Atlantic States Marine Fisheries Commission
1050 N. Highland Street
Arlington, VA 22201

Robert E. Beal, Executive Director

New Hampshire Marine Fisheries Division
225 Main Street
Durham, NH 03824-4732

Douglas E. Grout, Chief

MEMORANDUM

October 16, 2019

TO: Commissioners; Proxies; American Eel Management Board; American Lobster Management Board; Atlantic Coastal Cooperative Statistics Program Coordinating Council; Atlantic Coastal Fish Habitat Partnership Steering Committee; Atlantic Herring Management Board; Atlantic Menhaden Management Board; Atlantic Striped Bass Management Board; Coastal Sharks Management Board; Executive Committee; Habitat Committee; Horseshoe Crab Management Board; ISFMP Policy Board; Law Enforcement Committee; Management and Science Committee; Shad and River Herring Management Board; South Atlantic State/Federal Fisheries Management Board; Spiny Dogfish Management Board; Tautog Management Board; Weakfish Management Board

FROM: Robert E. Beal REB
Executive Director

RE: **78th Annual Meeting of the Atlantic States Marine Fisheries Commission**
October 27-31, 2019

The Atlantic States Marine Fisheries Commission's 78th Annual Meeting will be held October 27-31, 2019 at the Wentworth by the Sea, 588 Wentworth Road, New Castle, New Hampshire. Meeting materials are available on the Commission website http://www.asmfc.org/home/2019-annual-meeting. Supplemental materials will be posted to the website on Wednesday, October 23rd.

Board meeting proceedings will be broadcast daily via webinar beginning Monday, October 28th at 8:30 a.m. and continuing daily until the conclusion of the meeting (expected to be 12:15 p.m.) on Thursday, October 31st. The webinar will allow registrants to listen to board deliberations and view presentations and motions as they occur. No comments or questions will be accepted via the webinar. Should technical difficulties arise while streaming the broadcast the boards/sections will continue their deliberations without interruption. We will attempt to resume the broadcast as soon as possible. Please go https://attendee.gotowebinar.com/register/2059114101381638411 to register.

I look forward to seeing you at the Annual Meeting. If the staff or I can provide any further assistance to you, please call us at 703.842.0740.

Enclosures: Final Agenda, TA # 19-086

Public Comment Guidelines

With the intent of developing policies in the Commission's procedures for public participation that result in a fair opportunity for public input, the ISFMP Policy Board has approved the following guidelines for use at management board meetings:

For issues that are not on the agenda, management boards will continue to provide opportunity to the public to bring matters of concern to the board's attention at the start of each board meeting. Board chairs will use a speaker sign-up list in deciding how to allocate the available time on the agenda (typically 10 minutes) to the number of people who want to speak.

For topics that are on the agenda, but have not gone out for public comment, board chairs will provide limited opportunity for comment, taking into account the time allotted on the agenda for the topic. Chairs will have flexibility in deciding how to allocate comment opportunities; this could include hearing one comment in favor and one in opposition until the chair is satisfied further comment will not provide additional insight to the board.

For agenda action items that have already gone out for public comment, it is the Policy Board's intent to end the occasional practice of allowing extensive and lengthy public comments. Currently, board chairs have the discretion to decide what public comment to allow in these circumstances.

In addition, the following timeline has been established for the **submission of written comment for issues for which the Commission has *NOT* established a specific public comment period** (i.e., in response to proposed management action).

1. Comments received 3 weeks prior to the start of a meeting week will be included in the briefing materials.
2. Comments received by 5:00 PM on the Tuesday immediately preceding the scheduled ASMFC Meeting (in this case, the Tuesday deadline will be ***October 22, 2019***) will be distributed electronically to Commissioners/Board members prior to the meeting and a limited number of copies will be provided at the meeting.
3. Following the Tuesday, ***October 22, 2019 5:00 PM deadline***, the commenter will be responsible for distributing the information to the management board prior to the board meeting or providing enough copies for the management board consideration at the meeting (a minimum of 50 copies).

The submitted comments must clearly indicate the commenter's expectation from the ASMFC staff regarding distribution. As with other public comment, it will be accepted via mail, fax, and email.

Final Agenda

The agenda is subject to change. The agenda reflects the current estimate of time required for scheduled Board meetings. The Commission may adjust this agenda in accordance with the actual duration of Board meetings. Interested parties should anticipate Boards starting earlier or later than indicated herein.

Sunday, October 27

2:00 – 7:00 p.m. **Registration**

Monday, October 28

7:00 a.m. – 1:00 p.m. **Registration**

8:30 – 9:30 a.m. **Atlantic Herring Management Board**
Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey
Other Members: NEFMC, NMFS
Chair: Keliher
Other Participants: Zobel, Brown, Beal, Boelke
Staff: Rootes-Murdy

1. Welcome/Call to Order *(P. Keliher)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from April 2019
3. Public Comment
4. Progress Update on 2019 Atlantic Herring Area 1A Fishery Performance *(R. Zobel*)
5. Update on Development of New England Fishery Management Council's (NEFMC) Georges Bank Spawning Protection Discussion Document *(D. Boelke*) **Possible Action**
6. Review and Set 2020-2021 Atlantic Herring Fishery Specifications *(K. Rootes-Murdy*) **Final Action**
7. Update on Maine Enforcement Efforts on Quota Violation *(R. Beal)*
8. Elect Vice-Chair **Action**
9. Other Business/Adjourn

9:45 – 10:30 a.m. **American Lobster Management Board**
Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia
Other Members: NEFMC, NMFS
Chair: Train
Other Participants: Reardon, Perry, Beal
Staff: Starks

1. Welcome/Call to Order *(S. Train)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from April 2019
3. Public Comment

4. Discuss Reporting Requirements for 2020 *(C. Starks)*
5. Update on Resiliency in the Gulf of Maine (Draft Addendum XVII) *(C. Starks)*
6. Progress Update on the 2020 American Lobster Benchmark Stock Assessment *(J. Kipp)*
7. Other Business/Adjourn

10:45 – 11:45 a.m. **Tautog Management Board**
Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia
Other Members: NMFS, USFWS
Chair: McKiernan
Other Participants: Barry, Snellbaker
Staff: Rootes-Murdy

1. Welcome/Call to Order *(D. McKiernan)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019
3. Public Comment
4. Progress Report on Commercial Harvest Tagging Program *(K. Rootes-Murdy)* **Possible Action**
5. Other Business/Adjourn

11:45 – 1:15 p.m. **Lunch** *(On Your Own)*

1:00 – 5:00 p.m. **Atlantic Coastal Fish Habitat Partnership (ACFHP) Steering Committee**
Members: Babb, Bell, Campfield, Carloni, Chiarella, Coakley, Erikson, Faulkner, Greenberg, Groskin, Johnson, Kornbluth, Laney, Lorson, McMunigal, Medders, Powell, Rousseau, Socrates, Thomas-Blate, Topolski
Chair: Smith
Other Participants: Devers, Macone
Staff: Havel

1. Welcome/Introductions *(K. Smith)*
2. Committee Consent
   - Approval of Agenda
3. Funding Updates
   - RepYourWater (*L. Havel*)
   - Donate to ACFHP!
   - FishAmerica Funding *(L. Havel, K. Smith)*
   - 2019 – 2020 Operational Funding *(P. Campfield)*
   - Regional Business Plan 2-Pagers Update (L. Havel)
4. National Fish Habitat Plan Update *(L. Havel*)
   - American Fisheries Society Film Festival
   - Waters to Watch
   - Fish Habitat Act Status
5. National Fish Habitat Action Plan Funding Update *(J. Devers)*
   - FY2019 Funding
   - FY2020 Project Rankings
6. Whitewater to Bluewater Update (*J. Thomas-Blate*)

7. Merrimack River Watershed Council Update *(J. Macone)*
8. Day 1 Wrap Up *(K. Smith)*
9. Recess

1:15 – 2:45 p.m. **Atlantic Menhaden Management Board**
Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: NMFS, PRFC, USFWS
Chair: Meserve
Other Participants: Ballenger, Kersey
Staff: Appelman

1. Welcome/Call to Order *(N. Meserve)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019
3. Public Comment
4. Progress Update on the 2019 Atlantic Menhaden Single-Species and Ecological Reference Point Benchmark Stock Assessments *(K. Anstead, K. Drew)*
5. Update on 2019 Reduction Fishery Harvest from Chesapeake Bay *(N. Meserve*)
   - Consider Compliance with the Fishery Management Plan **Action**
6. Other Business/Adjourn

2:00 – 5:00 p.m. **Registration**

3:00 – 5:30 p.m. **Atlantic Coastal Cooperative Statistics Program (ACCSP) Coordinating Council**
Partners: ASMFC, Connecticut, Delaware, District of Columbia, Florida, Georgia, MAFMC, Maine, Maryland, Massachusetts, NEFMC, New Hampshire, New Jersey, New York, NMFS, North Carolina, Pennsylvania, PRFC, Rhode Island, SAFMC, South Carolina, USFWS, Virginia
Chair: Fegley
Staff: White

1. Welcome/Introductions *(L. Fegley)*
2. Council Consent
   - Approval of Agenda
   - Approval of Minutes from April 2019
3. Public Comment
4. Funding Subcommittee Report *(J.D. Simpson)*
5. Consider Recommendations for FY2020 Submitted Proposals *(L. Fegley)* **Action**
6. Consider Revision of the ACCSP Technical Committee Structure *(J.D. Simpson)* **Action**
7. Consider Establishment of Data Coordination Committee *(G. White)* **Possible Action**
8. Program/Committee Updates
   - Electronic Trip Reporting Status *(G. White)*
   - Registration Tracking *(J.D. Simpson)*
   - Updates from Operations/Advisors Joint Meeting *(N. Lengyel-Costa)*

- Committee Updates *(N. Lengyel-Costa)*
- For-Hire Methods Workshop Summary *(G. White)*
- State Conduct of For-hire Telephone Survey *(G. White)*

9. Other Business/Adjourn

6:00 – 8:00 p.m. **Welcome Reception**

Tuesday, October 29

7:00 a.m. – 1:00 p.m. **Registration**

8:00 – 9:30 a.m. **Spiny Dogfish Management Board**
Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina
Other Members: NMFS
Chair: Batsavage
Other Participants: Newlin, Moran
Staff: Rootes-Murdy

1. Welcome/Call to Order *(C. Batsavage)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019
3. Public Comment
4. Consider Addendum VI for Final Approval **Final Action**
   - Review Options and Public Comment Summary *(K. Rootes-Murdy*)
   - Consider Final Approval of Addendum VI
5. Review and Revise (If Needed) 2020/2021 Specifications *(K. Rootes-Murdy*) **Possible Action**
6. Consider Approval of 2019 Fishery Management Plan Review and State Compliance *(K. Rootes-Murdy*) **Action**
7. Elect Vice-Chair **Action**
8. Other Business/Adjourn

8:30 a.m. – 5:00 p.m. **Management and Science Committee**
Members: Armstrong, Burns, Dukes, Giannini, King, Knowlton, Madsen, McKown, McManus, Michels, Miller, Orner, Rawls, Ryan, Stevens, Sullivan, Wilson
Chair: Gartland (Knowlton will serve as Chair for this meeting)
Other Participants: Andrews, Faulkner
Staff: Murray

1. Welcome/Introductions *(K. Knowlton)*
2. Approval of Agenda
3. Review Committee Roles and Past Projects *(M. Armstrong)*
4. Discuss Measuring Success in Rebuilding and Sustaining Stocks
5. Discuss Climate Change Impacts to Fisheries Resources
6. Overview of Management Strategy Evaluations *(J. McNamee)*
7. Overview of New Marine Recreational Information Program Survey Data *(R. Andrews)*
8. Discuss Offshore Wind and Fisheries Interactions

9. Overview of United States Geological Survey Scientific Support to ASMFC *(S. Faulkner)*
10. Review ASMFC Research Priorities
11. Other Business
12. Public Comment
13. Adjourn

8:30 a.m. – 5:00 p.m. **ACFHP Steering Committee (continued)**

10. Review Current Action Plan *(L. Havel)*
11. Discuss 2020-2021 Action Plan *(K. Smith, L. Havel)*
12. Update on Conservation Mapping *(L. Havel, E. Martin)*
    - Southeast Mapping
    - Northeast Mapping
    - Assessment of Existing Information
13. Communications Discussion *(L. Havel)*
    - 10-Year ACFHP Factsheet
    - Western Native Trout Initiative Trout Challenge Discussion *(B. Groskin)*
    - World Fish Migration Day: May 16, 2020
14. Submerged Aquatic Vegetation Monitoring Protocols Discussion (*A. Kornbluth)*
15. Elect Vice-Chair
16. Other Business/Adjourn

9:45 – 11:45 a.m. **Horseshoe Crab Management Board**
Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: NMFS, PRFC, USFWS
Chair: Rhodes
Other Participants: Brunson, Messeck, Sweka
Staff: Schmidtke

1. Welcome/Call to Order *(M. Rhodes)*
2. Board Consent
    - Approval of Agenda
    - Approval of Proceedings from August 2019
3. Public Comment
4. Review Delaware Bay Ecosystem Technical Committee and Adaptive Resource Management Subcommittee Report *(J. Sweka*)
5. Consider Re-initiation of Postponed Draft Addendum VIII *(M. Rhodes)* **Possible Action**
6. Set 2020 Harvest Specifications **Final Action**
    - Review Horseshoe Crab and Red Knot Abundance Estimates and 2019 ARM Model Results *(J. Sweka)*
    - Set 2020 Harvest Specifications *(M. Rhodes)*
7. Consider Approval of 2019 Fishery Management Plan Review and State Compliance (*M. Schmidtke*) **Action**
8. Other Business/Adjourn

11:45 a.m. – 1:15 p.m. **Lunch** *(On Your Own)*

1:30 – 5:00 p.m. **Law Enforcement Committee (LEC)**
(A portion of this meeting may be a closed session for the LEC Coordinator* and *Committee members only)
Members: Beal, Blanchard, Brown, Eastman, Furlong, Gadomski, Garner, Hettenbach, Hodge, Hogan, Kersey, King, Lauderman, Messeck, Moore, Moran, Noel, Pearce, Ray, Santiago, Snellbaker, Walker, Williams
Vice-Chair: Messeck (Chair has retired, Vice Chair Messeck will serve as Chair for the meeting)
Other Participants: Odom
Staff: Robson

1. Call to Order/Roll Call of the LEC Representatives *(D. Messeck, M. Robson)*
2. Approval of Agenda and May 2019 Minutes
3. Public Comment
4. Appoint Nominations Subcommittee for LEC officers
5. Review LEC Input on Circle Hook Regulations and Enforcement
6. Review LEC Input on Atlantic Striped Bass Addendum VI
7. Review and Discuss ASMFC Species (as Needed)
8. Review and Discussion Ongoing Enforcement Activities **(Closed Session)**
9. State Agency Reports
10. Recess

1:15 – 2:15 p.m. **American Eel Management Board**
Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: DC, NMFS, PRFC, USFWS
Chair: Gary
Other Participants: Zimmerman, Beal
Staff: Rootes-Murdy

1. Welcome/Call to Order *(M. Gary)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019
3. Public Comment
4. Consider Approval of Coastwide Cap Overages Policy (*K. Rootes-Murdy*) **Final Action**
5. Consider Approval of 2019 Fishery Management Plan Review and State Compliance (*K. Rootes-Murdy*) **Action**
6. Other Business/Adjourn

2:00 – 5:00 p.m. **Registration**

2:30 – 4:00 p.m. **Weakfish Management Board**

Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: NMFS, PRFC, USFWS
Chair: Clark
Other Participants: Levesque, Walker
Staff: Schmidtke

1. Welcome/Call to Order *(J. Clark)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from October 2018
3. Public Comment
4. 2019 Stock Assessment Update *(E. Levesque)*
   - Presentation of 2019 Assessment Update Report
5. Consider Management Response to Stock Assessment Update *(J. Clark)* **Possible Action**
6. Consider Approval of 2019 Fishery Management Plan Review and State Compliance *(M. Schmidtke*) **Action**
7. Elect Vice-Chair **Action**
8. Other Business/Adjourn

4:15 – 5:15 p.m. **Business Session**

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Chair: Gilmore
Staff: Beal

1. Welcome/Call to Order *(J. Gilmore)*
2. Committee Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019
3. Public Comment
4. Review and Consider Approval of the 2020 Action Plan *(R. Beal)* **Action**
5. Elect Chair and Vice-Chair **Action**
6. Recess

6:00 – 9:00 p.m. **Annual Dinner**

Wednesday, October 30

8:00 – 10:00 a.m. **Executive Committee**

Breakfast will be available at 7:30 a.m.

(A portion of this meeting may be a closed session for Committee members and Commissioners only)

Members: Abbott, Anderson, Bowman, Boyles, Jr. (Bell), Cimino, Clark, Estes, Gilmore, Grout, Haymans, Keliher, McNamee, Miller, Miner, Murphey, Pierce, Shiels

Chair: Gilmore

Staff: Leach

1. Welcome/Call to Order *(J. Gilmore)*
2. Committee Consent
   - Approval of Agenda
   - Approval of Meeting Summary from August 2019
3. Public Comment
4. Report of the Administrative Oversight Committee (*P. Keliher*)
   - Consider Approval of Fiscal Year 2019 Audit/Financial Statement **Action**
   - Review Draft 2020 Action Plan
5. Consider Allocation of Remaining Plus-Up Funds *(R. Beal)*
   - Striped Bass Tagging Survey
   - Discuss Other Uses
6. Discuss Public Input Processes *(R. Beal)*
   - Advisory Panel Involvement
   - Public Hearing Process
7. Review Policy Addressing Non-payment of State Assessments *(R. Beal)*
8. Review Revised Investment Policy for Commission Reserves *(L. Leach)*
9. Future Annual Meetings Update *(L. Leach)*
10. Other Business/Adjourn

8:00 – 11:30 a.m. **Law Enforcement Committee (continued)**

11. Social
12. Federal Agency Reports
13. Review Offshore Enforcement Issues for American Lobster (tentative)
14. Review and Discuss State Compliance Reporting Process (tentative)
15. Review and Discuss ASMFC Species (as Needed)
16. Follow-up Discussion on Tautog Commercial Tagging Implementation
17. Elect Chair and Vice-Chair **Action**
18. Adjourn

8:30 a.m. – 3:30 p.m. **Habitat Committee**

Members: Ayvazian, Babb, Bachman, Carloni, Chiarella, Chintala, Coakley, Fay, Gill, J. Johnson, S. Johnson, Laney, Lorson, McTigue, Medders, Rousseau, Sanger, Schneider, Sherwood, Smith, Socrates, Tinsman, Watkinson, Wilber, Wilke
Chair: Topolski
Staff: Havel

1. Welcome/Introductions *(M. Topolski)*
2. Committee Consent
   - Approval of Agenda
   - Approval of Proceedings from May 2019
3. ACFHP Update (*L. Havel*)
4. Northeast Regional Habitat Assessment Data Discussion (*J. Coakley, M. Bachman*)
5. Status Updates (*L. Havel & R. Babb*)
   - Habitat Management Series: Aquaculture/Survey
   - Habitat Management Series: Acoustics
   - Habitat Hotline
6. Fish Habitats of Concern Workshopping
7. Species Assignments Check-in *(L. Havel*)
8. Other Business/Adjourn

10:15 – 11:45 a.m. **Shad and River Herring Management Board**

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: DC, NMFS, PRFC, USFWS
Other Participants: Sprankle, Furlong, Lyons Gromen
Chair: Armstrong
Staff: Starks

1. Welcome/Call to Order *(M. Armstrong)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from February 2019
3. Public Comment
4. Review Technical Committee Recommendations on Management and Monitoring Inconsistencies with Amendments 2 and 3 *(K. Sprankle)* **Possible Action**
5. Consider Approval of Revisions to the Maine River Herring Sustainable Fishery Management Plan *(K. Sprankle)* **Action**
6. Discuss Updates to Shad Habitat Plans *(C. Starks)*
7. Progress Update on Shad Benchmark Stock Assessment *(J. Kipp)*
8. Consider Approval of 2019 Fishery Management Plan Review and State Compliance *(C. Starks)* **Action**
9. Review and Populate Advisory Panel Membership *(T. Berger*) **Action**
10. Other Business/Adjourn

11:45 a.m. – 1:15 p.m. **Captain David H. Hart Award Luncheon**

1:15 – 2:30 p.m. **Coastal Sharks Management Board**
Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: NMFS, USFWS
Chair: Batsavage
Other Participants: Frazier, Garner
Staff: Rootes-Murdy

1. Welcome/Call to Order *(C. Batsavage)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from April 2019
3. Public Comment
4. Consider Postponed Motion from April 2019 *(C. Batsavage)* **Final Action**
   Move to require, for state waters, the use of circle hooks on lines intended to catch sharks.
   - Law Enforcement Committee Report *(M. Robson)*
   - Advisory Panel Report *(K. Rootes-Murdy)*
5. Set Coastal Sharks Fishery Specifications for 2020 (*K. Rootes-Murdy*) **Final Action**
6. Consider Approval of 2019 Fishery Management Plan Review and State Compliance (*K. Rootes-Murdy*) **Action**
   - Status Update on State Implementation of North Atlantic Shortfin Mako Recreational Measures
7. Elect Vice-Chair **Action**
8. Other Business/Adjourn

2:45 – 5:45 p.m. **Atlantic Striped Bass Management Board**
Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina
Other Members: DC, NMFS, PRFC, USFWS
Chair: Armstrong
Other Participants: Lengyel, Blanchard, Bassano
Staff: Appelman

1. Welcome/Call to Order *(M. Armstrong)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019
3. Public Comment
4. Addendum VI for Final Approval **Final Action**
   - Review Options and Public Comment Summary *(M. Appelman)*
   - Review Advisory Panel Report *(M. Appelman)*
   - Review Law Enforcement Committee Report *(K. Blanchard)*
   - Consider Final Approval of Addendum VI
5. Review Criteria for Development of Conservation Equivalency Proposals *(K. Drew*)
6. Other Business/Adjourn

Thursday, October 31

8:00 – 10:00 a.m. **Interstate Fisheries Management Program Policy Board**

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: DC, NMFS, PRFC, USFWS
Chair: Gilmore
Staff: Kerns

1. Welcome/Call to Order *(J. Gilmore)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019
3. Public Comment
4. Update from Executive Committee (*J. Gilmore*)
5. Discuss Process Implications for Ecological Reference Point Benchmark Assessment *(T. Kerns, K. Drew)*
6. Standing Committee Reports **Action**
   - Law Enforcement *(M. Robson*)
   - Habitat (*L. Havel*)
   - Atlantic Coastal Fish Habitat Partnership Steering Committee *(L. Havel*)
   - Management and Science *(S. Murray*)
   - Assessment Science *(S. Murray*)
     - Consider Approval of Assessment Schedule
7. Review Noncompliance Findings (If Necessary) **Action**
8. Other Business/Adjourn

10:00 – 10:15 a.m. **Business Session (continued)**

7. Consider Changes to the Rules and Regulations to Adopt a Policy to Address Non-Payment of State Appropriations (*R. Beal*) **Final Action**
8. Consider Noncompliance Findings, If Necessary **Final Action**
9. Other Business/Adjourn

10:30 a.m. – 12:15 p.m. **South Atlantic State/Federal Fisheries Management Board**

Member States: New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: DC, NMFS, PRFC, SAFMC, USFWS
Chair: Geer
Other Participants: Giuliano, McDonough, Rickabaugh, Hodge, Powers
Staff: Schmidtke

1. Welcome/Call to Order *(P. Geer)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from August 2019

3. Public Comment
4. Consider Approval of Atlantic Croaker Draft Addendum III and Spot Draft Addendum III for Public Comment (*M. Schmidtke*) **Action**
5. Discuss Differences between Federal and Commission Management of Spanish Mackerel *(P. Geer)* **Possible Action**
6. Consider Approval of 2019 Fishery Management Plan Reviews and State Compliance for Red Drum, Black Drum, and Spotted Seatrout *(M. Schmidtke*) **Action**
7. Other Business/Adjourn

Atlantic States Marine Fisheries Commission

Atlantic Herring Management Board

October 28, 2019
8:30 – 9:30 a.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(P. Keliher)*	8:30 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from April 2019	8:30 a.m.
3.	Public Comment	8:35 a.m.
4.	Progress Update on 2019 Atlantic Herring Area 1A Fishery Performance (*R. Zobel*)	8:45 a.m.
5.	Update on Development of NEFMC's Georges Bank Spawning Protection Discussion Document *(D. Boelke)* **Possible Action**	9:00 a.m.
6.	Review and Set 2020-2021 Fishery Specifications (*K. Rootes-Murdy*) **Final Action**	9:15 a.m.
7.	Update on Maine Enforcement Efforts on Quota Violation (*R. Beal*)	9:20 a.m.
8.	Elect Vice-Chair (*P. Keliher*) **Action**	9:25 a.m.
9.	Other Business/Adjourn	9:30 a.m.

The meeting will be held at Wentworth by the Sea; 588 Wentworth Road, New Castle, NH 03854; 603.422.7322

MEETING OVERVIEW

Atlantic Herring Management Board
Monday, October 28, 2019
8:30 – 9:30 a.m.
New Castle, New Hampshire

Chair: Pat Keliher (ME) Assumed Chairmanship: 02/18	Technical Committee Chair: Renee Zobel (NH)	Law Enforcement Committee: Michael Eastman (NH)
Vice Chair: Dr. David Pierce (MA)	Advisory Panel Chair: Jeff Kaelin (NJ)	Previous Board Meeting: April 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, NMFS, NEFMC (9 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from April 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Progress Update on 2019 Atlantic Herring Area 1A Fishery Performance (8:45 – 9:00 a.m.)

Background

- In response to the 2018 stock assessment, the Board specified bi-monthly quota periods to manage the significantly reduced 2019 Area 1A fishery in October 2018.
- In April, the states of Maine through Massachusetts set effort controls for the 2019 Area 1A fishery that included no landings days during Period 1 due to the reduction in the ACL.

Presentations

- Progress update on 2019 Area 1A Fishery Performance by R. Zobel

5. Update on Development of NEFMC's Georges Bank Spawning Protection Discussion Document (9:00 – 9:15 a.m.) Possible Action

Background

- In May, the NEFMC hired a contractor to develop a report on spawning activities on Georges Bank to consider additional management action to protect spawning herring **(Briefing Materials)**

- In September, the NEFMC initiated a Framework action to develop options to protect spawning herring in offshore waters in response to the draft report.

Presentations

- Update on Development of NEFMC's Georges Bank Spawning Protection Discussion Document by D. Boelke

6. Review and Set 2020-2021 Fishery Specifications (9:15 – 9:20 a.m.) Final Action

Background

- In June, the NEFMC set specifications for the 2020 and 2021 fishing years through Framework 6 (**Briefing Materials**)
- Per Amendment 3, states annual set the quota specifications, including the quota period system, in Area 1A.
- For the 2019 fishing year, the Board adopted a bi-monthly quota period approach in which 16.4% of the quota is allocated to Period one (June), 40.1% to Period two (July/August), 34% to Period three (September/October), and 9.5% to Period 4 (November/December).

Presentations

- Overview of 2020-2021 Specifications and Quota Period Options in Amendment 3 by K. Rootes-Murdy

Board actions for consideration at this meeting

- Set the season split of the Area 1A sub-ACL, quota rollovers, and sub-ACL trigger.

7. Update on Maine Enforcement Efforts on Quota Violation

8. Elect Vice-Chair

9. Other Business/Adjourn

Atlantic Herring Technical Committee Task List

Activity Level: Medium

Committee Overlap Score: Medium

Committee Task List
While there are no Board tasks for the TC at present, there are several annual activities in which TC members participate, both through the Commission and NEFMC • Participation on ASMFC PDT (currently working on Draft Addendum III) • Participation on NEFMC PDT (will be working to recommend specifications for the 2020-2021 fishing years) • Summer/fall collection of spawning samples per the spawning closure protocol • Annual state compliance reports are due February 1

TC Members

Renee Zobel (NHFG – Chair), Kurt Gottschall (CT DMF), Dr. Matt Cieri (ME DMR), Micah Dean (MA DMF), Corinne Truesdale (RI DFW), Deirdre Boelke (NEMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC HERRING BOARD

The Westin Crystal City
Arlington, Virginia
April 30, 2019

These minutes are draft and subject to approval by the Atlantic Herring Board
The Board will review the minutes during its next meeting

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INDEX OF MOTIONS

1. **Move to approve agenda** by Consent (Page 1).

2. **Move to approve proceedings of February, 2019** by Consent (Page 1).

3. **Move to approve the following options for Addendum II to the Atlantic Herring FMP:**
   - **Option C: GSI30 Trigger Value = 23 under Issue 1: GSI30 trigger values**
   - **Option B: Five Week Initial Closure under Issue 2: Spawning Closure Length**
   - **Option A: Sub-Option 2: 20% or more mature herring under Issue 3: Re-closure Protocol**

   (Page 5). Motion by Doug Grout; second by David Borden. Motion amended.

4. **Motion to Amend**
   Move to amend to replace Option B with Option C: Six Week Initial Closure under Issue 2: Spawning Closure Length (Page 4). Motion by David Pierce; second by Dennis Abbott. Motion carried (Page 8).

   Main Motion as Amended
   Move to approve the following options for Addendum II to the Atlantic Herring FMP:
   - **Option C: GSI30 Trigger Value = 23 under Issue 1: GSI30 trigger values**
   - **Option C: Six Week Initial Closure under Issue 2: Spawning Closure Length**
   - **Option A Sub-Option 2: 20% or more mature herring under Issue 3: Re-closure Protocol**

   Motion carried (Page 8).

5. **Move that states implement Addendum II no later than August 1, 2019 and move to approve Addendum II as modified today** (Page 8). Motion by Doug Grout; second by Steve Train. Motion carried (Page 9).

6. **Move to approve the 2019 Atlantic Herring FMP Review, state compliance reports, and de minimis status for New York** (Page 17). Motion by Doug Grout; second by Ray Kane. Motion carried (Page 17).

7. **Motion to adjourn** by Consent (Page 18).

ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Steve Train, ME (GA)
Sen. David Miramant, ME (LA)
Rep. Jay McCreight, ME, Legislative proxy
Doug Grout, NH (AA)
G. Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
David Pierce, MA (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Bob Ballou, RI, proxy for J. McNamee (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Terry Stockwell, proxy for T. Nies, NEFMC
Allison Murphy, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Jeff Kaelin, Advisory Panel Chair
Michael Eastman, Law Enforcement Representative
Renee Zobel, Technical Committee Chair

Staff

Robert Beal
Toni Kerns
Kirby Rootes-Murdy
Jessica Kuesel

Guests

Dave Bard, ECS/NOAA
Victoria Brown, MD Watermen
Peter Burns, NMFS
Don Frei, NOAA OLE
Joseph Gordon, PEW Trusts
Dee Lupton, NC DMR
Loren Lustig, PA (GA)
Patrice McCarron, MLA
Mike Millard, USFWS
Derek Orner, NMFS
Mike Ruccio, NMFS
Monica Scheremann, Potomac River Watermen

The Atlantic Herring Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, April 30, 2019, and was called to order at 8:30 o'clock a.m. by Chairman Patrick C. Keliher.

CALL TO ORDER

CHAIRMAN PATRICK C. KELIHER: Good morning everybody. We'll call the Atlantic Herring Management Board to order. My name is Pat Keliher, Chair of the Board. I want to welcome everybody. I noticed my Maine contingent is not here, with the exception of Representative McCreight.

Representative McCreight, if you would like to join us at the table, Senator Miramant will be here. If there are no objections, Representative McCreight knows that she can't speak to issues, but I thought I would invite her up as an opportunity to learn sitting at the table instead of the back of the room. Are there any objections to that? Seeing none; thank you. Here is the Senator, here is my Maine contingent.

APPROVAL OF AGENDA

CHAIRMAN KELIHER: Item Number 2 is Board Consent regarding Approval of the Agenda. Is there any objection to the agenda, anything that needs to be added under Other Business? Seeing none, the agenda is approved without objection.

APPROVAL OF PROCEEDINGS

CHAIRMAN KELIHER: Approval of the proceedings from the February, 2019 meeting, did everybody have a chance to Wordsmith the minutes from February, 2019? Are there any additions, any comments on that? Seeing none, we'll approve the proceedings from February, 2019.

PUBLIC COMMENT

CHAIRMAN KELIHER: Nobody has signed up for Public Comment. Does anybody have any?

Is there anybody from the public even here? Hello! It looks like we have nobody from the public here, so we will skip public comment. If anybody does come in, we'll allow them to potentially speak on issues as we go through the agenda.

CONSIDER ADDENDUM II FOR FINAL APPROVAL

CHAIRMAN KELIHER: Item Number 4 is Consider Addendum II for Final Approval**.** We will have a final action on this item. Up first is to Review the Options and Public Comments, so Kirby, if you could go through that please.

REVIEW OPTIONS AND PUBLIC COMMENT

MR. KIRBY ROOTES-MURDY: As mentioned, I'm going to go through the Draft Addendum II that's for Board review today, and I'll cover the public comment that was offered up on the document. Just an outline, I'll review the statement of the problem, go through an overview of what the options are that are in the Addendum, and then the public comment summary, and take any questions.

Statement of the problem, as you all are aware, the 2018 Stock Assessment showed reduced levels of recruitment of Atlantic herring over the last five years. In response, the Board initiated Draft Addendum II to strengthen the existing spawning protections for Area 1A. The Addendum considers measures that include the GSI30 trigger value that has been in place since Amendment 3, the closure period length and the reclosure protocol. As you are probably all aware by this point, these three issue items are connected to each other. The first being what the GSI30 trigger value is.

This is where the sampling of Atlantic herring helps us determine whether a closure needs to occur, followed by the question of the length of

that closure. Currently we are operating under a four week closure period. The third, which is connected to obviously the previous item, is regarding a reclosure protocol.

While there is a closure that's occurring, moving towards a point where they can open up the fishery again, sampling is happening, and that sampling helps inform whether spawning is continuing, and whether a reclosure is needed. The current framework we've been operating under allows for a reclosure based on the results of those samples.

We went out and did public comment over the last month and a half. Public hearings were held in three jurisdictions, Maine, New Hampshire, Massachusetts, 21 attendees approximately, came and provided comment at those meetings. In terms of written comment, there were a total of 9 that was offered up, 4 from individual stakeholders, and 5 from organizations.

I'll go through the management issues and the alternatives now. As I mentioned, the first issue item is the trigger value. There are four options under the trigger value alternatives. Option A would maintain us at status quo, the current trigger value of 25, which is equivalent to about 25 percent of the population of spawning.

Under this option we have a default closure date of August 28 in eastern Maine, October 4 in western Maine, and October 4 in Massachusetts/New Hampshire area. Option B while a similar trigger value as Option A has data that's updated through 2017, and therefore the default closure dates that I just read off. Those would be changed based on that updated information.

Option C would move to change the trigger value to a value of 23, which corresponds to about 20 percent of the population of spawning. It's a lower level that would trigger a closure based on sample counts. Option D would lower that trigger value even further to 22, which corresponds to about 15 percent of the population spawning.

As you can see on the slide, there are connected default closure dates that are adjusted slightly under each of those. In terms of public comment that was offered, a total of 4 individual were in favor of Option A explicitly. None were explicitly in favor of Option B, 3 were in favor of Option C, and 2 were in favor of Option D.

I want to make clear that when we were collating, pulling together the public comment, we found that we actually missed one, in terms of the document that went out to you all to review. We've updated this table to reflect that. In addition to what we have listed here as people who came, spoke on the record explicitly in favor of a specific option. There were 3 that were in support of a trigger value of 25 at the New Hampshire public hearing, but they were undecided between Options A or Option B. It's important to look at between Option A and B there is a total of 7 people who are in favor of that trigger value. Some additional comments were specific to reducing the trigger for spawning closures in the Gulf of Maine. One individual used a percentage shut down in the eastern closure area. When purse seining they recommended to take a sample, for example a five-gallon bucket, and have spawning closure triggers set at 20 percent, and if you have a 20 percent spawning individuals in the seine, you would dump the catch and contact the State Department of Natural Resources for that closure.

We had additional comments that supported no options for trigger values; they preferred going back to the old system that was in place, using a 20 percent catch tolerance. They believe that spawning closures from 0 to 200 nautical miles is the most effective way to conserve the fish. Those are some of the additional comments we received on this issue item.

The second issue item was regarding the closures length. As mentioned, the default right now or the status quo is four weeks. Option B moves to increase that closure period to five weeks, Option C to six, and Option D to eight weeks. Again, the increase in the closure length is trying to find, basically the best way to cover the spawning season, and ensure that the closure is most effective in helping protect those spawning fish.

In terms of public comment, there were 5 individuals in favor of the status quo, Option A, 2 in favor of moving to a five-week closure, 1 in favor of a six-week closure, and 1 in favor of an eight-week closure. We did receive some comments that were in support of shorter spawning closure periods, and again at the New Hampshire hearing we had 2 individuals who indicated they could support either Option A or B, which makes it a little bit difficult to count those and tally them up.

The last issue item for this Addendum is the reclosure protocol. Currently, as noted, there is the ability to reclose the fishery up to two additional weeks, if samples taken during a spawning closure indicate that a significant number of herring are spawning. Sub-Option 1 would maintain the significant number being 25 percent of more mature herring.

For the reclosure, we're not just looking at female herring; it's also males, so 25 percent or more of mature male or female herring. For Sub-Option 2, it would reduce that level down to 20 percent or more mature herring, and Sub-Option 3 would reduce it even further to 15 percent. Again, the lower you go the more likely you are to trigger a reclosure, potentially.

Option B would move to do away with the reclosure protocol, so there would be no reclosure once a spawning closure has happened. In terms of public comment that was offered on this. There were 9 individuals who indicated their support for Option A, status quo, and 1 in favor of doing away with the reclosure.

Specifically, in terms of the sub-options, there were 4 in favor of maintaining 25 percent as the significant number, 3 that were in support of moving to 20 percent, and 2 that were in support of moving to 15 percent. Some additional comments that were offered up that didn't pertain to any specific issue item or alternatives, was the need to consider measures that are consistent with the federal FMP, and allow the fishery to utilize optimal yield for this fishery, specifically looking to have shorter spawning closures and more flexibility with the reclosure protocol.

There was opposition to further restrictions on the Area 1A fishery, and recommended postponing action on this Addendum. Additional comments focused on the fact that they think the current sampling of the fishery in Area 1A is not sufficient that there is a need to have quicker closures, as well as longer closure periods.

Additional comments offered up focused on how the midwater trawlers, in their opinion, have a disproportionate impact on the resource, and then others indicated that low recruitment is being driven by other issues in the fishery, including available food sources for larval fish. Lastly, protecting spawning in the Gulf of Maine needs to have reciprocal protection on Georges Bank.

Obviously, these are from a variety of different people. They are not all the same, because some of them are contradictory to each other. But these were the comments we received on this Addendum. With that I'll take any questions, thank you.

ADVISORY PANEL REPORT

CHAIRMAN KELIHER: Are there any questions for Kirby? This will go quick. Seeing none, why don't we go right into the Advisory Panel Report? Jeff Kaelin, are you ready to go, Jeff?

MR. JEFF KAELIN: Yes sir, thank you. Good morning everybody. I'm Jeff Kaelin with Lunds Fisheries in Cape May, and I have the privilege of being the AP Chair. We had a call on the 16th. Kirby and I worked together to put this summary together, the list of participants on the call, eight Advisors on the call are here.

I can't remember if Ray was on the call or not, Mr. Kane, but I think he was listening in. Anyway, we've broken it up by issue relative to the management program. Issue Number 1, the GSI trigger value, 3 AP members were in favor of maintaining the status quo, Option A, with a 25 percent value. One member indicated the support for Option B, the 25 percent with the updated data, and 1 indicated support for Option C, value 23.

The reason cited in supporting the status quo were numerous, most notably concern that the current spawning program has only been in place for three years, and while spawning samples have been collected from 2005 to 2017, the current version of the program has not been in place long enough to justify adjusting it further.

Additional reasons in support of the status quo included the need to collect more spawning samples over time, and the potential negative impacts to the fishery from extended closures, on top of the already reduced quotas for 2019, actually for the next three years likely. Reasons cited in support of Option C were of course the need to provide greater protection to the herring population when spawning is occurring.

On the closure length, a similar kind of breakdown, 3 AP members were in favor of maintaining the status quo value of four weeks, 1 member indicated support for the five week, Option B, and 1 indicated support for Option C, the six week closure. The reasons cited in favor of status quo, again included the need for additional years of data from the current program, and additional negative impacts on the fishery, in addition to the reduced quotas. Then reasons cited in support of B and C was that the current closure period length has not been in place long enough to cover the spawning season, and extending the closure length may address this better. Reclosure protocol, 3 AP members indicated status quo support again, 2 members indicated support for Option A, the 20 percent value. The reasons were very similar to those I just outlined in both cases.

Then I'll switch over to the additional comments. This is on the document itself, 1 AP member took issue with the lack of information really, in Draft Addendum II on the 2018 Stock Assessment, specifically what was said about the lack of a stock recruitment relationship, and the limited impact of fishing mortality on the overall population.

Another AP member pointed out the assessment notes that environmental changes could also be affecting herring recruitment, and that AP member noted that the Draft Addendum was lacking in analysis on the impacts to the fishery by the proposed management alternatives, and stated this information is necessary for evaluating the cost of any potential changes today.

This AP member also noted the New England Council will likely be implementing catch limits for 2020 and 2021 that will be based on the new control rule part of Amendment 8 that afford greater protection to herring, and that this should be taken into account when considering expansion of the current spawning program.

Several AP members indicated that they disagree with some recent survey information that shows reduced recruitment in 1A, and those AP members think recruitment in the area is up in recent years, but lower in Areas 2 and 3. Of course Area 2 herring is closed at this time. One AP member noted that the 2018 Stock Assessment doesn't account for data from

the terminal year in 2018, which may be showing an increased trend in recruitment.

Then after the call an additional AP member communicated with Kirby, after being unable to participate on the call, and they supported Option B, the 25 percent value, Issue 1, Option C, the six week closure for Issue 2, and Option A, Sub-Option 2, the 20 percent trigger for Issue 3. That is reclosure I think.

For Issue 2 they indicated another option not listed that would include weekly monitoring of spawning so that the fishery could be closed, with a week buffer on either side of the spawning aggregation. That is not an option that is in the document specifically, so those are our comments, Mr. Chairman. I appreciate the opportunity to provide them to the Board this morning.

CHAIRMAN KELIHER: Thank you, Jeff for that thorough report. Are there any questions to Jeff Kaelin in regards to the Advisory Board? Seeing none, did you have enough coffee this morning?

CONSIDER FINAL APPROVAL OF ADDENDUM II

CHAIRMAN KELIHER: With no comments, now is the time to consider a final approval of the addendum. Do we have any, Doug Grout?

MR. DOUGLAS E. GROUT: Thank you, Mr. Chair, and I want to thank the PDT and the Advisors. I thank the PDT for putting together a very simple, easy to understand Addendum here. **With that I would like to move the following. I move to approve the following options for Addendum II to the Atlantic Herring FMP.**

Option C: GSI30 Trigger Value that is equal to 23 under Issue 1, GSI trigger values. Option B: a Five Week Initial Closure under Issue 2, Spawning Closure Length, and Option A: Sub-Option 2, a 20 percent of more mature herring under Issue 3 it would close protocol, and if I can get a second I'll provide a rationale.

CHAIRMAN KELIHER: I have a second by David Borden. Go ahead with your rationale, Doug.

MR. GROUT: These options provide additional protection to pre-spawning fish, and reduce the probability of catching spawning fish at the beginning of the spawning season. A five-year reclosure duration matches up best with the GSI30 trigger value of 23, as it is longer than the average spawning season in the document. The additional spawning protection will help enhance the opportunity for Atlantic herring stock to rebuild.

I tried to put together an option where we had a slightly more conservative trigger, even though the Technical Committee has told us that we should have a six-week closure with this. I took some of the public comment into consideration that they would probably rather have a shorter closure period, and then have reopening protocol. That is why I tried to put that in with a slightly more conservative reclosing protocol.

CHAIRMAN KELIHER: Thank you for that rationale, Doug. David, did you want to speak to the motion? David Pierce.

DR. DAVID PIERCE: I suspect we can support this motion with one exception, and that would be the length of the initial closure. I say that because of the status of the stocks, and in particular some of the text in the addendum that makes it very clear that we really are being faced with and are faced with, some historical low recruitment levels. Four out of the last five years or so historic low levels of recruitment, and granted there was some uncertainty about the recent year's recruitment.

But, I'm certainly more inclined to be pessimistic about it than to assume that the numbers we're looking at now are probably the correct ones. It has been said that perhaps there is a very weak relationship between stock recruitment and biomass. I suspect, and I'm guided by the fact that with recruitment being

the way it is, and with spawning stock biomass declining that there may actually now be a stock recruitment relationship that will affect us in the long term.

I prefer to be more cautious, and also to be more consistent with the Technical Committee advice. I would say okay, 23 on the trigger Option C that's fine, but Option B, I would make a motion to amend to go from Option B to Option C, relative to the closure length, so it would be a six-week initial closure instead of a five-week.

CHAIRMAN KELIHER: We have a motion to substitute, or amend?

DR. PIERCE: Just amend; change Option B to Option C, six week initial closure.

CHAIRMAN KELIHER: Motion to amend Option B to Option C. Dennis Abbott.

MR. DENNIS ABBOTT: I was going to suggest that we divide the question. We could probably do it either way. We could divide the question and vote on Option C the first part of it, and then go on to the second and third parts.

CHAIRMAN KELIHER: I certainly don't have any objections to do that. We don't have a second to the motion.

MR. ABBOTT: But I will second the motion at this time.

CHAIRMAN KELIHER: To complicate it you'll second the motion, thank you very much. Thank you very much, Mr. Abbott from New Hampshire. **We have a motion to amend on the table, moving Option B to Option C, a motion by Dr. Pierce, seconded by Dennis Abbott**. Are there any comments or questions in regard to the motion to amend? Ali.

MS. ALLI MURPHY: I just wanted to take a quick minute to summarize the NMFS comment letter on this Addendum. I certainly understand the Commission, or the Board's desire to be precautionary with regard to spawning herring. But I would ask that the Board balance this precaution with providing flexibility for the industry, and the opportunity to fully harvest the allocated quotas.

I think with the quotas that are expected this year, we're certainly going to see a closure, or we're likely to see a closure before the spawning closures kick in. But if the fish don't show up in time, or when they're expected, providing some flexibility to the industry to harvest the fish when they're available is preferred for us.

Secondly, looking forward under scenarios where there are higher quotas in future years, lengthier closures would likely limit industries ability to fully harvest the quota. I would urge the Board to support shorter, more targeted closures, and I plan on abstaining from votes on this Addendum.

CHAIRMAN KELIHER: Ray Kane, did you have your hand up?

MR. RAYMOND W. KANE: I get a little confused at these meetings. I support the amended part of this motion. We've got the Technical Committee sitting here saying we need a six week closure, and I think of the Technical Committee at ASMFC like I would think of the SSC, at Council level. I'm going to go ahead and support this.

I mean not only have we got a lobster industry that is concerned, but fish are not political, and we have to protect the predator fish. We have to give them enough forage, and we all know the state of the stock right now. It is my interest that we recover the stock as quickly as possible.

CHAIRMAN KELIHER: David Borden.

MR. DAVID V. BORDEN: A quick question. Has the New England Council taken a position or

outlined a preference under five or six weeks at all? I don't go to Council meetings, so I'm just asking.

CHAIRMAN KELIHER: I don't believe they have, but Terry Stockwell would you want to comment on that please?

MR. TERRY STOCKWELL: Yes thank you David for the question. The Council's Herring Committee received a report on the Addendum from Kirby in March, and there were no comments made at that time. There was some discussion at the recent Mystic meeting. In general the Council supports measures that will strengthen spawning protection, and I'm going to be listening to the conversation to determine how I vote at the end, but nothing specific to the question that you asked.

CHAIRMAN KELIHER: Thank you for that Terry, Steve Train.

MR. STEPHEN TRAIN: I would like to support this amendment, but I'm not sure I'm there yet. On Issue 2, a 25 percent increase in the closure period is what is on the table originally. Now we're going to a 50 percent. That's a lot of close time. We've already got a significant increase. I can see the benefits of it, but I need to be talked into it a little bit more to be able to support this. We're already increasing the closure with the original motion.

CHAIRMAN KELIHER: Dr. Pierce.

DR. PIERCE: I appreciate that point. What I would also like to do is to take the necessary steps to reduce the chances of our actually having to reclose, two week reclosure. That is another reason why I went with the six weeks as opposed to the five weeks. Right now we're at four, another week is five. I think again, considering the nature of the recruitment we're faced with right now, a longer duration of a closure makes sense, and we therefore minimize the chances of our needing a two week reclosure. I know in my staff we do a good job sampling the fishery with the state of Maine being involved in that of course. It's not an easy task to find the fish, so I would rather have them not having my staff and your staff not having to scramble around to try to find fish, to see if indeed a reclosure is necessary, minimize the chances of our having to reclose, go with the six weeks.

CHAIRMAN KELIHER: Any other comments, Ritchie White.

MR. G. RITCHIE WHITE: I guess I haven't made my mind up either, as Steve. Certainly it is important that the Technical Committee wanted the six weeks. Also important to me is that the Purse Seine Alliance that will probably catch over 90 percent of the herring in 1A this year supports the original motion. Those are the two issues that I have to balance to try to figure out what is a fair solution here, and I haven't done it yet.

CHAIRMAN KELIHER: Well you better hurry up, because we're going to call the question in a minute. Are there any other questions or comments in regarding the motion to amend? Senator Miramant.

SENATOR DAVID MIRAMANT: It seems like some of the purse seine folks thought that there was no need for closure, because you already have the option for the Department, so if they would move as an alliance to the five week or the first motion that is a good sign as well for cooperation. I'm new, just kind of a statement/question.

CHAIRMAN KELIHER: Are there any additional comments, any additional questions? **Seeing none, why don't we take two minutes to caucus? Do we need more time? Okay a roll call vote has been requested, and I'll read the motion to amend into the record. It is move to amend to replace Option B with Option C, Six Week Initial Closure under Issue 2, the**

Spawning Closure Length. I'll have Kirby go through the roll call.

MR. ROOTES-MURDY: I'll start with the state of Maine.

MR. TRAIN: No.

MR. ROOTES-MURDY: New Hampshire.

MR. ABBOTT: No.

MR ROOTES-MURDY: Massachusetts.

MASSACHUSETTS: Yes.

MR. ROOTES-MURDY: Rhode Island.

MR. ERIC REID: Yes.

MR. ROOTES-MURDY: Connecticut.

DR. JUSTIN DAVIS: Yes.

MR. ROOTES-MURDY: New York.

MR. JOHN G. McMURRAY: Yes.

MR. ROOTES-MURDY: New Jersey.

MR. JOE CIMINO: No.

MR. ROOTES-MURDY: New England Fishery Management Council.

MR. STOCKWELL: Abstain.

MR. ROOTES-MURDY: National Marine Fisheries Service.

MS. MURPHY: Abstain.

MR. ROOTES-MURDY: **The motion passes 4 in favor, 3 against, and 2 abstentions.**

CHAIRMAN KELIHER: With that the original motion has been amended, if we can get that on the board. With that the original motion has been amended to include the Option C, the six week initial closure. Is there any an additional question or comments on the newly amended original motion? Seeing none, do we need time to caucus?

Seeing none, is there any objection to the original motion that has been amended? We do have opposition, so I am going to call the question. **Well, let me read the new motion into the record. Move to approve the following options for Addendum II to the Atlantic Herring FMP: Option C, the GSI30 Trigger Value = 23 under Issue 1, GSI30 trigger values. Option C, Six Week Initial Closure under Issue 2, Spawning Closure Length.**

Option A, Sub-Option 2, 20 percent or more mature herring under Issue 3, the reclosure protocol. I'm going to call the question. All in favor of the newly amended original motion please signify by raising your hand. All opposed abstentions or null votes, 1 abstention. The motion passes 6 to 1 to 1. Okay thank you very much. That is the final approval of Addendum II, no excuse me, we have a couple more motions, I'm sorry. Doug.

MR. GROUT: I believe we have to have an implementation date and then I don't know which order I should do this. **My motion is to move the states implement Addendum II no later than August 1, 2019, and I'm also moving to approve Addendum II as modified today.**

CHAIRMAN KELIHER: We have a motion on the table, do I have a second? Mr. Train, seconded by Steve Train, is there any comments, questions on the motion? Ray Kane.

MR. KANE: A question of the maker. I thought at our AP meeting the season was going to start July 15, 2019. Why couldn't we use that as a date as opposed to August 1, 2019?

MR. GROUT: Well, my thought was the spawning closures typically don't start until August, and that would give the states sufficient

enough time to go through their regulatory process to get this in place.

MR. KANE: Thank you.

CHAIRMAN KELIHER: Are there any additional comments or questions? Seeing none, I'll read the motion into the record. **Move that states implement Addendum II no later than August 1, 2019, and move to approve Addendum II as modified today. The motion was by Mr. Grout, and seconded by Mr. Train.** Is there any objection to the motion on the board? We have objection. There is final action, so we'll have a roll call vote, Kirby.

MR. ROOTES-MURDY: We'll go through this fairly quickly. Maine.

MR. TRAIN: Yes.

MR. ROOTES-MURDY: New Hampshire.

MR. GROUT: Yes.
MR. ROOTES-MURDY: Rhode Island.

MR. REID: Yes.

MR. ROOTES-MURDY: Connecticut.

DR. DAVIS: Yes.

MR. ROOTES-MURDY: New York, oh we missed a state, sorry. Massachusetts.

MR. KANE: Yes.

MR. ROOTES-MURDY: New York.

MR. McMURRAY: Yes.

MR. ROOTES-MURDY: New Jersey.

MR. CIMINO: No.

MR. ROOTES-MURDY: New England Fishery Management Council.

MR. STOCKWELL: Yes.

MR. ROOTES-MURDY: National Marine Fisheries Service.

MS. MURPHY: Abstain.

MR. ROOTES-MURDY: **Motion passes 7 in favor, 1 against, 1 abstention**.

CHAIRMAN KELIHER: **That concludes the final action in regards to Addendum II**.

UPDATE ON THE 2020 AND 2021 FISHERY SPECIFICATIONS

CHAIRMAN KELIHER: Moving right along on the agenda, we'll go to Item Number 5, an Update on the 2020 and 2021 Fishery Specifications, Kirby.

MR. ROOTES-MURDY: I'll try to go through this quickly, but not too fast, sorry. As you all know, we have 2019 specifications that were set at the February meeting earlier this year. The New England Fishery Management Council met earlier this month to consider Framework 6, which outlines specifications for the 2020 through 2021 fishing season.

Framework 6 was developed to set those specifications based on new information from the 2018 Benchmark Assessment. Because the Benchmark Assessment adjusts what the overfishing reference points are for Atlantic herring, it required a framework, and in turn the document outlines alternatives to consider setting those specifications.

The Council agreed to include two overfishing definitions for the 2020 specifications. The first is a no action, which would maintain the current overfishing definition, and the second would update it to be more consistent with the 2018 assessment results. On the screen you can see an Alternative 1, which is no action, Alternative 2, which is an original calculation, and then Alternative 2 updated. Alternative 1 is straightforward; it's no action, which is the case

where you would rollover 2019 specifications as implemented through the NOAA Fisheries in-season adjustment.

Alternative 2 original, this alternative was recommended by the Scientific and Statistical Committee of the Council back in October, based on the proposed Amendment 8 Control Rule. Alternative 2 updated, is consistent with the proposed Amendment 8 Control Rule that was updated by the Herring Plan Development Team, to include more accurate catch data for 2018.

In terms of the other items that are considered as part of the framework, there is a management uncertainty buffer. Before the U.S. catches are set, the ABC is reduced to account for the potential harvest in the New Brunswick, Canada weir fishery, and other potential sources. In recent years the Council has subtracted 6,200 metric tons as a management uncertainty buffer for Framework 6.

The Council will consider three alternatives based on updated 3 year, 5 year, and 10 year averages of the New Brunswick weir catch. These averages total to about 5,888 metric tons, 3,992 metric tons, and 4,560 metric tons respectively. The Council also agreed that 1,000 metric tons of that management uncertainty buffer, could continue to roll over into the Area 1A catch limit on October 1, if that New Brunswick weir fishery has not landed a majority of that buffer up to that point.

Regarding border transfers, the framework includes two alternatives for border transfers of U.S. caught fish that is shipped to Canada via carrier vessels, and used for human consumption. The alternatives are 0 metric tons, and 250 metric tons. While the two options will be analyzed on their own, the Council will be able to select a number anywhere between 0 and 250 metric tons when it takes final action in June.

In terms of the U.S. at-sea processing, the Council moved to set that at 0 when allocated the supplies to U.S. vessels that want to process herring at sea, but don't meet the vessel size limit. In terms of the sub-ACL proportions, those were also maintained, so specific to Area 1A that remains at 28.9 percent.

In terms of the seasonal sub-ACLs, for Area 1A that remains 0 for January through May, and then 100 percent from June through December. Regarding RSA, the Council voted to maintain the RSA at 3 percent of the sub-ACL for each of the management areas for 2020 and 2021. The 2019 RSA value was set at 3 percent through the National Marine Fisheries Service in-season adjustment.

Then in terms of the fixed gear set-aside, the Council voted to set that at a level that's equivalent to the same proportional reduction from 2019 to 2020, as a total fishery reduction. The set-aside applies to the fixed gear fishermen west of Cutler, Maine, and is removed from the Area 1A sub-ACL, and it's returned to the sub-ACL if not used by November 1st. Last, I've included in here what the catch caps are by each of the gear types and areas for 2020. With that in terms of next steps, the New England Plan development Team, the AP, and the New England Management Council's Herring Committee will meet in May, and the Council is expected to take final action on Framework 6 in June. With that I'll take any questions.

CHAIRMAN KELIHER: I've got Terry Stockwell and then David Borden.

MR. STOCKWELL: Just a slight edit to the border transfer bullet. It's a range between 0 and 250, not one or the other.

CHAIRMAN KELIHER: Thanks for that clarification, Terry. David.

MR. BORDEN: Kirby, how close are we coming to the bycatch limits? In other words, if you go

back two slides you have what the allocation is. If you use the prior year bycatch as an indicator, how close are we to those numbers? If this takes too long, you can answer it after the meeting.

MR. ROOTES-MURDY: Yes, I don't know off the top of my head, but I can look it up and get back to you.

CHAIRMAN KELIHER: David, too many Davids?

DR. PIERCE: Kirby, I think you mentioned that 6,000 metric tons is pretty much the management uncertainty that accounts for the New Brunswick weir catch. Do we have an update as to what the New Brunswick weir catch was recently? Was it greater than 6,000? There is a number, but I can't recall what it is.

My colleague here mentions 11,500, so we've gone way over the 6,000. I just can't recall, but I can turn to the other members of the New England Council to help me with this. What is the consequence of our going over the 6,000, in terms of an impact on the amount of herring that is available for Massachusetts, Maine, New Hampshire fishermen, and of course New Jersey?

MR. ROOTES-MURDY: For the first question I don't know the exact value. On the second I would have to look at up as well.

CHAIRMAN KELIHER: That's a really good question, David on your second part, because it was always my understanding that that overage would not penalize the jurisdictions here, where they're coming off the top. But that has become less clear to me, and I'm going to look to Terry to see if he can create some clarity around that issue.

MR. STOCKWELL: I might have to phone a friend.

CHAIRMAN KELIHER: Mr. Grout.

MR. GROUT: Can I be your friend? It is my understanding from the discussion at the Herring Committee meeting that what that does is there isn't a payback from that at all. But what that does is that means the catch is higher than we anticipated, so when they put that into the stock assessment, or in any projections that takes into effect, and may lower the overall quota in future years.

CHAIRMAN KELIHER: There is no objection by Mr. Stockwell, so I think he must have thought you were his friend on that one, Doug, so very good.

MR. STOCKWELL: Very friendly here. I mean there is no payback for the Canadian coverage currently in our FMP. As you all know, the weir fishery is highly variable.

CHAIRMAN KELIHER: Any additional questions in regards to this topic? Toni.

MS. TONI KERNS: I don't have a question, but I can tell you that the midwater trawl, southern New England, Mid-Atlantic bycatch caps have been reached in total, I think the past two years. I'm not sure about the rest of them.

CHAIRMAN KELIHER: Mr. Kaelin just whispered that in my ear, but not this year so that's a good sign. Are there any additional comments on this topic?

PROGRESS UPDATE ON DRAFT ADDENDUM III

CHAIRMAN KELIHER: Let's move on to the next agenda item, Progress Update on the Draft Addendum III.

MR. ROOTES-MURDY: I'll go through just a brief background, give you all as much of an update as there is, and then we have some kind of questions for you to consider, to think about moving forward, and then I'll take any questions you may have. In terms of background, the Board initiated Draft Addendum III at the annual meeting last October. The Addendum was initiated to develop spawning protection in

Area 3. The Board also requested that the New England Council consider herring spawning protection in its 2019 priorities.

The Commission sent a letter to the Council in November. In terms of updates, the Council added herring spawning protection to its 2019 priorities, in that they have hired a consultant to support the development of a Discussion Document that would really be pulling together a lot of the information on what has been done in the past, in terms of monitoring, data collection in Area 3, as well as evaluating what the available information is out there, in terms of research and literature.

They closed the advertisement on, I believe it was April 22, and so I believe they are hoping to bring somebody on in May of this year. In terms of the Addendum itself, there has not been any progress made in drafting it up until this point. We did have a New England Council sub-PDT call that was convened to try to identify some of the challenges, brainstorm a little bit what spawning protection in Area 3 could look like.

We developed at least a couple of questions that we think may help us in furthering this document, by posing it to this Board to consider. As you all are aware, right now we have a program in Area 1A that outlines spawning closures in three discreet places, right. We have eastern Maine, western Maine, and then Massachusetts/New Hampshire.

But we also have information that demonstrates how and where herring are likely spawning throughout the overall region. You can see for a good chunk of Area 3, it is a continuous coverage along Georges Bank, up over to off the coast of Cape Cod. These are important considerations in thinking about how moving forward, spawning protection for Area 3 could and should develop in relation to what is currently in place for Area 1A. First off, one of the significant challenges is that Area 3 is a large area.

There are many unknowns regarding the timing and location of spawning events. There may also be spawning events that are occurring at different times, and in multiple large areas. This is stuff that the group was able to kind of talk through, but we again don't have a lot of great data that we can speak to at this point that demonstrate this.

Partly because current sampling in Area 3 is limited, we don't have a dedicated fishery independent sampling survey at this point. That further creates challenges to understand the dynamic of these temporal and spatial changes in herring spawning over time. The other facet that will create some challenges moving forward that you all are aware of, is that there is likely reduced quotas in future years that will further limit the ability to collect samples from fishery dependent sources.

Those fisheries that are currently operating and they encounter herring, but may not be targeting them directly. To give you a sense of kind of the extent of sampling what's happening or has happened, this slide is pulled from the white paper that was included in meeting materials from October of last year, and the number of herring samples taken from vessels fishing in Georges Bank and Nantucket Shoals from 1998 to 2018.

These samples were obtained by Massachusetts DMF, and as you can see over the last three years, a total of eight trips have been sampled. The figure is taken, as I said, from that white paper, and I think really just demonstrates the limit of how many samples we would be able to evaluate spawning activities in Area 3 right now, based on current data collection.

In terms of the Council's timetable moving forward, as I said they advertised to hire a consultant. They're hoping to bring that person on next month. Then they're looking to develop the discussion document in consultation with the Commission's Technical Committee, and the Council's PDT over this

summer, with the aim of having that Discussion Document presented to the Council for their consideration, and discuss possible next steps at the Council meeting then.

In trying to think through with Council staff what might happen beyond that is really difficult, because it really depends on what the Council decides, how that discussion goes in September. For the Board's consideration, these are some questions that the Sub-group had thought through and thought would be useful for this Board to consider, not necessarily providing feedback today, if you aren't ready for that.

But in trying to guide staff in developing this Addendum, thinking back to the goal of that Board motion from October: Is there an interest in trying to have more discreet spawning closures like we have in Area 1A, or is the move to try to do a much larger, broad spawning closure? Examples would be for discreet closures, you know specific places on Georges Bank or Nantucket Shoals or as a large area closure might be the entire Area 3. If there is interest in going down that road, what type of monitoring or protocol would help inform spawning closures for that type of program. Some key questions to think about. I'll leave those up on the board for now. If you have any further questions, please let me know.

CHAIRMAN KELIHER: Thank you, Kirby for that update. These questions that Kirby has posed could get us quickly into the weeds, I think and likely prematurely, because of the work that is ongoing at the Council. I would certainly be open to a few questions and comments though at this time. Dr. Pierce.

DR. PIERCE: We'll see what the Discussion Document reveals; again the Council will make a decision as to who will do that work, whether it's a particular state, or someone else. I'm sure that the state of Maine, the state of Massachusetts, Technical Committee members who have been so immersed in this issue over the years, and have already given us some great advice regarding closures in Area 1A.

I suspect that they'll be very helpful in developing some response to Number 2, the type of monitoring and protocol that would inform spawning closures. I know that my staff and I think your staff, Pat, have already weighed in, in previous discussions about this. I suspect that it will blossom, and we'll see before the fall, I hope, the results of that consultants work.

Then we'll be in a position to have some further discussion about the way we wish to go, maybe at our meeting later on this year, in preparation I would hope, for some action to be taken by ASMFC, to deal with Georges Bank spawning, Nantucket Shoals spawning in 2020.

CHAIRMAN KELIHER: Any additional questions or comments on this topic? Mr. Grout.

MR. GROUT: Yes, a couple things. I think what we're going to need to use the advice of our Technical and PDT members as to the answer to the first question; do we have enough data to develop discreet closures? If we don't, then clearly something on a broader scale is going to have to be.

I think we're going to have to rely on their scientific advice on that. As far as monitoring, as I remember at the last meeting, one of our previous Executive Committee meetings we had set aside some of the ASMFC plus-up funds just for this type of a project, to try and get better information on Georges Bank spawning closure.

I hope that we can start moving forward with developing a spend plan for that so that we can get this information, to help both the Council and the Commission in their decision in how to move forward with the potential spawning closure. I also think another thing that it will also help, could potentially help inform the white paper that the Council is working on, so that we're working together on this. Hopefully

the Council will move forward in September with a framework to address that.

CHAIRMAN KELIHER: Are you suggesting that the work associated with monitoring could help inform the development of the white paper? I was thinking of it kind of in reverse that the white paper would inform how we may need to move forward with the development of a spend plan, if we have to go in that direction.

MR. GROUT: You know you're probably right, because the white paper is going to be crafted during the summer. Probably some of the data from the monitoring program would not be able to be included. But I think we should be looking at trying to develop a spend plan this year, so that we can get some information on spawning, even before we put in any kind of spawning closure provisions.

CHAIRMAN KELIHER: I've got Terry Stockwell and then Ritchie White.

MR. STOCKWELL: Yes, I just want to underscore the ongoing collaboration between the Technical teams of the Commission and the Council staff. I know they've got a lot of work planned ahead, but I do want to wave a bit of a yellow flag, because come fall the Council's number one priority is going to be getting the Spec package out the door.

If it is group intent to make a very complicated document with a number of discreet spawning closures, and we haven't even, the Council's document refers to Georges Bank; it does not yet include Nantucket Shoals. It's going to languish, so just want to put that out for everyone's future consideration.

CHAIRMAN KELIHER: Ritchie White.

MR. WHITE: I think it's important that we maintain this Addendum in the queue. Clearly the Council is working towards making a decision in September. But if they don't, I think it's important that we look at the option of doing a temporary addendum that would not close fishing in Area 3.

But not allow the landing of spawned herring, which we clearly have the right to do, for an interim period until the Council does implement spawning protection. We would have the ability to protect spawn in 2020, if the Council is still working on something in a more permanent nature. This would give us the ability to do that and I think it's important for us to have that option.

CHAIRMAN KELIHER: Any additional comments on this topic? I think we probably ought to be putting this as a follow up to our next agenda in August, just to be thinking through some of these questions, and keeping this on the front burner, and be thinking about how we're going to be dealing with this.

But to Doug Grout's point on the spend plan, I think we need to be putting some more thought in regards to those additional data needs, and if some additional work can be done to the sampling for this year. We probably ought to be thinking about maybe a small work group associated with that. Do you have thoughts on that Doug?

MR. GROUT: I was thinking that maybe we should start tasking our Technical Committee and PDT to come up with a monitoring spend plan for this. But if you feel that it would be helpful, or if the Technical Committee feels it would be helpful to have Board input into it, I think a work group would also be a good way to move forward. As long as we, again, include our Technical Committee with this.

CHAIRMAN KELIHER: I'm sensitive a little bit to staff time around this issue. Renee, do you have any thoughts in regards to TC involvement with this? Would you like some additional input from the Board members from the work group?

RENEE ZOBEL: I think they've certainly been looking for input, as you saw the questions up

there. One of the problems we're going to face is the ability to encounter samples is going to be very low. We just can't rely on fishery dependent sources with the low quotas. The problem then becomes how do we get these samples?

I think we've been looking for the Council – that's kind of what a lot of the work has been done in communicating with the Council – yes, we have this money available. We need samples, how are we going to get them? We can't get them from the fishery. I know the state of Maine has actually contracted boats to go out and obtain spawning samples. I know that has not been super successful thus far, but we may be looking at something similar if we want to get samples outside of any lack of a dedicated fisheries independent survey for herring.

CHAIRMAN KELIHER: It would seem to me a small subset of the Board, working with some TC members on a potential work plan would be advisable in this situation. Without putting anybody on the spot, now why don't we work on pulling that group together? If anybody has any interest in doing that please see Kirby or I after the meeting, we'll put together a small group, and set up a call on that issue. Are there any objections to that? Seeing none, great.

REVIEW MANAGEMENT TOOLS USED FOR SETTING THE DAYS OUT MEASURES

CHAIRMAN KELIHER: Let's move on to Item Number 7, Reviewing Management Tools Used for Setting the Days Out measures.

MR. ROOTES-MURDY: This will be a pretty brief overview of what we've talked about thus far. It's laid out also in your supplemental materials, but basically the 2019 sub-ACL is much lower than previous years. In 2018, we had a sub-ACL of 31,000 metric tons. This year it is down to 3,850 metric tons.

In April the Days Out meeting occurred, and the Board moved to, well prior to that meeting moved to have bimonthly quota periods for 2019, and they specified what the permit and start of the season would be based on that framework. Given some of the variables that impact this fishery, the quota for 2019 could be harvested as quickly as three weeks.

Today we wanted to just provide a review again of what the Days Out management tools are, and to consider this moving forward for this season and looking towards the 2020 season when there may be a much lower quota than we have right now. Just a reminder, we have the Days Out Program, which currently prohibits landing days, or the possession of herring for only Category A permit holders, Category C limited access permits, and Category D, open access permits, only those designated small mesh bottom trawls can be submit to Days Out measures.

All other permit holders are not subject to Days Out measures, unless stipulated by state regulations. In terms of other tools, there is the weekly landings limit; they limit the amount of herring that a vessel can land on a weekly basis for Category A permit holders, and then last there are restrictions on transfers at sea, and carrier vessels. It restricts who can transfer at sea, and the number of transfers that can occur. States can elect to allow for limited transfers at sea or prohibited transfers at sea. When prohibiting transfers at sea, states can chose to restrict harvester to harvester, harvester to carrier, or both. In terms of next steps, staff and the states will monitor the effectiveness of the current management tools during the first few quota periods this year.

We will plan to provide an update to the Board at their next meeting on how the fishery is being prosecuted. At this point if the Board so chooses, you can have a discussion on the utility of the current Area 1A management tools, given changes in the abundance of Atlantic herring. But again, much of this stuff is a kind of wait and see, depending on how the fishery plays

out this year. With that I'll take any questions if you have any.

CHAIRMAN KELIHER: Are there any questions for Kirby? Seeing none, I do want to point out a shortcoming. The last Days Out meeting there was a motion made that was specific to no carriers, a no carrier provision only applies to Category A vessels, does not apply to Category C vessels. The state of Maine will be moving forward with rules that pertain to our own fishery that will restrict carriers within the fishery, so there is consistency.

Maybe this would be a good topic for the Sub-group, since there is going to be a Sub-group having a conversation about this, maybe bring some thoughts back to our August meeting in regards to a possible Addendum to create some additional tools in the toolbox, so we potentially could affect other permit categories.

Are there any thoughts or concerns in regards to that? Seeing none, any objections to adding that to the task of the work group that will be developed? Seeing none, we'll make sure that comes back to the Board at the August meeting.

CONSIDER APPROVAL OF THE 2019 FMP REVIEW AND STATE COMPLIANCE REPORTS

CHAIRMAN KELIHER: Item Number 8 is Consider Approval of the 2019 FMP Review. Kirby, can you go through that quickly?

MR. ROOTES-MURDY: I'm going to go through the status of the stock, status of the fishery, days out measures from 2018, and then state compliance. As you all know, the most recent assessment was peer reviewed and found that herring are not overfished, and overfishing is not occurring. But there are concerning trends in recruitment and spawning stock biomass.

The recruitment has been below average for the last five years. In terms of the status of the fishery, as you are aware the Atlantic herring fishery is controlled by an annual catch limit set by the Council, and approved by NOAA. The stock-wide ACL is distributed among four management areas.

Once 92 percent of the sub-ACL for an area is reached, the respective fishery is closed. The stock-wide fishery closes when 95 percent of the total ACL is projected to be reached. The stock-wide ACL for 2016 to 2018 was 104,000 metric tons. Obviously this year it has been reduced down for Area 1A from a little more than 30,000 metric tons to 3,000 metric tons.

In terms of 2018 measures, this slide lays out what the Days Out program and the Effort Controls that were in place last year. It shows you what the effective date was for the number of landing days for Category A permits, and how those changed over time, as well as what the weekly landing limits were for Category A permits, and the amount that they could transfer to carrier vessels. In terms of the spawning closures, the eastern Maine spawning area closed on the default date of August 28 through September 24 last year, given there was no samples taken from that area. Western Maine there was no spawning area closure last year, and for Massachusetts/New Hampshire spawning area, based on the GSI30 model, the projected date of closure was October 26, and continued through November 22, and that closure was based on 8 samples.

In reviewing state compliance, the Plan Review Team found that all states were in compliance with the FMP. In terms of de minimis, states may be eligible for de minimis if their combined average over the last three years, in terms of their commercial landings, constitutes less than 1 percent of the coastwide commercial landings for that same three-year period. New York has requested and has met that requirement. I'll take any questions if you have, but the Herring Board approved the 2019 Atlantic herring FMP State Compliance and de minimis status for New York.

CHAIRMAN KELIHER: Doug Grout.

MR. GROUT: One slide jumped out at me that surprised me was the slide that says there was no western Maine spawning closure last year. I would like to get that confirmed, because I thought we hit the default days.

MR. ROOTES-MURDY: Yes that was an error on my part. They did close, I would have to double check reviewing the materials, but they did close last year.

CHAIRMAN KELIHER: Bob, can you dock his pay, please?

EXECUTIVE DIRECTOR ROBERT E. BEAL: Yes, duly noted.

CHAIRMAN KELIHER: Thank you. Are there any other questions or comments for Kirby on that? Do we have a motion? Mr. Grout.

MR. GROUT: If you put the motion up on the board, I'll read it for you, save you the trouble, okay? **Move to approve the 2019 Atlantic Herring FMP Review, state compliance reports, and de minimis status for New York.**

CHAIRMAN KELIHER: Who will second it, Ray Kane? Too many hands going up at once, thank you. **Are there any comments on the motion, any objections to the motion? Motion passes without objection, thank you.** That concludes the items on the agenda.

OTHER BUSINESS

CHAIRMAN KELIHER: Is there any other business to be brought before the Board? Mr. Abbott.

MR. ABBOTT: Regarding this fishing year. I have some questions about what's going to happen. We already know that Area 2 has gone over their quota by 800 metric tons, and we also know that Area 1A meters out its fishery, in order to support the lobster bait industry. I think we can also assume that Area 3 will catch their quota, as will Area 1B and possibly go over the numbers that they have. Meaning that Area 1A will bear the brunt of any overages by the other three areas, which to me becomes concerning on a fairness issue, in that it's likely that the Commonwealth of Massachusetts won't see a season in October as a result of that. But my questions are, with the fact that Area 2 went over by a substantial amount, will in the future be any penalty in Area 2, just assuming that the entire small quota is caught in all the areas? In the future does Area 2 bear any responsibility to have a reduction?

Assuming they're separate stocks, is that not a consideration? My concern is by our efforts to control the Area 1A fishery as we do, we actually are penalizing, call it ourselves, in Area 1A because of our efforts. That I find is very concerning, and I'm sure it's concerning to the affected states. I don't know really who to address my questions to, but I think it needs some thought for the future, because with these low quotas, we've never had this before where we've caught the complete quotas in all the areas.

CHAIRMAN KELIHER: I don't have an answer, but I'll put Toni on the spot.

MS. KERNS: I mean, I think these questions should be addressed to the NOAA Fisheries, as well as the New England Fishery Management Council, in terms of looking towards to be able to closely monitor these other fisheries as these quotas are lower and lower. These fisheries are being caught faster and faster, and the monitoring of these fisheries will be essential. I know we've had a couple of conversations with NOAA Fisheries, and they're looking to figure out ways to improve the monitoring, to be able to close on a timely basis.

But you know as we talked about before, because the Area 2 fishery has gone over, it potentially could mean that the 1A fishery that is occurring in the latter months could be closed earlier, because we close the total fishery at 92 percent of the ACL. That means that if one area goes over their portion of the ACL, the other areas will get cut short potentially. I think those

comments would be directed towards them, 95 percent, sorry.

CHAIRMAN KELIHER: Ray Kane.

MR. KANE: This would be a question directed to Terry Stockwell, you represent the Council here. My understanding, this might be very what Toni has just said, very much so. But I thought the action of the Council in years past was like this year Area 2 went over, and there will be a payback in two years, so Area 2 quota will be reduced in two years. I mean we used to have this issue with Area 1B all the time. Am I correct in stating that Terry?

MR. STOCKWELL: We're entering brave new frontiers with these new lower quotas. As you know, when the Council discussed the Spec Package a month ago, there is no discussion on realigning the areas. I think the question you raised is going to be part of the Spec Package discussion that we have leading up to the fall.

CHAIRMAN KELIHER: Doug Grout.

MR. GROUT: Ray is right. It does get taken off the Area 2, two years from now. The same thing with any other sub-area overage, it will be taken off two years from now. Yes, we are in a brave new world, because I am very sympathetic to NOAA Fisheries challenge to try and close. We already have a 92 percent buffer in there to try and prevent overage.

But when you have quotas, for example 1B that are in hundreds of metric tons and the catching capacity of our vessels is quite large, it can very easily go over and has even at higher catch levels in the past. It is going to be a challenge for NOAA Fisheries this year to try and keep on top of that.

CHAIRMAN KELIHER: Are there any additional comments, any additional items to be brought before the Board? Seeing none, I think we have concluded our business for the Herring Board for the day. We're ahead of schedule by eight minutes, so any comments?

EXECUTIVE DIRECTOR BEAL: I think we'll start the Striped Bass Board about five minutes early. I imagine there will be some public showing up for that. I don't want to get going too early on that.

ADJOURNMENT

CHAIRMAN KELIHER: A motion to adjourn would be in order. We've got all kinds of motions to adjourn, thank you very much.

(Whereupon the meeting adjourned at 9:52 o'clock a.m. on April 30, 2019)

Review and analysis of Atlantic herring (*Clupea harengus*) spawning on Georges Bank

2019 Discussion Document for the New England Fishery Management Council

Prepared by Dr. Graham Sherwood, Ashley Weston, and Aaron Whitman in consultation with the Herring Plan Development Team

Version 09/06/19

New England Fishery Management Council

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I. Preamble

The purpose of this document is to provide a comprehensive review of all available data pertaining to Atlantic herring spawning on Georges Bank, as well previous management actions or discussions related to spawning protections. This draft document outlines completed analyses of existing data sets that can be used to infer location and timing of herring spawning. The final version of this discussion document (pending) will expand further on the literature and historical aspects of this review, as well as a general overview of herring biology. While the literature review will be integral to this document, it is felt that analyses of existing rich datasets (many of which have not been examined in detail as indicators of herring spawning) will be invaluable for the purpose of inferring spawning of Georges Bank herring.

The existing data sets considered here include larval herring data collected as part of the long-standing NEFSC ichthyloplankton surveys (1971 – 2017) where spawning is inferred from distribution of early stage (< 9mm) herring larvae, Northeast Fisheries Science Center trawl survey data (spring and fall) where spawning location is inferred from location of later maturity stage herring (1987 – 2018), and dockside monitoring data where location of late maturity stage herring is also mapped and used to infer spawning; dockside monitoring data comes from both Maine Department of Marine Resources (DMR) and Massachusetts Division of Marine Fisheries (DMF) dockside monitoring programs (1971 – 2018) which, in addition to maturity stage, also provide data on gonadal somatic index (GSI), a more quantitative measure of potential spawning. Other sources of spawning information contained in this draft include early depictions of spawning grounds from Olsen et al. (1977) and Overholtz et al. (2004), as well as presence of herring eggs in the diet of groundfish from the NMFS Food Habits Data Base (limited instances). Information from observer programs was considered (e.g., mention of spawning herring in notes by observers) but proved not useful in terms of detail. Finally, we reached out to fishing industry members, primarily owners and captains of herring vessels operating on Georges Bank for their input with regard to spawning herring on Georges Bank.

Each of the above mentioned data sets is described more in detail below and results from each, as potential indicators of spawning, are presented individually where spatial and temporal trends in spawning can be visualized and explored. A summary of all of these depictions of spawning is made in "consensus" figures following the example of DeCelles et al. (2017) who considered multiple points of view, with a heavy reliance on fishermen's ecological knowledge, for describing Atlantic cod spawning on Georges Bank (Figure I.1). Essentially, greater weight was given to areas of consensus or overlap where multiple sources identified spawning in the same area. A similar exercise is presented here where spawning areas may be inferred as areas where multiple data sources identify the same place (i.e., with high degree of overlap).

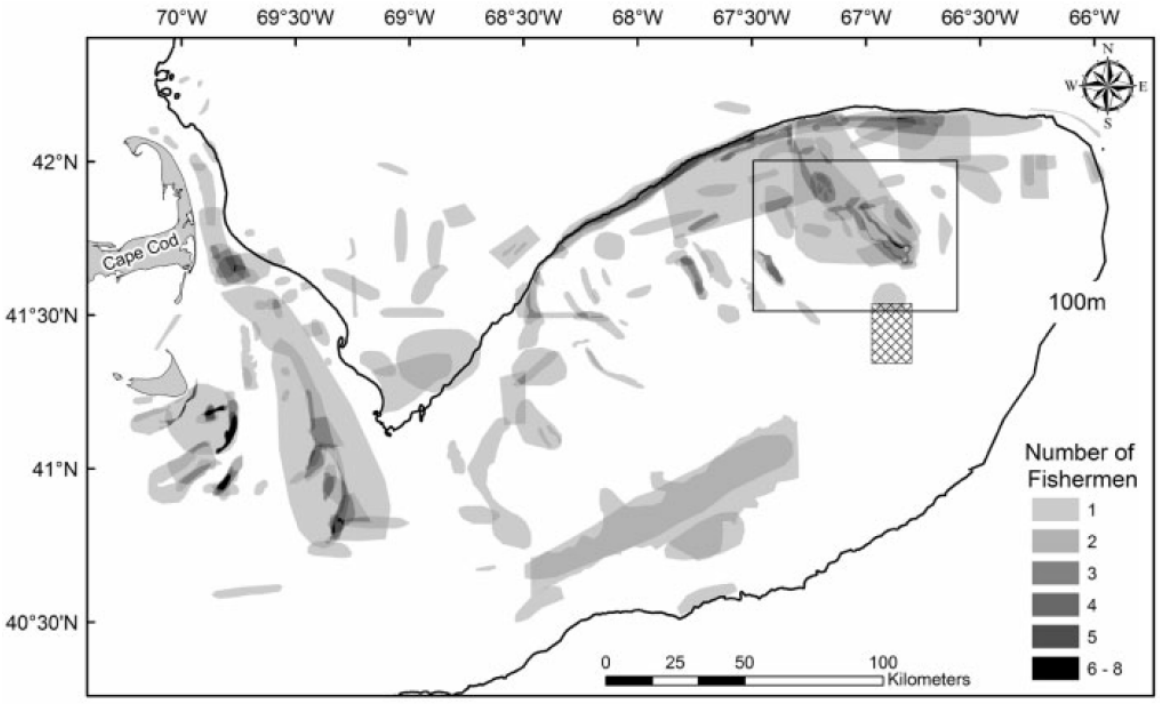

Figure I.1. From DeCelles et al (2017). "Cod spawning grounds that were identified by fishermen. Each polygon represents a spawning ground that was identified by a single fisherman. The shading is used to identify areas where there is overlap in the spawning locations reported by multiple fishermen. The rectangle outlined in black depicts the "Winter Fishing Grounds" that were described by Goode (1884) and Rich (1929). The hashed rectangle represents the cod spawning grounds that were reported by Bigelow and Schroeder (1953)."

Figure I.2. Map of Gulf of Maine and Georges Bank showing place names referred to in this document: Nantucket Shoals, Great South Channel (GS Channel), Western Georges Bank (WGB), Northern Flank (NF), and Northeast Peak (NEP). From Lough et al. (2006).

1. Background

1.1. Herring Spawning Biology

(to be completed for final draft)

1.2. Previous Considerations of Herring Spawning in New England Fisheries Management

(to be completed for final draft)

1.3. Herring Spawning and Management Around the World

(to be completed for final draft)

2. Consideration of Existing Maps and Data Sets

Herring spawning on Georges Bank has been described in the past in various documents. The currently and frequently cited source is from Overholtz et al (2004). Here, they describe spawning as follows: "*Georges Bank (including Nantucket Shoals): Varied with time – contracted and protracted around Nantucket Shoals. Major grounds Northeast Peak (pre and post collapse), Cultivator Shoals and the Nantucket Shoals (Figure 1.5) (Melvin et al. 1996, Reid et al. 1999). Currently, spawning appears to be continuous from Massachusetts Bay into Great South Channel and along the northern fringe of Georges Bank to the Northeast Peak.*" Figure 2.1 depicts what Overholtz et al (2004) describe as continuous spawning from Massachusetts Bay to the Northeast Peak.

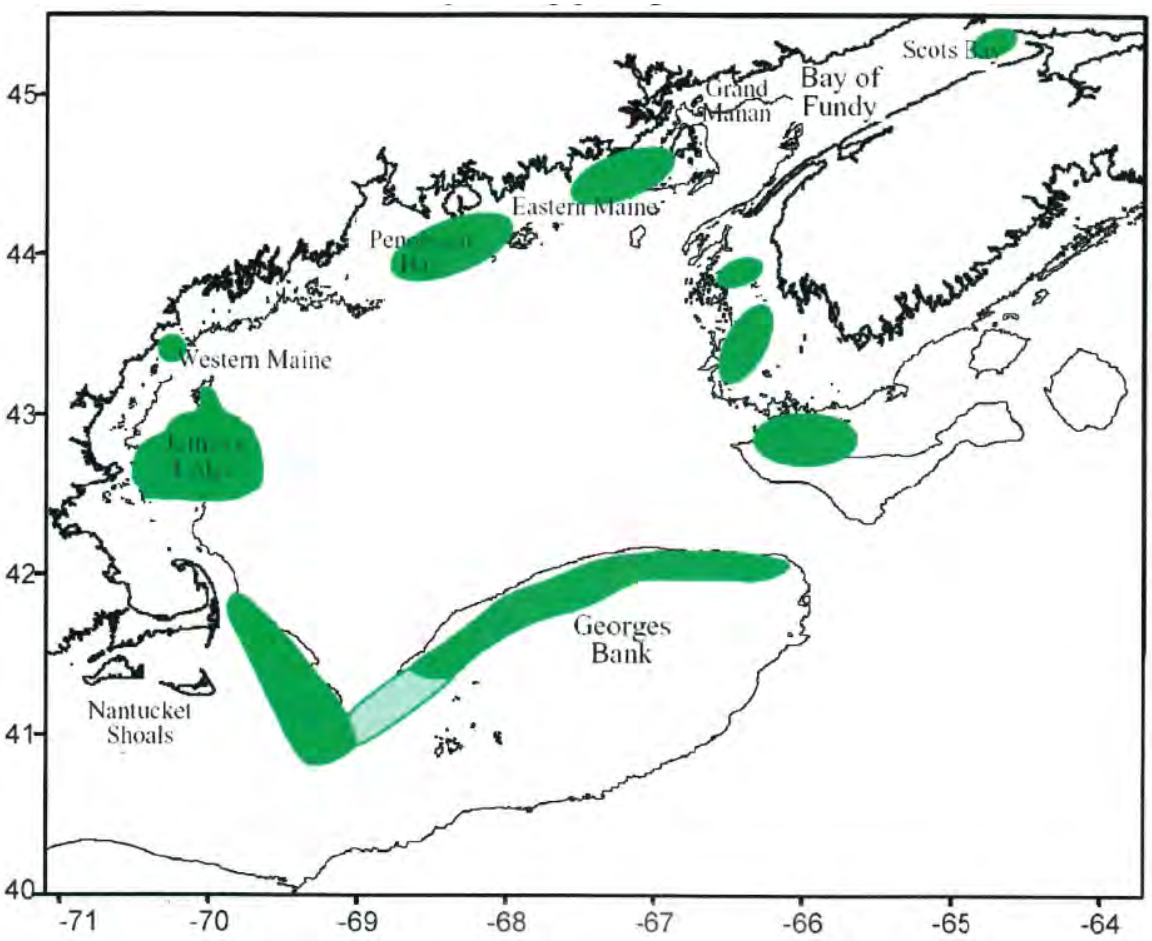

Figure 2.1. Generalized view of the current major herring spawning areas in the GOM and on GB (from Overholtz et al. 2004).

A previous publication showed more specific and limited spawning grounds on Georges Bank (Olsen et al. 1977) (Figure 2.2). These locations match well with egg essential fish habitat as shown in Amendment 5 to the Fishery Management Plan (FMP) for Atlantic Herring (NEFMC 2013) (Figure 2.3).

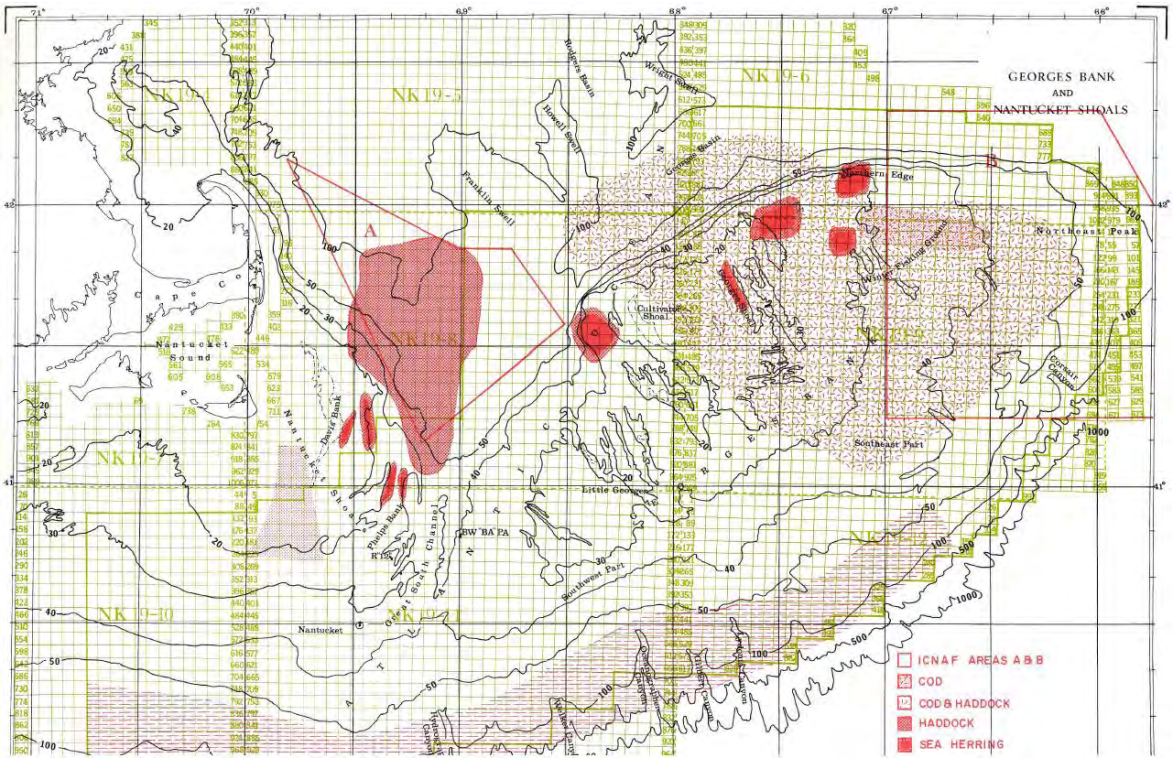

Figure 2.2. Known specific spawning grounds for various fishery species including Atlantic (sea) herring (dark red polygons; from Olsen et al. 1977).

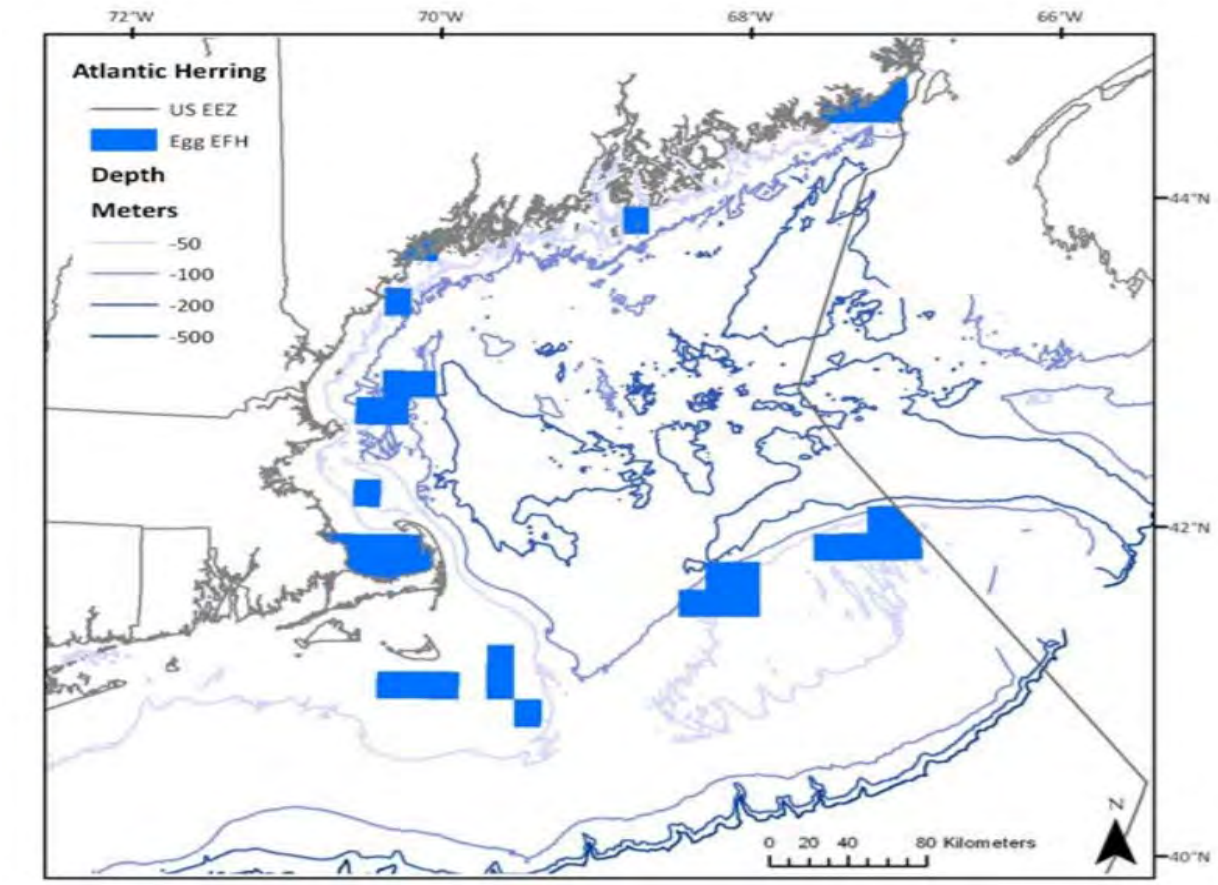

Figure 2.3. EFH for herring eggs from Amendment 5 to the Fishery Management Plan (FMP) for Atlantic Herring (NEFMC 2013).

2.1. Larval data

Fish larvae can be a valuable indicator of spawning locations in fish (reference), particularly for herring since eggs are demersal and not subject to dispersal (reference). Thus, young larvae, within a short time frame of hatching, may be spatially associated with where they were spawned. Herring larval data from Georges Bank monitoring have been presented in numerous publications and assessments (e.g., 54th Northeast Regional Stock Assessment Workshop; NEFSC 2012). For this review, larval data were accessed (D. Richardson, pers. comm.) and explored from the Northeast Fisheries Science Center ichthyoplankton sampling program from 1971-2017 (see Richardson et al. 2010 for description of monitoring program). Sampling was not conducted in every region every year during sampling cruises. During some sampling trips, there were ship time limitations, inclement weather, and other unforeseen circumstances leaving gaps in sampling. For our analysis, we summed abundance of Atlantic herring <9mm for each sample with unique locations. Larvae less than 9mm length are typically 10-15 days old (reference). We then used the '*MASS'* package in R to plot the data using 2-dimensional kernel density estimation (Venables and Ripley 2002). Most larval herring were observed in October and November. Over the entire time series, highest densities of larval herring occurred on the

northeast section of Georges Bank and Nantucket Shoals (Figure 2.1.1). These two areas had high densities in the 1970s and again in the 1990s, while Nantucket Shoals and Stellwagen Bank were prominent in the 1980s (Figure 2.1.2). Smith and Morse (1993) similarly found that the full extent of larvae herring contracted to only Nantucket Shoals and Stellwagen Bank after the fishery collapsed in 1976, but then expanded eastward on Georges Bank through 1990. Between 2000 and 2017 larval herring density has concentrated to the Northeast section of Georges Bank (Figure 2.1.2).

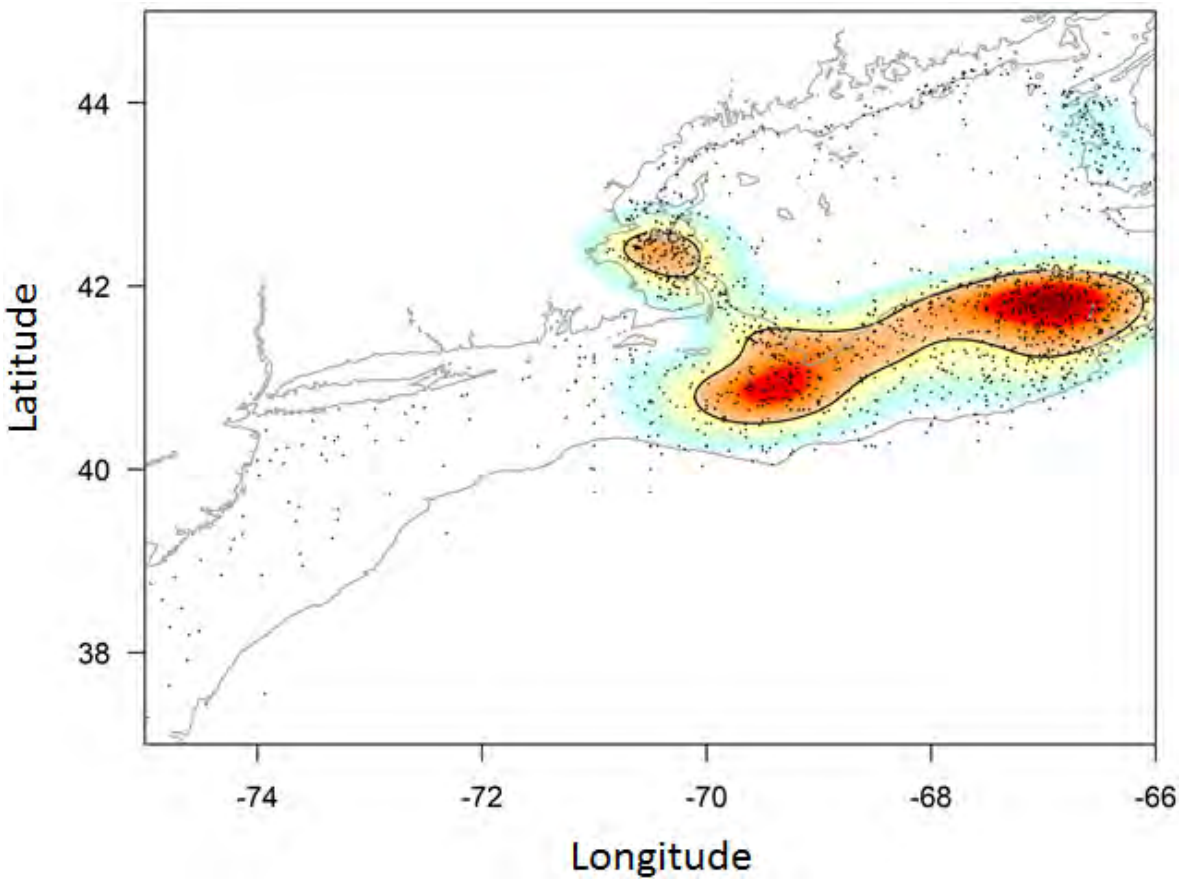

Figure 2.1.1. 2-dimensional kernel density estimates of larval herring (<9 mm) abundance per sample 1971-2017 with all sample location points overlaid. Red areas indicate higher densities. Total sample size = 2371.

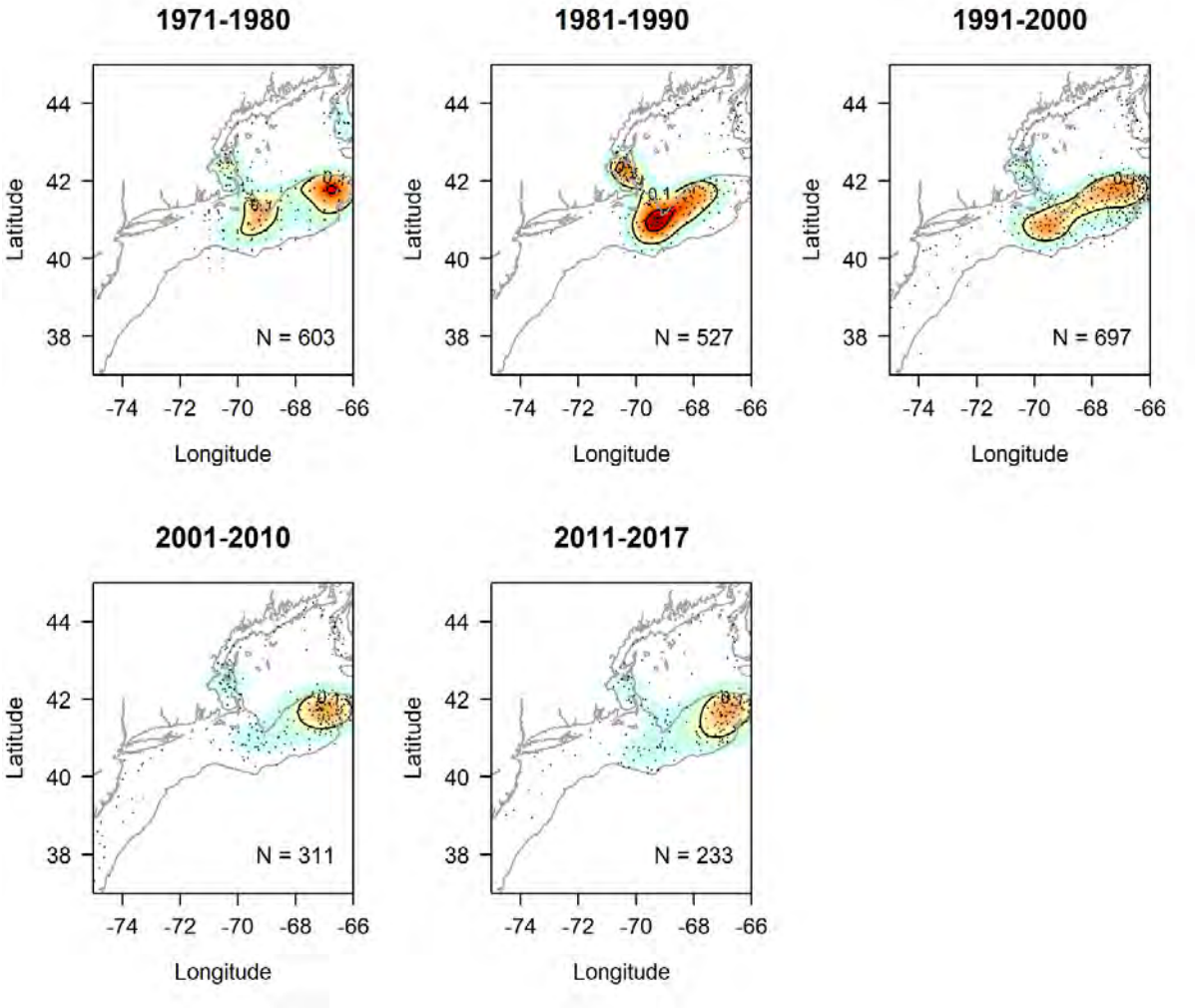

Figure 2.1.2. 2-dimensional kernel density estimates of larval herring (<9mm) per sample by decade as seen in SAW 54 with all sample location points overlaid. N = sample size and red areas indicate higher densities.

2.2. Adult Data: DMR and Mass DMF Dockside Monitoring Data (spatial patterns)

The Maine Department of Marine Resources (DMR) has been the lead agency for monitoring the US Atlantic herring fishery and has collected and processed commercial catch samples using a consistent methodology since 1960. Herring samples are collected from all commercial gear types; purse seine, single mid-water trawl, pair mid-water trawl, small mesh bottom trawl, and fixed gear. Two types of samples are collected, catch-at-age and spawn samples. Catch-at-age samples are collected throughout the entire range of the US fishery, year-round, including all four management areas, 1A, 1B, 2, and 3. Ports utilized for sample collection are from north to south. Starting in Maine at Jonesport, Prospect Harbor, Stonington, Rockland, New Harbor, Boothbay Harbor, and Portland. In NH, at Portsmouth, Newington, and Seabrook. In Massachusetts, at Gloucester, Fall River, and New Bedford. In Rhode Island, at Point Judith,

Davisville, and Newport. Lastly, in Cape May, New Jersey. Catch-at-age sampling requires n=50 randomly selected herring per gear type, per NMFS statistical area, per week. Spawn samples require n=150, adult sized herring per sample (>=23cm) during the spawn season (August – October) per week from all three spawn areas within Area 1A, only. Whole lengths, weights, age via otoliths, gender, spawn condition via staging (see Table 2.2.1) and stomach fullness, and additionally, GSI calculation for spawn samples are collected (J. Becker, Maine DMR, pers. comm.). The Massachusetts Department of Marine Fisheries (DMF) has additional data from 1998 – 2018 which were also included in this review.

Table 2.2.1. Maturity stages/codes used in DMR dockside monitoring and NMFS trawl surveys. Rows in bold are stages of interest for this review (i.e., closest to spawning condition).

DMR	Description	NMFS	Description
1	immature	I	immature
2	starting		
3	developing	D	developing
4	maturing		
5	**mature**	**R**	**ripe**
6	**ripe/running**	**U**	**ripe/running**
7	spent	S	spent
8	resting	T	resting
		X	unknown

The DMR data set included 17,529 samples from areas 1B, 2 and 3. Additional samples for area 1A exist but were not included in this review. Other data included length, weight and sex. This rich data set allowed for explorations of spatial and temporal patterns in maturity and GSI, both of which can be used to infer location of spawning. In other words, spawning could be assumed to occur at or near areas with high mean GSI values or high densities of later stage maturity fish (i.e., stages 5 and 6; Table 2.2.1).

We examined spatial patterns using both GSI and maturity stage. For GSI, we used the '*MBA*' and '*fields*' packages in R (Finley et al. 2017, Nychka 2019) to interpolate mean GSI per sample using multilevel B-spline approximation. This was done for the entire data set (all years and sexes combined) as well as by decade and with just females (Figures 2.2.1 to 2.2.7). The progression of GSI figures is as follows. Figure 2.2.1 shows mean GSI over the sample area (Areas 1B, 2 and 3) for all years. Overall, the highest GSI values tended to follow the northern edge of Georges Bank from Cape Cod to off of the bank near the Northern Flank. Some higher values were also associated with on the Bank (between Northern Flank and Southern Flank) but were associated with only 2 sample locations. The highest density of fishing locations was along the northern edge and was associated with relatively low GSI values. Figure 2.2.2 is the same as the previous but includes only females. The spatial pattern in GSI is similar with slightly higher mean GSI values (i.e., darker reds). Two areas in particular stand out as having higher GSI values: the Great South Channel and to the north of the Northern Flank. Figure 2.2.3 is the same

as figure 2.2.1 except that instead of applying the spline to the raw data (with multiple individuals per sample), the spline was applied to summarized data per sample (i.e., mean GSI per sample). The spatial pattern was again the same as in previous figures. Since spatial patterns were relatively consistent regardless of sex or whether samples were averaged or not, the following are both sexes and for whole data set (i.e., not averaged by sample). Figure 2.2.4 shows mean GSI over sample area by decade. Note that there was not continuous sampling between 1971 and 2018. There was a major gap in sampling between 1983 and 1995. As such data was pooled between 1971 and 2000, whereas the last two decades had relatively complete sampling and therefore were considered separately. The spatial pattern among decades/time periods was relatively consistent with previous figures. Figure 2.2.5 shows the Mass DMF data separately. This figure shows that the Mass DMF data set is relatively limited compared to the DMR data set. Finally, for the splines, figures 2.2.6 and 2.2.7 show the DMR and Mass DMF data combined for both sexes and for females alone. Given the limited size of the Mass DMF data the figures are not different than figures 2.2.1 and 2.2.2.

Figures 2.2.8 and 2.2.9 show 2-D kernel density estimates of the distribution of ripe and ripe and running herring, respectively (maturity stages 5 and 6 or R + U; see Table 2.2.1). In this case, ripe herring are most associated with the Northern Flank for the entire data set, whereas ripe and running herring are associated with both the Great South Channel and the Northern Flank. Figure 2.2.10 shows the distribution of herring with GSI values greater than 0.3. This value is significant since it is the threshold for initiation of spawning closures in the Gulf of Maine (reference). In this case, the highest density of high GSI herring for all years is at the Northern Flank.

Figures 2.2.11 to 2.2.13 show 2-D kernel density estimates of ripe + ripe/running (R + U), ripe/running only (U), and GSI > 0.3 herring, respectively by decade. Densities of R + U stage herring were relatively high at both the Northern Flank and Great South Channel in all decades. Densities of U stage herring were high in both Northern Flank and Great South Channel in 1991 – 2000 and were highest in the Great South Channel in the decade 2001 – 2010. No ripe and running herring were sampled in the decade 2011 – 2018. Finally, densities of high GSI herring were generally highest at the Northern Flank for all decades but areas of high density also existed at the Great South Channel. Consistent with all of these depictions of spawning (figures 2.2.1 to 2.2.13) is the relatively high importance of the Northern Flank and Great South Channel for harboring spawning condition (or near spawning condition) herring.

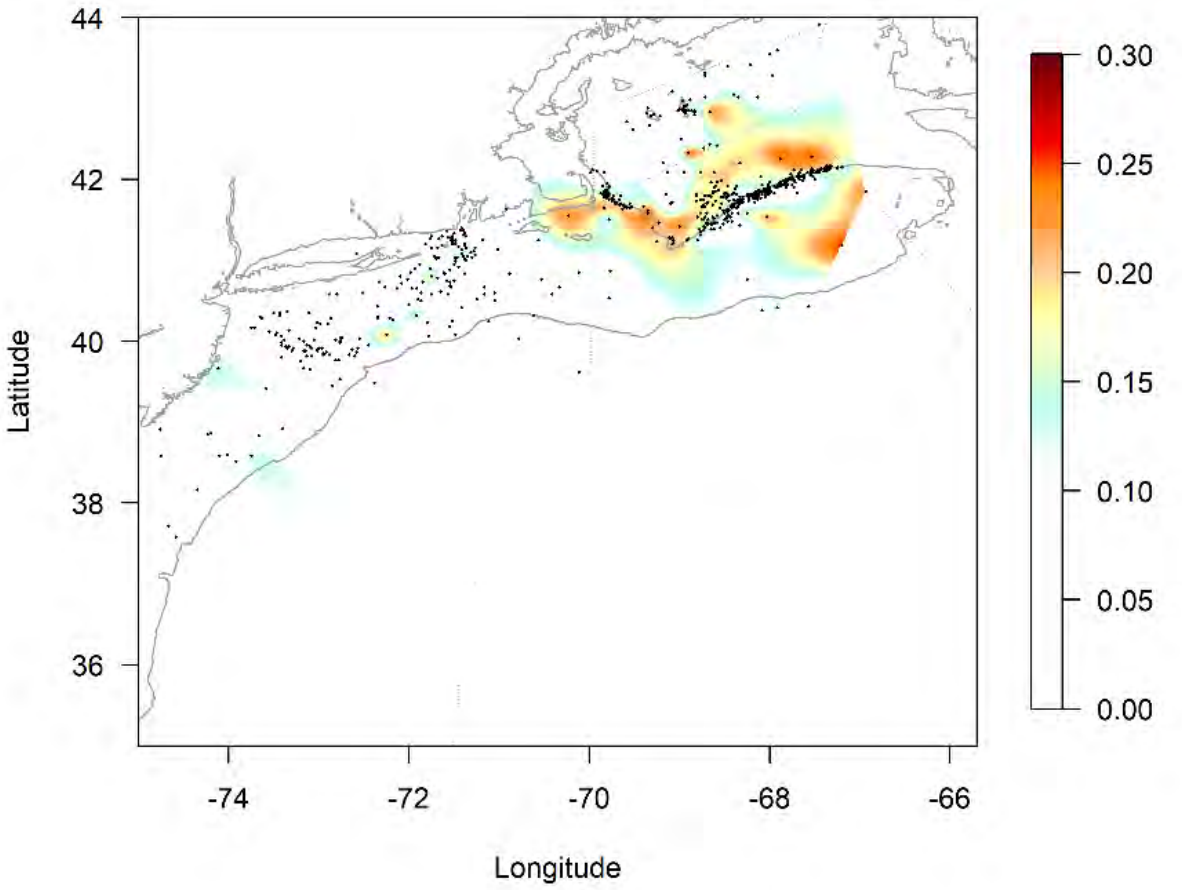

Figure 2.2.1. Surface spline interpolation of mean male and female GSI from DMR dockside monitoring data (1971-2018)

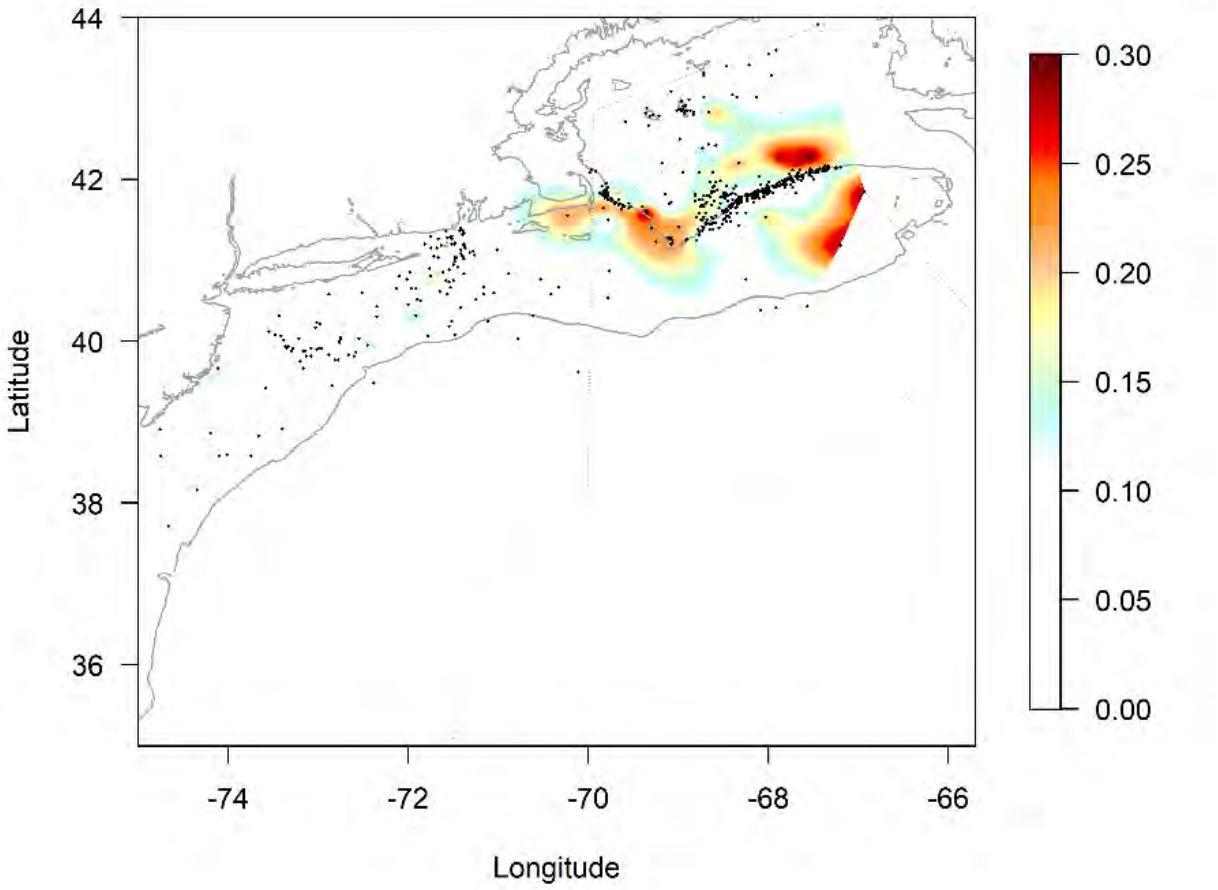

Figure 2.2.2. Surface spline interpolation of mean female GSI from DMR dockside monitoring data (1971-2018)

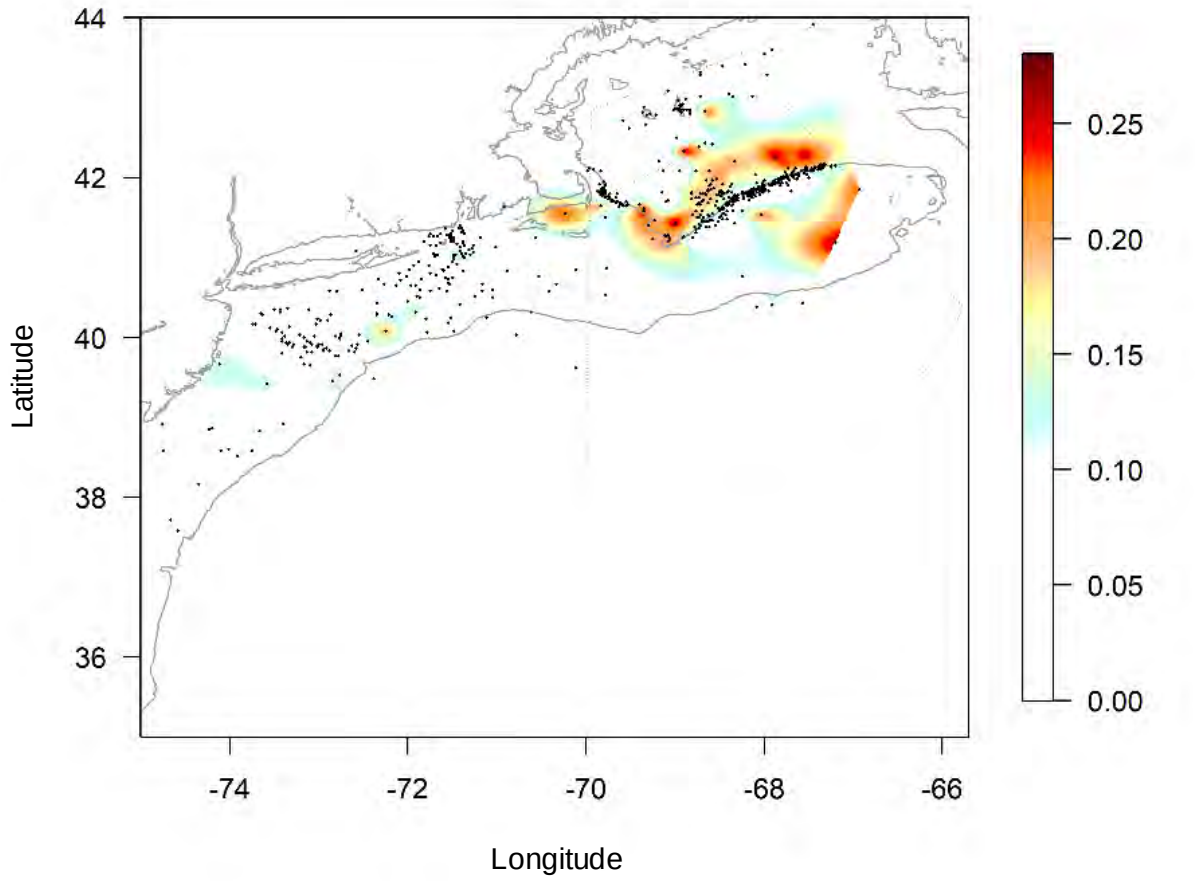

Figure 2.2.3. Surface spline interpolation of mean male and female GSI/sample from DMR dockside monitoring data (1971-2018). Samples were defined as unique date/locations (i.e., values were averaged for each sample).

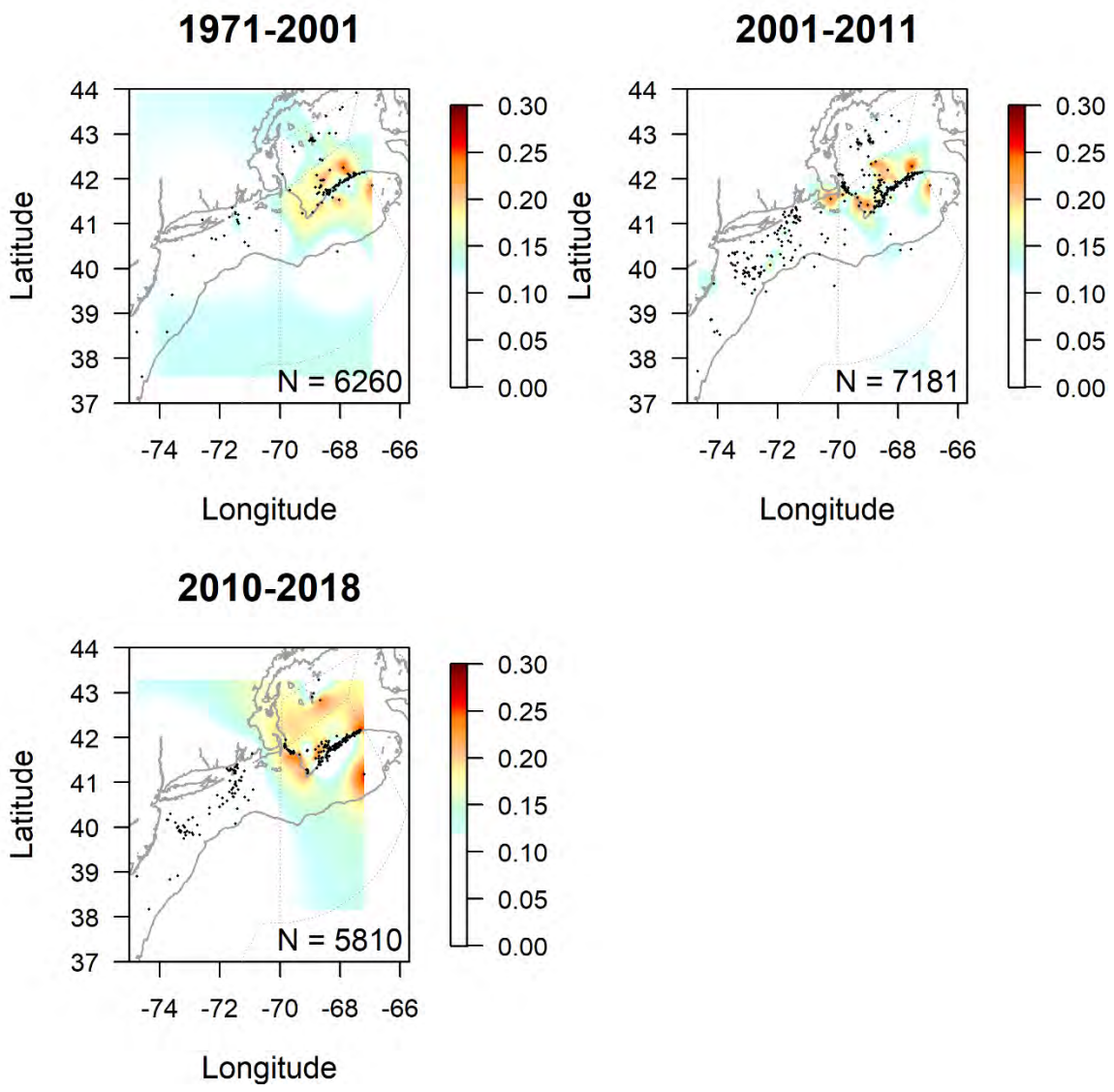

Figure 2.2.4. Surface spline interpolation of mean male and female GSI from DMR dockside monitoring data by decade (1971-2018). Note that 1971 – 2001 was pooled due to data gaps.

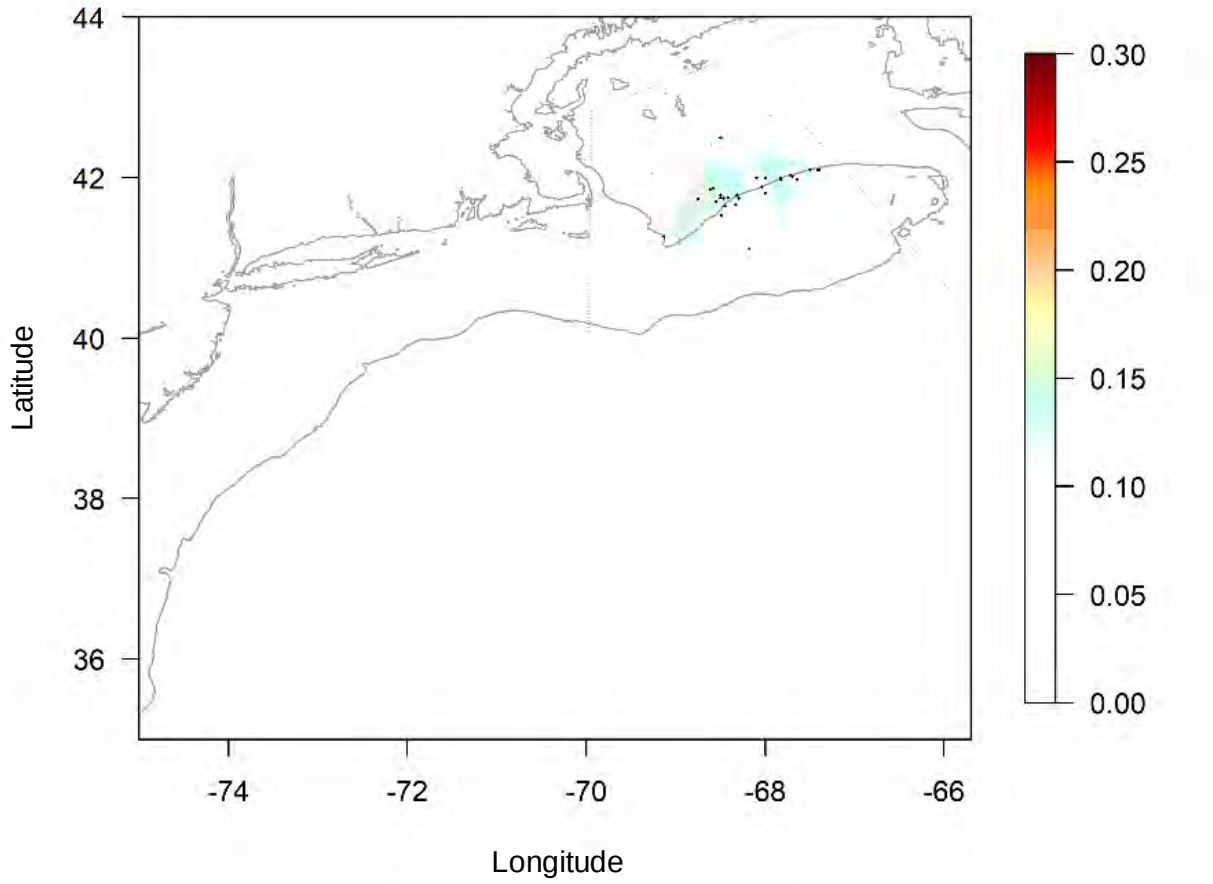

Figure 2.2.5. Surface spline interpolation of mean female GSI from Massachusetts Division of Marine Fisheries data (1998-2018); note: only female observations were available.

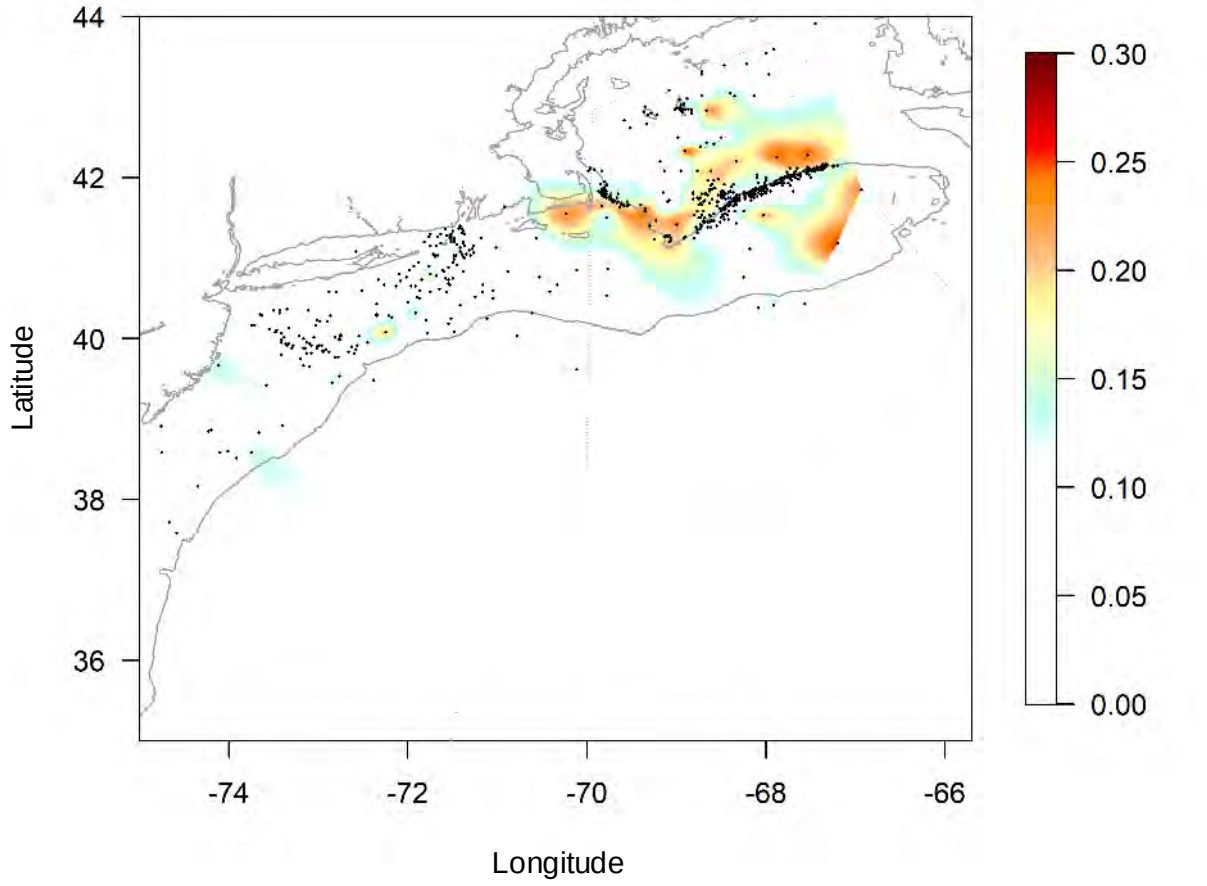

Figure 2.2.6. Surface spline interpolation of mean male and female GSI from combined DMR dockside monitoring data (1971-2018) and Massachusetts DMF data (1998-2018).

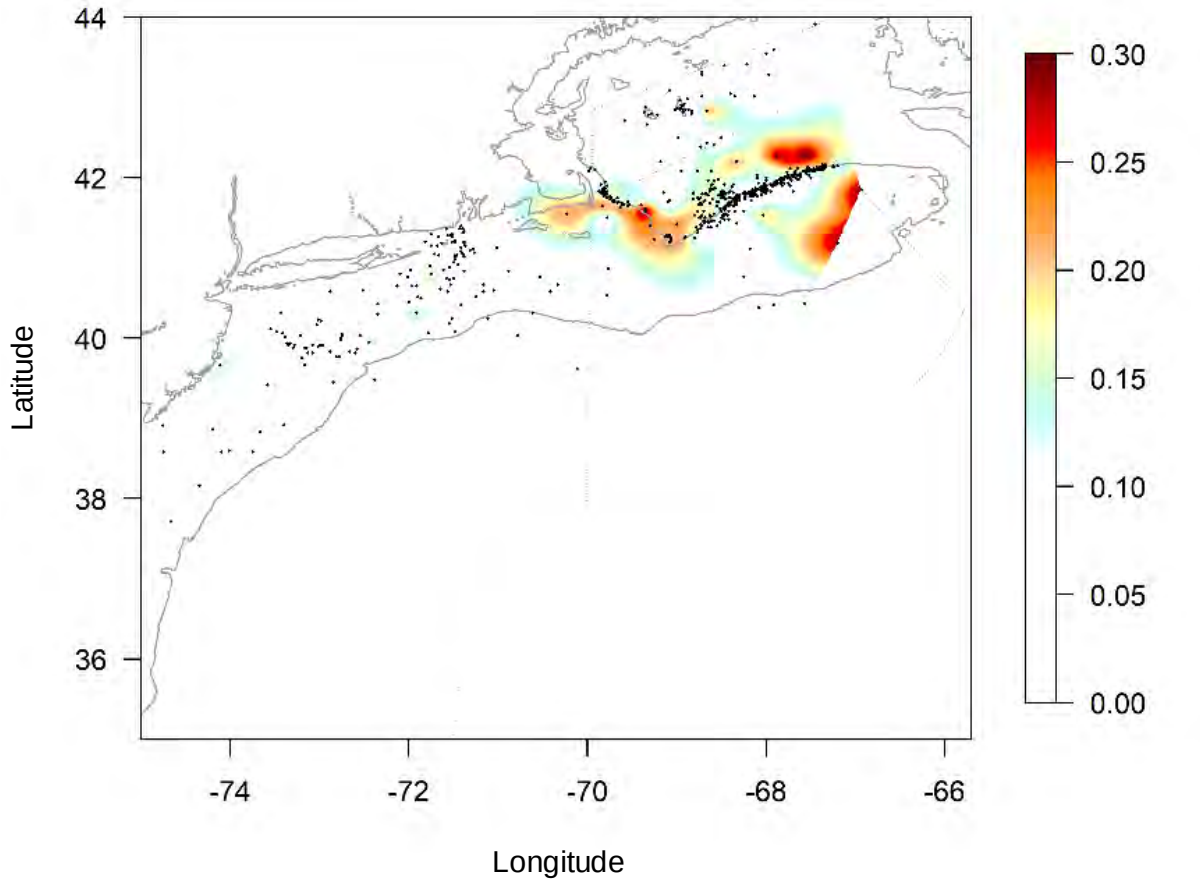

Figure 2.2.7. Surface spline interpolation of mean female GSI from combined DMR dockside monitoring data (1971-2018) and Massachusetts DMF data (1998-2018).

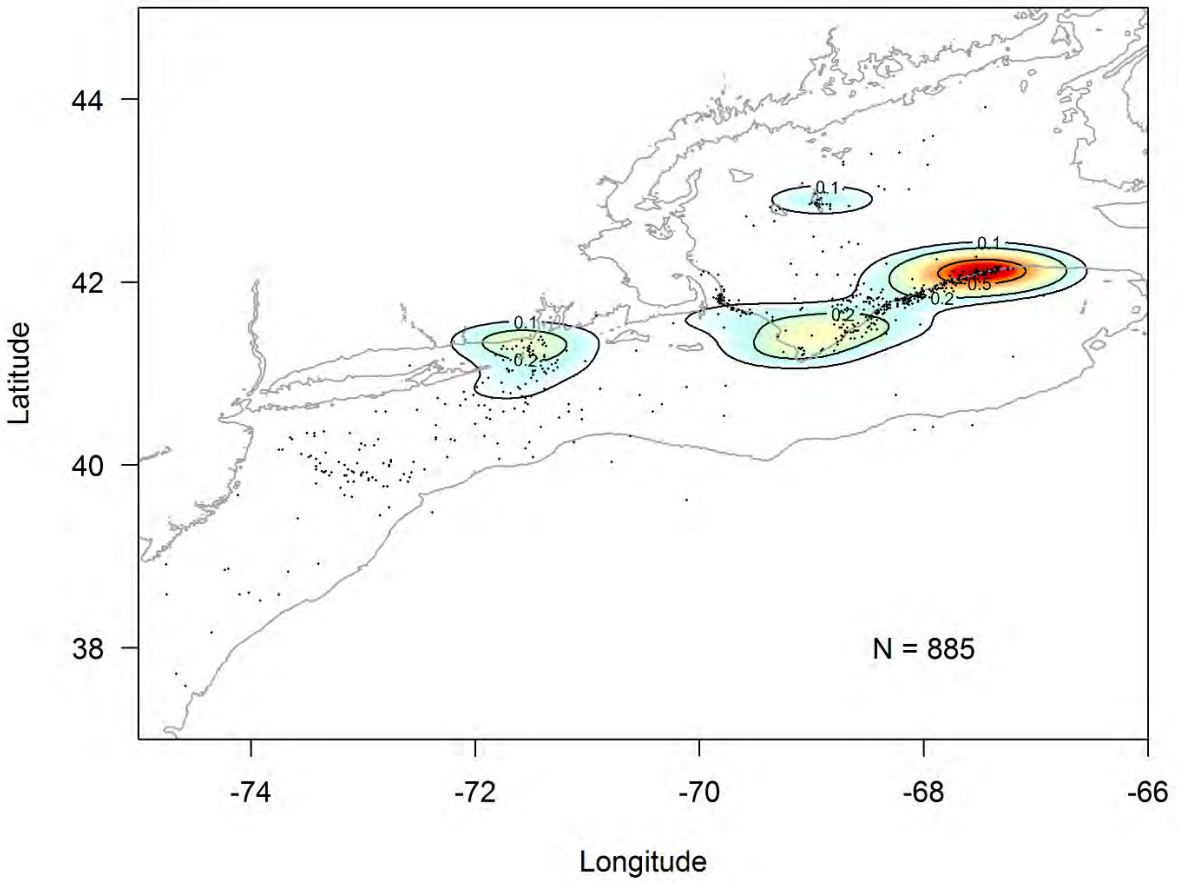

Figure 2.2.8. 2-dimensional kernel density estimates of DMR dockside monitoring data (1971-2018) of male and female "ripe + ripe/running" herring.

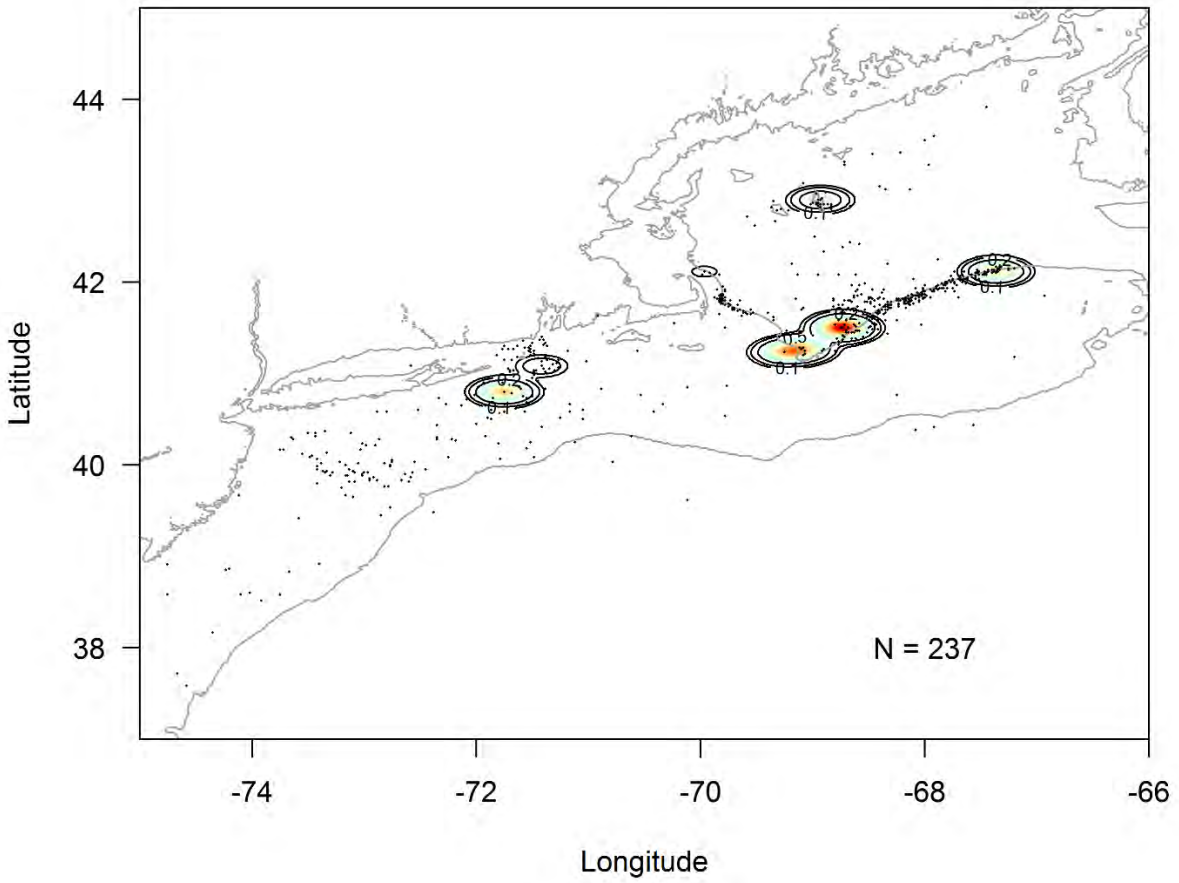

Figure 2.2.9. 2-dimensional kernel density estimates of DMR dockside monitoring data (1971-2018) of male and female "ripe and running" herring.

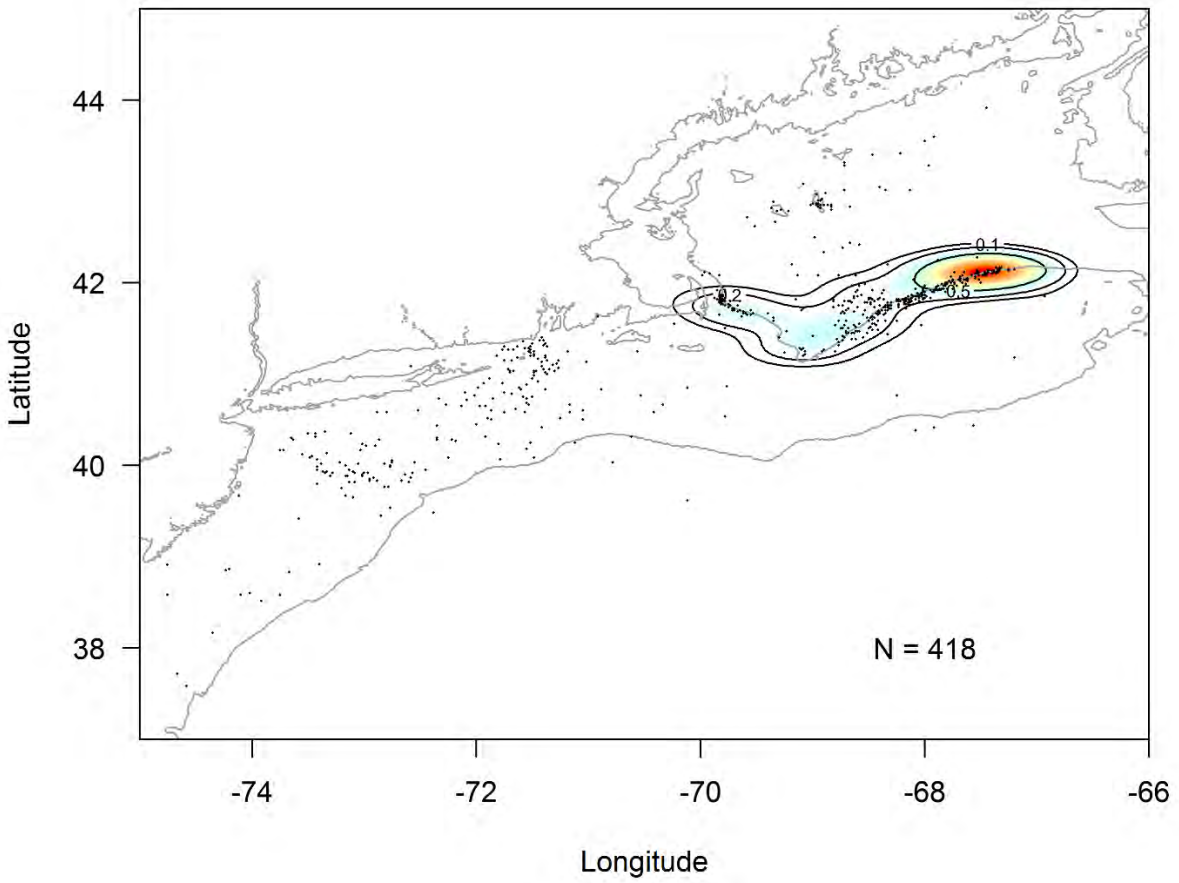

Figure 2.2.10. 2-dimensional kernel density estimates of DMR dockside monitoring data (1971-2018) of male and female herring with GSI values >= 0.3.

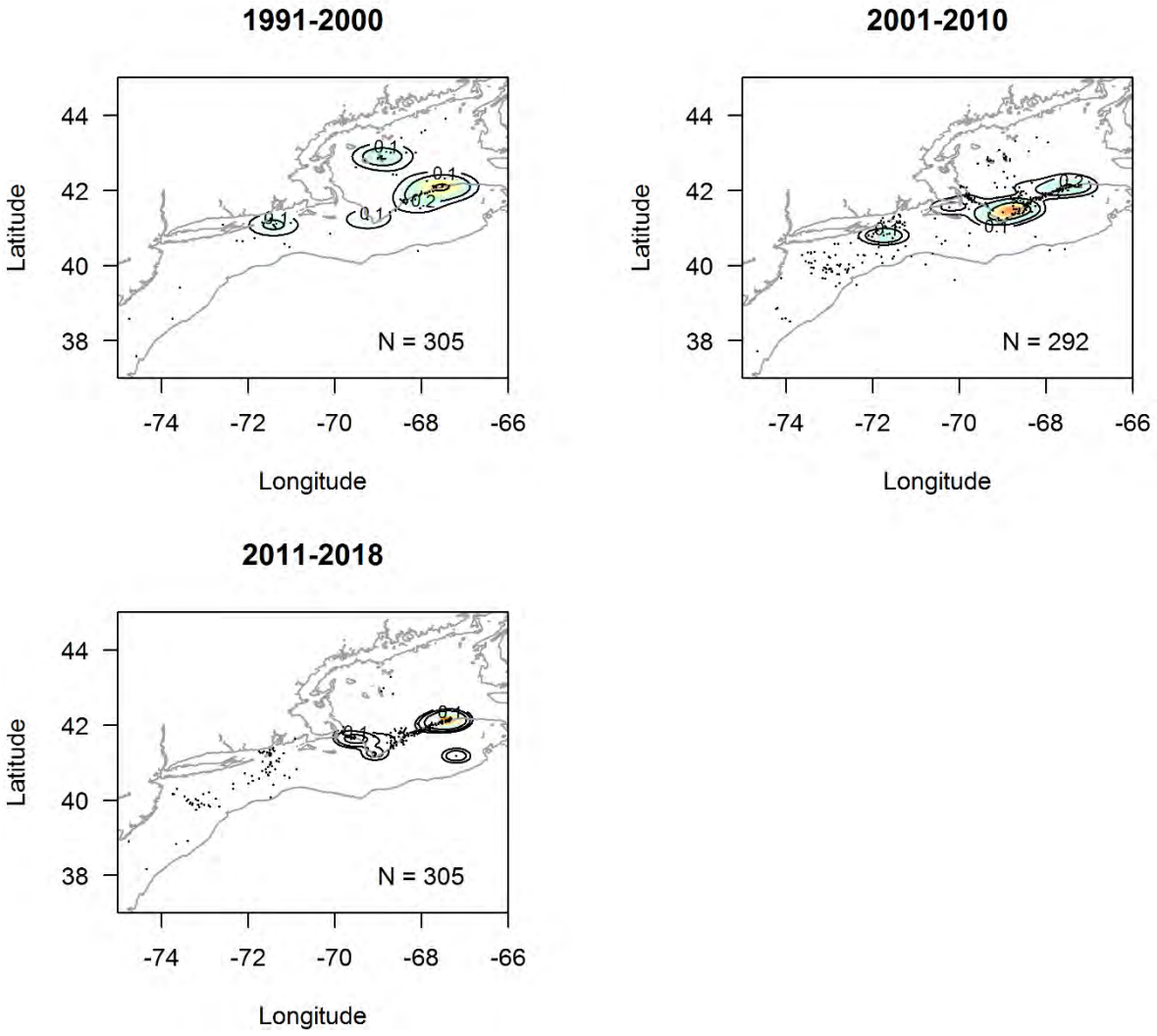

Figure 2.2.11. 2-dimensional kernel density estimates of DMR dockside monitoring data by decade of male and female "ripe + ripe/running" herring. Decades began at 1991 because there were no observations of ripe + ripe/running fish prior to this. This was likely due to sampling timing during the year (see figure 2.3.1).

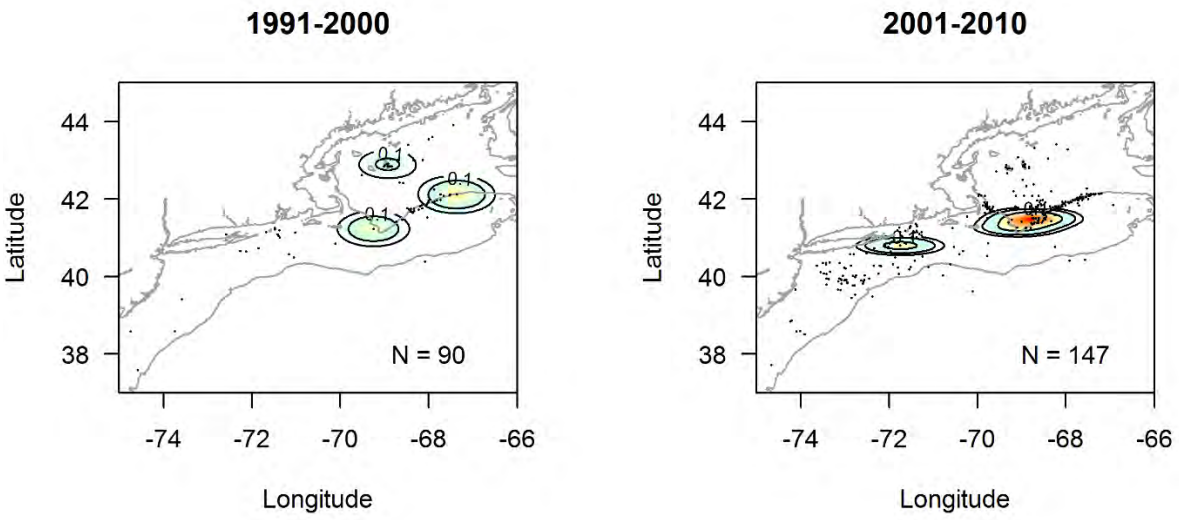

Figure 2.2.12. 2-dimensional kernel density estimates of DMR dockside monitoring data by decade of male and female "ripe and running" herring. Decades cover only 1991-2010 because there were no observations of ripe and running fish outside of that time frame.

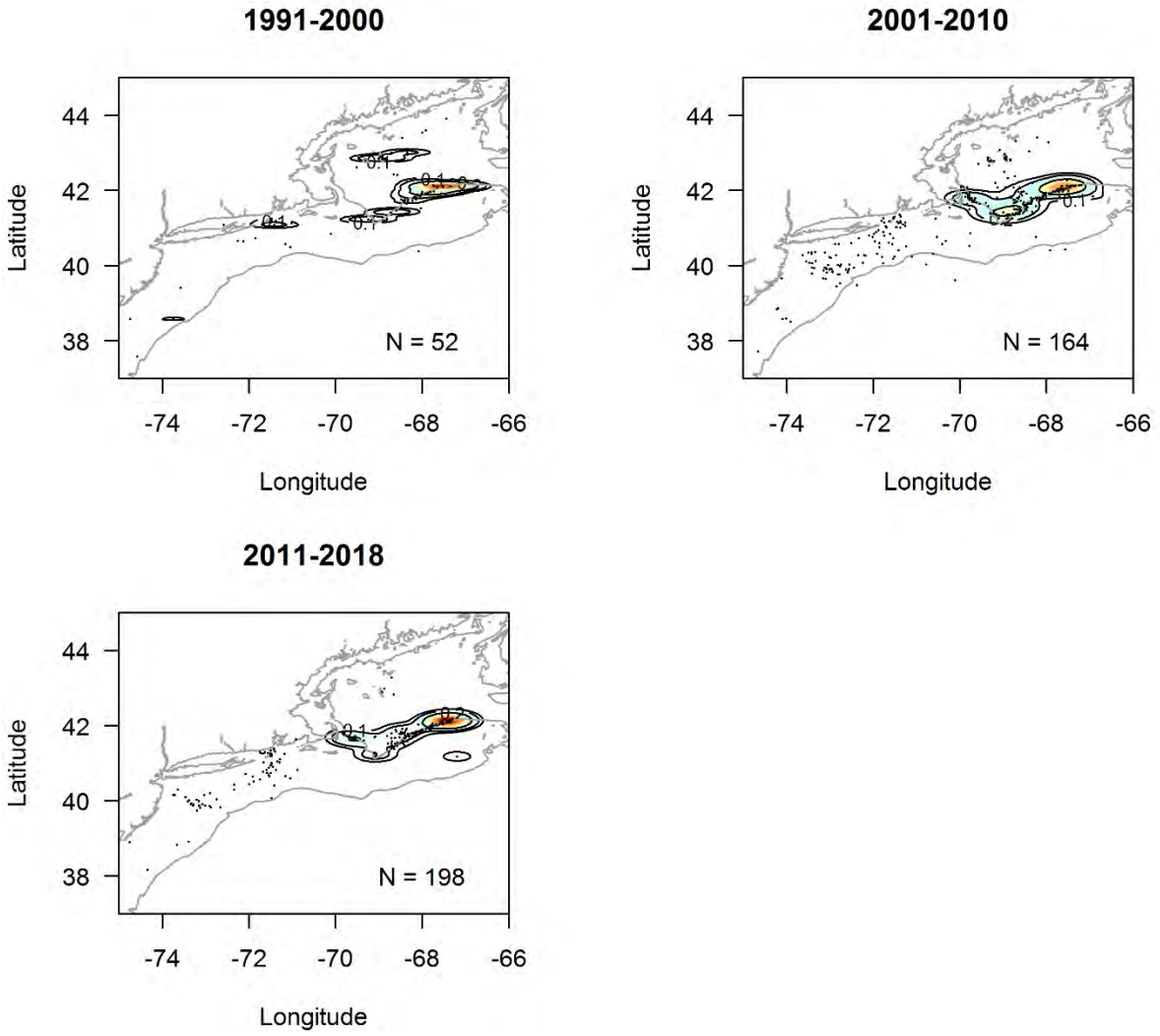

Figure 2.2.13. 2-dimensional kernel density estimates of DMR dockside monitoring data by decade of male and female herring with GSI values >= 0.3.

2.3. Adult Data: DMR Dockside Monitoring Data (temporal patterns)

The DMR dockside monitoring data was comprehensive enough to allow for temporal comparisons using GSI values. Here, mean GSI values were calculated by month and by year and are presented as heat maps using the '*ggplot2*' package in R (Wickam 2016). Figure 2.3.1 shows mean GSI by month and year for the entire data set. This figure shows the temporal distribution of sampling effort. Particularly, sampling was confined to the early months (January – April) for the first half of the data set. It was not until the mid to late 90s that sampling occurred year-round. From the 1990s on, the highest mean GSI values occurred in September and October. The limited sampling that took place in November suggests that spawning is completed by October, although only 3 years had data for November. There did appear to be

some higher GSI values in March in the early half of the data set. However, these values did not approach those seen in the fall.

Since management actions for spawning herring in the Gulf of Maine are based on the appearance of fish (any number) with GSI values greater than 0.3 (reference), we considered patterns in GSI at the high end of the distribution (the 90th quantile; i.e. the value at which 90% of the values are smaller). This exercise had the effect of revealing herring in spawning condition earlier than if mean GSI is considered (i.e., in August of some years; Figure 2.3.2). Figures 2.3.3 and 2.3.4 show the 90th quantiles by month and year for females and males separately. In this representation, females had higher quantile values and shorter periods during which values are elevated. We also explored whether the timing of peak GSI values differed between regions. The spatial analyses suggest that there are eastern and western components to spawning on Georges Bank (i.e., Northern Flank versus Great South Channel; previous section). We chose -68.7 degrees longitude to divide Georges Bank from Nantucket Shoals and the Great South Channel. We also considered Southern New England separately from these two. In this case, the cutoff between SNE and Georges Bank/Nantucket Shoals was -70.5 degrees longitude. There did not appear to be any difference between the timing of spawning between Georges Bank (eastern region) and Nantucket Shoals/Great South Channel (western region). Peak values for females were in September and October for both regions. Southern New England samples were clustered earlier in the year and showed no obvious sign of a spawning period; although higher GSI values in males in February and March in the 1970's may be indicative of spring spawning during this time.

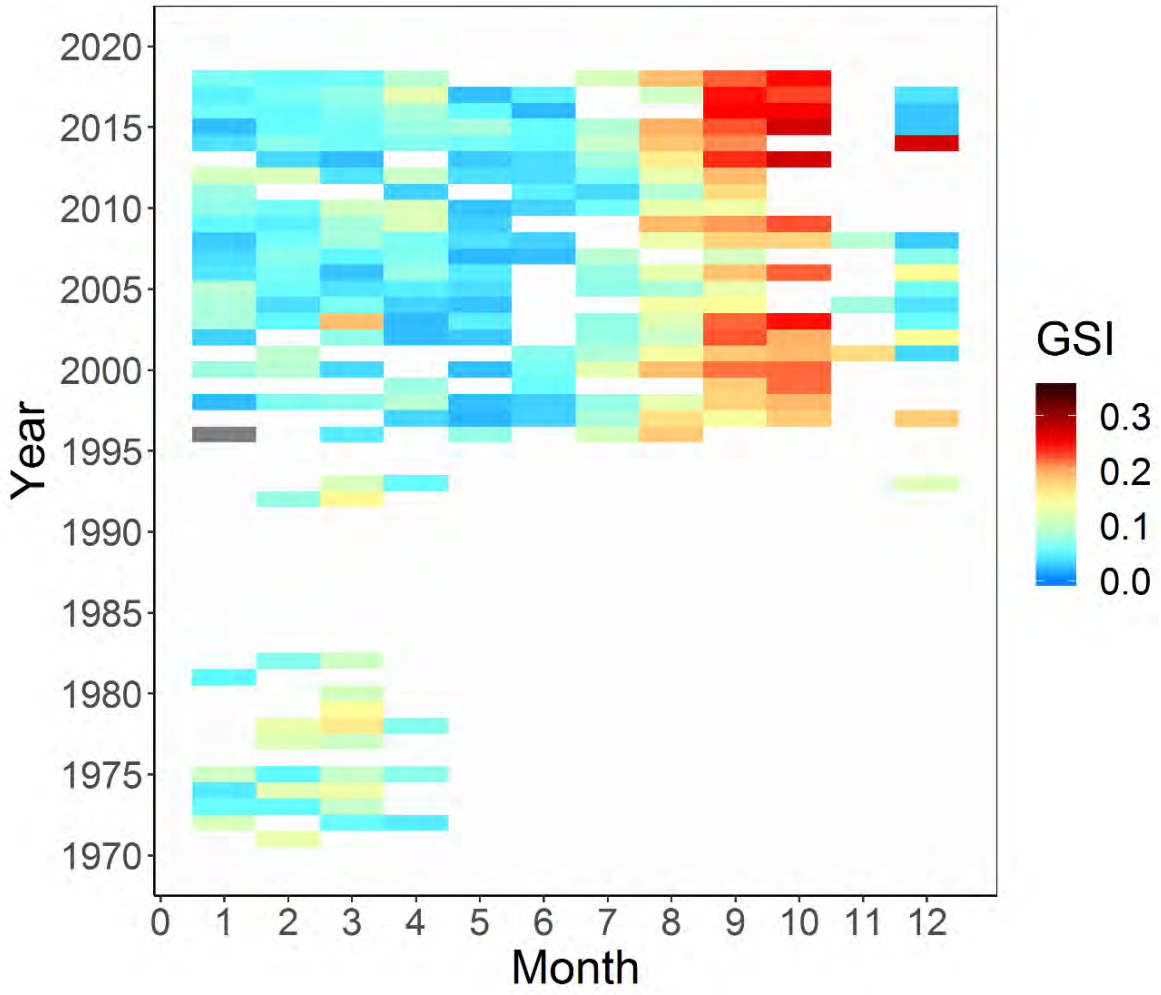

Figure 2.3.1. Mean GSI by month and year for entire DMR data set (both sexes).

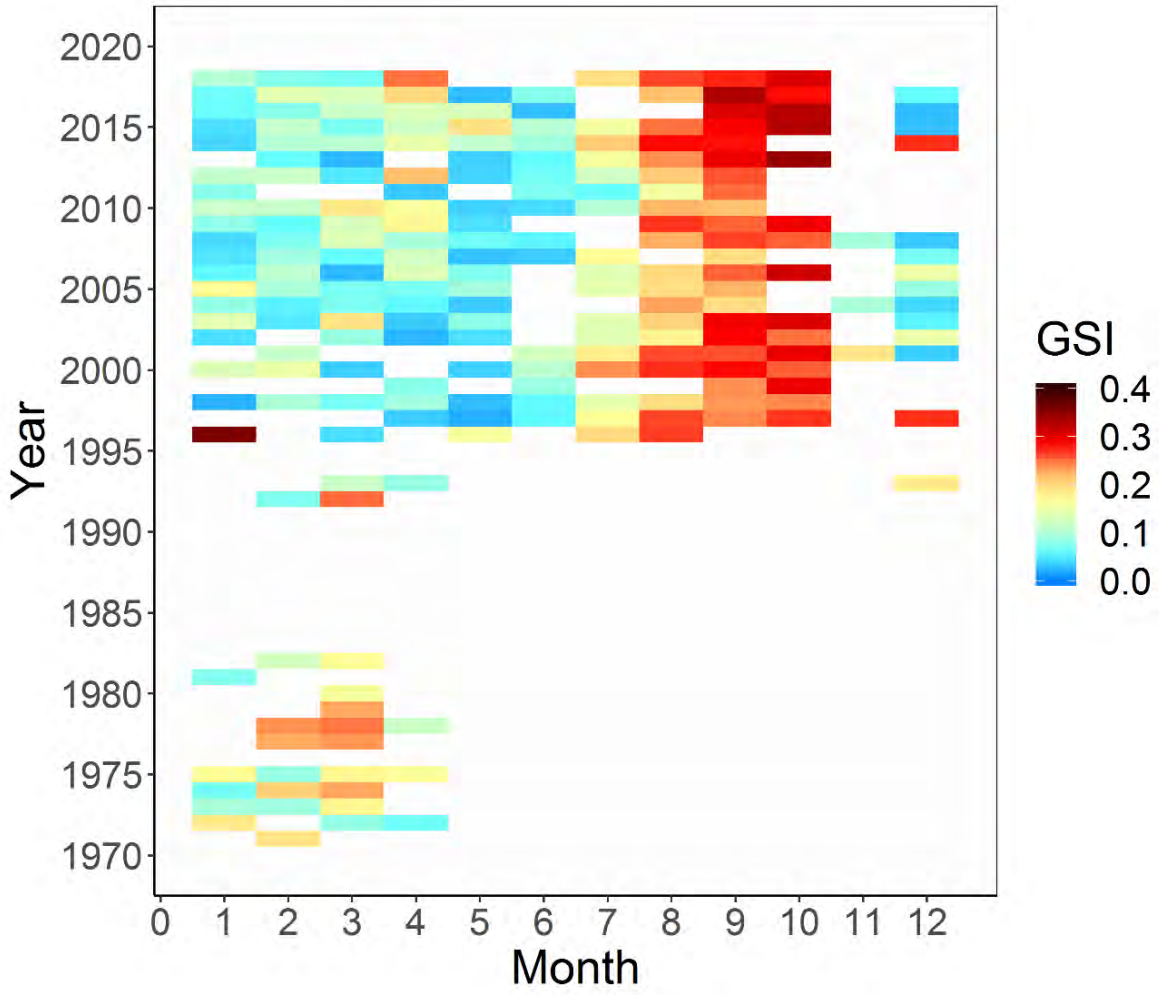

Figure 2.3.2. 90th quantile of GSI values by month and year for entire DMR data set (both sexes).

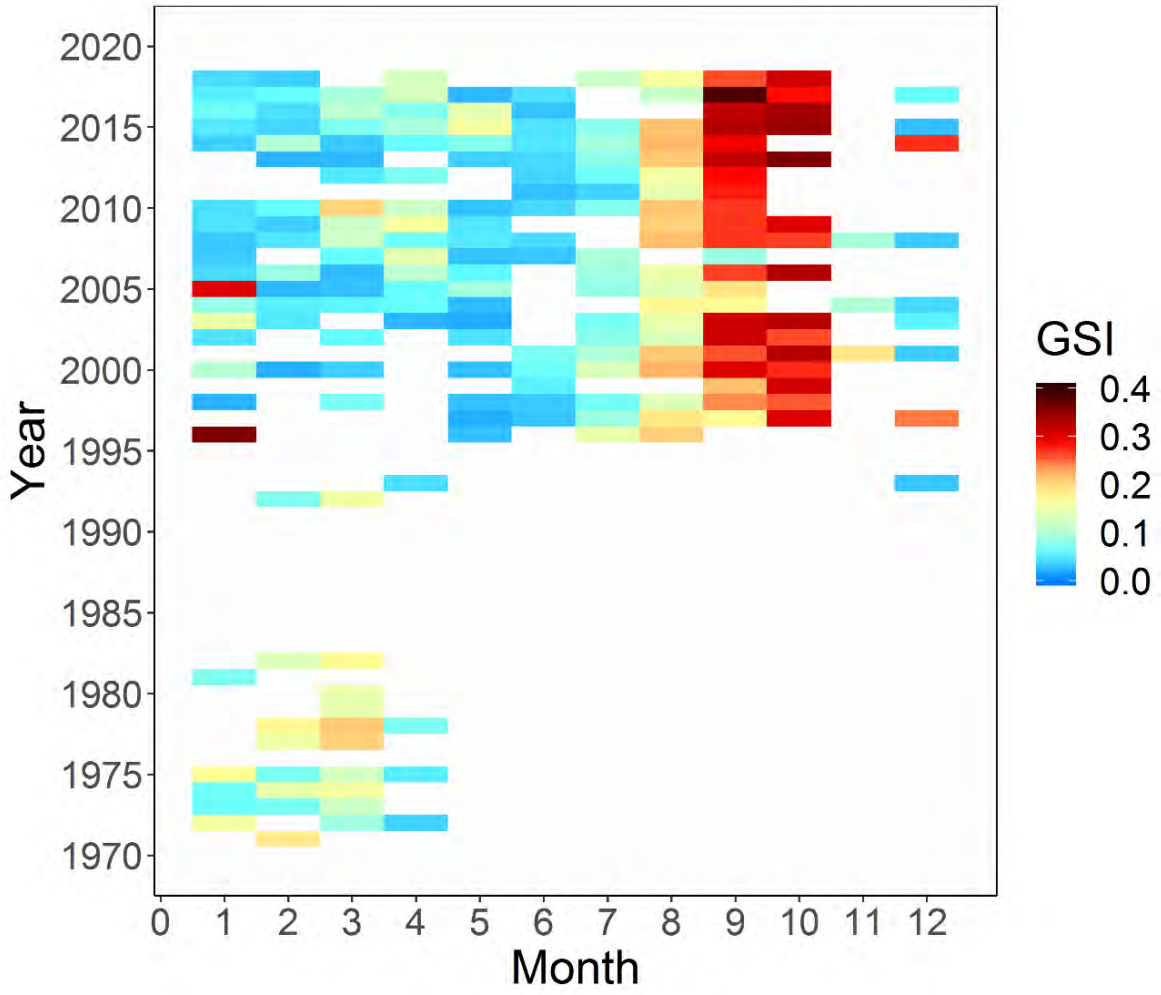

Figure 2.3.3. 90th quantile of GSI values by month and year for females.

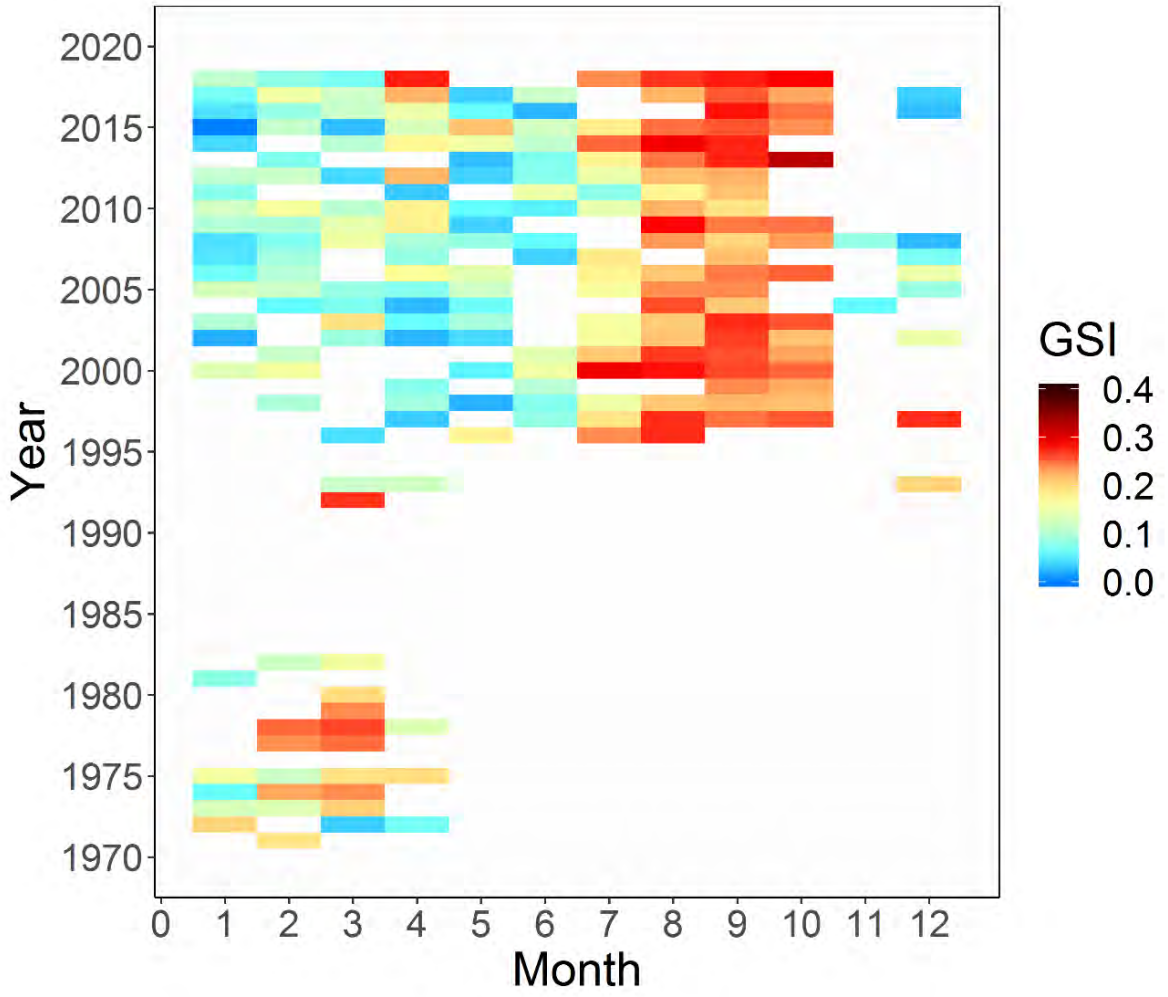

Figure 2.3.4. 90th quantile of GSI values by month and year for males.

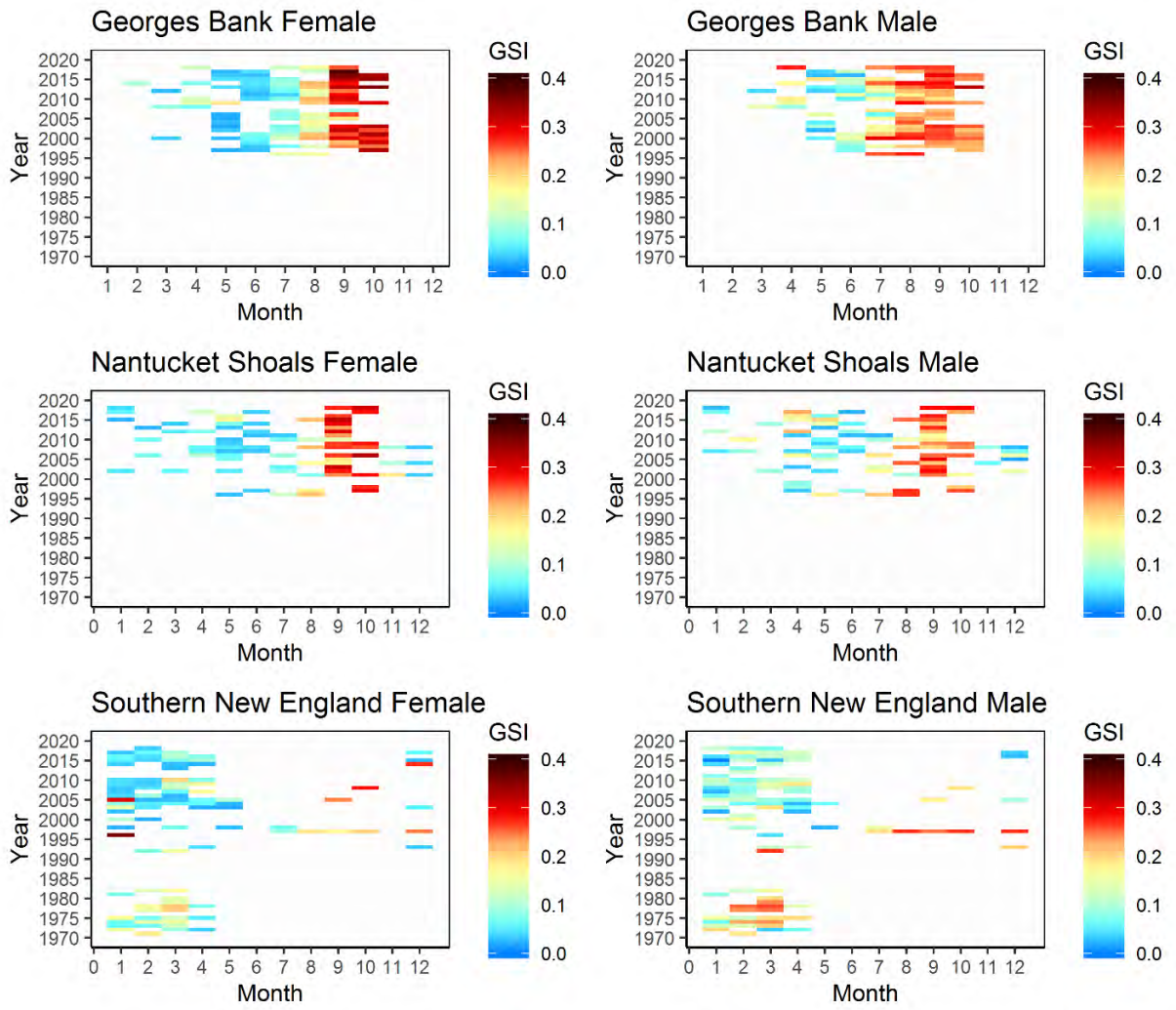

Figure 2.3.5. 90th quantile of GSI values by month and year and by location and sex. See text for description of locations.

2.4. Adult Data: Trawl Survey

We examined spatial and temporal patterns in maturity for herring sampled as part of biological processing during the Northeast Fisheries Science Center's spring and fall trawl surveys [Description of trawl survey sampling methodology pending]. While the trawl surveys have been operating since the 1960's, biological sampling for herring did not begin until 1987. Thus, our sample period includes the years 1987 – 2018. During this time, a total of 46,242 (28,878 spring and 17,364 fall survey) herring were sampled for length, weight, age, sex and maturity from 6,650 trawl sets. Thus, an average of 7.0 herring were sampled per set. Sampling intensity was higher in the spring than in the fall (8.5 versus 5.4 herring per set). The parameter of interest for this review was maturity stage. Maturity stages were as follows: immature (I), developing (D), ripe (R), ripe and running (U), spent (S), and resting (T). See table 2.2.1 for how these codes translate to DMR codes. We considered two stages as potentially indicative of spawning

locations. That is, if herring in spawning stages R or U were captured, they were inferred as being close to spawning grounds since they were in near or actual spawning condition. In reality, herring in maturity stage U would be the closest to spawning and therefore most likely to be near spawning grounds.

The location of herring in maturity stages R and U were mapped using a 2-D kernel density estimator in the package '*MASS*' (Ripley et al. 2019) in R (R Core Team 2019). This was done for all samples combined by season (i.e., spring and fall separately), and for different decades (by season). In this case, 'decades' were as follows: 1987 – 1990, 1991 – 2000, 2001 – 2010, and 2011 – 2018. For eventual incorporation of spatial depictions of spawning condition herring as layers in our consensus figures (see below), we considered polygons containing density values of 0.2 or greater (arbitrary).

For all the fall data combined, the location of ripe and ripe/running (R + U) herring was throughout the northern edge of Georges Bank with higher densities near the Great South Channel and the Northern Flank (Figure 2.4.1). Figure 2.4.2 shows the same data over different decades. Higher densities of R + U herring were found primarily on the western side of Georges Bank in the 1980's and 1990's. The distribution of R + U herring appeared to shift to the eastern side in the 2000's and in the most recent decade there are two areas of high density in both the east and the west. Figure 2.4.3 shows just maturity stage U herring from the fall survey from all years. Two areas of high density are evident in the Great South Channel (western side) and the Northern Flank (eastern Georges). The areas of high density of U stage herring shifts from decade to decade. It was highest in the west in the 1980's and 1990's, highest in the east in the 2000's and in the most recent decade it appears to have shifted back to the west, although densities were quite low. The density of spawning herring (maturity stage U) from the spring trawl survey are shown in figure 2.4.5. Only 9 of 28,878 samples were in maturity stage U confirming that spawning does not take place on Georges Bank in the spring. Similarly, only 179 herring were in maturity stage R in the spring (all years combined; not plotted).

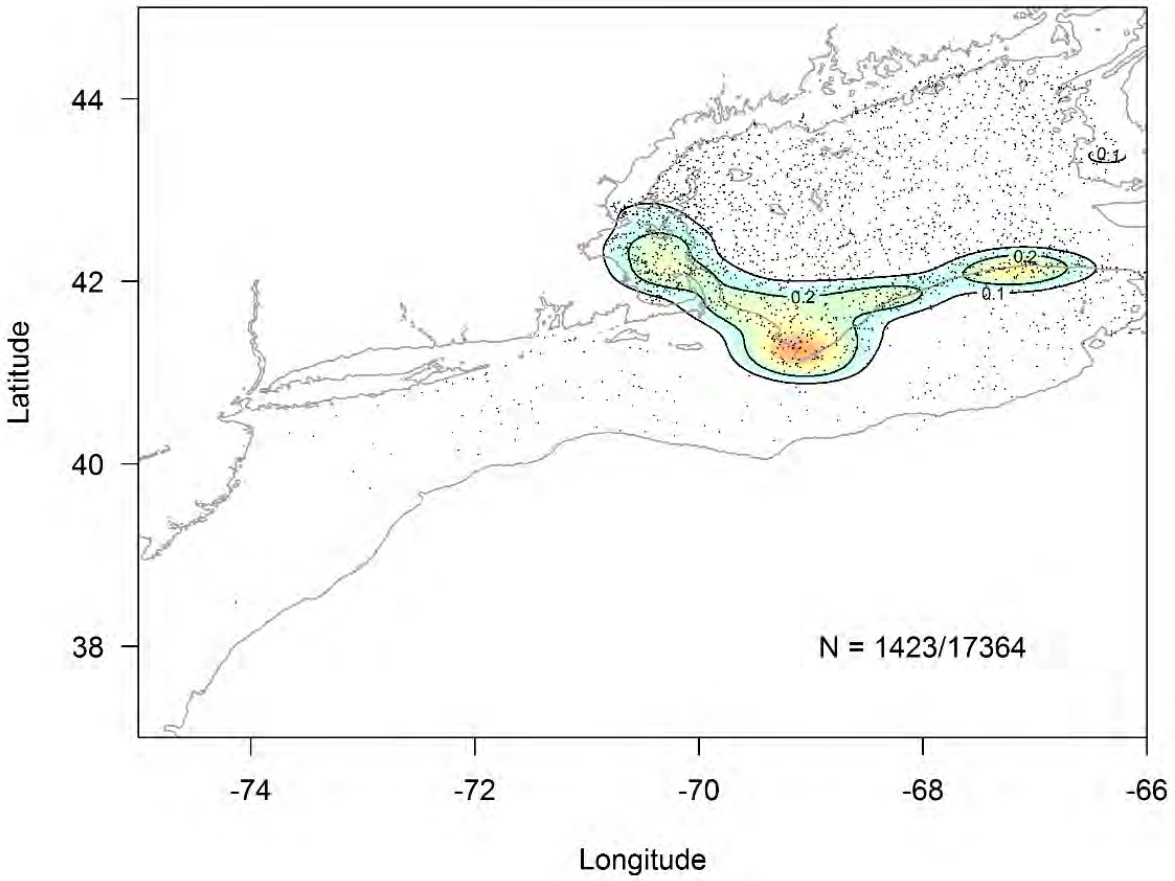

Figure 2.4.1. 2-dimensional kernel density estimates of ripe (mat stage R) and ripe/running (mat stage U) herring from fall trawl survey. Sample size is indicated; smaller number for samples in mat stage R + U and larger number for total sample size.

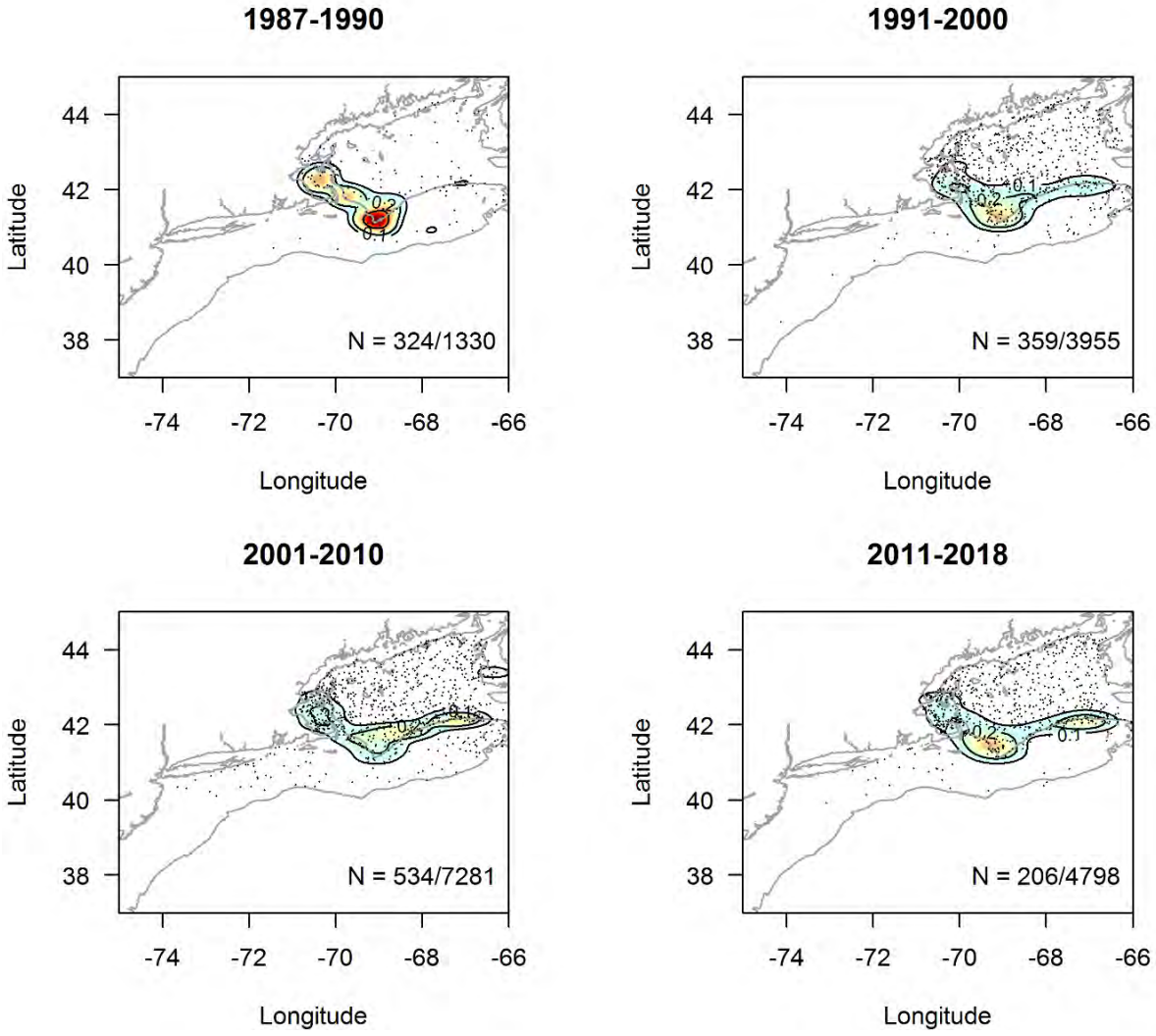

Figure 2.4.2. 2-dimensional kernel density estimates of ripe (mat stage R) and ripe/running (mat stage U) herring from fall trawl survey by decade. All sample locations are shown as points. Sample size is indicated; smaller number for samples in mat stage R + U and larger number for total sample size by decade.

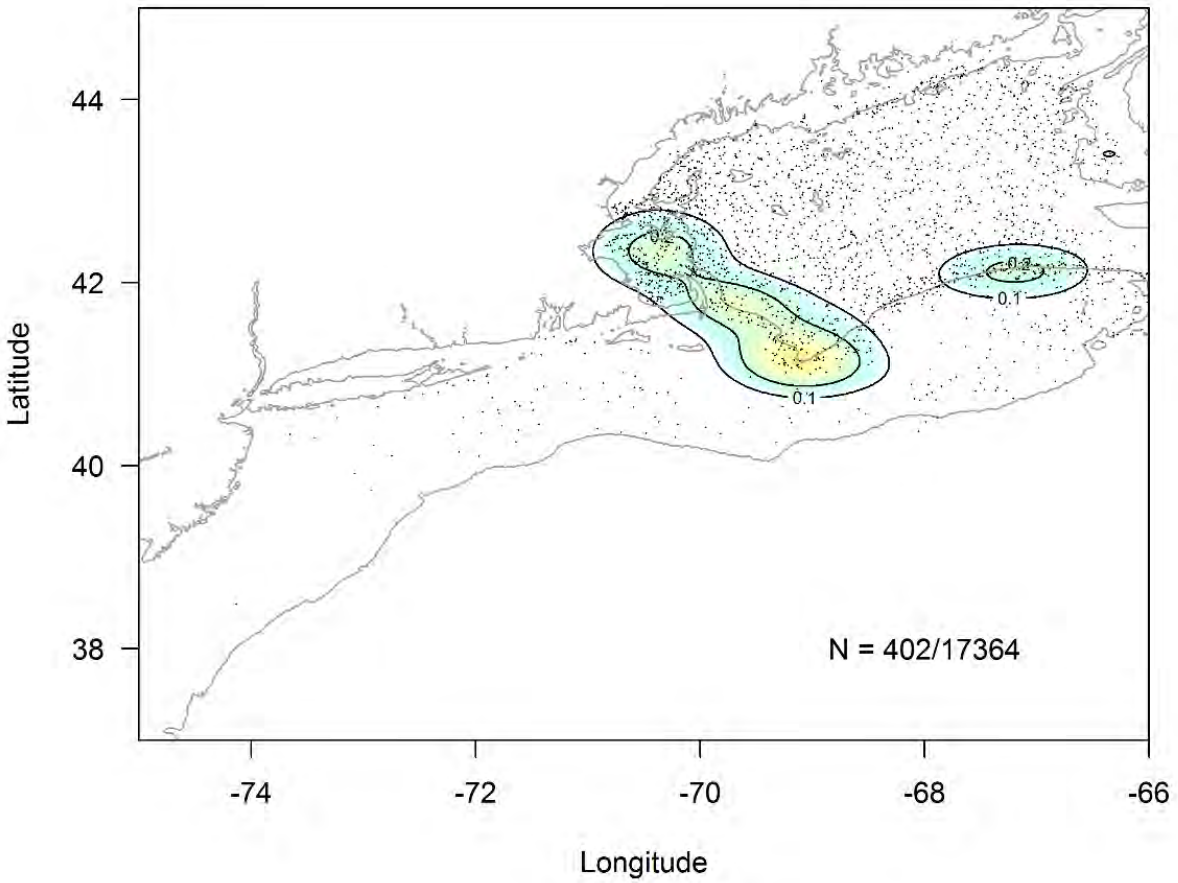

Figure 2.4.3. 2-dimensional kernel density estimates of ripe/running (mat stage U) herring from fall trawl survey. Sample size is indicated; smaller number for samples in mat stage U and larger number for total sample size.

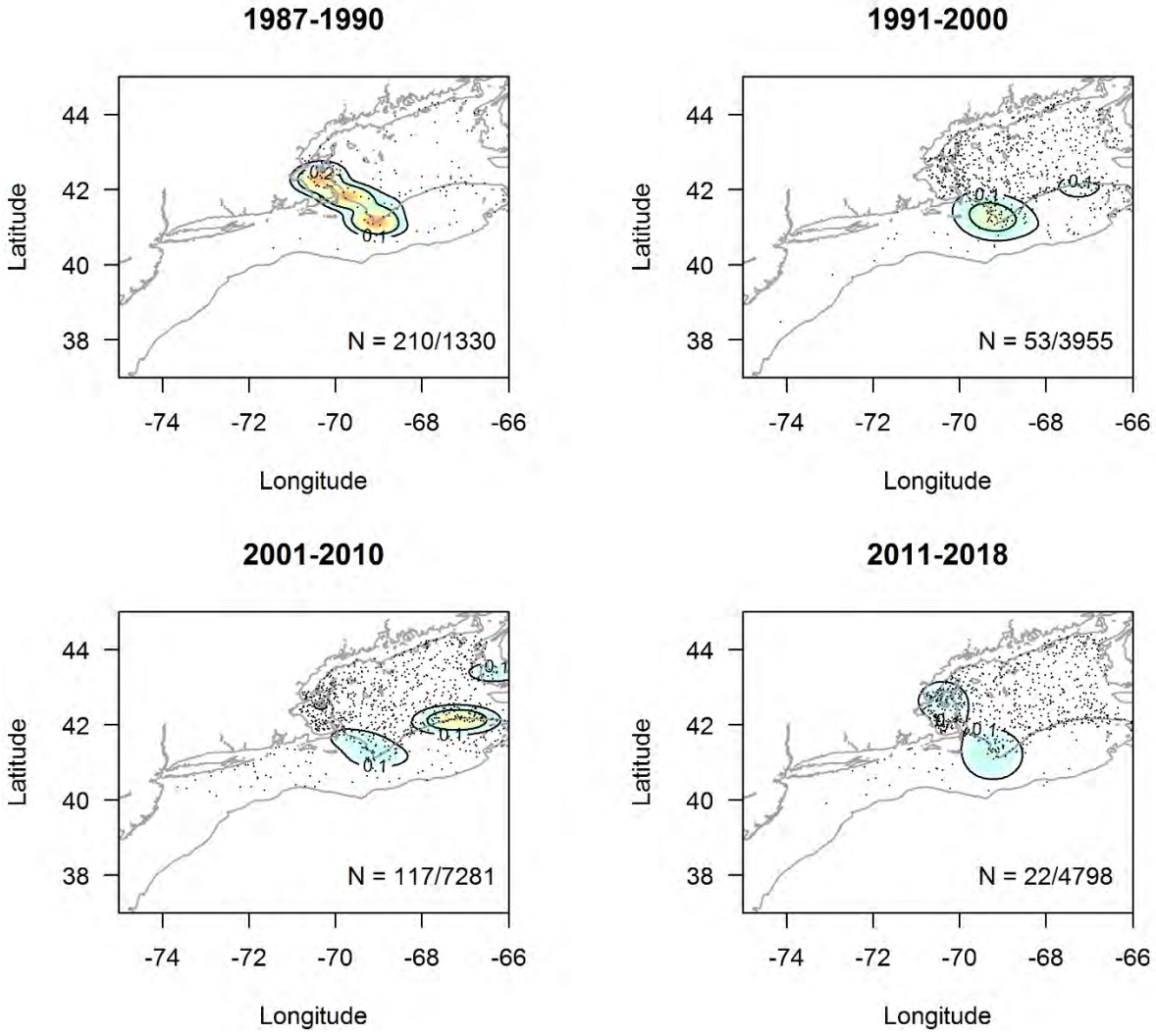

Figure 2.4.4. 2-dimensional kernel density estimates of ripe/running (mat stage U) herring from fall trawl survey by decade. All sample locations are shown as points. Sample size is indicated; smaller number for samples in mat stage U and larger number for total sample size by decade.

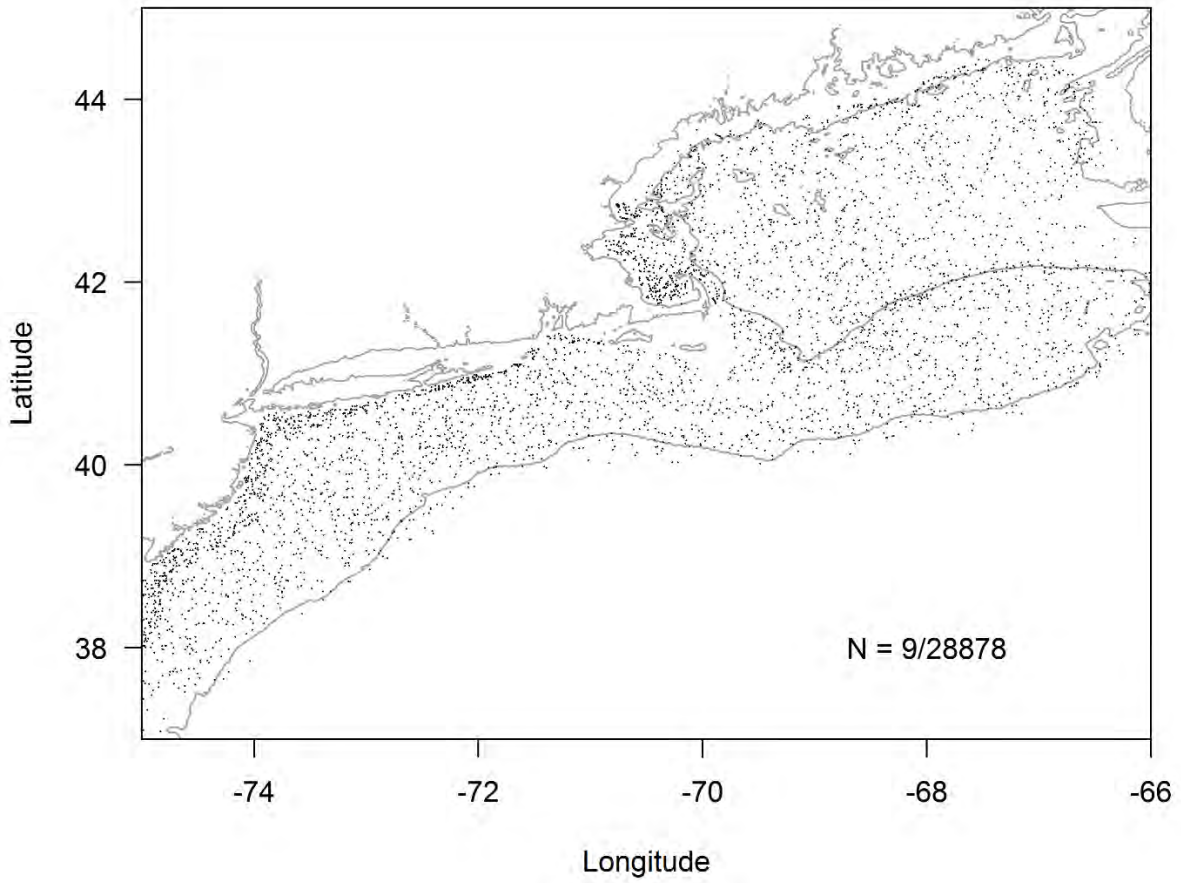

Figure 2.4.5. 2-dimensional kernel density estimates of ripe/running (mat stage U) herring from spring trawl survey (all years combined). Sample size is indicated; smaller number for samples in mat stage U and larger number for total sample size.

2.5. Food Habits Database (Herring Eggs in Diet of Groundfish)

Food habits data from the Northeast Fisheries Science Center Food Web Dynamics Program were explored for occurrences of *Clupeidae* eggs and *Clupea harengus* eggs as prey between 1973 and 2017 (B. Smith, pers. comm.). These data covered the entire Northeast US continental shelf and consist of approximately 650,000 total samples. There were only 113 observations from 10 hauls that contained herring eggs. Most of these samples were *Clupeidae* eggs and only a few were identified to the level of *Clupea harengus* eggs. All observations occurred between late September and early November. Years where herring eggs were identified included 1989, 1993, 1994, 1995, 1997, 1998, and 2005. Due to the limited amount of data we only explored the locations where these herring eggs were present, most of which were in the northeast section of Nantucket Shoals and a few occurances on the northeast edge of Georges Bank (figure 2.5.1).

These locations are generally consistent with herring egg essential fish habitat identified in Ammendment 5 to the herring fishery management plan (figure 2.3).

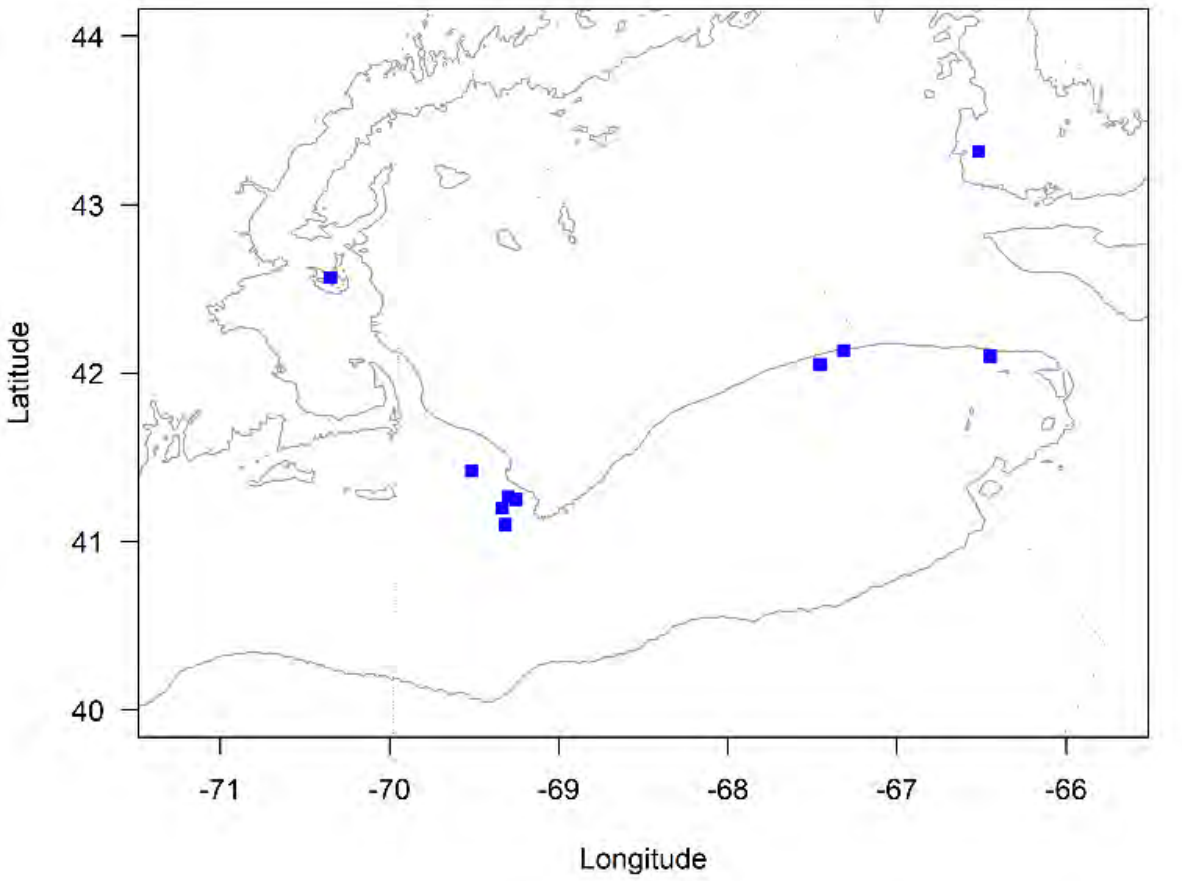

Figure 2.5.1. Locations of herring eggs observed in 113 NEFSC diet samples from 10 hauls (1989, 1993, 1994, 1995, 1997, 1998, 2005).

2.6. Industry Interviews

We conducted interviews with a representative of each of the mid-water pair trawls to gain a perspective from industry on where spawning takes place for herring and their overall thoughts on the topic. In general, industry felt that there was not one specific area that you would catch spawning herring and that it varies year to year. One group could not envision how a closure would work on George's Bank due to the variability from year to year in spawning and cautioned that a closure on GB would cripple the midwater fleet. Another group did not believe that the midwater fleet is interacting with spawning herring on GB; in their experience, it is a rare event to catch spawning herring. This coincides with some of the data we analyzed (particularly the

DMR data) where a large percentage of trips resulted with no spawning herring being sampled (figure 2.6.1).

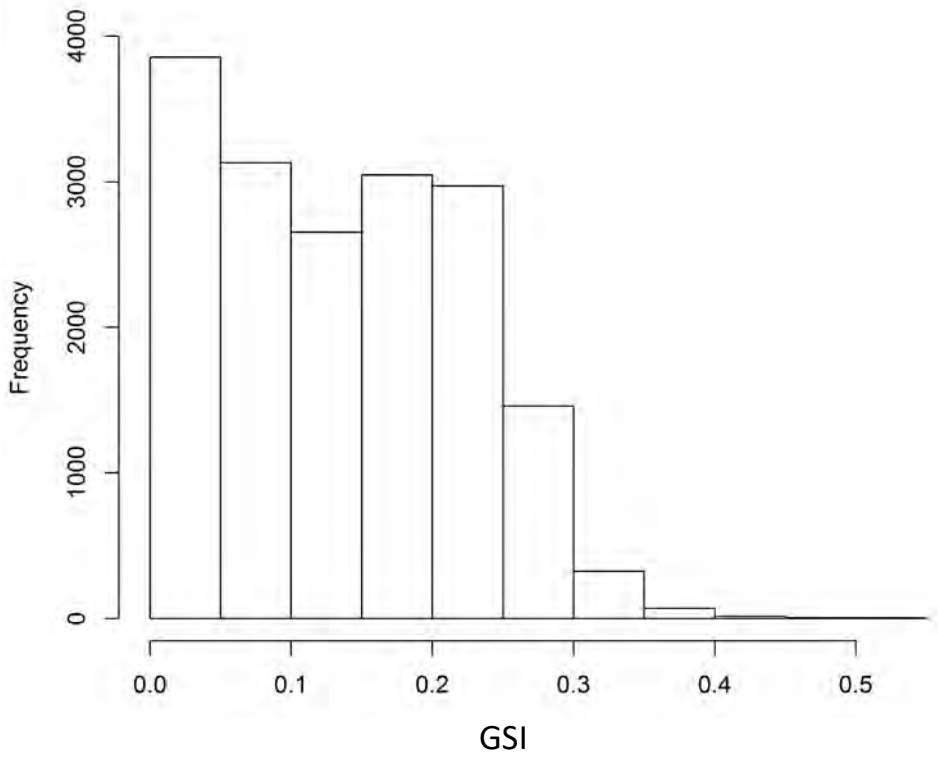

Figure 2.6.1. Histogram of GSI values from DMR dockside monitoring data. Only 418 of the 17,529 (2.4%) samples had GSI values > 0.3. This agrees with fishermen's experience of not seeing many spawning herring on Georges Bank.

The fishermen interviewed believe that the bottom type where they fish (sandy bottom with no structure and a tide of 2 knots) is not conducive to spawning. They believe that fish are spawning more along the shoal waters along the Northern edge of GB where the habitat is better suited for spawning (as is supported by the data; e.g., figure 3.3). They do not fish in that area of GB due to the possibility of tearing up their nets. There was one group of fishermen who informed us of the general areas where you can catch herring that have roe and where they spawn. Fish with roe can occur along the whole edge of GB from Canada to the Cape between August and November. There were a couple areas where they have caught spawning fish including the Northern edge east of the 1300 line in 50 fathoms, near the "BB" buoy south of Chatham, and when there are small fish (non-spawning) to the east you can find the large spawning fish near Cultivators Shoal. They used to find spawning fish inside the channel but have not seen any in a while. It was noted that all the spawning fish were large and of very good quality.

Each representative had their own explanations on the issue and offered ways to remedy the issue. Many would like to see more sampling including tagging programs, otolith work, surveys

that include multiple gear types and have industry data included in assessments. They believe that the small fish are present and that we will see this with more sampling. One group was worried about herring shifting where they spawn. Until about ten years ago, they would catch herring from Virginia up to Long Island while targeting mackerel. One captain has heard reports that there have been eight trips to Georges Bank with no herring and fears that they have shifted to Canadian waters where there have been reports of herring landed in large quantities.

One of the groups highlighted that when they catch spawning herring, they are also catching a larger amount of haddock than they have ever previously caught. He used to find only a couple haddock mixed in with spawning herring, but with the rebound of haddock he is finding more and more haddock mixed in with the spawning herring. He believes that the haddock are consuming the herring as well as the eggs and either lowering the recruitment or possibly forcing the herring to spawn in new areas that may not be as suitable. It was also raised by a group of captains (who are also able to purse seine) that if they were allowed to target mackerel using a 3 inch brailer instead of the normal 1 inch brailer, it would reduce the amount of small mackerel as well as limit the herring bycatch. Both changes in target fish would reduce the pressure on herring while allowing them to fish on a healthy stock. The abundance of river herring is another area of concern, one captain has seen more than ever before and believes that the river herring are taking over prime areas. Historically, the large balls of herring were able to push the river herring away from the prime feeding areas but with the smaller amounts of herring he doesn't believe they are able to compete with the river herring for the prime areas. All of the groups we interviewed were appreciative that we reached out to industry and welcome more science and research into the issue.

2.7. Observer Data

Northeast Fisheries observer comments from all gear types and fisheries were explored for accounts of spawning Atlantic herring (1989-2019) and herring eggs (2008-2019) (G. Chamberlain, pers. comm). There were very few entries of hauls where captains classified catch as spawning herring. A large amount (> 5,000) of comments recorded by observers contained unclassified fish eggs or unclassified eggs, but observations could not be classified as Atlantic herring eggs with confidence. These comments were too limited to make inferences about location and timing of spawning herring or herring eggs.

3. Building a Consensus

Similar to DeCelles et al (2017) we applied a consensus approach to identifying spawning areas on Georges Bank and Nantucket Shoals. We layered polygons from multiple sources to examine areas of overlap which are inferred as more consistent areas of spawning. Data layers for this exercise included historical data layers from Olsen et al (1977) (figure 2.2), egg EFH (NEFMC 2013) (figure 2.3), eggs in diet of groundfish (i.e., food habits database; figure 2.5.1), larval data (figure 2.1.1), DMR dockside monitoring data (specifically, maturity stage 6; figure 2.2.9), and trawl survey data (maturity stage U; figure 2.4.3). Maps were georeferenced in Google Earth where polygons were created and saved as KML files which were layered on top of each other in R (citation). The resultant map is shown in figures 3.1 (colored by data source) and 3.2

(monochrome). In general, all spawning associated activity, from ripe and running adults to evidence of eggs, occurred along the northern edge of Georges Bank from Cape Cod to the northern flank. However, there were also areas of high overlap of multiple data sources that may indicate more consistent spawning. These include an area to the west of the great south channel (northern Nantucket Shoals) and an area on the northern flank. Note how adults tend to aggregate to the north of putative spawning areas (in deeper water or near the edge of the bank), egg areas tend to be up on the bank and larval areas tend to be downstream of these areas. Figure 3.3 shows the areas of highest overlap (i.e., where 3 or more sources agreed). In this case, two distinct areas emerged; one to the west of the Great South Channel and the other on the Northern Flank.

Figure 3.4. shows overlap of data sources by decade. Here, only larval, DMR and trawl survey data were used since these had records that spanned multiple decades. While harder to infer consensus areas due to smaller data sets, spawning appeared to move from the west in the 1980's, to across the northern edge of the shelf in the 1990's and 2000's to distinctly west and east areas in the 2010's.

We also considered overlap of areas of high density of maturity stage R + U herring from both DMR data and the trawl survey over each decade (figure 3.5). Similar to other depictions, this showed areas of high overlap, among decades and data sets, at the Great South Channel and the Northern Flank. Consensus areas from this figure are shown in figure 3.6 (where 4 or more polygons overlapped). Figure 3.7 shows how this compares to the consensus areas shown in figure 3.3. Again, it appears that the adult spawning condition herring tend to aggregate slightly to the north and off the bank compared to consensus areas that include eggs and larval herring (more on the bank).

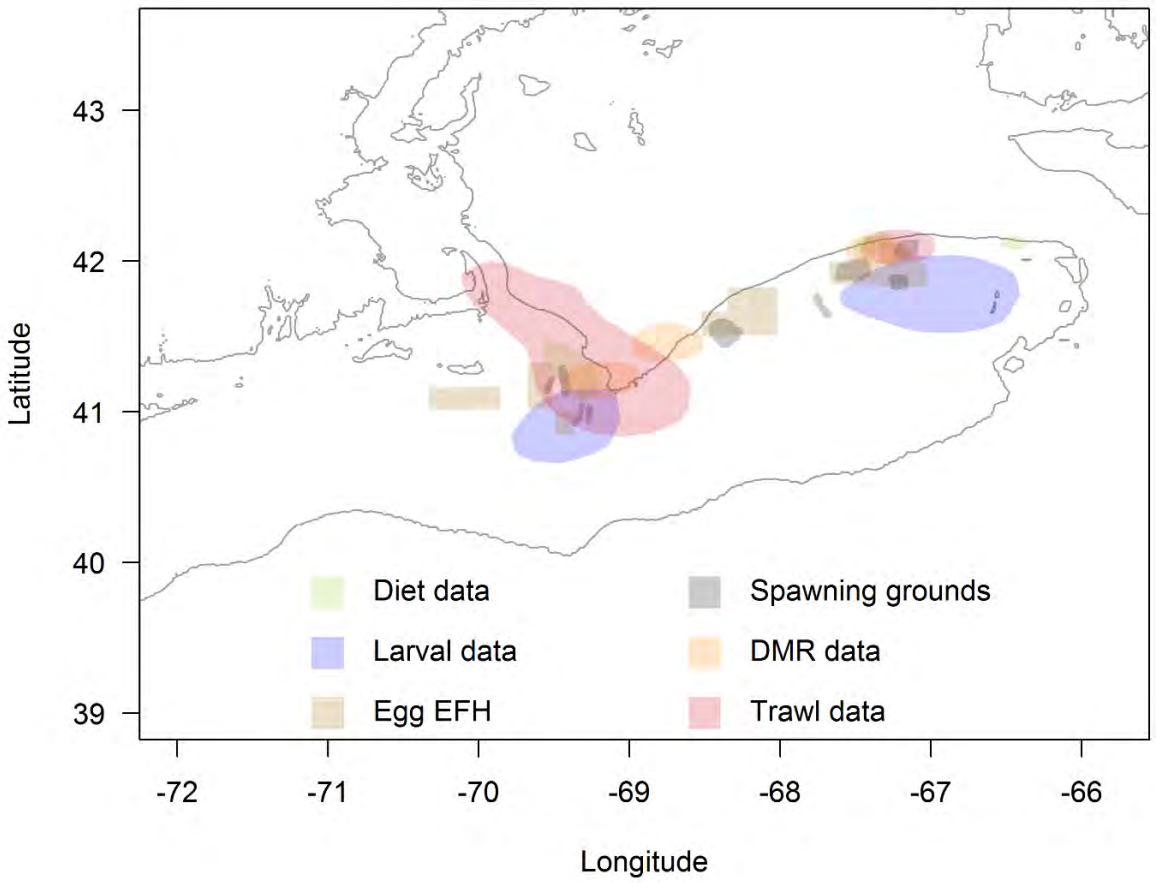

Figure 3.1. Areas of overlap between multiple data sources including data from food habits database (diet data; figure 2.5.1), larval monitoring (figure 2.1.1), egg EFH (figure 2.3), historical spawning grounds (figure 2.2), DMR dockside monitoring (mat stage U; figure 2.2.9), and fall trawl survey (mat stage U; figure 2.4.3).

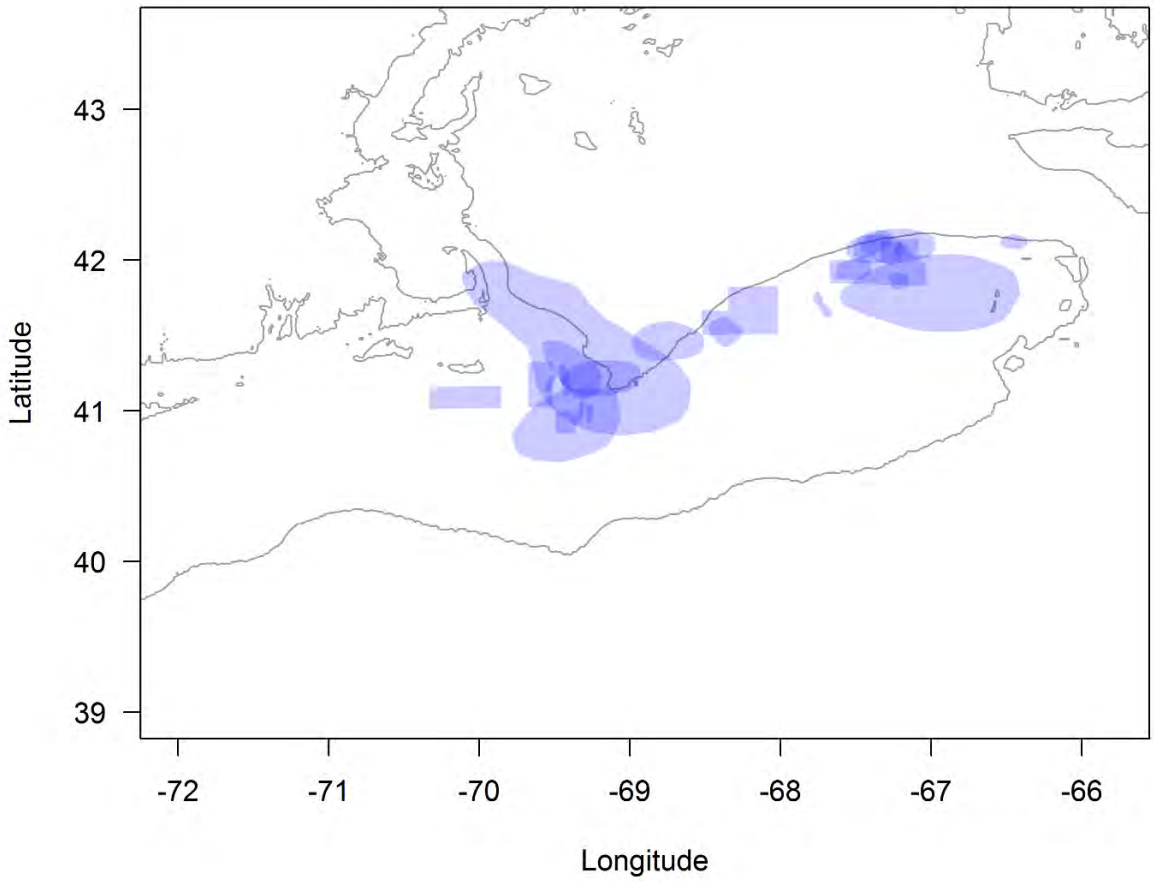

Figure 3.2. Same as figure 3.1 but all in same color to highlight areas of overlap through shading.

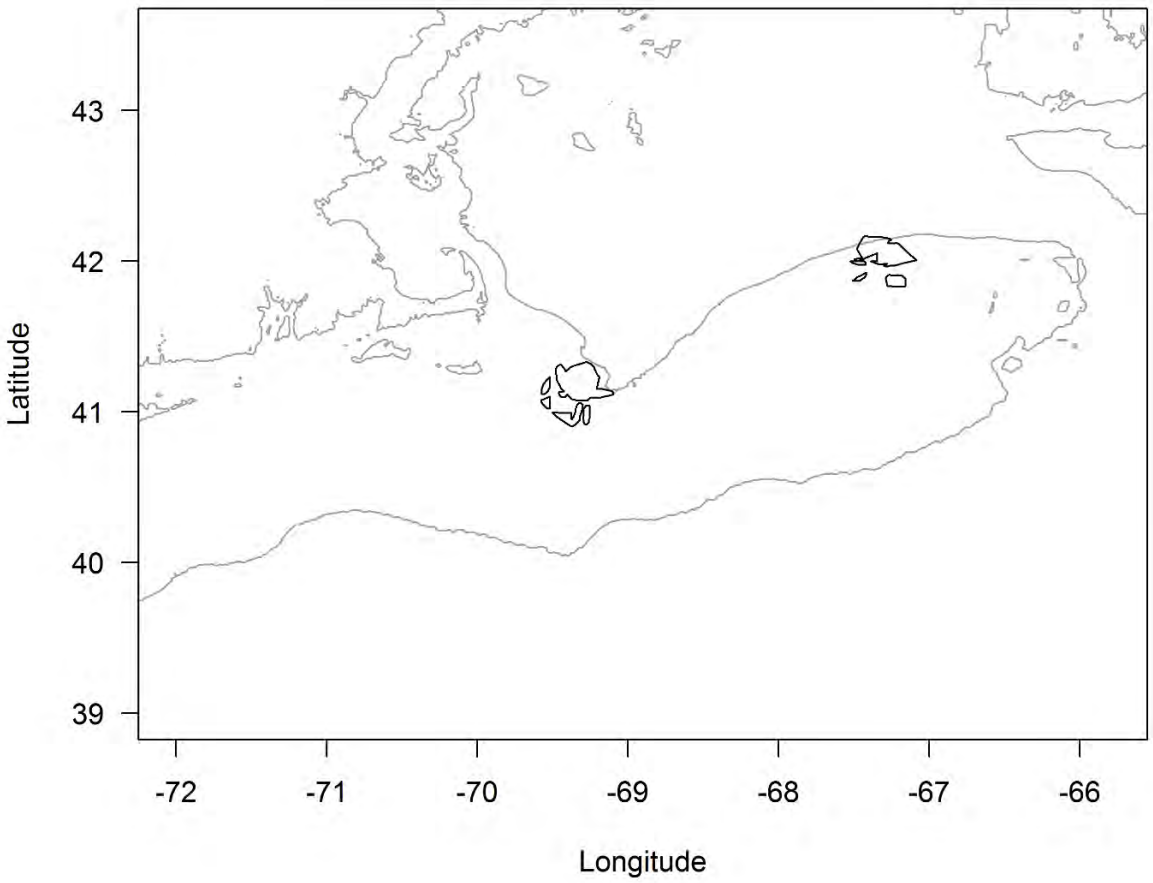

Figure 3.3. Consensus areas from figure 3.2 where 3 or more overlaps occurred between different data sources

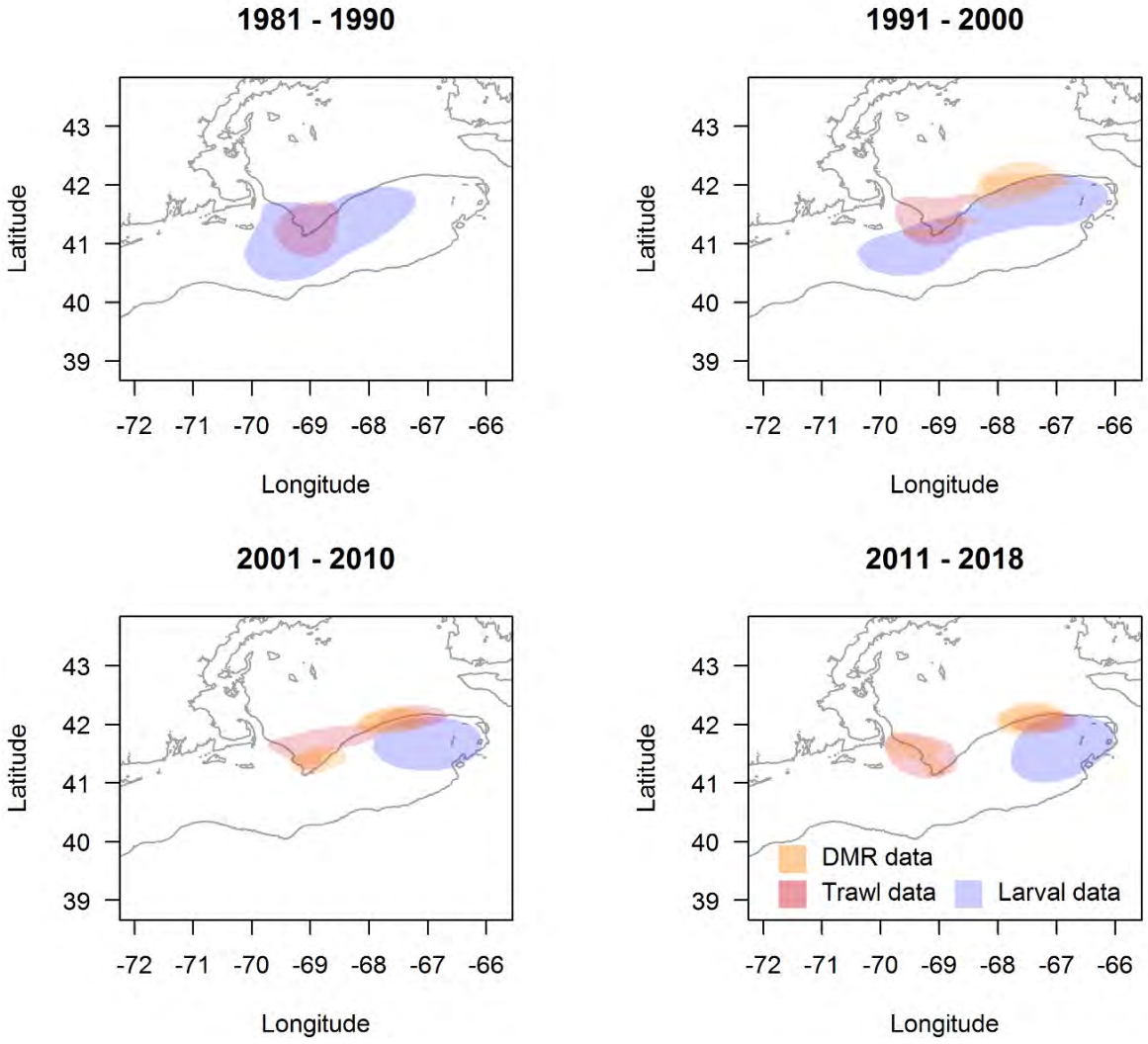

Figure 3.4. Overlap areas of spawning between different data sources by decade.

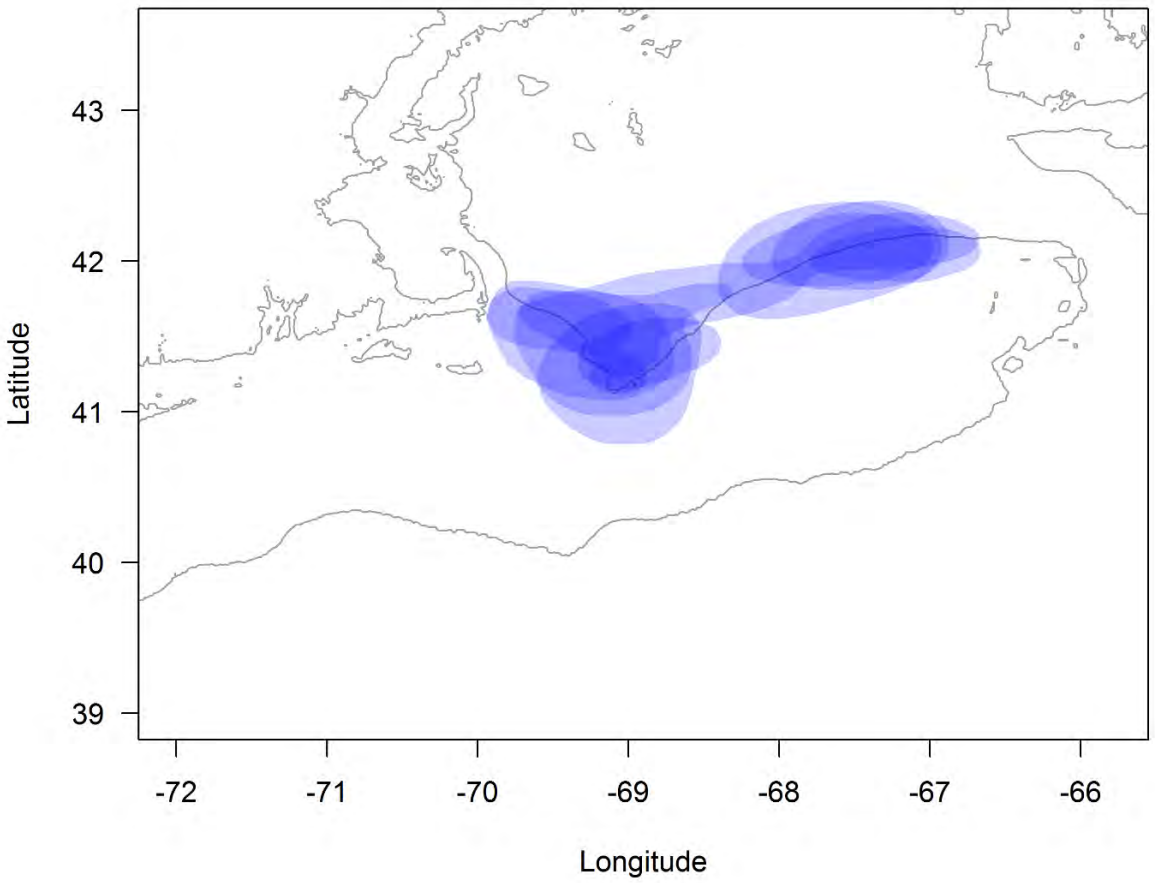

Figure 3.5. Overlap areas for maturity stage R+U herring from both DMR and trawl survey data sets for multiple decades (see figure 3.3).

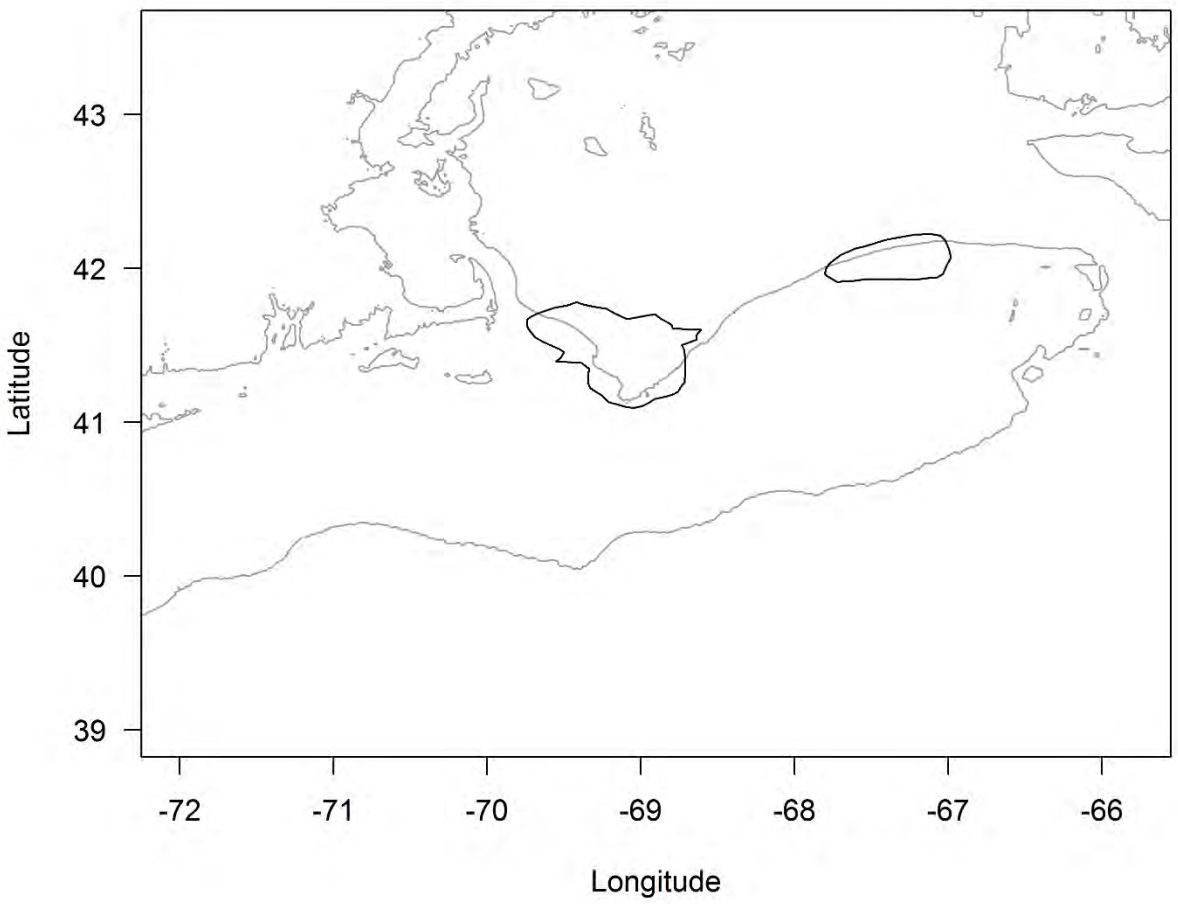

Figure 3.6. Consensus areas from figure 3.3 where 4 or more overlaps occurred between different data decades and data sources (DMR and trawl survey data).

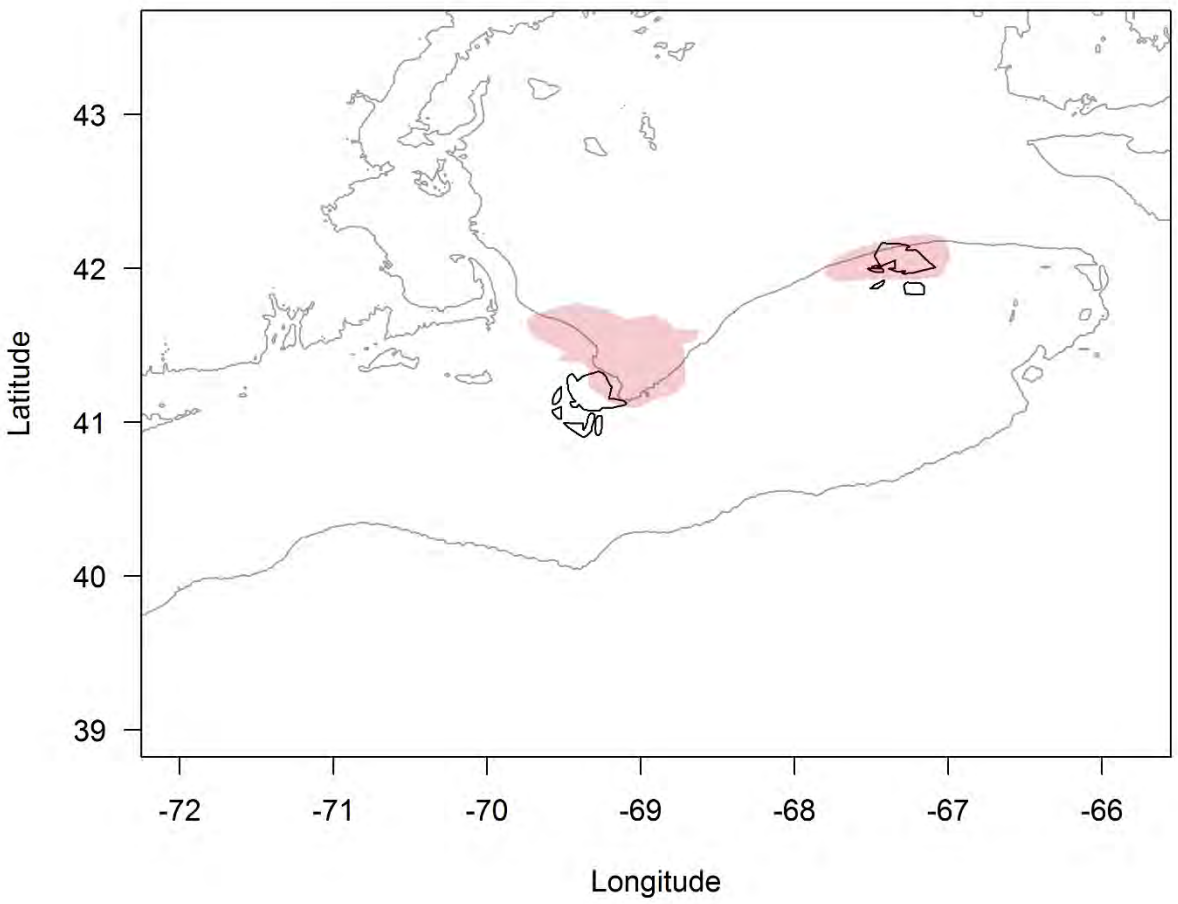

Figure 3.7. Comparison between consensus areas using all data sources (areas with black borders) and those from multiple decades using mature fish (mat stage R+U) only (red shaded areas).

4. Fishing Effort

Consensus spawning areas were compared to maps of fishing effort. The DMR dockside monitoring database was used as a first layer since this approximates fishing effort in space. Figure 4.1 shows the 2-D kernel density estimates of sample locations from the whole DMR dataset. Fishing effort was concentrated along the northern edge of Georges Bank with high densities seen near the Northern Flank which overlapped partially with an area of high spawning activity. Another area of high sample density was seen to the east of the Great South Channel and did not overlap with the area of high spawning activity in that region. Figure 4.2. shows effort variation among decades from the DMR data. In every decade, there was some overlap

with the spawning area at the Northern Flank and little to no overlap with the spawning area near the Great South Channel.

Effort data was also provided in the form of raster layers of herring fishing revenue for the years 2007-2017 (Benjamin et al 2018). A similar picture emerged from this data. Particularly, fishing effort was concentrated along the northern edge of Georges Bank and overlapped somewhat with the spawning area on the Northern Flank (Figure 4.3). Figure 4.4. shows how effort varies among sets of years. In the most recent years (2016/2017), herring revenue was concentrated near the Northern Flank spawning area and less spread out along the edge as in previous years.

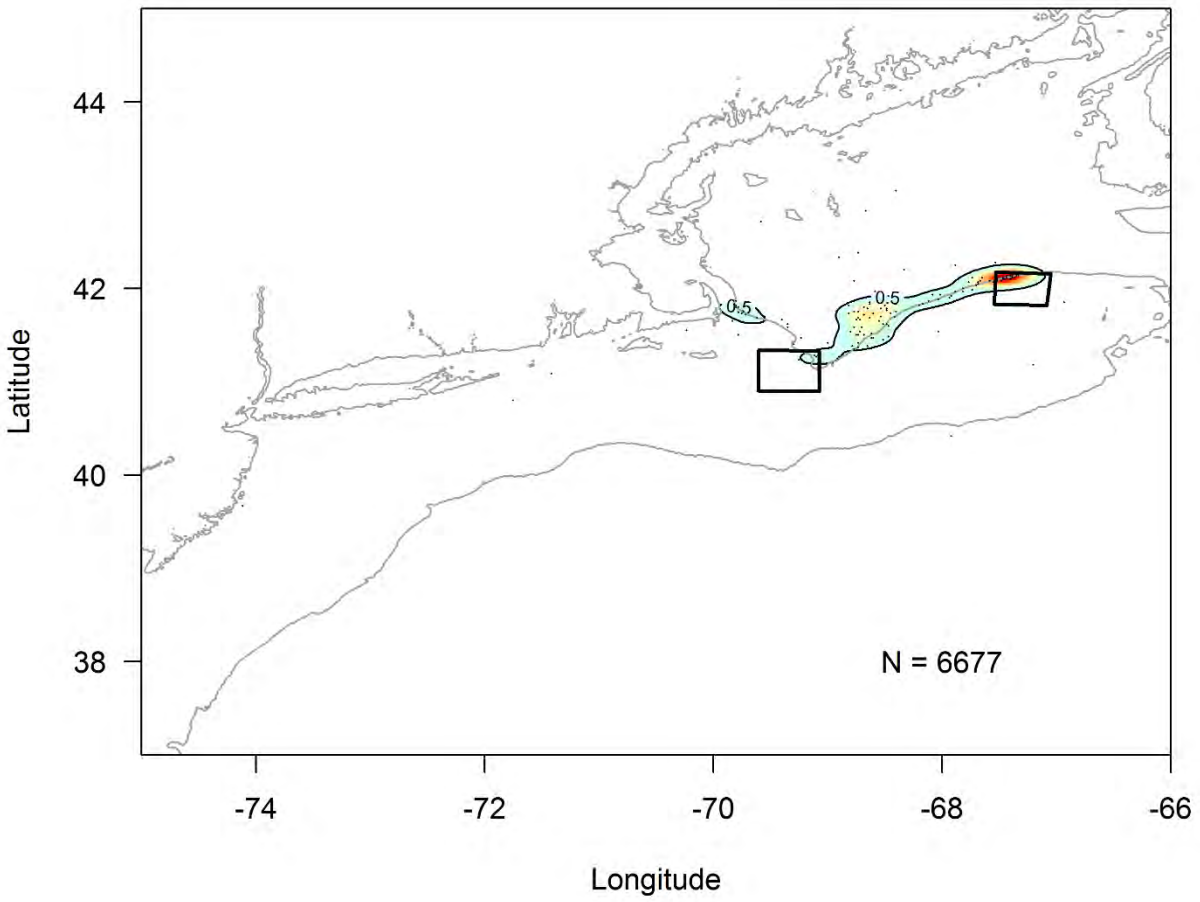

Figure 4.1. 2-dimensional kernel density estimates of fishing effort during spawning season (September and October; see figure 2.3.1) for all years from DMR dockside monitoring (i.e., location of industry samples). Total sample size is shown. Boxes enclose consensus spawning areas from figure 3.3.

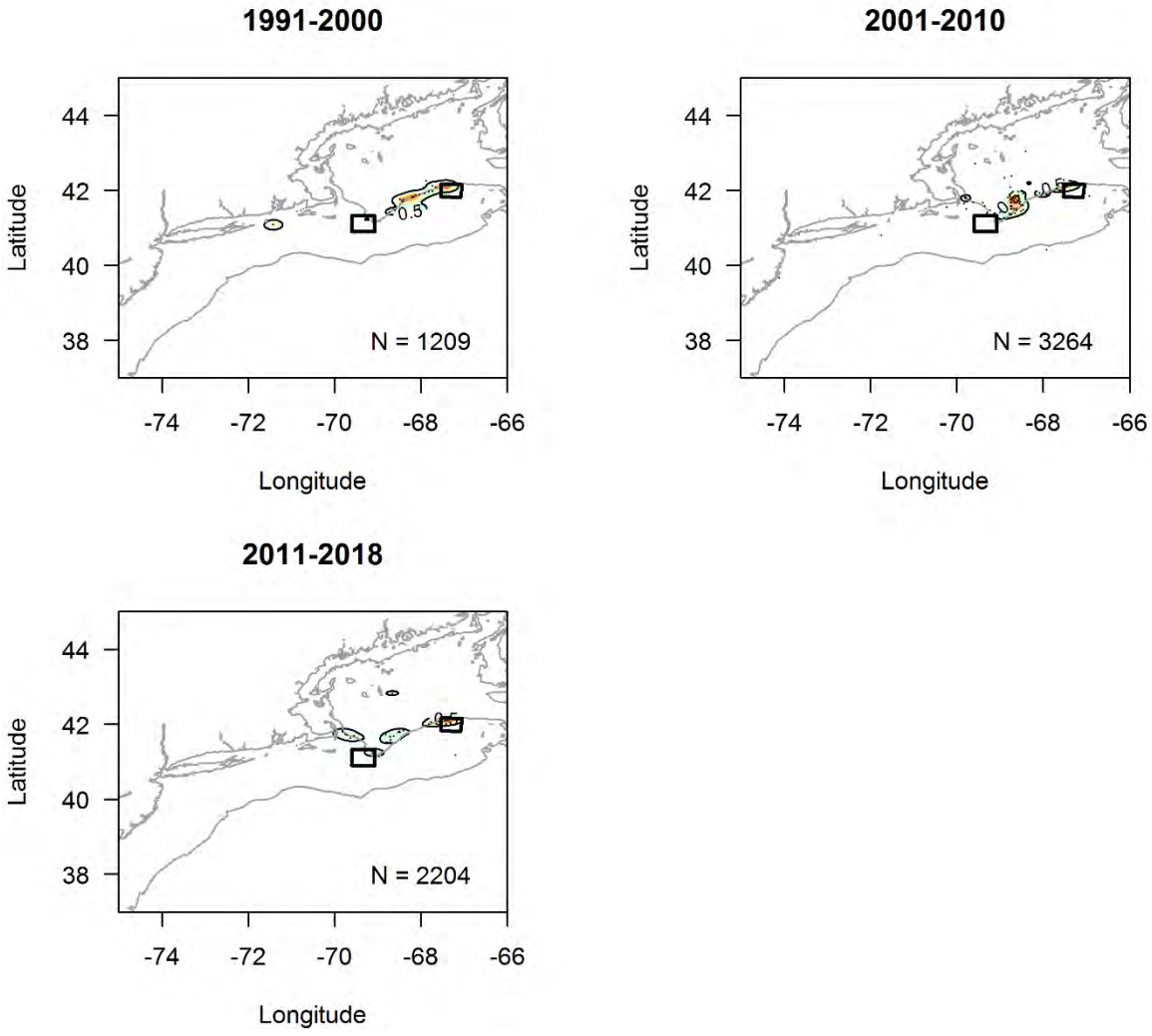

Figure 4.2. 2-dimensional kernel density estimates of fishing effort during spawning season (September and October; see figure 2.3.1) by decade from DMR dockside monitoring (i.e., location of industry samples). Sample sizes are shown. Boxes enclose consensus spawning areas from figure 3.3.

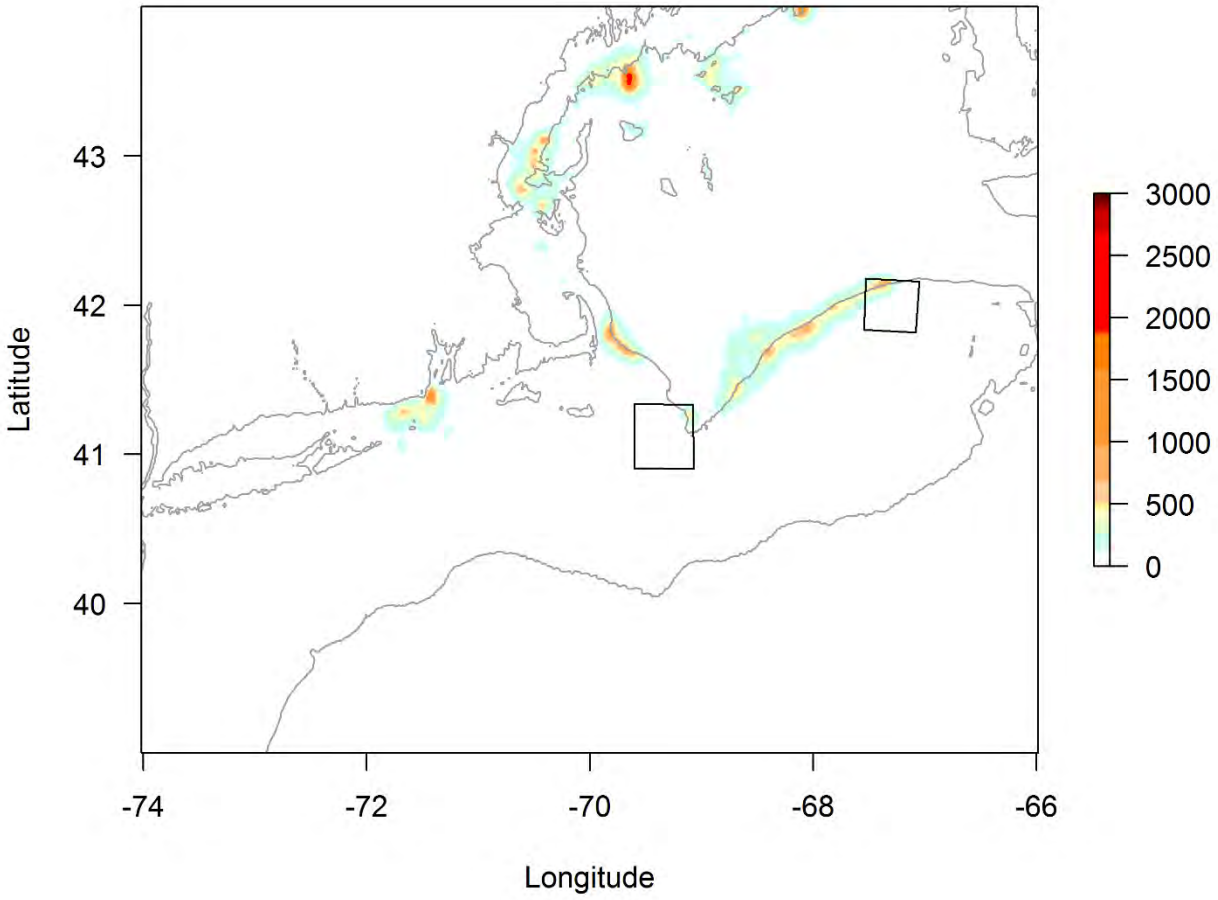

Figure 4.3. Fishing effort as herring revenue ($/0.25km2) for the period 2007-2017. Data from Benjamin et al (2018). Boxes enclose consensus spawning areas from figure 3.3.

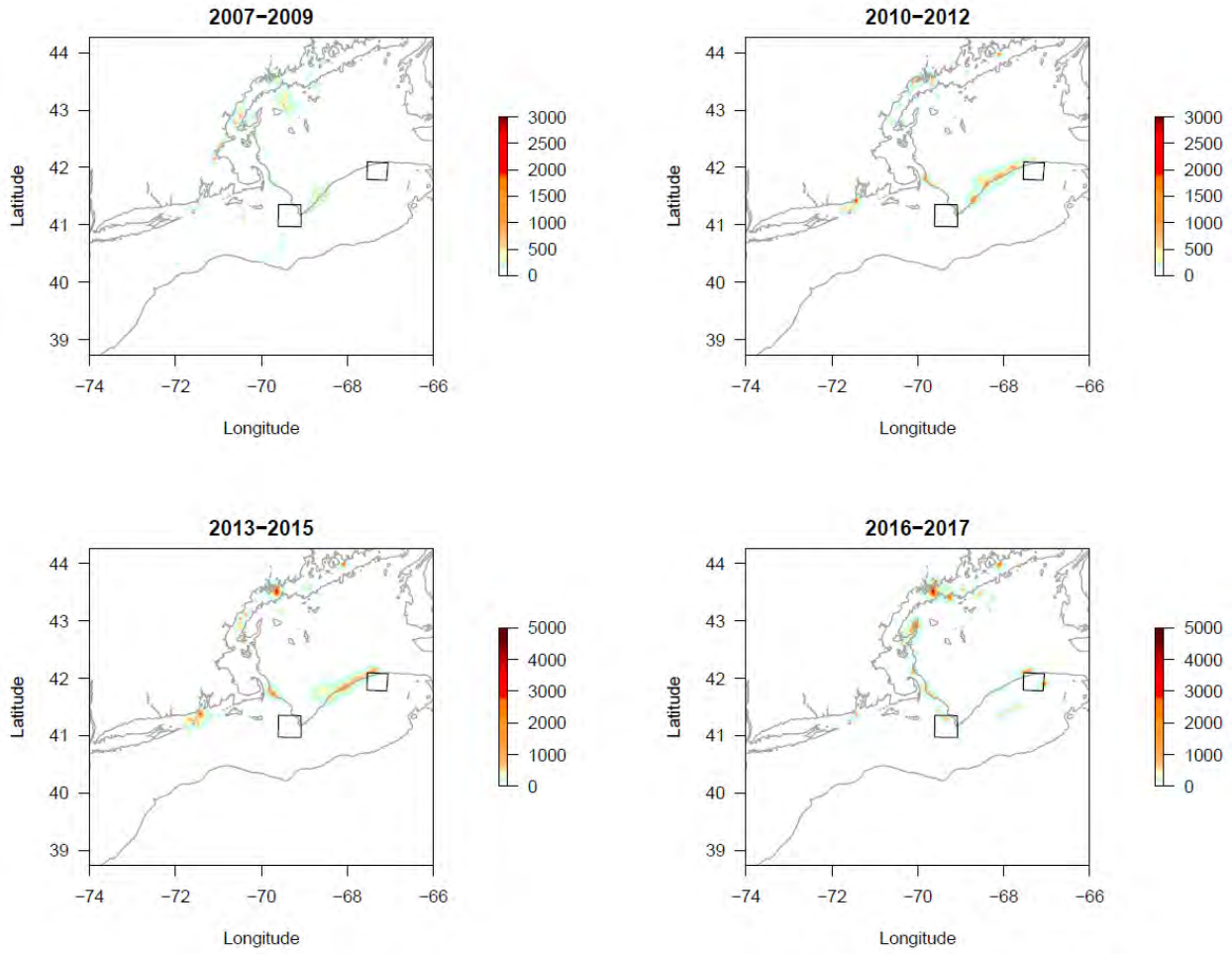

Figure 4.4. Fishing effort as herring revenue ($/0.25km2) for 4 3-year periods from 2007-2017. Data from Benjamin et al (2018). Boxes enclose consensus spawning areas from figure 3.3.

4. Research Recommendations

The following research recommendations were developed by the Herring PDT during review of this draft report. The Herring PDT includes all the members of the ASMFC Atlantic Herring Technical Committee. These recommendations are provided in this document as input on any future research that may be developed in the region on this topic.

Overall PDT input: Overall, the easiest and most cost effective approach is likely enhancing portside sampling efforts, followed by potentially enhancing collection of spawning data by at-sea observers and ASM. A fishery independent survey would be costly, and would take five or so years to complete; however, it would provide data from the entire area and season, not just where and when the fishery operates. Finally, it is important to note that the herring stock is currently at low abundance; therefore, research conducted now may not be representative of spawning behavior when herring biomass is larger.

1. Enhance portside sampling efforts

There is currently portside sampling occurring throughout the fishery, including herring trips from Georges Bank. However, the total number of trips from that region is much lower than the GOM for a variety of reasons, e.g. seasonality of the fishery, increased costs to fish offshore, sampling efforts are more concentrated in Maine and Massachusetts, etc. Therefore, while the current system is capable of sampling trips from GB, the current level is insufficient to track spawning activity on GB. The current portside sampling provides some information on seasonality of spawning on Georges Bank, but given how much this can change annually (approx. 5-6 weeks), there is a need for dedicated processing of portside samples over multiple years. An enhanced program could be designed to specifically target trips from GB during the spawning season. More resources could be used to increase the number of future samples, targeting trips from GB as described above. If there are any samples that have not been processed those should be prioritized first, and then efforts to increase the number of samples from trips on GB.

2. Develop a new spawning survey of Atlantic herring on GB

A fishery independent sampling of herring and spawning condition on GB would be useful, but may be cost prohibitive, i.e. $200,000 a year or more. Specific stations and seasons would need to be identified in advance, and could be sampled using fishing gear, survey gear, and/or acoustics. The overall design could be similar to the acoustic survey previously conducted by NEFSC on GB. The survey should probably span about five years to capture annual variability, with multiple stations targeting herring during spawning season across the area including places the fishery does not operate. While somewhat dated and limited, there is previous research and published literature on this topic that will hopefully be part of the NEFMC discussion document. Due to the relatively large expense of this approach, it may be prudent to fully evaluate past literature and research first, and then identify any knowledge gaps specific to management needs before a large spawning survey is funded.

3. Examine the feasibility of collecting spawning data at-sea by observers and ASMs, and on land by portside samplers

The Fisheries Sampling Branch (FSB) could examine the possibility of collecting spawning data at sea on observed trips (NEFOP and ASM) if conditions allow. If it is feasible to collect these data at sea then new data fields could potentially be added or even a separate data collection sheet (e.g. total weight of fish, gonad weight, and spawning condition). Information like this could provide complementary spawning data, at a superior spatial scale (tow by tow vs averaging location in stat area), to what is being collected through portside sampling efforts. It's understood that adding fields would likely slow down the work of observers, and may require some post processing of fish samples taken at sea. It could cost more to have portside samplers do this work dockside, so it may even be possible for portside samplers to send NEFOP samples that could be worked up by NMFS at a later time instead.

The federal Atlantic herring fishery (midwater trawl) portside sampling program is scheduled to begin in April 2020. The collection of spawning data is not currently part of that sample design

and was not included in draft regulations. Therefore, there would be additional costs and details that would need to be considered. The federal portside program may be a potential source of spawning data from landed catch in the future, but many details would need to be considered first.

5. References

To be completed

New England Fishery Management Council

FOR IMMEDIATE RELEASE
June 11, 2019

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Atlantic Herring: Council Approves Framework 6 Containing 2019-2021 Specifications and Revised Overfishing Definition

The New England Fishery Management Council has approved Framework Adjustment 6 to the Atlantic Herring Fishery Management Plan (FMP), which contains 2019-2021 specifications for the fishery and a new overfishing definition for herring that is more consistent with the 2018 benchmark stock assessment.

The Council took several steps during its April meeting that helped guide the development of Framework 6. Here at its June meeting in So. Portland, ME, the Council made three additional decisions to complete the package:

- **Overfishing Limit (OFL) and Acceptable Biological Catch (ABC):** The Council voted to set OFL and ABC based on the ABC control rule that's proposed in Amendment 8 to the Atlantic Herring FMP while using the original projections made by its Scientific and Statistical Committee. This was referred to as "Alternative 2 Original" in the draft framework.
- **Management Uncertainty Buffer:** The buffer is the difference between ABC and the Annual Catch Limit (ACL) and is factored into specifications to help ensure that the ABC is not exceeded primarily due to Canadian catch in the New Brunswick weir fishery. Management uncertainty previously was set at 6,200 metric tons (mt). This time, the Council supported using a 10-year average of Canadian catches, which resulted in an uncertainty buffer of 4,560 mt.

2019-2021 Atlantic Herring Specifications
(in Metric Tons)

Specification	2019	2020	2021
Overfishing Limit (OFL)	30,668	41,830	69,064
Acceptable Biological Catch (ABC)	21,266	16,131	16,131
Management Uncertainty	6,200	4,560	4,560
Optimum Yield / Annual Catch Limit (OY/ACL)	15,065*	11,571*	11,571*
Domestic Annual Harvest	15,065	11,571	11,571
Border Transfer	0	100	100
Domestic Annual Processing	15,065	11,471	11,471
U.S. At-Sea Processing	0	0	0
Area 1A Sub-ACL (28.9%)	4,354	3,344	3,344
Area 1B Sub-ACL (4.3%)	647	498	498
Area 2 Sub-ACL (27.8%)	4,188	3,217	3,217
Area 3 Sub-ACL (39%)	5,876	4,513	4,513
Fixed Gear Set-Aside	39	30	30
Research Set-Aside as % of Sub-ACLs	3%	3%	3%

* If the New Brunswick weir fishery catch through October 1 is less than the associated "trigger," then 1,000 mt of the management uncertainty buffer will be added to the Area 1A sub-ACL.

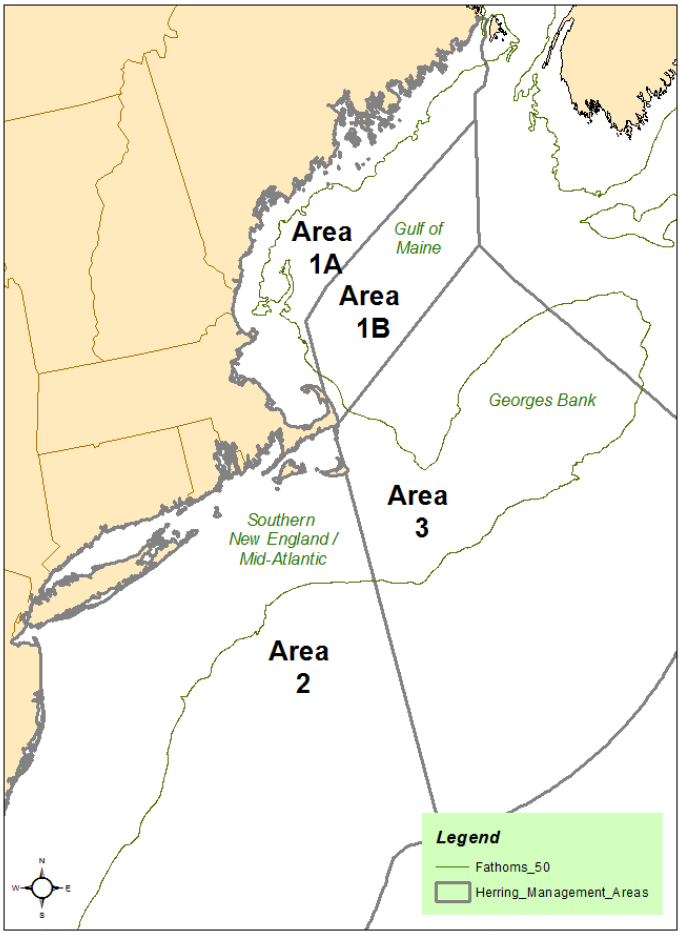
New England Fishery Management Council

If the New Brunswick weir catch through October 1 is less than the 4,000-mt trigger in 2019 or the 2,942-mt trigger in 2020 and 2021, then 1,000 mt will be subtracted from the buffer and added to Area 1A.

- **Border Transfer:** This specification applies to fish caught in Area 1A by U.S. fishermen that is transferred to Canada via a Canadian carrier. The fish must be used for human consumption. Until 2019, the border transfer allocation was set at 4,000 mt annually. In 2019, however, it was zero. For 2020 and 2021, the Council voted to set it at 100 mt. The specification has not been utilized in recent years.

Once the Council made these decisions, the specific management area sub-ACLs could be determined because catch limits all flow down from the ABC. The Council kept the same spatial percentage splits for the available quota: Area 1A – 28.9%; Area 1B – 4.3%; Area 2 – 27.8%; and Area 3 – 39%. The resulting catch limits are show in the table on page 1. The Council also kept the same Area 1 seasonal splits:

- Area 1A January through May – 0%
- Area 1A June through December – 100%
- Area 1B January through April – 0%
- Area 1B May through December – 100%



Atlantic Herring Management Areas 1A, 1B, 2, and 3. – NEFMC graphic

Important Factors to Remember

- The Council approved Framework 6 for submission to the National Marine Fisheries Service (NMFS/NOAA Fisheries). The agency still needs to review and approve the framework before implementing it.
- The target implementation date is January 1, 2020, the start of the new fishing year for Atlantic herring.
- 2019 specifications already are in place through a NMFS in-season adjustment. These catch limits have been folded into Framework 6.
- The framework contains catch limits for both the 2020 and 2021 fishing years. However, the 2021 specifications likely will be revisited following a new stock assessment that is scheduled to take place in 2020.
- Although provisions are in place to allow for the carryover of unharvested catch from one year to the next by up to 10% of an area's sub-ACL, the Council voted to "temporarily prohibit carryovers" for 2020 and 2021 given the current condition of the resource, which is resulting in the low quotas.

A copy of the summary report from the 2018 stock assessment for Atlantic herring is available HERE

New England Fishery Management Council

NEW REFERENCE POINTS

The Council approved the following updated overfishing definition as part of Framework Adjustment 6 to the Atlantic Herring FMP.

- *The stock will be considered **overfished** if stock biomass is less than 1/2 the stock biomass associated with the maximum sustainable yield (MSY) level or a proxy (e.g., SSB_{MSY} or $SSB_{MSY\ proxy}$). SSB is spawning stock biomass.*
- *The stock will be considered **subject to overfishing** if the estimated fishing mortality rate exceeds the fishing mortality rate associated with the MSY level or a proxy (e.g., F_{MSY} or $F_{MSY\ proxy}$).*

The Council maintained the current 2019 river herring and shad catch caps for 2020 and 2021 in Framework 6. Here are the allocations.

River Herring/Shad Catch Caps	Allocation in Metric Tons
Midwater Trawl Gulf of Maine	76.7 mt
Midwater Trawl Cape Cod	32.4 mt
Midwater Trawl Southern New England and Mid-Atlantic	129.6 mt
Bottom Trawl Southern New England and Mid-Atlantic	122.3 mt

The Council also discussed two other herring-related issues: (1) the Management Strategy Evaluation (MSE) process it used to develop the Amendment 8 control rule; and (2) a discussion document on Atlantic herring spawning on Georges Bank.

1. The Council is conducting a debriefing on the MSE process to identify perceptions, pros and cons, and lessons learned to help inform the Council about the potential use of MSE in other applications and whether or not it should be used again for herring. The debriefing will focus on collecting input from Council members and MSE participants, as well as summarizing how the process worked in other areas.
2. The Council has issued a contract to the Gulf of Maine Research Institute (GMRI) to review the literature and summarize previous discussions and data related to herring spawning activity on Georges Bank. A report will be presented to the Council in September. GMRI's Dr. Graham Sherwood is leading this effort. Anyone with related information should contact him at (207) 228-1644, gsherwood@gmri.org.

Questions? Contact Deirdre Boelke, the Council's Atlantic herring plan coordinator, at (978) 465-0492, ext. 105, email dboelke@nefmc.org.

- All herring documents and the presentation used during this meeting are available at Council meets June 11-13, 2019 in So. Portland, ME.

Atlantic herring. – School for Marine Science and Technology (SMAST) photo

Atlantic States Marine Fisheries Commission

American Lobster Management Board

October 28, 2019
9:45 – 10:30 a.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(S. Train)*	9:45 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from April 2019	9:45 a.m.
3.	Public Comment	9:50 a.m.
4.	Discuss Reporting Requirements for 2020 *(C. Starks)*	9:55 a.m.
5.	Update on Resiliency in the Gulf of Maine (Addendum XVII) *(C. Starks)*	10:10 a.m.
6.	Progress Update on 2020 American Lobster Benchmark Stock Assessment *(J. Kipp)*	10:25 a.m.
7.	Other Business/Adjourn	10:30 a.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

American Lobster Management Board Meeting
October 28, 2019
9:45 – 10:30 a.m.
New Castle, New Hampshire

Chair: Stephen Train (ME) Assumed Chairmanship: 02/18	Technical Committee Chair: Kathleen Reardon (ME)	Law Enforcement Committee Representative: Rob Beal
Vice Chair: Dan McKiernan (MA)	Advisory Panel Chair: Grant Moore (MA)	Previous Board Meeting: April 29, 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NMFS, NEFMC (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from April 29, 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Discuss Reporting Requirements for 2020 (9:55-10:10 a.m.)

Background

- Addenda XXVI (AL) and III (JC) addresses deficiencies in the harvester reporting and biological data collection requirements for the lobster and Jonah crab fisheries. Specifically, it improves the spatial resolution of data by requiring reporting via 10 minute squares.
- The Addenda require additional data elements including number of traps per trawl and number of buoy lines in order to collect information on gear configurations.
- The new data elements were to be implemented on January 1, 2019, but were delayed 1 year in order to incorporate the elements into all reporting platforms.
- The majority of the elements have been added to all reporting platforms except two (10 minute squares and number of buoy lines) (**Supplemental Materials**).

Presentations

- Implementation of Addenda XXVI and III reporting requirements by C. Starks

Board Actions for Consideration at the Meeting

- Delay the implementation of 10 minute squares and number of buoy lines until January 1, 2021.

5. Update on Resiliency in the Gulf of Maine (Addendum XXVII) (10:10-10:25 a.m.)

Background

- In August 2017 the Board initiated Draft Addendum XXVII to increase the resiliency of the GOM/GBK stock. The Draft Addendum was intended to consider, to the extent possible, the development of consistent management measures for the GOM/GBK stock, including gauge size and v-notch definitions.
- Due to higher prioritization of actions in response to the Atlantic Large Whale Take Reduction Team (ALWTRT) recommendations, development of this addendum has not continued. If desired, the Board may provide direction on the current priority level and timing of Draft Addendum XXVII.

Presentations

- Update on Draft Addendum XXVII by C. Starks

Board Actions for Consideration at the Meeting

- Evaluate prioritization and timeline for Draft Addendum XXVII

6. Progress Update on 2020 American Lobster Benchmark Stock Assessment (10:25-10:30 a.m.)

Background

- Work on the 2020 American Lobster Benchmark Stock Assessment began last year. The completion date was delayed to October 2020.
- A Data Workshop was held in May 2018, and the first Assessment Workshop was held in New Bedford, MA in January 2019.
- A workshop specifically focused on reference points will be held October 16-17, 2019 in Woods Hole, MA. The second Assessment Workshop is tentatively scheduled for February 2020.

Presentations

- Stock assessment update by J. Kipp

7. Other Business/Adjourn

American Lobster and Jonah Crab TC Task List

Activity level: High

Committee Overlap Score: Low

Committee Task List

Lobster TC
• 2020 Benchmark Stock Assessment
  • Assessment Workshop – February 2020
  • Review draft assessment report – May/June 2020
• Annual state compliance reports are due August 1
Jonah Crab TC
• Annual state compliance reports are due August 1

TC Members
American Lobster: Kathleen Reardon (ME, TC Chair), Joshua Carloni (NH), Chad Power (NJ), Colleen Giannini (CT), Jeff Kipp (ASMFC), Kim McKown (NY), Conor McManus (RI), Tracy Pugh (MA), Burton Shank (NOAA), Craig Weedon (MD), Somers Smott (VA)
Jonah Crab: Derek Perry (MA, TC Chair), Joshua Carloni (NH), Chad Power (NJ), Jeff Kipp (ASMFC), Conor McManus (RI), Allison Murphy (NOAA), Kathleen Reardon (ME), Burton Shank (NOAA), Somers Smott (VA), Craig Weedon (MD)

SAS Members
American Lobster: Kim McKown (NY, SAS Chair), Joshua Carloni (NH), Jeff Kipp (ASMFC), Conor McManus (RI), Tracy Pugh (MA), Kathleen Reardon (ME), Burton Shank (NOAA)
Jonah Crab: None

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

AMERICAN LOBSTER MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
April 29, 2019

These minutes are draft and subject to approval by the American Lobster Management Board.
The Board will review the minutes during its next meeting.

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INDEX OF MOTIONS

ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Steve Train, ME (GA)
Sen. David Miramant, ME (LA)
Rep. Jay McCreight, ME, Legislative proxy
Douglas Grout, NH (AA)
G. Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Dan McKiernan, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Rep. Sarah Peake, MA (LA)
Jay McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Sen. Craig Miner, CT (LA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NY (GA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Mike Luisi, MD, proxy for D. Blazer (AA)
Pat Geer, VA, proxy for S. Bowman (AA)
Peter Burns, NMFS
Allison Murphy, NMFS
Terry Stockwell, NEFMC

AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Jessica Kuesel
Caitlin Starks

Guests

Colleen Coogan, NMFS
Jane Davenport, Defenders of Wildlife
Justin Davis, CT DEEP
Heather Corbett, NJ DFW
Earl Gwin, Ocean City, MD
Arnold Leo, E. Hampton, NY
Chip Lynch, NOAA
Patrice McCarron, MLA
Katie Moore, USCG
Purcie Bennett-Nickerson, PEW Trusts
Michael Pentony, NFMS
Sam Rauch, NOAA
Mike Ruccio, NMFS
Ariana Spawn, Oceana
Jack Travelstead, CCA

The American Lobster Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Monday, April 29, 2019, and was called to order at 1:00 o'clock p.m. by Chairman Stephen Train.

CALL TO ORDER

CHAIRMAN STEPHEN TRAIN: I want to thank everybody for attending the spring meeting of the Atlantic States Marine Fisheries Commission. Our first meeting this year is the American Lobster Management Board. I'm your Chair, Stephen Train, and I'll call this meeting to order. We have one item that is not so much business as etiquette, before we get started. Pat Keliher, you would like to introduce somebody.

MR. PATRICK C. KELIHER: I am pleased to announce that the state of Maine Legislative leadership has appointed Senator David Miramant as the Legislative Appointee from the state of Maine to the Atlantic States Marine Fisheries Commission. Just to clarify for the record, Mr. Chairman that a letter was sent from leadership.

It used the wrong terminology, but the ongoing proxy was also named, and that is Representative Joyce McCreight who is here today, who came down to ensure that they both had an opportunity to see how the process works and to meet everybody. Very pleased to have them here today.

CHAIRMAN TRAIN: Welcome Senator Miramant, and Representative McCreight would you mind standing, so we can see who you are? Thank you very much.

APPROVAL OF AGENDA

CHAIRMAN TRAIN: With that out of the way, everybody received the paperwork electronically, unless you're on that special list where you want them by paper. Do we have approval? Is there any disapproval, can we have consensus for the agenda? Seeing no one against it, we'll approve the agenda as by consensus.

APPROVAL OF PROCEEDINGS

CHAIRMAN TRAIN: Everybody had the proceedings from the previous meetings; are there any additions, deletions, or corrections? Please raise your hand. Seeing none, I can assume that the proceedings can be approved by consensus. Seeing no hands, consider them approved.

PUBLIC COMMENT

CHAIRMAN TRAIN: Now is our time for public comment. Public comment is for things not on the agenda. I have a list currently of four people. First on the list is Jane Davenport.

MS. JANE DAVENPORT: Good afternoon, Jane Davenport, Defenders of Wildlife. Procedurally, may I just clarify that as per the agenda it says that items that have not yet gone out for public comment but are on the agenda may receive brief public comment?

MS. TONI KERNS: Jane, if it's pertaining to issues that are on the agenda, the Board Chairman can take public comment on that at that time. Then it is more relevant to the discussion that the Board is having. If you tell us which agenda item your public comment is relevant to, we will make sure we call on you during that time.

MS. DAVENPORT: That would be great; it would be relevant to the update on the Atlantic Large Whale Take Reduction Team.

MS. KERNS: All right, will do, thanks Jane.

CHAIRMAN TRAIN: Katie Moore.

MS. KATIE MOORE: Thank you, Katie Moore, U.S. Coastguard, Atlantic area. I wanted to say thank you for your efforts for the Atlantic Large Whale Take Reduction Plan enforcement, specifically offshore, and I'll reserve my

comments during the meeting. Thank you so much.

UPDATE ON THE ATLANTIC LARGE WHALE TAKE REDUCTION TEAM SPRING MEETING AND RECOMMENDATIONS TO NOAA FISHERIES

CHAIRMAN TRAIN: Ariana, I think it is Spawn, and Patrice McCarron. I hope everything goes this easily. Okay, Agenda Item 4, Update on the Atlantic Large Whale Take Reduction Team Spring Meeting and Recommendations to NOAA Fisheries. Colleen will be giving us that.

MS. COLLEEN COOGAN: Good afternoon everyone. I was about to say morning, it feels like morning to me. I want to start by saying thanks to the states that had representatives at our meeting last week. People really brought their A game to the meeting, worked really hard, and worked really hard with your industry representatives on the team, who also were really excellent representatives for their stakeholders. I do appreciate that. My name again is Colleen Coogan; I'm the Large Whale Take Reduction Team Coordinator.

My contact information is on this slide, in case you need to get in touch with me with any questions about the presentation or the Take Reduction Team process in general. As many of you know, the purpose of the Take Reduction Team meetings always is to ensure that we can achieve the potential biological removal level allowed by the Marine Mammal Protection Act, which for North Atlantic Right Whales are 0.9 right whales per year, so less than one right whale mortality or serious injury a year.

For the meeting last week we really focused on discussing risk reduction measures. There are a lot of other things on the table still that we'll resolve post meeting, but we wanted to get recommendations from the team regarding those measures that will actually reduce the risk of mortality and serious injury to right whales from, particularly fixed gear fisheries.

The goal that we provided to the team was a 60 to 80 percent reduction in mortalities and serious injuries. In order to help us get to that goal, we also did work with the Northeast Fisheries Science Center, who particularly thanks to Burton Shank developed a Relative Risk Reduction Decision Support Tool.

This was something that was really identified as needed during our October meeting where we had a number of proposals at the table, and it was very hard for Take Reduction Team members to choose which measures to put forward, because they couldn't tell how much risk reduction each element would provide, and how many would be needed to get us to our risk reduction goal. The Risk Reduction Decision Support Tool, if you want to really fully find out about it, there is a link on our Take Reduction Team webpage that gets to our presentation. There is an actual recording of the presentation on it, to get the full presentation of the tool. But essentially, it identifies the current risk landscape with a relatively simple formula of whale density times gear density, times relative risk of gear configurations, identifies the risk landscape.

Against that landscape we looked at risk reduction measures and applied them in the areas as proposed by the team. There were modelers at the meeting, and they actually modeled alternatives as they came up, or risk reduction elements as they came up. I did not provide this to you to go through the model runs. I just wanted you to have in your package the model runs, if you want to look at some of the initial ones, the kind of runs that were done. These were done periodically through the meeting.

The example I provided that would be in the presentation is an example midway through the meeting of some of the runs requested by some of the caucus and cross-caucus groups. We periodically during our meeting got into caucus groups, and then broke those out and had

mixed facilitated meetings as well, to try and drive the whole group towards consensus.

Again, a couple pages of scenario runs just for your entertainment. Most of these will be on the TRT site when I have time to get back to my office and get them up on the website. Where did we end up? By the end of the week, by Friday, we did get a near consensus vote on a package of recommendations. All but one person at the table did agree to move this package forward.

Our rough estimate right now, not having done a full analysis yet obviously, is that the package will get us, at least for the lobster fishery, which is the majority of gear in the areas where whales are vulnerable is about a 45 percent line reduction, and about 25 percent replacement of current line with weak rope, or at least 25 percent of the remaining line will be weak rope.

The idea that brought it to consensus was each state, or jurisdiction or lobster management area, we identified risk reduction measures that the Decision Support Tool suggested would get us to 60 percent risk reduction for each of those areas. The goal ultimately will be to have perhaps a menu of ways to get there, particularly for the weak rope.

We'll have weak rope equivalence identified, such as there is a whole rope that's weak, or there are sleeves that can be put in the rope and weaken the rope. There are some considerations that were also on the near consensus document. Dwight Carver from Maine, specifically asked that we include safe exemptions, which I think it's an important component, particularly for skiffs and students.

Some of the line reduction measures might be trawling up to three or four pots, rather than one pot per line that might get difficult for some of the students that are operating out of skiffs. Right now we have weak links near our buoys, and we're not sure how much risk reduction that's providing, so we were asked to revisit the weak links that are in the existing measures.

The model itself, a number of improvements are recommended for doing any actual analysis particularly. Right now the severity estimates we have in there are from a poll done with team members, and gear experts and disentanglers. There is a request that we either re-poll, and/or go to the literature where we can find risk reduction measures in the literature, provide that in our severity estimates in place of the current measures. There was some feeling among the academics that we were underestimating the risk reduction we would get from some of the weak rope measures in place.

Some of the academics suggested that although the measures would get us to our lower end of the goal, 60 percent, they believed it would actually provide additional risk reduction, beyond what we were identifying. There was also a strong opinion, or some strong support, for the fact that we need to make sure that we have a good monitoring plan in place, not just monitoring the line reductions and the implementation of the weak ropes, but also continuing or improving on a monitoring of where the whales are, and how many there are.

Then also, wish that we would really track the evolution of implementation, including any new gear options that present themselves while this is being done, as well as to determine whether or not there are socioeconomic impacts that might not be what we will be modeling, or identifying in our NEPA documents.

We do have plenty of next steps. This is more of an outline, not the actual implementation plan, obviously. I think that this provides us with some good marching orders that will require us to work really closely with the ASMFC and the states, to figure out how to actually implement it. More immediately even, we did not discuss gear marking, and some of the reporting and monitoring requirements that

were identified in, I think every proposal we received in October.

We do plan to do that and we did plan for that to be part of our next rulemaking. We will be holding webinars with the Team, and providing them an opportunity to vote on, and to also get consensus on those measures as well. We just didn't have those on the agenda last week, because we really wanted to focus on risk reduction measures.

We need to continue to discuss with LMA 3, and other federal waters outside of state waters, what our measures will be to reduce risk in those waters. As I indicate here, regrouping with ASMFC and state managers, and actually how to implement this. We did commit to really going to the ports and getting input from industry on what they're able to do.

This is particularly important to me regarding some of the weak rope, and the other measures that we'll be hoping to implement through rulemaking. Then we do expect this to get to our goal of PBR. We feel that this is a pretty strong target, or these measures identified are pretty strong. They do things like take line out of the water, which we think also applies to sub-lethal injury, which will be important when our folks back in GARFO are doing the Section 7 consultation.

But we also think that in June at the bilateral meeting with Canada, we've set a pretty high bar that they're going to have to also hit, due to the MMPA Import Rule by January 1, 2021. They're going to have to show that their measures provide similar protection to right whales throughout the range of right whales in Canada. While they currently have measures in the Gulf of St. Lawrence that appear to be reducing mortality and serious injury in the Gulf of St. Lawrence. You know we do hope to hear more from them about what they're doing outside that area, and for gear other than just snow crab gear. I think that's all I have to present.

CHAIRMAN TRAIN: Thank you, Colleen, and I for one appreciate the work of the Take Reduction Team. Are there questions for Colleen? Pat Keliher.

MR. KELIHER: Colleen, thank you for that presentation. Could you just clarify? I'm not sure if I heard it wrong, 25 percent of the line will be weak rope, or 75 percent of the line will be weak rope?

MS. COOGAN: Twenty-five percent of the line remaining will be weak rope, based on what we have on the table now. What we don't have on the table now is what will be happening in federal waters in LMA 3 particularly.

CHAIRMAN TRAIN: Are there any other questions? Go ahead, David Borden.

MR. DAVID V. BORDEN: Welcome, Colleen. I haven't seen you in a long time. My question is, on the other gear types that might be affected by this, because we've got most of the Mid-Atlantic States here, the leadership from those. Could you describe what fisheries might be involved in any type of rulemaking?

MS. COOGAN: We haven't extended the model to the full Atlantic coast, but do plan to. A lot of the gear in the Mid-Atlantic, such as blue crab gear, is already using weak rope. I am not sure how much of what is down there will require modifications. I'll have to look; I think it is black sea bass pots might be involved.

We haven't expanded that out further all of the proposals that were on the table in October really focus on the Gulf of Maine. Burton, who helped us create the Decision Support Tool, was working closely with the PDT, so he also focused on lobster. In our further efforts we'll be looking at what else we need to do, and that will be included in our scoping as well.

MS. KERNS: One follow up question to that just so the states are aware of what may or may not be happening. The Decision Support Tool didn't

include anything below the 40 degree line. But there is a portion of the Area 4 lobster fishery that is above the 40 degree line that did not get looked at during this TRT meeting. Should that state expect those fishermen to be evaluated during the same time that they look at gillnets and the other gear?

MS. COOGAN: It's a good question. Remember the risk reduction model; the support tool model is concentration of gear, concentration of whales and the level of risk. Because those areas don't have much gear, and I don't know that we have aggregations of whales in those areas. There are whales in the Mid-Atlantic year round, but we don't find them in aggregations most of the time.

I'm not sure that those will identify as areas that need a lot of modification, but it is something we'll probably be actually assessing within this rulemaking, because this rulemaking will be associated with trap pots. Next year is when we'll be looking at gillnets, and that is partly in association with entanglements of hump back whales as well. The dust has not yet settled on all of this, so pardon if some of my answers are.

CHAIRMAN TRAIN: You had a follow up, David?

MR. BORDEN: I can wait, I'll defer to Ritchie.

MR. G. RITCHIE WHITE: I didn't see any recommendations on law enforcement. Was there any discussion on law enforcement in federal waters and the potential need for a larger vessel?

MS. COOGAN: We did not have that conversation as a full-on TRT. There was some attention given to enforceability of some of the measures proposed, for instance we don't have LMA 3 measures pummeled out and on the table, but a commitment to do some research. A lot of the measures that were being identified had to do with weak rope or weak links, really within the scope, so within the top 500 feet, which hopefully would be somewhat enforceable. There was consideration of enforceability, but we did not have the conversation about enforcement and about getting a vessel.

CHAIRMAN TRAIN: Pat Keliher.

MR. KELIHER: Just to follow up to that. I think Colleen, the ASMFCs Law Enforcement Committee I think would be a really good Committee to kind of go in and dig into some of the details associated with line diameter, enforceability and breakaways. I know I've had some of that conversation with Marine Patrol at home. There are some complexities to that but I think it's doable. But related to that is also the upcoming webinar. Could you speak to the webinar that will have to be scheduled in regards to tracking?

MS. COOGAN: We really would like to piggyback on everything that ASMFC has done, related to vessel tracking systems, and not start from scratch certainly. Also, we understand that ACCSP is able to take in data once a system has been identified, which is one of the things I would have been concerned about for trying to implement something very quickly. I would be working closely with the folks who are doing the pilots, and with ASMFC.

Actually, possibly with you, Toni, to do that part of the presentation of the vessel tracking, because we haven't started on that initiative for the TRT. As far as gear marking goes, whether or not that will be one or two meetings it depends on how much is on the agenda. But gear marking we do have some ideas from the Gear Marking Workgroup that met prior to the TRT meeting.

At that meeting we actually do have some enforceability issues or preferences that were identified by New England Fishery Management Council, and I think your Law Enforcement Committee as well that we would be also

promoting. I hope to have calls on that within the next month.

CHAIRMAN TRAIN: David Borden, are you still deferring?

MR. BORDEN: I've got a couple of comments, Mr. Chairman, but if you're just taking questions.

CHAIRMAN TRAIN: Just taking questions, Ray Kane.

MR. RAYMOND W. KANE: Colleen, for those of us who tried listening in on the webinar. Were you comfortable with the way the materials were released to the public for the webinar? In the future can the materials be released in an earlier manner to the public, so when we do go on a webinar we actually have something to study?

MS. COOGAN: Would we have preferred to have it out earlier, definitely. Honestly, there was a strong preference for us to hold our meeting next week, because we knew we were going to need more time to fully cook a lot of the materials. But because we thought there was a good possibility that Massachusetts fishermen would be fishing next week, in the Mass Bay restricted area, which normally opens May 1, if the whales aren't hanging around.

We pushed to have our meeting two weeks ahead of where we were really comfortable, and I would do that again, because I really wanted fishermen at the table. But yes, we would prefer to have materials ready earlier. It is true that in the past when we had our co-occurrence model that also was presented for the first time at the Take Reduction Team meeting.

Our goal at this meeting was to have face-to-face time really be devoted to discussion, so we were trying to present analyses and tools a week ahead. Presenting a week ahead is actually a new thing that we were trying to do, where we were trying to get people the materials a week ahead of the actual face-to-face meeting, so we could maximize time with TRT members in conversations and caucuses and small breakout groups.

CHAIRMAN TRAIN: Okay, David Borden.

MR. BORDEN: Just for transparency, I am a member of the TRT, so I undoubtedly have some information that some others don't. It was an extraordinarily difficult meeting, and I mean that from the perspective of I think everybody who was there, particularly the NOAA staff. I would like to go on record on a positive side, by complementing the NOAA Center staff in particular for their willingness to try to come in and model activities, and predict what type of risk.

In my career, I've never seen a group of modelers put under the gun the way these guys were collectively put under the gun. I think we should be thankful now, having made that positive statement and been part of this process for quite a while. I'm horrified that we're doing business like this, because the model is very much a work in progress.

There are a lot of assumptions that went into the model that I think time will change some of those assumptions. In fact, Dr. Hare indicated that the model would not be, and correct me Colleen if I misspeak. The model will not be peer reviewed until after the first of the year, is that correct?

MS. COOGAN: I don't know if Dr. Hare is here, but they will put it on the list, and if they can move it up they will. I think generally, given the normal timing it would probably be around after the first of the year.

MR. BORDEN: What that means is we're using something that none of us have seen, it hasn't been peer reviewed, and to the extent that that changes it may change the results. I think there will be pressures from both sides on this issue

to move it in one direction or another. Colleen would like to correct something, or add to something.

MS. COOGAN: I don't really want to correct, but just to remind everyone. This is a Decision Support Tool, it's not a model, and it's not the full analysis. It was to help the team really envision that we needed to do a lot. The modelers I believe, although they realize that there are parts of it that will change, I don't think they anticipate that there will be huge changes in the outcomes. I mean because it's producing numbers it implies precision.

But, they were frequently reminding us that we shouldn't take it as precise. I thought it was very effective as a Decision Support Tool, to help the Team move towards decision making, which they did. But yes, it will be further tweaked, and will become an actual model that can be used for assessment purposes and improved over time.

MR. BORDEN: Okay the other comment I would make is just general observation that we had a few of our good neighbors to the north, and I mean that literally. At the meeting we're always fortunate when we have the Canadians at the same meetings. They have made kind of guarded comments, in my own view, as far as meeting the same objective.

One of the key aspects of this that I'm most uncomfortable with is this issue of apportioning the reductions 50 percent to the U.S. fishermen and 50 percent to the Canadian fishermen. The only reason I say that is prior to 2010, most of the interactions between fixed gear and right whales were by U.S. fishermen, and the dataset manifests that and supports that.

After 2010, if you look at the large line category, most of the interactions have been Canadian, and relatively few U.S. I'm very uncomfortable with that split. I think it needs to be examined some more. The other aspect that I'm uncomfortable with is the whole issue of how we deal with Canada.

Unless the Canadians take the required action, I'm not sure we will achieve our PVR target. Now there is a weighty force, the Import Ban on their products that would go into effect in 2021, and I think that will bring them to the table. But write down, just so everyone understands why I'm saying this.

Our two programs in my view are completely incompatible. We're forcing U.S. fishermen to use breakaways, weak lines, all these other rules and regulations. The Canadians are using floating line, and haven't implemented nearly as many of the restrictions that have been imposed on the U.S. industry. At some point these government to government discussions I hope, align these two systems, and if they don't then they should be compatible. It should be the goal. I think I will stop there with one other quick comment. The summary of the meeting I think would benefit from standardizing some of the language in it. You know if you look, and I won't point out, I can talk to you after the meeting. But if you look at the language under Maine, and then compare it to the language under Mass, some of the language is different, and it will cause confusion as people try to interpret it. If we standardize it, I think that would help. Thank you for coming down here.

CHAIRMAN TRAIN: We left Massachusetts almost 200 years ago. We're trying to be different. Pat Keliher.

MR. KELIHER: Two things. I just want to follow up on what David brought to the table in regards to Canada. I want to highlight the gray zone issues as it relates to Canada. If there are going to be further discussions with Canada, some consistencies with gear in those waters is really important.

Because if we move in the direction of a 50 percent reduction in that vertical end lines, those waters could actually just be replaced

with more gear from Canada, more end lines. It's all about holding the bottom at that point in time. I think that really needs to be part of the thinking from the Agency and with the state.

But just quickly calling on the timing of rule-making you brought up the Peer Review. Just so it's clear for the record, it's my understanding, and correct me if I'm wrong please that the Agency will be going through a regular rule making process here that's correct. Will the Peer Review potentially change any of that timing? I know it was described as being, or a little bit under the gun and want to get it started as soon as possible, potentially having a draft rule out very quickly. Do you see a Peer Review changing the timing here?

MS. COOGAN: I don't. I mean again, the dust hasn't settled yet. But I don't think that the Peer Review would change the timing. I mean that might be a reason they try and accelerate the Peer Review and move it up a queue, but there is a lot of best available data out there, and we'll have to use all of it in our analysis of the packet that we put together going forward. That tool will be one thing that we'll be using.

CHAIRMAN TRAIN: I have Terry Stockwell and then Dan McKiernan.

MR. TERRY STOCKWELL: Colleen, could you provide any more details on the timeline, related to the development of measures for the gillnet fisheries managed by the New England/Mid-Atlantic Councils?

MS. COOGAN: We anticipate, I mean nothing is set in stone, but we anticipate that humpback whales are likely to be identified as a strategic stock starting perhaps in the next SARs, stock assessment report. One of the areas where we're seeing mortality and serious injury is in gillnets.

We believe we'll be starting to look at humpbacks and gillnets over the next year, and bringing it up at the next TRT meeting, which can't be in April or May, so it will be probably early in the next calendar year. But TRT members who were there last week asked us to avoid April and May, due to whales being in the area.

MR. STOCKWELL: Good luck.

MS. COOGAN: Thanks.

CHAIRMAN TRAIN: Dan.

MR. McKIERNAN: I just want to give the Board an update that the end of last week we had 60 right whales in the bottom of Cape Cod Bay, so the Commonwealth of Massachusetts has extended the closure for at least another eight days. Of course if the whales leave in the next eight days we'll lift that closure.

We get the support to do these surveys from the NOAA Protected Species Program, as well as the Massachusetts Environmental Trust, the so called Whale Plate. We've told the commercial fishermen to keep the gear on the beach, and this closure is specifically Cape Cod Bay down to about Nauset on the eastern side of Cape Cod. It doesn't go into federal waters, and it doesn't even affect all of the state portion. But in the places that we have whales, we've kept the area closed.

CHAIRMAN TRAIN: Do we have any other questions or comments at the table? Peter Burns.

MR. PETER BURNS: Thank you Colleen for that summary. I was at the TRT meeting last week, and it was a real monumental result, so my hat is off to the team for coming up with such a positive way forward to address the issue with the right whales. One thing we're going to be talking about the Addendum that the PDT has been looking at coming up next.

While we're still on the topic of the TRT results, it may be worthwhile now for the Board just to consider how they may or may not want to

move forward with action with respect to the TRTs results. Is this something that the Board would be okay with having the states just go back to their own jurisdictions, and implement what came out of the TRT reductions?

NMFS would do the same under the Marine Mammal Protection Act, or is it something that maybe this Addendum could be a tool for making sure there is a backstop measure, or some type of compliance measures in place to make sure that what's been done at the TRT can be sort of enforced at the Board level? Just food for thought, maybe this is more relevant under the next agenda item with the Addendum, but I just wanted to broach the question.

CHAIRMAN TRAIN: I'm looking around. I'm not seeing anyone ready to open that discussion just yet, Peter. But we do have Jane Davenport. We told you we would give you time now, if you're still here.

MS. DAVENPORT: Thank you for this opportunity, I'm Jane Davenport, I'm with Defenders of Wildlife, but I'm also a conservationist member of the Take Reduction Team. I would like to say three brief comments about the results of last week's meeting. First of all, I concur that it was a monumental challenge, but I also very much appreciated the monumental efforts of state management agencies and fishing industries at this table to step up with commitments to reduce vertical line in waters by a significant capacity. I think that is the most reliable way we have of reducing risk to the right whale.

But I will asterisk, and say that we don't have a lot of time to get those reductions done. I do not underestimate at all what a monumental task it will be to translate those reduction commitments into practice, but the whale doesn't have a lot of time. We've known it's been in decline since 2017, and we know that that decline started in 2010.

I urge, with all due process and speed that those measures be discussed and implemented as quickly as is humanly possible. The second thing I would like to say on the Decision Support Tool, again recognizing the monumental efforts that NOAA and others had to try to put together this support tool.

I will also flag that in addition to the severity part of the equation, the tool is not up to date on the whale density part of the equation. The whale density was based on modeling developed by the Navy for its purposes, and does not include nearshore whale density data, or up-to-date whale density data.

I think it's important to put an asterisk on the tool, and understand that the results it cranks out are Number 1, not only mathematically guaranteed to translate into risk reduction, but Number 2, the tool itself still has to be a work in progress. The final comment I have is that I will reiterate my comments from the last Commission meeting that in order to get to Take Reduction Plan Amendments that meet the standards, not only of the Marine Mammal Protection Act, but also the Endangered Species Act.

Those Amendments have to pass the no jeopardy test, or if jeopardy is found, reasonable and prudent alternatives to jeopardy. Let us not forget that even if we reduced serious injury and mortality that doesn't go all the way to sufficiently addressing take, particularly sublethal impacts from take that affects the reproduction of the right whale.

I would urge the people at this table to keep an open mind about what has to come out in the final rule, because the Agency simply cannot be in a position to guarantee that the measures agreed to here are actually going to pass both the MMPA and ESA bar. More may be required, and I think it's important to understand the legal bases for why more risk reduction measures may be required in the Final Rule. Thank you.

CHAIRMAN TRAIN: Thank you for your comments, Katie Moore, did you want to speak again on this?

MS. MOORE: Again, Katie Moore, U.S. Coast Guard. I actually wanted to say thank you. I think the Atlantic States Commission has actually been a very strong advocate in looking at enforcement, looking at practicality and looking at resourcefulness. It's very encouraging to hear that the states and the feds want to work together, to look beyond what we're currently resourced at. We are limited. There is a lot of fishery management plans, there is a lot of take reduction plans, and I just want to say I really appreciate the efforts that have been made to have a work group to consider options out there, and not just to consider the wish list, but to look at can this actually come to be. I wanted to say thank you very much for that and I appreciate what you have brought to the table, and continue to do.

Enforcement is tough, every new FMP that comes out does not give us new resources to enforce those, and I think people are being very practical about it, while being mindful of what we're trying to achieve to sustain these fisheries, and to keep the marine species protected, so thank you very much.

CHAIRMAN TRAIN: Thank you for your comments, is there anybody else who would like to speak on this issue? Not seeing anybody. Okay, we'll get back to the topic. We're still on Agenda Item Number 4, Dan McKiernan, did you have something?

MR. McKIERNAN: Yes thank you, Steve. What we know, what came out of that meeting last week, is a very complex plan that also has a lot of detail that is yet to be worked out. We know that it's going to be complicated to get the states working together, along with NMFS. But what we do know is that things need to change going forward.

I apologize for not speaking to my colleagues on the Board sooner on this, but I think it would be appropriate to establish a control date, a general control date for the lobster fishery, and to establish that as of today. I've sent the staff a brief motion. I can read it. All right I'll read it aloud. Move to establish a lobster fishery control date immediately. The intention of the control date is to notify current state and federal permit holders and any potential new entrants to the fishery that eligibility to participate in the commercial fishery in the future may be.

CHAIRMAN TRAIN: She's trying to keep up with you writing it down, and she doesn't have an electronic version.

MR. McKIERNAN: Move to establish a lobster fishery control date immediately. All right, well let me speak to it.

CHAIRMAN TRAIN: Before you speak to it, is there anyone that would like to second the motion that was just made? I thought he finished reading it anyway the first time.

MR. McKIERNAN: No.

CHAIRMAN TRAIN: All right, let's get it up there before you speak to it please, Dan.

MR. McKIERNAN: Move to establish a lobster fishery control date immediately. The intention of the control date is to notify current state and federal permit holders, and any potential new entrants to the fishery that eligibility to participate in the commercial fishery in the future may be affected by the person's or vessel's past participation and its documentation of landings, effort, and/or gear configuration prior to the control date.

CHAIRMAN TRAIN: Dan, do I understand that you consider today the control date? This is the date.

MR. McKIERNAN: Yes.

CHAIRMAN TRAIN: Pat Keliher you second it. Okay, Dan.

MR. McKIERNAN: I mentioned complexity, and it's pretty clear that especially in Area 1, the states of Maine, New Hampshire and Mass, in the case of their state waters fisheries, have very different rules concerning the issuance of permits. They have different standards, in terms of reporting, and we all understand that and we respect those differences.

All I'm trying to do is to get all the jurisdictions together, and it would go beyond those three states, but for purposes of accomplishing the Whale Take Reduction goals, I propose we use today as a line in the sand, a timeline in the sand that each of us jurisdictions can tell the industry. Going forward if we have management measures, we're going to use today as the date. For example, we might want to constrain permits that are transferred to a new holder that they have to fish a certain number of buoy lines.

We might want to retire some unfished permits. We might want to require certain gear configurations as fishermen transition through the fishery. Also, because this is still a work in progress, I worry that fishermen who are receiving permits in transfer, whether it be a federal permit, or a state of Massachusetts or New Hampshire permit. Those recipients need to know that more is coming, and related to the Take Reduction Team proposals, and it could affect the business planning of that holder. I think it's the right thing to do.

CHAIRMAN TRAIN: Pat, would you like to speak as a seconder?

MR. KELIHER: Just to echo what Dan said. We've got a lot of moving parts here. I too commend the TRT and the work of the TRT, to actually come to consensus. Speaking on behalf of the state of Maine, it is a heavy lift for us to implement a 50 percent reduction in vertical lines. There are many different ways that we can do it.

There are different facets of the fishery, including latency that will need to be addressed. Much of this is likely to fall to the state legislature, sorry Senator. Understanding that the playing field is going to change is critically important for the industry. I think this helps send that signal that things will be changing.

CHAIRMAN TRAIN: Ritchie White.

MR. WHITE: Just a question. Do we have the ability to set a control date for federal permits? Wouldn't the Service have to be doing that?

CHAIRMAN TRAIN: I'm told it would be a recommendation to the service to use this date. Next I have John Clark. Not John Clark, Tom Fote.

MR. THOMAS P. FOTE: This is just a recommendation to the Service; we're not setting up a control date? I'm saying if we're setting up a control date, I don't think we can do it by a motion. It would take, I think an Amendment, a major amendment to the lobster plan to set up a control date. That's what I'm asking the question. It seems like we're doing a lot in a motion, but this is just a recommendation for NMFS to implement a control date. They'll have to go out to the public hearings on this, and set up a process with a federal notice.

CHAIRMAN TRAIN: Bob, did you have something for that?

EXECUTIVE DIRECTOR ROBERT E. BEAL: Just to respond to Tom's comments. The Commission has set control dates through motions a number of times in the past, and it's really just to let the fishermen know that as the motion says, from this date moving forward you may be treated differently than the actions you took prior to this date.

It has been done multiple times by the Commission just through motions of the Board, and if folks are concerned with the wording that this doesn't specifically say a date being set by the Commission, as well as a recommendation to NOAA Fisheries. We can modify the motion a little bit, but if everybody is comfortable that the record is clear that's what we're doing then the Board can move forward with the language that's up there.

CHAIRMAN TRAIN: Next I have Peter Burns.

MR. BURNS: It's an interesting discussion, and certainly the Fisheries Service isn't against anything like this. I think it makes sense, given some of the extent of the measures that we're going to be looking at here moving forward. But it gets a little bit complicated, because if the federal, I think if it was a recommendation for NMFS to do something complementary with a control date that would be a sensible way to move forward.

But whenever we do a control date, we can't really go retroactive, so if today was the date that the Commission chose; it might be a little more complicated, because we can only go by the date that a Federal Register Notice is published. Today's date would not match up with something that could happen in a federal action, so I am not really offering a solution here, but I just wanted to make that clear. Maybe there is some flexibility in when the date would be, contingent upon the publication of a Federal Register Notice.

CHAIRMAN TRAIN: I thank you for that information, Peter. Emerson.

MR. EMERSON C. HASBROUCK: I've got a few questions. This really would not impact New York, because we already have limited entry in our lobster fishery. But I'm wondering do any of the states of Maine, New Hampshire, or Massachusetts currently have limited entry in the lobster fishery? Then I have a subsequent question, Mr. Chairman.

CHAIRMAN TRAIN: I can answer part of that. There are different levels of entry in some of these states, and although there are ratios for exit and entry, there are still people coming in as new entrants, maybe through decreased effort, maybe on a one-to-one level. But they would still be a new entrant. Does that answer your question?

MR. HASBROUCK: Yes, thank you, and I have an additional question. Oops, looks like Toni has.

CHAIRMAN TRAIN: Toni has one more piece.

MS. KERNS: Emerson, I think the way Dan described it, it also could mean when you transfer permits or sell permits that those individuals could be treated differently, if you buy traps from somebody. I think what he said is putting it all on the table, so it's not just new entrants into the fishery, it's how you're transferring and buying permits, or et cetera as well, so it could impact New York fishermen, potentially.

MR. HASBROUCK: Additional question.

CHAIRMAN TRAIN: Your next question, go ahead.

MR. HASBROUCK: To the maker and seconder of the motion, is this directed specifically for lobsters, or is the implication here that it's going to impact the Jonah Crab fishery as well?

CHAIRMAN TRAIN: Toni will answer it.

MS. KERNS: Because of the way the Plan ties those two licenses together, it would impact the Jonah crab fishermen as well, because in order to fish for Jonah crab, you have to have a lobster pot and trap tags, with pots, fishing Jonah crab for pots.

CHAIRMAN TRAIN: I have David Borden.

MR. BORDEN: I intend to vote no on this, and to the reason that I have kind of a traditional

problem with control dates, because they're almost never explicit enough, and they just lead to endless questions. I'll just point out to you that in our association we have New Jersey members, and Mid-Atlantic members, who have brought additional traps, in order to position themselves for various types of business ventures. You pass something like this; it's immediately going to call into question whether or not they can use it.

We have significant numbers of industry who reside in New Hampshire, who own traps that they have not used. They bought them, and they're not being fished, and if you pass something like this, there is going to be a debate about can they be activated, what's the date of time that it's going to be used to control their activation. It just leads to like 25 different questions. I would offer two suggestions, one we postpone this, and consider it at our next meeting, or individuals don't like that strategy then limit it to Area 1 where the bulk of the problem is.

CHAIRMAN TRAIN: Based on the last comment Dan, would you and Pat consider limiting this to Area 1, or do you want to let it go as it is?

MR. McKIERNAN: I would agree to limit it to Area 1.

MR. KELIHER: I would concur with that.

CHAIRMAN TRAIN: Bob, procedurally are we in the ballpark with what we're doing here? Go ahead, Doug.

MR. DOUGLAS E. GROUT: Just because of the importance of this, I would like to add either via friendly or via motion to amend, to add and to forward a recommendation that National Marine Fisheries Service implement a control date for the lobster and crab fishery in federal waters at the end.

CHAIRMAN TRAIN: And that's okay, Dan?

MR. McKIERNAN: Yes.

CHAIRMAN TRAIN: Okay, Pat Keliher.

MR. KELIHER: I just want to make sure it's clear in my own mind. Are you saying that this would only be utilized if they concur and use it in rule, because a control date in regards to state activity is critically important here?

CHAIRMAN TRAIN: Doug, do you have an answer for what you just meant?

MR. GROUT: Well actually, your point is exactly what I was trying to get at is I wanted the states to be able to have this control date, but also to put it forward to NOAA Fisheries as a recommendation. Peter Burns has said we wait until it happens in the Federal Register, but it may not ever happen in the Federal Register. I want the states to be able to do it first, and then we'll figure out if we have to adjust it to comply with what the federal government might come up with for a date.

CHAIRMAN TRAIN: Go ahead, Pat, and do you understand that now to read that if this goes forward the states will be expected to use this date, and we use one that the Feds can give us as soon as possible?

MR. KELIHER: Yes, with that understanding made on the record, I would agree with the friendly amendment.

CHAIRMAN TRAIN: Dan is that your understanding, this will be the control date for Maine, New Hampshire, and Massachusetts.

MR. McKIERNAN: Yes.

CHAIRMAN TRAIN: Any other discussion? Hang on.

MS. KERNS: Dan and Pat, is it okay to add the lobster and Jonah crab fishery? Is that okay, Dan to make it explicit?

MR. McKIERNAN: Yes, Toni, thank you.

CHAIRMAN TRAIN: Okay, we have the motion up. I can't tell who has got their hands up.

MR. MICHAEL LUISI: It's Mike Luisi. Just for purposes of clarification. It may be best after the date and it says for, maybe the state waters portion of LCMA 1. I'm not familiar with how the area looks, but that would direct the motion to the state waters, and then the recommendation would be for the federal waters portion, just a thought.

CHAIRMAN TRAIN: Dan.

MR. McKIERNAN: Yes, I wouldn't agree to that amendment. Just so folks know Massachusetts already prohibits the issuance of new landing permits in the Commonwealth, for lobsters taken with traps from Area 1. We do this because of what we thought was going to be the so called pregnant boat syndrome, and the proliferation of more effort in Area 1.

We're doing that at the state level, we're affecting the ability to land lobsters taken by trap, and that's what I'm getting at here. We're going to have to prevent proliferation of new efforts, by using that kind of a mechanism going forward. It does affect the landing of product coming from federal waters.

CHAIRMAN TRAIN: Thank you, Dan, and are you okay with that Mike?

MR. LUISI: It was just a thought and I'm fine with that no problem.

CHAIRMAN TRAIN: Any other comments or questions on this motion? Peter Burns.

MR. BURNS: I'll abstain on this, just because it's a recommendation to the NOAA Fisheries. I just want to point out that it could be a little problematic if we have a differential control date between the states and the feds in Area 1, and I haven't had time, because I'm just thinking of this now, what the implications of something like that might be. I feel confident that we could probably knit something together here that makes sense, but I just wanted to reiterate that point that any date that we do is going to be different than this date.

CHAIRMAN TRAIN: Thank you, Peter, and I think we understand that. Seeing no more hands, does anyone in the public want to comment on this motion? Seeing nobody, all in favor of the motion raise your right hand, please. We'll give one more minute. We've got a state that needs to caucus. Okay, quick question then we're going to vote. Go ahead, Eric.

MR. ERIC REID: Sorry Mr. Chairman, thank you for entertaining my question. The way it's written it says, and to forward a recommendation to NOAA Fisheries to implement one in federal waters, meaning a control date in federal waters. Is that all federal waters, or just the federal portion of LCMA 1?

CHAIRMAN TRAIN: My reading of the motion is that it affects LCMA 1, specifically the state waters and a recommendation for federal waters**. The motion was about LCMA 1. Okay we'll try this again. All in favor of the motion, please raise your right hand, all opposed, abstentions. You voted in favor, you can't abstain, and null votes. The motion carries, 11, 0, 1, 0.** David Borden, you have a question.

MR. BORDEN: Not a question, I just want to clarify. I abstained on this vote, because this vote includes the crab fishery, because of the legal guidance I've gotten from Bob Beal.

CHAIRMAN TRAIN: Yes, I'm sorry. I made a little joke about that. But you clearly put your hand up for abstention, even though the state voted one way, but I get that okay thank you. We have nothing else on Agenda Item 4.

REVIEW PROGRESS OF DRAFT ADDENDUM XXVIII

CHAIRMAN TRAIN: We're going to move on. Colleen, thank you very much. Review Progress of Draft Addendum XXVIII, Toni.

MS. KERNS: I debated really on how to go through this PowerPoint presentation, based on the results of the TRT. But in the end I decided to go forward and just let you all know sort of what the Plan Development Team has been doing on Addendum XXVIII. Just as a reminder, how did we get to Addendum XXVIII, which is looking at vertical line reductions in the lobster fishery?

Back in last October, the Board reviewed some ongoing discussions related to right whale conservation and fisheries management. The Board put together a workgroup to discuss management measures the Board could potentially provide. That workgroup included several different partners and agencies.

Due to the high economic value and social significance of the lobster fishery, the workgroup made recommendation to the Board, and the Board thus took that recommendation and initiated Draft Addendum XXVIII. That Addendum considers up to 40 percent vertical line reduction in the fishery, elimination of the 10 percent replacement trap tag provision, as well as vertical line reporting.

The Plan Development Team has been meeting weekly since March, to try to address these issues. As we started to dig into things, we realized that this was an even more monumental task than we originally realized. We came through and made a lot of progress on the document, and I will go through some of the progress that we did make.

But, ultimately we didn't have a document to present to the Board today due to some challenges that we found, and those challenges included data sources, the risk reduction support tool, as well as the TRT recommendations. Some of the challenges included the base year that we should be using, how do we get the different states who actually already collect end line data into the document, instead of using the data that was coming from the contractor that NOAA Fisheries had identified to determine endline data for those states that do not collect that data?

Then the PDT really struggled with how to give credit to those states that already had ongoing reductions in vertical lines, as well as area closures, then how to reconcile the differences in how the data are collected, and how it impacts quantifying end lines in the long run. In addition there was the Risk Reduction Support Tool.

I think we've sort of covered some of the concerns that the states had through our discussions with Colleen just now. But when the PDT was discussing the Addendum document, we didn't have a Risk Reduction Support Tool to really dig into, so that was a challenge for them to see how. It's not that we needed the Risk Reduction Support Tool to develop the document itself, but we wanted to be able to inform the Board and the public of what the management measures that the PDT would be proposing, how much impact that would have on risk reduction.

I think where we are today is that we do have this Addendum document. We have some recommendations that came out of the TRT. The states need to determine what measures, or how they want to implement the measures that came out of the TRT. Most of those measures are state-specific plans.

The Commission is able potentially to implement some of those measures, and we might have some roadblocks on implementing some of those measures as well, due to things like the National Standard 4, which NOAA Fisheries would need to implement measures that are somewhat similar, for fishermen that

fish within the same lobster conservation management area.

In order to provide as many options as we can to the states, I think it would be wise to leave this management document open, in case the states do need to utilize an addendum for any measures to look at risk reduction, and move forward in the best way that is for the states to get these measures implemented.

There are some things that the PDT did discuss, in terms of making some changes to data collection protocols that we think would be helpful, in being able to quantify end lines in the future. I think some of those changes potentially could be made by the states on their own, but at some point it probably would be useful to codify those data collection protocols in an addendum.

There may be other things that the states determine that they want to include in an addendum. If we leave this document open for the next couple of months, I think it would be a useful tool, just in case type of measure. Then in addition, the Board did talk about the removal of the 10 percent additional trap tags that get issued by the states.

I'm not necessarily sure that that has to be removed through an addendum process. States can always be more conservative, so I think that the states may have the ability to not hand off those 10 percent additional trap tags at the beginning. But I think it is something maybe the Trap Tag Committee could discuss; to see what's the best path forward.

In order to do that in the same process with all of the states, because not all of the states actually give out the additional 10 percent of tags when the fishermen get their first set of 800, or their allocated trap tags. That is sort of my long winded story of we have a document that we've been working on really hard that we may or may not need anymore. I'll leave it at that for now.

CHAIRMAN TRAIN: Are there any questions about Toni's long winded story? Pat Keliher.

MR. KELIHER: I would just concur with staff that we should be leaving it open. The states have a lot of work, and if all goes well we'll be able to implement anything that comes out of the TRT on a state-by-state basis. But there may be a need for additional work by the Commission, and leaving the Addendum open, I think at this time, is important. As we heard in the public comment by Attorney Davenport, we also had an issue of ESA and Jeopardy here. I am in hopes that the TRT process goes far enough, but if it hasn't then we need to be ready to potentially act.

CHAIRMAN TRAIN: David Borden, and Dan McKiernan next.

MR. BORDEN: A quick point, Mr. Chairman is that Colleen Coogan noted that NOAA is going to try to set up whatever comes out of the TRT as a menu of items that fishermen can select from. I think that's really critically important, given the geographic range of this fishery. When we get down into, and I'll just give you a simple example.

What might work on the U.S. Canada Line, up in the Gulf of Maine, may not work when we get down to the New Jersey offshore industry in Area 4 and 5. But it is really important to have a menu of items; you have weak lines, weak links, and sleeves, whatever it is. Then you have the credit that they get. Then when we get back to the point that the Commission is going to implement this, the industry can tailor make the measures for their LMA. That is I think, important to keep in mind.

CHAIRMAN TRAIN: Thank you, Peter, any other? Dan McKiernan.

MR. McKIERNAN: Just briefly. While Toni presented a report that said it's a document we may not need. I do want to recognize Toni and my other state counterparts, and the PDT

members for working really hard on these issues, because we're in a much better place understanding what some of the challenges are, and also how to come up with more uniform reporting. I think each of the states has a better understanding of the other states permitting and reporting features. It was not a waste of time whatsoever.

CHAIRMAN TRAIN: Toni, do you have something else?

MS. KERNS: Colleen touched on this before, but I just want to make sure that the full Board is aware. At the last meeting we had made a recommendation that we take to the TRT that we implement vessel tracking in federal waters to the TRT. There is going to be a webinar, and I do plan on being on that webinar.

I'll make that ask for tracking in federal waters for the lobster fishery, in order to better enforce our fishermen out there. That is a recommendation from the Law Enforcement Committee as well as this group forward. We will do that and I will work with the Law Enforcement Committee on being very specific about what we are going to be asking for, what kind of standards we want from that tracking.

We'll also utilize the pilot project that we'll have ongoing this summer that will be testing some of the devices, as well as some information that a lot of those devices are also being tested in the Gulf right now. We'll look at the information coming out of that testing, to also inform our recommendation.

CHAIRMAN TRAIN: Pat Keliher.

MR. KELIHER: To that point, Toni. I think it's going to be really important for the Law Enforcement Committee to revisit some of this prior work, so we have much more specifics on the law enforcement requirements around vessel tracking. I think some input from them on why it is not needed frankly, in state waters. I mean the enforcement capabilities in state waters are so much better than as soon as we move beyond that three-mile line, and I think we should just document that as well. The Law Enforcement Committee would be a great place to start.

CHAIRMAN TRAIN: Who's down there? I can't read that from here. I know it was John, I just couldn't remember your last name. John McMurray.

MR. JOHN G. McMURRAY: I'm trying to follow this, and I'm not entirely clear on some things. Why is this a document we may not need, and what exactly are we doing? Are we putting this on hold, or are we continuing to work on it?

MS. KERNS: John, we're going to put this on hold. The reason why we may not need it is because the recommendations that came out of the Take Reduction Team were for state plans. For example, you saw that in Maine waters of LCMA 1, they're going to do a 50 percent vertical line reduction. But in Mass waters of LCMA 1, I think it was a 25 percent reduction in vertical lines. Figuring out what the best way to implement those measures will be a discussion amongst the states, and maybe a little bit with NOAA Fisheries on what's the best path forward to do that.

Is it through a Commission document or is it through measures through NOAA Fisheries through the Take Reduction Plan and the MPA. We're putting this on hold to sort of figure out what's the best path forward, and then move forward, because originally we thought vertical line reductions would not come out of the TRT. But they ended up coming out of the TRT.

CHAIRMAN TRAIN: All right, John?

MR. McMURRAY: I think I understand a little bit better now, not much. How does this affect the timeline then and you know I asked that question in relation to the ESA listing and the potential finding of jeopardy?

MS. KERNS: I think we'll be able to figure out the best path forward in the next month or so. I'm hoping we'll be able to figure that out potentially, and if we need to do measures through a Commission document, then perhaps we can get that document pulled together in time for you all to review it at the August meeting, and approve it for public comment, and then have final action in October.

That would put us relatively close to the timeline that we were at before; it's a two months difference. Even if the TRT had not made these recommendation, or the states hadn't come up with these individual state plans. We would have been in the same boat, because of the complexity of the data issue that we ran into as the PDT. It's not much of a delay, it's two months. We discussed that with NOAA, and they recognize the need for it, and sort of gave us a little bit of a nod that that would work out.

CHAIRMAN TRAIN: Peter Burns and I see nobody else after Peter, I don't think, so I'll move on to the next item.

MR. BURNS: Yes just a final word on this then Mr. Chairman. This gets back to my earlier comment that I made at the end of the TRT discussion that yes, NOAA Fisheries certainly supports keeping this Addendum open, because we're going to be going forward to try to figure out the best way to implement these measures that have come through the TRT, and having this option open in case any additional measures might need to be considered, so we support that. We understand what the limitations were to the PDT earlier on, and we can try to keep this opportunity open moving forward, and use it as necessary.

REPORT FROM THE LOBSTER BAIT WORKING GROUP

CHAIRMAN TRAIN: Next we have **a** report from the Lobster Bait Working Group. I've got Mike Schmidtke going to give that? He's coming.

MS. KERNS: Mike, you can just come to a microphone at the back of the table that's fine.

DR. MIKE SCHMIDTKE: My apologies. You all moved faster than I expected. This is going to be a fairly brief update from the Bait Working Group. This group has met several times via conference call, and we do have a resolution drafted. It's in kind of editing and final signoff stages, but we should have it on track to be reviewed by the Board at the summer meeting in August.

The overall goal of the resolution to this point has been to develop a process for assessing the risk of imported baits. This would entail a working group being formed to define this process, and then the states would apply it to the baits relevant to their waters and their fisheries. That is about where we are right now. I can take questions as needed.

CHAIRMAN TRAIN: Hang on, Toni wants to follow up, and then I'll take some questions.

MS. KERNS: Just as a reminder to those that have not been as clued in on this issue as others that the Atlantic herring fishery has had dramatic decreases in their quota, and there is concerns about what kind of bait would be moving into the lobster fishery with the lack of herring. We pulled together this working group, in order to make sure that we don't have any unwanted baits moving into that fishery.

CHAIRMAN TRAIN: Are there questions for Mike or Toni? Mike thank you for your presentation.

REVIEW THE IMPLEMENTATION OF THE JONAH CRAB FISHERY MANAGEMENT PLAN FOR DELAWARE AND NEW YORK

CHAIRMAN TRAIN: We need to Review the Implementation of the Jonah Crab Fishery Management Plan for Delaware and New York. This reminds me of the thing that my grandfather would say. "Don't make me go behind that stove and get that razor strap."

MS. KERNS: Wow! I wanted to provide an update on where Delaware is as a reminder. Both states have not fully implemented all the measures in the Jonah crab FMP, or Addenda 1 and 2. I am happy to report that Delaware does have a scheduled hearing on May 23, to review these measures. Either July 1, or August 1, those measures will then go into their Register. Once they are in the Register, then ten days later they will be final and approved. They will have their measures in place no later than August 11, so hopefully we won't have to revisit this again. Now John does have an update from here.

MR. JOHN CLARK: Well, just August 11. I'm pretty sure we'll be done by then, but if not it will be before the annual meeting, I'll say that. We will be fully in compliance before the annual meeting.

MS. KERNS: Thank you, John. Maybe we'll be revisiting this in August again, who knows? Then for New York, they are in the process of implementing all the measures except for two. One is the measure that ties your Jonah crab to your lobster permit, for those individuals that are fishing with Jonah crab with pots, as well as the 1,000 crab bycatch provision. I will let Maureen speak to that issue in particular, but the rest of the issues the state is moving forward, and I think you might even have a date in which you think that the rest of those measures would be implemented.

MS. MAUREEN DAVIDSON: Since the fall we have proposed regulations to bring us closer into compliance with the FMP for Jonah crab. Our regulations went out to public comment, we have received none. We are poised to have them become adopted by the end of May. As to the two points that we are still not in compliance, well before I say that I would like to add that the way the Jonah crab fishery is being prosecuted in New York State, our actions are within, we're in compliance with the FMP in our behavior.

Okay, those fishermen who hold crab licenses do not take more than 1,000 crabs per day, in fact it falls below that. We already prohibit the taking of berried females, and we limit our recreational catch to no more than 50 crabs. Those are things that were already in effect before the FMP went into effect.

The two points where we are not in compliance with the FMP, we need legislative action in order for that to happen. We cannot change the constraints on crab fishing, where you are allowed to do it with a lobster permit; it has to be done by the legislature. We are exploring, talking to our legislators.

But we're also trying to see if there is a way we can do this by regulation. It's kind of sneaky, kind of the back door, and I don't have permission to talk about it, but we are looking at other means of coming into compliance. But right now, our actions and the way the fishery is being operated in New York, we're not outside the FMP.

CHAIRMAN TRAIN: Thank you, is there anybody that has any questions for Delaware or New York? I think we're moving in the right direction, and that's the whole point, so I don't see this as an action item any longer. Dan, did you have something? Dave.

MR. BORDEN: Will we have an update on this at the next meeting?

MS. KERNS: We certainly can, David.

CHAIRMAN TRAIN: We should have a resolution by the annual meeting. I got that from John. Are there any other questions?

UPDATE ON
THE BENCHMARK STOCK ASSESSMENT

CHAIRMAN TRAIN: All right, we're on to Item Number 8, an Update on the Benchmark Stock Assessment. Jeff Kipp is giving us that.

MR. JEFF J. KIPP: Just here to give an update on the benchmark stock assessment progress. The last couple of months the Stock Assessment Subcommittee have been working to finalize data inputs for the assessment models, most notably the 2018 data that we hope to include, and also some data holes that were identified at the first assessment workshop back in January, most notably among those is updating the ventless trap survey in the seas for the assessment model.

We've also had a few calls focused on addressing the term of reference relating to identifying environmental drivers. We've also been working on some supporting analyses that we would hope to provide inputs directly to the stock assessment models, and how those models are configured.

We've run into some delays in those supporting analyses, and we will be having a call in early May to discuss those analyses and where they stand, and how impactful they are to the assessment results, and advice that come forward in the stock assessment. We will be having that call, and then we will be reporting back to the Board what comes from that call. That is the update on the stock assessment, and I can take any questions on that progress.

CHAIRMAN TRAIN: Are there questions for Jeff? Pat Keliher.

MR. KELIHER: Jeff thanks for that update. The call will be in May, are you expecting to report directly back out to the Board as soon as that's over? I'm just trying to make sure I get an understanding if the PDT will meet, or the Stock Assessment Committee will meet the June 1 deadline, and if not whether we should be looking for delays here.

MR. KIPP: Yes, I think that is what we're going to be talking about relevant to the June 1 deadline that the Stock Assessment Subcommittee agreed to have, specifically assessment model inputs finalized for the Assessment Team to consider. I think the plan right now was to have that May meeting, come forward with kind of recommendations on how everything we're hoping to do fits in with the current timeline, and how that would impact that timeline.

I think the plan was to come forward to the Board at the August meeting for these stock assessment updates and provide just an update on the assessment, and anything that would impact that current timeline as it stands. But I think that we could report that out to the Board immediately following the May call, if that is what the Board would desire.

CHAIRMAN TRAIN: Anything else, Pat?

MR. KELIHER: I would suggest that we report it out to the Board immediately after that May meeting, if we need a delay, if you need those additional data inputs. I know there is some growth-at-age information that will be coming up through some additional work as well that could be beneficial. I would rather make sure we get the information into the stock assessment, and we do it with the best available information, and if a delay gets us there great. If we don't need it, and it's not going to be beneficial, then well let's understand that and go from there.

CHAIRMAN TRAIN: Jay McNamee.

MR. JASON McNAMEE: Along the same, this scheduling line of questioning. The lobster assessment will be reviewed through a Commission review? I see Toni nodding there. That's good then, we're not bound to external schedules and things like that. Well maybe I'll pose it this way.

One of the things I started thinking about, knowing that a lot of the folks that are working on the assessment were also working on the stuff for the whale discussion that we had earlier. There is only a limited amount of these folks, and so what I was thinking about was the

data available the terminal year of the stock assessment, and what any delay would do to that.

How offset are we going to get from the most recent data, and when the actual assessment materials come out for the Board to consider? Can you add that specificity to when you come back to the Board with the information after you talk? That would be something that I would be interested in hearing is if there is a delay, what that gap between data available and when you believe the assessment information will come out, because that can be a part of that e-mail, or whatever it is.

MR. KIPP: Yes, I think that's a great point, and certainly we will include that in the discussion on our May call. But basically we'll go through these different analyses that we kind of have in mind, but that we're uncertain if they'll meet this June 1 deadline, and prioritize those. That will all play into how much of a delay we would need, if we think that that is necessary. But certainly right now, our terminal year is 2017 but including 2018 data, where available, to help kind of anchor the model estimates. But we will reconsider that and incorporate that into the discussions there on the timeline.

CHAIRMAN TRAIN: Toni.

MS. KERNS: If this ends up being something simple, we'll send out an e-mail update. But if it is not something simple, I'll be asking for a Board call, just as a heads up to the Board.

OTHER BUSINESS

CHAIRMAN TRAIN: Are there any other questions of Jeff? David? Okay, thank you, Jeff. Is there any other business to come before this? Pat Keliher.

MR. KELIHER: The last one, I promise Mr. Chairman. I think for a placeholder for the summer meeting, we should put the Resiliency Addendum back on the agenda for discussion, and talk about the timing of that Addendum, and whether we should be restarting any efforts on it.

ADJOURNMENT

CHAIRMAN TRAIN: Thank you for that anybody else? Toni wants credit for ending the meeting early. I'll entertain one final motion, anybody. I have all kinds of them, we're adjourned.

(Whereupon the meeting adjourned at 2:30 o'clock p.m. on May 1, 2019)

Atlantic States Marine Fisheries Commission

Tautog Management Board

October 28, 2019
10:45 - 11:45 a.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(D. McKiernan)*	10:45 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from August 2019	10:45 a.m.
3.	Public Comment	10:50 a.m.
4.	Progress Report on Commercial Harvest Tagging Program (*K. Rootes-Murdy*) **Possible Action**	11:00 a.m.
5.	Other Business/Adjourn	11:45 a.m.

The meeting will be held at Wentworth by the Sea; 588 Wentworth Road, New Castle, NH 03854; 603.422.7322

MEETING OVERVIEW

Tautog Management Board
October 28, 2019
10:45 - 11:45 a.m.
New Castle, New Hampshire

Chair: Dan McKiernan (MA) Assumed Chairmanship: 11/17	Technical Committee Chair: Linda Barry (NJ)	Law Enforcement Committee Representative: Snellbaker
Vice-Chair: Bill Hyatt (CT)	Advisory Panel Chair: VACANT	Previous Board Meeting: August 2019
Voting Members: MA, RI, CT, NY, NJ, DE, MD, VA, NMFS, USFWS (10 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the Agenda. Individuals that wish to speak at this time must sign in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Progress Report on Commercial Harvest Tagging Program (11:00-11:45 a.m.) Possible Action

Background

- Amendment 1 requires the implementation of a commercial harvest tagging program for Tautog. The Board moved to implement the program in January 2020.
- To ensure successful implementation of the tagging program, states provided feedback on their plans for implementation (**Supplemental Materials**)

Presentations

- Progress Report on Commercial Harvest Tagging Program by K. Rootes-Murdy

Board Actions for consideration

- Specify requirements (if any) for fish caught or sold outside of states with a declared interested

5. Other Business/Adjourn

Tautog 2019 Tasks

Activity Level: Low

Committee Overlap Score: High (Menhaden, BERP, Summer Flounder, Scup, and Black Sea Bass)

Current Committee Tasks:

- TC – Evaluate biological sampling requirements (assess the feasibility of adding pelvic spines as an acceptable ageing structure)
- TC – May 1, 2019: compliance reports due
- 2019: Consider initiating a benchmark stock assessment as per the 5-year trigger and MRIP data calibration

TC Members: Sydney Alhale (VA), Coly Ares (Vice Chair, RI), Linda Barry (Chair, NJ), Sandra Dumais (NY), Scott Newlin (DE), Deb Pacileo (CT), Craig Weedon (MD), Tiffany Vidal (MA)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

TAUTOG MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
August 7, 2019

These minutes are draft and subject to approval by the Tautog Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Tautog Management Board Meeting
August 2019

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ATTENDANCE

Board Members

Dan McKiernan, MA, proxy for D. Pierce (AA) Chair
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Raymond Kane, MA (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Matthew Gates, CT, proxy for J. Davis (AA)
Bill Hyatt, CT (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Joe Cimino, NJ (AA)
Russ Allen, NJ, proxy for T. Fote (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Mike Luisi, MD, Administrative proxy
Robert Brown, MD, proxy for R. Dize (GA)
Sen. Monty Mason, VA (LA)
Rob O'Reilly, VA, proxy for S. Bowman (AA)
Bryan Plumlee, VA (GA)
Mike Millard, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Kirby Rootes-Murdy
Caitlin Starks

Guests

Heather Corbett, NJ DFW
Charles Lynch, NOAA

The Tautog Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Wednesday, August 7, 2019, and was called to order at 4:12 o'clock p.m. by Chairman Daniel McKiernan.

CALL TO ORDER

CHAIRMAN DANIEL McKIERNAN: Good afternoon. My name is Dan McKiernan from the Commonwealth of Massachusetts. I'm the Board Chair, and we're opening the Tautog Management Board Meeting today on August 7.

APPROVAL OF AGENDA

CHAIRMAN McKIERNAN: The first order of business is the approval of the agenda. Are there any changes to the agenda? Seeing none, I'll consider it adopted by consent.

APPROVAL OF PROCEEDINGS

CHAIRMAN McKIERNAN: Next is the approval of the proceedings from the last meeting, which was almost a year ago, October, 2018.

Are there any recommended or suggested changes to the proceedings? Seeing none; consider it adopted by consent.

PUBLIC COMMENT

CHAIRMAN McKIERNAN: Next is under public comment. Is there anyone who would like to speak on any of the items that are not on today's agenda? I don't believe anybody has signed up according to Kirby. We just have a few issues today, so I'm sure we can get through this and keep on schedule.

REVIEW IMPLEMENTATION GUIDELINES FOR THE TAUTOG COMMERCIAL HARVEST TAGGING PROGRAM

CHAIRMAN McKIERNAN: The major business today is developing or adopting implementation guidelines for this commercial harvest tagging program, which is a component of Amendment 1, requiring a commercial harvest tagging program for tautog. It was originally intended to be adopted in the year 2019. The Board has postponed that to 2020. At our previous meeting we shared these guidelines. It's been distributed to you all, looking for your input.

Today what we want to do is approve those, and decide what level of compliance these rules or these guidelines are actually going to constitute for purposes of complying with this plan. I know that Kirby has a presentation to give us. In addition the Board, the TC, and the Advisory Panel have all weighed in on that and Kirby is going to give us a presentation on some of that today. Without any delay we can turn it over to Kirby for the presentation.

MR. KIRBY ROOTES-MURDY: As mentioned, I'm going to go through the draft Implementation Guidelines for the Tautog Commercial Harvest Tagging Program, just a brief outline to give you all some background regarding this, the Tagging Program requirements that are stated in the Amendment 1.

Then go through the draft Implementation Guidelines that were put together, what the implementation timeline will be, as well as the Technical Committee's review, the Advisory Panel's review and feedback, and then for this Board to consider management action. I want to just put it first on your guy's radar. Really when we're talking about these Implementation Guidelines, the Board today has kind of three courses of action they could take. The first is to specify changes to these draft Implementation Guidelines. The second would be to adopt these Guidelines as best management practices for this Harvest Tagging Program. In doing so they wouldn't be requirements, but they would be the best management practices to carry out this tagging program in its first few years.

The third course of action could be instead to consider specifying aspects of these Implementation Guidelines as actual FMP

compliance requirements. That would be taking some of those pieces that are included in the document, and making them an actual addendum to the FMP, and requiring states to comply with them annually. I just want to put that on your radar now. We'll revisit this at the end of the presentation.

First, the tagging program requirements as outlined in Amendment 1. The Commercial Harvest Tagging Program was required to combat illegal and unreported harvest of tautog; specifically the requirements as described in the Amendment include uniform single use tags with unique identifiers, to be applied to tautog by the harvester before offloading, and that the number of tags allocated to the harvesters to be determined by the state, based on a biological metric.

That unused tags be returned to the state management agency no later than February 15th of the following year, and that each state must submit an annual commercial tag report as part of annual compliance reports, including information on tags used and issued, participating harvesters and reported commercial harvest.

As you all are aware, this program was supposed to go into effect this year in 2019. By Board action it was postponed until January, 2020. Now, shifting from what the requirements that are in the FMP to the draft Implementation Guidelines. Staff worked with the Board Chair of the LEC and TC to develop these guidelines.

Again, the goal here was to provide guidance on how this program should be administered, encourage consistency between state programs, and try to enhance enforcement. It also recommended procedures for tag distribution, application, accounting, reporting, tag expiration, penalties, and outreach to help facilitate this program.

The first section of the draft Guidelines provides recommendations on tag distribution. In Year 1 what would happen is that ASMFC would purchase the tags on behalf of the states. States are then responsible for distributing those tags to licensed and permitted harvesters. To avoid confusion and reduce the opportunities for unauthorized individuals to obtain the tags, this is how we are going to address this through the Commission purchasing them, and then these tags being sent to the states.

The LEC and TC agreed that accounting and reporting would be made easier if harvesters were issued tags with consecutive numbers. The states would need to determine the total number of tags to order, and the number to allocate to each harvester based on a biological metric, like the prior year's harvest in numbers of fish plus an additional amount as a buffer.

Tags should not be transferrable, and regulations should prohibit reuse, altering, or counterfeiting of tags. Regarding tag application, the LEC recommended adding language to the Amendment requirements to specify that all fish need to be tagged prior to offloading, or before carring, to ensure there aren't any untagged tautog remaining on vessels without an authorized harvester onboard. It is also recommended that the tags be applied consistently to the operculum of the fish on one side of it.

The TC had indicated the tags could be applied to either side of the fish and would not interfere with any biological sampling. Again, application of tags in sequential order would simplify accounting and reporting, though we understand that this might be challenging if certain tags are lost or damaged in the first year.

Tags need to remain on the fish until final sale. That is another recommendation that was put forward, and there is the need to restrict tag

applications during closures in the fishery. Please note that it will be ideal for harvesters, as I said to apply the tags in sequential order, but we understand that this might not be possible.

This is an example of how the tag would be applied to a fish. Note, it might be difficult to apply tags to the left side of the fish, if for example a person is left-handed, so you can see it's applied to the left operculum. The draft Guidelines outlined that states need to allocate tags based on this biological metric. A biological metric is an estimate to determine the number of tags that would be required per year.

The types of metrics included with what some states calculate as part of their Striped Bass Tagging Program. For example, taking the average commercial weight per fish from the previous year, and using that as a basis to develop a number of fish, and in turn a number of tags that are needed. This language that is up on the screen now is what we would be looking for, for the states to submit as part of their biological metric request.

In terms of accounting and expiration, the Amendment requires that unused tags be returned by the harvester or the state agencies that issue them no later than February 15th of the following year, and the LEC recommended adding or within 90 days of the end of the fishing season, whichever is sooner, to reduce the gap between the end of an early season and tag returns.

In terms of these draft Guidelines. It's also recommended that harvesters should document tags that are lost or broken, and that annual commercial tag reports would include all of this information. The other potential recommendation that was included was the tags expire at the end of the fishing year.

Please note that currently there is not language in the Amendment on when tags expire. In terms of penalties and outreach, this would be left up to the states. But some ideas that were put forward in the document is that states should determine appropriate penalties, including suspension or removal of the commercial license or permit.

Wholesale dealer permit, retail dealer permit, or authorization to purchase tautog, as well as confiscation of all tautog caught and possessed or sold in violation, seizure and forfeiture of all property used in violation and fines, and then an outreach program to raise awareness of how the tags should be applied correctly would go a long way in ensuring that the program works successfully. In terms of a tentative timetable moving forward today, the Board would consider these draft Implementation Guidelines. Following this meeting states will need to submit their tag allowance or their biological metric to staff, likely at the end of August or early September. As I said before, ASMFC would order these tags, and the tags would be sent to the states.

Once that purchase has happened, and the tags are sent to the states. The states will then be responsible for distributing those tags to harvesters. Again, the goal would be to have those tags distributed to harvesters such that effective January 1, fish could start being tagged in 2020. Just so that it's clear, these tags would be sent from the manufacturer to state agencies; it wouldn't be going to ASMFC and then sent to the states.

Next for the TC Summary, the Technical Committee talked through a number of these elements of the draft Implementation Guidelines, and had the following comments. In terms of where to apply the tags on the fish, as I mentioned before tags could be applied to either operculum. This is because they can collect biological samples from either side of the fish.

In terms of the biological metric, there was a discussion on the tag loss. We've had a number of states that have actually gone through and tried implementing these through a trial period. What we found is that there is approximately a 10 percent loss rate. What that means is they've got their order, they go out on the water, and they try applying them. At least 10 percent of the tags that they were trying to apply either broke or came off.

That should be factored into any amount of tags that are being requested by the states. The TC also recommended that after the first year there should be an evaluation of the appropriate tag loss rate, such that if there is a general understanding that 10 percent works that if you're finding that there is a loss rate in certain parts of the coast, or in certain states that is much higher than that. Then that might start to become an area of concern.

In terms of expiration dates for tags, there was no consensus on the concept of a tag expiration date, and there was a need to clarify whether there would be an expiration date of the tag versus the expiration date of the sale of the fish. In terms of potential times of year in which tags could expire, the Technical Committee noted that possibly the end of February might be a potential timeframe. Next the Advisory Panel reviewed these draft Guidelines as well, and had the following comments.

They raised a number of concerns regarding tag application, accounting and distribution, expiration, and penalties. I'm just going to summarize a few of them. These materials were included in an e-mail sent to you all last week. In terms of the tag application, there was concerns raised that there may be a higher mortality rate than what was concluded in the New York study that has been the basis for us identifying the tag to be used in the upcoming year.

Concerns focused on that study had a controlled environment with those animals being able to be tagged, and kept in a condition that allowed them to have a higher survival rate than might happen in other situations that aren't controlled for a number of variables. Additionally, and to that point, applying tags while fishermen are on the water may be difficult. In terms of tag accounting and distribution, there was a recommendation to possibly move forward with a partial allocation of tags annually. It would be conditional on getting the other part of the tags that a harvester would be allocated, based on them returning their unused tags annually. In terms of tag expiration, the AP noted that there is a significant market demand for tautog around Chinese New Year, which varies year to year between late January and February.

This would complicate tag expiration dates if they followed along a calendar year, because a number of fish tend to be caught in December, and then held for a certain amount of time in preparation for that market. It was also noted by at least one AP member that there wouldn't be the need for an expiration date if the tags were to be applied, and there was a calendar year deadline by December 31st annually the fishing year ended.

Last there was the note that penalties need to address more than simply commercial harvesters that are not operating properly within the Tag Harvesting Program. That there are recreational harvesters who are catching tautog and then selling to dealers without a valid commercial license or permit, and that addressing those loopholes needs to be done.

Again, those were comments from the AP. We also received some requested changes from the state of Maryland. As you all are aware, staff sent out these draft Guidelines to the Board in early June. We received comments from Maryland regarding requested changes, and I'll walk through those briefly now.

They boil down to three items. The first was to allow some states to delay implementation until July 1. This would effectively be postponing the implementation date for the Tagging Program, and will require Board action. In terms of their second concern, they are requesting that there be an allowance of conservation equivalency for states to allow dealers to tag the fish rather than harvesters. I believe this would also require an addendum to the FMP to allow for this.

In terms of tag expiration, Maryland also noted a concern to allow dealers to retain inventory into the New Year. It's not a current FMP requirement, as I mentioned before in terms of there being an expiration date. If this Board wished to specify an expiration date on these tags that would also require an addendum.

To summarize, in terms of Board actions today, this Board could specify changes to these Implementation Guidelines, or can adopt these Guidelines as best management practices, and not make them requirements for the Harvest Tagging Program, or this Board could consider certain parts of the Implementation Guidelines and make them compliance requirements, and this would likely require an addendum. With that I will take any questions.

CHAIRMAN McKIERNAN: Yes, go ahead, Maureen.

MS. MAUREEN DAVIDSON: ASMFC is going to buy the tags for the states. Is there going to be one large purchase? Would we be allowed to purchase tags midyear if the need arose, or should we just estimate now what we really think we're going to need?

MR. ROOTES-MURDY: I'll take a first stab at this, and Toni might have a follow up. The plan is to have a bulk purchase for this first year. There has been some discussion about whether midyear there is the ability for states to do an additional purchase of tags, depending on how it plays out in the first few months. But there hasn't been any determination on how that would play out in 2020 at this point, aside from the bulk purchase of the tags that is about where we stand. But Toni might have some more information.

MS. TONI KERNS: First I want to clarify that we are going to purchase these tags, but the states are also going to reimburse us back. We are not actually buying them for you. We're physically doing that but not paying for them. Second, in lobster for trap tags, we've been able to negotiate a price, and then that price can last throughout the course of the time of that contract that we have with the company.

I believe when Caitlin spoke with the tag company, we get the lower price on the tags because of the volume that we're purchasing them in at that given time. I don't know if that price would then also carry over if we're not buying at the same bulk, but we can talk with the company and see if we can get that to work. If not, I'm sure that the states could order additional tags later on; it just might be at a higher rate per tag.

CHAIRMAN McKIERNAN: Mike Luisi.

MR. MICHAEL LUISI: A question that comes to mind now. We made some comments. Maryland doesn't have a commercial tautog fishery. Our fishermen operate under the recreational limits of 2 fish in the summer, and maybe 4 fish in the winter. It's almost a year round season. It's a bycatch to sea bass fishing and some lobster fishing.

But my question has to do with how the current commercial fisheries up and down our coast operate, and I'm looking across the table. Are they mostly derby style with limited access permits? Is that how fishermen, you know everyone has a quota? Not everybody has a quota? I'm just wondering. I don't know much about the commercial tog fishery.

But, I'm thinking about the experience that I went through that almost put me in the grave, when I had to use biological metrics in the striped bass fishery, and when I got that big giant box of tags I had to decide, of my 1,200 permitted fishermen, how I was going to give those tags to them, knowing that I couldn't order any more. That became the ITQ issues that again almost put me down. That was not fun at all. I'm only just bringing this up.

If you have a derby style fishery with a lot of fishermen participating, and you only have a limited availability of tags, everyone is going to tell you that they're going to catch as much as they can this year. You're going to have to figure out a way to allocate those tags. We did it through an ITQ on harvest history, but I don't know if this is all going to lead to something like that which you know we might want to think about, if that is something that you want to take on as a state.

CHAIRMAN McKIERNAN: Mike, do you want an answer to the question, or was that a rhetorical question about the states? Kirby, do you want to just give a summary of what the states rules are?

MR. ROOTES-MURDY: I can give you a general one, and then get into more details if you want. But basically there are some states that have a commercial quota as part of Amendment 1. Then there are other states that do not have a commercial quota. Then each of the states has different requirements for what their permitting and licensing is for their commercial fishery.

CHAIRMAN McKIERNAN: Jay McNamee next.

DR. JASON McNAMEE: Just to the root question that you asked, Kirby. You know I like some of the things that are in the Guidelines. I like all of them. Some of them I think would be problematic to try and dictate. For instance, I like the expiration date. I think the penalty stuff would be really difficult. States have very different mechanisms for that sort of thing. I'm hesitant to ask to initiate an addendum.

I think the most, I don't know sensible thing that we could do is let this shake out for a year, and revisit it like this time or at the Annual Meeting next year. Let the states test it out, and then revisit these guidelines and say, we should really implement X, Y, and Z in an addendum. My sense is we could give you a couple of things, you would go out to rulemaking, and we would have to do it again next year anyways. That is just a suggestion from me.

CHAIRMAN McKIERNAN: Rob O'Reilly.

MR. ROB O'REILLY: I agree with Jay. I don't know how we do that exactly, but certainly this has caused a lot of consternation in Virginia on how to do this, because I wouldn't say we have a derby fishery, but we have sort of an erratic pool of commercial fishermen. We think we can use the metric to help with that.

We would have to put something in the regulation that said if you don't have a tag then you're in violation. I guess that is how we go forward there. I was interested in the violations as well. You know we have a matrix of guidelines for penalties that started in 2013, and so I hope that that was just sort of a suggestion that Kirby put up there what states could do.

I'll give you an example, if there was a violation in Virginia, and then the most you could expect as a harvester would be a six month revocation. That is the most in that fishery, so it would take a couple of violations to get you to go beyond that for up to five years. I mean we have a fairly good working situation, and I'm just taking those as recommendations. I wasn't positive in the beginning, Kirby if I may, on the Best Management Practices versus having something that would be compliance.

But, if we're thinking of Best Management Practices then what Jay McNamee suggested, I would say we do need a trial for this. You know a lot of us already are swamped, and I can tell by the way the reactions that I received at VMRC from staff that they are scurrying around trying to figure out how to do that. One question in particular, it seemed unusual that the AP went from recognizing the Chinese New Year to then with the next statement you had there was just to end the tags December 31st. Well that would completely be a problem for us, as we fold into January with our fishery. We're into January up to the 21st, and certainly we do have some. We're trying to identify them.

We know of at least one harvester, maybe two that hold fish, and hold exactly for that situation. I know this has been lingering for several years. But I think it's a lot quite frankly. I appreciate any feedback specifically on the Best Management Practices versus having something where we're in compliance. I think what Jay brought up is worth more discussion.

CHAIRMAN McKIERNAN: I want to get Joe next, but I think the key questions today are the program start date, the tag accounting date, and the tag expiration date. Everything else about how you deal with your harvesters and distribute tags I think is something each state can sort of bake internally within their state rule making.

But it's going to be critical that to make this program work to have it be mandatory that there aren't fish in interstate commerce that don't have tags. I think all of our states are going to have to prohibit the possession of untagged tautog at some date certain, and that we need to decide that today. Go ahead, Joe Cimino.

MR. JOE CIMINO: I'm assuming we're into comments and not questions. I think we had long discussions about when the tags should be, and so you didn't suggest that this is one of them, but the AP talked about at the dealer. We felt that would not address the issue, so I think that can be taken off the table.

I would suggest, because I don't think that anyone, these tags are quite cheap, so I don't think that anyone's fishery is so large that as a state we shouldn't be over ordering, and they can hold on to those excess tags and redistribute if they feel there is a need after that initial distribution. I do agree with the AP that it is important for those tagged fish to not have an expired tag, so that a dealer could hold onto fish or even the harvester can hold onto the fish.

I think the expiration is for those unused tags. You know if states could put it in that if a vessel was stopped in 2021 with unused 2020 tags, then there is a problem. I think that's one of the things that we can move forward on. But one other thing that I thought was well hashed out was this has to be an all or nothing.

I sympathize with Maryland, but I don't see how one state could not do this when the others have to, as you said. Every fish that's out there for commerce should have a tag, and that would also apply to different starting dates. I mean if states can't start until July 1, then this program should start on July 1. I'll leave it at that.

CHAIRMAN McKIERNAN: Joe, to the point you're making. On Page 5 there is a section called Tag Expiration. What is implied there is that fish that are being held by dealers would have to be liquidated by some date certain in the New Year. We're looking for that cutoff date, so we're looking for the Board to endorse some date. Go ahead.

MR. CIMINO: Yes, and we had some conversations with our Law Enforcement guys on this. They said if the whole point is for any fish in commerce to have a tag, and all those

fish have a tag. How important is it whether or not that there is a date tied to that? I'm not sure there needs to be an expiration date. That's a personal opinion.

CHAIRMAN McKIERNAN: All right Maureen, did you have another comment? Go ahead, Toni.

MS. KERNS: Joe, in order for that to work do you think then though the fishermen will also have to report tags used, in order for us to link what was used and what was returned? Right now that is not a requirement, because otherwise I decide to only return 10 of the 20 tags I have, and I sell the rest to some recreational fisherman and those tags get into the market, but there is no way to prove that they weren't caught by a commercial fisherman, because right now we don't have any requirements to say that the tag was used by this fisherman on this date.

CHAIRMAN McKIERNAN: Go ahead, Joe.

MR. CIMINO: Okay so I fully support the guidelines that each harvester is assigned a range of tags, and these are lessons learned from striped bass, I mean because this is all the striped bass as well. If a harvester has a range of tags and that is known, those sold tags. Going back, if that harvester comes in asking for more tags then yes, there should be some sort of process to say I either used all those tags or they were unused. For some states they use affidavits if they are saying that they lost an exceptional amount of tags.

CHAIRMAN McKIERNAN: All right any other discussion? Yes. David Borden.

MR. DAVID V. BORDEN: I would like to go back to a point that Kirby made. He used the term final sale, they have to keep the tag on, and I was trying to find it in the document. Is it defined in the document, in the Guidelines? What constitutes final sale? I couldn't find it.

MR. ROOTES-MURDY: Yes. For the Guidelines, it's in the Guidelines. This is specific to tag expiration. It would be tautog with expired tags may be sold only directly to the final consumer, Page 5.

MR. BORDEN: Okay thank you.

CHAIRMAN McKIERNAN: Joe, are you comfortable with that? There wouldn't be an expiration date. A dealer could possess expired tagged fish, but they could only be sold to a consumer. Is that what you were thinking? Mike.

MR. LUISI: Just as a comment to that. Before we went to the new system for striped bass, we had no date on the tags. They just rolled from year to year, and it created the situations that we got ourselves into with the harvesters losing boxes. They didn't have to return anything. There was no need to return it, because it never expired and it just snowballed on itself over the years, where all of these unaccounted for tags. You give somebody a thousand tags and never expect them to return them. They can go anywhere out there, because there is no audit. That is I think an important part of that expiration date on the tags, so that they have to be returned and then there is an audit by the state.

CHAIRMAN McKIERNAN: Kirby, do you have a comment?

MR. ROOTES-MURDY: Just again to remind the Board that the language in the Amendment right now is that all states will require recipients to return unused tags from the previous fishing year no later than February 15.

CHAIRMAN McKIERNAN: Go ahead, Mike.

MR. LUISI: One of the comments that we made had to do with does it have to be a calendar year, or can you have the fishing year, and then have your tags returned during your closed

season, 45 days which would be the same as January 1 to February 15, after the end of your fishing year. That could be helpful for my staff that are doing all the auditing to the five fishermen that we have. It just could be helpful. I don't know if other states would be in the same situation.

MR. ROOTES-MURDY: The language is specific to the previous fishing year; it doesn't have it tied currently to a calendar year. I think part of that is because you do have some states that have a fishing season that extends across two calendar years.

CHAIRMAN McKIERNAN: Any other questions or comments? Eric Reid.

MR. ERIC REID: Kirby's comment and I'm reading the requirement that if you are a dealer and you have expired tags, you have to sell them. If you're a dealer and you have a tautog with an expired tag, you are required to sell it to the final consumer. That is totally insane, totally insane.

I mean we don't sell to the final consumer, we sell to a wholesaler who may sell to another wholesaler, who sells to a little Mom and Pop store, and somebody is going to walk in and buy one fillet, maybe a half a fillet. I mean that requirement is not reality and it's not acceptable for the market, no way.

MR. ROOTES-MURDY: I'm going to keep coming back to this, guys. We've got the draft Implementation Guidelines, so they are not requirements right now. That tautog with expired tags may be sold only directly to a final consumer is in the draft Implementation Guidelines. As I mentioned before, if you want to change or adjust the language in there we're happy to take those comments today to make those changes. If you want to make it a requirement that's also something the Board can do, but I need the Board to clarify what the pleasure of the group is.

CHAIRMAN McKIERNAN: Eric, did you want to follow up?

MR. REID: This whole thing is really, I've lost a lot of sleep over this, because just this whole thing is kind of crazy. The issue of an expired tag or the date of expiration, have you ever tried to tag a tautog with two tags? You've got a harvesters tag and a dealers tag. I don't know how.

CHAIRMAN McKIERNAN: Well there is not going to be a dealer tag in this program.

MR. REID: My opinion from the very beginning has been that the dealer should have the tags. You know you're talking about the point of last sale versus point of first sale. I'm not even sure if a guy that has got a tagged tautog has to sell to a licensed dealer.

CHAIRMAN McKIERNAN: I'm sorry, would you repeat that?

MR. REID: Does a harvester, who has a tagged tautog, have to sell it to a licensed dealer?

CHAIRMAN McKIERNAN: That's a question that every state would have to answer around the table. Certainly in my state it does. Are you thinking of like over the rail sales of like retail boat sort of stuff, where it direct sales to the public?

MR. REID: Honestly, Mr. Chairman, I'm just trying to think of the accounting of the tags themselves, and how you can keep the accounting for all those tags. You're going to lose 10 percent right off the top, apparently. That is an interesting number. I'm sure it's more than that, but this whole thing about we're going to tag, and we're going to have some accounting of all this.

I know in Rhode Island for striped bass. In order for me to get my next year's tags, I have to take all my unused tags and turn them in, every one.

When I get tags I have to sign for numbers 1,000 through 1,100 or whatever, and I have to sign for proof that I'm a dealer.

CHAIRMAN McKIERNAN: Well let me ask you this. As a Rhode Island dealer, do you only buy fish caught in Rhode Island?

MR. REID: Yes.

CHAIRMAN McKIERNAN: Okay Jay, when do you land tautog in your state? What months? What months of the year do you have commercial sales of tautog?

DR. McNAMEE: It's off and on, but starting in April and ending in December usually.

CHAIRMAN McKIERNAN: Okay so Eric, how many months into the following year do you need to hold onto those fish?

MR. REID: We only participate in the fresh market, we don't do live market. But if the Chinese New Year is a lunar, based on the moon not on the day, so it would change every year what that market condition, when that is going to appear. If you want to get into the, forget about the calendar year or the fishing year, you want to get into the lunar year. Now we're really going into the weeds there. But that is the market. That is what that's based on.

CHAIRMAN McKIERNAN: Is three months sufficient?

MR. REID: I think the end of February would be fine, but like I said we only participate in the fresh market, we don't participate in the live market.

CHAIRMAN McKIERNAN: Well, could we make the tag expiration then through the end of February of the following year? Is that a reasonable accommodation?

MR. REID: I think it would be reasonable. I don't know if the Chinese Year has ever gone into March. I don't think that that would be correct.

CHAIRMAN McKIERNAN: Yes go ahead, Doug.

MR. CRAIG PUGH: Would it help, I know in our striped bass fishery we do it at point of landing as our expiration, not at point of sale. Point of sale can continue, and the expiration is solely set on that date at end of the calendar year. At point of landing, as long as that fish is landed within that season can be sold outside of that parameter. But it seems to work for us at the point of landing, without issue.

MR. ROOTES-MURDY: I just want to clarify for the Board again; there is not language that requires a tag expiration date in the FMP right now. If you want to add that we can. But what we have put up on the screen for you all to consider regarding that topic is the closed and open seasons, commercially for each of the states. On the screen you have in red is when a state is closed, and in green is when a state's commercial season is open. If you have a transition that's usually showing that the start date is not falling on the first day or the end of the month. Toni has a point.

MS. KERNS: Originally when we had talked about this we said we would put the year, and that we thought all the tags would expire December 31st, just like any other fishery. As we continue to discuss this, and recognize that there are these states that have fisheries that span over December and January.

What if on the tag instead of putting the year, like 2019, we put the month and year that that fishing year ends, so that you could sell up until the end of that month, and then you turn your tags in 45 days after the end of that month? Will that work for the states, which is following the premise of the addendum. We had said

February 15 before, because it's 45 days after the end of December 31.

It will mean that there are tags with different timeframes, which I don't know what Law Enforcement would say about that. But I'm just trying to figure out a way to make these tags work, so that fishermen don't have to get tags in the middle of their fishing year, which I recognize is unrealistic.

CHAIRMAN McKIERNAN: I think that might be challenging, Toni for a state that has a quota, because the quota could fill in October. In other words, we might have a season that is only two months or six months, depending on the quota filling.

MS. KERNS: For those states that they're fishing year spans, because your quota starts on January 1 then? For example Mike, if you had a, well you don't have a quota. Delaware, do you have a quota? New Jersey, do you have a quota? If you had a quota, and your fishery closed in October, would you reopen January 1, or would you keep it closed until what looks like the opening sometime in September?

MR. CIMINO: Quite frankly I don't think that we would need to do this seasonally; I think annual works for us. Going back to my original statements, I think there would be value in the unused tags expiring annually; you know used tags, a tag in a fish not necessarily needing that same expiration. I think that is kind of what the AP was getting at. I also wonder if we thought this through, if states could handle receiving an order. All the states would receive the order at the same time, and then the states figure out when distribution would be most appropriate.

MS. KERNS: I'm just trying to determine that if your fishing year spans more than one calendar year what date do we put on that tag? That is the part that I am struggling with for you all.

CHAIRMAN McKIERNAN: Go ahead, Maureen.

MS. DAVIDSON: When we discussed getting tags for our tautog, and our season spans from April through the following January. If we say got tags for 2020, we would keep them in effect through January of 2021, and Law Enforcement would know that those tags go until the end of the fishing season, which ends in January.

But for most of 2020 it would be fine. We also said, because the dealers are going to keep the fish, you know well past the end of the season, especially if they're trying to sell fish for the Chinese New Year. We said that market-tagged fish we'll allow that to expire March 15th. We'll tell this to our Law Enforcement that 2020 tags for fishing will be good for fish until January 25, the season ends. However, dealers will hold fish labeled 2020 until March 15.

In light of that here is my question for Toni. Will we have enough states on the tags to put all the numbers that we are required to by the guidelines? I know that they are just the guidelines right now, but in terms of what you're going to do for 2020? We were concerned because the number of tags we might have to order for New York, because we do not have a quota. We're just limited to 25 fish a day. Off the top of my head, if we go to 100,000 tags, does that give you enough space to put everything you need on the tag?

CHAIRMAN McKIERNAN: Caitlin is going to speak to that. She worked on this question, Kirby, sorry.

MR. ROOTES-MURDY: The simple answer is yes, but if you want some more details Caitlin can speak to what has been thought through for the numbers that would go on the tag.

CHAIRMAN McKIERNAN: I mean in my mind, many of these fisheries are very small scale. There is overfishing occurring and many of these stocks are overfished. It may be necessary to tweak the in-state rules to accommodate this tagging program. I don't

think we should be throwing the tagging program out, because we have some rather loose rules within one jurisdiction or another. It may be that we need to evolve the rules to accommodate the tag. But go ahead.

MS. DAVIDSON: We intended to enact the tagging program, but since we currently don't have a quota, we weren't going to use a tagging program to establish the quota. We wanted to make sure we would be able to order enough tags to accommodate our fishermen, and then make sure that I know that there is limited space on the tags.

CHAIRMAN McKIERNAN: No, I agree.

MS. DAVIDSON: If I said that I needed six digits, just to make sure each one has a unique number. Would the tags be able to accommodate that? I believe New York has one of the largest landings of tautog on the east coast. We're not ready yet to start limiting our fishery just like that.

CHAIRMAN McKIERNAN: Well what I meant to say is because you have a closure beginning in February, you have a natural break that will allow you to do the accounting. I'm suggesting that that is probably something that other jurisdictions should probably consider, to accommodate the administration of this program. Rob O'Reilly.

MR. O'REILLY: I want to come back to the expiration date. I know we've moved a little away from that. Despite the graphic up there, I see three states, New Jersey, Delaware, and Virginia on Table 8 that roll through the calendar year and have a fishery in January. I guess what I'm wondering is can we settle on an expiration date for the previous year, because come January that year's tag is going to be made available.

The previous year tag is going to be still there, I hope by those who are holding fish for the Chinese New Year, and how difficult is it going to be to do that? One thing that we thought about is a permitting system. You're going to have a declaration. If you're going to hold fish beyond the calendar year, you're going to have a permit to do so.

I mean that is one thing that we have talked about. There probably are ways at the state level to take care of an end of February expiration date on the previous calendar year's tag. I'm just wondering. Is that something that is beneficial to the Board, because I know that Eric made a pretty good point about where he thinks the tag should be?

But it seems as if it's going to be on the harvester, from everything I know, and because of that I'm just curious as to can we set an expiration date, knowing that we leave it up to the state to ensure that those tags that are held beyond the calendar year are held by those individuals that the state knows have permission to do so, and law enforcement in that state knows that those are the individuals, not going to be a lot, have the ability to hold those fish and tags at that time.

CHAIRMAN McKIERNAN: Mike, go ahead.

MR. LUISI: To Maureen's example. If the state of Maryland had a tag with a printed date on there, 2020, but we had internally established an expiration date for that 2020 tag as being May 15, 2021. We established that via whatever rulemaking process we have. We have our own expiration date for that tag. It simplifies for me, just having a date on the tag, and then we just decide what our own expiration date is for it. That would work.

MR. ROOTES-MURDY: Yes. Sorry, we were side barring, trying to think through this and give you guys the best guidance, and trying to determine if an expiration date is really necessary, and really come back to the Implementation Guidance Document. The

language right now says that tags will expire when the fishing year when they were issued ends.

As you can see on the screen, there are two states that have a fishing year that straddles two calendar years, right, New York and Virginia. Really if that calendar year does not work for your state, then it would be up to your state to kind of think through what is the best guidelines for that.

I think Maureen outlined generally how they are going to view this in the state of New York for tags that are issued in the previous fishing year, but their fishing season ends in the next calendar year. Again, if this is a requirement that you guys want to put in place, then you can do that. But otherwise, if you are looking to just change the language in these draft Guidelines, this is what we were hoping to get feedback on from you all today.

CHAIRMAN McKIERNAN: Kirby, it sounds like consistent with Eric Reid's comments, he would want us to strike the last sentence of tag expiration, which says tautog with expired tags may be sold only directly to the final consumer. Eric would want that struck. Otherwise, the rest of the section could remain intact.

That would satisfy Maureen's concerns, which is to allow each state to have a fishing year that may cross over New Year's Day. Is everybody okay if we strike that last line and we take it up in that fashion, allowing states to define their own fishing year? Yes, Maureen, are you good? Okay. All right anything else? Yes, go ahead, Maureen.

MS. DAVIDSON: I also understand that the Guidelines it says that we should be assigning tags by management area. Do I have that correct, Kirby?

MR. ROOTES-MURDY: I don't believe so. Can you refer to where that is in the document?

MS. DAVIDSON: I don't have the document open. I have my notes open, not the document. We would be able to explain where the fish were caught by stat area from the VTRs as opposed to assigning tags by management area.

CHAIRMAN McKIERNAN: I don't recall seeing any reference in the document to tags attributed to a management area.

MR. ROOTES-MURDY: Yes just to confirm that. I'm not seeing that as well. It's not a requirement in the Amendment, and I don't see it in the Implementation Guidelines.

CHAIRMAN McKIERNAN: Are there any other comments on the document? Yes, Justin.

DR. JUSTIN DAVIS: What would now be the last sentence in the tag expiration section of the guidelines says it will be illegal for any dealer to buy or sell any tautog with an expired tag, but if I'm following this correctly, the expiration date for the tag would vary by state, and would be at some point in time past the end of the fishing season, at which you know it's reasonable to expect the dealer has had ample opportunity to sell sort of standing stock by that point, so this is conflicting with that sort of need to hold onto fish past the expiration date, or past the end of the fishing season and sell them.

MR. ROOTES-MURDY: I'm going to let Caitlin answer that I missed it, sorry.

MS. CAITLIN STARKS: I think if you're suggesting removing that language that would work. Maybe an addition would be it will be illegal for any dealer to buy any tautog.

MR. ROOTES-MURDY: Going through this document with you now. Staff's recommendation may be to remove those last two sentences, such that for the guidelines it would read; tags will expire when the fishing year for which they were issued ends. In parentheses, unless the state determines this

would unnecessarily restrict harvest and sale at the end of the year, in which case an alternate expiration date could be determined. That would be the end of it for that section.

CHAIRMAN McKIERNAN: Is everybody good with that? Good, all right. Thank you, Justin, good pick up. All right, I think we're pretty close. Are there any other comments? Yes. Ray Kane.

MR. RAYMOND W. KANE: We're talking about two states, so I'm going to presume Virginia and New York will make their submission 45 days after the middle of January, or the 20th or 2st of January, Rob?

MR. O'REILLY: That's when the season ends, yes for that portion.

MR. KANE: Yes, so you'll be submitting your numbers back within 45 days after January 21, as the other states are required.

MR. O'REILLY: I was just going to say that is the requirement. You know we haven't of course gotten to that point. I have a little confusion here on New York and Virginia being the only states. Is Table 8 incorrect in the documents, because it certainly looks like Delaware and New Jersey roll through December into January? That's what Table 8 says, and Table 8 says New York does not. But Virginia does, and that is why I indicated earlier that three states roll through a calendar year into the next year. I mean that's been a little bit of confusion for me.

CHAIRMAN McKIERNAN: Rob, Toni I think wanted to comment.

MS. KERNS: I think that maybe we misspoke earlier. There are I think five states that have the potential to carry over through the calendar year that have fisheries that go past January, or December 31. In the plan the one requirement that still holds is that harvesters must turn in their tags by February 15. I think that a state could apply for conservation equivalency when your fishing year spans two calendar years, and request that your harvester's turn in their tags to the state 45 days after the end of your fishing year, or in order to get your new tags. I don't know if all of these fishing years have 45 days in between them, but I would suggest they not be able to have two years-worth of tags in their hands at the same time. I think you would want to make sure you have the previous year's tags before they can have the new year's tags, as we do in striped bass.

CHAIRMAN McKIERNAN: Rob O'Reilly.

MR. O'REILLY: Consistent with what Ray asked me, the answer is yes. But at the same time, given everything that's been done to get to this point. I still see that the state is going to be responsible, I'm just informing you, for sort of having a two-tier system. In other words, if you're a harvester, and you are not holding fish for the live market, then those tags will come in before, and the other tags will be there on the fish.

As long as that's something that we're all in agreement about, because I don't expect a lot of harvesters in Virginia, but I know there will at least be a couple, maybe three. I hope that that is certainly consistent with what the Board is talking about, and in Toni's case that would mean that no one would have two years of tags, except those individuals, those few individuals who would be holding fish for the Chinese New Year. Is that still consistent?

CHAIRMAN McKIERNAN: Go ahead, Toni.

MS. KERNS: Well if you have a fish in your tank you've already tagged it, so you're not holding onto your tags from the previous year, you've tagged that fish, and if you're into your next fishing year you wouldn't need the previous year's tags anymore. Yes you could have tags in a tank that have two different calendar year

tags, but you as an individual harvester couldn't have tags in your hands with two different calendar year tags.

CHAIRMAN McKIERNAN: Rob.

MR. O'REILLY: I wasn't suggesting that and I think we've moved to a situation where it's a lot more understandable through this discussion. I think it will work out. I appreciate that Toni.

CHAIRMAN McKIERNAN: All right are we good? Yes, Ray.

MR. KANE: I have a question looking at this graph. We want to get this mandated and in place by January, 2020 right? We seem to be hung up on the fact that some states roll into January 21. Follow up years, as Jason has mentioned, we're going to have to tweak this as we go along. But follow up years.

There seems to be a concerted effort to get this up and running by January 1 of 2020. States will need that liberty to report up until January 21, so now we're looking at Jersey, Delaware, Maryland. But in years following like in '21, the year should start January 1, and it ends December 31. Kirby, I'm sorry. Go ahead.

MR. ROOTES-MURDY: No, it's all right, Ray. I'm realizing that there could have been some more clarity to this graph. I'm looking at the FMP right now that we reviewed state compliance reports, and with the exception of New York, all other states are listing that if they have a fishery in January, it's starting January 1. It is not straddling two different fishing years.

CHAIRMAN McKIERNAN: All right, any other comments? What about the implementation date? Can states succeed in getting rules enacted by January 1 to require tagging for harvesters, and to prohibit untagged fish in dealers? What do you say? Mike.

MR. LUISI: It was part of our comment, and Maryland can't get it done in time, because we have to go through a process to identify a group of people who are going to be applying for these tags, and that's a process we do. We have a declaration period, which we have to establish via regulation. We can't get it done by January 1, but we can begin the process of working to have it accomplished as soon as we can in the new year. But after this discussion today, I'm thinking about prohibiting all commercial landings of tog in Maryland. I'll walk away now.

CHAIRMAN McKIERNAN: Maureen.

MS. DAVIDSON: Our season for tautog will not open until April 25th, I forgot the date already. We would not put it in effect January 1, because we're going to consider that to be still the 2019 season.

CHAIRMAN McKIERNAN: Okay.

MS. DAVIDSON: We will probably have our regulations in effect in time when our season opens in April.

CHAIRMAN McKIERNAN: April 1.

MS. DAVIDSON: April 20 something or other. Yes. Is that okay?

CHAIRMAN McKIERNAN: Well let's find out what the consensus view is among the states, and maybe we can just delay to some common date. Jay.

DR. McNAMEE: I was just going to offer. What both Mike and Maureen have offered seem like perfectly fine exemptions. I would rather; you know we were supposed to have this in place right now, so I would rather get it going, allow some flexibility in this first year. But just mandate that it needs to start January 1, if you have it in process that's good, if your fishery doesn't start until April that's good, like we're

not going to find people out of compliance. But let's get it going.

CHAIRMAN McKIERNAN: Okay, all right. Anyone else, go ahead, Maureen.

MS. DAVIDSON: Well, to be clear, Tautog harvested in New York in January will not be tagged because we're not going to start it until April.

CHAIRMAN McKIERNAN: David Borden.

MR. BORDEN: In the spirit of trying to help, Mr. Chairman. How about if we just say if January 1 is the date, or as soon after as the state can implement the regulation, and they'll notify the Commission of that date of course.

CHAIRMAN McKIERNAN: I'll take that. All right, it won't be strict compliance criteria for January 1, but it will be to maybe commence rulemaking by January 1, Toni. We can monitor rulemaking, and if each state could send the plan coordinator their public hearing notice or whatever is being proposed, so we can keep our eyes on that. I know in Massachusetts we intend to have it in place by January 1. Eric, go ahead.

MR. REID: What about, let's say I want to buy tautog from New York in January and they're not tagged, but we are engaged in our tagging program? How are you going to interact with interstate commerce of non-tagged fish in states that are complying with the tagging program earlier than other states?

CHAIRMAN McKIERNAN: I think that's an issue for Jay when he goes to rulemaking. If he enacts the tagging program on January 1, you as a dealer in the state of Rhode Island can make that comment that you would like to get three months of grace period, until after that time period.

MR. REID: Okay thanks. Thanks, Jay.

CHAIRMAN McKIERNAN: Okay, yes Toni and Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Not to complicate anything. It might be worthwhile to have the states that can't implement by January 1st identify what they anticipate their timeline to be, and then come back at the annual meeting to have those conversations. Then Jay will know if he needs to give Eric three months grace period or six months.

You know if they're buying fish from Maryland it might take even longer. Just so there is sort of a conscious decision about what are the timelines for each of the states. A number of states can and will be able to go on January 1, but there are a couple that have identified they haven't, and it's probably worthwhile to have that conversation, and identify those timelines for those states.

CHAIRMAN McKIERNAN: Does that mean we'll schedule a Board meeting for the October, or just make it Policy Board?

EXECUTIVE DIRECTOR BEAL: We can. Maybe if we set a date. Notify the Commission by October 15th of your timeline, and then we'll see what those look like and we'll see if we need a Board meeting or not. I don't know, pick a date. Maybe September 15th so we can do the agenda. I don't know, the last minute? I think once the states go home and really start thinking about this, if there is even more, which would be hard to believe, even more difficulties than we've already talked about. I think we need to maybe set aside some time to work through those.

CHAIRMAN McKIERNAN: Does the Board agree that a September 15 deadline to report back to the Commission on their rulemaking timeline?

CONSIDER APPROVAL OF 2019 FMP REVIEW AND STATE COMPLIANCE

CHAIRMAN McKIERNAN: All right, thank you let's move on to the rest of the agenda then. Next is the Plan Review Report.

MR. ROOTES-MURDY: I'll try to go through this quickly, given we are behind on our schedule. I'm going to go first though the management measures. All the states implemented new regulations consistent with Amendment 1. Long Island Sound and the New Jersey/New York Bight Region put in place regulations to reduce harvest for that Long Island Sound Region.

It was to achieve a 20.3 percent reduction for the New Jersey/New York Bight. It was commercial and recreational measures to achieve a 2 percent reduction. The Massachusetts through Rhode Island Region, MARI and Delmarva, Delaware/Maryland/Virginia implemented regional regulations.

This is an important slide for you all. Since the last assessment as you're aware, NOAA implemented changes to the MRIP program for estimating recreational catch. That multiyear transition changed much of the harvest estimates for the entire time series. In particular, if you're looking at the graph on the screen, we have what the base series calculations are. That is what we were using up until last year.

We have the calibration applied to the APAIS design since 2013, and then we have the final calibrated estimates that are the higher ones. What this shows you is that annual coastwide harvest by weight has increased at the coastwide level in all years, anywhere between 27 percent to 323 percent after this calibration took place. This is the recreational data.

In looking at commercial and recreational harvest together, we're looking at landings from '81 to 2016. Commercial landings decreased by 15 percent in 2018 from 2017. In 2018 the commercial landings value was its highest ever at 3.98 dollars per pound. Recreational harvest though, while it was much higher for the time series, decreased in 2018 relative to 2017.

These recreational landings in 2018 were the lowest in the time series. As you're aware, recreational harvest has consistently made up at least 90 percent of coastwide landings combined. For the Biological Sampling Program, New York, Delaware, and Virginia were unable to meet the 200 age sample requirement.

The states reported that they did try to acquire these samples, and each state had different reasons for why it was difficult. New York has had issues with the contractor they previously worked with. For Virginia, they had a donation freezer that was at a marina that has since been removed, and Delaware has had more difficulty trying to get some of their samples from a previous for-hire captain that they've worked with.

In spite of that the PRT recommends that the Board find all states in compliance with the sampling requirements as these states did strive to try to collect these samples. One note to the FMP review, Maryland's regulations will be updated to reflect that they have a start date of January 1. The Plan Review Team recommends that state's should make more clear what their state measures are in their compliance reports, and what those measures result in for their regional management program to achieve a regional F target. This was spelled out in the Amendment. In terms of de minimis requests, Delaware and Maryland have both requested de minimis status, and continue to qualify for the commercial sector, and the Plan Review Team recommends that the Board approve the states for their requests**.** **For Board consideration today move to accept the 2019 Tautog FMP Review and state compliance**

reports and approve de minimis requests for Delaware and Maryland.

CHAIRMAN McKIERNAN: Can I get someone to make that motion**?** Yes, Ray, second, David Borden. Shall I read it into the record? **I'll read it into the record; motion to accept the 2019 Tautog FMP Review and state compliance reports and approve de minimis status for Delaware and Maryland. Motion by Mr. Kane, seconded by Mr. Borden, is there any objections to the motion? Seeing none it is unanimously consented.**

ELECT VICE-CHAIRMAN

CHAIRMAN McKIERNAN: All right, the next item on our agenda is the election of a Vice-Chairman. Jay McNamee, before we get there.

DR. McNAMEE: Thanks Mr. Chair, I didn't want to interfere with the motion. But I did want to make a comment on the age samples. In particular, now that we've moved to a set of spatial region specific stock assessments. I wanted to make a statement that the age information, the age samples become more important.

I just wanted to offer, I know folks are trying. I know the PRT felt that people had made efforts, but I just want to reemphasizes the importance of getting age samples from your regions, because we are using age-structure models that are now spatially explicit, so it has added importance now.

CHAIRMAN McKIERNAN: All right, we're looking for a Vice-Chairman and we're looking for a motion. Yes. Justin Davis.

DR. DAVIS: I nominate Bill Hyatt, to be the next Vice-Chair of the Tautog Management Board.

CHAIRMAN McKIERNAN: Would you like to close nominations as well?
DR. DAVIS: I would.

CHAIRMAN McKIERNAN: Any objection to Bill Hyatt being the next Tautog Board Chair? Oh a second, thank you. Can I get a second? Jay McNamee. Any objections to Bill Hyatt as the next Board Chair – Vice Chair – **Oh it will be quick, it will be Board Chair**. All right seeing none, thank you Bill for enlisting as Vice Chair, and next meeting will be my last, so maybe you'll be up then.

CHAIRMAN McKIERNAN: That is the end of the meeting and of our agenda. Bob, do you have any announcements? Oh Emerson, go ahead.

MR. EMERSON HASBROUCK: I would like to correct something that Kirby mentioned when he was going through the review on sampling, where he said that in New York there was a problem with the contractor. There is not a problem with the contractor; there is a problem with the state issuing a new contract to the contractor. I just want to make that clarification, thank you.

ADJOURNMENT

CHAIRMAN McKIERNAN: Bob, any announcements? I am done. Is there any objection to adjourning? Seeing none, the meeting is adjourned.

(Whereupon the meeting adjourned at 5:28 o'clock p.m. on August 7, 2019)

Atlantic States Marine Fisheries Commission

Atlantic Menhaden Management Board

October 28, 2019
1:15 – 2:45 p.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*N. Meserve*) 1:15 p.m.

2. Board Consent 1:15 p.m.
   - Approval of Agenda
   - Approval of Proceedings from August 2019

3. Public Comment 1:20 p.m.

4. Progress Update on the 2019 Atlantic Menhaden Single-Species and Ecological Reference Point Benchmark Stock Assessments (*K. Anstead, K. Drew*) 1:30 p.m.

5. Update on 2019 Reduction Fishery Harvest from Chesapeake Bay (*N. Meserve*) 1:50 p.m.
   - Consider Compliance with the Fishery Management Plan **Action**

6. Other Business/Adjourn 2:45 p.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

Atlantic Menhaden Management Board Meeting
October 28, 2019
1:15 – 2:45 p.m.
Arlington, Virginia

Chair: Nichola Meserve (MA) Assumed Chair: 05/18	Technical Committee Chair: Joey Ballenger (RI)	Law Enforcement Committee Representative: Maj. Robert Kersey (MD)
Vice Chair: Spud Woodward (GA)	Advisory Panel Chair: Jeff Kaelin (NJ)	Previous Board Meeting: August 6, 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (18 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Progress Update on 2019 Menhaden Single-Species and Ecological Reference Point Benchmark Stock Assessments (1:30 – 1:50 p.m.)

Background

- Two Atlantic menhaden-specific benchmark assessments are currently underway: a single-species assessment and an ecosystem-based assessment. The assessments will be used to evaluate the health of the stock and inform the management of the species in an ecological context. Both assessments will be peer-reviewed by a panel of independent experts at SEDAR 69 the week of November 4, in Charleston, SC

Presentations

- Benchmark stock assessment progress update by K. Anstead and K. Drew

5. Update on 2019 Reduction Fishery Harvest from Chesapeake Bay (1:50 – 2:45 p.m.) Action

Background

- In February, the Board postponed a motion indefinitely to find the Commonwealth of Virginia out of compliance with the FMP for failure to implement a reduced cap on reduction harvest from Chesapeake Bay provided the Cap established in Amendment 3 is not exceeded.
- The Commonwealth notified the ASMFC on September 13 that the Bay Cap has been exceeded **Briefing Materials**

Board Actions for Consideration

- Consider compliance with the Fishery Management Plan

6. Other Business/Adjourn

Atlantic Menhaden

Activity level: High

Committee Overlap Score: High (SAS, ERP WG overlaps with American eel, striped bass, northern shrimp, Atlantic herring, horseshoe crab, weakfish)

Committee Task List

- Peer-Review Workshop – week of November 4
- TC/ERP/SAS - various taskings relating to management response to 2019 benchmarks
- PDT - facilitates the adaptive management process by preparing and developing plan addendum or amendment
- Compliance reports due April 1

TC Members: Joey Ballenger (SC, TC Chair), Jason McNamee (RI), Eddie leonard (GA), Jeff Brust (NJ), Matt Cieri (ME), Ellen Cosby (PRFC), Micah Dean (MA), Corrin Flora (NC), Kurt Gottschall (CT), Caitlin Craig (NY), Rob Latour (VA-VIMS), Chris Swanson (FL), Ray Mroch (NMFS), Josh Newhard (USFWS), Derek Orner (NMFS), Amy Schueller (NMFS), Alexei Sharov (MD), Jeff Tinsman (DE), Kristen Anstead (ASMFC), Max Appelman (ASMFC)

SAS Members: Amy Schueller (NMFS, SAS Chair), Matt Cieri (ME), Micah Dean (MA), Robert Latour (VIMS), Chris Swanson (FL), Ray Mroch (NMFS), Jason McNamee (RI), Alexei Sharov (MD), Jeff Brust (NJ) Kristen Anstead (ASMFC), Max Appelman (ASMFC), Joey Ballenger (SC, TC chair)

ERP WG Members: Matt Cieri (ME, BERP Chair), Michael Celestino (NJ), David Chagaris (FL), Micah Dean (MA), Rob Latour (VIMS), Jason McNamee (RI), Amy Schueller (NFMS), Alexei Sharov (MD), Howard Townsend (NFMS), Jim Uphoff (MD), Shanna Madsen (NJ), Kristen Anstead (ASMFC), Katie Drew (ASMFC), Sara Murray (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC MENHADEN MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
August 6, 2019

These minutes are draft and subject to approval by the Atlantic Menhaden Management Board.
The Board will review the minutes during its next meeting.

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INDEX OF MOTIONS

ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Megan Ware, ME, Administrative proxy (AA)
Doug Grout, NH (AA)
Cheri Patterson, NH, Administrative proxy
Ritchie White, NH
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Nichola Meserve, MA, Administrative proxy (Chair)
Raymond Kane, MA (GA)
Jason McNamee, RI (AA)
Bob Ballou, RI, Administrative proxy
David Borden, RI (GA)
Eric Reid, RI, proxy for Rep. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Matt Gates, CT, proxy for Sen. Miner (LA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Russ Allen, NJ, Governor Appointee proxy
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Andy Shiels, PA, proxy for T. Schaeffer (AA)
Loren Lustig, PA (GA)
Roy Miller, DE (GA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Lynn Fegley, MD, Administrative proxy (AA)
Robert Brown, MD, proxy for R. Dize, MD (GA)
Allison Colden, MD, proxy for Del. Stein (LA)
Ellen Bolen, VA, proxy for S. Bowman (AA)
Bryan Plumlee, VA (GA)
Steve Murphey, NC (AA)
Chris Batsavage, NC, Administrative proxy
Mike Blanton, NC, proxy for Rep. Steinburg (LA)
Mel Bell, SC, proxy for R. Boyles (AA)
Malcolm Rhodes, SC (GA)
Spud Woodward, GA (GA)
Doug Haymans, GA (AA)
Rep. Thad Altman, FL (LA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Martin Gary, PRFC
Derek Orner, NMFS
Sherry White, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Bob Beal
Toni Kerns
Max Appelman
Sarah Murray
Katie Drew
Kristen Anstead

Guests

Bill Anderson, MD DNR
Greg Belle, VSSA
Benson Chiles, Chiles Consulting
Josey Cline, ASA
Richard Cody, NOAA
Heather Corbett, NJ DFW
Roy Crabtree, NMFS
Chris Dolla, TRCP
Syma Ebbin, UConn.
Pat Geer, VMRC
Walker Golder, Audubon Society
Joseph Gordon, PEW
Zach Greenberg, PEW
Pete Himchak, Omega Protein
Des Kahn, Fisheries Investigations
Aaron Kornbluth, Pew Trusts
Phil Langley, MD Leg. Proxy
Arnold Leo, E. Hampton, NY
Conor McManus, RI DEM
Chris Moore, CBF
Patrick Paquette, MSBA
Alesia Read, NMFS
Jack Travelstead, CCA
Bob Vanasse, Saving Seafood
Mike Waine, ASA
Jenni Wallace, NMFS
Chris Wright, NMFS

The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, August 6, 2018, and was called to order at 3:45 o'clock p.m. by Chairman Nichola Meserve.

CALL TO ORDER

CHAIRMAN NICHOLA MESERVE: Good afternoon. Commissioners can please take their seats. We will call the Atlantic Menhaden Management Board meeting to order. My name is Nichola Meserve from the Massachusetts Division of Marine Fisheries, serving as your Chair today.

APPROVAL OF AGENDA

CHAIRMAN MESERVE: You have an agenda before you. Would anyone like to make any additions to the agenda today? Seeing none, we'll consider that approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN MESERVE: We have the proceedings from February of 2019 to approve as well. Are there any modifications to those proceedings? Seeing none we will also consider those approved, and move on to public comment.

PUBLIC COMMENT

CHAIRMAN MESERVE: This is a time for members of the public to comment on items that are not on the agenda. If there is anyone that would like to comment they can come forward to the public microphone.

PROGRESS UPDATE ON 2019 MENHADEN SINGLE-SPECIES AND ECOLOGICAL REFERENCE POINT BENCHMARK STOCK ASSESSMENTS

CHAIRMAN MESERVE: Seeing none, we will move on to a Progress Update on a 2019 Menhaden Single-Species and Ecological Reference Point Benchmark Stock Assessments, and Dr.'s Anstead and Drew will be providing us with that update.

DR. KRISTEN ANSTEAD: I will give you an update on the single-species assessment. We're coming up to our peer review in October. I just wanted to fill you in on some of the changes you might see from the previous stock assessment, SEDAR 2015. It's pretty much a similar stock assessment, so it will be in the spirit of that last assessment.

We have made some updates on some of the inputs, this includes fecundity. We have an updated value on menhaden fecundity from VIMS, and it has resulted in a slightly higher fecundity than the previous benchmark. We have updated natural mortality, so that has resulted in a higher M at age.

We have revised our indices somewhat, so last time we had the northern index, the southern index for adults, and then a YOY index. This time we also have the YOY, northern and southern indices for the adults, but we have added a Mid-Atlantic index and the fishery independent surveys that went into each of those are slightly different from the last benchmark.

We also have some expanded uncertainty analysis to address some of the peer review comments from last time, so we have done some additional things. Then finally, we have some other changes, and there is a table in the report that will outline the changes between the two. But I think those are some of the highlights to start thinking about. Then finally for the reference points, they will be the ones you are used to seeing for single species for Atlantic menhaden, so the current fishing mortality reference points.

We have the median geometric mean F for ages 2 to 4 that's our target, and then the maximum, which is a threshold, and then we have the population and fecundity values that are associated with those F target and threshold. The same thing that you're used to seeing from last time will be there again, but with some changes in some of the inputs, which have

resulted in slightly different values throughout the assessment.

CHAIRMAN MESERVE: Are there any questions about the single-species assessment? Emerson Hasbrouck.

MR. EMERSON HASBROUCK: On that review, I didn't quite follow. Did you say that it was higher fecundity? That led you to a higher M at age? Did I follow that or no?

DR. ANSTEAD: We have updated data for both fecundity and natural mortality, and that has resulted in two different things. Our revised fecundity relationship for the assessment has resulted in a higher fecundity value for menhaden. These were results from a study that VIMS has done to address a research recommendation. Natural mortality is different.

There has been an updated tagging study, so it analyzed the old tagging data, and just provided some new values. We're using the same methods to estimate natural mortality, but we're scaling them to that tagging study, because we thing that is the best available science right now, and so that has resulted in slightly higher natural mortality at age. There are two separate inputs that have been slightly revised that have resulted in different things.

CHAIRMAN MESERVE: Are there any additional questions? If not we'll move on to Dr. Drew's update.

DR. KATIE DREW: For the ERP Assessment, we are obviously still on track and going through with the same timeline as the single-species assessment. I think you know we've laid out for you guys before some of the models that we're considering. We're still going forward with a suite of models that range from very simple, with minimal assumptions about ecosystem dynamics, to very complex with a lot of data requirements, and a lot of assumptions about the ecosystem.

We feel that it's important to present the story about the range of complexity, the range of information that you need, and the range of information that you can get out of all of these different models, to kind of set the stage for an ecosystem management context, since this is not really something that has been done before for management.

However, we will be providing a single sort of recommended approach to develop the ecosystem reference points, so that we say here are the models that we looked at, here's what they say about each other, and what they say about ecosystem reference points for their species. Here is our recommended management approach to develop quota recommendations that take into account menhaden's role as a forage fish. I think we'll get in October; we're planning to come back and have a more detailed update about the models that we're looking at, and some of the different options that we'll get out of them. But for now I just want to kind of explain our approach. The other thing to keep in mind is we're really focused on giving you guys a method to set these ecological reference points, and that there is not one single best value for menhaden, because it depends on kind of the tradeoffs that you want to make in other parts of the ecosystem.

If you want to increase fishing on your predators that gives you a different reference point for menhaden, then if you want to decrease fishing pressure on your predators, and vice versa. We'll give you guys a method and a framework to make some of these evaluations, and we're also going to put forward some example scenarios.

What do the reference point look like if we fish all of our predators at their target F rate, and want to keep them at their target biomass values? What does it look like if we fish the predators at their threshold F rates, and keep them above their threshold values? Obviously you can envision that there are a lot of different moving parts, there is a lot of combinations.

A lot of those come down to management questions, about what do you value in the ecosystem, not just for menhaden but for the predators? We'll provide you with some example scenarios. We'll have the review of the method, and kind of get that peer review feedback on is this the right approach for menhaden for ecosystem reference points?

Then we'll put this in front of the Board, and I think you guys will have to start having the conversations about how do you want to evaluate the tradeoffs for different predators, for different prey species, and the current management framework, not just for menhaden, but for all of these other species. We can give you some starting points, but there will have to be a lot of conversation, I think, in order to get to a final value that really encompasses what you want, for both menhaden and the predators.

CHAIRMAN MESERVE: Are there questions? Stew Michels, please.

MR. STEWART MICHELS: Katie, thank you very much. Are there any of the models that you're evaluating that have risen to the top, or just have you realized that they're just way to complex, and you won't be able to do it, or way to simplistic and we won't be able to use them for management that you can focus your effort a little more?

DR. DREW: Yes. We've definitely sort of picked out what we think is sort of the best approach. That's what we will be presenting to the Review Panel. I don't want to get too in-depth about that now, because I think that could change with the Review Panel, it could change with some of our discussions.

But for sure the focus is on; we think there is the best. There is a path forward that is sort of the best balance between being able to fully utilize all the data that we have available to us, and being able to really capture some of those complex dynamics, without getting so complicated that you're having to rely on really weak data sources and a lot of assumptions, and things like that and also without being too simple. There is definitely kind of a through line of this is the approach that we think is the best, in terms of the modeling tradeoffs. It's great in our perspective, the way there actually is really a consistent story out of all of these models. There are some differences, but really it's a consistent story, and I think the fact that we're getting a consistent story out of a really wide range of modeling approaches strengthens the entire assessment, which is why we want to keep that sort of background or story going forward.

CHAIRMAN MESERVE: Lynn Fegley.

MS. LYNN FEGLEY: I think that Stew asked my same question, and thank you. I know how much work this is for you guys. I'm trying to be clear that there are going to be several models. I'm trying to distinguish between model and approach. There are going to be several models going to the peer review, but from that there is going to be one recommended approach. Could that approach involve the outputs from several models, or by approach do you mean there was one recommended model?

DR. DREW: Good question. Right, and I think we're thinking of this now as, I know some people don't like the term preferred model, but we're thinking of this as a preferred model and some supporting models. These other models support the overall conclusions of our preferred approach.

We're calling it a preferred approach, because what we're looking towards now is really combining the single-species model, which we think is the best for menhaden-specific dynamics, with another more ecosystem-oriented model, in order to get an approach out, rather than saying this is the overall one best model where we are right now. That is kind of how we are going to see it. But definitely we're aiming for the preferred approach, recommended approach/model, and supporting analyses.

CHAIRMAN MESERVE: Other questions at this time on the assessment? Okay, clearly the SASS and ERP are doing a lot of heavy lifting right now, and it will be incumbent upon the Board to get in the game soon.

REVIEW AND CONSIDERATION OF THE 2019 FMP REVIEW AND STATE COMPLIANCE REPORTS

CHAIRMAN MESERVE: We'll move on to the Review and Consideration of the 2019 FMP Review and State Compliance Reports.

You may notice this has a little bit more time on the agenda than generally allotted, partly because 2018 serves as the first year that the fishery operated under Amendment 3, and the new allocations and associated measures, and it will also help to lay the ground a little bit for our next discussion about setting the TAC for next year. We'll begin with a presentation from Max on this.

MR. MAX APPELMAN: A little bit of pressure to fill the time there, I see. Just to restate that the 2019 FMP Review covers the 2018 fishing season. This is a lay of the land for my presentation. These are all the different sections of the report, and I will cover each of them starting with status of the management plan.

Stating one more time, 2018 was the first year under the provisions of Amendment 3, and I'm just highlighting some of the big changes that occurred with that Amendment. First, that the single-species reference points are still the guiding management under Amendment 3, until menhaden-specific ERPs come on line. Second that the allocation of the TAC changed with Amendment 3, so it's a modified fixed minimum, where each state gets 0.5 percent of the TAC, and then the remaining balance is allocated based on the 2009 to 2011 time period. The bycatch provision was sort of rebranded as the incidental catch and small-scale fisheries provision.

The aspects of it remain the same. It also defined applicable gear types for that provision. Lastly, the Chesapeake Bay Reduction Fishery Cap was reduced to 51,000 metric tons, and rollovers are not permitted under Amendment 3. Just highlighting status of the stock with this slide, again stock status continues to be based on the 2017 stock assessment update, which indicated the stock is not overfished, and overfishing is not occurring.

Figure 1 is the top right hand corner. That is showing fishing mortality through time. You can see in the terminal year the estimate is below both the target and the threshold levels. The bottom figure, Figure 2 from the report, showing fecundity in billions of eggs, and again the terminal year is below the target but above the threshold.

As we've already said, the benchmark assessments are on schedule for peer review in November of this year. This is a summary of landings in 2018, compared to the previous year. All these estimates are in millions of pounds. The TAC for 2018 was set at 216,000 metric tons, which is about 476.2 million pounds.

Directed landings in 2018, which includes our episodic events set-aside landings were estimated at 418.3 million pounds, which is an 11 percent increase relative to 2017. It also represents a 12 percent underage of the coastwide TAC. Incidental landings, which don't count towards the TAC, were estimated at 3.2 million pounds, 18 percent increase relative to 2017, for a total of 421.5 million pounds landed in 2018.

Zooming in on the different sectors, so that the bait harvest in 2018 was around 110 million pounds, this again is an increase relative to 2017, also above the previous five-year average. New Jersey, Virginia, Maine, and Massachusetts landed the largest shares for the bait harvest, moving to the reduction harvest around 311.6 million pounds, also an increase

relative to 2017, a slight increase relative to the previous five-year average.

In the Chesapeake Bay reduction harvest cap was set at 51,000, and the harvest came in around 32,000 metric tons, which is about 63 percent of the cap. This figure, you've all seen this before, showing both reduction landings and bait landings on the same figure here. Reduction landings going back to 1940, the bait landings start around the early 1980s.

Note the difference in scale on this figure. On the left hand side you have the reduction landings in the hundreds of thousands of metric tons. On the right hand side is the bait landings in tens of thousands of metric tons. You can see the general trajectory of landings in the recent decade or so. Bait landings have been going up, reduction landings have been going down, but in recent years it sort of tapered off, especially under the coastwide TAC, beginning in 2013.

This slide is highlighting the incidental fishery in 2018, and it's kind of difficult to compare the 2018 fishery to previous years, due to the implementation of Amendment 3, and the reallocation of quota. You can see from the table that landings increased in 2018 relative to the previous year. However, 2018 saw the lowest number of trips occurring, also the fewest number of states participating in the fishery since its inception in 2013. Based on this very rudimentary review of the 2018 incidental catch fishery, it appears that most states were able to keep their directed fisheries open throughout the season if there was sufficient quota there.

As noted on the slide, three states reported incidental catch landings in 2018, those being Maine, New Jersey, and Virginia, with Maine accounting for roughly 90 percent of that. Moving to the episodic event set-aside program or fishery in 2018, the quota was set at 4.48 million pounds, which accounted for an overage in 2017.

Maine was the only participating state, declaring participation in late July, and closing the fishery in early August, landing the whole EESA quota in that short amount of time. There was a small overage, about 160,000 pounds, which Maine did pay back in full. This table is showing you the usage of the EESA since 2013, and you can see that it has been exceeded in the last few years.

Taking a look now at quota performance in 2018, that first column is showing your base quota. Then looking at the second column, it is the transfers that occurred in 2018. There were 7 state-to-state transfers. There was also as I mentioned, a transfer from Maine to the EESA, and this all resulted in a net transfer of 5.2 million pounds to Maine.

Final 2018 quotas are listed in the third column there. There were no overages in 2018, and so the 2019 based quota on the far end of the table reflect a TAC of 216,000 metric tons, that's the 2019 TAC, and 4.4 million pounds of redistributed, relinquished quota from Delaware and Georgia.

This is a look at the biological sampling requirements under Amendment 3, so non *de minimis* states are required to collect biological samples based on landings and geographic region. Maine through Delaware are required to collect one 10-fish sample for every 300 metric tons of landings, and Maryland through North Carolina are required to collect one 10-fish sample per 200 metric tons of landings.

All the states met the requirement here, except for Massachusetts fell short of their 8 required samples, and it was noted in the compliance report that this was primarily because of a very short season in 2018. The primary purse seine fishery was only in operation for about three weeks. The state has indicated plans to more intensely sample the purse seine fishery in the future that ensure that the sampling requirement is met.

Regarding *de minimis* status, states are eligible for *de minimis* status if the bait landings are less than 1 percent of the total coastwide bait landings for the most recent two years. The states of Pennsylvania, South Carolina, Georgia, and Florida requested *de minimis* status for 2019, and the PRT determined that they do qualify.

A couple notable comments from the PRT this year, the first being that it's evident that from landings reports and data suggest that Atlantic menhaden have become increasingly available in the New England region, particularly in the Gulf of Maine. If you saw from some of the slides in my presentation, Maine's landings increased substantially in 2018, relative to the past few years, acquiring over three times its quota through transfers, using up the EESA and also reporting incidental catch landings. Clearly there is something going on there with menhaden. We are aware that the availability of other bait fish has changed in recent years, and there is probably all other social and economic factors going on.

The other notable comment here is in regards to the incidental catch provision, and this is sort of a tricky one. I'm going to try my best to explain it. But if the provision allows states to continue to land menhaden after its quota has been met under the 6,000 pound trip limit. However, there are some instances where states further subdivide its quota to different gear types or different sectors.

Typically a majority of the quota in these circumstances will go to a purse seine fishery or sector, and the remaining quota will go to a non- purse seine or small scale or other gears category. In these cases the incidental catch provision only applies to the non-purse seine fishery. It is in this circumstance that you can have a state close its small scale or non-purse seine fishery, due to reaching the quota, moving into an incidental catch fishery while there is still quota available for the larger fishery, the purse seine fishery.

In regards to the FMP, there is really no guidance for when a state subdivides its quota to different gear types or sectors. For completeness, sharing with the Board that the PRT has and will continue to report landings following the closure of these fisheries as incidental catch, unless the Board would like to see that reported differently.

Although the PRT is not recommending any action at this time, it is recommended that this incidental catch provision be readdressed in a future management document. Wrapping up with some PRT recommendations, the first is to approve *de minimis* status for Pennsylvania, South Carolina, Georgia, and Florida. Again, noting to readdress the incidental catch provision in some future management document. I am happy to take any questions, thank you.

CHAIRMAN MESERVE: Thank you, Max, are there questions for Max? Lynn Fegley.

MS. FEGLEY: Max, I'm just curious what the PRT, with the incidental catch and the issue of the subdivided quotas among gear factors. What was their concern with that? Was it a concern of accounting or a concern of equity, or could you be a little bit more specific about what exactly the worry was?

MR. APPELMAN: I think it was just pointing out that the provision in the plan requires a state to utilize its full quota before moving to incidental catch, and in this particular circumstance that is not necessarily happening. I don't think there is any real concerns, other than the plan is saying one thing and is sort of gray on what to do when a state further subdivides its quota to different sectors.

CHAIRMAN MESERVE: I think collectively it was about 300,000 pounds between the two states that fell into that incidental catch amount, so it's not a lot of fish being landed, but it could be different interpretations of the FMP, so the PRT recommendation is to just clarify it moving

forward. That is one option for the Board. Are there additional questions? Rob O'Reilly.

MR. ROB O'REILLY: Thank you for the report. Did you put a percentage on the 2018 achievement of the total allowable catch? Was there a percentage there?

MR. APPELMAN: The directed landings were 12 percent below the TAC.

MR. O'REILLY: This is for everything, so I'm just kind of cross-checking. Were the metric tons 213,840? Was that what you were showing us? I was just wondering if you had a percentage there.

MR. APPELMAN: No, I don't have a percentage. But if you go up to Slide 5, so that total at the bottom under 2018 that is total landings altogether. A portion of that 3.2 million pounds it doesn't count towards the TAC that is in pounds. I don't have the metric tons listed out there, but I do have what the total TAC was in pounds at the top of the slide. Does that help?

CHAIRMAN MESERVE: Go ahead, Rob.

MR. O'REILLY: Thank you that does help and I guess at least from our workings that we did, the last two years have been well under 85 versus 87 percent in 2018, 85 percent in 2017. Then I guess I would comment that the relinquished quota can't all be used, but is there a plan for when it can't be used?

Specifically, Virginia has in law a total allowable landings that can't be exceeded, and yet I think you mentioned a little over 4 million the first year, and over 3 million the second year. Well that's my recollection. There is also quota that is just relinquished, but there is not a plan for where that can go after that, I think.

MR. APPELMAN: I might be a little confused by the question. The states are allowed to relinquish quota by December of the current year for the following year. That relinquished quota is automatically redistributed to the states. It is given back to everybody, and is used in that fashion.

CHAIRMAN MESERVE: Follow up Rob?

MR. O'REILLY: Yes. I guess that was designed for the relinquishing quota to be apportioned according to the 2009 to '11 percentages. What I'm indicating, I know in Virginia we can't take on the amount of relinquished quota that we could, because of the situation with the law freezing the amount of allowable landings we have.

I was just wondering, will there be a provision in the future to determine what happens after that? If they can't go to a state, you know because the percentage was pretty high for Virginia, but Virginia couldn't take on that amount. I think maybe part of it brings up the Amendment 3 quota for Virginia, where we took a minus 0.45 reduction, and then the relinquished quota can bring that up to what's in the code of Virginia in the law, but no more than that. That is my understanding, and if you want to think about that for next time around. But I think if someone is relinquishing the quota, they clearly had a destination in mind that they wanted that quota to go somewhere else. But if it can't go anywhere, that might be a little bit of a situation.

CHAIRMAN MESERVE: Maybe something for the Board to consider in a future action, if more direction is needed there. States also have the option of not relinquishing quota, and just doing a direct transfer to another state if they do want it to go to a particular place. Are there other questions? I'll also take any comments. I'll comment on the Massachusetts situation with the biological monitoring requirements.

As Max pointed out we did fall short in 2018. However, we did implement a plan for 2019, and have sampled the fishery per the requirements this year already, and continue to sample opportunistically, so I don't expect there will be an issue with Massachusetts sampling

next year. But are there any comments about dealing with the incidental catch provision?

I'll assume that unless there are other comments made that it will be the Board's intent to consider addressing that issue in a future management action, as recommended by the PRT. If there aren't any other comments, **I would look for a motion to accept the FMP Review and the *de minimis* requests. Is that a motion, Emerson?**

MR. HASBROUCK: Yes, so moved.

CHAIRMAN MESERVE: All right, thank you, second by Ray Kane. **Is there any opposition to the motion? Seeing none, we'll consider that approved.** Sorry Bob, go ahead.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Since the maker of the motion just said so moved, kind of repeating yours, you may want to read that into the record, thank you.

CHAIRMAN MESERVE: Will do, thank you, Bob. The motion is to move to approve the 2019 Atlantic Menhaden FMP Review, state compliance reports, and *de minimis* status for Pennsylvania, South Carolina, Georgia, and Florida. The motion was made by Mr. Hasbrouck, seconded by Ray Kane, and carries without opposition. Then we will move on to our last agenda item to Discuss and Set the TAC for 2020. Max will start us off with a presentation, a review of the memo that was provided in your briefing materials.

MR. ROBERT BALLOU: Madame Chair, point of order that it was just written up on the screen incorrectly, without opposition it should have said. Thank you.

CHAIRMAN MESERVE: So noted, thank you. Max.

MR. APPELMAN: Yes there was a memo included in meeting materials, which sort of reviews the TAC setting process and a little bit of background information, as well as the Board's options for 2020. There are a few copies of it in the back of the room. It might be helpful to have that in front of you, sort of see the tables included in that. Just some background, the TAC is set through Board action on an annual basis, or for multiple years based on the best available science, which typically takes the form of projections analysis, which are in turn based on the latest available stock assessment. In 2017, during the Board's deliberations on Amendment 3, it set the TAC for 2018 and 2019, with the expectation that setting of the TAC for subsequent years would be guided by menhaden-specific ecological reference points, which as we've been discussing won't be ready for Board review until February of 2020, so the Board still needs to address the TAC for 2020.

Again, in 2017 the Technical Committee prepared a suite of projections for the Board to use when setting the TAC for the 2018 and 2019 fisheries. Those projections were based on the 2017 stock assessment update, which is still the assessment used for management. The projections ran through 2020, which is the year in question.

Part of the calculations there assumes constant landings at 200,000 metric tons for 2017 through 2020, and that was again you know these projections were done in 2017. That was based on the 2017 TAC level. Here is a review of the results of those projections. As you can see there is a suite of TAC options. This was all based on Board guidance from 200,000 metric tons, which was status quo at the time, all the way up to 280,000 metric tons.

You can see the associated probability of achieving respective reference points in 2018, 2019, and then again in 2020. The top table is the target, achieving F target. The bottom table is for the F threshold. The Board set the TAC at 216,000 metric tons in 2018 and 2019, sort of below the second and third options there.

Of note is for the 2020 year under these projections, there would be zero chance of

exceeding either of the reference points in 2020 at that TAC level. Here are the Board's options regarding 2020. The Board can use those existing projections, which I just went over, and set the TAC today. Alternatively, the Board can request updated projections, and keeping in mind that those updated projections would still be based on the 2017 stock assessment update.

The Board could give guidance to the TC on a suite of options to explore, and bring that back to the Board at annual meeting, at which case the Board could take action at that time. A couple things to keep in mind there is that I think staff feels that the projections wouldn't likely change, even if they were updated.

The level of landings that occurred in 2017 and 2018 were actually below that level that was assumed in those projections, as well as the proportions of landings coming from the bait and reduction sectors didn't change in those years either. But most importantly, the work to update those projections would certainly detract from the ongoing assessment work, which I think we all are aware is at a pretty critical stage of that process, so all important points to keep in mind.

The third option is to defer action on the 2020 TAC until the 2019 benchmarks, the single species, and the ecosystem-based benchmark assessment are presented, and new projections based on those assessments can be developed. Under this third scenario, the indecision clause in Amendment 3 would kick in, and essentially roll the 2019 TAC into 2020 in the interim. Those are the three options, and I'm going to leave this slide up on the screen for the Board to consider, and I'm happy to take any questions.

CHAIRMAN MESERVE: Are there questions? That was an excellent presentation. Bob Ballou.

MR. BALLOU: Max, with regard to that indecision clause. If that were to be enacted by deferring action, would the Board have to return to the 2020 TAC at some point in 2020 to change it from interim to final?

MR. APPELMAN: It's a great question. It's another point that I sort of left off from my presentation. Let me first, before I answer that directly. Under Options 1 and 2 here the Board could always revisit that TAC in the future, following review. I think it would take a two-thirds vote to bring it back to the table.

Under Option 3, again the intent behind this option would be to defer action until following review of those benchmark assessments, in which case new projections could be developed and reviewed. I think inherently there would be a new setting of the TAC under that option.

CHAIRMAN MESERVE: Toni Kerns, do you want to add to that?

MS. TONI KERNS: To get to Bob's point. If you wanted to keep it the same you could just leave it and not vote on it again.

CHAIRMAN MESERVE: Okay, thank you for that clarification. Lynn Fegley.

MS. FEGLEY: Max, thank you for the presentation. I was very excited and intrigued, as I'm sure we all were to hear the presentations from Dr.'s Anstead and Drew about the upcoming assessment. We know that there is going to be a lot of things that are going to be different. There is going to be different data. Some things have changed, and we also I think all remember the epic protracted conversations about setting TACs for this fishery.

I am going to make a motion, and I'm going to suggest we all go home and rest, and eat our Wheaties, and get ready for the results of the great work that's been done to come to us in February. **With that I would like to move to maintain the TAC for 2020 at 216,000 metric tons with the option to revisit the 2020 TAC following review of the 2019 single-species and**

ecological reference point benchmark assessments and peer-review reports.

CHAIRMAN MESERVE: Second the motion, David Borden. Is there discussion on the motion? Fantastic, so this is a final action, which would normally require a roll call vote, unless we can do it the easy way, which looks like it might be possible. Is there any objection to the motion before us today? Bob.

MR. BALLOU: I'm sorry; I'm late with my question. I guess I just want to make sure I understand that the option to revisit is different than a two-thirds majority vote, or is it the same as a two-thirds majority vote? I see Toni Kerns nodding yes. But maybe for the record you might want to clarify that.

MS. KERNS: To change it, it would require a two-thirds majority vote.

CHAIRMAN MESERVE: Does that cause concern for anyone? That would be whether to increase it or decrease it would require a two-thirds majority vote. Bob.

MR. BALLOU: I just want to be clear. I'm comfortable with the motion; I just want to make sure I understand though that we don't necessarily need this motion. The Board could defer action and not pass any motion. The indecision clause would kick in; the affect would be the same. This is just a more assertive way of doing it.

I agree that we're not undecided, we want to be decided. I would like the spirit of this. I just want to make sure that I understand the distinction, if there is one, between taking this action now versus not taking any action, and reverting to the status quo. I'm not really asking a question, I'm just making a comment to make sure that the rest of the Board concurs with what we're doing and why.

CHAIRMAN MESERVE: Based on staff guidance, it would require a two-thirds vote to change the 2020 TAC from 216,000 metric tons. As long as that is clear and on the record, are there any other questions. Is there a need to caucus? **Seeing as this is a final action, is there any comment from the public on this motion? Okay we'll go back to a request if there is any opposition to the motion. Seeing none, the motion carries unanimously.**

ADJOURNMENT

I think we've broken a record. If there is no other business to come before the Board, we are adjourned. Thank you.

(Whereupon the meeting adjourned at 4:30 o'clock a.m. on August 6, 2019)

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

TO: ASMFC Commissioners and Proxies

FROM: James J. Gilmore, Chair

DATE: September 19, 2019

SUBJECT: Atlantic Menhaden Chesapeake Bay Reduction Fishery Harvest

Fellow Commissioners:

Omega Protein notified the Commission on September 3, 2019 of their intent to exceed the 51,000 metric-ton 'Bay Cap' which was adopted under Amendment 3 of the Fishery Management Plan. The Commonwealth of Virginia has been monitoring menhaden landings per their commitments from last year and notified Omega Protein by letter on September 3rd (attached) to avoid exceeding the cap since harvest was at 85% at that time. Commission leadership communicated with Omega on September 3rd emphasizing the importance of complying with the cap reminding them ASMFC has attempted to work cooperatively with the company over the last two years to find middle ground during this transition period from single-species management to the implementation of Ecosystem Based Reference Points (ERP's). Complying with the Cap was centric to those "good faith" efforts. Commission leadership has also reminded the Commonwealth and Omega of the plan provision that requires "payback" of 'Bay Cap' overages.

Unfortunately, Omega has chosen to not comply and exceeded the cap on September 6th despite multiple communications to dissuade them. Additionally, Omega issued a press release on September 12th to justify their actions. I will not address the details of the release, since it contains inaccuracies and biased statements, other than their statement they abide by all "recommendations" of ASMFC. As you are aware, adopted ASMFC Management Plan measures are legally binding requirements, not arbitrary recommendations.

I have discussed with many of you on previous occasions, the Commission is in a transition stage as we progress from single-species management to an ecosystem approach for some species. Menhaden management is our pioneering effort for this transition. However, as we foresaw, development of ERP's would take time due to the complexity of the necessary analyses. Therefore, we remain in a transition period of managing a resource between previous rules while developing future ones. We were hopeful that a higher level of cooperation would occur during this transition time and I am heartened that all the member states have risen to this challenge; unfortunately, Omega, the largest individual harvester of this vital resource, has not. It appears Omega has chosen short-term economics over longer-term cooperation and sustainability which is paramount to the Commission's mission.

We will be adding a short amount of time to the October 28th Atlantic Menhaden Board meeting for discussion and possible action on this issue. I request that each of you spend some extra time to review all the background, so we are all prepared for the most appropriate actions moving forward.

COMMONWEALTH of VIRGINIA

Marine Resources Commission
Building 96
380 Fenwick Road
Fort Monroe, VA 23651

Matthew J. Strickler
Secretary of Natural Resources

Steven G. Bowman
Commissioner

September 3, 2019

Monty Diehl
Omega Protein
243 Menhaden Rd,
Reedville, VA 22539

Mr. Diehl,

I am concerned about the progress of Omega Protein in its harvest of menhaden from the Chesapeake Bay this year. As of August 23, data provided to the Marine Resources Commission by the National Marine Fisheries Service indicate Omega Protein has harvested 43,385 metric tons or 85.07 percent of the 51,000 metric-ton 'Bay' cap on reduction harvest of menhaden from the Chesapeake Bay. The 51,000 metric ton cap was adopted under Amendment 3 the Atlantic States Marine Fisheries Commission's (ASMFC) Atlantic Menhaden Fishery Management Plan.

Of immediate concern is the sudden increase in Chesapeake Bay menhaden harvest for reduction over the past three weeks, and 43,385 metric tons is substantially greater than any of the previous four years, especially at this stage of the fishing season.

Although the Virginia General Assembly has not adopted this 51,000 metric ton Bay cap, Virginia is obligated to ensure this cap is not exceeded, to avoid compliance issues with ASMFC. I personally told ASMFC's Menhaden Board at their winter meeting that VMRC will monitor the menhaden reduction harvest closely and will accept any consequences necessary, if the cap is exceeded.

Your company has remained below this Bay cap since 2013, and I urge you to monitor your activities closely to avoid any exceedance of the Bay cap in 2019.

Sincerely,

Steven G. Bowman
Commissioner

cc: Matthew J. Strickler

COPY

COMMONWEALTH of VIRGINIA

Marine Resources Commission
Building 96
380 Fenwick Road
Fort Monroe, VA 23651

Matthew J. Strickler
Secretary of Natural Resources

Steven G. Bowman
Commissioner

September 13, 2019

Robert E. Beal, Executive Director
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N,
Arlington, VA 22201

Mr. Beal,

I want to express my extreme disappointment with Omega Protein for recently exceeding the Atlantic States Marine Fisheries Commission's (ASMFC) 'Bay' cap of 51,000 metric tons on reduction harvest of Atlantic menhaden from the Chesapeake Bay. This cap was adopted under Amendment 3 of the ASMFC Atlantic Menhaden Fishery Management Plan in November 2017 and Virginia has remained below this value each year since 2013.

The Virginia Marine Resources Commission monitors the Bay cap and overall state quota with information provided weekly by the National Marine Fisheries Service. No activity was reported in the Bay from July 6th to August 2nd, with the Bay cap remaining at 58.7%. Fishing activity resumed in the Bay throughout August with harvest quickly rising to nearly 87% of the cap by August 23rd. On September 3rd, we sent a letter to Omega Protein expressing our concern with the sudden increase of Bay harvest and to alert them they were approaching the 51,000 metric tons.

We just received the latest harvest reports from NMFS through September 6th, indicating Omega Protein is presently at 101.25% of the Bay cap. Please consult with your staff to verify these numbers. Although the Virginia General Assembly has never adopted this Bay cap, pursuant with our agreement, VMRC is responsible to notify the Commission when the cap is exceeded and that is the purpose of this letter.

Sincerely,

Steven G. Bowman

cc: Honorable Matthew J. Strickler, Secretary of Natural Resources

Max Appelman

From: Ben Landry <publicaffairs@omegaprotein.ccsend.com> on behalf of Ben Landry <publicaffairs@omegaprotein.com>
Sent: Wednesday, October 2, 2019 8:04 AM
To: Meserve, Nichola (FWE)
Subject: Omega Protein: A Letter to Commissioners on the Bay Cap

Nichola Meserve

Massachusetts Division of Marine Fisheries

251 Causeway Street, Suite 400 MA 02114

Dear Commissioner Meserve,

Omega Protein appreciates this opportunity to speak directly to members of the Atlantic States Marine Fisheries Commission (ASMFC) to expand on its public statement regarding the Chesapeake Bay reduction fishery cap, specified in Amendment 3 to the Atlantic Menhaden Interstate Fishery Management Plan.

The Company understands the importance of the cap to many of you, and the legitimate concerns about the importance of Commission processes. Knowing that, we were faced with a hard decision whether stop fishing in the Bay just after Labor Day (and as Atlantic hurricane season was in full force with Hurricane Dorian). That decision would have reduced employee and crewmember income to stay within the Amendment 3 cap. Our other option was to continue fishing as allowed by Virginia law. It was not an easy choice. But we decided to stand by our fishermen who have depended on this fishery for over 100 years, as well as protect our company's own long-term viability.

Omega Protein regrets that this matter has come to its current state. However, adherence to the lowered cap would have caused significant economic harm, just as we all agree that forcing vessels to fish in unsafe oceanic conditions is clearly unacceptable. **Recognizing the Commission's concerns, Omega Protein commits to not exceeding 67,000 metric tons in Chesapeake Bay reduction harvest in 2019.** To be clear, this means we will stop fishing in the Bay, even if that jeopardizes our ability to catch our full 2019 coast-wide allocation. This 67,000 mt figure is slightly below the mid-point between the Amendment 2 and Amendment 3 cap levels. Perhaps more importantly, by ending fishing in the Bay at or

before harvesting 67,000 mt, it ensures that the 2-year, 3-year and 5-year average recent landings from the Bay will be well below the Amendment 3 level. (See below)

Some may perceive this gesture as insufficient. Another view, however, is that this approach provides the Commission, Commonwealth of Virginia, and the menhaden reduction fishery a path forward as we move towards the development of the Ecological Reference Points (ERP) in 2020. Hopefully, this ERP process will provide everyone the kind of scientific perspective on the Bay cap that all have recognized has been lacking since it was first put in place in 2006.

The Bay cap has always been a unique measure. It only impacts fishing in one state (and effectively impacts only one company). It was never justified as a scientifically derived catch limit. As ASMFC Leadership noted in its response to Virginia's now-withdrawn appeal in January of 2018, the Bay cap was a negotiated, precautionary measure. It should remain such.

The adoption of the Bay Cap in 2006 has had a major impact on how we fish, and the proof is in the harvest figures. Our recent Chesapeake Bay catches are much reduced from prior levels. Between 1985 and 2006, Bay reduction landings averaged over 137,000 mt. It is important to note that this was a period when striped bass were staging their spectacular recovery.

Omega Protein supported the initial cap as a precautionary measure, and abided by the 20 percent reduction imposed in 2012, when all menhaden fishing was reduced by that amount. The Amendment 3 cut of yet an additional 40 percent, however, was based on the prior five years' average landings. It was no accident that average Bay landings were way down when Amendment 3 was being developed. Nor was it any indication of any lack of menhaden in the Chesapeake Bay.

While you may not agree with the Company's position, we hope you will recognize that we have made significant strides in conducting our fishing operations in a way that other user groups have insisted we operate in the Bay. As explained above, we have fished there less since the cap was put in place, and, without any regulatory action, we also arrived at several gentlemen's agreements geographically in the Bay to avoid user conflicts. We are paying the price now economically and in the management process, with Amendment 3 having reduced the cap by 40% based on the Company's decision to heed Bay Stakeholders' advice to fish more outside of the Bay.

However, 2019 was a year when menhaden were schooling in the far eastern edge of the Bay, just inside the line dividing Bay and oceanic waters. Fishing operations were further complicated by weather. In its own way, the 2019 situation in the Bay is just as episodic as situations other states have confronted with menhaden. Furthermore, many states have exceeded their allocations and have done so without consequence since Amendment 2 was implemented.

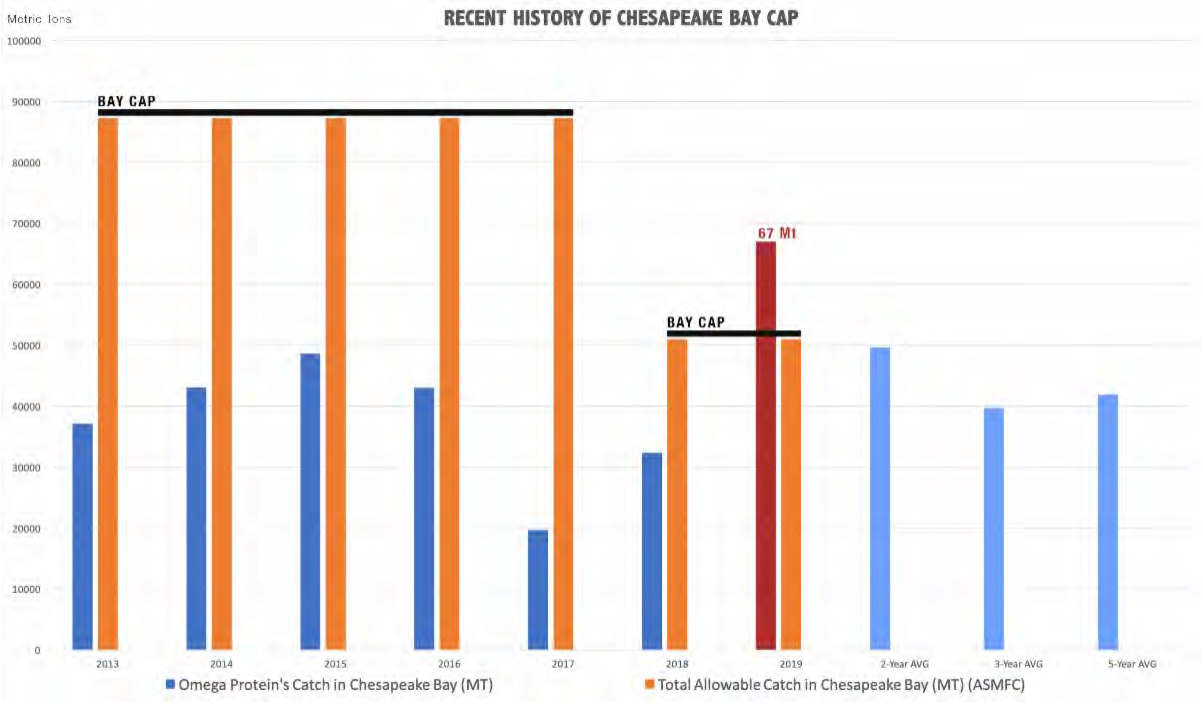
Omega Protein re-emphasizes a point stressed in its September 12th public statement; the company has enormous respect for the Commission and its members. Our use of the term "recommendation" to describe the cap reduction in that statement was only for consistency with the terminology in the ASMFC Compact and the ISFMP Charter. It was not meant to denigrate the measure's importance to the Commission or distinguish it from other elements of this or any other amendment.

We look forward to continuing this dialogue and if you have questions or would like to better understand our position regarding the Bay cap, please do not hesitate to contact Ben Landry at (713) 940-6183 or ben.landry@oceanfleetservices.com.

Sincerely,

Bret Scholtes
President and CEO
Omega Protein Corporation

Ben Landry
Director of Public Affairs
Oceanfleet Services



Omega Protein Statement on the Chesapeake Bay Cap

September 12, 2019 -- REEDVILLE, Va. -- Omega Protein strictly complies with Virginia law, and strives to abide by all recommendations of the Atlantic States Marine Fisheries Commission (ASMFC). However, the abundance of menhaden in the Chesapeake Bay this year combined with adverse fishing conditions outside Bay waters, particularly late in the season, means the Company will exceed the ASMFC's arbitrarily low and unscientific cap recommendation on harvest in the Bay for the 2019 season. The Company will comply with
the existing Bay cap codified in Virginia law.

The ASMFC's Bay cap was initially implemented in 2006 at just over 109,000 metric tons (mt) as a political compromise, not as a scientific necessity. The ASMFC wrote at the time that the cap was "precautionary and not based on a scientifically quantified harvest threshold, fishery health index, or fishery population level study."

While Omega Protein opposed - and continues to oppose - management that is not based on science, it agreed to the 2006 Bay cap to satisfy the concerns of stakeholders while millions of research dollars were spent to determine the impacts of menhaden removals from the Bay. Despite all of the money spent and research conducted, none of the results provided any evidence of negative impacts from menhaden fishing in the Bay.

In 2012, Omega Protein agreed to, and Virginia adopted, a 20 percent reduction in the Bay cap to its current 87,216 mt figure, a change that stemmed from the ASMFC's fears of potential overfishing of the coastwide menhaden population. Those fears were proven unwarranted by the 2015 Atlantic Menhaden Benchmark Assessment that indicated the population has not experienced overfishing since the 1960s. While the ASMFC has since increased the quota three times, the Bay cap has never been concurrently increased.

Given that the Atlantic menhaden stock remains healthy and robust, the Virginia General Assembly did not codify the ASMFC's 2017 decision to slash the Bay cap by over 41 percent to 51,000 mt, an arbitrary figure that was not scientifically derived. The proposed lower cap was based on the average harvest in the Bay over the previous 5-year period. Taking a multi-year average and making that average the maximum allowable harvest removes necessary flexibility from the fishery, since it fails to provide for where fish are located and fluctuating weather conditions season-to-season.

This season, adverse ocean conditions for fishermen coincided with an abundance of menhaden in the Bay. Facing unfavorable weather conditions, the company frequently could not send its employees outside the Bay into an unsafe working environment in the open ocean. But because the fish appeared with regularity in the safer, more protected Bay, menhaden could be harvested there without incurring unnecessary risks.

Omega Protein has great respect for the ASMFC, its commissioners and its staff. But this was a rare situation in which the Commission made an unscientific and arbitrary recommendation, which would have resulted in either forced, unsafe fishing conditions or economic hardship for hardworking fishing families. Risking our employees' safety is never a choice we will make. With our employees' livelihoods and the economic well-being of

Reedville, Virginia and the surrounding Northern Neck region on the line, shutting down operations was not a viable alternative.

Given the untenable situation created by the unnecessarily reduced Bay cap, we were left with no choice. Nonetheless we remain in compliance with the existing cap, as codified in Virginia law, which sets the cap at 87,216 mt.

At the ASMFC Summer meeting in August 2018, NOAA attorney Chip Lynch told the ASMFC that finding Virginia out of compliance with its menhaden management plan would be "the first time ever...that the federal government would receive a non-compliance referral for a fishery that is not overfished and overfishing is not occurring. And there is record evidence from the leadership of the Commission that the [Bay cap] is not related to conservation."

That statement referred to a January 2018 letter from the ASMFC's Chairman to then-Virginia Marine Resources Commissioner John Bull which acknowledged that, "The Bay Cap limit was a compromise reached by managers, fishery stakeholders, and environmental NGOs," and made clear that there was insufficient evidence presented to suggest the Bay cap was necessary to protect the Bay.

Omega Protein has operated in the Chesapeake Bay for over a century. The Company continues to support sound, science-based management of menhaden, which has made the fishery successful, including its recent sustainability certification by the Marine Stewardship Council. We look forward to working with the ASMFC as it develops and implements Ecological Reference Points for menhaden in the near future. But in the meantime, we cannot adhere to arbitrary and unscientific measures that would needlessly harm hardworking Virginia fishermen.

About Omega Protein

Omega Protein Corporation is a century old nutritional product company that develops, produces and delivers healthy products throughout the world to improve the nutritional integrity of foods, dietary supplements and animal feeds. Omega Protein's mission is to help people lead healthier lives with better nutrition through sustainably sourced ingredients such as highly-refined specialty oils, specialty proteins products and nutraceuticals. Omega Protein is a division of Cooke Inc., a family owned fishery company based in New Brunswick, Canada.

The Company operates seven manufacturing facilities located in the United States, Canada and Europe. The Company also has a long-term supply contract with Alpha VesselCo, LLC which owns 30 vessels which harvest menhaden, a fish abundantly found off the coasts of the Atlantic Ocean and Gulf of Mexico. The Company's website is www.omegaprotein.com.

All fishing vessels formerly owned by Omega Protein are owned and operated by Alpha VesselCo, LLC, an independent company.

Visit www.omegaprotein.com for more information.

Atlantic States Marine Fisheries Commission

Atlantic Coastal Cooperative Statistics Program Coordinating Council

October 28, 2019
3:00 - 5:30 pm
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order *(L. Fegley)*

2. Council Consent
   - Approval of Agenda
   - Approval of Previous Meeting Minutes

3. Public Comment

4. Funding Subcommittee Update *(J.D. Simpson)*

5. Consider Recommendations for FY2020 Submitted Proposals *(L. Fegley)* **Action**

6. Consider Revising ACCSP Technical Committee Structure *(J.D. Simpson)* **Action**

7. Consider Establishment of Data Coordination Committee *(G. White)*
   Possible Action

8. Program/Committee Updates
   - Electronic Trip Reporting Status *(G. White)*
   - Registration Tracking *(J.D. Simpson)*
   - Updates from Operations/Advisors Joint Meeting *(N. Lengyel-Costa)*
   - Committee Updates *(N. Lengyel-Costa)*
   - For-Hire Methods Workshop Summary *(G. White)*
   - State Conduct of For-hire Telephone Survey *(G. White)*

9. Other Business/Adjourn

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

DRAFT PROCEEDINGS OF THE

ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM

COORDINATING COUNCIL

The Westin Crystal City
Arlington, Virginia
April 30, 2019

These minutes are draft and subject to approval by the
Atlantic Coastal Cooperative Statistics Program Coordinating Council.
The Council will review the minutes during its next meeting.

TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Council Members

Pat Keliher, ME DMR, Vice-chair
Megan Ware, ME DMR, proxy
Cheri Patterson, NH F&G, proxy for D. Grout
Dan McKiernan, MA, proxy for D. Pierce
Jason McNamee, RI DFW
Matt Gates, CT DEEP, proxy for J. Davis
Jim Gilmore, NYS DEC
Maureen Davidson, NYS DEC, proxy
Joe Cimino, NJ DFW
Stewart Michels, DE DFW
John Clark, DE DFW, proxy
Lynn Fegley, MD DNR (Chair), proxy for D. Blazer
Robert Beal, ASMFC
Pat Geer, VMRC
Dee Lupton, NC DMF, proxy for S. Murphey
Robert Boyles, Jr., SC DNR
Kathy Knowlton, GA DNR, proxy for D. Haymans
Erika Burgess, FL FWC, proxy for J. McCawley
John Carmichael, SAFMC

Staff

Mike Cahall
Geoff White
Julie Defilippi Simpson
Alex DiJohnson
Heather Konell
Jessica Kuesel
Ed Martino
Nico Mwai
Joe Myers
Jennifer Ni
Mike Rinaldi
Coleby Wilt

Guests

Tom Sminkey, NOAA
Dave VanVoorhees, NOAA

The Atlantic Coastal Cooperative Statistic Program Coordinating Council of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, April 30, 2019, and was called to order at 4:30 o'clock p.m. by Chairman Lynn Fegley.

CALL TO ORDER

CHAIRMAN LYNN FEGLEY: Hello everyone. We are going to go ahead and get started with the ACCSP Coordinating Council. Thanks everybody for coming.

APPROVAL OF AGENDA

CHAIRMAN FEGLEY: To start the meeting, the first order of business is to approve the agenda. In the interest of time, and also in the interest of an item that has come to our attention, I would like to entertain a motion to modify the agenda. Cheri.

MS. CHERI PATTERSON: Yes, thank you. Again, to address our time constraints today, I move to modify the agenda to add after Agenda Item 5, Public Comment, a discussion pertaining to maintenance project funding, then proceed to Agenda Item 9, Review and Consider Approval of 2020 RFPs, and then follow the agenda as written, and stop the meeting at any of the agenda updates, either Agenda 7 or 8, if time does not allow for the updates.

CHAIRMAN FEGLEY: Great thank you, do I have a second? Dee. Is there any objection to this motion? Seeing none we shall proceed.

APPROVAL OF MINUTES

CHAIRMAN FEGLEY: Okay, and next is you all have meeting minutes from the winter meeting in your packets. Is there any comment or editing needed to those meeting minutes?

PUBLIC COMMENT

CHAIRMAN FEGLEY: Great, seeing none, and finally is there anybody in the public who would like to provide comment? Okay seeing none, we will move on to what is now our first agenda item.

MAINTENANCE PROJECT FUNDING

CHAIRMAN FEGLEY: This item concerns the formula that we're using for maintenance projects, where a project is funded for four years, and then after that there begins a 33 percent step down each year for three years, until funding reaches zero. We had this come up at the Executive Committee that some states are going to be put in a difficult position with this. I wanted to at this point, Pat if it's okay; tee you up to talk a little bit about this.

MR. PATRICK C. KELIHER: The state of Maine, in planning for the reduction in maintenance funds are 33 percent a year step down that has been outlined back from 2016. We were in the process of putting together outlines for new proposals as it pertains to, in particular, lobster reporting. We are fully prepared to submit new applications for that use.

In fact, since Mr. McKiernan is here we'll highlight the fact that we are intending to hopefully go in that direction for the year 2020, Dan. Okay, you win. I give! What we also though have started to look at pertaining to not only Massachusetts, but New Hampshire and states as far down as New Jersey, is a multistate effort that we run out of the state of Maine for monitoring the herring fishery. Reductions in that line at this time become problematic. It relates to what's going on in Massachusetts as well, because of their reliance on research set aside, and the money that comes into research set aside.

There is some complexity there with these multistate approaches. One of the ways to potentially resolve this, if I may, would be to

modify the RFP as one way to address this. Instead of having it be a hard, "you will reduce by 33 percent," softer language to say, "You would reduce by up to 33 percent," to give this Coordinating Council some additional flexibility when it comes time to addressing those type of multistate proposals.

CHAIRMAN FEGLEY: The question is, I'm not sure if we need a motion for this or not. The idea here is to amend the RFP with just a single word that would allow some flexibility for the Coordinating Council, so that step down is up to 33 percent. There is a couple of scenarios where this might not be a bad idea. But I think there is also, I want to extend the conversation a little further. But first, does anybody have any objection to modifying the RFP in this way, or does anybody have any comments about this? Cheri.

MS. PATTERSON: I have been involved in this maintenance process from the beginning, and I was on that work group that came into this step process of reducing states reliance on ACCSP funding. With what Pat is suggesting, I don't have much of an opposition to at this point in time, as long as it just pertains to those projects, or those proposals that are multistate faceted.

I understand that we probably should have gotten together well before now, to have these discussions with these multistate projects. Therefore, I'm willing to concede that on this particular RFP, but I'm not willing to necessarily concede this on a state basis, a state project basis, just on those that are multistate faceted.

CHAIRMAN FEGLEY: Does anybody else have any comments about this? Then if not, I'll try to sum up. Dee.

MS. DEE LUPTON: I would endorse what Cheri said. I am in one of the states who would like to see the step down start. If we restrict this only to the multistate proposals, I'm fine with that for one year, until that can be revisited later this year maybe for next year. I think we may need to define the multistate proposals, because some partners think they're in a multistate proposal. You know I've ranked these proposals. I see how people kind of play the game to be quite honest. There is a handful of what I would consider truly multistate proposals.

CHAIRMAN FEGLEY: Thank you, Dee. I think one of the things that might, Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Just to add to the comments. I'm kind of torn. It's kind of like an ACCSP purist. I get the notion that the funding through ACCSP is meant for pilot-type programs, and then once they're up and running, and you get over that initial hurdle of some initial start-up cost, then the state or a different agency takes it over after that. But, here is where I'm torn is that I see kind of the fiscal reality that some of the states are in, and some of these maintenance projects, if we end up with holes in those data streams, or diminished sampling levels. I think it's going to cause some problems down the stream. One of the projects that Pat, or that Maine gets money for is the Herring Sampling Project. If you were around this morning, which seems like about 30 hours ago. The herring quotas are way down, the herring stock is in rough shape.

Reduced biological sampling in that fishery that is something we want to avoid. I'm kind of torn on this, but I think a couple other pieces of information is that I don't have a good sense of how many more proposals, and how many more viable proposals we're going to get, if we start diminishing funding to the maintenance projects.

If we end up with not getting a whole lot of additional projects, or proposals, and we end up with kind of "extra money" at the end of this process. I would hate to see funding to a state project be diminished, either by funding a pilot program that's really not that great of a project, or just having money sit on the table, because we've obligated ourselves to go down 33

percent, and we don't have any other proposals that have come in.

The other piece of information is that it looks like the total funding for ACCSP may be increased a little bit for this year. We may go up, the Atlantic Coastal Act part of that may go up by about $75,000.00, so we may have an extra few dollars at the end of the pipeline. Put all those random thoughts together, and I think I'm comfortable with where Pat is going with this. I get the multistate dimension that Dee and Cheri have brought up as well.

CHAIRMAN FEGLEY: That is helpful. Robert, is that your hand?

MR. ROBERT H. BOYLES, JR.: Yes, Ma'am. This is about like a conversation about social security. I'm a state that has benefited. Our state has benefited terrifically by a maintenance project, I'm grateful for that. I just want the Coordinating Council to recognize we made a policy decision about this maintenance, and pilot project, a very difficult conversation. A very courageous decision, I believe at the time. I say that with the group recognizing it's our ox that's being gored here a little bit.

I just want us to think about this. I think Vice-Chairman Keliher puts a really good point out there. There are priority things that we need to do, and we need to be able to allocate resources to. That is certainly within the prerogative of this group. But I would just remind you; we made a difficult and a courageous decision several years ago about stepping down. I think it's important that we honor that commitment, thank you.

CHAIRMAN FEGLEY: It's a fair point, and I think we also have to be cognizant that once you begin, you know it's likely that we would need some sort of criteria, because if we are deciding that one maintenance project gets a bye, then the next maintenance project does, and the next and the next. It is something that we have to be very cognizant, and the process that got us where we are today.

CHAIRMAN FEGLEY: Given what we've heard, a couple of things. I would A, I think we're going to need a motion if we want to amend the RP, so I would ask that somebody make a motion if we want to add that up to 33 percent. But the way that I would see this unfolding, is that if we were to amend the RFP that we would let the proposals come in, and let the Operations Committee review them, and see where we fall out. At that point I think two things should happen. I think the Operations Committee might want to take the opportunity just to do a little cross check on our priorities.

I think also we should consider convening some variant of that work group that convened years ago to develop this process, so the Coordinating Council and the Operations Committee to discuss exactly how we would deal with these multistate projects that might ask for a step down waiver, if you will.

I think it's going to be really important to get that group together, talk about as Dee said, what is a multi-partner project, and come up with some criteria as to how exactly that would happen. But I think initially the first step would be is there anybody who would like to make a motion to amend? Pat.

MR. KELIHER: Look, it's already there. **Move to amend the RFP to read "up to 33%" for multi-agency proposals only for FY2020.** If I get a second I'll add some additional rationale.

CHAIRMAN FEGLEY: Dan, thank you.

MR. KELIHER: Whenever Robert Boyles speaks and he pauses it makes me nervous, because I expect a quote to come, so thank God he stopped at just social security. He was looking for one, I think. I don't take this lightly. I know there was a lot of, as he put it, a courageous policy decision on this point. I'm not looking for anything guaranteed here. It is strictly to allow

for some flexibility between the Ops Committee and ultimately the Coordinating Council, to make decisions on areas of high priority.

CHAIRMAN FEGLEY: Are there any other comments? Kathy.

MS. KATHY KNOWLTON: As a person who sat on Ops for about 18 years, and sat on I think every single funding work group that has ever been and will ever be, and has aged me in dog years. We knew that the rubber was going to hit the road for this exact thing, and it was probably going to be one of the maintenance proposals that have been going for 15, 18, almost 20 years, in terms of data collection.

I can remember sitting on the Work Group, the most recent one that has been referenced when we put forward this phase-in plan. We had the opportunity for partners who had been receiving the funds for so many years to be on that and them saying, we need the structured timeline to take this to our legislators and our representatives, in order to have the time to make a plan and work with legal changes that need to be made.

I understand that there are perhaps some more unexpected bumps that have come up when it's multi agency. However, I would recommend, I'm not sure I'm comfortable with actually changing the RFP and saying up to. I think I'm a little bit more comfortable with a group of partners who want to pursue that putting that in their cover letter, and giving us the reasons why this needs to be considered and it's imperative. Then the Operations Committee, and the Advisors, taking that under advisement for their recommendations, because you all would need to decide right now, which proposals that applies to and why. Does it apply to the headboat proposal? Those of our partners in the South Atlantic are very concerned that my partner right here to the right in Florida doesn't have that I know of yet, set-aside money for the headboat sampling, once this funding source runs out.

I don't know what their plans are, but they've had time to work on it. I think we need to be very, very careful, and I would not be in support of changing the RFP at this point. I would suggest that the partners get together and supply strong language in their cover letter that indicates to them why this is necessary, and let the Ops and Advisors use that as part of the review.

CHAIRMAN FEGLEY: Are there any other comments on the motion at this point? Kathy, or maybe Mike or Bob you can help me. If this motion were to not pass, and the partners were to include language in their cover letter. Does the Operations Committee, does the Coordinating Council even have the ability?

They do. Okay, all right, okay. The answer there is that yes, if this RFP is not amended, it sounds like that flexibility still remains, if a compelling case is given in a cover letter from the partners. At that point, I guess what I'm going to do is just call the question on this**. I'll read the motion; it is move to amend the RFP to read "up to 33%" for multi-agency proposals only for FY2020.**

If you are in favor please signify; any abstentions, any nulls. I'm hesitating, because I thought I saw Mr. Langley's hand up in opposition for Maryland, and Mr. Dize. Maybe you're a null. It sounds like the motion carries 11, 7, 3, and I'm hoping I got that right. Is there any other comments on this, or we'll move on. Cheri.

MS. PATTERSON**: I would like to make a motion that we convene a work group to have this discussion to iron out these "devil in the details," so that there is no future to these motions.**

CHAIRMAN FEGLEY: Fair enough, second by Matt Gates. Are there any comments on the motion?

MR. MIKE CAHALL: How would you want that group composed, Cheri?

MS. PATTERSON: If we can find out who were previous work group members, get them together. If they are not present, then we just need a combination of Ops and Coordinating Council individuals.

CHAIRMAN FEGLEY: The motion is to convene a workgroup to iron out the details to simplify future RFP language and policies, motion by Ms. Patterson, second by Mr. Gates**. Is there any opposition to this motion? Okay seeing none,** the next item on the agenda is the RFP review, and Mike to you.

MR. CAHALL: You already did the RFP. We're going to the Accountability/Validation piece right? We're going back to the agenda in order, right? I'm not doing that because Julie is doing it.

REVIEW AND CONSIDER APPROVAL OF 2020 REQUEST FOR PROPOSALS

CHAIRMAN FEGLEY: Okay, so now we have, and I believe I need a motion to approve the RFP, yes Cheri.

MS. PATTERSON: **Yes, I would like to make a motion to approve the RFP as amended.**

CHAIRMAN FEGLEY: Second, Bob. Okay the motion is to approve the RFP as amended by Cheri Patterson, second by Bob Beal. **Is there any objection to this motion? Okay, all right, now we can move on, Mike.**

ACCOUNTABILITY/VALIDATION UPDATE

MS. JULIE DEFILIPPI SIMPSON: This is a follow up to the survey results that you all received in the February meeting, and they were attached here. This issue was discussed at the Commercial Technical Committee meeting in March. Most of that discussion centered around the idea that the original survey was very intentionally somewhat broad, because there is a lack of definition on some of the language in there. Specifically, they refer to things like the words validation and audit. People are using them in very different ways, and interpreting them in different ways. That was very clear in the answers that we got. A small group was created to address the issue of accountability, and they wanted to start out by defining the terminology, and then bringing that back to this group, and looking for guidance on how the group felt we should move forward. Are there any questions on what the Commercial Technical Group worked on in this topic?

CHAIRMAN FEGLEY: No questions? Okay, moving right along.

ADMINISTRATIVE UPDATE

MR. CAHALL: I have fresh news on this particular topic, since I met this morning/afternoon, with the NMFS CIO. We've been asked to bring our systems into compliance with the Federal Information Security Management Act, or at least to have them reviewed with the eye towards the FISMA process.

We were given funds to pay for it through NMFS, and we went ahead and hired a company that specializes in this kind of work, and they did an audit, and I will tell you honestly, it was an exhaustive, long drawn out and fairly painful process that involved what, two or three, four hour, five hour interview sessions, and a lot of questions and a lot of poking.

We just last week received the draft results of the audit, and along with that came a proposal from the contractor for $300,000.00 to do the monitoring for the following three years, as well as writing the correction plans. I politely refused their offer. We went ahead and hired Joan Palmer to write our security plan, she's just retired from her position as Director of Information Systems at the Northeast Fisheries Science Center, and had in fact just finished revising her own security plan.

Our thinking was, that Joan understands the internals of the NMFS systems and she knows a lot more about us than the contractor would, and Joan was very eager to do it. She's one of the few people I would say, she actually said, "this will be fun." Really, she did. I was stunned. Anyway, we met with the new OCI this morning, and we had a chat, actually it was at 1:00 o'clock, about what their expectations are. ACCSP and the other fisheries information networks are in kind of a weird middle place. We are authorized under Magnuson-Stevens, but we aren't actually federal systems. There is no legal obligation for us to comply with FISMA, on the other hand if we don't, it will cause all kinds of issues with information sharing, especially as security requirements get tighter.

They are especially worried about personal identification information, so that is you know, names, addresses, birth dates that kind of thing. As any of you have been familiar with our processes over the years. We pretty much have to have people's names and birth dates to be able to uniquely identify them inside our systems.

We had an open conversation with them. We are going to present them with the results of the audit, and I know that Joan stayed behind and had a little bit more further discussion with them. I haven't had a chance to touch base with her yet. But the next step here would be for them to come back to us, and identify what in that report are the priorities.

Most of the time, as they went through our planning and our implementations, it isn't that we haven't done the steps that need to be done, it's that they are documented in accordance with the kinds of standards that the Feds expect to see. A lot of this will be generating paper that lines up with the way that they think they need to see them.

There shouldn't be much impact on our end users. Any of you who are familiar with our confidentiality process – that clearly meets a FISMA requirement – for example. Although the way we've documented it doesn't quite meet the standard. There are a few other things that we are going to have to do from a technical standpoint. I won't glaze you all over about what they are.

I think in the near term, I will get a list of priorities back from the OCIO, and we'll have Joan and Ed, Ed on the staff who is also working with this, will be working on, is he here someplace? He's supposed to be here. Where are you Ed? There you are, Ed. Joan and Ed are working on writing the plans, and part of Ed's follow-on duties will be to act as our security officer.

It remains to be seen, how much ongoing funding and resources are going to have to be put on maintaining this. FISMA isn't a one-shot deal. You get an audit. You identify your priorities. You fix them, you look at your next list of priorities, you fix them, you look at a third list of priorities, you fix them. You start over again.

It's a three-year cycle, where you have to provide quarterly updates to the OCIO about where you are and what's going on, if they require us to follow the conventional NMFS standard. I talked to them. I made it pretty clear that if they do that to us, we need to have some money from them to pay for it.

They didn't seem to have any problem with that – this coming from their HMS representative – so I was very pleased about the level of support. They were very cooperative; they were very interested in helping us out. They want to be active participants in our planning process. I felt pretty comfortable walking out of that meeting.

Again, I think that in the near term you're not going to look at too much. There will be some changes likely in the not-too-distant future inside the Commission. Those of you who access our database directly, there is probably going to

be some tightening down of security. We're going to have uglier passwords. There will have to be some kind of security training and signoffs.

Those sorts of things are what we're looking at. I am not looking to pass out CAT cards to people so they can access our system. We're hoping we'll know more as time goes by. But I am confident that Joan and Ed will make sure that we are minimally impacted, while at the same time meeting the requirements that they've given us.

SAFIS UPDATE

MR. CAHALL: The SAFIS redesign still underway, although we've not been able to devote as much energy towards it as we wanted to, simply because we've focused so much work on getting the eTrips/Mobile tool up to snuff, to be able to collect both northeast and southeast for-hire commercial and HMS requirements. I'll talk to that in just a minute.

We have created something that is going to be the heart of the new system. We're creating a switchboard that will essentially allow program partners to turn fields off and on, and turn the way that they are validated off and on. For example, if you want circle hooks you click the little button that turns them on. Then they will suddenly appear in the folks that are reporting to you.

If you want, and I'm being hypothetical now, if you want to be able to report not only the dealer that you sold it to, but which dock you landed it on, you'll be able to do that if you have to split. Those kinds of things are going to be gradually built into this, as part of the redesign of the system.

The end goal, and I'm not going to promise how long it's going to take, but at the end goal you should be able to custom configure the system to meet your own requirements, within the ACCSP standards. We also are working on the TMS System, for those just to recall. It is essentially the switchboard that moves the data to the other systems that need it, or indicates that it needs to be moved.

It also creates the universal trip ID, which is critical to integrated reporting. TMS, we have a version of TMS. The baseline system is up and running. It really right now just consists of some database tables, and a bunch of procedures. When a VTR hits the SAFIS database, it's given a universal trip ID.

The next thing that we're going to be looking at, and it's actually next week, is pre-trip notifications, which are going to be required for the southeast reporting, and eventually for northeast. When the Mid-Atlantic requires all that commercial reporting that is going to overlap, into a whole bunch of folks that have to do pre-trip notifications, so we need to be ready to do that.

Trip management will say I have a pre-trip notification for a northeast permitted dealer; it needs to go to the pre-trip notification system that's managed by the Northeast Fisheries Science Center. That in turn would notify the Observer System, and the VTRs and Law Enforcement. The TMS System will also maintain a cross reference of all the reports that are associated with that trip. As the reports are added into SAFIS, if a dealer report that comes in off of a trip, then it will connect them together and eventually resulting in the warehouse of a single record that represents all of the different pieces that we have that go with that trip. Over time we hope that that will include the biological and observer data, and potentially electronic monitoring as well.

That is like a decade kind of thing, but that's the vision. Okay, she says I'm talking too much, eTrips/Mobile Version 2. We released the latest version of eTrips/Mobile on April 15. They're working on 2.1 right this minute. It is much more flexible. It runs on both kinds of phones, it runs

on all three kinds of tablets, and it will run on a Windows 10 desktop.

It includes some redesign work that we did. We're working on the hail-out, which will include the HMS and social econ elements that are going to be required, and 2.1 is in discussion right now, and that will be released fairly soon and have all that stuff in it. You can't be here for either.

RECREATIONAL UPDATE

MR. GEOFF WHITE: I'll be super quick. This is kind of an announcement/pre-announcement. We've been working with MRIP on a national level for-hire data collection methods workshop. This is the idea of evaluating the minimum requirements of implementation challenges for a future, kind of comprehensive program.

The idea is vessels that have a required mandatory logbook, what elements of when those reports come in, how do they get validated, what are the minimum requirements of those components, and how does that match up with the idea of, if there are for example state vessels that don't have a logbook. How do those get included in the survey? It is state waters, federal waters, up and down the coast, national level, and headboats and charterboats.

The audience is really national representatives. We've got about 40 people identified and committed to do this. We're going to be holding the workshop July 10 and 11. Many of your state and federal partner agency representatives are already aware of this. I wanted to just at least highlight this, and briefly let you guys read what the major terms of reference are for that workshop. If you've got questions, please feel free to ask me afterwards, but we'll be sending out a further notice later.

MR. CAHALL: A quick add on to that. This is really important to be able to use these recreational trip data for catch estimation later. We're really looking forward to the outcome of this, very excited about it.

MR. WHITE: The intention is to figure out what are the minimum elements and pieces, so that MRIP can include the for-hire logbooks for effort and catch, and do the right math to combine it, so that there is a single comparable estimate at a national level on the for-hire statistics that we both believe in statistically and empirically.

MR. CAHALL: And emotionally.

MR. WHITE: And emotionally, yes excellent.

MR. ALEX DiJOHNSON: It's me. I'll try to make it fast; because I know we're under a time crunch. I just wanted to give a quick update.

MR. WHITE: Pardon me one moment. Alex DiJohnson, who has led the APAIS tablet development, I think you saw him at the last meeting, but he's been in charge of the tablet development and APAIS at the moment.

MR. DiJOHNSON: Thanks Geoff, so just a quick update on APAIS so far. We're almost finished, today is the last day. I think there is maybe 15 assignments left for Wave 2, so for March and April, and Wave 1 is obviously finished with just North Carolina, and so far this has been done in 2019, all of it has been done on tablets so far.

We're looking at just under 1,400 site assignments completed. These are actually a little bit old, so I think it's closer to 50 headboat assignments completed at this point, with just over 4,000 intercepts, and per assignment it's coming out to be about three intercepts per assignment. So far this about matches what we were seeing in previous years, '18, '17, and '16 it is about the same.

We actually just had an assignment come through with 98 intercepts recently. People are still killing it out there with their ability to get as many people as possible on assignment. The application, in general the way that we're kind of doing this on the tablet, we have an application on there that we're developing.

It's pretty much finished at this point. There are still a couple minor things that are being worked on, but overall the application software is where we want it to be to maximize the interviewer's time out there, to have as many intercepts as possible to improve the timeliness of available data. We're seeing this reflected in the way that the data is QC'd, both between us and the states.

It's a lot faster. It's the reduction and recall bias is great, I say. They submitted something yesterday and I say, hey what was this supposed to mean? They remembered, because they literally just did it yesterday, and so far yes. All the tablets have been sent out. It's about 170 tablets, I think throughout the coast.

MR. WHITE: About 140.

MR. DiJOHNSON: One hundred forty along the coast, and they're all distributed, they're all set up. I just actually worked with the last of them in Maine right before coming here. Everyone is ready to go for this year, and we actually held our first Wave meeting with all the states on the 17th of this month. We're on target to keep going for APAIS into 2019.

MR. WHITE: Thank you, Alex and passing it to Coleby Wilt, who has been leading the charge on the For-Hire Telephone Survey Data Collection.

MR. COLEBY WILT: The for-hire telephone survey, ACCSP is developing what we call a CATI system, which is a computer assisted telephone interviewing system. This is a centralized web-based tool, where states would be able to go on and conduct MRIPs for-hire telephone survey. With MRIPS approval we have been creating this tool, and have started to implement it and collecting data using the tool in 2019. There are three states that are going to be using the tool, or are already using the tool in 2019, which is North Carolina, Georgia, and Maine. North Carolina started in Wave 1, Georgia started in Wave 2, so they're just finishing their first wave, and Maine starts in Wave 3, which is next week, so that's very, very soon.

North Carolina basically noted that the process is significantly more efficient, about 30 percent more efficient than the process that they were using before. Primarily, because the CATI system does a lot automatically for them that they used to have to do manually, which has been really useful for them.

They've had really high response rates so far through the survey this year. In North Carolina overall response rates in Waves 1 and 2 were 83 percent, and Georgia has been 81 percent on both of those. They are very good for a telephone survey. In 2020, we would be looking at the potential of expanding this to all states, Maine through Georgia in 2020. The idea is, is that this would increase state contact, and build relationships with the fishermen.

North Carolina has noted this, where they actually have the same people interviewing for APAIS as they have making calls per their region, and because they already have a relationship with the Captain, when they go out and they talk to them, and then they give them a call. They know who it is, and they're much more likely to respond. That is part of the reason why they've had such a good response rate so far. They could have more direct vessel directory changes, so it actually gives them a lot of control over the actual vessel directory.

If they're conducting the for-hire telephone survey, they're the only person that is actually going to be, the only entity that is going to be making corrections and updates within that system. Then lastly to Geoff's point that he was talking about before with the Comprehensive For-Hire, once we move forward with that using the system will allow the states a lot more flexibility in moving forward with for-hire logbooks for each state.

COMMERCIAL UPDATE

MR. CAHALL: Then Julie, you're doing the commercial update, no Heather is, okay Heather.

MS. HEATHER KONELL: Hi, Heather Konell, Senior Fisheries Data Coordinator with ACCSP. The 2018 commercial data are now available. We did a public release on April 16, and we did a soft release on the 10th. These data included about 3 million records from 31 data sources. This is an earlier deadline than ever before, and a lot of that has to do with our partner collaboration.

We did our spring data coordination calls, and that was during the federal government shutdown, and I was able to even get federal feedback during those calls, so that was great. Also, it has a lot to do with the staff effort to improve and automate processing and quality checks. For these data we've gotten really positive feedback from our partners. This release also includes the third round of standardizing species common names. With the fourth round underway it should be released in about two weeks.

CHAIRMAN FEGLEY: Great, thank you all for presenting what is an impressive amount of work once again. Does anybody have any questions for anybody? John.

MR. JOHN CLARK: I had a question about the For-hire Telephone Survey, two questions really. One is are we going to get to the point where the Captains don't have to do logbooks and get called, and two, where it said you're expecting all states to take this over. At the last meeting I don't think we were the only state that was not real enthusiastic about taking this on ourselves. The option of having ACCSP do the survey for the state was presented at that time.

MR. CAHALL: That's still the plan. There is no expectation that says yes you will. One way or the other it will be accomplished, and to your first question. We've been working and having some discussions with the folks at MRIP. Since we should have all the VTRs, we should be able to tell which Captains are reporting. Eventually we're working with them to develop a methodology to exempt them from call.

CHAIRMAN FEGLEY: Anybody else? Okay, so I am going to take a very short moment here to reflect, and as we have just heard about this work that is ongoing and impressive.

ACCSP DIRECTOR RECOGNITION

CHAIRMAN FEGLEY: I want to make everybody aware if you're not that this will be Mike's last meeting as Director. He is retiring, and I want to just extend a heartfelt thank you for all of your exceptional work. This is very difficult, complicated stuff that you work with, and you have done it well and thank you so much. We're going to miss you. (Applause)

MR. CAHALL: Can I say just a couple things before you adjourn? Thank you. First of all, so long and thanks for all the fish. I hope most of you get the reference. Wow, it's been an amazing, amazing ride. I've been working with a lot of you guys from the very first. I can look at Cheri, and actually even Geoff, and others around the table that I've been working with from the very get go, when it was just me and Joe Moran, but God 20 years ago.

We had a computer that I actually built that was sitting in my office that was our first data warehouse. I could not have asked for a better opportunity. I could not have asked for a better people to work with, or a better mission. I take away from this a deep and abiding respect, for the work and dedication that you all have that made what we have done possible. I could not have asked for a better blessing, and I want to thank you all for your support over the years. I will miss you all, thank you. (Applause)

ADJOURNMENT

CHAIRMAN FEGLEY: With that would anybody object to adjourning? Okay.

(Whereupon the meeting adjourned at 5:13
o'clock p.m. on April 30, 2019)

Funding Decision Process
Atlantic Coastal Cooperative Statistics Program
May 2019

The Atlantic Coastal Cooperative Statistics Program (the Program) is a state-federal cooperative initiative to improve recreational and commercial fisheries data collection and data management activities on the Atlantic coast. The program supports further innovation in fisheries-dependent data collection and management technology through its annual funding process.

Each year, ACCSP issues a Request for Proposals (RFP) to its Program Partners. The ACCSP Operations and Advisory Committees review submitted project proposals and make funding recommendations to the Program Director and the Coordinating Council.

This document provides an overview of the funding decision process, guidance for preparing and submitting proposals, and information on funding recipients' post-award responsibilities, including providing reports on project progress.

Overview of the Funding Decision Process

Funding Decision Process Timeline

April- Operations and Advisory Committees develop annual funding priorities, criteria and allocation targets (maintenance vs. new projects)

May- Coordinating Council issues Request for Proposals (RFP)

June- Partners submit proposals

July- Operations and Advisory Committees review initial proposals; ACCSP staff provide initial review results to submitting Partner

August- Final proposals are submitted. Final proposals must be submitted electronically to the Program Director, and/or designee by close of business on the day of the specified deadline. Final proposals received after the RFP deadline will not be considered for funding.

September- Operations and Advisory Committees review and rank final proposals

October- Funding recommendations presented to Coordinating Council; Coordinating Council makes final funding decision

ACCSP Staff submits notification to submitting Partner of funded projects and notification of approved projects to appropriate grant funding agency (e.g. NOAA Fisheries Regional Grants Program Office, "NOAA Grants") by Partner

As Needed- Operation and/or Leadership Team and Coordinating Council review and make final decision with contingencies (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.)

Detailed Steps of Funding Decision Process

1. Develop Annual Funding Priorities, Criteria and Allocation Targets (maintenance vs. new projects).

Prior to issuing the Request for Proposals, the Coordinating Council will approve the annual funding criteria and allocation targets. These will be used to rank projects and allocate funding between maintenance and new projects respectively.

In FY16, a long-term funding strategy policy was instituted to limit the duration of maintenance projects. Maintenance projects are now subject to a funding reduction following their fourth year of maintenance funding.

- For maintenance projects entering year 5 of ACCSP funding in FY20, a 33 percent funding cut will applied to whichever sum is larger: the project's prior two-year-average base funding set in FY16, or the average annual sum received during the project's four years of full *maintenance* funding. In year 6, a further 33 percent cut will be applied and funding will cease in year 7. Please see Appendix A for a list of maintenance projects entering year 5 in FY20 and the maximum funds available for these projects in years 5 and 6.
- For more recent maintenance projects (i.e., those entering year 5 of maintenance funding after FY20), the base funding will be calculated as the average of funding received during the project's two years as a *new* project.

2. Issue Request for Proposals

An RFP will be sent to all Program Partners and Committees no later than the week after the spring Coordinating Council meeting. The RFP will include the ranking criteria, allocation targets approved by the Coordinating Council, and general Program priorities taken from the current Strategic Plan. The RFP and related documents will also be posted on the Program's website here.

All proposals MUST be submitted either by a Program Partner, jointly by several Program Partners, or through a Program Committee. The public has the ability to work with a Program Partner to develop and submit a proposal. Principle investigators are strongly encouraged to work with their Operations Committee member in the development of any proposal. All proposals must be submitted electronically to the Program Director, and/or designee, in the standard format.

3. Review initial proposals

Proposals will be reviewed by staff and the Operations and Advisory Committees. Committee members are encouraged to coordinate with their offices and/or constituents to provide input to the review process. Operations Committee members are also encouraged to work with staff in their offices who have submitted a proposal in order to represent the proposal during the review. Project PIs will be invited to attend the initial proposal review, held in July. The review and evaluation of all written proposals will take into consideration the ranking criteria, funding allocation targets and the overall Program Priorities as specified in the RFP. Proposals may be forwarded to relevant Program technical committees for further review of the technical feasibility and statistical validity. Proposals that fail to meet the ACCSP standards may be recommended for changes or rejected.

4. Provide initial review results to submitting Partner

Program staff will notify the submitting Partner of suggested changes, requested responses, or questions arising from the review. The submitting Partner will be given an opportunity to submit a final proposal incorporating suggested changes in the same format previously described in Step 2(b) by the final RFP deadline.

5. Review and rank final proposals

The review and ranking of all proposals will take into consideration the ranking criteria, funding allocation targets, and overall Program Priorities as specified in the RFP**.** The Program Director and the Advisory and Operations Committees will develop a list of prioritized recommended proposals and forward them for discussion, review, and approval by the Coordinating Council.

6. Proposal approval by the Coordinating Council

The Coordinating Council will review a summary of all submitted proposals and prioritized recommended proposals from the Operations and Advisory Committees. Each representative on the Coordinating Council will have one vote during final prioritization of project proposals. Projects to be funded by the Program will be approved by the Coordinating Council by the end of November each year. The Program Director will submit a pre-notification to the appropriate NOAA Grants office of the prioritized proposals to expedite processing when those offices receive Partner grant submissions.

7. Notification to submitting Partner of funded projects and submittal of project documents to appropriate grants agency (e.g. NOAA Grants) by Partner.

Notification detailing the Coordinating Council's actions relevant to a Partner's proposal will be sent to each Partner by Program staff.

- Approved projects from Non-federal Partners must be submitted as full applications (federal forms, project and budget narratives, and other attachments) to NOAA Grants via www.grants.gov. These documents must reflect changes or conditions approved by the Coordinating Council.
- Non-federal Partners must provide the Program Director with an electronic copy of the narrative and either an electronic or hard copy of the budget of the grant application as submitted to the grants agency (e.g. NOAA Grants).
- Federal Partners do not submit applications to NOAA Grants.

8. Operation and/or Leadership Team and Coordinating Council review and final decision with contingencies or emergencies.

Committee(s) review and decide project changes (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.) during the award period.

Determination of contingencies for funding adjustments (e.g. rescissions):

The Program Director will be notified by NOAA Fisheries of any federal grant reduction. Such reductions may include, but are not limited to:

- Lower than anticipated amounts from any source of funding
- Rescission of funding after initial allocations have been made
- Partial or complete withdrawal of funds from any source

If these or other situations arise, the Operations Committee will notify Partners with approved proposals to reduce their requested budgets or to withdraw a proposal entirely. If this does not reduce the overall requested amount sufficiently, the Director, the Operations Committee Chair and Vice-Chair, and the Advisory Committee Chair will develop a final recommendation and forward to the ACCSP Leadership Team of the Coordinating Council. These options to address funding contingencies may include:

- Eliminating the lowest-ranked proposal(s)
- A fixed percentage cut to all proposals' budgets
- A directed reduction in a specific proposal(s)

Proposal Guidance

- General Proposal Guidelines
- Format
- Budget Template

General Proposal Guidelines

- The Program is predicated upon the most efficient use of available funds. Many jurisdictions have data collection and data management programs which are administered by other fishery management agencies. Detail coordination efforts your agency/Committee has undertaken to demonstrate cost-efficiency and non-duplication of effort.

- All Program Partners conducting projects for implementation of the program standards in their jurisdictions are required to submit data to the Program in prescribed standards, where the module is developed and formats are available. Detail coordination efforts with Program data management staff with projects of a research and/or pilot study nature to submit project information and data for distribution to all Program Partners and archives.

- If appropriate to your project, please detail your agency's data management capability. Include the level of staff support (if any) required to accomplish the proposed work. If contractor services are required, detail the level and costs.

- Before funding will be considered beyond year two of a project, the Partner agency shall detail in writing how the Partner agency plans to assume partial or complete funding or, if not feasible, explain why.

- If appropriate to your project, detail any planned or ongoing outreach initiatives. Provide scope and level of outreach coordinated with either the Outreach Coordinator and/or Outreach Committee.

- Proposals including a collection of aging or other biological samples must clarify Partner processing capabilities (i.e., how processed and by whom).

- Provide details on how the proposal will benefit the Program as a whole, outside of benefits to the Partner or Committee.

- Proposals that request funds for law enforcement should confirm that all funds will be allocated towards reporting compliance.

- Proposals must detail any in-kind effort/resources, and if no in-kind resources are included, state why.

- Proposals must meet the same quality as would be appropriate for a grant proposal for ACFCMA or other federal grant.

- Assistance is available from Program staff, or an Operations Committee member for proposal preparation and to insure that Program standards are addressed in the body of a given proposal.

- Even though a large portion of available resources may be allocated to one or more jurisdictions, new systems (including prototypes) will be selected to serve all Partners' needs.

- Partners submitting pilot or other short-term programs are encouraged to lease large capital budget items (vehicles, etc.) and where possible, hire consultants or contractors rather than hire new permanent personnel.

- The Program will not fund proposals that do not meet Program standards. However, in the absence of approved standards, pilot studies may be funded.

- Proposals will be considered for modules that may be fully developed but have not been through the formal approval process. Pilot proposals will be considered in those cases.

- The Operations Committee may contact Partners concerning discrepancies or inconsistencies in any proposal and may recommend modifications to proposals subject to acceptance by the submitting Partner and approval by the Coordinating Council. The Operations Committee may recommend changes or conditions to proposals. The Coordinating Council may conditionally approve proposals. These contingencies will be documented and forwarded to the submitting Partner in writing by Program staff.

- Any proposal submitted after the initial RFP deadline will not be considered, in addition to any proposal submitted by a Partner which is not current with all reporting obligations.

Proposal Format

Applicant Name: Identify the name of the applicant organization(s).

Project Title: A brief statement to identify the project.

Project Type: Identify whether new or maintenance project.

> *New Project – Partner project never funded by the Program. New projects may not exceed a duration of two years. Second year funding is not guaranteed; Partners must reapply.*
>
> *Maintenance Project – Project funded by the Program that conducts the same scope of work as a previously funded new or maintenance project. These proposals may not contain significant changes in scope (e.g., the addition of bycatch data collection to a catch/effort dealer reporting project). PIs must include in the cover letter whether there are any changes in the current proposal from prior years' and, if so, provide a brief summary of those changes. At year 1 of maintenance funding, a project's base funding will be calculated as the average of funding received during the project's two years as a* new *project.*

Requested Award Amount: Provide the total requested amount of proposal. Do not include an estimate of the NOAA grant administration fee.

Requested Award Period: Provide the total time period of the proposed project. The award period typically will be limited to one-year projects.

Objective: Specify succinctly the "why", "what", and "when" of the project.

Need: Specify the need for the project and the association to the Program.

Results and Benefits: Identify and document the results or benefits to be expected from the proposed project. Clearly indicate how the proposed work meets various elements outlined in the ACCSP Proposal Ranking Criteria Document (Appendix B). Some potential benefits may include: fundamental in nature to all fisheries; region-wide in scope; answering or addressing region-wide questions or policy issues; required by MSFCMA, ACFCMA, MMPA, ESA, or other acts; transferability; and/or demonstrate a practical application to the Program.

Data Delivery Plan: Include coordinated method of the data delivery plan to the Program in addition to module data elements gathered. The data delivery plan should include the frequency of data delivery (i.e. monthly, semi-annual, annual) and any coordinate delivery to other relevant partners.

Approach: List all procedures necessary to attain each project objective. If a project includes work in more than one module, identify approximately what proportion of effort is comprised within each module (e.g., catch and effort 45%, biological 30% and bycatch 25%).

Geographic Location: The location where the project will be administered and where the scope of the project will be conducted.

Milestone Schedule: An activity schedule in table format for the duration of the project, starting with Month 1 and ending with a three-month report writing period.

Project Accomplishments Measurement: A table showing the project goals and how progress towards those goals will be measured. In some situations the metrics will be numerical such as numbers of anglers contacted, fish measured, and/or otoliths collected, etc.; while in other cases the metrics will be binary such as software tested and software completed. Additional details such as intermediate metrics to achieve overall proposed goals should be included especially if the project seeks additional years of funding.

Cost Summary (Budget): Detail all costs to be incurred in this project in the format outlined in the budget guidance and template at the end of this document. A budget narrative should be included which explains and justifies the expenditures in each category. Provide cost projections for federal and total costs. Provide details on Partner/in-kind contribution (e.g., staff time, facilities, IT support, overhead, etc.). Details should be provided on start-up versus long-term operational costs.

> **In-kind** - [1]Defined as activities that could exist (or could happen) without the grant. [2]In-kind contributions are from the grantee organization. In-kind is typically in the form of the value of personnel, equipment and services, including direct and indirect costs.
>
> [1] The following are generally accepted as in-kind contributions:
>
> i. Personnel time given to the project including state and federal employees
>
> ii. Use of existing state and federal equipment (e.g. data collection and server platforms, Aging equipment, microscopes, boats, vehicles)

Overhead rates may not exceed 25% of total costs unless mandated by law or policy. Program Partners may not be able to control overhead/indirect amounts charged. However, where there is flexibility, the lowest amount of overhead should be charged. When this is accomplished indicate on the 'cost summary' sheet the difference between the overhead that could have been charged and the actual amount charged, if different. If overhead is charged to the Program, it cannot also be listed as in-kind.

Maintenance Projects: Maintenance proposals must provide project history table, description of completed data delivery to the ACCSP and other relevant partners, table of total project cost by year, a summary table of metrics and achieved goals, and the budget narrative from the most recent year's funded proposal.

Principal Investigator: List the principal investigator(s) and attach curriculum vitae (CV) for each. Limit each CV to two pages. Additional information may be requested.

Budget Guidelines & Template

All applications must have a detailed budget narrative explaining and justifying the expenditures by object class. Include in the discussion the requested dollar amounts and how they were derived. A spreadsheet or table detailing expenditures is useful to clarify the costs (see template below). The following are highlights from the NOAA Budget Guidelines document to help Partners formulate their budget narrative. The full Budget Guidelines document is available here.

Object Classes:

Personnel: include salary, wage, and hours committed to project for each person by job title. Identify each individual by name and position, if possible.

Fringe Benefits: should be identified for each individual. Describe in detail if the rate is greater than 35 % of the associated salary.

Travel: all travel costs must be listed here. Provide a detailed breakdown of travel costs for trips over $5,000 or 5 % of the award. Include destination, duration, type of transportation, estimated cost, number of travelers, lodging, mileage rate and estimated number of miles, and per diem.

Equipment: equipment is any single piece of non-expendable, tangible personal property that costs $5,000 or more per unit and has a useful life of more than one year. List each piece of equipment, the unit cost, number of units, and its purpose. Include a lease vs. purchase cost analysis. If there are no lease options available, then state that.

Supplies: purchases less than $5,000 per item are considered by the federal government as supplies. Include a detailed, itemized explanation for total supplies costs over $5,000 or 5% of the award.

Contractual: list each contract or subgrant as a separate item. Provide a detailed cost breakdown and describe products/services to be provided by the contractor. Include a sole source justification, if applicable.

Other: list items, cost, and justification for each expense.

Total direct charges

Indirect charges: If claiming indirect costs, please submit a copy of the current approved negotiated indirect cost agreement. If expired and/or under review, a copy of the transmittal letter that accompanied the indirect cost agreement application is requested.

Totals of direct and indirect charges

Example. Budget narrative should provide further detail on these costs.

Description	Calculation	Cost
Personnel (a)		
Supervisor	Ex: 500 hrs x $20/hr	$10,000
Biologist		
Technician		
Fringe (b)		
Supervisor	Ex: 15% of salary	$1500
Biologist		
Technician		
Travel (c)		
Mileage for sampling trips	Ex: Estimate 2000 miles x $0.33/mile	$660
Travel for meeting		
Equipment (d)		
Boat	Ex: $7000, based on current market research	$7000
Supplies (e)		
Safety supplies		$1200
Sampling supplies		$1000
Laptop computers	2 laptops @$1500 each	$3000
Software		$500
Contractual (f)		
Data Entry Contract	Ex: 1000 hrs x $20/hr	$20,000
Other (h)		
Printing and binding		
Postage		
Telecommunications charges		
Internet Access charges		
Totals		
Total Direct Charges (i)		
Indirect Charges (j)		
Total (sum of Direct and Indirect) (k)		

Post-award Responsibilities

Changing the Scope of Work

Partners shall submit requests for amendments to approved projects in writing to the Program Director. The Coordinating Council member for that Partner must sign the request.

When Partners request an amendment to an approved project, the Program Director will contact the Chair and Vice Chair of the Operations Committee. The Program Director and Operations Committee Chairs will determine if the requested change is minor or substantial. The Chairs and Program Director may approve minor changes.

For substantial proposed changes, a decision document including the opinions of the Chairs and the Program Director will be sent to the Operations Committee and the ACCSP Leadership Team of the Coordinating Council for review.

The ACCSP Leadership Team will decide to approve or reject the request for change and notify the Program Director, who will send a written notification to the Partner's principal investigator with a copy to the Operations Committee.

When a requested major amendment is submitted shortly before a Coordinating Council meeting, the approval of the amendment will be placed on the Council Agenda.

The Program Director will notify NOAA Grants of any change in scope of work for final approval for non-federal proposals, and the Partner will need to request a Change in Scope through Grants Online. Necessary communications will be maintained between the concerned Partner, the Program and NOAA Grants. Any changes must be approved through the normal NOAA Grants process.

Requesting a No-cost Extension

If additional time is needed to complete the project, Program Partners can request a no-cost extension to their award period. Partners should let the Program know of the need for additional time and then request the extension as an Award Action Request through NOAA Grants Online at least 30 days before the end date of the award.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Declaring Unused/Returned Funds

In an effort to limit the instances in which funds are not completely used during the award period, draw down reports from the NOAA Grants offices indicating remaining grant balances will be periodically reviewed during each fiscal year.

While effort should be made to complete the project as proposed, if Program Partners find that they will not be able to make use of their entire award, they should notify the Program and their NOAA Federal Program Officer as soon as possible. Depending on the timing of the action, the funds may be able to be reused within the Program, or they may have to be returned to the U.S. Treasury.

Program Partners must submit a written document to the Program Director outlining unused project funds potentially being returned. The Partner must also notify their Coordinating Council member (if applicable) for approval to return the unused funds. If the funding is available for re-use within the Program, the Director will confer with the Operations Committee Chair and Vice-Chair and the Advisory Committee Chair, and then submit a written recommendation to the ACCSP Leadership Team of the Coordinating Council for final approval on the plan to distribute the returned money.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Reporting Requirements

Program staff will assess project performance.

The Partner project recipients must abide by the NOAA Regional Grant Programs reporting requirements and as listed below. All semi-annual and final reports are to include a table showing progress toward each of the progress goals as defined in Step 2b and additional metrics as appropriate. Also, all Partner project recipients will submit the following reports based on the project start date to the Program Director:

- Semi-annual reports (due 30 days after the semi-annual period) throughout the project period including time periods during no-cost extensions,
- One final report (due 90 days after project completion).
- Federal Partners must submit reports to the Program Director, and State Partners must submit reports to both the Program Director and the appropriate NOAA Grants office.

Program staff will conduct an initial assessment of the final report to ensure the report is complete in terms of reporting requirements. Program staff will serve as technical monitors to review submitted reports. NOAA staff also reviews the reports submitted via Grants Online.

A project approved on behalf of a Program Committee will be required to follow the reporting requirements specified above. The principle investigator (if not the Chair of the Committee) will submit the report(s) to the Chair and Vice Chair of the Committee for review and approval. The Committee Chair is responsible for submitting the required report(s) to the Program.

Joint projects will assign one principle investigator responsible for submitting the required reports. The principle investigator will be identified within the project proposal. The submitted reports should be a collaborative effort between all Partners involved in the joint project.

Project recipients will provide all reports to the Program in electronic format.

Partners who receive no-cost extensions must notify the Program Director within 30 days of receiving approval of the extension. Semi-annual and final reports will continue to be required through the extended grant period as previously stated.

Partners that have not met reporting requirements for past/current projects may not submit a new proposal.

A verbal presentation of project results may be requested. Partners will be required to submit copies of project specifications and procedures, software development, etc. to assist other Program Partners with the implementation of similar programs.

Report Format

Semi-Annual(s) – Progress Reports: (3-4 pages)

- Title page - Project name, project dates (semi-annual period covered and complete project period), submitting Partner, and date.
- Objective
- Activities Completed – bulleted list by objective.
- Progress or lack of progress of incomplete activities during the period of semi-annual progress – bulleted list by objective.
- Activities planned during the next reporting period.
- Metrics table
- Milestone Chart – original and revised if changes occurred during the project period.

Final Report:

- Title page – Project name, project dates, submitting Partner, and date.
- Abstract/Executive Summary (including key results)
- Introduction
- Procedures

- Results:
    - Description of data collected.
    - The quality of the data pertaining to the objective of the project (e.g. representative to the scope of the project, quantity collected, etc.).
    - Compiled data results.
    - Summary of statistics.
- Discussion:
    - Discuss the interpretation of results of the project by addressing questions such as, but not limited to:
    - What occurred?
    - What did not occur that was expected to occur?
    - Why did expected results not occur?
    - Applicability of study results to Program goals.
    - Recommendations/Summary/Metrics
- Summarized budget expenditures and deviations (if any).

Programmatic review

Project reports will inform Partners of project outcomes. This will allow the Program as a whole to take advantage of lessons learned and difficulties encountered. Staff will provide final reports to the appropriate Committee(s). The Committees then can discuss the report(s) and make recommendations to modify the Data Collection Standards as appropriate. The recommendations will be submitted through the Program committee(s) review process.

Appendix A: Maximum Funding for Maintenance Projects Entering Year 5 of Funding in FY20

Project Entering Year 5 of Maintenance Funding	**Calculated Base** (formula used)	**Maximum Funding Year 5**	**Maximum Funding Year 6**
ME DMR: Portside commercial catch sampling and bycatch sampling for Atlantic herring, Atlantic mackerel, and Atlantic menhaden	**$133, 452.50** (2-year base)	**$88,968.33**	**$44,484.17**
ME DMR: Managing Mandatory Dealer Reporting in Maine	**$183, 934.50** (4-year avg)	**$122,623.00**	**$61,311.50**
RI DEM: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	**$82,563.50** (2-year base)	**$55,042.33**	**$27,521.17**
NJ DFW: Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	**$163,803.75** (4-year avg)	**$109,202.50**	**$54,601.25**
SC DNR: ACCSP Data Reporting from South Carolina's Commercial Fisheries	**$170,770.00** (2-year base)	**$113,846.67**	**$56,923.33**
ACCSP RTC: At-sea Headboat Sampling	**$162,114.00** (2-year base)	**$108,076.00**	**$54,038.00**
SEFSC: Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	**$266,792.00** (4-year avg)	**$177,861.33**	**$88,930.67**

Appendix B: Ranking Criteria Spreadsheet for Maintenance and New Projects

Ranking Guide – Maintenance Projects:

Primary Program Priority	**Point Range**	**Description of Ranking Consideration**
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	**Point Range**	**Description of Ranking Consideration**
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. geographic range of the stock).
> yr 2 contains funding transition plan and/or justification for continuance	0 – 4	Rank based on defined funding transition plan away from Program funding or viable justification for continued Program funding.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – Maintenance Projects: (*to be used only if funding available exceeds total Maintenance funding requested*)

Ranking Factors	Point Range	Description of Ranking Consideration
Achieved Goals	0 – 3	Proposal indicates project has consistently met previous set goals. Current proposal provides project goals and if applicable, intermediate metrics to achieve overall achieved goals.
Data Delivery Plan	0 – 2	Ranked based if a data delivery plan to Program is supplied and defined within the proposal.
Level of Funding	-1 – 1	-1 = Increased funding from previous year 0 = Maintained funding from previous year 1 = Decreased funding from previous year
Properly Prepared	-1 – 1	-1 = Not properly prepared 1 = Properly prepared
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – New Projects:

Primary Program Priority	Point Range	Description of Ranking Consideration
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	Point Range	Description of Ranking Consideration
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. fisheries sampled).
Contains funding transition plan / Defined end-point	0 – 4	Rank based on quality of funding transition plan or defined end point.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Innovative	0 – 3	Rank based on new technology, methodology, financial savings, etc.
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

FY2020 Proposal Rankings (Operations)

				Admin Grant	2,012,744	$105,931	2,118,675	
			3.35M	Maint @ 75%	923,494	New @ 25%	307,831	
			3.5M	Maint @ 75%	1,035,994	New @ 25%	345,331	
Project Name	**Partner**	**Score**	**Cost**	**Cumulative Base Cost**	**NMFS Fee**	**Cumulative Cost**	**3.5M Amt Remaining**	**3.35M Amt Remaining**
ACCSP Data Reporting from South Carolina's Commercial Fisheries (18 pages)	SC DNR	8.69	$ 113,846	$ 113,846	$ -	$ 113,846	$ 922,148	$ 809,648
FY20: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island (18 pages)	RI DEM	8.6	$ 55,043	$ 168,889	$ -	$ 168,889	$ 867,105	$ 754,605
FY2020: Managing Mandatory Dealer Reporting in Maine (39 pages)	ME DMR	8.52	$ 122,480	$ 291,369	$ 6,446	$ 297,815	$ 738,179	$ 625,679
Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast of Florida (12 pages)	ACCSP RTC	8.1	$ 104,899	$ 396,268	$ 5,521	$ 408,235	$ 627,759	$ 515,259
Advancing Fishery Dependent Data Collection for Black Sea Bass (Cetropristis striata) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach (39 pages)	RI DEM	8	$ 132,097	$ 528,365	$ 6,952	$ 547,284	$ 488,710	$ 376,210
Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries (34 pages)	NJ DFW	7.95	$ 93,408	$ 621,773	$ 4,916	$ 645,608	$ 390,386	$ 277,886
Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland - Year 2	MD DNR	7.52	$ 103,175	$ 724,948	$ 5,430	$ 754,213	$ 281,781	$ 169,281
Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries (24 pages)	SEFSC	7.21	$ 177,861	$ 902,809	$ 9,361	$ 941,435	$ 94,559	$ (17,941)
Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries (52 pages)	ME DMR	4.95	$ 25,974	$ 928,783	$ 1,367	$ 968,776	$ 67,218	$ (45,282)
FY20: SAFIS Expansion of "SAFMC Release" and "NC DMF Catch U Later" Discard Reporting Applications	SAFMC/NC DMF	56.3	$ 118,500	$ 118,500	$ 6,237	$ 124,737	$ 220,595	$ 183,095
Voice Recognition using Dragon Speech within Dockside Interceptor Application (DIA)	RI DEM	51.4	$ 60,541	$ 179,041	$ 3,186	$ 188,464	$ 156,868	$ 119,368
FY20: Use of Geographic Data and SAFIS Data Sources to Evaluate an Aggregate Landings Commercial Fishing Management Program	RI DEM	51	$ 35,414	$ 214,455	$ 1,864	$ 225,742	$ 119,590	$ 82,090
FY20: Managing 100% Lobster Harvester Reporting in Maine	ME DMR	48.8	$ 837,251	$ 1,051,706	$ 44,065	$ 1,107,057	$ (761,726)	$ (799,226)

FY2020 Proposal Rankings (Advisors)

				Admin Grant	2,012,744	$105,931	2,118,675	
			3.35M	Maint @ 75%	923,494	New @ 25%	307,831	
			3.5M	Maint @ 75%	1,035,994	New @ 25%	345,331	
Project Name	Partner	Score	Cost	Cumulative Base Cost	NMFS Fee	Cumulative Cost	3.5M Amt Remaining	3.35M Amt Remaining
FY20: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island (18 pages)	RI DEM	8.25	$ 55,043	$ 55,043	$ -	$ 55,043	$ 980,951	$ 868,451
ACCSP Data Reporting from South Carolina's Commercial Fisheries (18 pages)	SC DNR	8.13	$ 113,846	$ 168,889	$ -	$ 168,889	$ 867,105	$ 754,605
FY2020: Managing Mandatory Dealer Reporting in Maine (39 pages)	ME DMR	8	$ 122,480	$ 291,369	$ 6,446	$ 297,815	$ 738,179	$ 625,679
Advancing Fishery Dependent Data Collection for Black Sea Bass (Cetropristis striata) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach (39 pages)	RI DEM	8	$ 132,097	$ 423,466	$ 6,952	$ 436,864	$ 599,130	$ 486,630
Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland - Year 2	MD DNR	7.88	$ 103,175	$ 526,641	$ 5,430	$ 545,469	$ 490,524	$ 378,024
Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries (24 pages)	SEFSC	7.5	$ 177,861	$ 704,502	$ 9,361	$ 732,691	$ 303,303	$ 190,803
Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast of Florida (12 pages)	ACCSP RTC	7.44	$ 104,899	$ 809,401	$ 5,521	$ 843,111	$ 192,883	$ 80,383
Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries (34 pages)	NJ DFW	7.25	$ 93,408	$ 902,809	$ 4,916	$ 941,435	$ 94,559	$ (17,941)
Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries (52 pages)	ME DMR	4.38	$ 25,974	$ 928,783	$ 1,367	$ 968,776	$ 67,218	$ (45,282)
FY20: SAFIS Expansion of "SAFMC Release" and "NC DMF Catch U Later" Discard Reporting Applications	SAFMC/NC DMF	58	$ 118,500	$ 118,500	$ 6,237	$ 124,737	$ 220,595	$ 183,095
FY20: Use of Geographic Data and SAFIS Data Sources to Evaluate an Aggregate Landings Commercial Fishing Management Program	RI DEM	55.9	$ 35,414	$ 153,914	$ 1,864	$ 162,014	$ 183,317	$ 145,817
Voice Recognition using Dragon Speech within Dockside Interceptor Application (DIA)	RI DEM	53.5	$ 60,541	$ 214,455	$ 3,186	$ 225,742	$ 119,590	$ 82,090
FY20: Managing 100% Lobster Harvester Reporting in Maine	ME DMR	49.9	$ 837,251	$ 1,051,706	$ 44,065	$ 1,107,057	$ (761,726)	$ (799,226)

FY2020 Proposal Rankings (Average)

				Admin Grant	2,012,744	$105,931	2,118,675	
			3.35M	Maint @ 75%	923,494	New @ 25%	307,831	
			3.5M	Maint @ 75%	1,035,994	New @ 25%	345,331	
Project Name	Partner	Score	Cost	Cumulative Base Cost	NMFS Fee	Cumulative Cost	3.5M Amt Remaining	3.35M Amt Remaining
ACCSP Data Reporting from South Carolina's Commercial Fisheries (18 pages)	SC DNR	8.6	$ 113,846	$ 113,846	$ -	$ 113,846	$ 922,148	$ 809,648
FY20: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island (18 pages)	RI DEM	8.54	$ 55,043	$ 168,889	$ -	$ 168,889	$ 867,105	$ 754,605
FY2020: Managing Mandatory Dealer Reporting in Maine (39 pages)	ME DMR	8.44	$ 122,480	$ 291,369	$ 6,446	$ 297,815	$ 738,179	$ 625,679
Advancing Fishery Dependent Data Collection for Black Sea Bass (Cetropristis striata) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach (39 pages)	RI DEM	8	$ 132,097	$ 423,466	$ 6,952	$ 436,864	$ 599,130	$ 486,630
Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast of Florida (12 pages)	ACCSP RTC	7.99	$ 104,899	$ 528,365	$ 5,521	$ 547,284	$ 488,710	$ 376,210
Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries (34 pages)	NJ DFW	7.84	$ 93,408	$ 621,773	$ 4,916	$ 645,608	$ 390,386	$ 277,886
Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland - Year 2	MD DNR	7.58	$ 103,175	$ 724,948	$ 5,430	$ 754,213	$ 281,781	$ 169,281
Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries (24 pages)	SEFSC	7.26	$ 177,861	$ 902,809	$ 9,361	$ 941,435	$ 94,559	$ (17,941)
Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries (52 pages)	ME DMR	4.86	$ 25,974	$ 928,783	$ 1,367	$ 968,776	$ 67,218	$ (45,282)
FY20: SAFIS Expansion of "SAFMC Release" and "NC DMF Catch U Later" Discard Reporting Applications	SAFMC/NC DMF	56.5	$ 118,500	$ 118,500	$ 6,237	$ 124,737	$ 220,595	$ 183,095
FY20: Use of Geographic Data and SAFIS Data Sources to Evaluate an Aggregate Landings Commercial Fishing Management Program	RI DEM	51.7	$ 35,414	$ 153,914	$ 1,864	$ 162,014	$ 183,317	$ 145,817
Voice Recognition using Dragon Speech within Dockside Interceptor Application (DIA)	RI DEM	51.6	$ 60,541	$ 214,455	$ 3,186	$ 225,742	$ 119,590	$ 82,090
FY20: Managing 100% Lobster Harvester Reporting in Maine	ME DMR	49	$ 837,251	$ 1,051,706	$ 44,065	$ 1,107,057	$ (761,726)	$ (799,226)

		Partner	Title	Primary Module	Others		Cost
MAINTENANCE	1	ME DMR	FY2020: Managing Mandatory Dealer Reporting in Maine (39 pages)	Catch/Effort (100%)		$	122,480
	2	ME DMR	Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries (52 pages)	Biological (70%)	Bycatch (30%)	$	26,116
	3	RI DEM	FY20: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island (18 pages)	Catch/Effort (100%)		$	55,043
	4	RI DEM	Advancing Fishery Dependent Data Collection for Black Sea Bass (Cetropristis striata) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach (39 pages)	Biological (40%)	Catch/Effort (30%), Bycatch (30%)	$	132,097
	5	NJ DFW	Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries (34 pages)	Catch/Effort (55%)	Biological (45%)	$	93,408
	6	SC DNR	ACCSP Data Reporting from South Carolina's Commercial Fisheries (18 pages)	Catch/Effort (70%)	Biological (30%)	$	113,846
	7	ACCSP RTC	Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast of Florida (12 pages)	Biological (80%)	Catch/Effort (20%)	$	104,899
	8	SEFSC	Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries (24 pages)	Biological (100%)		$	177,861
	9	MD DNR	Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland - Year 2	Catch and Effort (80%)	Biological (10%), Socioeconomic(10%)	$	103,175
					Total Maintenance	**$**	**928,925**

		Partner	Title	Primary Module	Others		Cost
NEW	10	ME DMR	FY20: Managing 100% Lobster Harvester Reporting in Maine	Catch and Effort		$	837,251
	11	RI DEM	FY20: Use of Geographic Data and SAFIS Data Sources to Evaluate an Aggregate Landings Commercial Fishing Management Program	Catch and Effort		$	35,414
	12	SAFMC/NC DMF	FY20: SAFIS Expansion of "SAFMC Release" and "NC DMF Catch U Later" Discard Reporting Applications	Biological (90%)	Catch and Effort (10%)	$	118,500
	13	RI DEM	Voice Recognition using Dragon Speech within Dockside Interceptor Application (DIA)	Catch and Effort	Biological, Bycatch	$	60,541
					Total New	**$**	**1,051,706**

Admin		ACCSP	ACCSP Administrative Budget (23 pages)	Admin		$	2,012,744
					Grand Total Proposed	**$**	**3,993,375**

STATE OF MAINE
DEPARTMENT OF
MARINE RESOURCES
MARINE RESOURCES LABORATORY
P.O. BOX 8, 194 MCKOWN POINT RD
W. BOOTHBAY HARBOR, MAINE 04575-0008

PAUL R. LEPAGE
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

August 6, 2019

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St. Ste. 200 A-N
Arlington, VA 22201

Dear ACCSP:

We are pleased to submit the revised proposal titled "FY20: Managing Mandatory Dealer Reporting in Maine" for your consideration. This is a maintenance proposal which has not changed in the scope of work. The Maine Department of Marine Resources (MEDMR) has required mandatory swipe card reporting for elver dealers since the 2014 season; which the MEDMR fully funded. The MEDMR has required the sea urchin industry to use eDR mobile (ACCSP's swipe card program) for the past three seasons. This is the swipe card program that MEDMR worked collaboratively with the Massachusetts Division of Marine Fisheries (MADMF), National Marine Fisheries Service Greater Atlantic Regional Office (NMFS GARFO), ACCSP and HarborLight Software LLC. The MEDMR brought its experience with the Elver System swipe card project to this effort in the hope that other partners may benefit from the new swipe card system and we could use our "lessons learned" to make this project a success. The roll-out during the first two seasons did not go as smooth as intended; however, the 2018-19 season was greatly improved. The MEDMR also continued to monitor compliance and suspend those dealers who fail to report on time. The threat of a license suspension has improved the timeliness and quality of data submitted. Please view all graphs in color. This proposal addresses the following 2020 ranking criteria: catch and effort, data delivery plan, regional impact, funding transition plan, in kind contribution, improvement in data quality and timeliness, impact on stock assessment and properly prepared. For a summary of the proposal for ranking purposes, please see page 30. Please contact Robert Watts at the MEDMR with any questions. Thank you for your consideration of this proposal.

In our original proposal, committee members asked that we address the questions below. We are addressing them in this cover letter, but also in the report where applicable.

+ Why the decline in the number of dealers using VESL to report – from 81 in 2017 to 44 in 2018. Move to different reporting system (e.g., eDR), some other change?

The VESL program contains the swipe card system used exclusively for MEDMR's elver fishery. The number of dealers using VESL are dependent upon the number of elver dealer licenses purchased in a particular year and this past year we had fewer dealers in the fishery.

+ Why is 2018 data incomplete (page 11)?

MEDMR does not consider any data complete until the end of the following year. This is a standard practice we have always worked under. Example: 2018 data will be considered complete in January of 2020.

+ Are there tradeoffs between this proposal and the new 100% lobster proposal?

No, the two proposals are separate and no ACCSP funded positions overlap.. This proposal and staff funded by this proposal only work on dealer reporting and any staff funded by the other MEDMR 100% Lobster Harvester Reporting proposal would work on harvester reporting.

Sincerely,

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Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street. Suite. 200A-N
Arlington, VA 22201

FY20: Managing Mandatory Dealer Reporting in Maine

Total Cost: $122,480

Submitted by:

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Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Robert Watts, Marine Resource Scientist

Project Title: FY20: Managing Mandatory Dealer Reporting in Maine

Project Type: Maintenance Project

Requested Award Amount (without the NOAA administration fee): $122,480

Requested Award Period: One year after receipt of funds

Change in Scope/Cost from Previous Year Project:
This is a maintenance proposal which has not changed its scope from the FY19 proposal. **The dealer reporting objectives have largely remained unchanged since 100% of licensed dealers must report trip level information on 100% species they purchase from harvesters, which meets ACCSP standards.** However, since 2014 the MEDMR required that all elver dealers report daily using a MEDMR initiated and funded swipe card reporting program called the "Elver System" for dealers to report. Elver dealers were required to report daily using the Elver System. Since 2015, the Elver System was modified to start tracking of dealer to dealer transactions. Not only are harvesters required to swipe a card at the initial point of sale, but also dealers are required to swipe a card for any dealer to dealer elver transactions. The MEDMR implemented swipe card reporting in the sea urchin fishery during the 2016-2017 season. The program used for sea urchins was the swipe card program (eDR mobile) that MEDMR worked collaboratively with the Massachusetts Division of Marine Fisheries (MADMF), National Marine Fisheries Service Greater Atlantic Regional Office (NMFS GARFO), ACCSP and HarborLight Software LLC. The MEDMR required all 12 sea urchin dealers to report for the 2018-2019 season through the eDR mobile program for the third season. This was the first season that the program had very few issues within the season. The MEDMR continues to bring its experience with the Elver System and now eDR mobile swipe card projects to the current effort in the hope that other partners may benefit from the new swipe card system. The MEDMR currently does not have any plans to expand swipe card reporting to other fisheries unless there are management needs that swipe cards would justify. The MEDMR staff was again able to present data on this past season within a week of seasons end. Industry was impressed with how fast MEDMR could provide them with accurate data. The use of swipe cards in the sea urchin fishery allowed MEDMR to modify their management approach towards fishing days in the sea urchin fishery. In past years, harvesters were provided with set days they could fish. For the 2017-2018 and 2018-2019 season the MEDMR allowed harvesters to pick their own days from a list of open fishing days. It was the hope of the MEDMR that allowing this flexibility will allow harvesters to stay home on foul weather days. **The MEDMR also continued to suspend dealer licenses for those who fail to report on time which has greatly improved the timeliness and quality of the data submitted.** The MEDMR continues to fund the position that administers this suspension authority. These costs are not included in this grant proposal. See Attachment 1 for a summary of the project history and Attachment 2 (view in color) for a graph of previous grant costs.

Objectives:
The objective of this proposal is to collect trip level landings information from all licensed dealers who buy directly from harvesters. The primary tasks will be regulation compliance, data entry and auditing. Staff will also focus on dealer outreach to help industry understand the importance of the accurate and timely reporting. Electronic reporting will be encouraged for those still opting to report on paper. The continuous expansion of electronic reporting requires the MEDMR to spend a significant amount of time on outreach, explaining each system to dealers and troubleshooting any issues that might arise. In 2014 Maine State Legislature passed a law requiring that all elver dealers report using a swipe card program. Another law was passed in 2015 that provides the MEDMR the authority to require scallop and sea urchin dealers to report with swipe cards. **The results of the Elver System have proven successful and the MEDMR feels that swipe**

cards only be used where there is a fisheries management need. Currently the MEDMR does not anticipate any new fisheries be required to report via swipe card. The MEDMR used their swipe card program experience as a learning process to help create a more complete swipe card program in collaboration with MADMF, NOAA GARFO, ACCSP and HarborLight Software LLC. For the 2016-2017, 2017-2018 and 2018-2019 sea urchin season the MEDMR required all sea urchin dealers to use eDR mobile to report all sea urchin transactions. There is no plan to mandate electronic reporting for all other dealers at this time, as this is not an ACCSP requirement.

Need:

Maine has many dealers who can buy directly from harvesters, and spends significant resources tracking compliance, entering and auditing many records. In 2018, approximately 600 dealers were licensed to buy from harvesters and 197 (33%) of them were required to report to National Marine Fisheries Service (NMFS). Regardless of their federal permit status, MEDMR works with all dealers to ensure all landings are reported either to MEDMR or to SAFIS, and staff audits all records with a state landed of Maine. Of the dealers, 234 (36%) chose to report on paper; 182 (28%) chose Trip Ticket (electronic reporting software developed by Bluefin Data LLC); 109 (17%) chose file upload; 57 (9%) chose key entry SAFIS; 44 (7%) were required to use VESL (swipe card reporting program developed by Bluefin Data LLC and used exclusively by MEDMR elver dealers, the number of dealers will fluctuate from year to year); 12 (2%) were required to use eDR mobile (swipe card program created jointly by ACCSP, MADMF, MEDMR and NOAA GARFO) and 5 (1%) would report using the NMFS quahog database (Table 1).

Table 1: Reporting Methods Chosen for the 2018 Primary Buyers in Maine

Reporting Method	Combo Dealers	State Dealers	Total Dealers
Paper	14	220	**234**
Trip Ticket	118	64	**182**
VESL Program	0	44	**44**
eDR Mobile	4	8	**12**
SAFIS Key Entry	32	25	**57**
File Upload	61	48	**109**
Quahog Electronic Logbook	5	0	**5**
Total Electronic*	**220**	**189**	**409**
Grand Total	**234**	**409**	**643**

*Data submitted via Trip Ticket, SAFIS Key Entry, eDR Mobile, VESL, File Upload and Quahog Electronic Logbook are data electronically reported.

Note: Twenty-three dealers chose multiple methods of reporting, so they were counted two or more times on this table.

Some dealers opted to report using multiple methods, (largely due to the exemption of certain species in the federal reporting requirement**). Of the 1.35 million trips entered for 2018 in the data warehouse, 31% of them were landed in Maine which exceeds any other state (Figure 1 – view in color). These records were submitted by both "state-only" dealers (those that only report to MEDMR) as well as "combo" dealers (those that report to fulfill both NMFS and MEDMR requirements). Because MEDMR cooperatively works with NMFS to collect and audit data from federally permitted dealers, MEDMR staff devotes time and resources to help these "combo" dealers submit data and MEDMR staff audits all these records.**

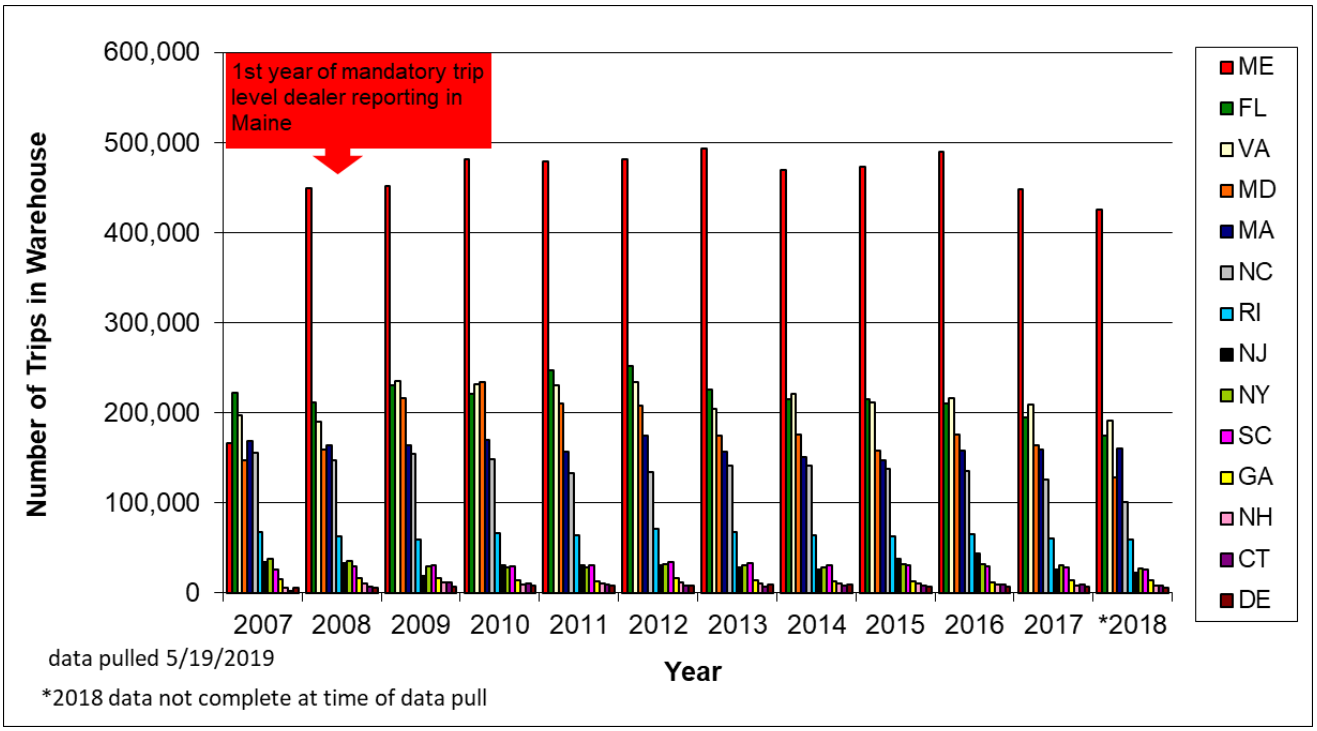


Figure 1: Number of Reported Trip Records by State Landed in ACCSP Data Warehouse

The number of trip records that MEDMR staff uploaded into SAFIS or data entered into MARVIN (MEDMR's database that contains all sampling, biological and landings data that MEDMR collects) has increased 155% since 2007 (Figure 2 – view in color). When dealers submit reports on paper, they are entered into the MARVIN database. **MARVIN is used for reports submitted on paper because it is a faster method of data entry and MEDMR wishes to use this tool to audit the data before sending a copy of it to ACCSP. Routines are configured to convert the MARVIN data to ACCSP codes before they are uploaded to the ACCSP warehouse.**

The numbers in Figures 1 and 2 differ because they contain different data sets. Figure 1 shows the Maine-landed data in the warehouse which contains data from: MARVIN dealer data, MARVIN harvester data, SAFIS data, the federal ocean quahog data, and highly migratory species data. Figure 2 only shows Maine-landed records from MARVIN dealer data and SAFIS data.

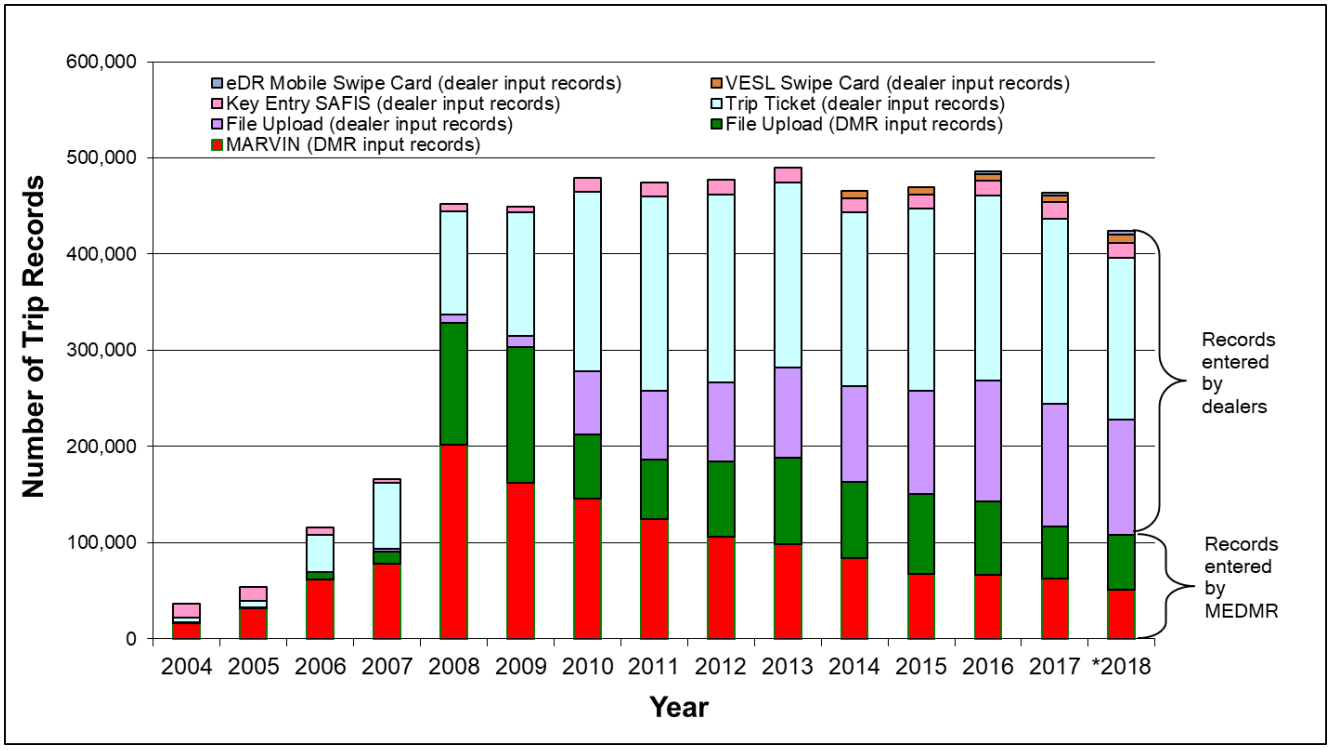


Figure 2: Number of <u>Dealer</u> Reported Trip Records entered in MARVIN and SAFIS

Landings data entered in MARVIN are uploaded to the ACCSP data warehouse. The significant increase in the amount of data entry and auditing is the single greatest challenge for the dealer program staff. Within the past few years, MEDMR absorbed the cost of two of the four positions previously funded by ACCSP grants, and MEDMR is also funding the position who will administer the license suspension process of the program. MEDMR is now requesting funding for one existing position: one Specialist I who audits data, helps set up dealers with electronic reporting (trip ticket, file upload, key entry SAFIS and swipe card programs), uploads data for "state-only" dealers, trains and supports "combo" dealers to report their own data, and provides the personal outreach with industry. **It is essential that this dealer reporting program continue as it is an important tool for monitoring Maine's commercial fisheries which are large and economically important to the U.S. seafood industry. According to the NMFS commercial fisheries database (as of 5/20/2019), Maine was ranked as the second highest state on the Atlantic Coast in commercial value ($643 million) and fourth highest in whole pounds landed (276.6 million) in 2018. This comprehensive dealer reporting program is also an ASMFC (Atlantic States Marine Fisheries Commission) compliance issue for several fisheries, including for American lobster which is Maine's largest fishery.**

<u>Summary of staffing:</u>

MEDMR Landings Program staff involved in dealer reporting who are fully funded by MEDMR:

- Scientist IV: makes decisions on the general Landings Program direction.
- Scientist III: oversees the Landings Program, participates in ACCSP committees, transfers data to ACCSP; reporting technology development and responds to data requests.
- Scientist II: manages the day-to-day operations of the Landings Program, is responsible for database development, responds to data requests and updates the Landings Program web page. This position also audits data, and monitors licenses and compliance.
- Specialist II: provides one-on-one outreach with the seafood dealers; trains dealers how to report electronically or on paper; follows up on compliance issues; uploads data from "state-only" dealers who choose to file upload; and audits data. This position trains "combo" dealers how to file upload their own data, maintains dealer upload conversion tables, troubleshoots uploading errors, and installs Trip Ticket at dealer locations. This position not only audits data from "state-only" dealers, but also data submitted electronically by "combo" dealers. This position

frequently works with federally permitted dealers because the dealers are also submitting this information in order to fulfill MEDMR reporting requirements. See the *Approach* section below for further details on auditing. This position is also assigned tasks in the harvester-reporting project.

- Office Associate II: corresponds with industry regarding new suspension authority for failure to report on time; identifies and notifies delinquent reporters; follows protocols for suspending licenses; works with the licensing division to ensure licenses are re-issued when reports have been submitted.
- Office Associate I: opens and processes mail and enters data into MARVIN.

MEDMR Landings Program staff currently funded by ACCSP and in need of additional ACCSP funding:

- Specialist I: provides one-on-one outreach with the seafood dealers; trains dealers how to report electronically or on paper; follows up on compliance issues; uploads data from "state-only" dealers who chose to file upload; and audits data. This position trains "combo" dealers how to file upload their own data, maintains dealer upload conversion tables, troubleshoots uploading errors, and installs Trip Ticket at dealer locations. This position not only audits data from "state-only" dealers, but also data submitted electronically by "combo" dealers. This position frequently works with federally permitted dealers because the dealers are also submitting this information in order to fulfill MEDMR reporting requirements. MEDMR staff help federally permitted dealers to submit data and staff audit the data submitted to ensure the data are as accurate as possible, even though the data may have been submitted under the NMFS partner ID. See the *Approach* section below for further details on auditing.

The FY14 through FY19 grant did not include any funding for the elver swipe card program. The MEDMR fully funded the original programming, programmatic updates and maintenance costs associated with this project. The MEDMR will continue to fund the monthly maintenance fees.

Results and Benefits:

The data collected so far have shown how valuable this information is for Maine's fisheries. In the lobster industry, MEDMR scientists have learned more about the fleet characteristics and number of active full time and part time fishermen involved in this fishery than they have been able to with the current sampling programs. Other fishery managers are now analyzing landings data to learn more about the fishing fleet and the makeup of other fisheries. MEDMR has learned how many harvesters are active in each fishery (Figure 3 – view in color).

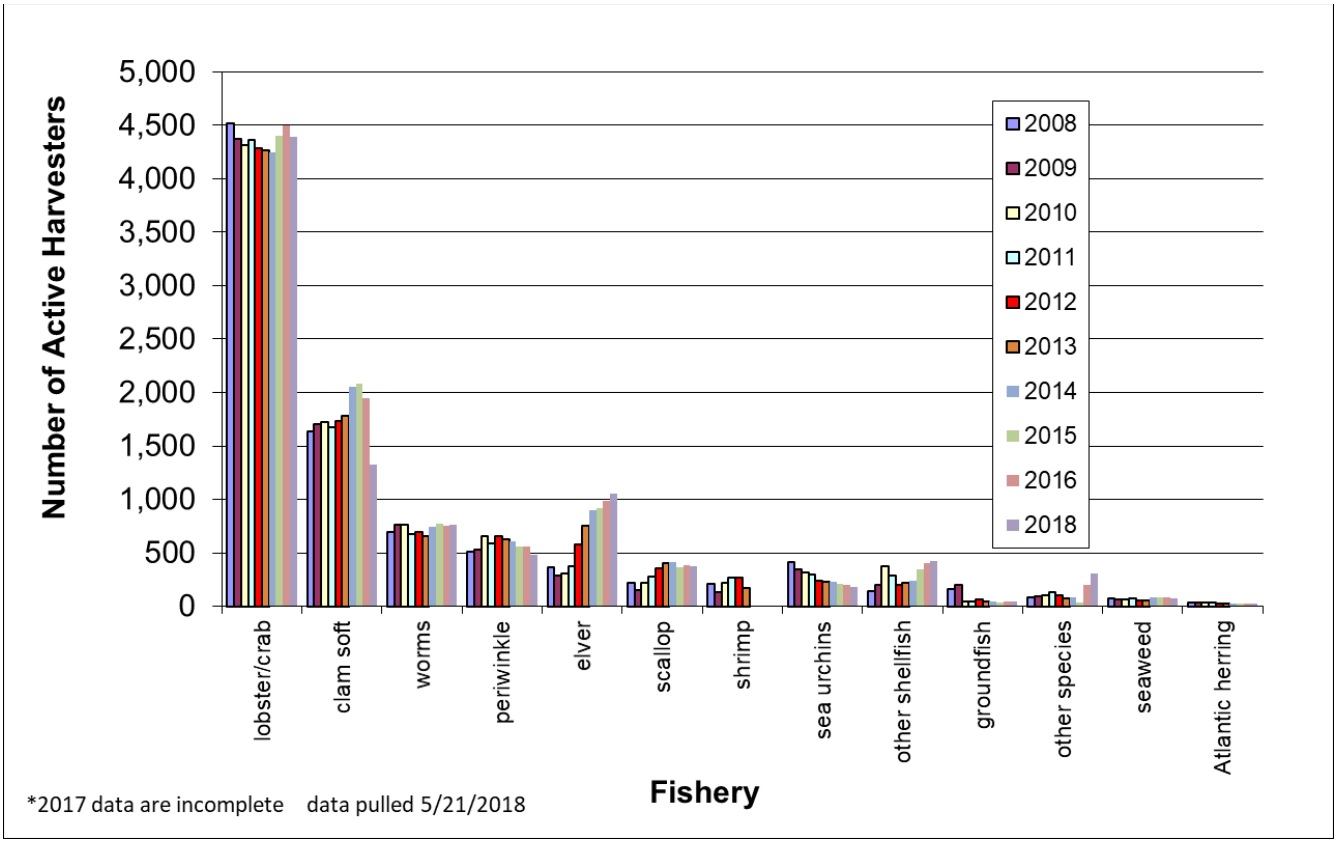


Figure 3: Number of Active Harvesters Reported in Dealer Data

This grant will allow MEDMR to complete an 13th year of mandatory trip level reporting for all dealers. More data auditing and follow up with dealers will help to ensure the data reported are as accurate as possible. MEDMR continues to encourage more dealers to move from paper reporting to electronic reporting as dealers become more comfortable with trip level reporting and will continue to mandate electronic swipe card reporting in the elver and sea urchin fishery. The MEDMR participated in a collaborative effort that created a complete swipe card program with MADMF, NOAA GARFO, ACCSP and HarborLight Software LLC that was used for sea urchin reporting the past two seasons. The MEDMR expects other fisheries will eventually be required to use the swipe card program. MEDMR is already uploading data reported to MARVIN to ACCSP every six months and intends to start uploading every month; which benefits all partners.

Metadata for the dealer program will be updated as needed according to the Federal Geographic Data Committee (FGDC) and the Content Standard for Digital Geospatial Metadata (CSDGM) standards where appropriate. The resulting metadata will be reported to ACCSP as text and XML.

This project will help MEDMR meet the data collection standards of ACCSP. All partners will benefit, as all data will be uploaded to ACCSP and many of the species landed in Maine have a broad geographic range which includes many other agencies in their management. Partners have also benefited from the technologies built and lessons learned from the elver dealer swipe card/mobile app project that was rolled out to elver dealers in 2014 and the ACCSP eDR mobile app project in 2016.

Approach:

1. Enforce compliance

MEDMR staff will enforce compliance of the trip level reporting regulation through these methods:

- Provide initial outreach and technical support needed for dealers to report trip level landings to MEDMR. Meet with dealers individually as needed to explain reporting procedures, load software, troubleshoot problems with reporting, and explain consequences for failing to report.
- Review reports submitted for completeness and log the submissions in the compliance database. If reports are incomplete, MEDMR will contact industry to correct reporting mistakes. If a dealer cannot be contacted by phone, the report will be returned for correction.
- **Complete suspension notices monthly to those dealers that are delinquent enough to meet the minimum notification criteria as outlined in the suspension law (Attachment 4).**
- Complete follow-up suspension notices monthly to those dealers that are delinquent enough to meet the minimum notification criteria as outlined in the suspension law (Attachment 4).
- **MEDMR will suspend dealer licenses for those who fail to report in a timely manner. See Attachment 4 for the law, which dictates suspension procedures MEDMR will follow.**

2. Data entry

Paper reports will be entered into MARVIN. Staff will file upload all data through the SAFIS interface for those "state-only" dealers who choose to report from their own accounting systems.

3. Encourage electronic reporting

MEDMR staff will encourage dealers reporting on paper to report using one of the three electronic reporting methods (SAFIS key entry, Trip Ticket, or file upload). Currently only certain fisheries are required to report using swipe card technology, so the swipe card report type is not counted above. MEDMR staff will train "combo" dealers who are required to report electronically according to NMFS regulation to upload their own data and will help them maintain their conversion tables so the correct fishermen, vessels, ports and species-grade-market-unit combinations are reported. MEDMR staff will install Trip Ticket at those dealer locations where file uploading is not an option. Staff will also customize the Trip Ticket program so that only the correct harvesters, vessels, species, ports and gears pertinent to the dealer can be chosen.

MEDMR believes the electronic reporting can benefit many in the industry as much as it benefits MEDMR by reducing the amount of key entry required of staff. Starting with the 2014 elver season and continuing through 2019 season, the MEDMR required all elver dealers report daily using the "VESL" (formally the "Elver System"), which was created by Bluefin Data LLC. The MEDMR required VESL to be used to record and report all harvester to dealer transactions. In 2015 through 2019, the Elver System and VESL also tracked dealer to dealer transactions. The MEDMR paid for and supplied each dealer with an Elver System or VESL (starting in 2017) program and swipe card reader and training. There was a total of 16 buying stations that could have purchased directly from harvesters in 2019, 36 in 2018, 24 in 2017, 22 in 2016 and 27 in 2015. Starting in September 2016 MEDMR required that all sea urchin dealers use eDR Mobile (created through collaborative effort with MEDMR, MADMF, ACCSP, NOAA GARFO and HarborLight Software) to purchase sea urchins directly from harvesters. During the 2018 – 2019 season, 12 dealer locations were set up and required to use swipe card technology to purchase sea urchins from licensed harvesters. That number remained unchanged from 2017-2018 and down slightly from the 15 that were set up for the 2016 – 2017 season. While the initial roll-out for the first two seasons did not come without glitches, the rollout for the 2018-2019 season was very smooth. **The use of the swipe cards in the elver and sea urchin fishery has eliminated the need of MEDMR staff to manually enter approximately 10,000 transactions between both fisheries each year while also providing staff with the most up to date data available. Dealers were required to report daily which allowed the MEDMR to monitor each harvester's individual quota (elver only) and the overall quota (elver only). For the past two sea urchin seasons the MEDMR was able to utilize eDR mobile to allow for harvesters to pick which days they fished based off a pre-determined calendar of fishing days. It was the hope to make this fishery safer for all involved by allowing harvesters to stay home on bad weather days.**

4. Continue outreach with industry to promote buy-in.
MEDMR staff will continue to work with dealers to explain the purpose and benefits of this reporting system. Staff will attend the annual Maine Fishermen's Forum and present a Landings Program poster explaining the importance of accurate reporting as well as displaying preliminary data by fishery. Staff will work with established industry organizations, such as the MEDMR advisory councils, lobster zone councils, and dealer and harvester associations to reiterate the program goals and show results of mandatory reporting. Staff will also focus on explaining the new statutory authority for suspending licenses for those who fail to report on time, and how this will help gather more accurate data.

5. Audit of dealer data submitted.
Staff will audit data submitted monthly. Paper data will be audited twice per month; electronic audits sent via email from SAFIS will be corrected weekly. SAFIS audits for "state-only" dealers will be corrected via an ODBC connection to a view of the Maine data. Audits concerning "combo" dealers will also be vetted through the NMFS Northeast Region. MEDMR staff audit data submitted by "combo" dealers because these dealers submit data in order to also fulfill MEDMR reporting requirements. MEDMR performs basic audits of records to catch potential oversights from NMFS audits, audits data exempted from the federal reporting rule (e.g. softshell clams, razor clam, mussels, oysters, quahog, elver, and worm data), and performs additional audits that NMFS does not. For example, MEDMR audits all records to flag those harvesters selling without a license for that species. MEDMR also compares dealer-reported landings with harvester-reported landings and identifies dealers with discrepancies. In these audits, MEDMR contacts dealers when discrepancies are discovered and works to correct records or recover missing data.

6. Transmission of dealer data to ACCSP.
MEDMR will upload dealer data from MARVIN to the ACCSP data warehouse once every two months. In each data feed, the following fields are uploaded to the warehouse according to ACCSP protocols: supplier dr id, supplier dealer id, supplier trip id, supplier cf id, supplier vessel id, unload year, unload month, unload day, state code, county code, port code, primary gear, data source, data supplier, reported quantity, live pounds, dollars, disposition code, grade code, unit measure, species ITIS, market code, supplier action flag, dr seq id, fishing mode. **MEDMR enters data daily and audits data weekly, so the data uploaded to the warehouse are a mix of pre- and post-audited records. MEDMR does not keep track of what percentage of the uploaded records are "reloads" due to errors, but simply reloads <u>all</u> the data in MARVIN to the warehouse once every three months. In addition, the data supplied by the Elver System are sent directly to SAFIS daily during elver season.**

The MEDMR does not upload data from MARVIN to SAFIS because MEDMR staff continually audit data each week, so the data that are uploaded to the warehouse are a mix of pre- and post-audited records. The reloading of data from MARVIN to the Warehouse is an automated process that the MEDMR loads into a temporary table provided by the Warehouse. If we were to perform the same upload method to SAFIS we would need the ability to mass delete records from SAFIS (which we do not have the ability to do at this time) before records are reloaded to avoid creating duplicate records. In addition, quahog data are loaded into the warehouse and not into SAFIS, so all Maine dealer data would still reside in the warehouse and not SAFIS.

7. Report metadata to ACCSP.
Metadata will be created with ESRI ArcCatalog 10 in order to conform to the FGDC (Federal Geographic Data Committee) standards and specifications. As specified by the federal standard, MEDMR metadata will include the following main sections with detailed information on: identification information, data quality information, spatial data organization information, spatial reference information, entity and attribute information, distribution information, metadata reference

information, citation information, time period information and contact information. Created metadata will be available in text and XML formats.

Geographic Location: Operations will be based out of Boothbay Harbor, Maine and the project will take place throughout Maine.

Milestone Schedule:

	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Enforce dealer compliance	X	X	X	X	X	X	X	X	X	X	X	X
2. Data enter dealer reports	X	X	X	X	X	X	X	X	X	X	X	X
3. Encourage electronic dealer reporting	X	X	X	X	X	X	X	X	X	X	X	X
4. Industry outreach to promote dealer buy-in	X	X	X	X	X	X	X	X	X	X	X	X
5. Audit dealer data	X	X	X	X	X	X	X	X	X	X	X	X
6. Upload dealer data to ACCSP		X		X		X		X		X		X
7. Report metadata to ACCSP												X
8. Semi-annual reports						X						X
9. Annual reports												X

Project Accomplishments Measurement:

*2018 and 2019 data are incomplete at the time of proposal submission

Goal	Measurement	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*	2019*
Enforce Dealer Compliance	Number of dealer licenses rejected due to failure to report	43	155	48	56	66	81	16	35	15	115	407	-	-	-	-	-
Enforce Dealer Compliance	Frequency of referrals to Marine Patrol due to missing reports	-	-	-	-	-	4X per yr	4X per yr	4X per yr	4X per yr	4X per yr	4X per yr through 6/1/14	-	-	-	-	-
Enforce Dealer Compliance	Number of compliance calls to delinquent dealers	-	-	-	-	166	297	259	451	523	420	269	208	45	37	25	25
Enforce Dealer Compliance	Number of suspension letters to delinquent dealers	-	-	-	-	-	-	-	-	-	-	407	567	177	876	532	25
Enforce Dealer Compliance	Number of dealers suspended for failing to report timely	-	-	-	-	-	-	-	-	-	-	27	57	38	32	29	35
Dealer Data Entry	Number of trip records by year landed in data warehouse	15,858	27,455	126,559	166,468	449,216	451,056	481,668	478,819	481,116	493,314	469,430	473,400	489,367	447,626	425,040	15,231
Dealer Data Entry	Number of positive trip records by year landed in MARVIN	15,824	31,486	61,656	76,744	197,289	159,437	143,766	124,057	105,760	98,195	83,942	67,798	66,594	62,350	51,018	7,693
Dealer Data Entry	Number of positive trip records by year landed in SAFIS	21,602	26,382	59,452	91,551	250,656	290,155	333,132	350,232	371,391	391,192	381,413	401,522	418,956	383,043	372,996	43,746
Encourage Electronic Reporting	Number of dealers submitting positive reports in SAFIS	69	78	98	142	204	230	275	291	312	328	342	330	339	329	339	222
Transmit Dealer Data to Data Warehouse	Frequency of data submitted by year landed	Yearly	Yearly	Yearly	Yearly	yearly to twice per month	twice per month	twice per month	twice per month	twice per month	twice per month	bi-monthly	once every 6 months	once every 6 months	once every 6 months	once every 6 months	once every 6 months
Outreach	Number of custom data requests	-	11	95	155	204	269	275	281	302	419	434	569	806	720	531	365

MEDMR does not consider any data complete until the end of the following year. This is a standard practice we have always worked under. Example: 2018 data will be considered complete in January of 2020.

Cost Summary: FY20 Managing Mandatory Dealer Reporting in Maine			
10/1/2020 - 9/30/2021			
Personnel[A]	**Description**		**Cost**
1 Specialist I (Eileen Greenleaf)	full time position for 12 months		$46,207
		Subtotal	**$46,207**
Fringe Benefits[A]			
1 Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement		$29,289
		Subtotal	**$29,289**
		Total Personnel	**$75,496**
Travel			
Mileage Reimbursement	2500 miles @ $0.44/mile		$1,100
5 Overnight stays[C]	5* $150/night		$750
Per diem (includes extended days)	(5 overnights + 5 extended days) * $65/day		$650
		Total Travel	**$2,500**
Supplies			
Filing Supplies	folders, folder labels, year labels		$300
Other			
Printing and binding of dealer report forms	500 logbooks * $2.50 per logbook		$1,250
Postage for logbooks	Mail 500 logbooks * $4.00 per logbook		$2,000
Postage for info packets and letters	($0.50*600 compliance letters)		$300
Technology (computer programs, equipment)			$250
Telecommunication charges[D]	4 phones * $40/mo * 12 mo		$1,920
		Total Supplies	**$6,020**
Contractual			
Trip Ticket 1 yr maintenance	$850/mo fee * 12 mo		$10,200
(Software support and upgrades)		**Total Contractual**	**$10,200**
		Subtotal	**$18,720**
Total Direct Costs			**$94,216**
Indirect Costs (30%)			**$28,265**
Total Award to DMR			**$122,480**

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

Partner Contribution For ACCSP Purposes

Scientist IV (7% time)	$9,115
Scientist III (50% time)	$51,837
Scientist II (50% time)	$57,484
Specialist II (75% time)	$59,364
Office Associate I (15% time)	$11,704
Office Associate II (100%)	$78,417
Elver Mobile Swipe Card Project	$21,900
	$289,821

Budget Narrative for FY2020 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Greenleaf. The position is funded full time (100%) by this award and are a Department of Marine Resources' employee. Salary and benefits for this employee are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provide dealers with one-on-one training on these reporting systems and help troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software to submit their landings information.

The mileage reimbursement rate is set by the State of Maine and are not negotiable.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary. The rates were calculated through the GSA website for posted rates.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 30%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY19 Managing Mandatory Dealer Reporting in Maine			
10/1/2019 - 9/30/2020			
Personnel[A]	**Description**		**Cost**
1 Specialist I (Eileen Greenleaf)	full time position for 12 months		$44,893
1 Office Associate I (Susan Kelley)	full time position for 12 months		$39,007
		Subtotal	**$83,900**
Fringe Benefits[A]			
1 Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement		$28,282
1 Office Associate I (Susan Kelley)	Includes health, dental, workers comp, FICA, life insurance and retirement		$27,957
		Subtotal	**$56,239**
		Total Personnel	**$140,139**
Travel			
1 seasonal vehicle[B]	1 car * $188.67/mo * 12 mo		$2,264
Mileage fee	1 car * 1,000 mi per mo * $.1533/mi * 12 mo		$1,840
Toll allowance	Estimated		$100
5 Overnight stays[C]	5* $150/night		$750
Per diem (includes extended days)	(5 overnights + 5 extended days) * $65/day		$650
		Total Travel	**$5,604**
Supplies			
Filing Supplies	folders, folder labels, year labels		$500
Other			
Printing and binding of dealer report forms	500 logbooks * $2.50 per logbook		$1,250
Postage for logbooks	Mail 500 logbooks * $4.75 per logbook		$2,375
Postage for info packets and letters	($0.48*1200 compliance letters)+($6.47*200 certified letters to delinquent dealers)		$1,870
Telecommunication charges[D]	4 phones * $55/mo * 12 mo		$2,640
		Total Supplies	**$8,635**
Contractual			
Trip Ticket 1 yr maintenance	$850/mo fee * 12 mo		$10,200
(Software support and upgrades)		**Total Contractual**	**$10,200**
		Subtotal	**$24,439**
Total Direct Costs			**$164,578**
Indirect Costs (30%)			**$49,373**
Total Award to DMR			**$213,951**

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

Partner Contribution for ACCSP Purposes

Scientist IV (15% time)	$17,699
Scientist III (50% time)	$50,327
Scientist II (50% time)	$55,810
Specialist II (75% time)	$57,635
Office Associate I (15% time)	$11,363
Office Associate II (100%)	$76,133
Elver Mobile Swipe Card Project	$19,300
	$288,267

Budget Narrative for FY2019 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Greenleaf and the Office Associate I is Susan Kelley. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects. The increase in Personal and Fringe benefits reflects one of these staff members decision to collect the State of Maine medical and dental benefits whereas the previous employee in the position elected not to take these benefits.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provide dealers with one-on-one training on these reporting systems and help troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software to submit their landings information.

The monthly fee for the vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Nissan Rogue SUV which is a state-owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary. The rates were calculated through the GSA website for posted rates.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance, and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 30%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY18 Managing Mandatory Dealer Reporting in Maine			
10/1/2018 - 9/30/2019			
Personnel[A]	**Description**		**Cost**
1 Specialist I (Eileen Greenleaf)	full time position for 12 months		$42,795
1 Office Associate I (Susan Kelley)	full time position for 12 months		$35,383
		Subtotal	**$78,178**
Fringe Benefits[A]			
1 Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement		$27,515
1 Office Associate I (Susan Kelley)	Includes health, dental, workers comp, FICA, life insurance and retirement		$23,656
		Subtotal	**$51,171**
		Total Personnel	**$129,349**
Travel			
1 seasonal vehicle[B]	1 car * $108.65/mo * 12 mo		$1,304
Mileage fee	1 car * 1,000 mi per mo * $.12/mi * 12 mo		$1,440
Toll allowance	Estimated		$74
5 Overnight stays[C]	5* $100/night		$500
Per diem (includes extended days)	(5 overnights + 5 extended days) * $50/day		$500
		Total Travel	**$3,818**
Supplies			
Filing Supplies	folders, folder labels, year labels		$500
Other			
Printing and binding of dealer report forms	500 logbooks * $2.50 per logbook		$1,250
Postage for logbooks	Mail 500 logbooks * $4.75 per logbook		$2,375
Postage for info packets and letters	(.48*1200 compliance letters)+(5.75*200 certified letters to delinquent dealers)		$1,726
Telecommunication charges[D]	4 phones * $55/mo * 12 mo		$2,640
		Total Supplies	**$8,491**
Contractual			
Trip Ticket 1 yr maintenance	$600/mo fee * 12 mo		$7,200
(Software support and upgrades)		**Total Contractual**	**$7,200**
		Subtotal	**$19,509**
Total Direct Costs			**$148,858**
Indirect Costs (30%)			**$44,657**
Total Award to DMR			**$193,516**

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	$15,975
Scientist III (50% time)	$45,971
Scientist II (50% time)	$51,397
Specialist II (75% time)	$60,558
Office Associate I (15% time)	$10,768
Office Associate II (100%)	$76,148
Elver Mobile Swipe Card Project	$12,000
Total	**$272,816**

Budget Narrative for FY2018 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Greenleaf and the Office Associate I is Susan Kelley. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects. The increase in Personal and Fringe benefits reflects one of these staff members decision to collect the State of Maine medical and dental benefits whereas the previous employee in the position elected not to take these benefits.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provides dealers with one-on-one training on these reporting systems and helps troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software to submit their landings information.

The monthly fee for the vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Chevy Cobalt car which is a state-owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance, and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 30%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY17 Managing Mandatory Dealer Reporting in Maine			
Personnel[A]	**Description**		**Cost**
1 Specialist I (Eileen Greenleaf)	full time position for 12 months		$42,806
1 Office Associate I (Currently Vacant)	full time position for 12 months		$31,772
		Subtotal	**$74,578**
Fringe Benefits[A]			
1 Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement		$25,756
1 Office Associate I (Currently Vacant)	Includes health, dental, workers comp, FICA, life insurance and retirement		$12,575
		Subtotal	**$38,331**
		Total Personnel	**$112,909**
Travel			
1 seasonal vehicle[B]	1 car * $108.65/mo * 12 mo		$1,304
Mileage fee	1 car * 1,000 mi per mo * $.12/mi * 12 mo		$1,440
Toll allowance	Estimated		$75
5 Overnight stays[C]	5* $100/night		$500
Per diem (includes extended days)	(5 overnights + 5 extended days) * $50/day		$500
Supplies			
Filing Supplies	folders, folder labels, year labels		$500
Contractual			
Trip Ticket 1 yr maintenance	$500/mo fee * 12 mo		$6,000
(Software support and upgrades)			
Other			
Printing and binding of dealer report forms	500 logbooks * $2.50 per logbook		$1,250
Postage for logbooks	Mail 500 logbooks * $4.75 per logbook		$2,375
Postage for info packets and letters	(.465*1200 compliance letters)+(5.75*200 certified letters to delinquent dealers)		$1,708
Telecommunication charges[D]	4 phones * $55/mo * 12 mo		$2,640
		Subtotal	**$18,292**
Total Direct Costs			**$131,201**
Indirect Costs (25%)			**$32,800**
Total Award to DMR			**$164,001**

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

FY 2017 Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	$16,392
Scientist III (50% time)	$61,576
Scientist II (50% time)	$38,861
Specialist II (75% time)	$51,402
Office Associate I (15% time)	$6,911
Office Associate II (100%)	$61,438
Elver Swipe Card Program	$11,950
Total	$248,746

Budget Narrative for FY2017 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Greenleaf and the Office Associate I is Susan Kelley. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provides dealers with one-on-one training on these reporting systems and helps troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software to submit their landings information.

The monthly fee for the vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Chevy Cobalt car which is a state-owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance, and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. The Specialist I do not have an office phone, so the cell phones also serve as the only phone through which dealers can contact them with questions.

Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 25%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY16 Managing Mandatory Dealer Reporting in Maine			
Personnel[A]	**Description**		**Cost**
1 Specialist I (Eileen Greenleaf)	full time position for 12 months		$42,806
1 Office Associate I (Rebecca Barter)	full time position for 12 months		$32,084
		Subtotal	**$74,890**
Fringe Benefits[A]			
1 Specialist I (Eileen Burk)	Includes health, dental, workers comp, FICA, life insurance and retirement		$26,285
1 Office Associate I (Rebecca Barter)	Includes health, dental, workers comp, FICA, life insurance and retirement		$12,454
		Subtotal	**$38,739**
		Total Personnel	**$113,629**
Travel			
1 seasonal vehicle[B]	1 car * $108.65/mo * 12 mo		$1,304
Mileage fee	1 car * 1,000 mi per mo * $.1254/mi * 12 mo		$1,505
Toll allowance	Estimated		$75
5 Overnight stays[C]	5* $100/night		$500
Per diem (includes extended days)	(5 overnights + 5 extended days) * $50/day		$500
Supplies			
Filing Supplies	folders, folder labels, year labels		$500
Contractual			
Trip Ticket 1 yr maintenance	$450/mo fee * 12 mo		$5,400
(Software support and upgrades)			
Other			
Printing and binding of dealer report forms	500 logbooks * $2.50 per logbook		$1,250
Postage for logbooks	Mail 500 logbooks * $4.75 per logbook		$2,375
Postage for info packets and letters	(.49*1200 compliance letters)+(5.75*200 certified letters to delinquent dealers)		$1,738
Telecommunication charges[D]	4 phones * $55/mo * 12 mo		$2,640
		Subtotal	**$17,787**
Total Direct Costs			**$131,416**
Indirect Costs (25%)			**$32,854**
Total Award to DMR			**$164,270**

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

FY 2016 Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	$16,392
Scientist III (50% time)	$51,363
Scientist II (50% time)	$44,599
Specialist II (75% time)	$51,402
Office Associate I (15% time)	$6,911
Office Associate II (100%)	$61,438
Total	$232,105

Budget Narrative for FY2016 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Burk and the Office Associate I is Rebeca Barter. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provides dealers with one-on-one training on these reporting systems and helps troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software to submit their landings information.

The monthly fee for the vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Chevy Cobalt car which is a state-owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance, and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. The Specialist I do not have an office phone, so the cell phones also serve as the only phone through which dealers can contact them with questions.

Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 25%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY15 Managing Mandatory Dealer Reporting in Maine			
Personnel[A]	**Calculation**		**Cost**
1 Specialist I (Eileen Burk)	full time position for 12 months		$42,382
1 Office Associate I (Currently Vacant)	full time position for 12 months		$37,063
		Subtotal	**$79,445**
Fringe Benefits[A]			
1 Specialist I (Eileen Burk)	Includes health, dental, workers comp, FICA, life insurance and retirement		$22,928
1 Office Associate I (Currently Vacant)	Includes health, dental, workers comp, FICA, life insurance and retirement		$21,989
		Subtotal	**$44,917**
		Total Personnel	**$124,362**
Travel			
1 seasonal vehicle[B]	1 car * $108.65/mo * 12 mo		$1,304
Mileage fee	1 car * 1,000 mi per mo * $.1525/mi * 12 mo		$1,830
Toll allowance	Estimated		$75
5 Overnight stays[C]	5* $100/night		$500
Per diem (includes extended days)	(5 overnights + 5 extended days) * $50/day		$500
Supplies			
Filing Supplies	folders, folder labels, year labels		$500
Contractual			
Trip Ticket 1 yr maintenance	$350/mo fee * 12 mo		$4,200
(Software support and upgrades)			
Other			
Printing and binding of dealer report forms	500 logbooks * $2.50 per logbook		$1,250
Postage for logbooks	Mail 500 logbooks * $4.75 per logbook		$2,375
Postage for info packets and letters	(.48*680 compliance letters)+(.48*680 letters explaining compliance enforcement)+(5.75*200 certified letters to delinquent dealers)		$1,803
Telecommunication charges[D]	4 phones * $50/mo * 12 mo		$2,400
		Subtotal	**$16,737**
Total Direct Costs			**$141,099**
Indirect Costs (25%)			**$35,275**
Total Award to DMR			**$176,373**

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

FY 2015 Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	$16,240
Scientist III (50% time)	$47,597
Scientist I (50% time)	$42,565
Specialist II (75% time)	$48,937
Office Associate I (15% time)	$9,240
Office Associate II (100%)	$60,591
Total	$225,171

Budget Narrative for FY2015 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Burk and the Office Associate I position is currently vacant and open for recruitment. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provides dealers with one-on-one training on these reporting systems and helps troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software in order to submit their landings information.

The monthly fee for the vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Chevy Cobalt car which is a state-owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance, and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

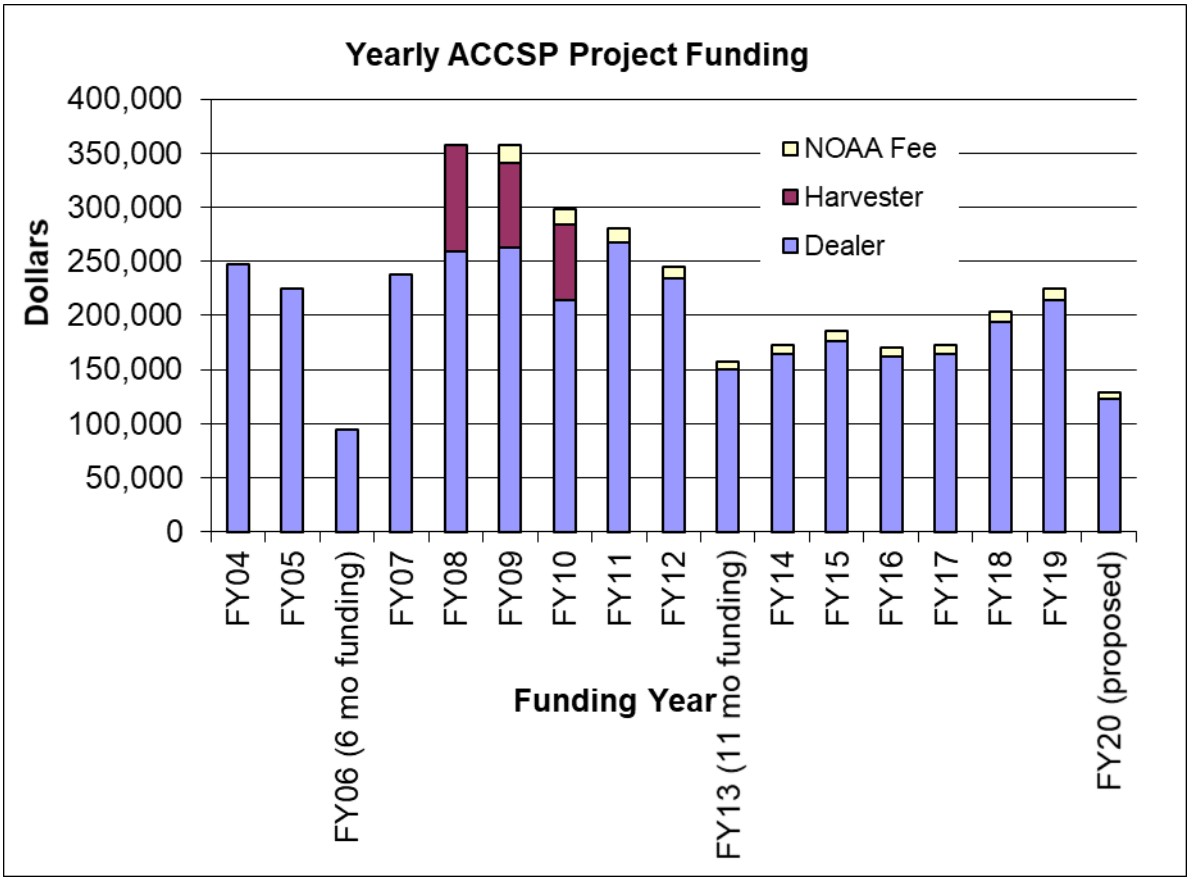
Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. The Specialists do not have office phones, so the cell phones also serve as the only phone through which dealers can contact them with questions.

Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Attachment 1: Project History

Fund Year	Title	Cost	Extension through	Actual dates funding covered	Results
2004	Implementation of a Mandatory Dealer Reporting System for Maine Commercial Landings According to ACCSP Standards	246,965	Apr-06	Jul 2004-Apr 2006 (extension required when Ops Committee asked MEDMR not to hire Office Associate I with this grant and salary savings when Specialist I quit)	Established Reporting Advisory Committee; drafted trip level reporting regulation; extensive outreach with industry including 10 state-wide meetings and 11 industry-specific meeting; worked with SCBI to develop and deploy "Trip Ticket" to state dealers; 1174 dealer visits; recruited dealers to report voluntarily; defeated a legislative bill to stop MEDMR's reporting program; see Completion Report for more info.
2005	Continuation of Implementation of a Mandatory Dealer Reporting System for Maine Commercial Landings According to ACCSP Standards	224,749	Jun-07	May 2006-Jun 2007 (extension required because FY04 was extended and a Specialist I was promoted in MEDMR, leaving vacant position for a number of months)	Worked with ACCSP to make SAFIS usable for Maine state dealers; began file uploading voluntary dealer data; began collecting voluntary paper trip tickets; 380 dealer visits; 67 dealers actively reporting; worked to modify report options in "Trip Ticket" software to benefit dealers; began phasing out duplicative reporting by dealers; passed comprehensive trip level reporting regulation for all dealers in June 2007 which will give momentum to project.
2006	Interim Support for Mandatory Dealer Reporting in Maine	94,093	Dec-07	Jun 2007-Dec 2007	Worked to get remaining 404 dealers set up with a trip level reporting method. Notified dealers to begin reporting trip level data as of Jan 1, 2008. Began uploading harvester license & vessel data weekly to SAFIS.
2007	FY07 – Mandatory Dealer Reporting for Maine Commercial Landings	237,548	8-Oct	Jan 2008 -Oct 2008	Began enforcing trip level reporting; begin audit dealer data; began monthly compliance calls to delinquent dealers; encouraged more electronic reporting; staff entering paper data from 433 dealers and uploading electronic data from 58 dealers.
2008	FY08- Managing Mandatory Dealer and Harvester Reporting in Maine	357,574	9-Oct	Nov 2008-Sept 2009	Complete 1st year of mandatory dealer reporting regulation; enter, audit and transmit data to ACCSP; year 1 of 10% lobster and dogfish harvester reporting; begin to implement scallop harvester reporting.
2009	FY09 – Managing Mandatory Dealer and Harvester Reporting in Maine	357,415	10-Nov	Oct 2009-Sept 2010	Complete 2nd year of mandatory dealer reporting; enter, audit and transmit data to ACCSP; year 2 of 10% lobster and dogfish harvester reporting; year 2 of scallop harvester reporting. Enter, audit and transmit data to ACCSP.
2010	FY10- Managing Mandatory Dealer and Harvester Reporting in Maine	298,129	11-Nov	Oct 2010-Oct 2011	Complete 3rd year of mandatory dealer reporting; enter, audit and transmit data to ACCSP; year 3 of 10% lobster and dogfish harvester reporting; year 3 of scallop harvester reporting. Enter, audit and transmit data to ACCSP.
2011	FY11- Managing Mandatory Dealer Reporting in Maine	280,605	12-Nov	Aug 2011 – July 2012	Complete 4th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Work on more audits, including dealer data vs. harvester data submitted.
2012	FY12 – Managing Mandatory Dealer Reporting in Maine	245,303	13-Nov	Aug 2012-July 2013	Complete 5th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Expanding audits, including dealer data vs. harvester data submitted.
2013	FY13- Managing Mandatory Dealer Reporting in Maine	156,966	14-Oct	Aug 2013-June 2014	Complete 6th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Expanding audits, including dealer data vs. harvester data submitted for different fisheries.
2014	FY14- Managing Mandatory Dealer Reporting in Maine	164,663		July 2014 – Sep 2015	Complete 7th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and implement new swipe card program for elver dealers.
2015	FY15- Managing Mandatory Dealer Reporting in Maine	176,373		Oct 2015 – Sep 2016	Complete 8th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and help develop new swipe card program for multiple fisheries.
2016	FY16- Managing Mandatory Dealer Reporting in Maine	161,558		Oct 2016 – Sep 2017	Complete 9th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and implement new swipe card program for sea urchin dealers.
2017	FY17- Managing Mandatory Dealer Reporting in Maine	161,001		Oct 2016 – Sep 2017	Complete 10th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and continue swipe card reporting for sea urchin and elver dealers.
2018	FY18- Managing Mandatory Dealer Reporting in Maine	193,516		Oct 2017 – Sep 2018	Complete 11th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and continue swipe card reporting for sea urchin and elver dealers.
2019	FY19- Managing Mandatory Dealer Reporting in Maine	213,951		Oct 2018 – Sep 2019	Complete 12th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and continue swipe card reporting for sea urchin and elver dealers.

Attachment 2: Yearly Breakdown of ACCSP Funding



Attachment 3: Negotiated Indirect Cost Agreement

MAXIMUS
Cost Allocation Methodology and Process

Office of Acquisition Management – Grants Management Division
1401 Constitution Ave., NW, HCHB Rm 6412
Washington, DC 20230, Attn: Indirect Cost Program

CERTIFICATE OF INDIRECT COSTS

This is to certify that I have reviewed the indirect cost rate proposal prepared and maintained herewith and to the best of my knowledge and belief:

(1) All costs included in this proposal dated Jan 9, 2019 to establish indirect cost billing rates for July 1, 2018 through June 30, 2019 are allowable in accordance with the requirements of the federal awards to which they apply and 2 CFR Part 200 , "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards". This proposal does not include any costs which are unallowable as identified in the applicable federal cost principles. For example, advertising contributions and donations, bad debts, entertainment costs or fines and penalties.

(2) All costs included in this proposal are properly allocable to federal awards on the basis of a beneficial or causal relationship between the expenses incurred and the agreements to which they are allocated in accordance with applicable requirements. Further, the same costs that have been treated as indirect costs have not been claimed as direct costs. Similar types of costs have been accounted for consistently and the Federal Government will be notified of any accounting changes that could affect the rate.

(3) The indirect cost rate calculated within the proposal is 30.71%, which was calculated using an indirect cost rate base type of Modified Total Direct Costs. The calculations were based on actual costs from fiscal year July 1, 2017 thru June 30, 2018 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2018.

Subject to the provisions of the Program Fraud Civil Remedies Act of 1986, (31 USC 3801 et seq.), the False Claims Act (18 USC 287 and 31 USC 3729); and the False Statement Act (18 USC 1001), I declare to the best of my knowledge that the foregoing is true and correct.

Organization Name: State of Maine, Department of Marine Resources

CFO Signature: Gilbert M. Bilodeau Date: 1/10/19

Name/Title Authorized Official: Gilbert M. Bilodeau, Director, Natural Res Ser Ctr

Dept Head Signature: Date: 1/9/19

Name/Title Authorized Official: Patrick Keliher, Commissioner

Department of Marine Resources

INTEROFFICE MEMORANDUM

TO: FILE

FROM: PATRICK KELIHER, COMMISSIONER

SUBJECT: RATE USED FOR COST ALLOCATION

DATE: 5/23/19

In accordance with OMB Circular A-87, the Department of Marine Resources has submitted to the U.S. Department of Commerce a departmental cost allocation plan for use during state fiscal year 2018 ending June 30, 2018. The indirect cost rate proposal is 30.71%. I am authorizing the use of the lesser rate of 30% to be used during this period.

ACCSP
"FY20: Managing Mandatory Dealer Reporting in Maine"
(Oct. 1, 2020- Sept. 30, 2021)

Patrick Keliher, Commissioner

Attachment 4: Authority to Suspension Licenses for Delinquent Reporters

An Act to Improve the Quality of the Data Used in the Management of Maine's Fisheries

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 12 MRSA §6301, sub-§6 is enacted to read:

6. Ownership identified. If a license issued under chapter 625 is issued to a firm, corporation or partnership, the individual who owns the highest percentage of that firm, corporation or partnership must be identified on the license application. When 2 or more individuals own in equal proportion the highest percentages of a firm, corporation or partnership, each of those owners must be identified.

Sec. 2. 12 MRSA §6412 is enacted to read:

§ 6412. Suspension of license or certificate for failure to comply with reporting requirements

1. Authority to suspend. The commissioner, in accordance with this section, may suspend a license or certificate issued under this Part if the holder of the license or certificate fails to comply with reporting requirements established by rule pursuant to section 6173. A license or certificate suspended under this section remains suspended until the suspension is rescinded by the commissioner. The commissioner shall rescind a suspension when:

A. The commissioner determines and provides notice to the holder of the suspended license or certificate that the holder has come into compliance with the reporting requirements established by rule pursuant to section 6173; and

B. The holder pays to the department a $25 administrative fee.

When a suspension is rescinded, the license or certificate is reinstated. Until the suspension is rescinded, the holder of the suspended license or certificate is not eligible to hold, apply for or obtain that license or certificate.

2. Process for suspension for failing to comply with weekly reporting. If the commissioner determines that a person who holds a license or certificate under this Part has failed to comply with a weekly reporting requirement established by rule pursuant to section 6173, the commissioner shall notify the person at the telephone number provided on the application for the license or certificate and by e-mail if an e-mail address is provided on the application. If the license or certificate holder has not complied with the reporting requirements within 2 days after the commissioner has provided the notice, the commissioner shall mail a notice of suspension to the license or certificate holder by certified mail or the notice must be served in hand. The notice must:

A. Describe the information that the license or certificate holder is required to provide pursuant to this Part that the department has not received; and

B. State that, unless all the information described in paragraph A is provided to the department or the license or certificate holder requests a hearing, the license or certificate will be suspended in 3 business days after the license or certificate holder's receipt of the notice.

If the license or certificate holder has not complied with the reporting requirements or requested a hearing within 3 business days after receipt of the notice, the commissioner shall suspend the license or certificate.

3. Process for suspension for failing to comply with monthly reporting. If the commissioner determines that a person who holds a license or certificate under this Part has failed to comply with a monthly reporting requirement established by rule pursuant to section 6173, the commissioner shall notify the person at the telephone number provided on the application for the license or certificate and by e-mail if an e-mail address is provided on the application. If the license or certificate holder has not complied with the reporting requirements within 45 days after the commissioner has provided the notice,

the commissioner shall mail a notice of suspension to the license or certificate holder by certified mail or the notice must be served in hand. The notice must:

A. Describe the information that the license or certificate holder is required to provide pursuant to this Part that the department has not received; and

B. State that, unless all the information described in paragraph A is provided to the department or the license or certificate holder requests a hearing, the license or certificate will be suspended in 3 business days after the license or certificate holder's receipt of the notice.

If the license or certificate holder has not complied with the reporting requirements or requested a hearing within 3 business days after receipt of the notice, the commissioner shall suspend the license or certificate.

4. Hearing. A license or certificate holder receiving a written notice of suspension pursuant to this section may request a hearing on the suspension by contacting the department within 3 business days of receipt of the notice. If a hearing is requested, the suspension is stayed until a decision is issued following the hearing. The hearing must be held within 3 business days of the request, unless another time is agreed to by both the department and the license or certificate holder. The hearing must be conducted in the Augusta area. The hearing must be held in accordance with:

A. Title 5, section 9057, regarding evidence, except the issues are limited to whether the license or certificate holder has complied with reporting requirements established by rule pursuant to section 6173;

B. Title 5, section 9058, regarding notice;

C. Title 5, section 9059, regarding records;

D. Title 5, section 9061, regarding decisions, except the deadline for making a decision is one business day after completion of the hearing; and

E. Title 5, section 9062, subsections 3 and 4, regarding a presiding officer's duties and reporting requirements, except that notwithstanding Title 5, section 9062, subsection 1, the presiding officer must be the commissioner or the commissioner's designee.

Summary of Proposal for ACCSP Ranking

Proposal Type: Maintenance

Primary Program Priority and Percentage of Effort to ACCSP modules:

Catch and Effort (10 points): 100% of licensed dealers must report trip level information on 100% species they purchase from harvesters.

Data Delivery Plan (2 Points): All electronic data are submitted into SAFIS daily. All data reported on paper reports are entered into MEDMR's MARVIN database and will be sent to the ACCSP Data Warehouse on at least a bi-annual basis after all data have been thoroughly audited.

Project Quality Factors:

Regional Impact (5 Points): all partners will benefit, as all the data collected will be uploaded to ACCSP. Regional management organizations, such as ASMFC, will benefit from the trip level information from Maine. Partners may also benefit from the technologies/procedures tested in the elver swipe card/mobile app reporting project. MEDMR contracted to have a mobile app built for dealers to use in conjunction with swipe card technology and required elver dealers to use since the 2014 season. MEDMR paid for all start-up costs associated with this project and shared findings with ACCSP.

Funding transition plan (4 Points): through MEDMR's reorganization, the cost of two positions was absorbed by state and MEDMR is no longer asking for funding for salary and benefits. MEDMR also funds the Office Associate II that is responsible for license suspensions for those who fail to report, and all costs associated with that additional position. MEDMR paid for the development of a "limited species" version of the Trip Ticket software and a mobile app that will be used in conjunction with harvester swipe cards for elver dealers to report with swipe card technology. MEDMR will pay for the ongoing monthly maintenance fee associated with this program. Currently, the MEDMR does not have any plans to require electronic reporting for all fisheries. Geographical restrictions prevent all dealers from having reliable high-speed internet access at this time.

In-kind Contribution (4 Points): the partner contribution is listed on page 12.

Improvement in Data Quality/Timeliness (4 Points): MEDMR can audit data at a more detailed level, including checking dealer reported data against harvester reported data. MEDMR encourages reporting timeliness through outreach with dealers and is working with Marine Patrol to ensure industry understands the importance of submitting accurate and timely information. The Maine State Legislature also passed a new law that authorizes license suspensions for those who fail to report on time which will improve the timeliness and quality of the data submitted. MEDMR mandated electronic reporting through a swipe card system for the elver fishery starting with the 2014 season and in 2015 started requiring dealer to dealer transactions. In 2016 MEDMR required sea urchin dealers to report through swipe cards, which improved timeliness and data quality.

Potential secondary module as a by-product (in program priority order) (3 points): This project has led to the development of swipe card reporting which has proven to be a great data collection tool. This project helped develop eDR mobile which was used to successfully collect timely data and change how the MEDMR manages a fishery.

Impact on Stock Assessment (3 Points): Regional management organizations which carry out stock assessments will benefit from the detailed landings data reported from Maine. This information is used in stock assessments for many species that are managed by regional agencies.

Properly Prepared (1 Points): MEDMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

Merit (3 points): This proposal allows MEDMR to comply with mandatory ASMFC requirements. The MEDMR currently provides more data to the data warehouse than any other state

and accounts for over 31% of all records landed in the Data Warehouse. MEDMR are always looking for ways to collect data in a timely and efficient manner.

Maintenance Project Special Ranking:

Achieved Goals (3 points): The MEDMR has always achieved the goals they have outlined in their proposals. Current goals for this grant cycle have been clearly outlined and how MEDMR intends to achieve have been discussed within this proposal.

Data Delivery Plan (2 Points): All electronic data are submitted into SAFIS daily. All data reported on paper reports are entered into MEDMR's MARVIN database and will be sent to the ACCSP Data Warehouse on at least a bi-annual basis after all data have been thoroughly audited.

Level of Funding (1 Point): The MEDMR are asking for less than the mandated 33% cut. The decrease was achieved by removing one full-time position from the grant. The MEDMR still has a larger in-kind contribution than what is being asked for in this grant proposal.

Properly Prepared (1 Points): MEDMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

Merit (3 points): This proposal allows MEDMR to comply with mandatory ASMFC requirements. The MEDMR currently provides more data to the data warehouse than any other state and accounts for over 21% of all records landed in the Data Warehouse. MEDMR are always looking for ways to collect data in a timely and efficient manner.

Robert B. Watts II
Maine Department of Marine Resources
(207) 633-9412
rob.watts@maine.gov

June, 2019

PROFILE:

- Knowledge of Maine and federal regulations pertaining to commercial fishing and associated reporting requirements through working with the Department of Marine Resources and the National Marine Fisheries Service.
- Knowledgeable of Maine's fishing industries and how they operate.

EDUCATION:

B.S. Marine Science, Maine Maritime Academy, Castine, ME 2002

EMPLOYMENT EXPERIENCE:

May 2016 – Present **Marine Resource Scientist III**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Oversees Maine's Environmental Monitoring Program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP), serving on the Operations Committee, Commercial Technical Committee, Information Systems Technical Committee, Standard Codes Committe and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

Jan 2014 – Jan 2016 **Marine Resource Scientist III (Acting Capacity)**
June 2015 – Apr 2016 **Marine Resource Scientist II**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.

- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP) through serving on the Commercial Technical Committee, Information Systems Technical Committee and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

Feb 2012 – Apr 2015 **Marine Resource Scientist I**
Maine Department of Marine Resources

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises five Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees outreach to industry.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings.

Oct 2007 – Jan 2012 **Marine Resource Specialist II**
Maine Department of Marine Resources

- Oversee daily operations of the harvester landings program.
- Notify new harvesters about reporting requirements.
- Maintain databases used for data audits and data entry.
- Monitor reporting compliance database and notifies harvesters if they are delinquent.
- Supervise two Landings Program personnel.
- Oversees IVR reporting.
- Prepare data requests from various sources

Jul 2005 – Oct 2007 **Marine Resource Specialist I**
Maine Department of Marine Resources

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Created publications, updated regulation handouts and updated the recreational fishing website as needed.

May 2001 – Jun 2005 **Conservation Aid**
Maine Department of Marine Resources

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Acted as a liaison between the State of Maine and the recreational anglers, answered anglers questions about fishing regulations.

Lessie White Jr.
Maine Department of Marine Resources
(207) 633-9412
lessie.l.white@maine.gov

June, 2019

PROFILE:

- Knowledge of tracking systems and applications to retrieve fishing intensity.
- Knowledge of and working relationship with many fishing industries in Maine.

EDUCATION:

M.S. Marine Biology, University of Maine/Orono Campus, Orono, ME 2000
B.S. Marine Science/Biology, Long Island University/Southampton Campus, Southampton, NY 1997

EMPLOYMENT EXPERIENCE:

Jul 2016 – Present **Marine Resource Scientist II**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings information.

Jul 2000 – Jul 2016 **Marine Resource Scientist I**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Implemented the RockSeven tracker project; Tracked boats using GPS trackers to determine fishing activity; Worked with Rock Seven to develop application to show fishing intensity at different speed ranges; Managed the funds;
- Participated in Locus Traxx project; Tracked boats using GPS trackers to determine daily movement and fishing activity; Checked for daily trip reports of fishing activity; Called fishermen to confirm fishing activity; Constructed a spreadsheet to show the performance of the on board reporting system.
- Responsible for implementation of the sea urchin and shrimp port sampling programs; Coordinating sampling schedule; Supervised employee during winter months; Conduct interviews; Collect samples; Process samples in the field and in the lab; Run data quality checks; Maintaining sampling gear; Train other scientists in urchin and shrimp procedures for working up sample; Data analysis on Maine, Massachusetts and New Hampshire's shrimp data; Participate in the stock assessment for shrimp.

- Participated in scallop, quahog and sea cucumber port sampling program; Sample catches at the docks; Interview the vessel captains for fishing and effort information; Process samples.
- Participated in a Fishing Gear Technology Working Group trying to look at all gear technology advancements for all fisheries; my primary focus was shrimp and lobsters.
- Participated in a Trawl Gear Workshop entitled "Working Together to Improve Fishing Technology". This workshop looked at different ways to improve otter trawl selectivity through technological advances in materials and trawl designs.
- Participated in Bycatch in Northeast Fisheries: Moving Forward Workshop, where I participated at observing the roadblocks facing researchers and fishermen in trying to get new gear technology into fisheries management.
- Was responsible for shrimp logbook program; Distributing logbook forms; Developing a database to track compliance; Direct contact with fishermen to obtain correct entries; Answer any question the fishermen may have related to the logbook program.
- Participate in lobster sea sampling and ventless survey trips; Measure carapace length; Determine sex; Determine cull code; Determine V notch code; Determine egg classification code; Determine molt; Determine shell disease prevalence; Interviewing the vessel captains for fishing and effort information; Enter data into database.
- Participate in the summer shrimp trawl survey as lead shrimp biologist to assess the status of the stock; Train other scientists in shrimp identification, sex and stage identification, and procedures for working up samples; Work on a limited basis with FSCS (Fisheries Scientific Computing System).
- Implemented whiting gear research; supervised two contract positions; Observed and sorted the catch; Processed catch; analyzed data.
- Acted as DMR liaison and lead scientist on the NEC New Generation Trawl groundfish gear project. This included supervising four contract positions and two observer positions, overseeing data collection, collecting data, data entry, data checking, data analysis and writing the final report.
- Implemented the shrimp combination grate and cod end research; Sorted, identified, and measured the catches; Data analysis; Partial report writing; used underwater camera to video shrimp grate in action. Supervised one contract position.
- Participated as a member of the New England Fishery Management Council's Plan Development Team for deep-sea red crabs; Assisting in the initial development of a Fishery Management Plan for deep-sea red crabs.
- Participated as an observer in the experimental Atlantic halibut fishery; conducted a literature search on the tagging methods in the halibut fishery.
- Implemented a green crab trapping experiment looking at catchability, retention and cost of five different traps; Looked at converting current gear with the least amount of effort and cost; Set up sampling schedule and area; obtained the equipment; ran the experiments; partial data analysis.

Oct 1997 – Dec 2000 **Graduate Student Research**
University of Maine/Orono Campus
Orono, ME

- Graduate research project on cod energetics; Ran a small closed water aquaculture system; Raised larval and juvenile cod; Raised live food for larval cod; Conducted water quality tests; Gave presentations; Analyzed data; Did minor repairs and cleaned system; Gave tours.

Erin L. Summers
Maine Department of Marine Resources
(207) 633-9556
erin.l.summers@maine.gov

June, 2019

Profile:

- Work collaboratively with state, federal, academic, conservation, and industry partners to reduce whale entanglements
  and mortality in marine mammals and sea turtles through bodies such as the Atlantic Large Whale Take Reduction team and Atlantic Large Whale Disentanglement Network.
- Build research programs to provide baseline data on large whale life history, ecology, and habitat use in Maine's coastal rocky bottom habitats. Design new and emerging methodologies to inform management decisions.
- Oversee research and monitoring programs within the Division of Biological Monitoring at DMR, including the lobster programs, surveys for scallops, sea urchin, shrimp, and herring, recreational fisheries program, inshore trawl survey, and the landings and reporting group.
- Represent the Department of Marine Resources in stakeholder meetings, including those for wind energy permitting, Natural Resource Damage Assessments, department wide research and priority setting, etc.
- Member of the Atlantic Scientific Review Group advising NOAA Fisheries on marine mammal stock assessments

Education:

MA Biology: Boston University Marine Program	Woods Hole, Ma.	5/02
BA Biology, Spanish minor: Truman State University	Kirksville, Mo.	5/00

Employment:

Jan 2017 – present: **Marine Resource Scientist IV**
Maine Department of Marine Resources
West Boothbay Harbor, Me

- Oversee Division of Biological Monitoring, including Commercial Landings Program, Benthic group (lobster, scallops, urchins), and Pelagic group (herring, groundfish, shrimp, and recreational fishing)
- Lead Scientist for DMR's Large Whale Conservation Program
- Member of the Atlantic Large Whale Take Reduction Team

Feb 2006 – Jan 2017: **Marine Resource Scientist II**
Maine Department of Marine Resources

- Lead scientist for DMR's Large Whale Conservation Program
- Secured grant funding, wrote reports, tracked budgets to support research projects
- Completed projects to support management decisions for the Atlantic Large Whale Take Reduction Plan, including tagging humpback whales, right whale habitat surveys, passive acoustic surveys, gear density surveys, testing alternative fishing gear, characterizing fishing practices, etc.
- Oil Spill Response Coordinator
- Assist with GIS coordination

Jan 2010 – May 2010: **Adjunct Faculty**
Unity College
Unity, Me

- Taught upper level course in the biology of Marine Mammals

Feb 2004 – Feb 2006: **Marine Mammal Research Specialist**
University of New England
Biddeford, Me

- Lead Research technician on project to track and predict right whale habitat use and distribution
- Analysis of remotely sensed data and right whale sightings in the Bay of Fundy Critical Habitat
- Assisted with report writing and budget tracking
- Completed project and published paper analyzing right baleen using stable isotope analysis
- Completed project and published papers satellite tagging and tracking basking sharks off the coast of New England

Sept 2002 – Feb 2004: **Research Technician**
Cetacean and Sea Turtle Team, NOAA Fisheries Service
Beaufort, NC

- Lead technician tracking and analyzing movements of satellite tagged dolphins
- Perform field work including fishing gear and dolphin aerial surveys, boat-based dolphin biopsy and photo-identification surveys, satellite tagging dolphins, responding to standings, etc.
- Participate in necropsies as needed

Oct 2000 – June 2002: **Laboratory Technician**
Marine Biological Laboratories
Woods Hole, Ma

- Manage daily operations of the laboratory of marine veterinarian, Roxanna Smolowitz
- Run experiments and document methodologies and results
- Prepare media, samples, histology slides, and other lab bench work

STATE OF MAINE
DEPARTMENT OF
MARINE RESOURCES
MARINE RESOURCES LABORATORY
P.O. BOX 8, 194 MCKOWN POINT RD
W. BOOTHBAY HARBOR, MAINE 04575-0008

PAUL R. LEPAGE
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

Atlantic Coastal Cooperative Statistics Program
Operation and Advisory Committee
1050 N. Highland Street, Suite 200A-N
Arlington, VA 22201

August 13, 2018

We are pleased to submit the revised proposal entitled **"Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries"**

This is a maintenance proposal which has not changed its scope from the previously funded project in 2018. The top priority is the biological sampling of the Atlantic herring commercial fishery because the information derived has critical value that shows the health of the east coast herring meta population.

We have addressed all the general comments (below). Changes from the original proposal are highlighted in yellow as directed. In addition, specific comments were made (below). Our responses to these comments are also included.

Please note there has been a cost change to $26,115.86 due to a recent change in the indirect rate.

Dr. Matthew Cieri and Erin Summers

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street, Suite 200A-N
Arlington, VA 22201

Portside commercial catch sampling and bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries

Total Cost: $26,116.

Submitted by:

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Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries

Questions

- p.6 - When is the final FY16 completion report due? Will more information/final analyses be available to include in updated proposal?
- This proposal has been changed to a 5-year cycle with Grants online. The authors agree that this is likely to long to wait for initial results, and so a report has been appended (Attachment 7)
- Will the likely significant changes in the Atlantic herring quotas have an impact on the sampling scheme/schedule of this proposal given the potential shifts and changes in the fishery?
- Currently it is not known how the NEFMC or ASMFC will respond to the most recent assessment. Sampling is based on the number of trips by gear, area, and month. While it is likely that there will be a reduction in the amount of catch, and thus trips, we currently do not know how the fleet will respond. Further while herring landings may decline, menhaden sampling is expected to continue or increase during the period.

Recommendations

- Proposal states none of the species involved in study has been declared overfished and as of June 2018; however, the Atlantic mackerel benchmark assessment indicates the stock is overfished and overfishing is occurring.
- Corrected
- Given the low catches of Atlantic mackerel recently, not sure if this fishery is one of the top three commercial volume fisheries on the east coast as mentioned in proposal.
- Corrected
- p.5 – Additional justification for the continued collection of Atlantic mackerel samples could include the recently approved age-structured mackerel stock assessment; Mid-Atlantic SSC noted/recommended the continued collection of biological and bycatch samples; rebuilding plan now in place and greater need to continue bio sampling programs in order to track rebuilding progress.
- Justification added
- p.9 - 10: NMFS NEFMC at bottom of page 9 should be changed to NMFS NEF**S**C. Also it seems like coordination with NJDFW would be listed agency.
- Corrected

Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Matthew Cieri, Marine Resource Scientist

Project Title: Portside commercial catch sampling and bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries

Project Type: Maintenance Project

Requested Award Period: One year after receipt of funds

Change in Scope/Cost from Previous Year Project:
This is a maintenance proposal which has not changed its scope from the previously funded project in 2018 The overall cost is slightly lower than the FY18 final award amount anticipated savings in supplies.

Objectives:

To maintain and expand the biological sampling of primarily the Atlantic herring commercial fishery including Atlantic menhaden and mackerel and other incidentally retained species of interest.

A secondary objective is to continue the portside bycatch sampling for trips targeting Atlantic herring.

Need:
Each of the species involved in this study has been declared not overfished and not subject to overfishing, as of June 2018, with the exception of mackerel. However, each of these principle pelagic fisheries has recently become the focus of management action because of their status as forage species and because of potential bycatch problems associated with the directed fishery. In particular, Atlantic herring and Atlantic menhaden have been the focus of the emerging trend towards ecosystem management. Additionally, the commercial catch sampling portion of this project cover four important species listed in ACCSP FY 2017 Biological Sampling Priority Matrix; River herring (*Alosa sp.*), Atlantic menhaden (*Brevoortia tyrannus*), Spiny dogfish (*Squalus acanthias*), and Shad (*Alosa sapidissima*)

Atlantic herring *(Clupea harengus)*, Atlantic menhaden (*Brevoortia tyrannus*) and Atlantic mackerel (*Scomber scombrus*) are three of the most ecologically and economically important fish species in the western Atlantic. All three are high volume, low value species utilized for bait, reduction, or human consumption. The three species are oceanic plankton-feeding fish that occur in large schools, inhabiting coastal and continental shelf waters from Labrador to Florida. With an estimated complex-wide biomass of 1.8 million metric tons (mt) of herring, 1+ million mt of mackerel, and 2.5+ million mt of menhaden, these species provide a significant forage base for other fish species, marine mammals, and birds. Additionally, they support the first, second largest commercial fisheries on the east coast in terms of volume. Atlantic herring landings in 2016 (the last year that NMFS data was available) were reported at approximately 65,000 mt with an estimated value in excess of $37 million. In addition to the direct economic contribution of herring landings, this fishery supports a domestic value-added industry worth

approximately $65 million and the North Atlantic lobster fishery estimated at over $500 million. Atlantic mackerel landings in 2016 were reported at approximately 5,300 mt with an estimated value in excess of $4 million. The domestic value added industry (frozen whole fish) for mackerel, based in Cape May, NJ, and Fall River, New Bedford and Gloucester, MA, is estimated at $20 million. The Atlantic menhaden 2016 catch was ~180,000 mt valued at ~$50 million. Generally, 25-30% of all menhaden are landed for bait

This study will continue the biological commercial catch sampling of Atlantic herring, Atlantic mackerel, and Atlantic menhaden. Additionally, other species of interest, such as dogfish, both river herring species, and shad will be sampled as they are routinely encountered in this study.

This proposal will also continue to survey bycatch during trips targeting Atlantic herring using the protocols developed over the last decade of sampling.

Approximately seventy percent (70%) of project resources are needed to carry out the first and prime objective (or module) of the concurrent sampling portion of the project while thirty percent (30%) of resources are needed for the bycatch module.

Commercial catch sampling of Atlantic herring, Atlantic mackerel and Atlantic menhaden

MEDMR has collected and processed Atlantic herring commercial catch samples since 1960. A significant focus of this proposal is a continuation of the commercial catch sampling program for Atlantic herring along the east coast. MEDMR maintains primary responsibility for fishery dependent sampling of the east coast Atlantic herring fishery. Duties include, processing biological samples, compiling catch data, and constructing the catch at age matrix for the age structured model. Currently, staffing and financial limitations prevent MEDMR from providing adequate commercial catch sampling coverage without ACCSP support. Furthermore, NMFS has reduced port agents and other staff, such that biological sampling of herring has become a lower priority. In an effort to improve the commercial catch sampling program, MEDMR has supported a dedicated northeast herring sampler.

The Atlantic herring fishery has recently undergone significant management changes as a result of federal and state action. Recent implementation of River herring and Shad bycatch quotas will dramatically change fleet behavior, which in turn may alter size and location of where fish are caught. Also, a recent update to the Atlantic herring assessment has revealed the re-immergence of a retrospective pattern. Such a pattern for Atlantic herring tends to overestimate spawning stock biomass and under estimate fishing mortality in the terminal year. While changes to selectivity and natural mortality may be the cause of this pattern, age discrepancies between fishery dependent and commercial catch sampling may also play a role. As such continued commercial catch sampling will be vital in potential resolution of this issue

Without ACCSP support, samples would not be collected or aged, resulting in no catch-at-age information for the assessment. Atlantic herring would move from an age-structured stock assessment to one developed for data-poor species, and would be categorized as a data-poor species in need of sampling. Because ACCSP has funded this project, however, Atlantic herring are currently adequately sampled and are not scored by ACCSP. Given the most recent management changes, changes in the most recent stock assessment, ongoing litigation, and the importance to both state and federal partners, Atlantic herring would have scored very high in the process had it been part of the scoring.

Although ACCSP has not identified Atlantic mackerel as a priority, commercial catch sampling should be important given recent changes to the Squid, Mackerel, and Butterfish Plan as implemented by the Mid-Atlantic Council. Further mackerel has transitioned to a new age-structured assessment, further increasing the importance of fishery dependent sampling for this stock. Like Atlantic herring, fleet behavior may change markedly, as a result of bycatch quotas recently implemented for River herring. Traditionally the commercial mackerel catch was sampled by NMFS; however, due to the closure of port offices and limited personnel, current mackerel sampling is limited. With the existing and predicted growth in the domestic mackerel harvest, additional sampling is necessary to adequately cover the fishery.

Recently (since 2016) Atlantic menhaden have been increasing in numbers in Maine state waters. As a result of this, and a lack of herring being landed from Georges Bank, Maine landings have increased for this important baitfish. Because of this, Maine has increased its biological sampling program for this species to both fulfill ASMFC sampling objectives and to provide valuable fishery dependent data for the stock assessment.

Continued commercial catch sampling has been put forth as an imperative research need in the most recent menhaden assessment. Further importance has been placed on increased commercial catch sampling in the northern portions of the stock's range and in the bait fishery in general. This is particularly important as the menhaden assessment team analyzes the possibility of a dome, rather than the existing logistic function in selectivity for the northern bait fishery.

Because the Atlantic herring. Mackerel, and Menhaden fisheries encounter bycatch, this project also samples all species encountered during either the bycatch or commercial catch sampling modules. In particular, four species River herring (*Alosa sp.*), Atlantic menhaden (*Brevoortia tyrannus*), Spiny dogfish (*Squalus acanthias*), and Shad (*Alosa sapidissima*), are routinely encountered and samples for length, weight, and otolith/scales are forwarded to other institutions for age analysis. These four species represent 20% of the top quartile of ACCSP's FY 2016 Biological Sampling Priority Matrix.

Continued bycatch sampling

During at-sea operations NMFS observers use basket sampling to document occurrence of other species during targeted Atlantic herring and mackerel trips. These non-target species are then included in the data as retained or "Kept" (http://www.nefsc.noaa.gov/fsb/manuals/2013/NEFSC_Observer_Program_Manual.pdf). Normally, ten 50 lb. basket sub-samples are taken at regular intervals during the pumping process from net to hold. These samples are then checked for bycatch and the results expanded. Because the Atlantic herring fishery is a high volume fishery much of the bycatch is retained during the pumping process, particularly for co-occurring pelagic species such as river herring.

Until the spring of 2011 MEDMR port sampling procedure measured bycatch using a "lot" (~40,000 lbs) approach. Lot sampling involves looking intensively at a portion of a vessel's landings, and then extrapolating those results to the entire offload. This sort of sampling contrasts that done by NMFS and MADMF, which takes regularly spaced basket subsamples during pumping.

Analysis of more than ten years (2005-2014) of both portside and at sea bycatch data and results from the DMR, DMF and NMFS databases revealed that "lot" sampling, as MEDMR had been conducting it, was not useful when comparing the portside and at-sea programs. The reasoning behind this stems from variability of catch composition in vessels with multiple fish holds. Fish being partitioned into separate holds may be from the same, different, or a mixture of multiple tows or sets. While lot sampling has provided valuable spatial and temporal insights to bycatch distribution and frequency, it is unable to resolve variability between vessel holds. Sampling entire vessel offloads allows that variability to be reflected in the data.
In an attempt to more closely align our data with both the at-sea observer data and DMF portside data, we (DMR) have moved away from the practice of "lot" sampling in 2011 and instead now use a protocol similar to DMF and NMFS.

In 2012 MEDMR, with ACCSP funding, implemented concurrent sampling of Atlantic herring trips portside that had also been sampled by at sea observers. After 4 years, MEDMR had the required number of trips, by gear, area season, and year, to analyze the data and statistically determine if portside and at-sea sampling give similar results. Further analysis will be provided in the FY2016 completion report, but preliminary analysis suggests that since institution of lot sampling by MEDMR, results between portside and at-sea sampling are statistically similar for small bodied species in high volume fisheries.

Given the encouraging, but preliminary results, MEDMR is now proposing to use this newly revamped protocol and during routine portside bycatch monitoring of the Atlantic herring fishery. DMR's efforts, coupled with ongoing work by MA DMF and the NEFOPS program will help to increase sample sizes for determining bycatch amounts in the Atlantic herring fishery. While neither MEDMR or MA DMF portside programs are used to monitor bycatch quotas for haddock or River herring, data from both programs were used to set the River herring quotas by gear type (http://s3.amazonaws.com/nefmc.org/160301-2016-2018-Herring-Specs-Formal-Submission.pdf)

Results and Benefits:

Commercial catch sampling
This program collects all the Atlantic herring directed samples from the U.S East coast fishery and a portion of all the collected mackerel and menhaden samples use in assessments of the stocks and management of the fisheries. Regarding the need for the work as stated above, if this project was not funded there are currently no other resources that would or could be shifted to collect samples of Atlantic herring, Atlantic mackerel, or Atlantic menhaden. There are also limited resources to perform Atlantic herring, Atlantic mackerel, or Atlantic menhaden bycatch studies. The catch at age analysis for all three species would lack coverage for the full range of the fishery without this project.

Annually collected samples of Atlantic herring from the commercial fishery provide the cohort catch at age data for the SARC's periodic assessment of the herring population and are used to predict and define the ASMFC's (Atlantic States Marine Fisheries Commission) rolling spawning area closures and give evidence of overall health of the Coastal Stock Complex. All Atlantic herring sample data is uploaded to the ACCSP data warehouse. Commercial catch sampling can also provide insight into the biological and management processes that drive the stock and fishery. Recently an analysis was performed to

examine changes in length at spawning for Atlantic herring. Results were presented to the ASMFC Atlantic Herring Section that is in the process of finalizing spawning relationship changes to account for a decrease in herring length at full maturation.

Maine DMR processes all commercial catch herring samples for the east coast fishery. DMR maintains a lab facility with the equipment and staffing necessary for processing more than 200 commercial herring samples a year. In addition, DMR provides staff oversight of the field sampling program and scientific analysis of the data generated from the program which is then fed directly into the assessment. Without the ACCSP funded program, samples would not be collected or aged, resulting in no catch-at-age information to inform the assessment. As such, Atlantic herring would move from an age-structured stock assessment to one developed for data-poor species, and would be categorized as a data-poor species in need of sampling. Because ACCSP has funded this project, however, Atlantic herring are current adequately sampled and are not scored by ACCSP.

In addition to sampling Atlantic herring and mackerel for the purposes of developing catch-at-age matrices, this program has provided biological samples for multiple research projects. Herring have been collected for the Gulf of Maine Research Institute acoustics project, the NEFSC's (North East Fishery Science Center) morphometrics study, genetics studies, and most recently stomach and fat content samples have been provided to various organizations to examine the role of climate change in nutritional content of herring. The commercial catch samples also provide the basis for determining the start date for the three Atlantic States Marine Fisheries Commission herring spawning closure areas (two along the Maine coast and one along the NH/MA coast).

Atlantic menhaden were added as a sample species in 2010. Menhaden can be collected as bycatch during herring operations as well as from a growing purse seine directed fishery for lobster bait in the Northeast. While the bulk of this fishery occurs in the Mid-Atlantic, there is a growing interest in menhaden as a result of recent management changes in the Atlantic herring fishery. Bait landings of menhaden in Southern New England and the Mid-Atlantic have tripled in the past two years. Even more recently, Maine landings have risen sharply as the stock has entered state of Maine waters. Because menhaden stratify in latitude by age, a more complete sampling of the menhaden catch in the northern parts of its range may improve our understanding of the population dynamics of this important forage species.

The commercial catch sampling program funded historically by ACCSP has proven extremely successful and has provided important information to the fishery managers. The biological information on size, age, and maturation of herring feeds directly into the stock assessments for Atlantic herring, Atlantic mackerel, and Atlantic menhaden. ASMFC has routinely used the data collected from this project to implement management changes to herring spawning regulations, as well as to make other decisions with regards to allocation of quota among management areas.

Bycatch sampling

The data collected through the bycatch survey supplements the federal at-sea observer coverage program, as well as the MA DMF River Herring Avoidance Program, has vastly increases the amount of information available on bycatch in the herring fishery. This project will maintain and expand an effective and scalable method for the long-term monitoring of bycatch in the Atlantic herring fishery. A portside bycatch sampling methodology has been developed and tested, and has demonstrated the

ability to observe high volumes of landed herring catch. Portside efforts will complement but not replace the NMFS at-sea observer coverage. This proposed bycatch survey represents a unique opportunity to collect data in an inexpensive but efficient and accurate way. Given this in 2018 NMFS has started the process of incorporating Maine DMR and MA DMF portside sampling into the quota monitoring system for Haddock and river herring bycatch quotas.

Beyond the immediate benefit to the NMFS, MA DMF, and MEDMR bycatch sampling in this fishery, the proposed project may provide guidance to other bycatch sampling programs in other fisheries. More importantly DMR's proposed portside sampling will augment the MA DMF and NEFOP efforts allowing for better estimation of River herring, haddock, and potentially other species caught as bycatch in the directed Atlantic herring fishery

Review of Previous Results:

This proposal is a continuation of an ACCSP funded herring sampling and combined portside bycatch survey. The project has evolved over the past several years in order to maximize the use of funds. Project history is shown in Attachment 2 and explains the evolution of the project, including the transition to an emphasis on portside bycatch sampling in conjunction to biological sampling along with a review of project costs. The Project for FY 2017 has just ended so full analysis has yet to be completed, but the most recent semi-annual report is in Attachment 3.

Approach:

Commercial catch sampling of Atlantic herring, Atlantic mackerel and Atlantic menhaden

Commercial catch sampling will be conducted at herring and mackerel pumping and processing sites along the east coast. As a general rule commercial catch sampling occurs such that there is at least one sample per statistical area, per week, per gear type and generally meets NMFS protocols of one sample per 500 mt.

The samplers will follow the existing protocol developed for commercial catch sampling of Atlantic herring (Attachment 4). This protocol complies with the guidelines laid out by ACCSP. Sample will be processed and aged by in-house staff, primarily Lisa Pinkham. Samples are processed for length; weight, maturity, and aged per NMFS protocols (please see www.nefsc.noaa.gov/publications/crd/crd0406/crd0406.pdf Page 22). This information is uploaded to the ACCSP warehouse and is used for the assessment of Atlantic herring.

The same vessels that harvest Atlantic herring primarily pursue Atlantic mackerel on the east coast. Traditionally, when markets are available the pelagic fishing fleet transfers some of their effort from herring to mackerel in the winter and early spring. The samplers funded by this grant can easily collect mackerel by keeping in touch with the herring vessels that enter the mackerel fishery. Most of the ports where significant mackerel landings occur overlap with major herring ports; this is largely due to the fact that herring processing facilities are also capable of freezing mackerel. Sampling will follow the existing NMFS protocol for mackerel and the guidelines established by ACCSP (Attachment 4).

Atlantic menhaden sampling

Support for port sampling for Atlantic menhaden (*Brevoortia tyrannus*) is also requested. Currently, there have been increased menhaden catches in the New England Area, particularly Maine, when compared to previous years. This trend is expected to continue for the next several years. National

Marine Fisheries Service in Beaufort, North Carolina has requested commercial samples from the northern extent of this stock's range (north of Cape Cod). Such sampling of the "snapper rig bait fishery" (Northeast purse seine) is also listed as a priority research initiative in the most recent menhaden assessment. Such samples are critical to the assessment process for Atlantic menhaden and in accurately estimating the catch at age. During our normal sampling of the Atlantic herring bait fishery, we will collect Atlantic menhaden samples primarily from purse seines using the protocols outlined by NMFS, Beaufort (Attachment 4) and forward scales and measurements for use in the next assessment. Sampling targets for menhaden could not be derived because of the exploratory nature of this sampling and the uncertainty in the effort placed on this stock north of Cape Cod; where our sampling effort will be directed.

Bycatch sampling

The herring industry has changed tremendously in the last five years resulting in a much more centralized distribution structure. Generally, the herring used for bait goes through a wholesale dealer to smaller dealers and lobster wharfs along the coast. The wholesale dealers have facilities where they sort, barrel, freeze and store bait for redistribution. It is at these sites where effective bycatch surveys can also be done, thereby including the bait sector in this study. Herring is also landed at larger centralized processing plants which may process for a food grade market for export or for direct sale into the regional bait market.

The sampling takes place at centralized processing plants and bait dealers. A goal of observing 2 trips per month January through May and one or two trip per week during the June-Oct time period (when the fishery is most active) is proposed. Trip selection will be hap hazard, with an overall goal of sampling multiple gears and management areas each month and to scale bycatch sampled trips with the activity of the fishery.

The samplers will quantify bycatch from individual off-loadings that enter the processing and bait plants according to a NMFS specified protocol. The total weight of any observed bycatch will be recorded along with species identification, total species weight, individual lengths and weights of all fish or a representative sub-sample. The total estimated bycatch weight by species will then be compared to census sampling by MA DMF and/or at sea basket sampling conducted by NEFOP as appropriate.

Using existing MEDMR protocols (Attachment 5) and in close concert with NMFS observers and MA DMF portside samplers, staff will directly target trips that have been observed by either of those two programs. Where possible, and as practicable, staff will also conduct a full census of landed bycatch from full offloading events (trips) which have also been sampled at-sea; thereby allowing a direct analysis and validation of current at-sea bycatch monitoring methods. Particular emphasis will be placed on sampling those trips, using current MEDMR methods that had both NMFS and MA DMF bycatch sampling.

Once the data are collected, they will be housed and archived in a MEDMR relational database. Data requests and queries will be performed to assist in monitoring quotas, should the need arise, as well as to provide bycatch information to the NEFMC Plan Development Team, NMFS, and other interested parties.

Geographic Location and Temporal Distribution of Effort:

Sampling will occur in ports from Prospect Harbor, ME to Cape May, NJ, and reflect landings and effort from NC, through ME. Efforts will be coordinated with the NMFS NEFSC in Woods Hole, NMFS, Beaufort, NC, NJ, MA, MA DMF, NH F&G, and RI, DEM, and other state agencies throughout the range of the herring and mackerel fisheries. Staff will be based out of the MEDMR Boothbay Harbor lab facility. Because of herring and mackerel availability to the fishery, market conditions, and other factors, it is difficult to pinpoint where the fleet maybe landing at any given time. Sampling will thus occur after direct contact with vessel captains and plant managers to identify were sampling should take place.

In general herring, biological and bycatch sampling is primarily conducted spring, summer, and fall, with some effort during winter months. Mackerel sampling occurs primarily in the winter months; and it's anticipated that menhaden sampling will occur in the late summer to early fall. Bycatch sampling and commercial sampling become more infrequent in the winter months, while travel to get to the landing sites increases. Report writing and data analysis occur between regular commercial and bycatch sampling.

Data Management:

Data collected through this study are regularly entered into the MARVIN biological database housed at MEDMR. Data are first entered into MARVIN and run through Quality Assurance/ Quality Control (QA/QC) routines to insure accurate reporting.

Metadata will be created with ArcCatalog in order to conform to the (Federal Geographic Data Committee (FGDC) standards and specifications. Created metadata will be available in text and XML formats.

Milestone Schedule:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Catch Sampling-HERR	x	x	x	x	x	x	x	x	x	x	x	x
Catch Sampling-MACK	x	x	x	x	x							x
Bycatch Sampling-co-occurring NMFS	x	x	x	x	x	x	x	x	x	x	x	x
Analysis	x	x	x	x	x	x	x	x	x	x	x	x

* - Upon request, MEDMR will provide bycatch sampling data on a state by state basis three times a year.

Project Accomplishment Measurement

Commercial Catch Sampling	
Atlantic herring	At Least 10% sampled trips by gear type and month
Atlantic mackerel	At Least 10% sampled trips by gear type and month
Bycatch Sampling	
Atlantic herring	At least 40 trips sampled by area, gear type and quarter

FY 2019 Budget & Narrative

FY2020 Budget (State FY21)
7/1/20 - 6/30/21

Cost Summary: Portside bycatch sampling

Personnel Services	**Description**	**ACCSP**
None		
All Other		
Travel Expenses		
PROJECT VEHICLE 12 months	$295/mo	$ 3,600.00
Mileage fee	31000 @ $.21/mi	$ 6,510.00
Toll allowance		$ 150.00
35 Overnight stays	$102/night	$ 3,570.00
Per diem (includes extended days)	$50/day	$ 2,750.00
		$ 16,580.00
Office Supplies & Minor Equipment		
2 Cell Phones	2 @ $50/month	$ 1,200.00
1 air card	1 @ $75/month	$ 900.00
Sampling Gear		$ 500.00
Lab Supplies		$ 800.00
		$ 3,400.00
Total Direct Costs		**$ 19,980.00**
Indirect Costs (30%)		**$ 6,135.86**
Award to DMR		**$ 26,115.86**

Partner Contribution – For ACCSP Purposes

Scientist IV (10% time)	$10,000
Scientist III (25% time)	$15,000
Specialist II 100% time)	$84,000
Specialist I (25%)	$12,000
Total	$121,000

Future Project Needs:

This project is designed to benefit all states from Maine to New Jersey, ASMFC and federal management agencies including the NEFMC and NMFS. While accessory funding is available for FY 19 to cover all personnel costs, MEDMR continues to pursue long-term and permanent funding for this project through a commitment made by the participating states and the federal government. Additionally, the New England Fishery Management Council is examining industry funded at-sea observer monitoring in herring and other fisheries. Part of the discussion has included the possibility of industry funding port-side monitoring. MEDMR is engaged in these discussions.

Budget Narrative:

Personnel and Fringe Benefits: Because of state funding resources, we are not requesting to fund either the Specialist II (James Becker) or the Specialist I (Lisa Pinkham) as we have in past years. This represents shift in the project from mostly ACCSP funded, to mostly State funded.

Travel and vehicles
Travel is requested for 35 trips overnight. The exact number of trips will depend of fleet activity and port of landing. A small utility 4x4 truck is proposed for safety reasons during winter sampling in remote locations, as well as to haul equipment from time to time. Central fleet for the State of Maine stipulates rates, and private rentals are prohibited by state policies. Current request reflects a recent policy change by Central Fleet to charging less per month, but increasing the mileage rate for trucks.

Office Supplies & Minor Equipment
Two cell phones and an "Air card" are requested. One cell phone is for the sampler to contact vessels and to coordinate with NEFOP and MA DMF personnel. A second phone is requested for the supervisor to provide direction if needed and to allow for communication in case of an emergency. An air card is also requested which allows the user to connect to the State network from any location with cell phone coverage. Air cards allow for the efficient entry of data while waiting for vessels to land, along with allowing access to the VMS system to better pin point landing events.

Other Lab and Sampling supplies include baskets for sampling, scale calibration, rain gear, water proof paper, sample boxes, safety equipment, and other items

Indirect costs: The Department of Marine Resources has an indirect cost rate of 30%. See Attachment 6 for the Negotiated Indirect Cost Agreement. Note this is a 5% increase from FY2017

Attachment 1: FY 2018 Budget & Narrative

As proposed

FY2018 Budget (State FY20)
7/1/18 - 6/30/19

Cost Summary: Portside bycatch sampling

Personnel Services	**Description**	**ACCSP**
No Personnel Services		
All Other		
Travel Expenses		
PROJECT VEHICLE 12 months	$295/mo	$ 3,600.00
Mileage fee	31000 @ $.21/mi	$ 6,510.00
Toll allowance		$ 150.00
35 Overnight stays	$102/night	$ 3,570.00
Per diem (includes extended days)	$50/day	$ 2,750.00
		$ 16,580.00
Office Supplies & Minor Equipment		
2 Cell Phones	2 @ $50/month	$ 1,200.00
1 air card	1 @ $75/month	$ 900.00
Sampling Gear		$ 800.00
Lab Supplies		$ 500.00
		$ 3,400.00
Total Direct Costs		**$ 19,980.00**
Indirect Costs (30%)		**$ 5,994.00**
Award to DMR		**$ 25,974.00**

Partner Contribution – For ACCSP Purposes

Scientist IV (20% time)	$20,000
Scientist III (25% time)	$15,000
Specialist II 100% time)	$84,000
Specialist I (25%)	$12,000
Total	$131,000

Budget Narrative: 2018

Personnel and Fringe Benefits: Because of state funding resources, we are not requesting to fund either the Specialist II (James Becker) or the Specialist I (Lisa Pinkham) as we have in past years. This represents shift in the project from mostly ACCSP funded, to mostly State funded.

Travel and vehicles

Travel is requested for 35 trips overnight. The exact number of trips will depend of fleet activity and port of landing. A small utility 4x4 truck is proposed for safety reasons during winter sampling in remote locations, as well as to haul equipment from time to time. Central fleet for the State of Maine stipulates rates, and private rentals are prohibited by state policies. Current request reflects a recent policy change by Central Fleet to charging less per month, but increasing the mileage rate for trucks.

Office Supplies & Minor Equipment
Two cell phones and an "Air card" are requested. One cell phone is for the sampler to contact vessels and to coordinate with NEFOP and MA DMF personnel. A second phone is requested for the supervisor to provide direction if needed and to allow for communication in case of an emergency. An air card is also requested which allows the user to connect to the State network from any location with cell phone coverage. Air cards allow for the efficient entry of data while waiting for vessels to land, along with allowing access to the VMS system to better pin point landing events.

Other Lab and Sampling supplies include baskets for sampling, scale calibration, rain gear, water proof paper, sample boxes, safety equipment, and other items

Indirect costs: The Department of Marine Resources has an indirect cost rate of 30%. See Attachment 6 for the Negotiated Indirect Cost Agreement. Note this is a 5% increase from FY2017

Attachment 2: Project history

YEAR	TITLE	COST	Rational/Emphasis	RESULTS
2001	Commercial catch sampling of Atlantic herring	$52,299	catch sampling, herring	expanded sampling of herring
2002	Commercial catch sampling of Atlantic herring	$67,168	catch sampling, herring	herring and mackerel sampling
2003	Commercial catch sampling of Atlantic herring and other northeast fisheries	$67,168	catch sampling, herring	herring, mackerel and halibut
2004	Commercial catch sampling and bycatch survey of the northeast Atlantic herring fishery	$70,441	catch sampling, herring and mackerel	herring, halibut, mackerel and pilot portside bycatch sampling
2005	Commercial catch sampling and bycatch survey of two pelagic fisheries	$69,949	catch sampling, herring and mackerel	herring, halibut, mackerel and pilot portside bycatch sampling
2006	Portside bycatch sampling and commercial catch sampling of the Atlantic herring and Atlantic mackerel fisheries	$104,633	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch at 5% level and catch sampling
2007	Portside bycatch sampling and commercial catch sampling of the Atlantic herring and Atlantic mackerel fisheries	$108,891	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch at 5% level
2008	Portside bycatch sampling and commercial catch sampling of the Atlantic herring and Atlantic mackerel fisheries	$116,300	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch at 5% level
2009	Portside bycatch sampling and commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries	$105,985	portside bycatch survey herring menhaden and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2010	Portside bycatch sampling and	$84,451	portside bycatch survey	

	commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries		herring menhaden and mackerel catch sampling	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2011	Portside bycatch sampling and commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries	$174,778	portside bycatch survey herring menhaden and mackerel catch sampling	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2012	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries	$0	portside bycatch survey herring menhaden and mackerel catch sampling	Funds were not requested because of previous cost saving measures; allowing for the continuation of the previous work with no added costs.
2013	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries	$113,774	portside bycatch survey herring menhaden and mackerel catch sampling	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2014	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries	$130,599	portside bycatch survey herring menhaden and mackerel catch sampling	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2015	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries	$136,306	portside bycatch survey herring menhaden and mackerel catch sampling	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level. Final analysis Ongoing
2016	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries	$23,606	portside bycatch survey herring menhaden and mackerel catch sampling	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level. Final analysis Ongoing
2017	Portside commercial catch sampling and bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries	$24,975	portside bycatch survey herring menhaden and mackerel catch sampling	Ongoing
2018	Portside commercial catch sampling and bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries	$25,974	portside bycatch survey herring menhaden and mackerel catch sampling	Not yet started

Proposed ACCSP Ranking

Proposal Type: Maintenance

Primary Program Priority and Percentage of Effort to ACCSP modules:

Biological Sampling (8 Points): Although Atlantic herring is missing from the top quartile of the Biological Matrix a correct scoring would certainly adjust it to that level. The score would rise to the top of the matrix with the elimination of biological sampling.

Bycatch/Species Interaction (6 Points): Mid-Water trawl gear targeting Atlantic herring and mackerel is currently the most scrutinized for bycatch of river herring and groundfish. Amendment 5 of the Atlantic herring FMP is calling for added increase in bycatch monitoring.

Metadata (2 Points): will be created with ESRI ArcCatalog 10 in order to conform to the FGDC standards and specifications. Created metadata will be submitted to ACCSP in text and XML formats.

Project Quality Factors:

Regional Impact (5 Points): all partners will benefit, as the all data collected will be uploaded to ACCSP. Regional management organizations, such as ASMFC, will benefit from the biological and bycatch information from the proposed project.

Funding transition plan (4 Points): MEDMR will continue to seek alternative sources of funding in order to further transition from ACCSP grant money.

In-kind Contribution (4 Points): the partner contribution is listed below the budget.

Improvement in Data Quality/Timeliness (4 Points): Data collected through this study are regularly entered into the MARVIN biological database housed at MEDMR. Data are first entered into MARVIN and run through QA/QC routines to insure accurate reporting. The biological sampling data is uploaded to the ACCSP data warehouse on a regular basis.

Potential secondary model (4 Points) Data collected through this proposed project is sued in assessment and management of river herring, Atlantic herring, Mackerel, and menhaden as outlined to the expected benefits section

Impact on Stock Assessment (3 Points): Regional management organizations which carry out stock assessments would benefit from the detailed biological sampling and bycatch data. This information could be used in stock assessments for many species that are managed by regional agencies.

Properly Prepared (5 Points): MEDMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

Attachment 3: FY2017 semi Report

Maine Department of Marine Resources
Bureau of Resource Management
West Boothbay Harbor, Maine

Atlantic Coastal Cooperative Statistics Program
Grant No. NA14NMF4740360
(DMR#4077)

Portside Bycatch Sampling and Comparative Sampling for Atlantic Herring (*Clupea harengus*), Atlantic Atlantic Mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries

Semi-annual Report

July 1, 2017 – December 31, 2017

Submitted by:

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West Boothbay Harbor, ME 04575
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(207)-633-9545

January 15, 2018

Project Background

The Atlantic herring (*Clupea harengus*) (Linnaeus, 1758) is one of the most biologically and economically important species in the Northwest Atlantic. With an estimated biomass of one million metric tons, Atlantic herring (hereinafter "herring") are an important food source for many species of fish, mammals, and seabirds, and therefore play a crucial trophic role as a forage fish (Power and Iles, 2001; TRAC, 2009).

Herring are a migratory species, which aggregate in large schools, feed on plankton, and are found between Labrador and Cape Hatteras, along coastal and continental shelf waters (Colette and Klein-MacPhee, 2002). Migration patterns are seasonally based with adults (≥3 years) moving south during the autumn from the Gulf of Maine (GOM) spawning grounds to spend the winter off southern New England and the Mid-Atlantic. During the spring, adult herring return to the GOM, where they spend the summer months (Kanwit and Libby, 2009).

Since the 17th century juvenile herring have been part of a significant commercial fishery from New Brunswick to Massachusetts. During the 1980s the immergence of a large-scale fishery occurred across the entire range of the fishery (Overholtz, 2002). Commercial landings are currently around 70,000 metric tons annually with 90 percent supporting the lobster (*Homarus americanus*) bait market. Herring is the primary bait of the approximately $600 million per year New England lobster industry (National Marine Fisheries Service, 2016).

The Maine Department of Marine Resources (DMR) has collected and processed herring commercial catch samples since 1960. Sampling was historically carried out with the cooperation of processors and the National Marine Fisheries Service (NMFS). This system of sampling the commercial catch resulted in incomplete coverage of the fishery and insufficient collection of population data. Therefore, DMR secured funding to hire a dedicated sampler to improve the commercial catch sampling program.

After the completion of a successful pilot study in late 2003, the DMR initiated an exploratory portside bycatch survey of the herring fishery in 2004. This project was created in response to the lack of bycatch data available for the directed herring fishery. Moreover, in 2004, NMFS received funding to expand the at-sea observer coverage of the herring fishery. Interestingly, in 2008, following in suit, Massachusetts Department of Marine Fisheries (MADMF) began their own portside bycatch program. Still, in a large volume fishery, statistically significant sampling levels are hard to achieve. The Maine DMR portside bycatch program now complements both the MADMF portside program and the NMFS at-sea observer program by providing expanded coverage of the herring fishery, and validation of the at-sea observer data via our co-occurring trip analysis.

In an attempt to more closely align our data with MADMF's portside bycatch program and NMFS at-sea observer data, we moved away from the practice of "lot" sampling, or looking intensively at a portion of a vessel's landings. The reasoning behind this stems from variability of the catch composition in vessels with multiple fish holds. Fish being partitioned into separate holds may be from the same,

different, or a mixture of multiple tows or sets. While lot sampling has provided valuable spatial and temporal insights to bycatch distribution and frequency, it is unable to resolve variability between vessel holds. Sampling entire vessel offloads eliminates that variability.

In accordance with these changes, our sampling efforts have shifted to sampling direct vessel offloads, targeting sites with suitable infrastructure and accessible dewatering boxes, or offload pipes (used to distribute fish into a processing facility). This was problematic at first, as few sites offered adequate working space, and concerns over safety eliminated some options. We currently have 11 sampling sites.

In Maine, sites are in Jonesport, Prospect Harbor, Rockland, Phippsburg, and Portland, in Massachusetts, sites are in Gloucester, New Bedford, and Fall River, in Rhode Island, two sites are in Point Judith, and in New Jersey, one site is in Cape May.

Due to the mandate of river herring bycatch quotas within the herring fishery via the New England Fishery Management Council (NEFMC), an analysis and comparison between overlapping trips from the at-sea Northeast Fisheries Observer Program (NEFOP) and portside observed trips (co-occurring trips) was added in 2012, looking exclusively for significance of the presence of river herring and to a minor extent haddock. This test and comparison was also useful to examine methodologies between the two programs and addressing which methods could be aligned to better document bycatch of many species. As of January 2017, the co-occurring analysis is complete, and therefore no longer part of this project. Now, the goal is to focus on sampling unobserved trips to increase the bycatch sampling coverage across all three of the fisheries within this project.

Objectives

1. Continuation of the portside bycatch survey
    a. Expand the coverage of landed herring, mackerel, and menhaden monitored for bycatch.
    b. Increase the number of unobserved at-sea sampling offloads.

2. Continuation of commercial catch sampling and species collection upon request

Methods

All bycatch sampling events were arranged with the participating sites along with a request of their processing schedule. A sampling event started when the fish were delivered either by boat or truck, to the dewatering tower and or facility. As the fish were sorted, the bycatch was removed and set aside. Each boat load was processed separately, with the collection of catch amount, gear type, NMFS Statistical Area, date of capture, presence/absence of an observer, and the VTR number.

After the bycatch was sorted, all species were identified and separated. Each species was then weighed and a random sub-sample (n=50) was taken if necessary. All individuals (of the entire sample or sub-sample) were measured and recorded on a length frequency log.

It is important to note that for this progress report all non-targeted species (i.e. any species, but Atlantic herring) are referred to as bycatch. This includes species such as shad, alewives and blueback herring (river herring), Atlantic mackerel, and squid, that are classified as incidental catch in the herring fishery.

Herring commercial catch samples that were collected during either portside bycatch surveys or directly from the fishing vessel's hold were transported to DMR where they were processed for length, weight, age (using otoliths), gender, gonad stage/maturity, and stomach contents/weight. Data are then entered into a database and are available for statistical analysis as part of an ongoing NOAA interstate fisheries grant.

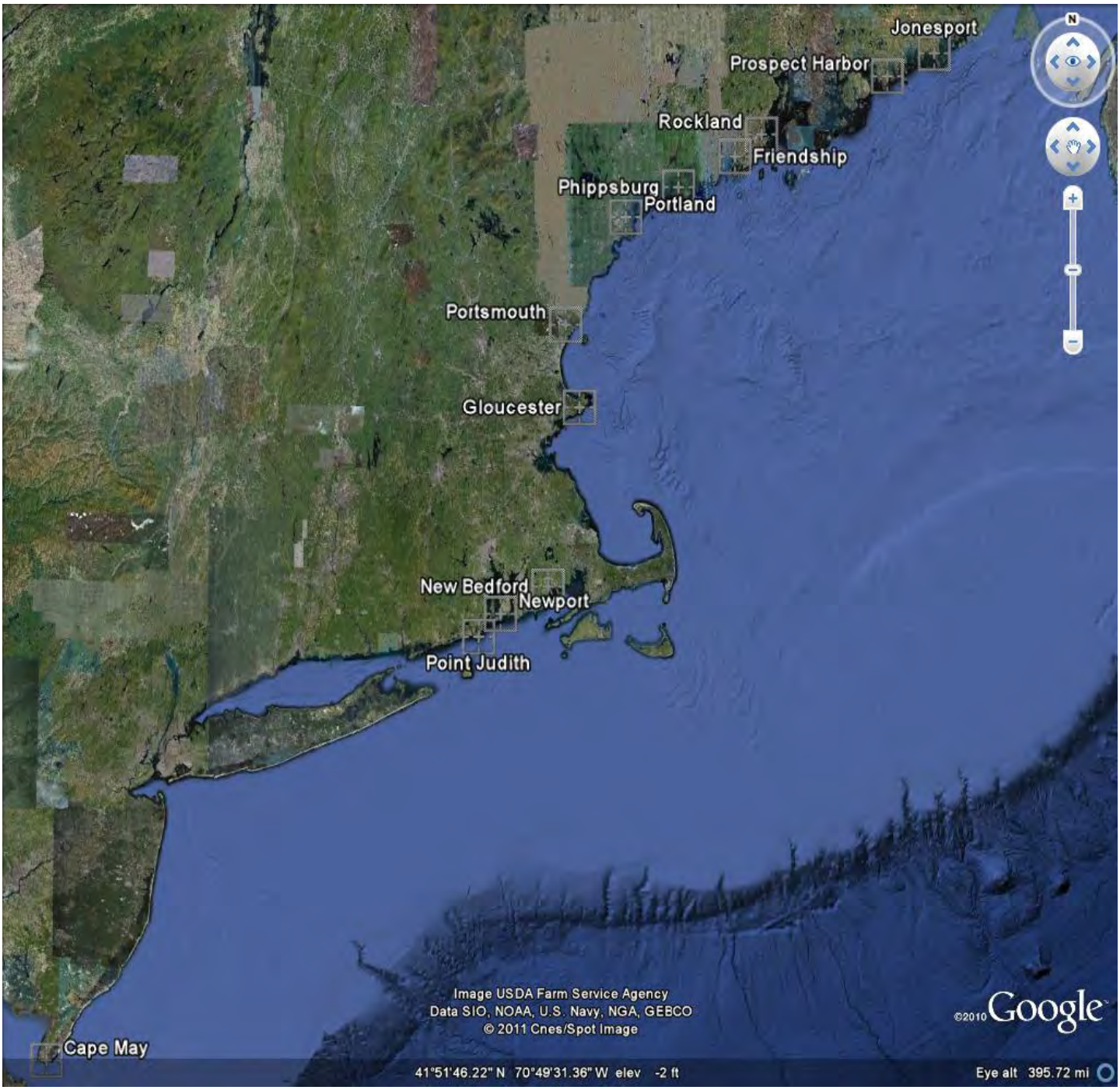

Figure 1: Range and locations of sampling and portside bycatch studies.

Results

Objective 1a: Portside Bycatch sampling of Atlantic Herring, Mackerel and Menhaden

Atlantic herring

Nine portside bycatch studies were conducted on US Atlantic herring landings from July 1, 2017–December 31, 2017. Six were conducted on purse seiners (PS), 2 on single mid-water trawlers (SMWT) and 1 on a pair mid-water trawler (PMWT) (Figure 2). For this period the US Atlantic herring fishery landings were approximately 31,464 t (NOAA Quota Monitoring Website 2018) and a total of 538 t of herring was sampled for bycatch, equating to 1.71% sampling coverage (Table 1a). The total weight of documented bycatch was 29 t. The total percent of documented bycatch was 5.39%. The overall mean percentage of bycatch per individual study was 6.88%, with a standard deviation of 11.87%, a minimum of 0.27% and a maximum 36.28% (Table 1b). Nine species of bycatch were documented (Table 2).

Four NMFS Statistical Areas were sampled for Atlantic herring bycatch for this timeframe. Area 539, off southern New England, contained the largest portion of bycatch, approximately 84.85% of the total documented bycatch. Area 512, off mid-coast Maine, contained the least, about 1.54% (Figures 3 and 5).

River herring (RH) a category of anadromous fish, containing both Alewife (*Alosa pseudoharengus*) and Blueback herring (*A. aestivalis*) made up the bulk of the documented bycatch, about 79.52% and 4.23% of the total sampled herring, up from 1.34% and 0.06%, respectively, for this time frame in 2016 (Table 2).

Atlantic mackerel (*Scomber scombrus*), made about 8.04% of the bycatch and about 0.43% of the sampled herring, down from 42% and 1.74%, for this `time frame in 2016 (Table 2).

Silver hake (*Merluccius bilinearis*) accounted for approximately 4.81% of the documented bycatch, and about 0.26% of herring sampled, down from 7.45% and 0.31% in 2016 (Table 2).

American shad (*Alosa sapidissima*) accounted for approximately 3.68% of the total bycatch, and 0.20% of the herring sampled, up from 1.21% and 0.05% in 2016 (Table 2).

Atlantic menhaden (*Brevoortia tyrannus*) made up 3.39% of the bycatch composition and about 0.18% of the herring sampled, up from 1.07% and 0.04% in 2016 (Table 2).

The remaining three species that individually comprised less than 1.00% of the total bycatch were pooled together into a category called “All other species”, which combined, made up the remaining 0.56% of the total bycatch and about 0.03% of the entire sampled herring (Table 2).

Note that spatial information and all length frequencies for all species, other than squids, will be provided in this years annual report.

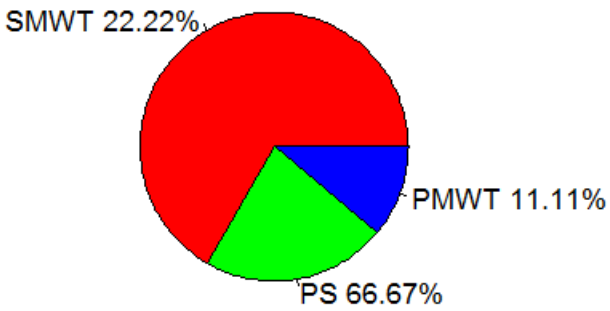

Figure 2. Percentage of herring bycatch studies by trip, per gear type, July 1, 2017–December 31, 2017.

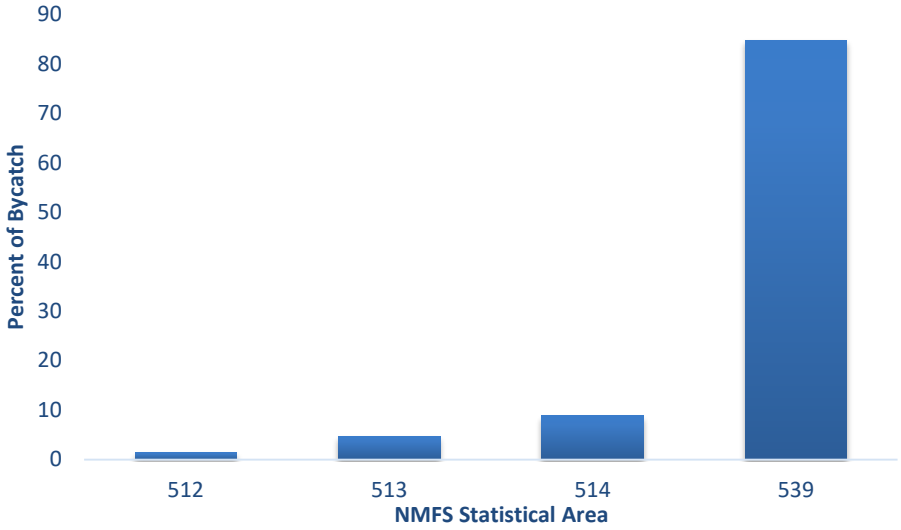

Figure 3. Percentage of bycatch by NMFS Statistical Area, July 1, 2017–, December 31, 2017.

Table 1. Atlantic herring bycatch data, July 1, 2017–December 31, 2017.

a. Bycatch Data by Total Landings and Total Sampled	
Total Landings (t)	31,464
Total Sampled (t)	538.28
% of Total Landings Studied	1.71
Total Bycatch (t)	29.00
% Bycatch in Total Sample	5.39
b. Bycatch Data per Sampling Event	
Mean % Bycatch	6.88
Maximum % Bycatch	36.28
Minimum % Bycatch	0.27
Standard Deviation	11.87

Table 2. Documented herring bycatch, including incidental species, July 1, 2017–December 31, 2017

Species	Total Weight (kg)	% Total Bycatch	% Bycatch in Herring
*River Herring	23,062.75	79.52	4.285
Atlantic Mackerel	2,331.35	8.04	0.433
Silver Hake	1,394.20	4.81	0.259
American Shad	1,068.32	3.68	0.198
Atlantic Menhaden	981.76	3.39	0.182
**All Other Species	162.93	0.56	0.03
Total	29,001.30	100.00	5.388

*A category of anadromous fish containing both Alewife (*A. pseudoharengus*) and Blueback herring (*A. aestivalis*).

**A combination of species whose individual total bycatch was <1.00%.

Atlantic mackerel

The US Atlantic mackerel season is a winter fishery that usually starts in December and ends in late spring. It is important to note that over the past ten years US Atlantic mackerel landings have been significantly low (Fisheries of the U.S, NMFS, 2017). Thus, due to the time frame of this report and historically low mackerel landings, no mackerel bycatch studies were conducted.

Atlantic menhaden

Other than personal landings in Maine of Atlantic menhaden, state and federal landings stopped at the end of June, therefore, zero bycatch studies were conducted between July 1, 2017 and December, 31, 2017.

Objective 1b: Increase the number of unobserved at-sea sampling offloads.

None of the herring bycatch studies during this time frame had an onboard observer, giving 100% unobserved portside bycatch studies and meeting this objective.

Objective 2: Commercial catch sampling of herring, mackerel and menhaden

Atlantic Herring Sampling

Fifty-six herring samples were collected from July 1, 2017 and December 31, 2017 from catches in the GOM, offshore on GB, and off southern New England. Approximately 75% of the herring samples were acquired from Maine ports, 12.50% from NH, 7.14% from RI, and 5.36% from MA (Figure 4). These samples were transported to DMR where they were processed for length, weight, age (using otoliths), gender, gonad stage/maturity, and stomach fullness.

Note that length, weight, and age structures will be provided in the next annual report.

Sampling for the Atlantic herring fishery occurs routinely during bycatch sampling at many of the same locations, plus sites specific for the collection of commercial catch samples only. Data are entered into a database and are available for statistical analysis as part of an ongoing NOAA interstate fisheries grant.

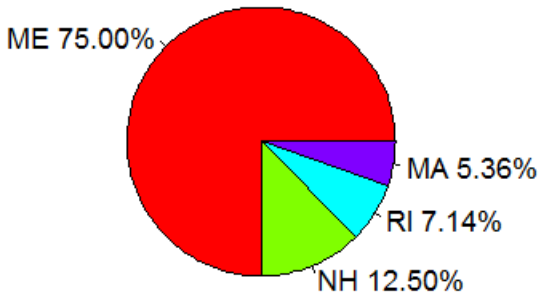

Figure 4. Percentage of herring samples collected by state, July 1, 2017–December 31, 2017.

Atlantic Mackerel Sampling

The DMR has sampled mackerel since 2005 for the NMFS Northeast Fisheries Science Center (NEFSC) because the most recent stock assessment uncovered a severe lack of large mackerel in their biological samples. This expansion of mackerel sampling will continue as requested by the NEFSC to provide broader coverage of this resource in time and space. Due to the extremely low amount of Atlantic mackerel landings in 2017 and for the time frame of this report, one sample was collected from a PMWT fishing in Area 521 (Figure 5).

Atlantic Menhaden Sampling

As requested by the NMFS office in Beaufort, NC, menhaden samples are to be collected when this species is landed in significant numbers within the GOM. During the time frame of this report, zero menhaden landings occurred (as mentioned above in the menhaden bycatch section), thus no samples were collected.

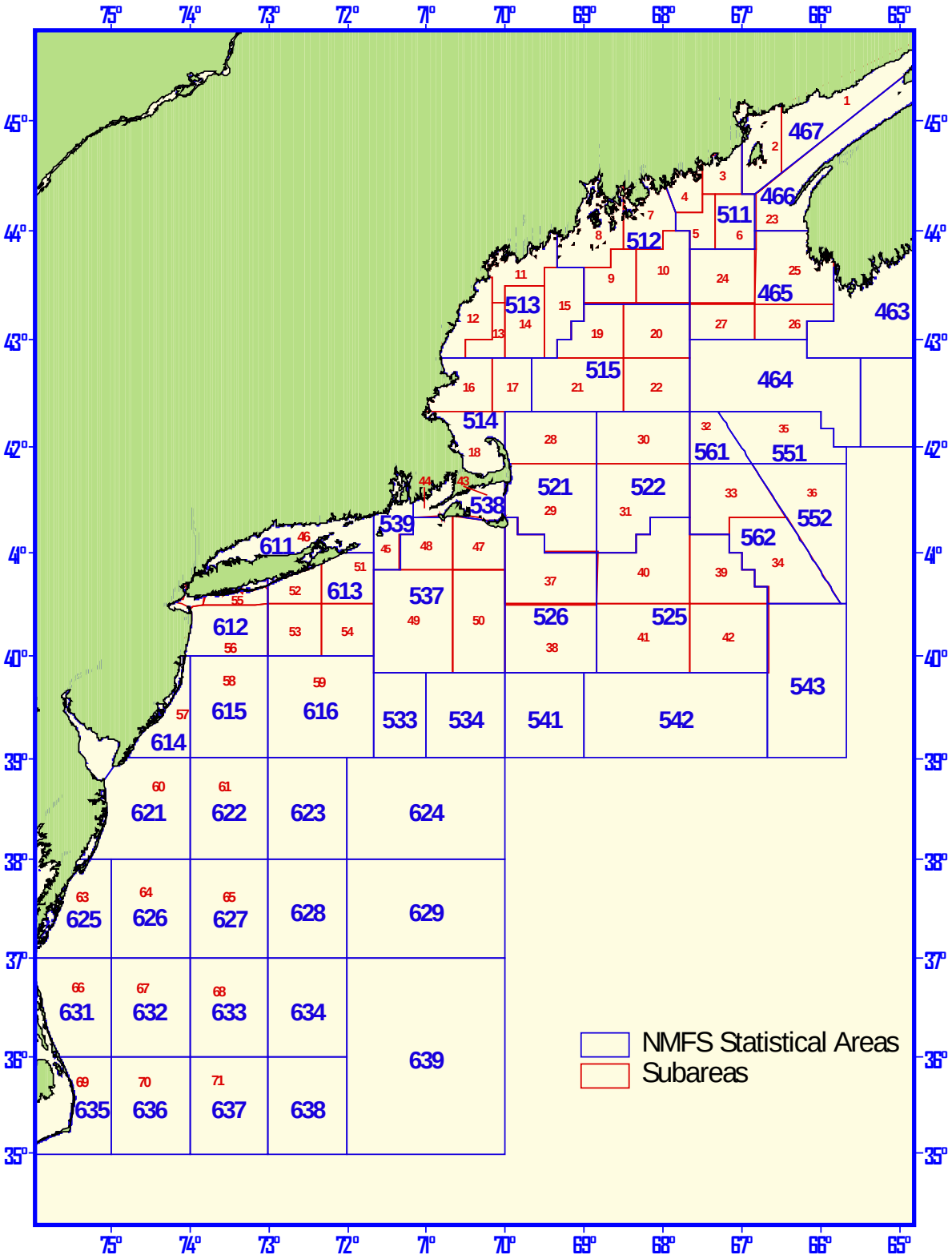

Figure 5. NMFS Statistical Areas.

Conclusions

The portside bycatch survey has continued to prove very successful since its inception in August of 2003. The results of this survey have revealed extremely small levels of bycatch in the directed herring fishery, and minor levels of bycatch in the Atlantic mackerel and menhaden fisheries for all gear types sampled. The results of this project are useful in quantifying and understanding the extent of retained bycatch in the Atlantic herring fishery and should prove as useful in the Atlantic mackerel and menhaden fisheries. However, the species encountered as bycatch varied spatially by NMFS Statistical Area, and conclusions drawn from this regarding the spatial nature of the bycatch encountered should be interpreted cautiously due to the small sample size. It is important to remember that bycatch in these fisheries can be episodic, and can be isolated to one fishing event in one specific spatial location.

Atlantic herring, mackerel, and menhaden are harvested as large volume fisheries, which results in mass handling techniques, like pumping the catch from the nets into the vessel holds and again into the processing facilities. Because of the nature of these fisheries there are limited opportunities to observe and/or sample bycatch at-sea. However, vessels can discard some or all of the catch at-sea and there are some methods of sorting out large bycatch, i.e. mammals, before or during the pumping process. For these reasons the portside component is not designed to quantify all bycatch in these fisheries, but only retained and landed bycatch.

Since the spring of 2011 the portside bycatch sampling protocol shifted towards analyzing entire boat loads only, and eliminating partial boat or lot sampling. This change in approach and the results of the co-occurring trip analyses have revealed that aligning portside data between Maine DMR, Massachusetts DMF, and NEFOP, leads to statistically more sound bycatch estimates and an increase in coverage of the herring fishery. These efforts will continue to complement and supplement, but not replace the NEFOP at-sea observer coverage. Furthermore, this bycatch survey continues to offer a unique opportunity to collect data in an inexpensive, but efficient and accurate way.

The data collected from both the Portside Bycatch Program and Commercial Catch Sampling Program were useful for the herring stock assessment in June of 2011, the most recent update during 2015, and the upcoming benchmark assessment in 2018. Moreover, the Atlantic herring samples used for the catch-at-age matrix helped to determine spawning stock biomass, the 2014 and 2015 area fishing quotas, and spawn closure management changes in 2016. In addition, portside bycatch data from this project was used in conjunction with the at-sea data to calculate the river herring and haddock bycatch quotas for the 2016/2017 herring fishery. As of Sept 2015, data from both MA DMF and ME DMR portside bycatch sampling were used in the ongoing specifications for herring for 2016-2018.

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TRAC. 2009. Gulf of Maine-Georges Bank Herring Stock complex,

Instructions for Sampling Atlantic Menhaden from the Maine Bait Fisheries

Acquiring the 'Sample'

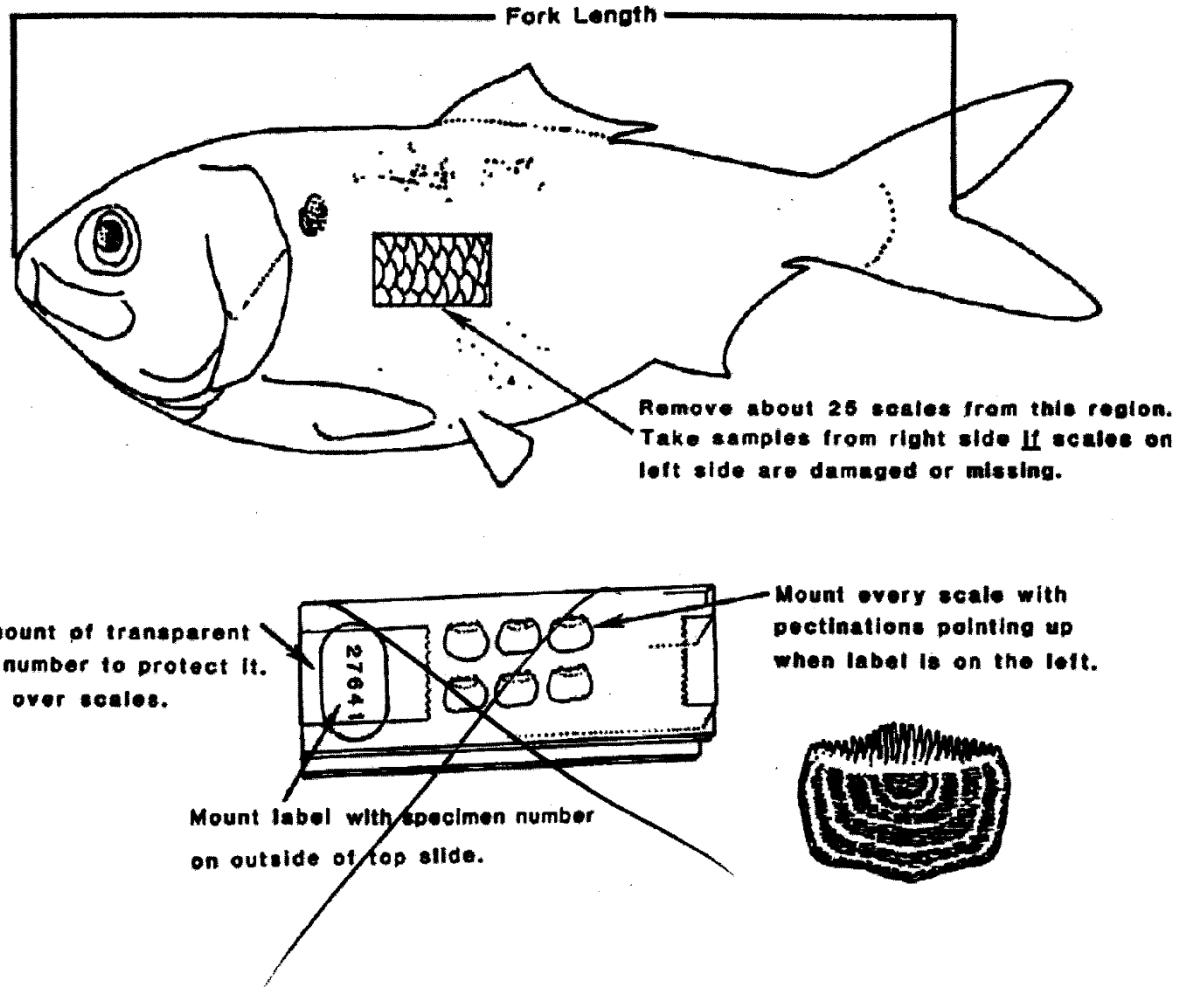
- Ideally, scoop a bucket of menhaden at random from the top of the fish hold.
- If the menhaden have already been packed out in flats or fish boxes, take 15-20 fish at random from the container.
- If available, record date of capture, location of capture, and vessel name. Usually we write this info on a waterproof tag and toss it in with the bagged menhaden sample.

Processing the 'Sample'

- Select a data sheet from the top of the pile. Write-in pertinent sample info on left half of data sheet:
  - Year Caught - last two digits
  - Vessel Name - just a name; we'll assign a vessel number at Beaufort
  - Location Caught - write location above the boxes; we'll assign a location code at Beaufort
  - Month and Day
  - LEAVE BLANK - Species and Scale Reader
  - Initial the data sheet (bottom right), and write any miscellaneous comments in the 'Remarks' box of the data sheet, eg, gear type, port of landing.
- Before you begin to handle the fish for lengths and weights, lay out ten coin envelopes on the counter-top and **label each on the back** with the unique 5-digit 'Specimen Number' found on the right side of the data sheet.
- From the plastic bag, bucket, etc. holding the menhaden sample, randomly draw out 10 fish. Process each of these 10 fish for fork length (in mm), weight (to the nearest whole gram), and remove a scale patch. Write fork lengths and weights for each of the 10 sample fish in the appropriate boxes on the right side of the data sheet.
- Scale patches are removed from mid-body, just below the start of the dorsal fin. See illustration in sampling manual.
  - Place scale patches in the appropriately labeled coin envelope, ie, scale patch from the first fish in the sample goes in the coin envelope labeled with the specimen number ending in '1'; scales from second fish go in coin envelope ending with specimen number ending in '2, etc.
- Re-bind ten coin envelopes with a rubber band. Paper-clip the coin envelopes to the top of the data sheet.
- Mail data sheets and coin envelopes to Beaufort via Dr. Matt Cieri.

Questions?? - Call Joseph W. Smith, NMFS Beaufort, 252-728-8765

FIGURE 2


Fork Length
Remove about 25 scales from this region.
Take samples from right side If scales on
left side are damaged or missing.
Use minimum amount of transparent
tape, but cover number to protect it.
Do not lap tape over scales.
27641
Mount every scale with
pectinations pointing up
when label is on the left.
Mount label with specimen number
on outside of top slide.

Attachment 5

COMMERCIAL PORTSIDE BYCATCH SURVEY PROTOCOL

EXPLANATION:

The bycatch survey represents a unique opportunity to collect data in an inexpensive but efficient and accurate way. The program takes advantage of normal processing plant operations by quantifying bycatch that enters the facilities. Processing plants have to manually remove other species from the production line before the fish are sorted and cut or frozen. In normal operations, bycatch removed from the product is segregated into xactix bins or totes and removed from the processing floor at the end of each lot. Plants process one lot (fish caught by one vessel on a particular trip, delivered by truck or boat) at a time and then reset the plant in preparation for the next lot. Therefore, the bycatch removed from each lot can be documented and assigned to a catch location, gear type, date and a total lot amount. Additionally, the plants generally buy herring from vessels throughout the fishery and therefore cover multiple gear types, vessel sizes and individual fishing practices.

The bait industry has changed tremendously in the last five years resulting in a much more centralized distribution structure. Generally the herring used for bait goes through a large wholesale dealer to smaller dealers and lobster wharfs along the coast. The wholesale dealers generally have facilities where they sort, barrel, freeze and store bait for redistribution. It is at these sites where effective bycatch surveys can also be done, thereby including the bait sector in this study.

The sampling takes place at processing plants and bait dealers in Maine, New Hampshire, Massachusetts, Rhode Island and New Jersey. Sampling sites are selected by targeting Tier 1 locations first and then relying on Tier 2 locations to meet weekly goals. A sampling level of five percent of the entire herring fishery is targeted (Table 1). The mackerel fishery will be sampled if the target levels for the herring fishery are being reached or when herring samples are not available. This scenario is most likely to occur in the winter months when many of the herring vessels switch to the mackerel fishery. The samplers quantify bycatch from individual lots that enter the processing and bait plants according to a NMFS specified protocol. The total weight of any observed bycatch are recorded along with species identification, total species weight, individual lengths and weights of all fish or a representative sub-sample.

From 2004 thru 2008 the average annual herring landings were 91,803 metric tons. Over this five year period, April averaged the lowest landings of 2,033 metric tons, yielding about 2% of the annual landings (Figure 1). August averaged the highest landings of 13,438 metric tons, and yielded about 15% of the annual landings.

Table 1: Target sampling levels for herring

Month	5% Herring landings
January	319.82
February	270.91
March	144.92
April	101.63
May	346.8
June	355.3
July	544.18
August	671.9
September	502.18
October	646.28
November	386.65
December	299.61
Totals MT	4590.18

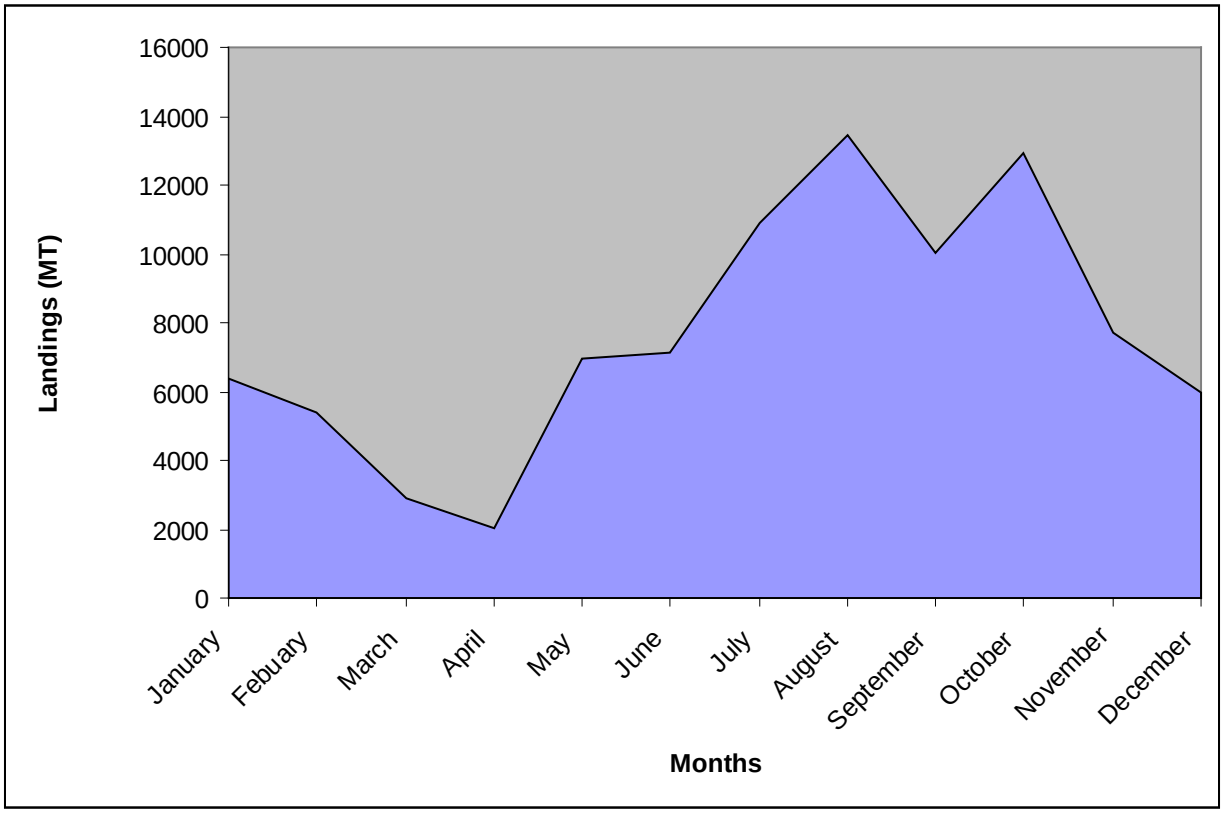


Figure 1: Five year average (2004-2008) of monthly herring landings

COMPLETE SAMPLING PROTOCOL:

The samplers collect and quantify all bycatch from individual lots of fish (transported by trucks or vessels) that enter the processing facilities. Samplers position themselves at the point of entry into the facility along an assembly line or at the base of the hoppers where the fish are unloaded. Sampling is conducted before grading or sorting of the catch occurs. All bycatch is removed from the assembly line or hopper and placed in bushel baskets or buckets specific to each species. Species identification is accomplished by examination and the use of identification keys when appropriate as outlined in NMFS and NEFOP protocols. The total weight of any observed bycatch is recorded along with species identification, total species weight, individual lengths and weights of all fish according to a NMFS and ACCSP specified protocol. If there is a large amount of one species, the total weight is recorded and then length frequencies and weight are gathered from a sub sample of n=50. The information collected for each bycatch study is recorded on the data sheets (see "Data Sheets" section of packet) and entered into the MEDMR biological database.

SUB-SAMPLING PROTOCOL:

A sub-sampling protocol is utilized when sampling a large volume of catch, determined as greater than 80,000 lbs (~40 mt). Instances where this is likely to occur include sampling sites where vessels land an entire catch (as much as one million pounds) to a single facility. Sub-sampling is also appropriate in instances when there is an overwhelming amount of bycatch and/or non targeted species mixed in with the lot of fish. In these cases it can be impossible to use the complete sampling protocol regardless of the amount inspected (< 80,000 lbs.). These situations are likely to occur when vessels are fishing mixed groups of herring and mackerel, some of which have a 50-50 composition.

Sub-samples are to be collected using bushel baskets at timed intervals during the pumping or unloading process following the NMFS at-sea observer sampling protocol. To accomplish this type of sub-sampling one needs to know the total lot weight and the duration of time it will take to unload the catch. After sampling the bushel basket of fish should be sorted by species, and total weight of each species and length frequencies should be recorded (sub sample n=50, for length frequencies if more than fifty of any species occurs).

Example:

Lot size = 120,000 lbs (3 Trucks)
Pumping or unloading time = 3 hours (180 minutes)

If a sample basket is to be collected for every 10,000 lbs of fish, then **12 sample baskets** need to be collected over the entire pumping or unloading process.

120,000 lbs/10,000 lbs = 12

If the entire pumping or unloading process takes an estimated 180 minutes, than **a basket sample needs to be taken every 15 mins.**

If the catch composition from the bushel baskets is 99% Atlantic herring, than one can extrapolate that out of the 120,000 lbs unloaded, then 118,800lbs is Atlantic herring.

99% Atlantic herring = 120,000 lbs x 0.99 = 118,800lbs of Atlantic herring

If the remaining 1% of the catch composition is Atlantic mackerel, then one can extrapolate that out of the 120,000 lbs unloaded, 1,200lbs is Atlantic mackerel

1% Atlantic mackerel = 120,000lbs x 0.01 = 1,200lbs of Atlantic mackerel

Attachment 6: Negotiated Indirect Cost Agreement

Office of Acquisition Management – Grants Management Division
1401 Constitution Ave., NW, HCHB Rm 6412
Washington, DC 20230, Attn: Indirect Cost Program

CERTIFICATE OF INDIRECT COSTS

This is to certify that I have reviewed the indirect cost rate proposal prepared and maintained herewith and to the best of my knowledge and belief:

(1) All costs included in this proposal dated Jan 9, 2019 to establish indirect cost billing rates for July 1, 2018 through June 30, 2019 are allowable in accordance with the requirements of the federal awards to which they apply and 2 CFR Part 200 , "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards". This proposal does not include any costs which are unallowable as identified in the applicable federal cost principles. For example, advertising contributions and donations, bad debts, entertainment costs or fines and penalties.

(2) All costs included in this proposal are properly allocable to federal awards on the basis of a beneficial or causal relationship between the expenses incurred and the agreements to which they are allocated in accordance with applicable requirements. Further, the same costs that have been treated as indirect costs have not been claimed as direct costs. Similar types of costs have been accounted for consistently and the Federal Government will be notified of any accounting changes that could affect the rate.

(3) The indirect cost rate calculated within the proposal is 30.71%, which was calculated using an indirect cost rate base type of Modified Total Direct Costs. The calculations were based on actual costs from fiscal year July 1, 2017 thru June 30, 2018 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2018.

Subject to the provisions of the Program Fraud Civil Remedies Act of 1986, (31 USC 3801 et seq.), the False Claims Act (18 USC 287 and 31 USC 3729); and the False Statement Act (18 USC 1001), I declare to the best of my knowledge that the foregoing is true and correct.

Organization Name: State of Maine, Department of Marine Resources

CFO Signature: Gilbert M. Bilodeau Date: 1/10/19

Name/Title Authorized Official: Gilbert M. Bilodeau, Director, Natural Res Ser Ctr

Dept Head Signature: Date: 1/9/19

Name/Title Authorized Official: Patrick Keliher, Commissioner

Attachment 7:

Atlantic Coastal Cooperative Statistics Program
Grant No. NA13NMF4740203
(DMR#4077)

Comparative Analysis of Two Bycatch Programs within the U.S. Atlantic Herring (*Clupea harengus*) Fishery

Supplementary Report

Submitted by:

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2/10/2017

Introduction

Bycatch estimates in the U.S. Atlantic herring fishery are primarily calculated by an at-sea sampling program conducted within the National Marine Fisheries Service (NMFS) by the Northeast Fisheries Observer Program (NEFOP). However, in recent years due to high costs and lack of appropriate funds, NEFOP decreased its overall coverage, leaving a larger portion of herring trips unobserved (NMFS, 2015). Moreover, in 2005 the Maine Department of Marine Resources (ME DMR) began a portside bycatch program of the herring fishery that offered the ability to estimate bycatch at a safer and cheaper cost, allowing access to high volume offloads without placing observers at-sea. However, unlike NEFOP, the portside program has yet to be used for bycatch quota estimation. This report attempts to validate the bycatch estimates derived between the at-sea and portside bycatch programs from co-occurring trips (trips that were sampled both at-sea and portside). If the methodologies and bycatch estimates are compatible, combined, both programs could offer increased sampled trips, and decrease the variability associated with the current low coverage.

To date, there are five species with bycatch caps within the U.S. Atlantic herring fishery. Bycatch caps for haddock (*Melanogrammus aeglefinus*) were mandated in 2006, and in 2014 for river herring and shad (RHS), a combination of alewife and blueback herring *(Alosa pseudoharengus* and *A. aestivalis*), and american and hickory shad (*Alosa sapidissima* and *A. mediocris*), respectively (NMFS, 2016). The bulk of the focus of this report is on river herring, but looks at other bycatch species as well. The past decade has shown an increasing concern for river herring bycatch within the U.S. Atlantic herring fishery, thus, minimizing and grasping the extent of this bycatch and assessing the status of the population have become paramount (NMFS, 2012).

Prior to the implementation of these bycatch quotas, NOAA conducted a series of workshops to gather more information on the status of river herring in the northwest Atlantic. In May of 2012, NOAA worked closely with the Atlantic States Marine Fisheries Commission (ASMFC) to use information contained in their river herring stock assessment and the best available information to determine whether these two species should be listed under the Endangered Species Act (ESA). Several areas where additional information was needed included stock structure, extinction risk, and the impact of climate change on these species (NOAA Fisheries Northeast Regional Office: Protected Resource Division, 2013).

Due to the growing concern of the health of the river herring population and its interactions with the Atlantic herring fishery, facilitation of bycatch quotas, and the potential for an ESA listing, lead to an analysis and comparison of co-occurring trips between at-sea observed and portside observed, looking for, but not limited to, the significance of bycatch estimates of river herring. These tests and comparisons were also useful for examining other bycatch species estimates, methodologies, and for addressing which methods could be tweaked to better estimate bycatch landings.

The objective of this report is to access whether the portside and at-sea observer programs are compatible, and can estimate statistically sound and similar bycatch estimates within the US Atlantic herring fishery.

Methods

For the analysis and comparison of the co-occurring trips three methods were initially used, (for more detail, see the 2016 proposal for ACCSP Grant No. NA13NMF4740203). However, after accessing the data and the sampling protocol for the at-sea program, it became evident that Method 3 was the most statistically sound approach for determining significance between programs of bycatch estimates.

Typically at-sea sampling requires10 bushel baskets to be systematically collected per haul (tow) per trip. Bycatch species are removed and weighed, and then the proportions of each species are multiplied by the estimate of each haul weight. The overall bycatch estimate per trip is the sum of each bycatch estimate per haul. Due to the variance associated with each individual haul, Method 3 offered the most viable approach for comparing bycatch estimates between co-occurring trips.

Portside sampling requires the collection of a bushel basket from the offload delivery system (dewatering box or pre-graded assembly line) every 5 minutes until the entire herring trip has been pumped from the vessel. Bycatch species are sorted and weighed from each basket, and the overall proportion is multiplied by the total hail weight of the catch.

Method 3, (Dean, 2011), involved calculation of composition and variance of bycatch species per haul, per at-sea trip, combining the individual variances into a single array representing the entire catch, then conducting a modified two sample two tailed t-test to look for significance between both programs ($P<0.05$). Since this particular method needed a customized significance test to compensate for the individual haul compositions at-sea per trip, the sample means and variances were replaced with the total estimated bycatch per trip (w), and the variance of those estimates ($V(w)$) written as:

$$t = \frac{w_1 - w_2}{\sqrt{V(w_1) + V(w_2)}}$$

With

$$H_0 : w_1 - w_2 = 0$$
$$H_A : w_1 - w_2 \neq 0$$

Calculations for the pooled degrees of freedom for each at-sea trip were written as:

$$Pooled\ At\text{-}sea\ DF = (N_1\text{-}1) + (N_2\text{-}1) + (N_3\text{-}1) = (N_1+N_2+N_3) - g$$

Where N_i is the total haul weight divided by the average basket weight per haul, and g is the number of hauls per trip, in this case 3 (https://www.isixsigma.com/topic/degree-of-freedompooled-estimate-of-variance/).

Calculations for the degrees of freedom for each portside trip were written as:

$$Portside\ DF = N\text{-}1$$

Where N is the total trip hail weight divided by the average basket weight.

In both cases, N is estimated and scaled up to establish the number of possible baskets that could be taken from the entire catch.

For this analysis of co-occurring trips three universal criteria were used. The first was used if a specific bycatch species was absent in the sample baskets between both programs for the same trip. For example, if a certain trip lacked alewife in the sample baskets for the portside data and the at-sea data, then the results would state there was no significant difference between the two trips, noted as (-,-) or denoted a "zero" trip. The second was if a bycatch species was found only in one of the programs, noted as (+,-) for presence at-sea only, and (-,+) for portside only, deeming that specific trip significantly different. Lastly, on occasion a scenario arose where the at-sea program was unable to identify what type of river herring species was landed (either an alewife or blueback herring), therefore nullifying the possibility of a comparison, noted as (NK,+) NK standing for "not known".

Results

To meet the necessary criteria for this type of analyses, i.e., a co-occurring trip that contained the presence of the same species both at-sea and portside, the filtering process mentioned above was implemented which limited and reduced the useable data. Thus, sixty one co-occurring trips were conducted, of which 38 were accessed for significance testing (Table 1 and 2). Currently seven trips were used for statistical comparisons, and within three of those specific trips analyses were conducted on more than one species. This resulted in 13 individual statistical analyses conducted to date. Eight out of the 13, or 62% of the analyses revealed that bycatch estimations between programs were not statistically different (Table 2).

Refer to Table 2 for the following results: Trip 16, a small mesh bottom trawler (SMBT) fishing in Block Island Sound (BIS), in Area 539, showed no significant difference between estimated Alewife (Ale) bycatch, yet showed significance between both blueback herring (BB) and the combination of the two, river herring (RH). Trip 17, a SMBT fishing in BIS, showed no significant difference between Alewife. Trip 18, a single mid-water trawler (SMWT) fishing on Georges Bank (GB) in Area 522, revealed a significant difference in haddock (Had) estimations. Trip 19, a SMWT on GB, did not show a significant difference in Had. Trip 20, a SMBT, showed no significant difference among Ale, BB, or combined as RH. Trip 21, a paired mid-water trawler (PMWT) fishing on GB, showed a significant difference with Had, and Ale, but not with mackerel (Macks). Trip 22, a PMWT fishing on GB, showed no significant difference with Had.

The scaled up bycatch estimates for w and $V(w)$ varied substantially. The highest w *and* $V(w)$ were found in trip 19, with the portside Had estimates around 25, 928 lbs and 10,063,307, and the at-sea about 28,582lbs and 22,714,397, respectively. The lowest w *and* $V(w)$ portside were documented in trip 16, with the BB estimates about 98lbs and1,920 respectively. However, the lowest w *and* $V(w)$ at-sea were

found within trip 21, with the Ale estimates around 59lbs and 3,184, respectively. Note that trip 21 contained zero Ale portside, or in this case a null value.

Table 1. Co-occurring trips that were not analyzed via a statistical test, including zero trips.

Trip	Year	Gear	Area	Spe	Signf	Criteria	Comments
1	2016	PS	513	Zero	No	(-,-)	
2	2014	PS	512	Zero	No	(-,-)	
3	2014	PS	513	Zero	No	(-,-)	
4	2013	PS	513	Zero	No	(-,-)	
5	2012	PMWT	521	Zero	No	(-,-)	
6	2012	PMWT	522	Had	Yes	(+,-)	At-sea observed Haddock outside of baskets
7	2012	PMWT	522	Had	No	(-,-)	
8	2012	PS	513	Ale	Yes	(-,+)	Alewife were present in one At-sea basket, 0.2Lbs
9	2012	PS	513	Ale	Yes	(-,+)	
10	2012	PMWT	522	Ale	Yes	(+,-)	Alewife were present in one Portside basket, 0.2lbs
11	2012	PMWT	539	BB	NA	(+,NK)	
12	2011	PS	511	Zero	No	(-,-)	
13	2011	PMWT	522	Zero	No	(-,-)	
14	2011	PS	513	Zero	No	(-,-)	
15	2010	PMWT	515	Zero	No	(-,-)	

Table 2. Co-occurring trips with statistical analyses of bycatch species estimations.

Trip	Year	Gear	Area	Hail Lbs	Spe	Prtsd Ws lbs	At-Sea Ws lbs	Prtsd Bskts	At-Sea Bskts	All hauls smpld	Prtsd V(Ws)	At-Sea V(Ws)	Signf	Tval	Tcrit
16	2016	SMBT	539	44,127	Ale	738	1,128	6	12	Yes	41,251	28,193	No	1.481	1.964
					BB	98	405				1,920	4,195	Yes	3.933	1.964
					RH	836	1,533				51,267	20,878	Yes	2.598	1.964
17	2013	SMBT	539	34,998	Ale	795	560	5	16	Yes	33,340	8,443	No	-1.147	1.964
18	2013	SMWT	522	79,996	Had	5,637	2,149	10	15	Yes	1,805,154	576,741	Yes	-2.260	1.962
19	2013	SMWT	561	520,011	Had	25,928	28,582	37	58	No	10,063,307	22,714,397	No	0.464	1.960
20	2013	SMBT	539	21,773	Ale	1,332	1,617	5	10	Yes	17,006	491,560	No	0.040	1.966
					BB	348	310				10,017	9,648	No	-0.275	1.966
					RH	1,681	1,927						No		1.966
21	2012	PMWT	522	469,908	Had	2,881	1,151	36	18	No	472,957	219,789	Yes	-2.078	1.960
					Ale	0	59				NA	3,484	Yes	NA	NA
					Mack	7,003	9,474				532,343	1,651,887	No	1.695	1.960
22	2011	PMWT	522	520,528	Had	110	246	26	22	Yes	11,972	590,226	No	0.176	1.960

Conclusion

Results suggest it is important to note the following when comparing co-occurring trips for significance among estimated bycatch: 1.) Achieving the established sampling protocol for both programs; sampling every haul at-sea, collecting ten baskets per haul, and maintaining sampling of the offload stream every 5 minutes for the entire offload for the portside program. 2.) The number of baskets collected per haul at-sea. For example, if fifty baskets were collected port side, and only twenty total at-sea for the same trip, a significantly different bycatch estimation between trips may result. 3.) Due to the small sample size, i.e. total weight of all baskets collected for either study compared to the overall trip hail weight, the estimated variance *V(Ws)* can be extremely large.

4.) Discrepancies in identifying alewives versus blueback herring (river herring). 5.) Culling of large species at-sea, i.e. haddock may reveal a significant difference in estimated weight compared to portside data. 6.) At-sea observers putting their documented bycatch back in the hold versus overboard. 7.) Within-trip speciation, varying distributions per species, and multiple zeros of species per basket.

One co-occurring trip in particular brought to light some of the issues mentioned above (Table 2, Trip 21). A PMWT fishing on GB showed a significant difference in alewife estimations with only 0.2lbs documented at-sea (one individual fish) and zero reported portside. Once scaled up to the total catch, 59.03lbs was estimated at-sea, and 0.00lbs portside, deeming a significant difference (if following the methods of this analysis). Interestingly, the haddock estimations were smaller at-sea than portside, even though culling and removal of the larger fish at-sea after collecting the 10 required baskets for bycatch estimation could have revealed a larger amount of haddock. However, this may be due to the fact that not all the hauls were sampled at-sea, which potentially could underestimate the overall bycatch. Lastly, the estimations of mackerel were not significantly different. This within-trip speciation may be revealing varying distributions per species within the catch composition. Mackerel, one of the most common bycatch species (incidental catch) found in the Atlantic herring fishery (NEFOP, 2016), may sometimes be distributed normally within the catch, whereas other species of the catch composition may be in a delta-lognormal distribution and may be solely responsible for the many zeros documented per basket sample (Fletcher, 2008). Overall this trip represented an example of the limits of precision and detection of small amounts of bycatch, the difference in methodologies between programs, lack of achieving sampling protocol, and that significance can be species specific.

An important note to consider was the decision not to use any of the "zero" trips. Once these trips were removed from our analysis, the percent of trips that were significantly different increased to about 38%. This seemed the appropriate approach as that zero trips prevented the use of our customized t-test, and therefore couldn't be pooled with the trips that contained the relevant bycatch. If in the future the use of zero trips is incorporated, another approach could be some type of randomization test (Hooton, 1991).

Overall this study revealed that the bulk of the co-occurring trips analyzed were not statistically different, reinforced the legitimacy of portside sampling, and combined will help for both management and this industry. Incorporating the portside bycatch program will increase coverage, and should reduce the variance within bycatch quota monitoring found within large volume fisheries, especially if the areas of concern mentioned above are addressed. Overall this would reduce the cost to both the US Atlantic herring fishery and NEFOP, and increase bycatch monitoring for both the RHS and haddock bycatch caps and overall statistical power and effectiveness of bycatch estimation.

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EDUCATIONAL EXPERIENCE

B.S.	Marine Science, Stockton College of New Jersey	1993
M.S.	Biology (Marine Ecology), Rutgers University	1995
Ph.D.	Oceanography, University of Maine	1999

PROFESSIONAL EXPERIENCE

Marine Resource Scientist, Maine Department of Marine Resources 2/01-present
Post-Doctoral Scientist, The Ecosystem Center, Marine Biological Laboratory 9/99-2/01
Graduate Research Assistant, School of Marine Science, University of Maine 5/95-9/99
Research Technician, Cranberry/Blueberry Research Laboratory, Rutgers /USDA 5/95-9/95
Graduate Teaching Assistant, Department of Biology, Rutgers University 9/93-9/95
Graduate Research Assistant, Institute of Marine Sciences, Rutgers University 10/93-4/94
Animal Laboratory Technician, Department of Natural Sciences, Stockton College 10/92-9/93

CURRENT DUTIES

Atlantic Herring: New England Fishery Management Council (NEFMC) and Atlantic States Marine Fisheries Commission (ASMFC)

- Oversee catch and landings reporting. Use of VTR (Vessel Trip Reports), Dealer Reports, & IVR (Interactive Voice Reports) to analyze and report landings and catch data to NMFS (National Marine Fisheries Service) regional office, NEFMC, and ASMFC
- Monitor IVR system: Query IVR database and report landing weekly to interested parties. Design and execution of a catch and effort model to predict appropriate "Days Out" needed to extend the fishery in some areas
- Commercial and Bycatch Sampling: Oversee the collection, inventorying, processing, and ageing of herring samples, also verify data entry. Make data available to interested parties. Supervise two full-time and one part-time technician. Produce compliance reports for ASMFC
- Monitor Herring spawning condition: Analyze biological sample data to determine spawning activity status. Indicate when areas should be closed to fishing to protect spawning herring
- Herring PDT (Plan Development Team) & Stock Assessment Subcommittee member (NEFMC & ASMFC): Participate in Stock assessments and analysis of catch and landings statistics for the Herring SAFE report. Develop the catch at age matrix for use in Virtual Population Analysis (VPA) and Age Structure Assessment Program (ASAP) models. Provide technical advice to management; Current Technical Committee Chair (ASMFC)

Whiting and Small mesh Multispecies (NEFMC):

- PDT & Stock Assessment Subcommittee member (NEFMC): Participated in stock assessment activities; Revision of overfishing and biomass reference points; Analysis of catch and landings statistics; Provide technical advice to management.

Spiny Dogfish (ASMFC):

- Participated in stock assessment activities and management analysis; Revision of overfishing and biomass reference points; Analysis of catch and landings statistics; Provide technical advice to management.

Assessment Science Committee (ASMFC):

- Provide stock assessment and technical advice to ASMFC Policy board including; Sampling targets for fishery independent and dependent sampling; Workload and scheduling for ASMFC stock assessment and participating scientists; coordinate Advanced Stock assessment training workshops

Multispecies Technical Committee Chair (ASMFC):

- Provide stock assessment and technical advice to ASMFC Policy on predator/prey relationships; Update and Expand MS-VPA (Multispecies Virtual Population Analysis) model as appropriate; Assist in incorporating Predator/prey and natural mortality estimates in the Atlantic Menhaden Assessment. Current Chair

Atlantic Menhaden (ASMFC)

- **Stock Assessment Subcommittee:** Provide estimates of natural mortality and participate in general assessment activities.

Biological Review Panel (ACCSP):

- Provide recommendations of priority and scope of fishery dependent and independent sampling for East Coast Fisheries

PREVIOUS DUTIES

Monkfish

- **PDT & Stock Assessment Subcommittee member (NEFMC):** Participated in stock assessment activities; Revision of overfishing and biomass reference points; Analysis of catch and landings statistics; Provide technical advice to management.

Atlantic Menhaden (ASMFC)

- **Technical Committee Chair:** Writing consensus documentation from technical meetings; Provide analysis of catch and landings data; Analyze current assessment methods; Present findings to the Menhaden Management Board. Produced compliance reports for the state of Maine
- **Multispecies Subcommittee Chair:** Provide technical guidance on conceptualization and implementation of the Menhaden Multispecies ecosystem model; Report progress to the Menhaden Management Board.

American Eel (ASMFC)

- **Stock Assessment Subcommittee Chair:** Organized and lead meetings with both scientific and stakeholder participants. Writing consensus documentation from technical meetings. Provided analysis of catch and landings data. Analyzed assessment methods for use in the stock assessment. Presented results during ASMFC external peer review and Eel Management Board.

Erin L. Summers
Maine Department of Marine Resources
(207) 633-9556
erin.l.summers@maine.gov

Profile:

- Work collaboratively with state, federal, academic, conservation, and industry partners to reduce whale entanglements
  and mortality in marine mammals and sea turtles through bodies such as the Atlantic Large Whale Take Reduction team and Atlantic Large Whale Disentanglement Network.
- Build research programs to provide baseline data on large whale life history, ecology, and habitat use in Maine's coastal rocky bottom habitats. Design new and emerging methodologies to inform management decisions.
- Oversee research and monitoring programs within the Division of Biological Monitoring at DMR, including the lobster programs, surveys for scallops, sea urchin, shrimp, and herring, recreational fisheries program, inshore trawl survey, and the landings and reporting group.
- Represent the Department of Marine Resources in stakeholder meetings, including those for wind energy permitting, Natural Resource Damage Assessments, department wide research and priority setting, etc.
- Member of the Atlantic Scientific Review Group advising NOAA Fisheries on marine mammal stock assessments

Education:

MA Biology: Boston University Marine Program	Woods Hole, Ma.	5/02
BA Biology, Spanish minor: Truman State University	Kirksville, Mo.	5/00

Employment:

Jan 2017 – present: Marine Resource Scientist IV
Maine Department of Marine Resources
West Boothbay Harbor, Me

- Oversee Division of Biological Monitoring, including Commercial Landings Program, Benthic group (lobster, scallops, urchins), and Pelagics group (herring, groundfish, shrimp, and recreational fishing)
- Lead Scientist for DMR's Large Whale Conservation Program
- Member of the Atlantic Large Whale Take Reduction Team

Feb 2006 – Jan 2017: Marine Resource Scientist II
Maine Department of Marine Resources

- Lead scientist for DMR's Large Whale Conservation Program
- Secured grant funding, wrote reports, tracked budgets to support research projects
- Completed projects to support management decisions for the Atlantic Large Whale Take Reduction Plan, including tagging humpback whales, right whale habitat surveys, passive acoustic surveys, gear density surveys, testing alternative fishing gear, characterizing fishing practices, etc.
- Oil Spill Response Coordinator
- Assist with GIS coordination

Jan 2010 – May 2010: **Adjunct Faculty**
Unity College
Unity, Me

- Taught upper level course in the biology of Marine Mammals

Feb 2004 – Feb 2006: **Marine Mammal Research Specialist**
University of New England
Biddeford, Me

- Lead Research technician on project to track and predict right whale habitat use and distribution
- Analysis of remotely sensed data and right whale sightings in the Bay of Fundy Critical Habitat
- Assisted with report writing and budget tracking
- Completed project and published paper analyzing right baleen using stable isotope analysis
- Completed project and published papers satellite tagging and tracking baskings sharks off the coast of New England

Sept 2002 – Feb 2004: **Research Technician**
Cetacean and Sea Turtle Team, NOAA Fisheries Service
Beaufort, NC

- Lead technician tracking and analyzing movements of satellite tagged dolphins
- Perform field work including fishing gear and dolphin aerial surveys, boat based dolphin biopsy and photo-identification surveys, satellite tagging dolphins, responding to strandings, etc.
- Participate in necropsies as needed

Oct 2000 – June 2002: **Laboratory Technician**
Marine Biological Laboratories
Woods Hole, Ma

- Manage daily operations of the laboratory of marine veterinarian, Roxanna Smolowitz
- Run experiments and document methodologies and results
- Prepare media, samples, histology slides, and other lab bench work

COMMERCIAL FISHERIES
RESEARCH FOUNDATION
P.O. Box 278, Saunderstown, RI 02874
Phone: (401) 515-4892 | Fax: (401) 515-3537
www.cfrfoundation.org

August 6, 2019

Michael Cahall
Atlantic Coastal Cooperative Statistics Program 1050
N. Highland, Suite 200A-N
Arlington, VA 22201

Dear Mr. Cahall,

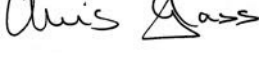
The Commercial Fisheries Research Foundation (CFRF) and the Rhode Island Department of Environmental Management (RI DEM) have reviewed all questions and recommendations provided by the ACCSP Operations and Advisory Committees for our proposal titled "Advancing Fishery Dependent Data Collection for Black Sea Bass (*Cetropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach." The proposal has been revised accordingly and we have also responded to each question and recommendation below.

1. Does the FY20 budget represent the likely anticipated costs to support the project long-term?
    - *The proposed FY20 budget represents the anticipated cost to continue sampling for an additional year with the Research Fleet. Project PIs are constantly seeking long-term year over year funding to continue the Research Fleet sampling beyond the proposed timeline. Depending on vessel sampling rates, Research Fleet sampling may continue beyond the proposed timeline as funds permit.*
2. How comparable is the On Deck Data collection system to the NMFS FLDRS study fleet program? Any benefit in making those consistent or integrated in any way? Maybe part of the communication plan – sharing lessons learned with this program and data collection system with the study fleet, especially now with Anna Mercer at NMFS and familiarity with both projects.
    - *The Black Sea Bass Research Fleet On Deck Data application is likely much more specialized than the Study Fleet program as we target specifically black sea bass data and basic environmental/gear data for analysis. However, the data collected by our Research Fleet is likely collected to the same standard as ultimately, we designed On Deck Data to record data to ACCSP reporting standards. We have discussed comparing Research Fleet data/methodology to that of the Study Fleet and Observer Program to further validate the methodology. This is a comparison we look to undertake in the future.*
3. Last year's proposal noted the expansion of two additional vessels, just as the FY20 proposal. It appears the project was successful in bringing on two new vessels (total vessels went from 10 to 12) – any details on these two new vessels (ie., gear type and fishing location)? Any specific needs for another two additional vessels or open to any vessel willing to participate?
    - *The CFRF and RI DEM have recently transitioned into year-3 funding from ACCSP on the project and are currently reviewing applications for the 2 additional vessels covered under the year-3 award. The two vessels being brought on under the year-3 award will be selected from the non-trawl fishery with preference given to vessels that will 1. Increase the number of replicates of existing gears types 2. Fish in areas with lower coverage from our existing Fleet Members and 3. Fish during times of year which tend to be the least sampled by our existing Fleet Members. Further justification and identified areas of need for the additional 2 vessels proposed under year-4 funding have been added to the proposal.*

4. Proposal mentions obtaining information from other fleets and lists aquaculture fisheries. Can expand or provide some detail as to what aquaculture fishery this might be and how that information may be representative of overall population?
    - *Currently there is only one Fleet Member who has collected data from aquaculture. Aquaculture was not one of the intended gear types to attempt to classify with the original proposal. However, one of the Fleet Members who was brought on to sample in the lobster and trawl fisheries also operates an oyster farm. He began noticing an influx of young of the year black sea bass coming up while tending to his oyster cages and asked if he could sample them. The Fleet Member still prioritizes sampling from his trawl and lobster gear; however, he will sample his oyster farm during the times of year he is not operating in his other gear types. Although population level conclusions will be difficult to draw with only one Fleet Member sampling from aquaculture, the data coming from aquaculture was viewed simply as an opportunity to collect a new stream of data while maintaining our sampling in the originally proposed gear types.*
5. The budget indicates there are no equipment costs – if two new vessels join the study fleet, don't they need to be equipped with the Samsung Tablets with the On Deck software?
    - *Due to the price of each piece of the sampling equipment (Samsung tablets, measuring board, etc.) being under $5000, the equipment is technically classified as a supply. The costs to acquire the sampling equipment for the two new vessels can be found under section F, subsection e, in the budget and budget narrative.*
6. Well written. Page 9 mentions 10 boats (and lists them) and says they are adding 2 additional boats which I would think equals 12 total but on page 10 they mention 14 boats and have 14 in the budget. Not clear where the other 2 additional boats came from. Need clarification.
    - *The 10 vessels listed in the proposal are the vessels supported by the ACCSP through the year-2 of funding of the project. The CFRF and RI DEM have just begun funding year-3 of the project and are actively reviewing Research Fleet applicants for the two additional slots under the funded year-3 award which would bring the Fleet total to 12. If the proposed project is funded, the ACCSP would be supporting the 12 vessels in the Research Fleet through the year-3 award plus an additional two vessels, bringing the total of vessels supported to 14 through the proposed project.*
7. Not a fan of the milestone schedule formatting due to the text wrapping.
    - *Formatting of text was fixed in the milestone schedule table.*
8. The total In-Kind and overall total in the budget does not match the budget justification write up. Numbers are slightly different. Also, the indirect charges in the table and budget justification do not match math shown (i.e., in J - $12,394 X 17.25% = $2,865 but actually equals $2,137.97).
    - *Budget table and budget justification have been updated accordingly to the appropriate amount and to be consistent with each other. The original calculation was correct however the change from previous years to charge indirect against salaries and fringe benefits was not included in the budget narrative.*

We appreciate your consideration of this proposal. Please do not hesitate to contact us if the Operations and Advisory Committee have any further questions.

Sincerely,



Jason McNamee, PhD	Christopher Glass, PhD	Thomas Heimann, MsC
Chief, RIDEM Marine Fisheries	Executive Director, CFRF	Research Associate, CFRF

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22201

Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach

Submitted by:

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and

Thomas Heimann, MsC
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Saunderstown, RI 02874
theimann@cfrfoundation.org

Applicant Name: Rhode Island Department of Environmental Management (RI DEM) and the Commercial Fisheries Research Foundation (CFRF)

Project Title: Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach

Project Type: Maintenance (Year 4)

Requested Award Amount: $132,097

Requested Award Period: August 1, 2020 – July 31, 2021

Principal Investigators: Jason McNamee, PhD, Chief of Marine Fisheries, Rhode Island Department of Environmental Management; Christopher Glass, PhD, Executive Director, Commercial Fisheries Research Foundation; Thomas Heimann, MsC, Research Associate, Commercial Fisheries Research Foundation

Date Submitted: June 10, 2019

Objective:

This proposal is a request for financial support for an additional 12 months of biological catch, effort, and bycatch sampling by the Black Sea Bass Research Fleet, which was successfully piloted in 2016 with support from ACCSP and has been in contiguous operation since. Through the first two years of funding provided by the ACCSP, the Research Fleet sampled 13,751 black sea bass from 1,024 locations from Narragansett Bay to Hudson Canyon and east to George's Bank. The Research Fleet will continue data collection through July 31, 2020 (Year 3 of funding from ACCSP). All biosamples data collected by this project have been communicated to and accepted by ACCSP. The proposed project will continue delivering black sea bass biosamples data to ACCSP at six-month intervals through July 31, 2021.

The goal of the proposed project is to seamlessly continue the Research Fleet's sampling efforts to develop a robust year-round time series of black sea bass (*Centropristis striata*) catch, bycatch, and biological data for five different gear types (trawl, lobster/crab pot, fish pot, gillnet, rod and reel) throughout the Southern New England (SNE) and reaching into Mid-Atlantic (MAB) region. The continuation of this project is critical to the evolution of black sea bass assessment and management efforts by the Atlantic States Marine Fisheries Commission, Mid-Atlantic Fisheries Management Council, Northeast Fisheries Science Center, and Atlantic Coastal Cooperative Statistics Program as the Black Sea Bass Research Fleet produces spatially and seasonally distinct data for numerous commercial and recreational gear, which is currently lacking for this species.

Project components include: 1) Continue and expand the existing fishery dependent data collection program that utilizes fishing vessels and modern electronic technology to collect and relay catch and bycatch data (number, length, sex, disposition) and fishery characteristics (location, gear type, effort, habitat) for black sea bass from across the SNE/MAB region throughout the year; 2) Internal data analysis to address research questions about spatiotemporal patterns in black sea bass biological and fishery characteristics and gear-specific selectivity; and 3) Communication of project data and results to the Atlantic Coastal Cooperative Statistics Program (ACCSP), black sea bass stock assessment scientists, managers, and members of fishing industry.

In summary, the general goals of the proposed project are:

1) Collect and communicate critically needed fishery dependent black sea bass data (catch and effort, bycatch, and biological) in a cost-effective way using modern electronic technology and fishermen's time on the water;
2) Contribute to the evolution of the northern Atlantic black sea bass stock assessment and associated management measures;
3) Demonstrate a model for fishery dependent data collection, management, analysis, and utilization that can be duplicated in a cost-effective way in other regions of the black sea bass range and in other fisheries.

Specific objectives include the following:

- Continue the Black Sea Bass Research Fleet for an additional 12 months to develop seasonal characterizations of northern Atlantic black sea bass biology and distribution;
- Expand the Black Sea Bass Research Fleet to include two additional F/Vs to increase the number of replicate vessels for gear types currently represented in the Research Fleet;
- Maintain and evolve the On Deck Data app to meet the data needs of scientists and the logistical needs of participant fishermen;
- Collect fishery dependent black sea bass data from five gear types (trawl, lobster/crab pot, fish pot, gillnet, rod and reel) across the SNE/MAB region to characterize the size and sex distributions of black sea bass catch and bycatch and investigate the spatial and temporal trends of the fishery;
- Communicate black sea bass biosamples data to ACCSP every six months;
- Conduct internal analyses of the project database to: 1) Assess the selectivity and CPUE of five gear types in the SNE/MAB region and explore temporal variability, and 2) Further monitor and assess spatial and temporal trends in species' catch and bycatch composition and fishery characteristics;
- Further refine gear-specific fishery dependent indices that utilize different data error structures, standardization techniques, and Bayesian applications;

- Communicate to a broad audience the benefits and value inherent in this type of collaborative data collection program.

Need:

As asserted in the ACCSP Biological Review Panel's biological sampling priority matrix, black sea bass is identified as a top priority for data collection, receiving the highest total priority ranking for inadequate biological sampling as well as being a high priority for managing stakeholders (ASMFC, NMFS, and state agencies) (ACCSP 2019). The lack of adequate data for northern Atlantic black sea bass is an issue of regional importance, as this highly valuable stock ranges from Cape Hatteras to the Gulf of Maine (Musick & Mercer 1977, Moser & Shepherd 2009). In part due to the dearth of data throughout the black sea bass range, assessment and management efforts have been slow to react to the shifting distribution and growing abundance of the species (Bell et al. 2014, NEFSC 2017). As stated by ASMFC (2013), high priority data needs for black sea bass include: biological characterization of commercial catch and discards, and expanded sampling of all sizes across the species temporal and spatial range to develop more reliable catch-at-age and CPUE. The Black Sea Bass Research Fleet has, and will continue to with continued funding, provide exactly this type of information. Ultimately, cost-effective sampling programs, such as the Black Sea Bass Research Fleet, are needed to collect these data on regional scales and inform and evolve the stock assessment to consider the complex life history and spatial structure of black sea bass.

Fishery dependent data has become an important source of information that is used as a term of reference for many stock assessments, but in the case of the northern Atlantic black sea bass stock, the data generated by the Black Sea Bass Research Fleet serves as the only systematically collected fishery dependent data source with a focus on the data being used in the assessment process. Thus, this project seeks to strengthen the fishery dependent data for this population in an effort to provide better information from across the temporal and spatial distribution of this species.

The limited coverage of optimal black sea bass habitat and semi-seasonal (spring/winter) sampling schedule of the NEFSC trawl survey may limit the suitability of the survey data for the stock assessment (ASMFC 2013) and require the addition of new data streams to improve the information available to assessment. As such, the ASMFC Black Sea Bass Technical Committee and ACCSP Biological Review Panel identified expanded collection of biological data as a top priority for improving the black sea bass stock assessment (ASMFC 2013, ACCSP 2019).

Other regions have adapted sampling and analytical techniques to better fit the life history and habitat associations of the black sea bass (Southern Atlantic and Gulf of Mexico stocks). These stock assessments rely heavily on fishery-dependent indices of abundance (SEFSC 2013). Such fishery-dependent indices of abundance, however, have not yet been developed for the northern black sea bass stock due to insufficient data, but will become possible if the Black Sea Bass Research Fleet is able to amass multiple years of contiguous data. This project aims to address this need by maintaining and expanding the existing Black Sea Bass Research Fleet to

conduct year-round biological sampling of black sea bass catch and bycatch within the trawl, lobster/crab, fish pot, gillnet, and rod and reel fisheries in the SNE/MAB region.

Ultimately, the proposed project will help to meet ACCSP's mission of improving data quality for fisheries science. In addition, this project, and its integration with the ACCSP data housing program, will lend to the other mission of the ACCSP, namely by contributing to a single data management system that will meet the needs of fishery managers, scientists, and fishermen. Collecting timely scientific data across a species range is imperative for successful fisheries management, as more robust data enables fisheries science to be as comprehensive as possible, which in turn supports informed and efficient decision making by managers. Furthermore, stock assessment scientists rely on robust biological, catch and effort, and bycatch data to help improve the quality of stock assessments. In these ways, the proposed project meets all of the main elements of the mission of ACCSP.

Results and Benefits:

The results of the proposed project include:

- Improved quality, quantity, and timeliness of biological, catch and effort, and bycatch data for the northern Atlantic black sea bass, made available via the ACCSP;
- A vetted source of year-round black sea bass data that can be used to inform the stock assessment and management of this data poor species;
- Coordinated data transmission procedures with the ACCSP that build upon the CFRF's existing data communication practices with ACCSP's Senior Data Coordinator;
- A demonstrated method to cost effectively collect data for a commercially and recreationally important species from areas and times of year not accessed by existing survey programs;
- Improved collaboration and trust between fishermen, scientists, and managers;
- Improved accuracy and credibility of the stock assessment and management plan for the northern Atlantic black sea bass stock;

The benefits of the proposed project are:

- Address priorities of ACCSP, ASMFC, and MAFMC by providing critically needed black sea bass data from the SNE/MAB region to support assessment and management efforts that reflect the current state of the resource;
- Provide an efficient and constructive way for fishermen to be involved in the scientific process by using modern technology to collect quantitative black sea bass data during routine fishing practices;
- Fill black sea bass data gaps in areas, habitats, and times of year not covered by standard survey techniques;
- Evolve and improve the black sea bass stock assessment by providing expanded biological data from retained and discarded black sea bass from a variety of gear types;

- Support regional science and management agencies, including ACCSP, ASMFC, MAFMC, and state agencies in their efforts to sustainably manage the black sea bass resource;
- Support diversification and resilience of fishing communities in the many states across the Atlantic coast with a black sea bass fishery;
- Provide a model for cost-effective fishery dependent data collection efforts in other regions and fisheries.
- Build strong working partnerships between fishermen, scientists, and managers that will contribute to the sustainable management of the nation's living marine resources;
- Build confidence in the efficacy of the northern Atlantic black sea bass stock assessment and management process.

Data Delivery Plan:

An important component of the proposed project is the compilation and communication of fishery and biological data to the ACCSP, participant fishermen, stock assessment scientists, and management teams. The CFRF will maintain the black sea bass database for internal project analyses (described below) but will also regularly share the project data with other users, regardless of any internal publication endeavors.

Copies of the black sea bass database will continue to be sent semi-annually (every six months) to the ACCSP. These data will be made available in a format that is compatible with the ACCSP database to encourage data be readily used in the black sea bass stock assessment and other analyses. Data submissions to the ACCSP will build upon the established procedures from the first three years of the project. All data provided to the ACCSP will match ACCSP data collection standards and any requested and available metadata will be provided. At the end of the project, data will also be made available to fishery scientists at the NMFS Northeast Fisheries Science Center. A vessel ID system will be used to maintain the confidentiality of participant fishing vessels. The CFRF will maintain open communication with the ACCSP data coordinator and will remain available to provide any necessary metadata along with data submissions.

In an effort to provide regular feedback to fleet participants, the project team will compile and distribute individual data reports every three months (quarterly). Vessel-specific data reports will include the following summary statistics: number of catch sampling sessions, amount of effort sampled (number of trawls, hooks, traps), average depth of sampling, percentage of black sea bass catch retained for sale, percentage of black sea bass catch discarded, number of black sea bass biologically sampled, sex distribution of black sea bass sampled, minimum/maximum length of black sea bass sampled, and average length of black sea bass sampled. Additional summary statistics will be available upon request. Data reports were compiled and distributed to Research Fleet participants following the above-mentioned quarterly time frame and content guidelines throughout the entirety of past project sampling.

Completed Data Delivery to ACCSP:

During the first funding year of the project, the CFRF and RI DEM worked with the ACCSP Data Coordinator, Julie Defilippi Simpson, to coordinate data formats, metadata, and delivery procedures for the Research Fleet's black sea bass biosamples data. As a result of these efforts, all black sea bass biosamples data collected to date through the funded project have been incorporated into the ACCSP black sea bass biosamples database. The CFRF has maintained the semi-annual data submission to the ACCSP and submits data in June and December of each sampling year. The project team will maintain a semi-annual data delivery schedule to ACCSP throughout the proposed project following the same data formats and standards previously established.

Approach:

The proposed project seeks to collect, communicate, and analyze critically needed catch, bycatch, and biological data for incorporation into the ACCSP biosamples database and ultimate application in the northern Atlantic black sea bass stock assessment. Project components include: 1) Maintenance of the current Black Sea Bass Research Fleet and expansion to incorporate two new vessels; 2) Collection of fishery-dependent biological (catch and bycatch) black sea bass data and fishery characteristics for 12 months in the SNE/MAB region; 3) Internal data analysis to address research questions about spatiotemporal patterns in the black sea bass population and fishery; 4) Compilation and communication of project data and results to ACCSP, stock assessment scientists, and fisheries managers; and 5) Outreach and education activities to share findings. Methodological details are outlined below.

Maintenance and Expansion of Black Sea Bass Research Fleet and Data Collection App:

During the first funding year of this project, the CFRF and RI DEM were successful in developing the Black Sea Bass Research Fleet for fishery dependent data collection, including the development of a Project Steering Committee, solicitation and selection of participant fishing vessels, development of the On Deck Data app and SQL database, refinement of sampling protocols, construction of sampling equipment, training of Research Fleet participants, on-time initiation of data collection, data delivery to ACCSP and professional and industry outreach. The project was implemented by the PIs, CFRF staff, and a Project Steering Committee, which consists of members of the fishing industry as well as state and federal fisheries scientists and managers. Currently the project is run by the PIs and CFRF staff and the project steering committee serves in an advisory role and provides feedback on project progress and major milestones. More information about the accomplishments of the project is available on the project website: www.cfrfoundation.org/black-sea-bass-research-fleet.

If funded, during the fourth year of the project, the CFRF and RI DEM will maintain the twelve fishing vessels supported through year-3 funding from ACCSP as well as seek to expand the fleet by an additional two vessels. The primary goal when selecting new vessels for the Research Fleet will be; 1. Increase the number of replicate vessels of gear types currently represented in

the Research Fleet and 2. Increase the spatiotemporal coverage of the Research Fleet. Both of the previously mentioned goals will help to increase the statistical power of the fishery dependent data collected by the Research Fleet overall. Through Fleet Meetings and communication between project PIs and steering committee members, focusing the proposed Fleet expansion on the non-trawl fishery to better address limitations in the current stock assessment. This is because the current stock assessment groups all non-trawl fisheries together and assumes the same selectivity and discard structure between all non-trawl gear types. Aside from the trawl fishery, the Research Fleet currently provides data from the gillnet, lobster pot, fish pot, rod and reel, conch pot, and aquaculture fisheries. Focusing Research Fleet expansion among these identified non-trawl gear types would help reduce uncertainties and inform the current black sea bass stock assessment. To ensure a fair and transparent fleet expansion, the CFRF and RI DEM will issue an open call for F/V applications as well as reach out to strong candidates from past application calls and encourage reapplying. A Review Committee will rank applicants and select the two new F/Vs for the Black Sea Bass Research Fleet. The CFRF staff will notify the selected F/Vs and will work with them to establish work agreements, introduce them to sampling equipment, and train them on sampling protocols.

The black sea bass data collection app, On Deck Data, was developed during the first year of the project to enable Research Fleet participants to collect standardized black sea bass data as well as day-to-day observations. On Deck Data prompts participant fishermen to record a suite of session data (location, depth, habitat type, etc.), effort data (mesh size, length of trawl, hooks fished, etc.), and biological data (length, sex, disposition) while at sea. To account for the multi-gear nature of the black sea bass fishery, On Deck Data prompts gear-specific data entry for Research Fleet participants (Table 1). On Deck Data was originally launched during the first year of the project and has received various improvements and quality of life updates in each funded year since to streamline data collection.

Table 1. Summary of fishing effort data collected by the Black Sea Bass Research Fleet.

Trawl	**Gillnet**	**Commercial Rod & Reel**	**Charter**	**Lobster/Crab Traps**	**Fish Pot**
Mesh Size (inches)	Number of Net Panels Per String	Time Spent Fishing (hours)	Time Spent Fishing (hours)	Soak Time (days)	Soak Time (days)
Tow Time (hours.decimal)	Length of Net Panels (feet)	Number of Rods Fished	Number of Rods Fished	Number of Traps	Number of Traps
Sweep Length (feet)	Mesh Size (inches)	Humber of Hooks Used	Number of Hooks Used	Escape Vent Size (inches)	Escape Vent Size (inches)
	Soak Time (days)			Escape Vent Shape	Entrance Size (inches)

	Net Height (feet)				
	Tie Downs (inches)				

On Deck Data will be maintained throughout the proposed project to allow for efficient data collection and wireless data submission by Research Fleet participants. The CFRF and RI DEM will continue to work with an application developer to address any issues that arise and to update On Deck Data to maintain functionality. Application maintenance is a constant task, as tablets regularly receive operating system updates that may impact On Deck Data functionality.

The Black Sea Bass Research Fleet will continue to follow the fishery-dependent sampling protocols implemented during the first year of the project to collect catch and effort, biological, and bycatch data from the SNE/MAB region. The percentage of project effort devoted to each of these modules is as follows: Catch and Effort 30%, Biological 40%, Bycatch 30%. The estimated effort devoted to the catch and effort module is based upon sampling during the roughly 154 days of open black sea bass fishing season in Rhode Island in 2016 (42% of the year). The estimated project effort devoted to biological sampling reflects the collection of black sea bass length and sex data by participant vessels during three trips per month for 12 months. Finally, the project effort allocated to the bycatch module reflects sampling efforts conducted while the commercial black sea bass fishing season is closed and while participant vessels are targeting other species.

Fishery-Dependent Data Collection:

The Black Sea Bass Research Fleet started collecting data on November 30, 2016 and, if this proposal is funded, will continue to do so, utilizing the established sampling protocols and procedures, through at least July 31, 2021. The Black Sea Bass Research Fleet currently consists of ten fishermen based in Rhode Island, chosen strategically to provide data coverage from across the SNE/MAB region, throughout the year, from a variety of gear types: F/V Excalibur (Offshore Trawl), F/V Johnny B (Fish Pot, Rod & Reel, Lobster Pot), F/V Laura Lynn (Fish Pot, Rod & Reel, Lobster Pot), F/V Matrix (Lobster/Crab Pot), F/V Nancy Beth (Gillnet), F/V Priority Too (Rod & Reel, Charter), F/V Second Wind (Offshore Trawl), and F/V Sweet Misery (Gillnet, Lobster Pot), F/V Lady Clare (Lobster Pot), and F/V Debbie Sue (Trawl). The majority of samples have originated from statistical areas 537 and 539 as these two statistical areas exclusively cover the fishing grounds of the F/V Johnny B, F/V Laura Lynn, F/V Matrix, and F/V Priority Too, all of which are either seasonal fishing vessels or do not interact with black sea bass in the winter. The majority of inshore lobster, fish pot, rod and reel and gillnet samples come from the end of spring through the end of the fall when black sea bass are in highest abundances inshore in statistical areas 537 and 539. The F/V Second Wind and the F/V Excalibur fish further south than the above-mentioned vessels and interact with black sea bass year-round but primarily during the winter, however various vessel repairs and unrelated injuries have reduced the

amount of data collected by these two vessels. The F/V Lady Clare fishes offshore and interacts with black sea bass heavily in the winter and spring months, however encounters them less frequently through the summer and fall. The newest vessel added to the Research Fleet, F/V Debbie Sue, fishes the further south of all Research Fleet Members and consistently completes trips into the MAB region south of Hudson Canyon. In total, the Black Sea Bass Research Fleet has sampled black sea bass from 9 distinct statistical areas, 537, 539, 616, 613, 611, 615, 533, 525, and 622. Two additional F/Vs will be brought on with currently awarded funds from ACCSP. The proposed project seeks to add an additional two F/Vs that interact with black sea bass to increase the gear-type specific statistical power of the non-trawl collected data and to increase the spatiotemporal coverage of Research Fleet data collection.

Due to the high number of gear types currently represented in the Research Fleet, it was identified that increasing the number of replicates of each gear type within the Fleet would strengthen the conclusions of the proposed discard characterization for each gear type. If funded, the CFRF and RI DEM will open an application period for the Research Fleet slots as done in the previous years of the project. Any vessel will be able to apply for consideration however preference will be given to vessels which fish in gear types currently represented within the Research Fleet and fish in the non-trawl fisheries of; gillnet, lobster pot, commercial rod and reel, and fish pot. Although conch pot and oyster aquaculture are currently represented within the Research Fleet, these two gear types will not be targeted for expansion like the previously mentioned gears. Conch pot and oyster aquaculture were not initially intended to be gear types covered by the Research Fleet sampling however, a couple Fleet Members brought on to sample from other gears types also operate in the conch and aquaculture fisheries. The CFRF and RI DEM will not target conch pot and oyster aquaculture for expansion in the Research Fleet as neither gear type actively targets black sea bass or interacts with the species on a level similar to the other, targeted gears. However, sample collection will continue through existing Fleet Members opportunistically as it provides a novel source of data on black sea bass. Further, vessels from the above-mentioned gear types which operate and interact with black sea bass in areas and times of year under-represented by our current Research Fleet will be further prioritized, specifically through the winter months of January-April and south of Hudson Canyon. If the proposed work is funded, ACCSP funding would allow for the inclusion of at least 14 total F/Vs in the Research Fleet.

Participant fishermen will use Samsung Tab A tablets pre-programmed with On Deck, described above, to efficiently and accurately record and transmit fishery dependent data. As such, the proposed project will advance the use of electronic technology in at sea biological data collection, management, and analysis efforts.

The goal for each participant is to conduct at-sea catch sampling sessions during three fishing trips each month (Nelson 2014). Thus, the black sea bass research fleet will aim to sample 42 trips per month, for a total of 504 trips over twelve months. Given the population inferences implied in the project objectives and the aggregating nature of black sea bass, a biological

sampling (length/sex) minimum of 50 black sea bass per location will be the required (Zhang & Cadrin 2012). With a goal of sampling three locations per month, the Research Fleet may sample up to 21,600 black sea bass over the course of the year.

The realized sampling frequency, however, will be dependent on a variety of factors, including weather, seasonal black sea bass distribution, and fishery closures. Further, due to the high seasonality of a large portion of the Black Sea Bass Research Fleet and fishery sampling frequency exhibits high seasonal fluctuations. Due to the multi-gear nature of the Research Fleet, the proposed sampling targets do not adequately represent the fishing schedules for each gear type. For example, due to the low daily catch limit (50 pounds per day per vessel for most of the year) in Rhode Island for black sea bass if a fishing vessel is only targeting black sea bass on a day trip and the limit is caught, all fishing ceases. This leads to instances where sampling 50 black sea bass per location becomes unfeasible as fishing may have already stopped prior to landing 50 black sea bass. Further, many of the larger trip vessels are mainly retaining their daily or trip limits of black sea bass from bycatch while targeting other species, which again leads to instances of fishing ceasing prior to 50 black sea bass have been caught. However, the goal of sampling 150 black sea bass per month remains to ensure statistical power. Vessels may sample fewer fish from more than three locations to reach the 150 fish per month target. Further, the same scenario occurs in highly mobile fishing gears, such as charter and commercial rod and reel, which will often change locations prior to catching 50 black sea bass. Both instances may lead to the potential for more numerous sampling locations with fewer fish from each location. Finally, the maximum target of 21,600 black sea bass would only be achievable if all Research Fleet participants operated year-round. Since many of the gear types represented within the Research Fleet stop fishing for the winter months, the realized sampling numbers are lower. However, this proposal's goal of adding two new F/Vs to the Research Fleet will seek to, first, increase the number of replicates in the non-trawl fishery and, second, to target areas and times of year under-sampled by the current Research Fleet members.

At each sampling location, participant fishermen will use On Deck Data to record the date, time, location, statistical area, depth, habitat type, target species, gear type, effort deployed (see Table 1), total number/pounds of black sea bass retained and discarded, and length, sex, and disposition of at least 50 black sea bass. Sampling date, time, and location will be automatically recorded by the internal tablet GPS. Standardized fish measuring boards will be used across the Research Fleet to ensure a consistent measure of fish length to the nearest centimeter. Data will be wirelessly uploaded to a MySQL database once a vessel returns to port and continually monitored by the project team. This data communication, review, management, and storage process was established and vetted during the first year of the project and has been implemented in each year since.

As outlined above, all participant fishermen will aim to sample black sea bass during three fishing trips per month regardless of black sea bass fishery closures. Thus, each fishing vessel

will need an exempted fishing permit to retain black sea bass on deck for biological sampling when the commercial fishing season is closed and operating in Federal water. Scientific collector's permit, issued by RI DEM, will also be required for vessels fishing within state waters. These permits were successfully acquired multiple times during the first funding year of the project and will be extended through subsequent years of data collection and expanded to cover new Research Fleet participants.

Internal Data Analysis:

As described above, the Black Sea Bass Research Fleet was able to operate effectively and deliver data in an efficient manner during first two years of data collection, sampling over 13,850 black sea bass from 1025 locations between Narragansett Bay to the northern end of the MAB and east to George's Bank from November 30, 2016 to June 1, 2019. These data are summarized in the Table 2. The ultimate application of these data will be the black sea bass stock assessment. To achieve this goal, the project team has worked directly with steering committee members and black sea bass stock assessment scientists (Gary Shephard, NEFSC; Steve Cadrin, SMAST) since the beginning of the project to ensure that Research Fleet data is of the necessary quality and structure for utilization in the stock assessment. Communication with the above listed stock assessment scientists will continue with the proposed project. Work with the stock assessment scientists will be focused on directly incorporating the Research Fleet data into the stock assessment, creating in depth gear selectivity models for the gear types represented within the Research Fleet and exploring the creation and incorporation of CPUE indices of abundance(including gear specific indices), both of which could be directly utilized in the stock assessment. Further, the proposed work will include gear specific discard characterizations describing the length frequencies of discarded black sea bass from each gear type through both time and space, with the intention of providing a more accurate black sea bass discard rate for the stock assessment.

Table 2. Summary of data collected by the Black Sea Bass Research Fleet as of June 1, 2019.

Total Black Sea Bass Sampled	13,850
Percent Male	26%
Percent Female	43%
Percent Unknown	31%
Minimum Size (cm)	3
Maximum Size (cm)	63
Average Size (cm)	32.2
Percent Discarded	68%
Percent Retained	32%

In addition to the application of biological black sea bass data to the stock assessment, the data derived from the Black Sea Bass Research Fleet could also be used to characterize the catch, bycatch, and other characteristics of black sea bass in the SNE/MAB region, including gear selectivity and spatiotemporal patterns in catch composition. An additional 12 months of sampling by the Research Fleet, as well as increasing the number of gear-type replicates, will provide a better understanding of these seasonal and spatial dynamics as the data will now become the first multi-gear, multi-year, time series for the species.

The data collected during the previous funding years of the project exhibit interesting biological and fishery trends that will continue to be monitored in subsequent years of sampling for the proposed project. The high frequency of legal-sized, discarded, black sea bass suggests the black sea bass are primarily being discarded due to seasonal closures and/or low daily limits and not due to the minimum size limit (Figure 1). The range of the discarded length data further supports this, showing that even the largest of sampled black sea bass (receiving the highest market value) are often discarded.

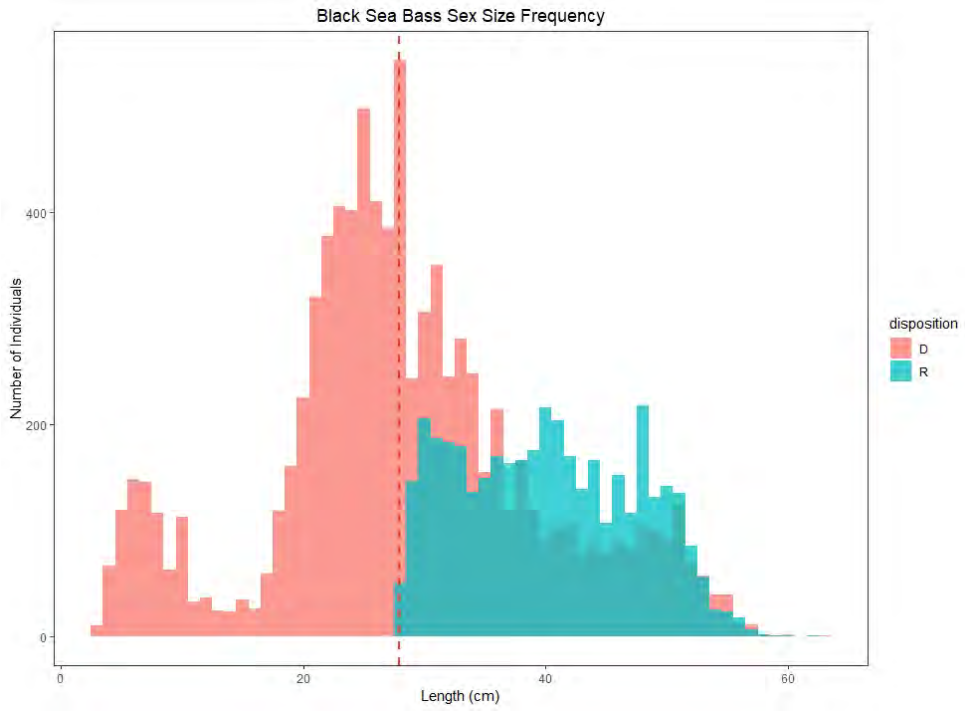

Figure 1. Size spectra of black sea bass sampled by the Research Fleet from November 30, 2016 to June 1, 2019. Red bars indicate discarded (D) fish. Blue bars indicate retained (R) fish. Red-dashed line represents the Rhode Island minimum legal size of 11 inches (27.94 cm).

When comparing gear selectivity between the different gear types represented within the Research Fleet, trends between discarded and retained black sea bass sizes are apparent (Figure 2 and 3). Trawl, lobster pot, and fish pot generally exhibited similarly, highly variable,

size selectivity and accounted for the largest ranges of size interaction with black sea bass. Commercial rod and reel and charter vessels exhibited nearly as wide a range of size interaction with black sea bass as the previously mentioned three gear types, however did not interact with the smallest of size classes of black sea bass. Gillnet appears to be in a distinct grouping of its own and exhibits the highest selectivity amongst all represented gear types as well as interacting with the largest size classes of black sea bass exclusively. These trends which have become apparent from just the first funding year of sampling suggest there are gear specific size selectivity occurring in the black sea bass fisheries in the SNE/MAB regions. Further, the apparent trends between gear types support the decision to focus Research Fleet expansion on the non-trawl fishery as non-trawl gear types have already begun to show distinct selectivity trends from one another. The proposed project will continue to track these trends as the time series builds with subsequent years of sampling. This type of information could have important ramifications to the stock assessment as it could help inform the selection of fleets modeled within the assessment.

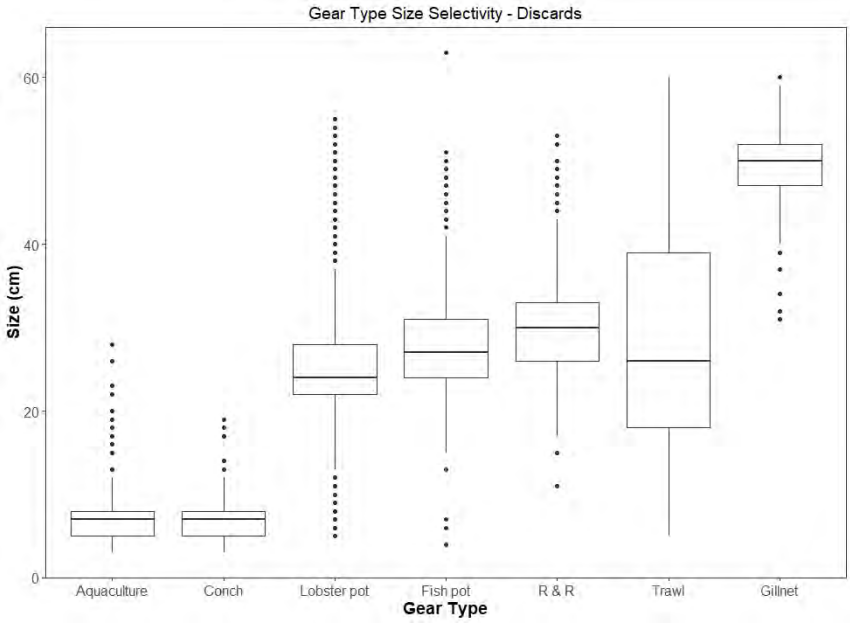

Figure 2. Size selectivity of discarded black sea bass sampled by each gear type represented within the research fleet. From left to right, gear types are as follow; oyster aquaculture, conch pot, lobster pot, fish pot, rod and reel (commercial and charter), trawl, and gillnet.

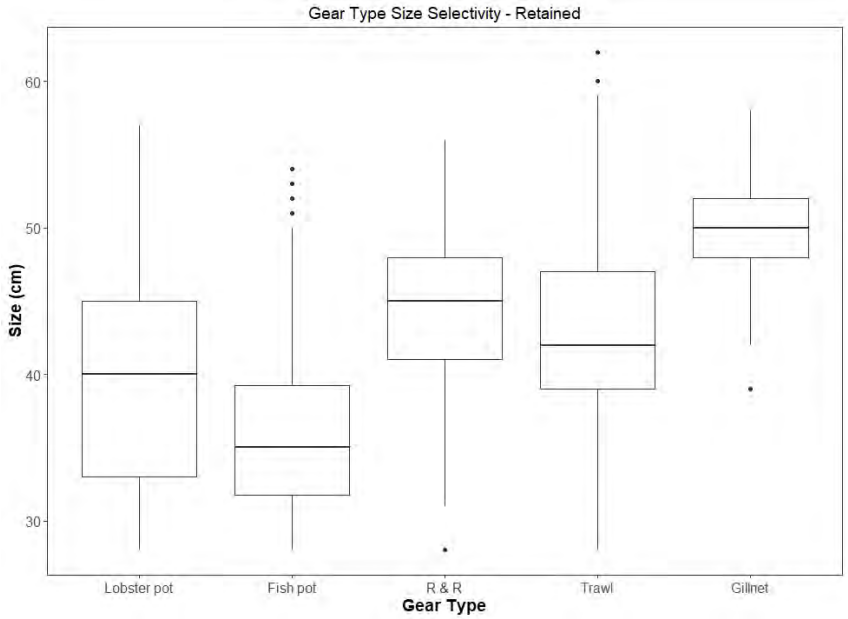

Figure 3. Size range of retained black sea bass sampled by each gear type represented within the research fleet. From left to right, gear types are as follow; lobster pot, fish pot, rod and reel (commercial and charter), trawl, and gillnet. Note, aquaculture and conch pot gear types are absent from this graph because no black sea bass have been retained from either of those two gear types.

During the fourth year of the project, the project team will focus primarily on the refinement of analyses previously established for application to the stock assessment including: size spectra, sex ratios, catch per unit effort (CPUE), black sea bass retention and discard structure, seasonal activity of Research Fleet, and gear selectivity. Specifically, internal data analysis questions proposed during the past funded year of the project were: 1) Are there spatial (latitudinal) patterns in the length frequency or sex ratio of black sea bass?, 2) Are there seasonal differences in black sea bass catch composition (length frequency and sex ratio)?, 3) Are different life stages of black sea bass apparent in commercial fisheries catch in specific areas or at different times of year?, and 4) What is the selectivity (min, max, mean length) of different gear types (trawl, fish pots, gillnet, lobster/crab pot, rod and reel) that harvest black sea bass? Year-4 analyses will build upon the initial results from exploration of these questions. The establishment of gear type selectivity regressions comparing different gear types as well as multiple years of Research Fleet data will serve as the primary and direct input to the next black sea bass stock assessment.

The open-source statistical software package R will be used for data analysis. Length frequencies, black sea bass length gear selectivity, spatial and seasonal sex ratio regression models, and catch rate patterns will all be updated based on the protocols established in prior years of the project to further analyze seasonal trends as well as compare data from year to year.

In addition to further addressing the aforementioned research questions, the project team will also explore novel fishery dependent indices for the black sea bass stock assessment, as time permits. Building upon the analytical techniques established in prior years, data will continue to be standardized from the disparate gear types represented within the Research Fleet through generalized linear modeling approaches and/or hierarchical modeling techniques to allow for more direct communication into the black sea bass stock assessment.

Outreach and Education

Education, outreach, and ongoing communication are considered to be an integral part of the overall work plan for the proposed project. These components of the proposed project support the goal of fostering collaborative working partnerships among scientists, managers, and members of the fishing industry through all phases of research, from the fine-tuning of sampling strategies through the analysis and sharing of data and results.

The primary outreach/education goal of the proposed project is to share and disseminate information on two topics: 1) the lessons learned from the collaborative Research Fleet approach for fishery dependent data collection; and 2) the findings from analysis of the black sea bass catch, bycatch, and biological databases derived from this project.

A secondary goal is to share and disseminate project information to a variety of interest groups including: 1) commercial fishing industry members; 2) fisheries scientists and managers based in various state, regional, and federal agencies; 3) outside researchers who will utilize this information to inform their own research efforts in the region; and 4) other interested parties who are seeking information on new data collection/ocean monitoring techniques and approaches, and/or trends in black sea bass abundance and distribution in the SNE/MAB region.

There are a number of work elements embedded in the project work plan that are aimed at specifically addressing outreach and education goals, including:

1. Ongoing communication with project team members, including the members of the Black Sea Bass Research Fleet through personal meetings, group meetings, e-mail briefings, and phone conversations. Through prior funding years, annual Research Fleet meetings were held. The CFRF hosts all Research Fleet members, PIs, project staff, and steering committee members to receive feedback on the data collection process and present trends and analyses of the past years' worth of data. These Fleet meetings have been invaluable for receiving project feedback and as well as forming relationships between the fishing industry, managers, and scientists. The same annual Fleet meetings held through previous years of funding will be continued during the proposed project.
2. Periodic project briefings to key individuals outside the project team, including ASMFC, MAFMC, NMFS NEFSC, and NMFS GARFO staff, members of the black sea bass fishing fleet, and interested others through direct e-mail/mail correspondence, including periodic newsletters describing the project progress.

3. Regular postings of project information on the CFRF website, including descriptions of the fishermen involved, the equipment being used, the type of data being collected, and findings, as this information becomes available over the course of the project (www.cfrfoundation.org/black-sea-bass-research-fleet).
4. Organization of a research session at the end of the project involving managers, scientists, and members of the commercial and recreational fishing industries to share project findings and discuss experiences and results.
5. Issuance and distribution of a written summary report.
6. Participation in professional conference(s) to share project methods, findings, and conclusions.

Geographic Location:

At-sea sampling will be conducted within the northern Atlantic black sea bass stock area (SNE/MAB region), potentially including statistical areas 521 to 631. The final distribution of at-sea data collection will depend on the commercial fishing locations selected by participant fishermen. Project administration, and data management and analyses will be conducted at the Commercial Fisheries Research Foundation office in Kingston, Rhode Island and the RI DEM marine laboratory in Jamestown, Rhode Island.

Milestone Schedule:

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13-15
Research Fleet data collection & open call and select 2 new F/Vs	Research Fleet data collection & training of new F/Vs	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Final report writing and submission of report and all project data to ACCSP
Send extended EFP to Fleet	Revise EFP for added F/Vs			Apply for RI DEM Permits								
Maintain sampling gear and buy new sets	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear & collect after sampling	
Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	
Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	
		Quarterly reports to Fleet Members			Quarterly reports to Fleet Members			Quarterly reports to Fleet Members			Quarterly reports to Fleet Members	
				Submit data to ACCSP		Write progress report and submit to ACCSP				Submit data to ACCSP		
Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	

Project History Table:

Funding Year	Title	Original Project Dates	Funded Amount	Total Project Cost	Description
2016	Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach	September 1, 2016 – August 31, 2018	$137,827.00	$203,072.00	Piloted the research fleet technique for collection of fishery dependent catch, effort, bycatch, and biological data in the multi-gear black sea bass fishery
2018	Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach	May 1, 2018 – May 31, 2019	$135,648.00	$187,949.00	Maintained the research fleet fishery dependent data collection of catch, effort, bycatch, and biological data in black sea bass fishery and expanded Research Fleet by two fishing vessels
2019	Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach	June 1, 2019 – May 31, 2020	$132,749.00	$169,033.00	Maintained the Research Fleet data collection of catch, effort, bycatch, and biological data in the black sea bass fishery in the SNE/MAB region and expanded the Research Fleet by two fishing vessels

Project Accomplishment Measurement (Metrics and Achieved Goals):

Project Goal		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Metric 6	Metric 7	Metric 8	Metric 9	Metric 10
Collection & communication of biological and fishery data for BSB	*Year 4 Proposal Metrics*	Upkeep of ODD, CFRF server, and MySQL database	Use of ODD by Research Fleet Members	Support of 12 Research Fleet Members and addition of two new Members	Twelve months of biological BSB and fishery data collection by Fleet	Collection of up to 25,200 BSB records by Research Fleet	Collection of 504 records of BSB catch and discard rates over 12 months	Collection of 504 records of BSB fishing location, depth, habitat, gear type, effort, and catch over 12 months	Transfer of collected BSB biological and fishery data into MySQL database	Compilation of and distribution of all quarterly reports on a three-month basis to Fleet Members	Auditing, formatting, and submission of BSB biosamples and fishery data to ACCSP and other managers
	Year 3 Proposal Metrics	Maintenance of BSB data collection app, wireless data transfer, and SQL database	Use of BSB data collection app by participant fishermen	Maintenance of ten existing Research Fleet participants and addition of two new participants	Twelve months of biological fishery data collection for BSB	Collection of 21,600 measurements of BSB sex and length over twelve months	Collection of 432 records of BSB catch and discard rates over 12 months	Collection of 432 records of BSB fishing location, depth, habitat, gear type, effort, and catch over 12 months	Compilation of BSB biological and fishery data into SQL database	Compilation and distribution of quarterly data reports to Research Fleet participants	Formatting and distribution of BSB biosamples data to ACCSP, ASMFC, and MAFMC
	Year 2 Proposal Metrics	Maintenance of BSB data collection app, wireless data transfer, and SQL database	Use of BSB data collection app by participant fishermen	Maintenance of eight existing Research Fleet participants and addition of two new participants	Twelve months of biological fishery data collection for BSB	Collection of `18,000 measurements of BSB sex and length over twelve months	Collection of `360 records of BSB catch and discard rates over 12 months	Collection of `360 records of BSB fishing location, depth, habitat, gear type, effort, and catch over 12 months	Compilation of BSB biological and fishery data into SQL database	Compilation and distribution of quarterly data reports to Research Fleet participants	Formatting and distribution of BSB biosamples data to ACCSP, ASMFC, and MAFMC
	Year 1 Achievement	Development of the On Deck Data app for BSB data collection. Server processes, and SQL database	Piloting of the BSB data collection app by participant fishermen	Solicitation, selection, and training of eight BSB Research Fleet participants	17 months of biological and fishery data collection for BSB (as of June 2018)	Collection of 8,439 measurements of BSB length and sex over the 17 months	Collection of 643 records of BSB catch and discard rates	Collection of 643 records of BSB fishing location, depth, habitat type, gear type, effort, and catch	Compilation of all BSB data into SQL database (bsb_fleet, bsb_session, bsb_sample, bsb_random tables)	Compilation and distribution if quarterly data reports to Research Fleet participants	Formatting and distribution of BSB biosamples data to ACCSP in June and December 2017
Reduce uncertainties in BSB stock assessment	*Year 4 Proposal Metrics*	Increase number of gear replicates in non-trawl fishery	Provide BSB data from areas and times of year currently under sampled	Distribution of project data to managing stakeholders at federal, region, and local level	Utilization of data by BSB stock assessment working group	Explore fishery dependent index of abundance for BSB using Fleet data					
	Year 3 Proposal Metrics	Provide BSB data from areas, habitats, and times of year not covered by standard survey techniques	Distribution of BSB data to ACCSP, ASMFC, MAFMC, and NEFSC	Distribution of data and updated project findings to BSB stock assessment working group	Utilization of data by BSB stock assessment working group	Exploration of fishery dependent indices of abundance for BSB					
	Year 2 Proposal Metrics	Provide BSB data from areas, habitats, and times of year not covered by standard survey techniques	Distribution of BSB data to ACCSP, ASMFC, MAFMC, and NEFSC	Distribution of data and project findings to BSB stock assessment working group	Utilization of data by BSB stock assessment working group	Exploration of fishery dependent indices of abundance for BSB					

	Year 1 Achievement	Provided BSB data from months, areas, and habitats not sampled by existing surveys	Distributions of BSB data to ACCSP in June 2017 and December 2017	Contact with BSB assessment scientists (Gary Shepard NEFSC and Steve Cadrin SMAST)							
Asses spatial & temporal patterns in BSB fishery and catch	*Year 4 Proposal Metrics*	Analyze catch trends between years, gear types, and locations of Fleet sampling	Monitor discard structure between years within Fleet sampling	Monitor size and sex structure of retained BSB between sampling years	Monitor trends in length frequencies within gear types, locations and times of year	Add additional years of data to explore inter annual differences in length frequency	Update of BSB sex ratio logistic regression models from prior years	Develop manuscript for publication utilizing biological or fishery data from Fleet			
	Year 3 Proposal Metrics	Analyze trends in CPUE between years for gear types and locations	Analyze trends in discard rates between years based on gear types and locations	Monitor size and sex distributions of retained BSB catches between years	Update of BSB length frequencies by gear type, month, and location	Compare inter annual differences in Kolmogorov-Smirnov tests of BSB length frequency by gear type, month, and location	Update of BSB sex ratio logistic regression models from Year 2	Update of BSB catch rates and standardized CPUE GLMs established during Year 2	Publication of peer reviewed paper		
	Year 2 Proposal Metrics	Calculation of CPUE for different gear types, times of year, and locations	Calculation of discard rates for different gear types, times of year, and locations	Calculation of size and sex distributions of retained BSB catch	Construction of BSB length frequency by gear type, month, and location	Completion of Kolmogorov-Smirnov tests of BSB length frequency by gear type, month, and location	Completion of logistic regression models of BSB sex ratios by gear type, time of year, and location	Developments of GLMs of BSB catch rates and standardized CPUE	Publication of peer reviewed paper		
	Year 1 Achievement	Preliminary data analysis of BSB length and sex data	Development of size spectra for discarded and retained BSB	Creation Research Fleet sampling coverage maps	Preliminary exploration of spatial and temporal trends in BSB size spectra						
Demonstrate model approach for cost efficient fishery dependent data collection	*Year 4 Proposal Metrics*	Usage of collaborative approach established in previous years	Presentations of Fleet design at scientific conferences	Develop manuscript to validate Fleet design through peer review							
	Year 3 Proposal Metrics	Utilization of modern technology to collect biological data during routine fishing practices	Approval of project approach, protocols, and outcomes by BSB scientists, managers, and fishermen	Application of data to stock assessment and resource management	Maintenance of contact between all project partners, participants, and end users	Development of working partnerships between participating fishermen, scientists, and managers	Completion of projects tasks within project budget	Approval of project progress from steering committee members			
	Year 2 Proposal Metrics	Utilization of modern technology to collect biological data during routine fishing practices	Approval of project approach, protocols, and outcomes by BSB scientists, managers, and fishermen	Application of data to stock assessment and resource management	Maintenance of contact between all project partners, participants, and end users	Development of working partnerships between participating fishermen, scientists, and managers	Completion of projects tasks within project budget	Approval of project progress from steering committee members			
	Year 1 Achievement	Successful utilization of modern technology to collect biological BSB data during routine fishing practices	Approval of project approach and protocols by BSB scientists, managers, and industry (Project Steering Committee)	Contact with BSB stock assessment scientists (Gary Shepard NEFSC, Steve Cadrin SMAST)	Maintenance of contact between all project partners, participants, and end users	Development of working partnerships between participating fishermen, scientists, and managers	On track to complete projects tasks within project budget	Establishment of a project steering committee consisting of state and federal fisheries scientists and managers and members of the fishing industry	Development of project website, media articles, and outreach materials		

Cost Summary and Funding Transition Plan:

This proposal represents a 0.5% ($652) cost reduction from Year 3's proposal of a similar scope. The drop is due primarily to a reduction in the fishing vessel sampling costs associated with weather, vessel maintenance, and seasonal black sea bass distribution. CFRF personnel and Fringe Benefits have been updated to current staff expenses. These changes are reflected in the CFRF sub-contract (section F of the Budget Table).

The CFRF and RI DEM have pursued funding from a variety of sources for the Black Sea Bass Research Fleet and will continue to do so to ensure the longevity and utility of the data collected to the management of this data poor species. Presently, the CFRF has secured partial funding from the Sarah K. de Coizart Tenth Perpetual Charitable Trust to partially support additional fishing vessels operating in the Research Fleet as well as to undertake laboratory sampling of black sea bass from the federal water, winter fishery. These recently awarded funds represent a willingness for the CFRF and RI DEM to search for external sources of funds to support the Research Fleet as well as an agreement by the management representatives on the steering committee and the industry collaborators that the project addresses important issues.

The CFRF no longer has internal funds to cover research projects or issue RFPs, as the multi-year NOAA awards that enabled the CFRF to operate such programs expired in December 2015. Since then, the CFRF has relied exclusively on competitive research awards to support all of its operations, collaborations, and research projects.

Budget Table:

	Year 4 (Maintenance)		
	Proposal	**In-Kind**	**Total**
TOTAL	**$ 132,097**	**$ 25,638**	**$ 157,735**
% Contribution by Funding Source	**84%**	**16%**	**100%**
Object Class Category	Proposal	In-Kind	Total
A Personnel			
- RI DEM - Jason McNamee		$ 5,347	$ 5,347
- RI DEM - Contractor		$ 4,547	$ 4,547
- RI Dem - Intern		$ 2,500	$ 2,500
Total RI DEM Personnel Costs	$ -	$ 12,394	$ 12,394
B Fringe Benefits	$ -	$ 4,214	$ 4,214
C Travel	$ -	$ -	$ -
D Equipment	$ -	$ -	$ -
E Supplies	$ -	$ -	$ -
F Contractual - CFRF			
a. Personnel			
- Executive Director - Anna Mercer	$ 9,350		$ 9,350
- Research Scientist - Thomas Heimann	$ 28,600		$ 28,600
- Business Manager	$ 4,840		$ 4,840
Total CFRF Personnel Costs	$ 42,790	$ -	$ 42,790
b. Fringe Benefits	$ 3,851	$ -	$ 3,851
c. Travel	$ 3,000	$ -	$ 3,000
d. Equipment	$ -	$ -	$ -
e. Supplies			
- Research Supplies	$ 2,000		$ 2,000
- Office Supplies	$ 1,000		$ 1,000
Total Supplies	$ 3,000	$ -	$ 3,000
f. Contractual			
- Programmer for On-Deck Data database	$ 2,000	$ -	$ 2,000
Total Contractual	$ 2,000	$ -	$ 2,000
g. Construction	$ -	$ -	$ -
h.Other Costs			
- Fishing Vessel Stipends	$ 55,440	$ -	$ 55,440
- Executive Assistance	$ -	$ 5,000	$ 5,000
Total Other Costs	$ 55,440	$ 5,000	$ 60,440
i. Total Direct Charges	$ 110,081	$ 5,000	$ 115,081
j. Indirect Charges			
- Proposed at 20% of CFRF Direct Charges	$ 22,016	$ 1,000	$ 23,016
- Approved Rate Differential proposed as In-Kind	$ -	$ 165	$ 165
Total Indirect Charges	$ 22,016	$ 1,165	$ 23,181
k. Total CFRF Costs	$ 132,097	$ 6,165	$ 138,262
G Construction	$ -	$ -	$ -
H Other Costs	$ -	$ -	$ -
I Total Direct Costs	$ 132,097	$ 22,773	$ 154,870
J Indirect Charges	$ -	$ 2,865	$ 2,865
K Total Proposal Costs	$ 132,097	$ 25,638	$ 157,735

Budget Justification – Year 4 (Maintenance Project, Proposed):

The total proposed federal budget requested by the Rhode Island Department of Environmental Management (RI DEM) and the Commercial Fisheries Research Foundation (CFRF) for all components of the work is $132,097 for 12 months. The voluntary non-federal match funds provided by the RI DEM and CFRF is $25,638. The total proposal value is $157,735. The proposed timeframe is August 1, 2020 to July 31, 2021.

The proposed budget justification for object class category items include the following:

A. Personnel: $12,394 In-Kind (RI DEM). RI DEM staff will play an advisory/support role in the proposed project, providing guidance on research protocols, assisting with statistical analyses as needed, exploring gear-specific indices of abundance and alternative modeling approaches as time permits, support in the procurement and storage of samples, and communicating project results to fishery governance system via existing participation in technical committees and working groups.

B. Fringe Benefits: $4,214 In-Kind (RI DEM). Fringe costs are charged on RI DEM FTEs only.
RIDEM Annual Fringe benefit rates are:

Retirement 24%	Deferred Compensation 0.4%
FICA 6.2%	Medicare 1.45%
Health care $21,937/year	Dental $1,132/year
Vision Mercer $165/year	Assessed Fringe 4.25%
Retiree Health 6.75%	

C. Travel: There are no direct travel charges.

D. Equipment: There are no direct equipment charges.

E. Supplies: There are no direct supplies charges.

F. Contractual: The CFRF will conduct most of the work involved in this project, with administrative and technical assistance provided by RI DEM as In-Kind. These services will be charged to the grant as contractual costs and are outlined below to provide more detail as to how the funding will be used:

a) Personnel: $42,790 federal. This includes the wages for the following CFRF personnel for time spent working directly on the project:

1. Executive Director – Proposed at 10% of time for 12 months = $9,350
2. Research Scientist – Proposed at 50% of time for 12 months = $28,600.

   The CFRF Research Scientist is the primary individual responsible for fleet organization, maintenance, and support, as well as data management, communication, and analysis.

3. Business Manager – Proposed at 10% of time for 12 months = $4,840

b) Fringe Benefits: $3,851 federal. This includes a percentage for payroll taxes and worker's compensation insurance prorated in accordance with % of salary paid from program. Benefits proposed at 9% of personnel costs based on 2019 benefits and historical analysis.

c) Travel: $3,000 federal. Travel costs include travel support (mileage) for project staff to provide support at docks to Research Fleet participants, to participate in meetings with the Research Fleet, stock assessment scientists, and managers, and to participate in one industry/professional conference for two personnel to share and disseminate project methods, findings, and conclusions.

d) Equipment: $0. There will be no equipment costs on this project.

e) Supplies: $3,000 federal. This category includes research supplies and project office supplies.

1. Research Supplies: $2,000 - Costs of tablets, waterproof cases, stylus & fish measuring board. Proposed at $500 per set x 4 vessels (2 new vessels and 2 existing fleet vessels) for the duration of the project. The two sets of sampling equipment for existing Research Fleet vessels are replacements for equipment that is damaged.
2. Office Supplies: $1,000 – Costs to cover database storage and website fees ($35/month), project office and meeting supplies, etc.

f) Contractual: $2,000 federal. This includes costs associated with:

1. Programmer ($2,000 - federal) - CFRF hiring an outside computer programmer to maintain the On Deck Data application and database coding for data relay and storage, to address any issues that arise, and to update the app to maintain functionality.

g) Construction: There are no construction costs.

h) Other Costs: $55,440 federal + $5,000 match = $60,440. This includes:

1. Fishing vessel stipends ($55,440 - federal) for 14 vessels for 12 months at $600 per month. A fleet of 14 vessels will be utilized each month to obtain the proposed biological samples. The total stipend is computed at 55% due to fluctuations in vessel sampling associated with weather, vessel maintenance, and seasonal black sea bass distribution.
2. Executive Assistance ($5,000 - in-kind match) covers the administration assistance for the project (including, review of fleet applications and invoices, work agreements, progress/final reports) by the CFRF President and Vice President, who provide these services at no cost. Costs proposed at $250 per day for 10 days for 2 people over the duration of the project.

i) Total Direct Charges: $110,081 federal + $5,000 in-kind = $115,081 total. This is the total direct charges for cost items a-h.

j) Indirect Charges: $22,016 federal + $1,165 in-kind = $23,181 total. Indirect general and administrative costs are calculated as 20.0% of federally requested Total Direct Charges ($110,081). Indirect general and administrative costs are used to cover costs associated with the general operations of the CFRF including accounting services, legal services, maintenance of office space, liability insurance, payroll fees, phone/fax lines, internet service, board member participation, etc. The CFRF's FY2019 Indirect Cost Rate Proposal dated 12/21/18 is for 20.15% based on FY2018 actual costs. The 0.15% indirect cost rate differential is a voluntary nonfederal match by CFRF. CFRF has historically averaged around 20% of Indirect G&A which is proposed for this project.

k) Total Proposal Costs: $132,097 Federal + $6,165 In-Kind = $138,262 Total.

G. Construction. There are no construction costs on this grant

H. Other Costs. There are no other costs associated with this grant.

I. Total Direct Charges: $132,097 Federal + $22,773 In-Kind = $154,870 total. This is the total direct charges for cost items A-H.

J. Indirect Charges: $2,865 In-Kind (RIDEM). Indirect charges are charged on RIDEM Salaries and Fringe Benefits. The Negotiated Indirect Cost Rate for FY2018 is 17.25%. (Total personnel and fringe is $16,608 x 17.25% = $2,865.)

K. Total Proposal Costs: $132,097 Federal + $25,638 In-Kind = $157,735 Total.

Budget Justification – Year 3 (Maintenance Project, Funded):

The total proposed federal budget requested by the Rhode Island Department of Environmental Management (RI DEM) and the Commercial Fisheries Research Foundation (CFRF) for all components of the work is $132,749 for 12 months. The voluntary non-federal match funds provided by the RI DEM and CFRF is $36,284. The total proposal value is $169,033. The proposed timeframe is June 1, 2019 to May 31, 2020.

The proposed budget justification for object class category items include the following:

L. Personnel: $12,394 In-Kind (RI DEM). RI DEM staff will play an advisory/support role in the proposed project, providing guidance on research protocols, assisting with statistical analyses as needed, exploring gear-specific indices of abundance and alternative modeling approaches as time permits, support in the procurement and storage of samples, and communicating project results to fishery governance system via existing participation in technical committees and working groups.

M. Fringe Benefits: $4,214 In-Kind (RI DEM). Fringe costs are charged on RI DEM FTEs only.

RIDEM Annual Fringe benefit rates are:

Retirement 24%	Deferred Compensation 0.4%
FICA 6.2%	Medicare 1.45%
Health care $21,937/year	Dental $1,132/year
Vision Mercer $165/year	Assessed Fringe 4.25%
Retiree Health 6.75%	

N. Travel: There are no direct travel charges.

O. Equipment: There are no direct equipment charges.

P. Supplies: There are no direct supplies charges.

Q. Contractual: The CFRF will conduct most of the work involved in this project, with administrative and technical assistance provided by RI DEM as In-Kind. These services will be charged to the grant as contractual costs and are outlined below to provide more detail as to how the funding will be used:

l) Personnel: $42,240 federal. This includes the wages for the following CFRF personnel for time spent working directly on the project:

1. Executive Director – Proposed at 10% of time for 12 months = $9,240
2. Research Scientist – Proposed at 50% of time for 12 months = $28,600.

   The CFRF Research Scientist is the primary individual responsible for fleet organization, maintenance, and support, as well as data management, communication, and analysis.
3. Business Manager – Proposed at 10% of time for 12 months = $4,400

m) Fringe Benefits: $4,224 federal. This includes a percentage for payroll taxes and worker's compensation insurance prorated in accordance with % of salary paid from program. Benefits proposed at 10% of personnel costs based on historical analysis.

n) Travel: $3,000 federal. Travel costs include travel support (mileage) for project staff to provide support at docks to Research Fleet participants, to participate in meetings with the Research Fleet, stock assessment scientists, and managers, and to participate in one industry/professional conference for two personnel to share and disseminate project methods, findings, and conclusions.

o) Equipment: $0. There will be no equipment costs on this project.

p) Supplies: $3,000 federal. This category includes research supplies and project office supplies.

1. Research Supplies: $2,000 - Costs of tablets, waterproof cases, stylus & fish measuring board. Proposed at $500 per set x 4 vessels (2 new vessels and 2 existing fleet vessels) for the duration of the project. The two sets of sampling equipment for existing Research Fleet vessels are replacements for equipment that is damaged.
2. Office Supplies: $1,000 – Costs to cover database storage and website fees ($25/month), project office and meeting supplies, etc.

q) Contractual: $2,000 federal. This includes costs associated with:

1. Programmer ($2,000 - federal) - CFRF hiring an outside computer programmer to maintain the On Deck Data application and database coding for data relay and storage, to address any issues that arise, and to update the app to maintain functionality.

r) Construction: There are no construction costs.

s) Other Costs: $56,160 federal + $5,000 match = $61,160. This includes:
1. Fishing vessel stipends (federal) for 12 vessels for 12 months at $600 per month. A fleet of 12 vessels will be utilized each month to obtain the proposed biological samples. The total stipend is computed at 65% due to fluctuations in vessel sampling associated with weather, vessel maintenance, and seasonal black sea bass distribution.
2. Executive Assistance (in-kind match) covers the administration assistance for the project (including, review of fleet applications and invoices, work agreements, progress/final reports) by the CFRF President and Vice President, who provide these services at no cost. Costs proposed at $250 per day for 10 days for 2 people over the duration of the project.

t) Total Direct Charges: $110,624 federal + $5,000 in-kind = $115,624 total. This is the total direct charges for cost items a-h.

u) Indirect Charges: $22,125 federal + $11,577 in-kind = $33,702 total. Indirect general and administrative costs are calculated as 20.0% of federally requested Total Direct Charges ($110,624). Indirect general and administrative costs are used to cover costs associated with the general operations of the CFRF including accounting services, legal services, maintenance of office space, liability insurance, payroll fees, phone/fax lines, internet service, board member participation, etc. The CFRF's FY2018 Indirect Cost Rate Agreement dated 1/18/2018 is for 29.32% based on FY2017 actual costs. The 9.32% indirect cost rate differential is a voluntary nonfederal match by CFRF. CFRF has historically averaged around 20% of Indirect G&A which is proposed for this project.

v) Total Proposal Costs: $132,749 Federal + $16,577 In-Kind = $149,326 Total.

R. Construction. There are no construction costs on this grant

S. Other Costs. There are no other costs associated with this grant.

T. Total Direct Charges: $132,749 Federal + $49,202 In-Kind = $184,850 total. This is the total direct charges for cost items A-H.

U. Indirect Charges: $3,099 In-Kind (RIDEM). Indirect charges are charged on RIDEM Salaries only. The Negotiated Indirect Cost Rate for FY2017 is 25%. (Total personnel is $12,394 x 25% = $3,099.)

V. Total Proposal Costs: $132,749 Federal + $36,284 In-Kind = $169,033 Total.

Summary of Proposal for Ranking Purposes

Type: Maintenance (Year 4)

Primary Program Priorities:

This project follows fishery-dependent sampling protocols to collect black sea bass catch and effort, biological, and bycatch data from the SNE/MAB region. The percentage of project effort devoted to each of these modules is as follows: 40% Biological, 30% Catch and Effort, 30% Bycatch. Thus, Biological sampling is the primary program priority. The estimated project effort devoted to biological sampling reflects the collection of black sea bass length and sex data by participant vessels during three trips per month for twelve months (approximately 504 trips and 25,200 black sea bass total).

Project Quality Factors:

Multi-Partner/Regional impact including broad applications:

The results of the proposed project have regional impacts and broad applications, as black sea bass are expanding to inhabit, and potentially be harvested from, the majority of the US east coast. Furthermore, the social and economic implications of this work could be extensive, as project data contributes to the improvement of the northern Atlantic black sea bass stock assessment and potentially the creation of new economic opportunities. From a collaboration perspective, this project provides a unique opportunity for the RI DEM and CFRF to maintain a fisherman-based research fleet to address ACCSP priorities, drawing upon networks of partners in industry, fisheries research, and management. This project will help RI DEM and CFRF demonstrate that, with support from ACCSP, they have the ability to bring stakeholders together, outside of a contentious management environment, to collect, communicate, and analyze critically needed data to address the data needs of the data poor northern Atlantic black sea bass.

Greater than year 2 contains funding transition plan and justification for continuance:

This proposal is for a one-year study to continue an industry-based research fleet approach to biological, catch, and bycatch sampling for northern Atlantic black sea bass. The project has been successful through the first two years of funded work and has sampled over 14,000 black sea bass. Year 3 funding is expected to result in increased sampling rates and coverage as the Research Fleet will expand by two vessels while reducing overall costs. An additional year of funding would bolster the first year-round, multi-year database for this biologically data poor species. Ultimately, long term maintenance of this project will provide invaluable data to the ACCSP, ASMFC, and MAFMC, and improve the assessment and management of the northern Atlantic black sea bass resource. The CFRF and RI DEM have continued to apply for funding for this project through external sources and have already secured supplemental funding to partially support the Research Fleet as described above. Obtaining long-term funding for the Research Fleet is a top and ongoing priority for project PIs and staff.

In-kind contribution: The total project cost is $157,735. In-kind contributions provided by RI DEM and CFRF total $25,638. Thus, RI DEM and CFRF will provide 16% of total project costs.

Improvement in data quality/quantity/timeliness:
The proposed project addresses the critical need to improve the quality, quantity, and timeliness of biological, catch and effort, and bycatch data for the northern Atlantic black sea bass, which the ACCSP Biological Review Panel identified as having inadequate biological sampling and high stakeholder priority, resulting in the highest-ranking priority score. Ultimately, the proposed project will help to meet ACCSP's mission of improving data quality for fisheries science by contributing to a single data management system that will meet the needs of fishery managers, scientists, and fishermen.

Potential secondary modules as by-products:
The potential secondary modules are catch and effort (30%) and bycatch sampling (30%). The estimated effort devoted to the catch and effort module is based upon sampling during the roughly 156 days of open black sea bass fishing season in Rhode Island in 2016 (42% of the year). The project effort allocated to the bycatch module reflects sampling efforts conducted while the commercial black sea bass fishing season is closed and while participant vessels are targeting other species but still interacting with black sea bass as bycatch.

Impact on stock assessment:
The northern Atlantic black sea bass stock assessment was recently approved for management (December 2016), but the new model requires spatially and temporally comprehensive data that is currently lacking. Thus, the proposed project aims to provide critically needed biological data from retained and discarded black sea bass, and fishery

data from a variety of gear types to continue to evolve and improve the black sea bass stock assessment. The project team will also explore novel fishery dependent indices for the black sea bass stock assessment, as time permits.

The Research Fleet collected data has the potential to directly improve the federal stock assessment in a number of ways including reducing the uncertainty in recruitment rates, gear type specific selectivity, and gear (and location) specific discard structure.

Currently, the indices of abundance relied upon in the black sea bass stock assessment come primarily from the NEFSC winter and spring trawl survey, Northeast Area Monitoring and Assessment Program (NEAMAP) survey trawls, recreational catch per effort, and is supplemented with various state trawl survey indices of abundance (NEFSC 2017). The utility of the Research Fleet data in this respect is to inform the management about catch and discard structure from a variety of gear types. Whereas the stock assessment currently only delineates between trawl and non-trawl gear types, after building a multiple-year time-series the Research Fleet data could potentially be utilized to create a variety of CPUE indices of abundance (trawl, gillnet, lobster pot, rod & reel, fish pot, and multigear). Further, the Research Fleet data has the potential to be directly used to create a discard characterization for the northern stock sub-unit and reduce uncertainties in the annual total fishery removals. Finally, due to the nature of the Research Fleet being comprised entirely of commercial and recreational fishing vessels, from a variety of gear types, the data collected is spatially and temporally expansive across the northern black sea bass sub unit in locations and times of year not covered by any of the federal or state survey programs utilized in the stock assessment. Therefore, there is the potential to reduce the uncertainties in recruitment rates within the northern sub unit as the Research Fleet is able to record presence and absences of juvenile and young of the year black sea bass in entirely unsampled locations and times of year.

Innovative:
The innovative and cost-effective nature of the proposed project, which relies upon collaboration between a Program partner and the fishing industry, can provide an opportunity for fishermen to constructively engage in the data collection process for black sea bass and provide a model for future data collection efforts in other regions and fisheries. In addition to demonstrating a novel sampling approach, the proposed project also leverages modern technology to improve the efficiency of data collection and communication.

Properly Prepared:
This proposal follows the guidelines provided in the ACCSP Funding Decision Document.

Principal Investigators:

The co-Principal Investigators of the proposed project are: Jason McNamee (Chief, RI DEM Marine Fisheries), Christopher Glass (Executive Director, CFRF), and Thomas Heimann (Research Associate, CFRF). Curriculum vitae are provided in the following pages.

Jason McNamee will play an advisory/support role in this project, given his existing commitments at the RI DEM Division of Marine Fisheries. More specifically, Jason will provide advice for sampling protocols, act as a liaison to the existing black sea bass assessment/management infrastructure and assist with data analysis as his time permits (data review/analysis will primarily be the role of the CFRF Research Associate). In his role as both a technical committee member, and having been a member of the contracted stock assessment team for the MAFMC, Jason McNamee will be able to help the project with capturing the correct information and making sure this information is formatted appropriately for inclusion in future northern Atlantic black sea bass stock assessment projects.

Christopher Glass, a specialist in the study of fish behavior in relation to fishing gears, Chris Glass has a long record of conservation gear research in New England's Fisheries and fisheries worldwide. Chris has recently been appointed Executive Director of the Commercial Fisheries Research Foundation.

Prior to joining CFRF Chris served for 14 years as Director of The Northeast Consortium based at the University of New Hampshire. Prior to that he worked as Director of Marine Conservation at Manomet Center for Conservation Sciences developing innovative and selective fishing gears in collaboration with commercial fishermen with the goal of expanding fishermen's involvement in scientific data collection and application. Previously Chris worked for 14 years at The Marine Laboratory in Aberdeen, Scotland and has worked extensively on conservation engineering programs throughout Europe and North America. Chris has been a featured lecturer on sustainable fisheries topics at numerous international conferences and has published extensively in scientific journals. His education includes a B.Sc. in Marine Biology and Animal Behavior from The Queens University, Belfast and a Ph.D. from The University of Glasgow, Scotland.

Thomas Heimann, CFRF, serves as the primary individual responsible for Research Fleet maintenance and support, as well as data management, communication, and analysis. Heimann has been the primary Research Administrator for the Black Sea Bass Research Fleet since its first year of funding starting in September 2016. Heimann has gained extensive experience with the work involved in initiating and supporting an industry-based research fleet and has formed a relationship with the current Fleet Members.

Jason Earl McNamee, PhD

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Saunderstown, RI 02874
Day Phone: 401-423-1943
Email: jason.mcnamee@dem.ri.gov

WORK EXPERIENCE

RI Department of Environmental Management 12/2002 - Present
Jamestown, RI US
Chief, Marine Resource Management
Duties:

- Management of the Marine Fisheries program for the RI Dept. of Environmental Management
- Management of a staff of 20 professionals in the field of marine fisheries
- Manage operating budgets for multiple federal grants and state accounts
- Creation of grant proposals for marine fisheries projects
- Management of the Ft Wetherill Marine Laboratory building and research vessels
- Membership on several technical panels: the New England Council Science and Statistics Committee (Chair), Atlantic States Marine Fisheries Commission Menhaden (chair), Tautog (chair), and Summer Flounder/Scup/Black Sea Bass technical and stock assessment committees, Biological and Ecological Reference Point committee
- Support to the RI Marine Fisheries Council
- Creation and administration of the RI Marine Fisheries Institute
- Principal investigator (PI) on the Narragansett Bay juvenile seine survey
- PI for the Narragansett Bay Menhaden monitoring program
- Small vessel operation
- Production and review of multiple annual technical and grant completion reports
- Perform stock assessment analyses

Skills developed: Personnel and budget management experience; Supervisory experience; Good statistical and computer skills (ADMB, R, Microsoft software, ADAPT, JMP, ASAP, Oracle Discoverer, web design); Species identification experience; Experience using water quality instrumentation (DO meter, pH meter, Gas Chromatograph, Conductivity meter, flow meter); GIS Experience (Arcview and R); Field work experience; Experience in the construction and maintenance of technical research equipment; Seine, fyke net, trawl net, gillnet, fish pot, and electroshock surveying; Small boat handling (State of Rhode Island and Coast Guard certified)
Supervisor's Name: Janet Coit
Supervisor's Phone: 401-222-4700 ext. 2409

RI Department of Environmental Management 4/2000 - 12/2002
Providence US
Senior Natural Resource Specialist

Duties: My duties were to perform all tasks necessary to conduct and complete a Total Maximum Daily Load reports including field work, data collection and processing, and writing of the report. I also participated with other staff to help in the completion of their reports.

Skills developed: Good statistical and computer background (Microsoft software), Experience designing and implementing a personal research project, Experience preparing a federally approved Quality Assurance Protection Plan, Experience using water quality instrumentation (DO meter, pH meter, Conductivity meter), Experience in the collection of water samples for testing (biological and metals), GIS Experience (Arcview) Field work experience, Small boat handling (State of Rhode Island and Coast Guard certified), Experience in the preparation of a federally approved Total Maximum Daily Load report, Experience disseminating information to the public
Supervisor's Name: Christian Turner
Supervisor's Phone: unsure, no longer employed at RIDEM

EDUCATION

University of Rhode Island – Graduate School of Oceanography
Narragansett, RI US
PhD – 8/2018
Major: Biological Oceanography
Doctoral Dissertation Topic: Multispecies Statistical Catch-At-Age Model for a Mid Atlantic Species Complex

University of Connecticut
Groton, CT US
Masters of Science Degree - 6/2006
38 Semester Hours
Major: Biological Oceanography

University of Rhode Island
Kingston, RI US
Bachelor's Degree - 5/1996
136 Semester Hours
Major: Zoology

PROFESSIONAL PUBLICATIONS

- ASMFC Lobster stock assessment (2015), ASMFC Menhaden stock assessment (2004, 2012, 2015), ASMFC Tautog stock assessment (2006, 2011, 2015), NEFSC Summer flounder stock assessment (2011, 2013), NEFSC Scup stock assessment (2011, 2015), NEFSC Black sea bass stock assessment (2004, 2016), Interactions between the introduced Asian shore crab, *Hemigrapsus sanguineus*, and three common rocky intertidal littorine gastropods in Southern New England (MS Thesis).
- Taylor, DL, J McNamee, J Lake, CL Gervasi , and DG Palance. 2016. Juvenile winter flounder (*Pseudopleuronectes americanus*) and summer flounder (*Paralichthys dentatus*) utilization of Southern New England nurseries: Comparisons among estuarine, tidal river, and coastal lagoon shallow-water habitats. Estuaries and Coasts. 39:1505-1525.

CURRICULUM VITAE

CHRISTOPHER W. GLASS Ph.D.

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E-mail: cglass@cfrfoundation.org
Website: www.cfrfoundation.org

Education

B.Sc. (Hons.) First Class, (Zoology) 1979 The Queens University of Belfast, Belfast N.I.
Ph.D. 1984 (Zoology) The University of Glasgow, Glasgow, Scotland

Current Positions

- Executive Director, Commercial Fisheries Research Foundation
- Research Professor (Affiliate), Institute for the Study of Earth, Oceans and Space, Ocean Process Analysis Laboratory, University of New Hampshire, Durham NH, (2005 – present)
- Associate Director, Institute for the Study of Earth, Oceans and Space (2013 – 2016)
- Chair, EOS Promotion and Tenure Committee, (2013 – 2015)
- Director, Northeast Consortium, University of New Hampshire (2005 – 2018)
- Director, Ocean Process Analysis Laboratory (OPAL) UNH (2009 – 2013)
- Executive Committee, School of Marine Science and Ocean Engineering, University of New Hampshire (2013 – 2016)

Professional Experience

- 1998 – 2005, Director, Marine Conservation, Manomet Center for Conservation Sciences
- 1996 – 1998, Senior Fisheries Scientist, Manomet Center for Conservation Sciences
- 1993 – 1996, Senior Scientific Officer, Scottish Office, Agriculture and Fisheries Department, Aberdeen, Scotland
- 1988 – 1993, Higher Scientific Officer, Scottish Office, Agriculture and Fisheries Department, Aberdeen, Scotland
- 1984 – 1988, Scientific Officer, Scottish Office, Agriculture and Fisheries Department, Aberdeen, Scotland
- 1983 – 1984 Biological demonstrator, University of Glasgow, Medical School
- 1983 – 1983 Scientific Research Assistant, on expedition to collect and catalogue the shore fishes of Saint Helena Island, South Atlantic Ocean. Funded by National Geographic and The Royal Society.
- 1982 – 1983 Biological demonstrator, University of Glasgow, Medical School
- 1982 – 1982 Research diver, University of West Indies, Discovery Bay Marine Laboratory Jamaica

Honors and Awards

Foundation Scholarship for study in Science 1979, Queens University Belfast.
International Council for Exploration of the Sea (ICES) Service Award, 2006

Thomas E. Heimann

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Providence, RI 02906
(508)728 3401
theimann@cfrfoundation.org

EDUCATION

NORTHEASTERN UNIVERSITY **Boston, MA**
Master's: Marine Biology, Jan 2016

PRESCOTT COLLEGE **Prescott, AZ**
B.A. Marine Science, May 2013

RELATED WORK EXPERIENCE

Commercial Fisheries Research Foundation **South Kingston, RI**
Research Associate *Sep 2016 – Present*

- Research project management position working collaboratively with the Rhode Island fishing industry as well as state and federal fisheries management bodies. Responsible for management of both Black sea bass Research Fleet and Quahog Research Fleet as well as lead at-sea sampler for the Southern New England Cooperative Ventless Trap Survey. Duties include Fleet support and training, sampling protocol development, database management, data manipulation and statistical analysis, report writing, at-sea sampling on lobster vessels, grant writing, and outreach.

Northeastern University **Nahant, MA**
Diving Research Methods Teaching Assistant *Sep 2015 – Oct 2015*

- Employed by Northeastern University to be a teacher's assistant for an intensive American Academy of Underwater Sciences diving research methods course. Duties included demonstrating underwater research and diving skills, minor SCUBA gear maintenance and repair, and supervision of student divers.

Mote Marine Laboratory **Sarasota, FL**
Research Experience for Undergrads, National Science Foundation Intern *May 2012 – Jul 2012*

- Highly competitive National Science Foundation funded internship at Mote Marine Laboratory in Florida. Worked closely with a postdoctoral fellow on an independent research project in sensory biology and behavior of the common snook, a local sportfish. Project dealt specifically with the impacts of the hatchery rearing environment on the survival of released fish in the wild. Worked extensively with Microsoft Excel for data analysis.

Sheriff's Meadow Foundation **Vineyard Haven, MA**
Ecological Stewardship Intern *May 2010 – Aug 2010*

- Summer Intern position on Martha's Vineyard. Responsibilities included property management, boundary mapping, invasive species control, vegetation identification, and tour guide.

SCIENTIFIC PUBLICATIONS

Malek Mercer, A.J., Ellertson, A., Spencer, D., and **Heimann, T**. 2018. Fishermen fill data gaps for American lobster (*Homarus americanus*) and Jonah crab (*Cancer borealis*) in the Northeast USA. Bulletin of Marine Science, 94:3, pp 1121-1135.

SELECTED PRESENTATIONS

Heimann, T., McManus, C., Leavitt, D., Malek Mercer, A.J. 2018. Methods for Establishing a Quahog (*Mercenaria mercenaria)* Industry-Based Research Fleet for expansion of Fishery Dependent Data Sources. National Shellfisheries Association Annual Meeting. Seattle, Washington.

Heimann, T., McManus, C., Leavitt, D., Malek Mercer, A.J. 2018. Engaging Fishermen to Address Data Gaps and Evolve Management of the Quahog in Narragansett Bay. Southern New England Chapter of the American Fisheries Society Winter Meeting. New Bedford, MA.

Heimann, T., Malek Mercer, A.J., and McNamee, J. 2018. Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata)* in Southern New England and Mid-Atlantic Region Using a Fishing Vessel Research Fleet Approach. American Fisheries Society 148th Annual Meeting. Atlantic City, New Jersey.*

Heimann, T., Malek Mercer, A.J., and McNamee, J. 2019. Using Fishermen-Collected Data to Explore the Black Sea Bass (*Centropristis striata)* Population and Construct Gear-Specific Discard Characterizations. Southern New England Chapter of the American Fisheries Society Winter Meeting. Storrs, Connecticut.

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Heimann, T., Malek Mercer, A.J., and McNamee, J. 2019. Using Industry Collaboration to Improve Black Sea Bass Management. Wakefield Fisheries Symposium. Anchorage, Alaska.

CERTIFICATIONS AND SKILLS

- Statistical Language R (Commonly used packages; ggplot, shiny, sp)
- MySQL
- ArcGIS
- American Academy of Underwater Sciences Scientific Diver Certificate
- PADI Rescue Diver Certificate
- At-Sea Safety Training Certificate
- Experienced in Small Boat Operations

References:

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Zhang, Y. and S.X. Cadrin .2013. Estimating Effective Sample Size for Monitoring Length Distributions: A Comparative Study of Georges Bank Groundfish, Transactions of the American Fisheries Society 142 (1): 59-67.

Proposal for funding made to the
Coordinating Council and the Operations Committee
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Ste. 200A-N
Arlington, VA 22201

FY20: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island

Submitted By:
Nichole Ares
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Division of Marine Fisheries
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Applicant Name: Rhode Island Department of Environmental Management, Division of Marine Fisheries

Project Title: **FY20: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island**

Project Type: Maintenance

Requested Award Amount: **$55,043**

Requested Award Period: FY 2020 (August 1, 2020 to July 31, 2021)

Primary Program Priority: Commercial and Recreational Catch and Effort Module

Date Submitted:

Project Supervisor: Julia Livermore, Supervising Biologist julia.livermore@dem.ri.gov
Principal Investigator: Nichole Ares, Principal Biologist, nichole.ares@dem.ri.gov
Project Staff: John Lake, Supervising Biologist, john.lake@dem.ri.gov
Nicole Lengyel, Principal Biologist, nicole.lengyel@dem.ri.gov
Seasonal Interns

Atlantic Coastal Cooperative Statistics Program (ACCSP) Proposal for the State of Rhode Island 2018

Objectives:

- Provide new and existing Rhode Island (RI) seafood dealers with technical support to maintain and improve dealer electronic reporting to the Standard Atlantic Fisheries Information System (SAFIS) pursuant to RI Marine Fisheries Statutes and Regulations.
- Provide technical and analytical support to the RI Marine Fisheries Quota Monitoring Program as well as maintain dealer compliance monitoring protocols for both quota and non-quota managed species by utilizing commercial landings data from SAFIS.
- Collect and enhance trip-level catch and effort data through the RI Marine Fisheries Commercial Harvester Catch and Effort Logbook Program and the RI Electronic Recreational Logbook (eLOGBOOK) Program, and continue to transition commercial fishermen to electronic trip reporting.
- Maintain and improve the existing data feed of RI supplemental fisheries data to the ACCSP data warehouse.

Need:

Beginning in 2006, the Rhode Island Division of Marine Fisheries (RIDMF) implemented the marine fisheries commercial data collection program. This program collects trip level landings data from all 125 dealers licensed in RI through direct dealer entry into the eDR (electronic dealer report) SAFIS application. Catch and effort data are currently collected from 100% of the fishermen in the state for the finfish, squid, whelk, and crustacean sectors. RI meets the ACCSP standard by maintaining a one-ticket system for the shellfish fishery sector and a two-ticket system for the crustacean, squid, finfish, and whelk fishery sectors. In addition, crustacean dockside sales are collected through a supplementary paper logbook which captures daily data of all sales. Data are transferred to the ACCSP data warehouse in the proper format annually.

Maintenance and coordination of the SAFIS data entry is critical for successful fisheries management in RI. This data has been essential for the determination of commercial catch and effort statistics, establishing an efficient quota monitoring process, and tracking active verses latent license holders. Quota monitoring is one of the most important uses of SAFIS data, as staff analyze trip level commercial landings data for quota managed species in RI daily. These analyses are used to make decisions regarding seasonal closures and possession limit changes.

In addition to commercial data being collected, recreational data is also being collected. RI ACCSP staff is also responsible for outreach and support of the voluntary eLOGBOOK program; this SAFIS application is used to enter and house recreational catch and effort data. Additionally, in 2019, RIDMF established mandatory party and charter trip level electronic reporting. This increases the amount of recreational data collected and will provide a better understanding of the party and charter industry through accurate trip counts, census effort data, discard information, and catch rate data.

Furthermore, RI ACCSP staff continues to provide data feeds for lobster at-sea and port sampling data via the Atlantic States Marine Fisheries Commission (ASMFC) Lobster Database and supplemental horseshoe crab, aquaculture, and dockside data for the Fisheries of the United States via ACCSP. Data feeds for finfish sampling to the ACCSP warehouse will continue to be developed and RI ACCSP staff will need to maintain this data feed once it is active.

With these programs established and planned enhancements scheduled for 2020, the goal of this project is to maintain these data feeds to the ACCSP while continuing to improve data quality as well as maintaining outreach to dealers and fishermen. The plan detailed below is similar to the scope of work proposed for the past several years.

Results and Benefits:

Collecting high quality, comprehensive fisheries data is essential to successful fisheries assessment and management. This project allows the current level of oversight and coordination of the ACCSP to continue in RI by providing funding for the staff necessary to maintain the project. **RI relies on comprehensive SAFIS eDR and eTRIPS/RI Commercial Harvester Logbook data for fisheries management programs including quota monitoring, resource assessment and allocation, and license tracking. The state also relies on eLOGBOOK data and the newly required census party and charter data; it enhances and adds to the existing MRIP dataset with regarding landings and discards** and increases our understanding of the length frequency distribution of recreational harvest. This comprehensive and timely data allows RIDMF to establish higher latitude in management programs which is encouraged by the fishing industry. **Additionally, once in the ACCSP data warehouse, the catch and effort and biological sampling data provided by RI can be utilized by other partners and stock assessment scientists for regional scientific assessment of important fish populations.** Although the work outlined in this proposal is specific to RI, **the presence of RI ACCSP staff provides benefits to regional partners; including increased coordination between state and federal program partners, increased technical assistance, as well as sharing of data collection methodology and troubleshooting techniques.**

Data Delivery Plan:

All landings data and catch and effort data collected by RI is entered in SAFIS. Landings data is entered directly into SAFIS eDR by the dealer twice a week and immediately available to ACCSP. Catch and effort (logbook) data (both commercial and party/charter) is entered into SAFIS eTRIPS throughout the year, typically data entry is completed by March of the following year. **Once entered, all data is immediately available to ACCSP and other program partners who utilize SAFIS and the SAFIS tables within the warehouse. This data is also incorporated into the warehouse tables during the yearly uploads and available for warehouse users annually.**

Additionally, RIDMF collects data on crustacean dockside sales, horseshoe crabs, lobster (sea, port, and ventless surveys), aquaculture, and finfish port sampling. **Currently, the dockside sale, horseshoe crab, lobster, and aquaculture data is converted into the proper flat file format and submitted to ACCSP during the spring upload.** The data feed for the finfish port sampling is still being developed, once active, RI data will be submitted.

Approach:

All licensed seafood dealers in RI (approximately 125 dealers) are electronically entering trip level data into SAFIS at least twice weekly (RIMF, 2018). Dealers are provided support and initial SAFIS training regarding the SAFIS eDR system. **Technical support is provided to dealers who call or walk-in daily for questions regarding licensing, possession limits and seasons, reporting, and other topics. Site visits are conducted if further support and training are necessary.**

To ensure data quality and proper SAFIS reporting, RIDMF strictly monitors dealer compliance. Phone calls are made to dealers who fall behind in reporting, and in cases where dealers are found to be non-compliant, administrative action is taken. Rhode Island Department of Environmental Management (RIDEM) Division of Law Enforcement becomes involved when a dealer has repeatedly violated compliance regulations. To summarize a dealer's compliance performance, dealer "report cards" assigning qualitative grades are mailed quarterly to all dealers. It contains information regarding the number of reports made during a period, the number of reports that were submitted late, and the number of times RIDMF staff needed to contact the dealer regarding late reporting and reporting mistakes.

Landings entered by dealers are routinely checked for accuracy, both via SAFIS audit protocols daily, and through additional weekly audits. Any issues discovered during these audits are addressed with dealers and corrected via National Marine Fisheries Service (NMFS) JIRA or through eDR directly. **Licensing and commercial vessel data generated from RIDEM are kept up to date in SAFIS tables through weekly updates via the SAFIS Management System (SMS).** These audits and updates are of great importance and are necessary to maintain high standards of data quality.

Quota monitoring relies solely on accurate and up to date SAFIS data. Data are downloaded from SAFIS daily and analyzed using a software program developed in the statistical package R (R core team 2016). Once data are in the software program, they are sorted and filtered to detail daily landings of fluke, scup, black sea bass, striped bass, tautog, menhaden, bluefish, and smooth dogfish. **This data is then used to make fisheries management decisions, possession limit changes, and early seasonal closure decisions. Non-confidential, graphical updates of cumulative RI landings are then posted weekly to the RIDMF webpage as public information.**

Data requests and validations from fishermen, academics, stock assessment scientists, the RIDEM Licensing Division, and other stakeholders are also completed. **These requests support fisheries science and management decisions and are necessary to maintain the level of support required by RIDEM and other regional fisheries managers. The data obtained becomes available to support state and regional stock assessments, economic analyses, and research.** All requests include only non-confidential data unless confidential access is granted through ACCSP channels. RI ACCSP staff are needed both to complete these data requests and handle confidential data access requests originating from ACCSP.

In addition to monitoring SAFIS landings data, metadata and socio-economic data are also collected by RI ACCSP staff. Examples of metadata include but are not limited

information regarding weather (i.e. wind data), possession limits, and closed fishing seasons. Socio-economic data collected comes primarily from dockside sales of crustaceans from the state dockside sales logbook. Economic data entered by the dealers are used in monthly summaries for RI's two largest ports, Point Judith and Newport. The data are used to justify funding for port improvements and maintaining shoreside operations that enhance fisheries. Data are also used to highlight seafood availability and provide the basis for public outreach promoting local seafood consumption and improving the state's economy through support of the fishing industry.

Catch and effort data for all fisheries are essential to provide efficient and effective management. **Harvesters in all commercial fisheries are required by RI law to submit catch and effort data to RIDMF. Currently, all finfish, crustacean, squid, and whelk commercial fishermen are required to submit catch and effort information.** Shellfish fishermen are not required to submit catch and effort logbooks because the data is captured via a one-ticket system.

There are approximately 1600 commercially licensed fishermen in RI. Fishermen with a reporting requirement fall into two main categories: fishermen with a federal VTR requirement, and fishermen without a federal VTR requirement. Fishermen with a VTR requirement report to NMFS. Fishermen without a VTR requirement report to RIDMF and can elect to report either via the paper logbook, or electronically utilizing SAFIS eTRIPS. Due to the multiple reporting options, at the time of license renewal/purchase the **fishermen must declare a reporting method: federal VTR, state paper logbook, or eTRIPS. Fishermen who selected paper logbook are also required to purchase the paper logbook endorsement to help contribute to the printing, mailing, data entry, and administrative costs of the paper logbook program.**

Federal fishermen are exempt from the state logbook program to ensure there is not duplicate effort information being collected, however they are still required per regulation to submit reports. At the beginning of the year, all fishermen who declared VTR as their reporting method are mailed a "VTR Declaration Form," that asks for their federal permit and commercial fishing license number. **This information is then used to track compliance for the fishermen using the online NMFS database.** This system for VTR compliance eases the burden on both the fishermen and RIDMF. Fishermen are now reporting their catch and effort information to a single source (NMFS), decreasing confusion and mailing costs. This also decreases staff time used to track VTR compliance.

Fishermen without a VTR requirement must submit catch and effort information directly to RIDMF either via a paper logbook or through eTRIPS/eTRIPS Mobile. **All fishermen who report via the logbook need to submit quarterly catch and effort paper logbooks. They are provided postage-paid envelopes by RIDMF** to ensure timely return of completed logbooks. **Data quality is checked for each logbook submitted and any missing or inaccurate information is corrected through contacting the fishermen.** Any logbook not completed in full is returned to the fishermen for correction.

Since 2012, RI fishermen have had the ability to enter their catch reports directly into eTRIPS. Currently there are approximately 775 eTRIPS accounts in RI issued to fishermen who declared eTRIPS as their reporting method; **this is equivalent to 52% of all fishermen with a reporting requirement, a large increase as 26% of fishermen were utilizing eTRIPS in 2014**

(Figure 2: Reporting Method Breakdown). To help continue the trend to electronic reporting, RIDMF staff offers support to fishermen who want to learn and use the program. **Training materials are available on the RIDMF website, and staff routinely answer phone calls, emails, and walk-in questions about eTRIPS.** RIDMF will continue outreach for eTRIPS to continue to increase the number of fishermen using electronic reporting.

RIDMF also does outreach and support for eTRIPS-Mobile and will continue this in the future. The application allows for both real time data entry as well as post-trip entry. Reports submitted through this application fulfill both state reports and NMFS Greater Atlantic Regional Fisheries Office (GARFO) VTRs. RI has also adopted eTRIPS-Mobile as a mandatory reporting method for a pilot aggregate landing program, further increasing its use. In 2018 there were 39 users; however due the ease of use, GARFO acceptance, and use in RI pilot programs use has been increasing. **Utilizing the mobile application and offering training on the program will allow fishermen to enter data in real time, resulting in more accurate and time sensitive entries.**

All reports directly entered by the fishermen electronically are audited; in the event an error is found, the fisherman is contacted and sent a report with any corrections that need to be made. In addition to audit reports, **emails are sent to all RI eTRIPS users detailing the common errors seen during the audit process and importance of accurate reporting.**

RI commercial licensees may not renew their licenses unless they have correctly completed their catch and effort logbooks or eTRIPS reports for the entire year. Additionally, **harvester license number, dealer, and sale date from the catch and effort data are used to match records with dealer reports for quality control and assurance of the landings data.**

F**ishermen who hold a RI crustacean dockside sales endorsement must fill out a dockside sales logbook which details the quantity, market, grade, and price of all crustaceans sold at the dock.** The dockside sales logbook is mailed to the 264 dockside endorsement holders and must be completed before the licensee can renew their license for the following year. **The dockside sales data captures some of RI's economic data, and this data is transmitted to the ACCSP as supplementary data.** RI staff is needed to oversee data entry, perform quality checks, and transfer the sale data to ACCSP in the proper format annually.

Reporting of all party and charter trips became mandatory in 2019. Per RIMF Regulations, all trips must be reported electronically through either eTRIPS or eTRIPS Mobile within 48 hours of landing. Staff are needed to train fishermen, audit data, check compliance, and provide support to the industry. **This data will also provide a clearer picture of the party/charter fleet in RI and allow more flexibility within the regulations for the fleet.**

RI will continue to utilize and promote the voluntary eLOGBOOK program. This data can be used for recreational effort estimates as well as for important management decisions. The eLOGBOOK data also contains lengths of both fish harvested and released. This data was useful for all partners in the **bluefish stock assessment, as discard data was used in the 2015 benchmark assessment.**

RIDMF has port and at-sea sampling programs for selected commercial fisheries within the state. **The port sampling program focuses on collecting biological samples required by ASMFC fishery management plans.** These species include striped bass, weakfish, tautog, bluefish, menhaden, and lobster. **RIDMF's at-sea lobster sampling program focuses on ASMFC management needs** as well as state specific data needs. **RIDMF provides the data feed of lobster port and at-sea sampling data to ACCSP via the ASMFC Lobster Assessment Database.** Neither the lobster sampling programs nor the finfish sampling programs receive funding from ACCSP.

RIDMF staff also sit on ACCSP committees including: Operations Committee, Biological Review Panel, Bycatch Prioritization Committee, Commercial Technical Committee, Information Systems Committee, Standard Codes Committee, and Recreational Technical Committee. RIDMF staff are heavily involved in all aspects of ACCSP and contribute in full to all partners' interest.

From 2002 through 2016, RI utilized primarily contract employees through ASMFC to manage the ACCSP data collection program funded through ACCSP. In February 2016, RIDMF hired a state full-time employee to fill the ACCSP Coordinator duties. Project staff will continue to provide support with processing and data entry of harvester logbooks, aiding with compliance monitoring and data auditing, quota monitoring and compliance issues relevant to SAFIS, SAFIS technical support and outreach, ACCSP committees, eTRIPS and eLOGBOOK outreach, grant management, and long-term program development.

This proposal represents a recurring project funded by ACCSP for the past sixteen years. With a total budget of $189,169, 71% of the total cost is an in-kind contribution from RIDMF. Table 1 provides a brief project history of ACCSP Implementation in RI. Cost details for fiscal year 2019 are outlined in the requested budget while last year's requested funding is presented in Appendix A.

In a RIDMF white paper, Gibson and Lazar (2006) documented the deficiencies of the Rhode Island Marine Fisheries program and argued that significant infusion of funding and staff is needed. The RIDMF Marine Fisheries section has undergone a peer reviewed evaluation and need assessment, which concluded that RIDMF Marine Fisheries requires more staff to effectively maintain its services (Boreman et al., 2006). However, like many other states on the Atlantic Coast, the state of RI is experiencing fiscal shortfalls. **RIDMF is starting to actively assume some of the costs of ACCSP programs by devoting more staff time to the project and continues to seek alternate funding sources for the project.** In 2010 the state of RI implemented the RI Recreational Saltwater License. **Funds from license receipts are dedicated to the salary of a recreational biologist as well as improving data quality. The recreational biologist sits on the ACCSP recreational technical committee and manages eLOGBOOK and party and charter reporting, thus these funds now help support the ACCSP program. Encouraging commercial fishermen to transition from paper logbooks to the eTRIPS reporting method through incentives, training programs and regulations has already decreased and ultimately will eliminate some of the costs surrounding the distribution and data entry required for paper logbooks.** This will reduce the RIDMF's dependence upon ACCSP funds for maintaining timely and accurate data feeds and will be

completed as funding and staff time allows. **Furthermore, the transition the ACCSP coordinator from a fisheries specialist ASMFC employee to an RIDEM FTE (Principal Biologist) shows RIDMF's dedication to covering the costs of the ACCSP program in the future, but asks for funding assistance during this transitional time.**

RIDMF also recognizes the recent changes made to maintenance proposals regarding funding opportunities. While a concrete plan is not in place to take over funding, **different options are being proposed including: the continued move to electronic reporting, licensing restructure, and other means to fund the program. Nothing is confirmed at this point, so the final years of available funding is important to RI and its ACCSP program.**

Geographic Location:

The project will be administered out of the Rhode Island Division Marine Fisheries office in Jamestown, RI. The scope of the project covers all of RI and adjacent state and federal waters fished by RI license holders.

Program Accomplishment Measurement Metrics:

The success of the project will be measured by the following metrics:

Goal	Metric	Accomplished
Data Delivery to ACCSP	Supplemental data complete, correct, and available for spring upload	Data delivered to ACCSP in March annually
Landings and Effort Data Delivery to ACCSP	Trips Entered in 2018 by application	eDR: 22,899 (56,940 including federal trips) eTRIPS: 26,259
Support to RI Licensed Seafood Dealers	Dealer trainings, site visits, and other outreach in 2018.	2 new dealers 2 site visits Phone call and email correspondence was made
Quota Monitoring	Number of possession limit changes and early closures during 2018 determined through accurate SAFIS data	25 changes in possession or early season closures

Table 1. Project History.

Year	Title	Cost	Results
2000	Implementation of the ACCSP Program in Rhode Island	230,938	Planning and development of ACCSP commercial module implementation
2001	Implementation of ACCSP Continuation	20,000	Implementation of trip level reporting for all RI lobster harvesters, Commercial fishing license reconstruction
2002	Implementation of Phase 2 of ACCSP in the State of Rhode Island	133,084	ACCSP coordinator hired, planning and development of electronic dealer reporting system (RIFIS)
2003	Implementation of Phase 3 of ACCSP in the State of Rhode Island	131,760	Phased Implementation of RIFIS with focus on high volume dealers
2004	Continued Implementation of the ACCSP Program in the State of Rhode Island	159,716	Transition of RIFIS to SAFIS, implementation of federally permitted dealers
2005	Continued Implementation of the ACCSP Program in the State of Rhode Island	95,365	Quota monitoring system developed using SAFIS data, regulation created requiring all RI dealers to report landings via SAFIS
2006	Continuation of SAFIS and Finfish Logbooks in Rhode Island	150,365	Implementation of SAFIS completed, Development of harvester logbook for finfish and crustacean fishery sectors
2007	Coordination and Development of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	145,697	Implementation of harvester logbook for finfish and crustacean fishery sectors

2008	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	128,647	Implementation of Dockside Sales Logbook, work begun on feeding data to ACCSP, maintenance of Data collection programs
2009	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	142,075	Data feeds of Logbook data and lobster biological sampling developed.
2010	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	100,983	eREC developed and eTrips pilot program started , data feeds continued, Fluke sector monitoring database developed, dealer report card system developed
2011	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	85,584	Automatic data feed for catch and effort data established via eTRIPS, eREC maintained and developed, data feeds continued
2012	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	99,379	Maintenance of automatic data feed for catch and effort data via eTRIPS on a real time basis, maintenance of eLOGBOOK, data feeds continued
2013	FY13: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	91,416	RSA tracking improved, maintenance of automatic data feed for catch and effort data via eTRIPS upload, maintenance of eLOGBOOK, data feeds continued
2014	FY14: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	85,408	RSA tracking improved, maintenance of automatic data feed for catch and effort data via eTRIPS upload, maintenance of eLOGBOOK, data feeds continued
2015	FY15: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	79,719	Maintenance of automatic data feed for catch and effort data via eTRIPS on a real time basis, maintenance of eLOGBOOK, data feeds continued. Improvements to party and charter industry tracking. eTRIPS user outreach and training
2016	FY16: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	79,736	Maintenance of automatic data feeds for catch and effort data via eTRIPS, maintenance of eLOGBOOK data feeds continued. Outreach of eTRIPS Mobile application. Continue eTRIPS user training and outreach.
2017	FY17: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	78,420	Maintenance of automatic data feeds for landings catch and effort data via SAFIS, eLOGBOOK data feeds, and supplemental data feeds. Outreach of eTRIPS-Mobile. Continue SAFIS user training and outreach.
2018	FY18: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	76,920	Maintenance of automatic data feeds for landings catch and effort data via SAFIS, eLOGBOOK data feeds, and supplemental data feeds. Outreach of eTRIPS-Mobile. Continue SAFIS user training and outreach.
2019	FY18: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	76,920	Maintenance of automatic data feeds for landings catch and effort data via SAFIS, eLOGBOOK data feeds, and supplemental data feeds. Outreach of eTRIPS-Mobile. Continue SAFIS user training and outreach.

Table 2. Milestone Schedule

Activity	Month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SAFIS Support to RI Dealers	X	X	X	X	X	X	X	X	X	X	X	X			
Quota Monitoring	X	X	X	X	X	X	X	X	X	X	X	X			
eTRIPS support to industry	X	X	X	X	X	X	X	X	X	X	X	X			
eTRIPS logbook Data Entry	X	X	X	X	X	X	X	X	X	X	X	X			
Data Feeds to ACCSP	X	X	X	X	X	X	X	X	X	X	X	X			
Semi and Annual Report Writing							X					X	X	X	X

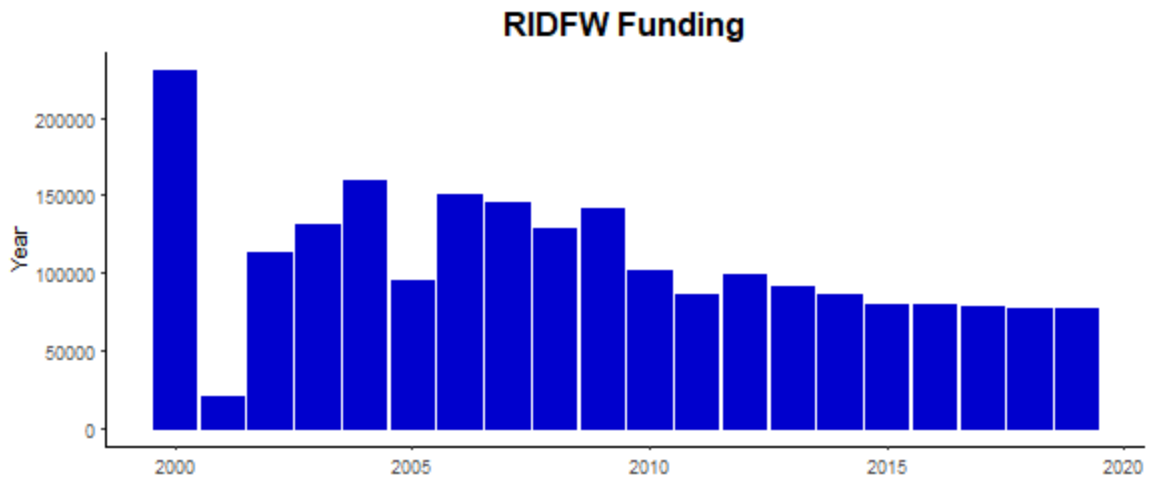

Figure 1. RIDMF past funding from ACCSP.

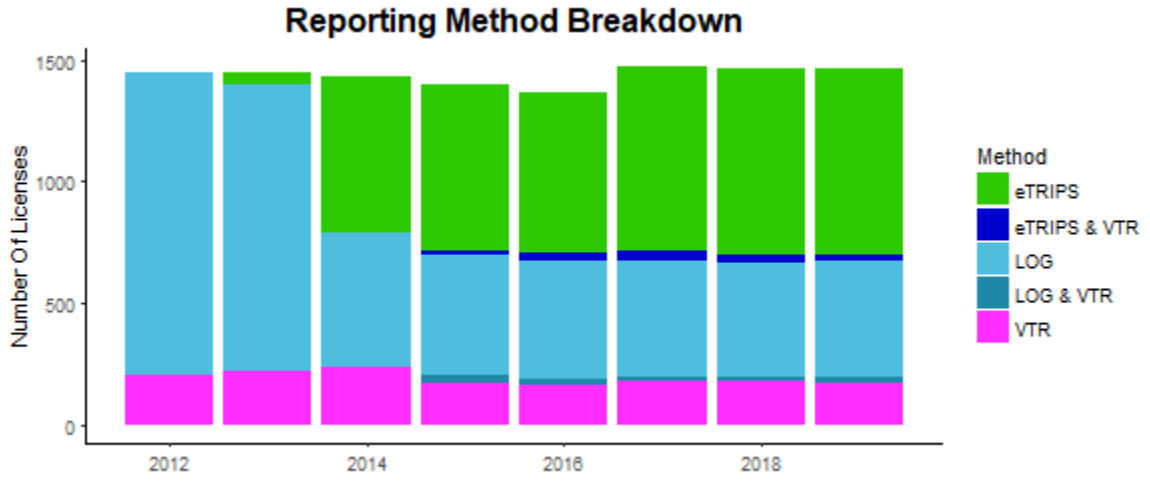

Figure 2: Reporting Method Breakdown

References:

Boreman, J., Diodati, P., O'Shea, and E. Smith. 2006. Assessment of the Rhode Island Department of Environmental Management's Marine Fisheries Section. RIDEM Internal Document, October 2006.

Gibson M. and N. Lazar. 2006. Rhode Island Division of Fish and Wildlife, Marine Fisheries Section 2006: Current Activities, Funding, and an Appraisal of Future Needs. RIDEM Internal Document, August 2006.

Rhode Island Marine Fisheries Regulations (RIMFR), Part 7- Dealer Regulations, 2018

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Requested Budget FY 2020 (August 1, 2020 to July 31, 2021)

Item	ACCSP Share	Direct State Share	Total
Supervising Biologist (FTE 10%)	$0	$12,312	$12,312
Principal Biologist (FTE 50.9%)	$0	$50,159	$50,159
Principal Biologist (FTE 34%)	$38,391	0	$38,391
Assistant Admin Officer (Contractual 50%)	$0	$21,139	$21,139
Seasonal Interns - 2 (RIDEM 40% each)	$8,554	$10,692	$19,246
Indirect Charges (RIDEM FTE 17.25%)	$8,098	$16,267	$24,365
Total Personnel	$55,043	$110,569	$165,612

EQUIPMENT & SUPPLY:

Item	ACCSP Share	Direct State Share	Total
Logbook Printing @ $5.91 per logbook	$0	$3,546	$3,546
Logbook Mailing @ $4.75 per logbook	$0	$2,850	$2,850
Dockside Printing @ $4.96 per logbook	$0	$1,488	$1,488
Dockside Mailing @ $5.91 per logbook	$0	$1,773	$1,773
Business reply envelope printing	$0	$2,500	$2,500
Business reply account	$0	$1,500	$1,500
Website development and updating	$0	$2,400	$2,400
Outreach mailing	$0	$3,000	$3,000
Office supplies	$0	$1,000	$1,000
Telephone & Fax Usage	$0	$500	$500
Vehicle Usage and Travel	$0	$3,000	$3,000
Total Supply	$0	$23,557	$23,557

TOTAL:

Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	$55,043	$134,126	$189,169
Percentage	29%	71%	

Bold Comments indicate sections that help with the ranking process

COST DETAILS:

Description of Budget categories and expenses for this project.

a. **Salary**

Each person spends a fraction of their time working on this grant in a team effort. The annual salaries for personnel and the percentage of their time spent on this project are as follows:

From ACCSP:

i. **Principal Biologist/ ACCSP Coordinator:** 34% ACCSP funded position to act as support to the ACCSP Coordinator; 34% of salary and fringe benefits for one year = $38,391.

ii. **Seasonal Interns:** Support for 2 Seasonal Interns to assist with data entry 40% of annual salary = $8,554.

From RIDEM as match:

i. **Supervising Biologist:**
Approximately 10% of annual salary and fringe benefits equals $12,312.

ii. **Principal Biologist:**
Approximately 50.9% of annual salary and fringe benefits equals $50,159.

iii. **Seasonal Interns:**
Support for 2 Seasonal Interns to assist with data entry.
Approximately 50% of annual salary ($10,692) X 2 = $10,692.

b. **Fringe benefits**

Annual fringe benefits rates for all employees include the following:

Retirement 24%
Deferred Compensation 0.4%
FICA 6.2%
Medicare 1.45%
Health care $21,937/year
Dental $ 1,132/year
Vision Mercer - $165/year
Assessed Fringe 4,25%
Retiree Health 6.75%

c. **Travel**

$3,000 used for mileage, tolls for site visits and meetings, and to subsidize vehicle usage by ACCSP staff as well as any incurred travel expenses for dealer visits; RIDEM will assume the costs. These costs are based on historical used under the current award.

d. **Equipment**

No equipment will be purchased on this grant.

e. **Supplies**

From ACCSP:

i. None.

From RIDEM:

ii. **Logbook Printing**: 600 logbooks @ $5.91/logbook – $3,546.

iii. **Logbook Mailing**: 600 logbooks @ $4.75/book = $2,850

iv. **Dockside Printing:** 300 logbooks @ $4.96/logbook - $1,488
v. **Dockside Mailing:** 300 logbooks @ $5.91/logbook - $1,773
vi. **Business Reply Envelope Printing**: 20,000 Envelopes @ $0.125/envelope = $2,500.
vii. **Business Reply Account**: $100/month Mar-Nov; $200/month Dec-Feb = $1,500.
viii. **Website Development and Updating**: Costs for maintaining current website and creating a website section dedicated to online reporting, including the creation training materials. Estimated at $2,400.
ix. **Telephone and Fax usage** - $500
x. **Office Supplies** $1,000
xi. **Miscellaneous and outreach mailing**:
    1. **Compliance mailing**: 1,600*$0.50 = $800
    2. **License renewal mailing to notify license holders of renewal regulations and changes**: 3,000*$0.50 = $1,500
    3. **Dealer Report Cards**: 140*4*$0.50 = $280
    4. **Returned Logs**: ~2% per month of 1,600 = 32*12 = 384*$0.50 = $192
    5. **Miscellaneous/Outreach mailings:** ~$228

f. Contractual

Contractual will include the time spent for a contractual employee: Assistant Administrative Officer. Contractual annual salary and administrative charges total $42,279. The employee will be spending 40% of their time on this grant and will be supported by RIDEM. 50% equals $21,139.

g. Construction

There will be no construction as part of this grant.

h. Other

There is nothing in this category

i. Total Direct Charges

This is the sum of all direct charges to the grant, listed above.

j. Indirect charges.

Indirect charges are only calculated using RIDEM personnel charges. The negotiated Indirect Rate for fiscal year 2019 is 17.25%.

Summary of Proposal for Ranking

Proposal Type: Maintenance

Primary Program Priority: Catch and Effort **(100%)**

- 100% of dealers report trip level landings data for all species.
- 100% of commercial fishermen report trip level catch and effort data, which is entered into SAFIS (except federal permit holders that report on VTRs to NMFS) or via a 1-ticket system for shellfish entered at trip level by the dealer in the eDR.
- 100% of all party and charter captains report trip level data, which is entered into SAFIS.
- Metadata and socioeconomic that is detailed on page 6 are also collected to enhance and describe data sets that are important to RI's commercial fisheries.

Project Quality Factors:

Partners

- **Multi-Partner/Regional impact including broad applications** –To collect and manage catch and effort, landings, and recreational data in RI. However data on many regionally managed species, such as American lobster, striped bass, black sea bass, bluefish, tautog, and others is collected. As these species are regionally managed, the data collected are used in coastwide and regional stock assessments, therefore other partners benefit from having access to this data.

Funding

- **Contains funding transition plan –** This proposal contains a transition to funding plan on page 8-9. Changes in maintenance proposal funding has been addressed by RIDMF and the ACCSP Coordinator role has been transitioned to a Principal Biologist FTE. While RIDMF continues to ask for funds during this transitional period, it is understood there is a definite end date to the funds available to RI for this project.
- **In-kind contribution-** 71% of this project is funded by the RIDMF.

Data

- **Improvement in data quality/quantity/timeliness –** RI provides timely catch and effort data and landings data to the ACCSP. This is done by fully utilizing ACCSP data entry products (eTRIPS, eDR, eLOGBOOK, and eTRIPS Mobile) as well as having standards backed up by Marine Fisheries regulations that require reporting that meets ACCSP standards. RI has successfully begun to push fishermen to using eTRIPS for direct data entry resulting in timelier data entry and is embracing eTRIPS Mobile for data entry. Additionally, all supplemental data (port and sea sampling, aquaculture, dockside sales, and horseshoe crab data) is provided to ACCSP annually in the proper format.
- **Potential secondary module as a by-product –** Social and economic data that is described on pages 6 is collected regularly and used in fisheries models to characterize and understand RI fisheries. This data has also been made available to regional partners upon request and has been used in groundfish disaster relief funding to determine how the money is to be distributed.
- **Impact on stock assessment-** Data collected in this program is regularly used for many "in-house" stock assessments done on local species such as whelk, quahog, and soft shell clam. This data also includes information on regionally or jointly managed species and is used for their science and management programs as well. Partners, like surrounding states, the ASMFC, and the NOAA Fisheries can and do use this information for various stock assessments.

Appendix A: Prior year budget

Budget FY 2019 (August 1, 2019 to July 31, 2020)

PERSONNEL COSTS:

Item	ACCSP Share	Direct State Share	Total
Supervising Biologist (FTE 10%)	$0	$12,312	$12,312
Principal Biologist (FTE 60.5%)	$0	$50,159	$50,159
Principal Biologist (FTE 49.5%)	$39,315	0	$39,315
Assistant Admin Officer (Contractual 40%/50%)	$16,912	$21,139	$38,051
Seasonal Interns - 2 (RIDEM 50%)	$10,692	$10,692	$21,384
Indirect Charges (RIDEM FTE 16%)	$8,501	$11,706	$20,207
Total Personnel	$75,420	$106,008	$181,428

EQUIPMENT & SUPPLY:

Item	ACCSP Share	Direct State Share	Total
Logbook Printing @ $5.91 per logbook	$0	$3,546	$3,546
Logbook Mailing @ $4.75 per logbook	$0	$2,850	$2,850
Dockside Printing @ $4.96 per logbook	$0	$1,488	$1,488
Dockside Mailing @ $5.91 per logbook	$0	$1,773	$1,773
Business reply envelope printing	$0	$2,500	$2,500
Business reply account	$0	$1,500	$1,500
Website development and updating	$0	$2,400	$2,400
Outreach mailing	$0	$3,000	$3,000
Office supplies	$0	$1,000	$1,000
Telephone & Fax Usage	$0	$500	$500
Vehicle Usage and Travel	$1,500	$1,500	$3,000
Total Supply	$1,500	$22,057	$23,557

TOTAL:

Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	$76,920	$128,065	$204,985
Percentage	38%	62%	

Appendix B: Curriculum Vitae for Principal Investigator

Nichole L. Ausfresser Ares Nichole.Ares@gmail.com **(**978) 833- 4017

Education

Roger Williams University — Bristol, RI
Bachelor of Science in Marine Biology — Dec. 2010
Minor in Mathematics

Atlantic States Marine Fisheries Commission — October 2015
Introduction to Stock Assessment
Intermediate Stock Assessment Training — December 2017

Work Experience

Rhode Island Department of Environmental Management — February 2016-Present
Principal Biologist

- Coordinate and improve the Atlantic Coastal Cooperative Statistics Program (ACCSP) in Rhode Island.
- Monitor commercial fishing quotas, lead quota management meetings and determination of seasonal closures and possession limit changes.
- Reporting compliance for ~1500 RI commercially licensed fishermen. Including tracking compliance, training and support to fishermen on report submissions and utilization of the electronic reporting system. Supervise and train staff on data entry of collected catch and effort data. Audit data quality of submitted reports.
- Data accuracy and quality of dealer reported landings data for the ~140 RI commercial licensed seafood dealers. Correction of inaccuracies in data, training new seafood dealers, and retraining dealers with data entry issues.
- Serve on ACCSP committees, including Commercial Technical Committee, Information Systems Committee and Standard Codes Committee.
- Assist in field work as necessary including but not limited to otter trawl, ventless lobster pot, beach seine, fyke net, and ventless fish pot surveys.
- Write and submit project plans, compliance reports, and grant proposals.

Atlantic States Marine Fisheries Commission — May 2014- February 2016
Fisheries Specialist 1- ACCSP Coordinator

- Coordinate and improve the Atlantic Coastal Cooperative Statistics Program (ACCSP) in Rhode Island under the supervision of Rhode Island Division of Fish and Wildlife Marine Fisheries Section.
- Monitor commercial fishing quotas, lead quota management meetings and determination of seasonal closures and possession limit changes.
- Track reporting compliance for ~1500 RI commercially licensed fishermen. Train fishermen and seasonal staff on report submissions. Audit data quality of submitted reports.
- Audit and correct data of dealer reported landings data for the ~140 RI commercial licensed seafood dealers. Train new seafood dealers and retraining dealers with data entry issues.
- Write and submit project plans, compliance reports, and grant proposals.

- Member of various ACCSP committees, including Commercial Technical Committee and Information Systems Committee.
- Assist in field work as needed, including beach seine, lobster ventless pot, and otter trawl surveys.

East West Technical Services LLC Feb. 2012- May 2014
At-Sea Monitor and Scallop Observer
- Organize fishing trips with federal commercial fishermen of the North Eastern United States.
- Collect catch and discard data on groundfish (trawl, gillnet, and longline) and scallop dredge fishing vessels. Identify all species brought on board and take biological measurements and samples including; length, weight, scales, vertebrae, and otoliths.

Rhode Island Department of Environmental Management June. 2011-Dec. 2011
Division of Fish and Wildlife- Marine Fisheries Student Researcher April 2013-Oct. 2013
- Data and logbook entry using Microsoft Access, Microsoft Excel, SAFIS, and Telnet.
- Contact fishermen when questions arise with logbook submissions.
- Assist in field work sampling in beach seine, otter trawl, clam suction, clam dredge, lobster pots, fish pots, and finfish port sampling.
- Fish aging structure removal (operculum, scales, and otoliths) and preparation.

Research Experience
Roger Williams University June 2009- June 2011
- Project goals are to examine mercury bioaccumulation in fish tissues, examine selenium concentrations in tissues, and examine selenium mercury relationships.
- Includes sampling methods of rod & reel and otter trawl surveys, the extraction of muscle, liver, brain tissues, and otoliths. Preparing tissues samples for atomic absorption spectroscopy and inductively coupled plasma mass spectroscopy. Use of Microsoft Excel and SAS to analyze the data, PowerPoint to present data at conferences. Organize the laboratory and help keep scientific equipment running correctly.
- Mentor: Dr. David L. Taylor, Assistant Professor

Technology, Skills, and Certifications
- Proficient in Microsoft Word, PowerPoint, Excel, Access, and Picture Manager, SAFIS info systems, Telnet, HTML, Adobe DreamWeaver, Oracle Databases (SAFIS Interface and Business Objects), and R.
- Familiar with SQL.
- Large dataset management
- Certified PADI Open Water Scuba Diver
- RIDEM Certificate of Boating Safety Education
- U.S Coastguard Auxiliary Boating Safety Course
- Fisheries sampling techniques including fish and invertebrate identification, trawl, beach seine, lobster and fish pots, gillnets, and dissections.

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
PHILIP D. MURPHY
Governor
NATURAL AND HISTORIC RESOURCES
DIVISION OF FISH AND WILDLIFE
P.O. BOX 420; MAIL CODE: 501-03
TRENTON, NJ 08625-0420
SHEILA Y. OLIVER
Lt. Governor
TEL: (609) 292-2965; FAX: (609) 984-1414
VISIT OUR WEBSITE: WWW.NJFISHANDWILDLIFE.COM
David Golden, Acting Director
CATHERINE R. MCCABE
Commissioner

Atlantic Coastal Cooperative Statistics Program

Operations and Advisory Committee

1050 N. Highland Street., Suite200 A-N

Arlington, VA 22201

June 7, 2019

I am pleased to submit the proposal titled “Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries”. Please feel free to contact me with any questions or comments.

Sincerely,

Greg Hinks, Principal Biologist

NJ Marine Fisheries Administration

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 North Highland Street, Suite 200 A-N
Arlington, VA 22201

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

Submitted by;
Gregory Hinks
New Jersey Division of Fish and Wildlife
P.O. Box 418
Port Republic, NJ 08241

Proposal for FY2020 ACCSP Funding

Applicant Name:	New Jersey Division of Fish and Wildlife Bureau of Marine Fisheries P.O. Box 418 Port Republic, NJ 08241
Project Title:	Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries
Project Type:	Maintenance
ACCSP Program Priorities:	1) Catch/Effort (55%), 2) Biological (45%)
Project Supervisor:	Greg Hinks, Principal Biologist (NJDFW)
Principal Investigator:	Chad Power, Assistant Biologist (NJDFW)
State Staff:	Matthew Heyl, Biologist Trainee (NJDFW)
Project Staff:	Laura Versaggi, NJ ACCSP Fisheries Specialist
Requested Amount:	$93,408
Requested Award Period:	September 1, 2020 to August 31, 2021

1. Objective

To continue New Jersey's trip level catch and effort data collection, dependent at-sea observer coverage, and biological characterization of commercial fisheries, a program that started in 2001.

2. Need

Since 2001, several programs have been implemented by the New Jersey Division of Fish and Wildlife (NJDFW) through funds provided by the Atlantic Coastal Cooperative Statistics Program (ACCSP). These funds have been vital in proactive management of the marine resources in New Jersey (NJ). Loss of funding for these critical programs would result in a significant loss of commercial fisheries data collection for the State of NJ, the ACCSP, and the Atlantic States Marine Fisheries Commission (ASMFC).

NJ programs currently funded under the ACCSP grant include commercial trip level data collection via eTRIPS for all commercially important species including American eel, Atlantic menhaden, blue crab, and tautog; port sampling of the American eel, Atlantic menhaden, Atlantic croaker, weakfish, and American shad fisheries; at-sea observer coverage for American lobster off the NJ coast, and trip level dealer reporting and quota management through the Standard Atlantic Fisheries Information System (SAFIS) electronic Dealer Reporting (eDR). Five of the species that NJ collects biological data for occur in the upper quartile of the ACCSP Biological Priority Matrix. These species include American lobster, American eel, black sea bass, river herring and weakfish. The major scope of work for the current FY2020 proposal has not changed from the accepted FY2019 proposal. As part of the ACCSP funding process, NJ has submitted all progress reports to date covering the FY2018 project to the ACCSP. The final FY2018 Report will be due on November 30, 2019. The NJ FY2019 project will begin on September 1, 2019.

2.A. Fisheries Dependent At-Sea Observer Program

Project staff has used at-sea observer coverage to describe fishing activities and aid in biological characterization of American lobster and tautog. In addition, port sampling for tautog is also performed as a source of characterizing the commercial landings. The information collected is critical to accurate stock assessments and ultimately sustainable harvest practices for these species. Characterization of the NJ commercial tautog fishery began in 2007 and will continue through FY2020 to document sex ratios, length: weight relationships and age information. Project staff have been sampling federally and state permitted American lobster pot vessels since 2008 and will continue to do so based on Addenda VIII and X of the American Lobster Fishery Management Plan, which mandates at-sea observer coverage as a means of describing the fishing activities in southern New England. The ASMFC American Lobster Technical Committee encourages sampling at-sea as a way of monitoring commercial bycatch and discards in the fishery.

2.B. Biological Characterization of Commercial Fisheries

The NJ biological characterization sampling program provides accurate length, weight, age, and temporal data for stock assessment and management of commercial harvest for the NJDFW, ASMFC, and NMFS. Target sample sizes identified through the ASMFC's Fishery Management Plans (FMP) achieved from 2019 are found in Table 3 of the Appendix. Sampling is conducted through port of landings intercepts and will be continued in FY2020 for American eel, American shad, Atlantic croaker, Atlantic menhaden, tautog and weakfish. NJ will continue sampling for Atlantic croaker, black sea bass, river herring, summer flounder, tautog and weakfish through independent sampling on the NJ Ocean Trawl Survey. Data collected will provide information on sex ratios/mean length/weight as identified by the Stock Assessment Review Committee (SARC) on June 20, 2008.

2.C. ACCSP Data Feeds

NJ is currently conducting several projects under the auspices of the ACCSP, most of which are mandates from the ASMFC and require compliance by the State of New Jersey to fulfill various ASMFC's FMPs. Equally important to the collection of fisheries dependent data is the guarantee of accurate data entry and quality assurance before these data are used as fisheries management tools. The ACCSP has increasingly taken on more duties as the data depot starting with SAFIS and moving to Fisheries of the US for the NMFS. As such, it is advantageous to the success of not only the ACCSP, but to all 23 ACCSP partners that partner data be supplied to the ACCSP in a timely and accurate fashion facilitating the movement of data into fisheries management.

2.D. Commercial Trip and Dealer Reporting (eTRIPS, eDR, Commercial Harvester & Dealer Reports)

The importance of a standardized trip and dealer reporting system is clear. The effort put forth to use an all-inclusive standardized data entry program is critical for the NJDFW to provide a single location to find harvest data for multiple fisheries/species/years. Further, the importance of single source harvest data is like that for dealer data entry and warehousing: allowing managers and scientists to pull accurate landings data through a query database using common ACCSP data formats. Project Staff provide support to federal/state permitted dealers facilitating weekly eDR reporting. Additionally, it is the responsibility of project staff to monitor landings through eDR, correct erroneous data when trip landings and dealer reports are inconsistent, and recommend closures when seasonal quotas are reached within the state. NJ has shifted to entering trip reporting data directly to SAFIS to increase efficiency in supplying the ACCSP and its partners with fishery dependent data. This was initiated in FY2016 and will continue for FY2020.

3. Results and Benefits

The ACCSP Coordinating Council approved NJ's proposal "Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ" for FY2019. Included again in the FY2020 proposal is the request for salary for staff on the project with a small amount of funds allocated towards aging summer flounder and black sea bass otoliths by the NMFS Woods Hole Laboratory. The FY2020 proposal will ensure that ongoing projects in NJ will continue to maintain NJ's participation in the ACCSP/ASMFC's mandated compliance programs. In kind state match, has averaged over 50% for the past seven fiscal years (2010-2018) for the NJ ACCSP Program and for FY2020 state match is 75% due to the addition of new state staff. (See page 14).

3.A. Fisheries Dependent Sampling Program

Lobster At-Sea Observer Coverage. In January 2008, at-sea sampling commenced aboard lobster vessels fishing in Lobster Conservation Management Areas (LCMA) 4 and 5 off the coast of NJ. Staff will continue at-sea observer coverage in FY2020 to characterize the NJ lobster fishery except during each LCMA closed seasons occurring April 30 - May 31 in LCMA 4, and February 1 – March 31 in LCMA 5. All data collected resulting from this program will be delivered to the ACCSP for inclusion into the Lobster Database. As this is the only at-sea observer program in LCMAs 4 and 5, it is imperative to continue at-sea sampling.

3.B. Biological Characterization of Commercial Fisheries

Biological sampling for American eel, American shad, Atlantic croaker, Atlantic menhaden, black sea bass, river herring, summer flounder, tautog, and weakfish was a maintenance project for FY2018. Sampling targets were near 100% of set goals during the first 13 years (2006-2019, Table 1) and will be similar for FY2020.

Commercial American eel, American shad, Atlantic croaker, tautog and weakfish samples collected are processed and aged at the NJDFW Nacote Creek aging facility in Port Republic, New Jersey. Atlantic menhaden samples collected from the NJ commercial purse seine, pound net, gillnet, and cast net fisheries are processed at the NJDFW Nacote Creek facility and forwarded to the NMFS Beaufort Laboratory, Beaufort, North Carolina for aging. Black sea bass and summer flounder samples collected on the NJDFW Ocean Trawl Survey are processed for length, weight, and sex at the NJDFW Nacote Creek facility. Hard parts are collected and sent to the NMFS Woods Hole Laboratory for processing and age determination. Future samples collected will be processed and aged using the same protocol as in previous years. A current summary of species processed and aged by the NJDFW staff in support of this proposal are found in Table 1 of the Appendix.

A NJDFW Biological Characterization data entry system was developed in 2006 to warehouse all data collected under the biological characterization program. The NJ

biological database consists of trip level effort information from which the samples were collected and biological data taken from each individual sample. To date, all biological data collected for American eel, American shad, Atlantic croaker, Atlantic menhaden, black sea bass, river herring, summer flounder, tautog and weakfish have been entered, processed for QA/QC, and are available for assessment purposes.

The ACCSP and ASMFC have established species specific biological sample size goals for each partner state based on the total annual landings for each specific species. Sampling targets for species not based on commercial landings were developed by NJDFW staff at the initiation of this project and may exceed what is mandated by ASMFC through species specific FMPs. All data entry is standardized in the ACCSP format and queried when needed by NJDFW staff members for inclusion in technical reports, stock assessments, etc.

4. Data Delivery Plan

4.A. ACCSP Data Feeds

The project staff provides the ACCSP with support tables to facilitate timely and accurate landings for all species in which trip level data are collected. FY2016 initiated the direct entry of trip level data into SAFIS. This will ensure a more efficient process for quality assurance and quality control performed by NJDFW and NJ ACCSP staff. It will also allow for a smooth transfer of data for the "End of the Year" Fisheries of the U.S. report submission.

4.B. Commercial Trip and Dealer Reporting (eTRIPS, eDR, Commercial Harvester & Dealer Reports)

The ACCSP and the State of NJ have accumulated a significant number of commercial landings data while improving accuracy and efficiency through the use of eTRIPS and eDR. The eTRIPS program encourages fishermen to enter their own catch and effort data providing each fisherman the ability to review data without staff involvement. Commercial trip level reporting is mandatory for American eel, Atlantic menhaden, blue crab, and tautog in NJ. Additionally, commercial trip level data are available to authorized NJDFW staff for query purposes used in harvest compliance, and stock management. NJ has gained a significantly larger number of commercial landings data through eDR for American eel, Atlantic menhaden, blue crab and tautog. Project staff remove duplicate reports from multiple sources (paper, e-TRIPS) prior to ACCSP data uploads, ensuring accurate landings. Continuation and maintenance of eDR is imperative for the improvement of NJ's commercial fishery landings data collection. SAFIS eDR is the exclusive method of quota monitoring in NJ and has proven itself as a central management tool for monitoring fisheries status in NJ.

A major goal from the onset of the NJ ACCSP program was to develop and implement an all-encompassing commercial trip and dealer reporting system for the NJDFW. This goal was accomplished by project staff on January 1, 2016, through the New Jersey

Commercial Harvester Trip Reporting Program. The New Jersey Harvester Trip Reporting Form was created to help standardize all trip level data collected and to provide fishermen with a single comprehensive reporting form for all issued commercial licenses. The New Jersey Harvester Trip and Dealer Reporting Forms collect catch, effort, bycatch and discards data. A copy of the harvester trip form can be found in Figure 4. A summary of New Jersey Division of Fish and Wildlife commercial trip reporting since the NJ ACCSP project's initiation is described in Table 2.

The New Jersey Commercial Harvester Trip Report Database was developed and is the primary database for New Jersey Trip Harvester Trip Reports submitted by fishermen. In combination with SAFIS eTRIPS, the New Jersey Commercial Harvester Reporting Form will comprehensively characterize the commercial fisheries within New Jersey State Waters. All paper reporting forms are entered into SAFIS, reviewed for quality assurance, and are available to the ACCSP immediately.

5. Approach

5.A. Fisheries Dependent Sampling Program
30% Allocated Funds

Lobster At-Sea Observer Coverage. The primary location of commercial lobster landings during the past 5 years off NJ takes place in LCMA 4 with some landings occurring in LCMAs 3 and 5. Therefore, at-sea observer sampling will consist of 13 trips per year in LCMA 4. During each sampling effort, every lobster brought aboard the vessel is measured for carapace length in addition to biological observations including sex, egg development on females, cull status (number of claws), shell condition (diseased or not), and shell hardness.

Tautog At-Sea Observer Coverage. NJDFW will continue to collect filleted fish (racks) from the recreational hook and line fishery, as well as whole samples from the commercial hook and line fishery. Data collected from both sectors include, sex, length, weight, area fished, and effort data. This data is taken for collected fish as well as those that are discarded. Total targeted lengths and ages of tautog can be found in Table 3 of the Appendix. Data from the recreational and commercial observer coverage will be entered into the NJDFW Biological Characterization database. Data will be formatted to ACCSP standards and submitted annually.

5.B. Biological Characterization
15% Allocated Funds

Sampling of American eel, American shad, Atlantic croaker, Atlantic menhaden, black sea bass, river herring, summer flounder, tautog and weakfish will continue in FY2020 based on 2018 annual landings of each species. Five of the species sampled by NJ are ranked in the top quartile of the biological sampling priority matrix. Effort, either at-sea

or dockside, is assigned in accordance with guidelines defined in the ASMFC's FMPs for each species. NJDFW and ACCSP staff will continue to collect biological samples. Staff will process (cut and/or mount) all hard structures to be aged. The project staff at the NJDFW Nacote Creek facility in Port Republic, NJ will age all hard parts collected, except Atlantic menhaden, black sea bass and summer flounder. Atlantic menhaden are sent to the NMFS aging lab in Beaufort, NC throughout the sampling year and are aged pro-bono. We have been providing samples for over 14 years and this has been beneficial to the coastwide stock assessment for Atlantic menhaden (Ray Mroch, Ray.Mroch@noaa.gov); black sea bass and summer flounder were sent to the NMFS aging lab in Woods Hole, MA in early 2019 (Eric Robillard, Eric.Robillard@noaa.gov). For all other species, NJDFW and ACCSP staff have received the necessary training to process and read all the collected otolith samples (Table 1 of the Appendix). NJ will coordinate with NOAA Fisheries-Greater Atlantic Regional Fisheries Office (GARFO) to avoid duplicate aging**.**

Data collected from each sample is transferred to electronic format by NJDFW and NJ ACCSP staff. After data are successfully entered and quality control measures have been performed, project staff will send data feeds to the ACCSP for integration into the ACCSP Data Warehouse. This method will allow stock assessment committees, technical committees, and operations committees to view the status of the NJ biological sampling program. Species specific sampling and data collection methodology will follow previous sampling protocol. Species specific target samples sizes for 2019 can be found in Table 3 of the Appendix.

5.C. ACCSP Data Feeds
15% Allocated Funds

The NJ ACCSP Program supplies the ACCSP with data from multiple sources including paper/electronic landings data and biological characterization programs. Some NJ landings data are not collected via eTRIPS or eDR and must be converted from paper to electronic records. Included in paper reports are trip level landings of all commercially harvested fish by state permitted fishermen. Biological characterization data are collected for American eel, American lobster, American shad, Atlantic croaker, black sea bass, river herring, summer flounder, tautog and weakfish. Following collection, the data are then input into SAFIS for future use and analyses by NJ and all other partners.

5.D. Commercial Trip and Dealer Reporting (eTRIPS, eDR, Commercial Harvester & Dealer Reports) 40% Allocated Funds

The continuation of SAFIS implementation includes components for web-based dealer reporting (eDR), web-based fishermen reporting (eTRIPS), paper-based data entry by project staff, report compliance monitoring, and site administration (user access, look-up tables, data correction, etc.). The NJDFW and NJ ACCSP Fisheries Specialist supervise the implementation of the NJ eTRIPS application. Project staff provides state permitted fishermen with user accounts, establishes favorites lists and facilitate the usage of the eTRIPS application, a web-based trip level reporting form. Staff develop and present

training seminars for groups and conduct individual meetings when necessary to support fishermen in the use and customization of the eTRIPS application. These training tools include Power Point presentations at local libraries, firehouses, and other public meeting venues. The NJ ACCSP project attempts to train multiple individuals at each meeting, however, there are frequently cases when individual attention and support is required outside of these announced seminars. In addition, staff conducts compliance monitoring of reporting and perform QA/QC analyses of collected data. NJDFW and ACCSP Fisheries Specialist identify and complete data gaps/user support for state-permitted dealers, fishermen, and managers. Cross validation for all species entered into eTRIPS with SAFIS eDR is completed during each reporting period to assure that duplicate reporting is not taking place by comparing electronic reports to those received in paper logbook format by the NJDFW for all commercial species. Compliance of fishermen monthly reports is facilitated using the eTRIPS program and the New Jersey Harvester Trip Reporting forms.

Project staff lends support to the majority of state permitted dealers, typically providing logistical information regarding quota status, vessel recognition, gear selection, and general state regulations. Staff will travel to commercial fishing facilities, to provide assistance to permitted dealers pertaining to data entry for the eDR application as needed. NJ ACCSP staff travel for dealer and fishermen support pertaining to SAFIS and eTRIPS data entry, meetings for the further development of NJ commercial fisheries landing statistics program, and training expenses incurred will be covered by the NJ ACCSP.

In addition to all trip and dealer reports entered electronically through SAFIS, NJDFW and ACCSP staff collects all paper trip reports submitted on NJ Commercial Harvester and Dealer Reporting Forms. Harvester and Dealer Reports are due at the same frequency as electronic reports. Trip and dealer reports are entered into SAFIS and are processed for QA/QC. Project staff enter all harvest data received by paper trip report forms directly into SAFIS to increase efficiency.

6. Geographic Location

The ACCSP Fisheries Specialist will serve as the project staff. The project will be administered from the New Jersey Department of Environmental Protection (NJDEP), Division of Fish & Wildlife Nacote Creek Research Station in Port Republic, New Jersey.

7. Milestone Schedule: Month 1 following receipt of grant approval.

Description of Activity	Month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Electronic Vessel Trip Reporting (monitor existing fishermen reports, train new fishers, rollout system for additional species, data entry of data collected via paper based reports)	X	X	X	X	X	X	X	X	X	X	X	X			
Biological Characterization of Commercial Fisheries (Collect lengths, weights and age structures from NJ's commercial fisheries. Process and age scales, opercula or otoliths collected)	X	X	X	X	X	X	X	X	X	X	X	X			
Lobster Landing Statistics (Lobster harvest data collection with components of eVTR, dealer data, at-sea sampling, port sampling)	X			X		X	X	X	X	X	X	X			
Tautog Landing Statistics (collection of commercial at-sea coverage data)	X	X	X	X	X	X	X	X	X	X	X	X			
ACCSP Data Feeds (data entry of all biological samples collected by the NJDFW, transmission of all data to the ACCSP through monthly data feeds, SAFIS support tables)			X			X			X			X			
Electronic Dealer Reporting (continue to perform quota monitoring and the online reporting of commercial fisheries landings data for summer flounder, black sea bass and scup)	X	X	X	X	X	X	X	X	X	X	X	X			
Semi-annual report 1							X								
Semi-annual report 2													X		
Final report															X

8. Project Accomplishment Measurements update

Project Component	Goal	Measurement
SAFIS Electronic Trip Reporting (eTRIPS) Phase I	Successfully collect data from fishermen reports, check for compliance, and perform quality assurance.	All data checked, and compliance performed prior to the 10th of the following month.
SAFIS Electronic Trip Reporting (eTRIPS) Phase II	Enter all received data submitted by fishermen, perform quality assurance measures.	All data entered and checked prior to the 10th of the following month.
Biological Characterization of Commercial Fisheries	Meet all target sample sizes for length, sex, age for each species.	Number of samples collected.
Dependent Fisheries At-Sea Observer Program	Conduct the prescribed number of trips and collect target number of samples by species and management area.	Number of trips made, and number of samples collected.
ACCSP Data Feeds	Supply the ACCSP with data feeds as described including participant, and landings data on the schedule described	Were the data feeds performed by the deadlines identified?
SAFIS Electronic Dealer Reporting (eDR)	Supply support to participating eDR dealers with NJ state dealer permits when requested. Perform report compliance monthly. Manage summer flounder, black sea bass, and bluefish quota as allocated to the State of NJ.	Was support provided and quotas managed?
New Jersey Commercial Harvester Trip Report	Create an all-encompassing reporting form for all state issued commercial marine fishing licenses.	All trip reports are entered and checked for quality assurance and accuracy.

9. FY2020 Budget (Letters in parenthesis pertain to Federal Grant Object Codes)

Item	*Total NJ DFW in-kind support*
Salaries (NJDFW)	
Supervising Biologist 5% in-kind (current FTE)	$4,821
Principal Biologist-Lab Supervisor- 15% in-kind (current FTE)	$12,739
2- Assistant Biologists- 50% in-kind (current FTE)	$49,263
Biologist Trainee - 90% in-kind (current FTE)	$44,100
Clerical 10%	$2,600
Fringe benefits (46.35% on FTEs)	$50,972
Hourly Technician (current PTE)	$11,700
Fringe benefits (7.65% on PTE)	$895
Supplies & Materials	
Scientific Equipment (Measuring boards, scales, calipers)	$250
Materials for collection and preparation of scales, otoliths, operculi, etc.	$350
purchase of samples (American eels)	$600
Other	
NJDFW Trawl Survey ($5,900 per day x 10 days)	$59,000
Department Network account (OIRM)	$4,000
NJ DFW indirect costs (20.29% of salaries)	$36,859
Subtotal NJ funds	**$278,149**
Append to ACCSP Administrative Grant	
Salaries (NJ ACCSP Staff)	
1 ACCSP Fisheries Specialist (ASMFC employee)	$43,500
Benefits 25%	$10,875
Other	
Travel (mileage and tolls)	$2,000
NMFS Contract; process and age summer flounder/black sea bass otoliths, ($12.94/sample, 1,000 samples)	$12,940
Biological Collection	$15,000
ASMFC Overhead (16.13%)	$9,093
ACCSP Admin Grant Project Costs	**$93,408**
Total Project Costs (includes in-kind)	**$371,557**

Budget Narrative

(a). Salaries; ACCSP Fisheries Specialists:

(1) NJ ACCSP Fisheries Specialist's annual salary.

(b). benefits of above employees

25% of the annual salary for the one NJ ACCSP staff.

(c). Travel (mileage and tolls):

The average number of miles traveled over the last three years to commercial docks, vessels, and instate meetings with industry representatives for the entire project = 3,450 miles / year.
3,450 x $0.58 = $2,001 dollars.

(d). NMFS Contract:

For aging otoliths from summer flounder and black sea bass collected by NJ ACCSP Staff:
500 black sea bass otoliths x $12.94 per otolith = $6,470.
500 summer flounder otoliths x $12.94 per otoliths = $6,470.
1,000 total otoliths to be aged x $12.94 per otoliths = $12,940.

(e). Biological Collection:

Additional requested funds to purchase market sized fish not encountered with current biological sampling methods.

(f). ASMFC Overhead:

16.13% of the sum of budget items a, b, and c.

(g). ACCSP Administrative Grant Project Costs:

Total of (a) through (f) does not include in-kind support. No funds are being directly received by the State of NJ.

The FY2020 budget is in two parts, the first part details the amount that is being provided as in-kind match by the NJDFW, while the second part is the amount to be amended to the ACCSP Administrative Grant. The $93,408 covers the salaries for one Fisheries Specialist position that was hired by the ACCSP and works out of the NJDFW's field office in Port Republic, NJ. This covers their fringe and indirect, the ASMFC's overhead, their travel for mileage, and tolls during port sampling and at-sea observer trips, in addition to attendance at ACCSP Committee meetings. The ACCSP is also able to administer funds to have the summer flounder and black sea bass otoliths prepared and ages determined by the NMFS Northeast Fisheries Science Center staff.

Additional funds of $15,000 are being requested for the purchase of biological samples from commercial fishermen at fair market value. With current biological sampling methods, there is a size class gap amongst larger fish. Being able to purchase additional samples will allow the NJDFW to expand age data, in turn aiding Stock Assessment Scientists in effective management of the resources. The species targeted for purchasing include: Atlantic croaker, American shad, black sea bass, summer flounder, tautog, and weakfish.

The requested ACCSP Administrative Grant amount achieves the 33% mandatory reduction for FY2020, based on the average amount of the 4 previously awarded proposals.

The in-kind funding provided by the NJDFW includes salaries for NJDFW full time employees under the titles of Supervising Biologist, Principal Biologist, two Assistant Biologists, Biologist Trainee, and Clerical. **The addition of a Biologist Trainee devoted to the project exemplifies the commitment of the NJDFW to transition staff, while maintaining the objectives and goals of the project.** Additional in-kind funds include: supplies for port sampling, aging laboratory materials, and purchasing American eel samples; staff time for independent samples taken aboard the NJ Ocean Trawl Survey and processed at the NJDFW's Port Republic field station, as well as Department network support for online reporting systems, and computer support for staff working under the ACCSP Project. Sources of in-kind funding come from the annual state appropriation for the Marine Fisheries Administration (MFA) and from the Atlantic Coastal Grant.

9.1 FY2018 Budget (Letters in parenthesis pertain to Federal Grant Object Codes)

	Item	*Calculation*	*Total NJ DFW in-kind support*
	Salaries (NJDFW)		
	Supervising Biologist 5% in-kind (current FTE)		$4,821
	Principal Biologist-Lab Supervisor- 15% in-kind (current FTE)		$12,739
	Assistant Biologist- 50% in-kind (current FTE)		$24,632
	Biologist Trainee - 50% in-kind (current FTE)		$22,527
	Clerical 10%		$2,600
	Fringe benefits (46.35% on FTEs)		$31,202
	Hourly Technician (current PTE)		$11,700
	Fringe benefits (7.65% on PTE)		$895
	Supplies & Materials		
	Scientific Equipment (Measuring boards, scales,		$250
	Materials for collection and preparation of scales, otoliths, operculi, etc.		$350
	purchase of samples (American eels)		$600
	Other		
	NJDFW Trawl Survey ($5,900 per day x 10 days)		$59,000
	Department Network account (OIRM)		$4,000
	NJ DFW indirect costs (20.29% of salaries)		$23,601
	Subtotal NJ funds		**$198,916**
	Append to ACCSP Administrative Grant		
	Salaries (NJ ACCSP Staff)		
(a)	2 ACCSP Fisheries Specialists (ASMFC employees)	2x(2080hrs x 20.80/hr	$86,528
(b)	Benefits 25%	25% of total salaries	$21,632
(c)	Travel (mileage and tolls)	7,408 Miles x &.054/mile	$4,000
(d)	NMFS Contract; process and age summer flounder/black sea bass otoliths,	$12.94/sample, 1,000 samples	$12,940
(f)	* ASMFC Overhead (35%)	35% of the sum of budget items a, b, c	$39,256
(g)	**ACCSP Admin Grant Project Costs**		**$164,356**
	Total Project Costs (includes in-kind)		**$363,272**

10. Maintenance Projects

Amount of funds received directly by the NJDFW, the amount appended to the ACCSP Admin. Grant for NJ ACCSP Staff salaries, and the amount and percentage of in-kind funds supplied by the NJDFW for the ACCSP projects.

History Details for NJDFW ACCSP Funded Projects						
Fiscal Year	**Period**	**Project**	**NJ ACCSP Funds Request**	**Appended to ACCSP Admin Grant**	**NJDFW In-Kind**	**In-Kind Percentage of Total Project Cost**
2001	9/01/2001 through 8/31/2002	Integration of Commercial Blue Crab Harvest Data into the ACCSP	$133,988	$0	$0	0%
2005	5/01/2005 through 4/30/2006	Implementation of Phase 2 of the ACCSP for the State of New Jersey	$89,180	$84,375	$41,831	19%
2006	9/01/2006 through 8/31/2007	Biological Characterization of Four New Jersey Commercial Fisheries	$79,722	$0	$59,986	43%
2006	9/01/2006 through 8/31/2007	Continuance of Phase 2 of the ACCSP for the State of New Jersey	$81,264	$78,975	$63,556	28%
2007	9/01/2007 through 8/31/2008	Implementation of eVTR, Biological Characterization and Continuance of SAFIS Coordination for the State of New Jersey	$167,544	$87,413	$111,617	30%
2008	9/1/2008 through 8/31/2009	NJ Implementation of ACCSP Commercial Fisheries Data Collection; Electronic Vessel Trip Reporting, Electronic Dealer Reporting, and Biological Characterization.	$128,536	$150,525	$86,609	24%
2009	9/1/2009 through 8/31/2010	Introduction & Continuation of SAFIS and Biological Characterization of Commercial Fisheries in NJ	$52,814	$174,096	$132,008	37%
2010	9/1/2010 through 8/31/2011	Further Development of SAFIS and Biological Characterization of Commercial Fisheries in NJ	$24,301	$174,096	$191,008	49%
2011	9/1/2011 through 8/31/2012	Continued Expansion of SAFIS and Biological Sampling for the Commercial Fisheries of NJ	$0	$188,779	$191,008	50%
2012	9/1/2012 through 8/31/2013	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	$0	$192,100	$240,897	56%
2013	9/1/2013 through 8/31/2014	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	$0	$192,100	$240,897	56%
2014	9/1/2014 through 8/31/2015	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	$75,988	$152,602	$159,227	41%
2015	9/1/2015 through 8/31/2016	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	$0	$158,740	$205,725	56%
2016	9/1/2016 through 8/31/2017	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	$0	$167,356	$205,725	55%
2017	9/1/2017 through 8/31/2018	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	$0	$158,547	$205,725	56%
2018	9/1/2018 through 8/31/2019	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	$0	$164,356	$198,316	55%
Total Amount for all ACCSP Projects			$833,337	$2,124,660	$2,334,735	44%

Proposal Summary for Ranking Criteria

PROPOSAL TYPE: ***Maintenance***

PRIMARY PROGRAM PRIORITY:

Catch and Effort: **100%** of permitted dealers in NJ will be submitting dealer reports through SAFIS eDR, for **100%** of the species they purchase. **100%** of the 21 commercial harvester license types will be submitting trip level catch and effort data, the remaining harvester licenses are collected through the federal NMFS VTR program.

PROJECT QUALITY FACTORS (Partners, Funding, and Data):

Partners-

Multi-Partner/Regional impact including broad application:
Although this project focuses on the activities of NJ permitted fishermen and dealers, it includes the data collection of species harvested regionally such as lobster, bluefish, summer flounder, black sea bass, scup, tautog, river herring, and weakfish. Thus, the ASMFC will benefit from the dealer and harvester data collected from this project.

Funding-

Transition Plan:
The NJ ACCSP Project in FY2013 included funds that went directly to the NJDFW for salaries and supplies. The NJDFW has proposed a landing license for all state fisheries several times over the years. The efforts have been thwarted by industry lobbyists who are opposed to any license. The NJDFW has been able to create an Atlantic menhaden landing license, the funds of which will be directed towards commercial fisheries research and management for that specific fishery. This specific license is limited entry with very specific qualifying factors to remain in the fishery. Because of this recent development, there are several commercial bases realizing the importance of mandatory reporting. These license funds will provide NJ with a source of revenue further relieving funding away from the ACCSP. These costs were removed in FY2014 and will continue to be covered as NJDFW in-kind match for FY2020.

Additionally, a Biologist trainee was hired in January of 2019, as the first phase of transitioning staff under NJDFW authority. The addition of the Biologist Trainee, whose main task is devoted to the objectives and goals of this project, allowed NJDFW to meet the mandatory 33% reduction. NJDFW anticipates the addition of another new staff member devoted to the project prior to the final year of funding for this maintenance project.

In-kind Contribution:
The NJDFW is providing 75% of the project cost (see section 9).

Data:

Improvement in data quality/quantity:
The NJDFW has been able to provide commercial harvest landings data to the ACCSP for American lobster, Atlantic menhaden, blue crab, and American eel through annual data feeds. Additionally, the NJDFW will be able to provide all commercial state harvester landings

through the Commercial Harvester Trip Report Program. The NJ eDR program continues to be monitored by the project staff. This type of project and data management has ensured improvements in data quality, quantity and timeliness.

SECONDARY PROGRAM MODULE:

Biological Sampling:
NJDFW is collecting biological characterization data through port sampling and at-sea observer coverage for 10 species, 5 of which are listed in the upper 25% on the ACCSP Biological Priority Matrix.

PROJECT QUALITY FACTORS (Partners, Funding, and Data):

Partners:
NJDFW is collecting biological characterization data for 10 species, all of which are regionally managed through the ASMFC's FMPs including weakfish, Atlantic croaker, American shad/river herring, tautog, Atlantic menhaden, American eel, American lobster, black sea bass, and summer flounder.

-American lobster at-sea observer data coverage includes trips in LCMA 4.
-American eel sampling covers water bodies bordered by NY, NJ, PA, and DE.

Data:
All biological data collected by the NJDFW and NJ ACCSP staff are available for coast-wide stock assessment. NJDFW blue crab harvest trip level catch and effort data are used by the state of Delaware to conduct their stock assessment within the Delaware Bay. NJDFW tautog biological sampling and aging data are used by coast-wide and regional stock assessment committees. NJDFW at-sea lobster observer data are utilized regionally for stock assessment and recruit abundance. NJDFW American eel and weakfish biological characterization data are used for stock assessment.

Appendix:

Table 1. History of ALL biological samples collected by the NJ ACCSP program. American eel, American lobster, black sea bass, river herring and weakfish, all appear on the upper quartile of the ACCSP Biological Priority Matrix. (NJDFW recognizes biological samples by calendar year, not project year) American shad and river herring have been aged by scales in the past, otoliths were collected and will be processed for aging.

NJ ACCSP Biological Sampling Summary (Calendar Year)

	Weakfish			American Eel			Atlantic Croaker			American Shad			Atlantic Menhaden		
Year	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Scales	Scales Aged
2004	71	57	57	0	0	0	0	0	0	0	0	0	0	0	0
2005	148	148	148	0	0	0	0	0	0	0	0	0	0	0	0
2006	379	311	300	457	141	104	364	364	364	0	0	0	310	310	230
2007	566	546	543	237	0	0	340	340	338	7	0	0	630	630	486
2008	457	451	448	547	508	259	608	500	498	36	34	0	760	760	667
2009	254	254	254	478	418	274	960	560	558	28	28	0	430	430	386
2010	650	571	571	399	384	346	750	750	749	42	42	0	560	560	421
2011	313	313	310	289	289	265	274	274	240	0	0	0	530	530	448
2012	202	202	154	140	60	60	660	635	635	0	0	0	890	890	826
2013	216	216	212	175	173	175	0	0	0	162	162	0	570	570	474
2014	108	108	108	197	197	188	27	27	27	81	77	0	890	890	814
2015	88	88	86	256	256	136	170	169	166	130	128	0	1300	1300	1078
2016	80	80	76	279	279	170	166	166	163	149	148	0	1120	1120	778
2017	116	116	114	167	167	113	50	50	50	83	82	0	1461	1461	1345
2018	144	144	144	341	339	*	52	52	52	23	23	0	946	946	*
TOTAL	**3792**	**3605**	**3525**	**3962**	**3211**	**2090**	**4421**	**3887**	**3840**	**741**	**724**	**0**	**10397**	**10397**	**7953**

* All samples denoted by an asterisk have not been aged at the time of submission. Please note that 2019 samples are in the process of being collected

	Tautog			American Lobster		Black Sea Bass			River Herring			Summer Flounder		
Year	Lengths	Opercles	Opercles Aged	Lengths	Trips Made	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged
2004	176	176	176	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2005	208	208	208	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2006	339	339	339	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2007	467	313	313	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2008	983	505	505	6330	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2009	902	569	200	6785	14	N/A	N/A	N/A	2009	1850	0	N/A	N/A	N/A
2010	563	486	486	5569	10	91	91	90	378	306	0	247	247	231
2011	363	346	346	8661	14	106	106	106	655	509	0	340	340	335
2012	265	259	259	23690	20	109	109	108	891	889	0	393	393	377
2013	460	431	300	9954	9	142	142	141	226	226	0	360	360	350
2014	783	783	294	13482	13	113	113	113	319	319	0	347	343	323
2015	569	536	200	6352	10	126	120	120	156	156	0	360	359	336
2016	637	637	253	3710	5	113	113	109	49	48	0	327	327	324
2017	504	504	*	9543	10	119	119	119	247	243	0	315	315	295
2018	359	359	*	1615	5	150	150	150	152	149	0	286	286	285
TOTAL	**7578**	**6451**	**3879**	**95691**	**121**	**1069**	**1063**	**1056**	**5082**	**4695**	**N/A**	**2975**	**2970**	**2856**

* All samples denoted by an asterisk have not been aged at the time of submission. Please note that 2019 samples are in the process of being collected

Table 2. History of reported commercial fisheries in New Jersey state waters.

Fishery	Year								
	2008	2009	2010	2011	2012	2013	2014	2015	2016- 2019
AMERICAN SHAD	X	X	X	X	X	X	X	X	X
CRAB DREDGE	X	X	X	X	X	X	X	X	X
BAIT NET									X
CRAB POT	X	X	X	X	X	X	X	X	X
LOBSTER, FISH, CONCH POTS									X
DRIFTING GILL NET									X
FYKE NET									X
GILL NET MESH EXEMPTION PERMIT (GNMEP)	X	X	X	X	X	X	X	X	X
HAUL SEINE									X
MENHADEN							X	X	X
MINIATURE FYKES OR POTS	X	X	X	X	X	X	X	X	X
POUND NET									X
SHIRRED NET, PURSE SEINES, OTTER/BEAM TRAWLS									X
SHRIMP TRAWL									X
STAKED AND ANCHORED GILL NET									X
TAUTOG	X	X	X	X	X	X	X	X	X
WIRE POUND NET									X

Table 3. 2019 sampling targets for each of the nine species currently funded through the ACCSP.

2019 NJ ACCSP Sampling Targets

Species	Target Lengths	Target Ages
American eel	350	350
American shad	250	250
Atlantic croaker	540	540
Atlantic menhaden	709	709
Black sea bass	500	500
River herring	500	500
Summer flounder	500	500
Tautog	200	200
Weakfish	270	135

Figure 1. Historical summary of the NJDFW tautog aging program (1993-2016).

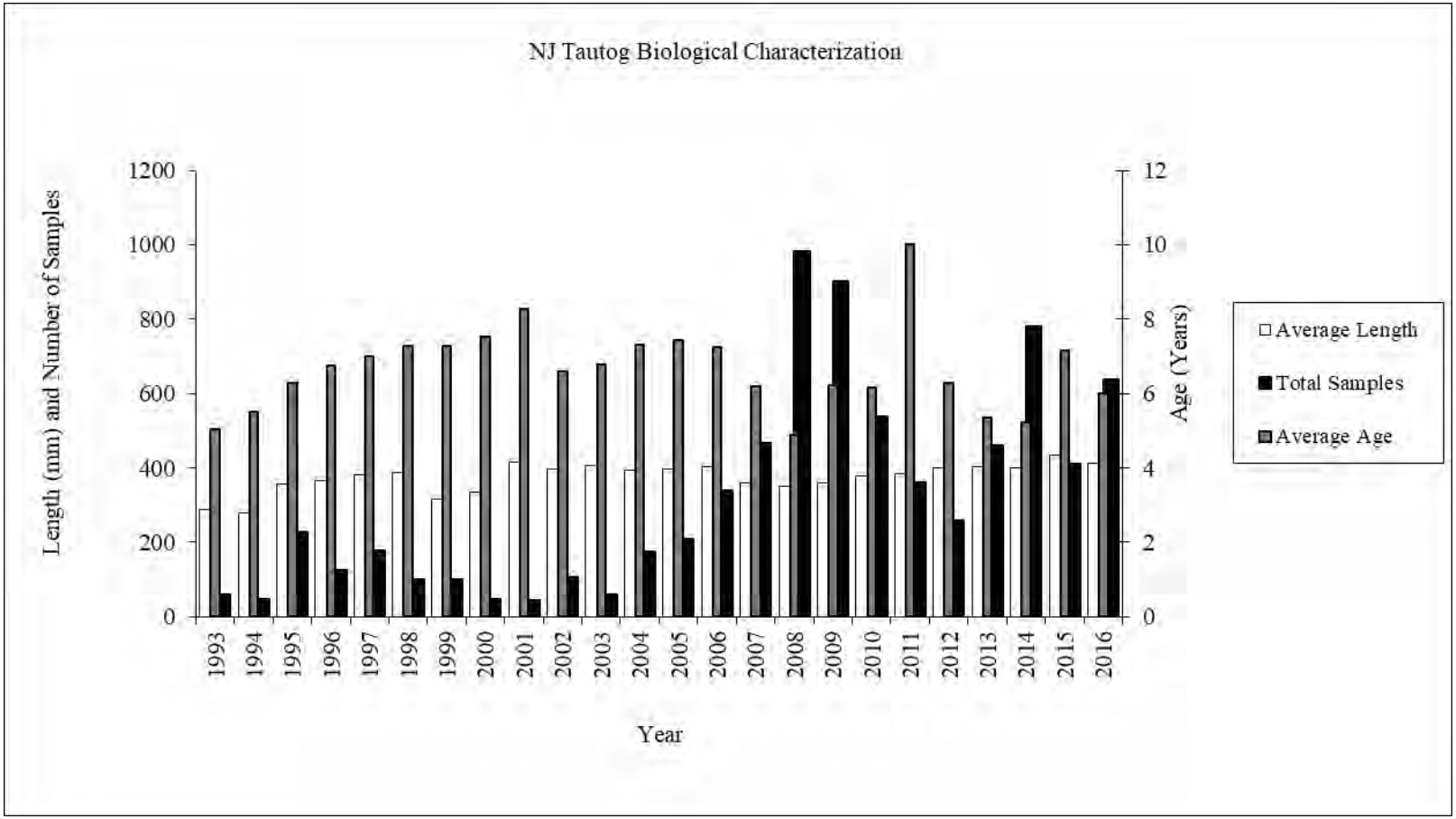


Figure 2. Average length at age for summer flounder samples collected through the NJ ACCSP Project (2010-2018).

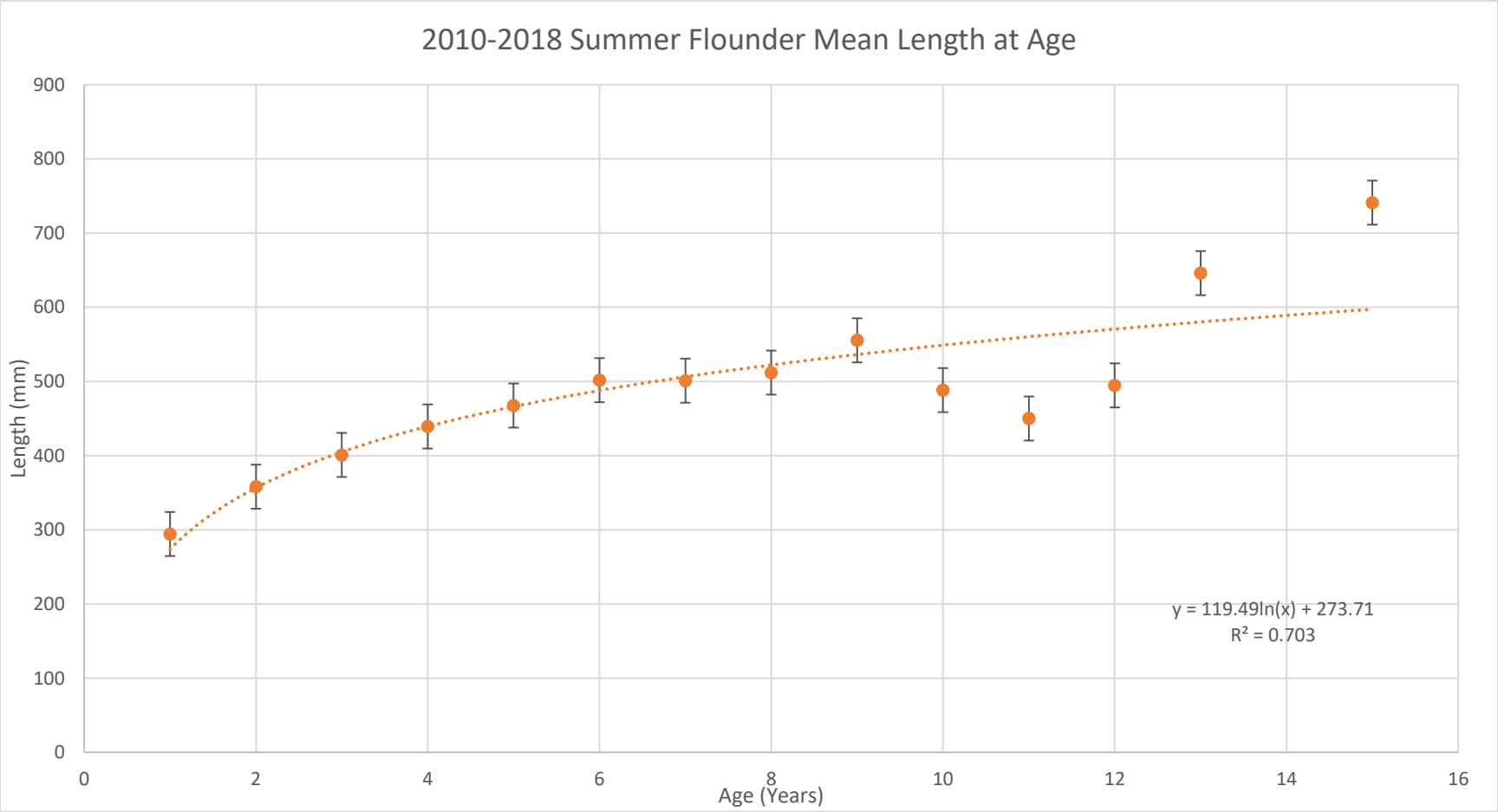


Figure 3. Average length at age for black sea bass samples collected through the NJ ACCSP Project (2010-2018).

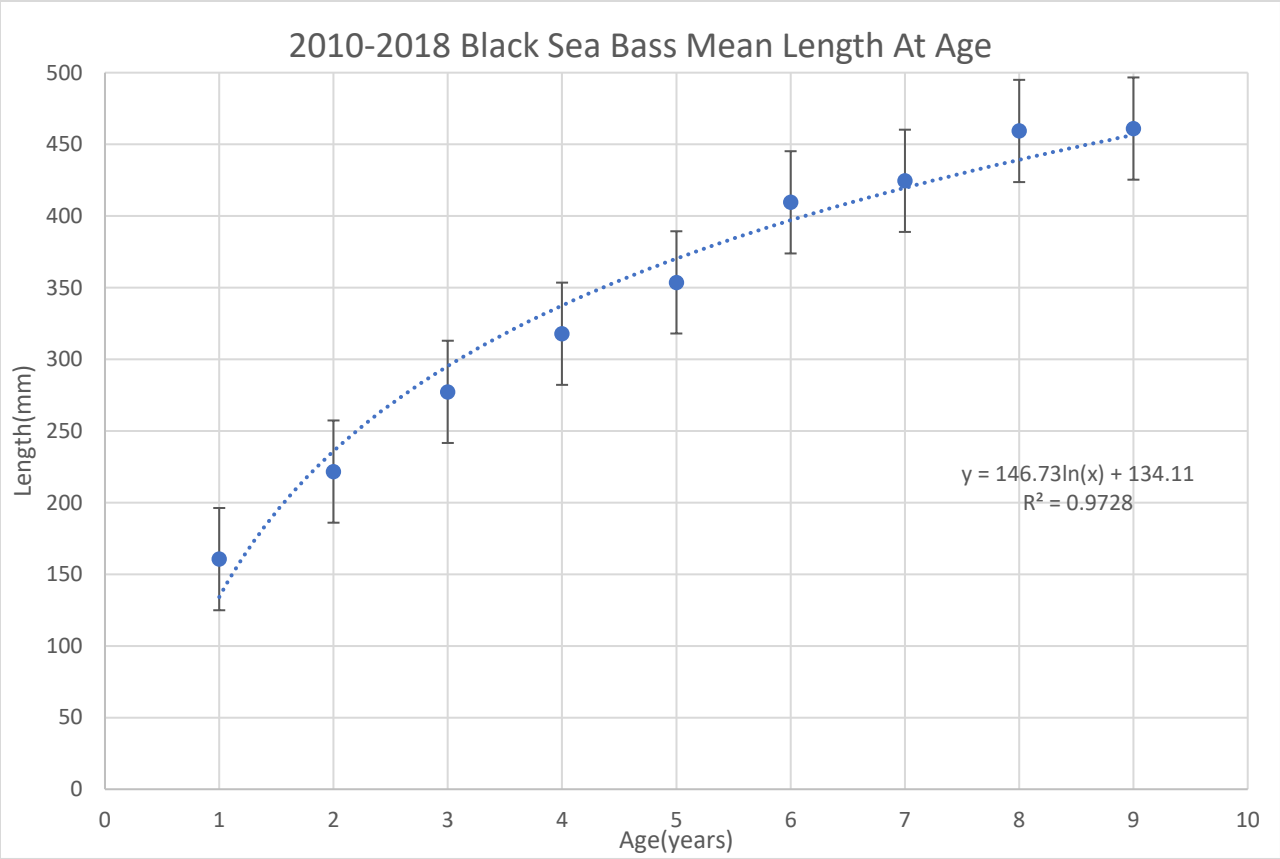
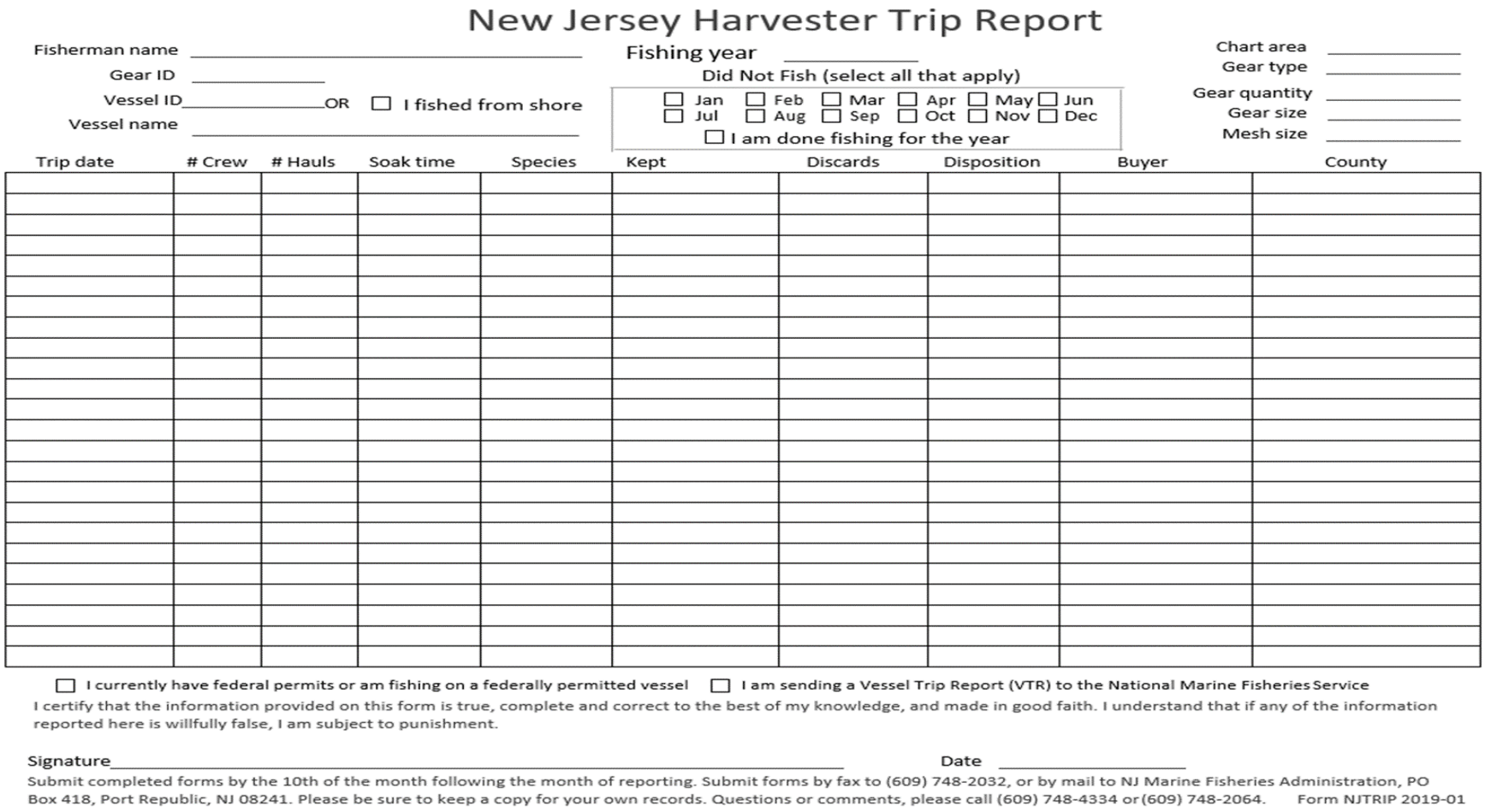


Figure 4. New Jersey Harvester Trip Reporting Form(front)



New Jersey Harvester Trip Report

Fisherman name _____ Fishing year _____ Chart area _____

Gear ID _____ Did Not Fish (select all that apply) Gear type _____

Vessel ID_____OR ☐ I fished from shore ☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun Gear quantity _____

Vessel name _____ ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec Gear size _____

☐ I am done fishing for the year Mesh size _____

Trip date	# Crew	# Hauls	Soak time	Species	Kept	Discards	Disposition	Buyer	County

☐ I currently have federal permits or am fishing on a federally permitted vessel ☐ I am sending a Vessel Trip Report (VTR) to the National Marine Fisheries Service

I certify that the information provided on this form is true, complete and correct to the best of my knowledge, and made in good faith. I understand that if any of the information reported here is willfully false, I am subject to punishment.

Signature_____ Date _____

Submit completed forms by the 10th of the month following the month of reporting. Submit forms by fax to (609) 748-2032, or by mail to NJ Marine Fisheries Administration, PO Box 418, Port Republic, NJ 08241. Please be sure to keep a copy for your own records. Questions or comments, please call (609) 748-4334 or (609) 748-2064. Form NJTRIP 2019-01

New Jersey Harvester Trip Reporting Form(back)

Trip date	# crew	# hauls	Soak time	Species	Kept	Discards	Disposition	Buyer	County

This is a continuation for any additional catch during the same month. Remember to fill out all chart and gear information on the front of this report. If gear size, gear type or chart area changes please fill out a new harvester trip report.

Chad A. Power

67 Arapaho Place
Galloway, NJ 08205
(609) 334-6479
Chad0826@gmail.com

Education

***Bachelors of Science, Marine Science**, 2012* GPA- 3.68
Stockton University, Pomona, N.J

***Associates of Chemistry**, 2010* GPA- 3.30

Gloucester County College, Sewell, N.J

Employment

APRIL 2017- PRESENT NEW JERSEY DIVISION OF FISH AND WILDLIFE

Marine Fisheries Biologist

- Manage and Monitor allocations and seasonal quotas for New Jersey's commercial fisheries
- Oversee the duties and responsibilities of New Jersey's Atlantic Coastal Cooperative Statistics Program's (ACCSP) contracted fisheries specialists
- Lead and assist numerous field and lab oriented projects administered by the New Jersey Division of Fish and Wildlife
    - Lead on NJ's yellow eel survey
    - Support crew on NJ's Ocean Trawl Stock Assessment Survey
    - Lead on NJ's Gut Content Analysis Project
- Active member of the Atlantic States Marine Fisheries Commission's (ASMFC) American lobster Technical Committee, and the acting chair ACCSP's Biological Review Panel
- Oversee operations and maintenance of New Jersey's Commercial Harvester Trip Reporting Program

Chad A. Power

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OCTOBER 2013- APRIL 2017 ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM

NJ ACCSP Fisheries Specialist

- Interact and assist New Jersey fishermen and dealers on submitting commercial harvest and landings reporting forms on both paper and electronic formats through theStandard Atlantic Fisheries Information System (SAFIS)
- Draft and design formal documents, including request for funding (RFP) documents and regulatory correspondence letters
- Created and implemented New Jersey's first Commercial Harvester Trip Reporting Program
- Coordinate with upper management on commercial fishery closures based on monitoring quotas
- Supervision of seasonal and part time New Jersey Division of Fish and Wildlife employees
- Supervise and take part in at sea observing and dock side sampling programs to assess New Jersey fisheries species populations

JUNE 2012- JUNE 2013 NEW JERSEY DIVISION OF FISH AND WILDLIFE

Marine Fisheries Technician

- Exportation and evaluation of collection data, using both software and online applications
    - Microsoft Office
    - SAFIS
    - Infoview, a database application of SAP BusinessObjects
- Outreach to commercial fishermen about monthly reporting issues and violations
- Extraction of fish otoliths and other hard parts for use in aging
- Operation and maintenance of sampling equipment
    - haul seines, dredges, fyke nets, benthic grabs, trawls, gill nets

Chad A. Power

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(609) 334-6479
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JUNE 2012- OCTOBER 2013 STOCKTON UNIVERSITY

Field Station Technician **Marine Science and Environmental Field Station**

- Provide support to research and educational activities; participate in vessel trips including assisting with field oriented classes
- Vessel and equipment preparation, deployment, and operation
- Oversight of equipment, facility, and vessel maintenance
- Remote operated vehicle, side scan sonar towfish, depth finders, YSI water quality sondes, Boat Motors
- Maintenance shop, storage units, office buildings
- Upkeep and Husbandry on lab's multiple aquaculture systems

Matthew Heyl

6 Provincial Place, Neptune, NJ 07753 | C: (908) 433-1166 | phewman@msn.com

Objective

To obtain a responsible and challenging position, where I can apply my experience and educational background and contribute with my desire to learn and work with others.

Experience

FISHERIES MARINE BIOLOGIST | NEW JERSEY DIVISION OF FISH AND WILDIFE | 11/18 TO CURRENT

- Oversee New Jersey's commercial fisherman and dealer reporting
    - Supervising the entry in the state's compliance file, entry of report in SAFIS eTRIPS, QA/QC of entry, and uploading of data to ACCSP
    - Reviewing commercial dealer reports in SAFIS eDR for accuracy
    - Reaching out to commercial fisherman via by phone, email, letter or in person to discuss reporting requirements
- Oversee New Jersey's commercial biological sampling
    - At sea observer trips for American lobster and tautog
    - Communicating with commercial fisherman for dockside sampling
    - Supervise and participate in the processing of commercially important species
- Active member on the ACCSP Commercial Technical, Information Systems, and Standard Codes committees
- New Jersey's contact for confidential data access for ACCSP's data warehouse
- Processing of data request from ACCSP and state biologist
- Participating in NJDFW field sampling
- Supervising hourly and summer employees

FISHERIES SPECIALIST | ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM |01/18 TO 11/18

- Monitor multiple databases to keep track of all state and federal seafood dealers and fishermen as regulated by the Atlantic States Marine Fisheries Commission (ASMFC) and the New Jersey Division of Fish and Wildlife
- Conducing dockside sampling of marine fish from commercial and recreational fisherman
- Field sampling that includes fisheries dependent and independent surveys
- Biological sampling of marine fish while in a lab and in the field which includes extracting otolith, operculum, and scales for aging
- Work with New Jersey seafood dealers and fishermen, and with state, federal, and ACCSP staff to implement the ACCSP Standard Atlantic Fisheries Information System (SAFIS) for electronic Dealer Reporting, and electronic Vessel Trip Reporting
- Perform entry of commercial fisheries data collected from individual fishermen for the use of stock assessment
- Provide New Jersey biologist commercial fisheries data upon request
- Supervise hourly and summer workers and proof reading and editing work before submission

Matthew Heyl

6 Provincial Place, Neptune, NJ 07753 | C: (908) 433-1166 | phewman@msn.com

HOURLY MARINE BIOLOGIST | NEW JERSEY FISH AND WILDLIFE | 05/2008 TO 01/2018

- Successfully helped create and lead New Jersey's River Herring Project which resulted in much needed data and a time line that will be used in management and regulation of the fishery
- Knowledge and experience conducting fisheries surveys of adult and juvenile saltwater, freshwater and estuarine fishes with a focus on anadromous fish
- Provide supervision and training to hourly and summer workers
- Documented and collected fisheries data while working in the field and at the office
- Created and monitored river herring field survey database keeping track of fisheries data using Microsoft office
- Certified and experienced using electro-fishing equipment
- Monitored water quality, atmospheric conditions, and flow rates of various water bodies
- Processing and aging of otoliths and scales
- Prepares time restricted reports for supervisors
- Knowledge and experience of various sampling methods including Seine Nets, Gill Nets, Otter Trawl, and Fyke Nets
- Maintenance and purchasing of nets, vehicles, boats, trailers and field equipment

CONSERVATION OFFICER | NEW JERSEY FISH AND WILDLIFE | 01/2016 TO 03/2017

- Full law enforcement powers

- Conducting field investigations, inspections and surveying and patrolling a designated area of the State by motor vehicle, boat, and foot
- Conducts environmental inspections and investigations and collects field information to determine compliance with the appropriate environmental laws and regulations
- Educates and informs the public regarding rules, laws, procedures and management practices regarding the recreational and commercial uses of fish, game and wildlife to ensure the protection of the environment
- Prepares investigating reports of hunter-related accidents, and completion of a thorough and comprehensive report on all such incidents
- Maintain field notes and prepare for record retention

LAB PROFESSOR | BROOKDALE COMMUNITY COLLEGE | 09/2013 TO 01/2016

- Teach college age student Oceanography and Environmental Science concepts
- Plan and lead labs and field trips
- Grade students work including lab practical, class work, and research papers

Matthew Heyl

6 Provincial Place, Neptune, NJ 07753 | C: (908) 433-1166 | phewman@msn.com

Education

BACHELOR OF SCIENCE | 2008 | RICHARD STOCKTON COLLEGE OF NEW JERSEY

- Major: Marine Biology

BROOKDALE COMMUNITY COLLEGE

- Major: Environmental Science
  - transferred

Skills & Abilities

ACCOMPLISHMENTS

Gloucester County, New Jersey Police Academy Graduate

Boy Scout Eagle Scout Award

PUBLICATIONS

Books:

- Heyl, M. River Herring Status: Research Hold the Key, NJ Fish and Wildlife Marine Fish Digest, 2018.
- Heyl, M. It's a Short! Safely Releasing Summer Flounder Unharmed, NJ Fish and Wildlife Marine Fish Digest 2017

LAURA E. VERSAGGI

29 Briar Creek Road www.linkedin.com/in/laura-versaggi lversaggi@gmail.com
Sicklerville, NJ 08081 (856)-562-7903

EDUCATION

Stockton University Galloway, NJ
B.S. in Marine Science: Marine Biology Concentration Graduated: May 2017
GPA: 3.10

Rowan College at Gloucester County (RCGC) Sewell, NJ
A.S. in Marine Science Graduated: December 2014
GPA: 3.59

PROFESSIONAL EXPERIENCE

Fisheries Specialist February 2019 – present
Atlantic States Marine Fisheries Commission Port Republic, NJ

- Contracted with *Atlantic Coastal Cooperative Statistics Program (ACCSP)* to work with *New Jersey Division of Fish & Wildlife (NJDFW)*
- Manage New Jersey commercial fisheries data and ensure accuracy of fishery dependent data being submitted in *Standard Atlantic Fisheries Information System (SAFIS)*
- Work within the SAFIS Management System to manage data such as participants, permits, and SAFIS accounts
- Work with fishermen to provide accurate reporting on their NJ Harvester Trip Reports
- Dockside sampling and data collection for New Jersey commercial fisheries
- Extract hard parts (otoliths, scales, and opercula) from commercially important NJ marine species
- Prepare and submit proposals, semi-annual reports, and final reports for each grant period.
- Prepare and submit New Jersey participant and dealer information for data uploads to Data Warehouse
- Complete data requests for NJDFW staff involving confidential and non-confidential fisheries data

Hourly Fisheries Technician May 2018 – February 2019
New Jersey Division of Fish & Wildlife Port Republic, NJ

- Assist in field activities, including inshore and at-sea sampling surveys of important NJ species
- Dockside sampling and data collection of commercial and recreational fisheries
- Work with *Atlantic Coastal Cooperative Statistics Program (ACCSP)* staff to enter and ensure accuracy of fishery dependent data using *Standard Atlantic Fisheries Information System (SAFIS)*
- Work with fishermen to provide accurate data on their NJ Harvester Trip Reports
- Extract hard parts (otoliths, scales, and opercula) from commercially important NJ marine species

LAURA E. VERSAGGI

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- Follow laboratory procedures to mount scales and clean opercula to prepare them for aging
- Review proposals and reports for errors and suggest edits
- Transcribe audio from lobster vessel observer trips into database
- Conduct public outreach events
- Maintenance of field and laboratory equipment

Assessment Coordinator November 2015 – February 2019
Conserve Wildlife Foundation of New Jersey Manahawkin, NJ

- Sub-contracted by *Marine Academy of Technology and Environmental Science.*
- Assist in removal of derelict fishing gear from Barnegat Bay
- Assess the condition, by-catch, and organism growth of derelict fishing gear
- Database management and analysis

Program Coordinator May 2015 – February 2019
Marine Academy of Technology and Environmental Science Manahawkin, NJ

- Assist in activities, programs and projects for Project Terrapin
- Assist in raising diamondback terrapin hatchlings
- Assist in creating nesting habitats
- Create educational materials and conduct outreach events
- Database management and analysis

PRESENTATIONS

NJ Diamondback Terrapin Meeting, The Wetlands Institute October 13, 2017

- Poster: Removal and Assessments of Derelict Fishing Gear from Barnegat Bay

Stockton University NAMS Research Symposium April 28, 2017

- Poster: Removal and Assessments of Derelict Fishing Gear from Barnegat Bay
- Poster: Determination of Important Chemical and Nutrient Trends Along an Estuarine Salinity Gradient

Ocean Planet: Where the River Meets the Sea, Stockton University October 29, 2015

- Guest Lecture on diamondback terrapins with hatchling measurement activity

CERTIFICATIONS AND SKILLS

- Microsoft Office Suite
- Standard Atlantic Fisheries Information System (SAFIS)
- NJ Boating Safety Certificate

LAURA E. VERSAGGI

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Sicklerville, NJ 08081 (856)-562-7903

COURSEWORK

Barnegat Crab Pot Project Spring 2017
- Independent study student research project Stockton University
- Collected and analyzed data for poster presentation at student research symposium

Analysis of Sediments and Seawater Spring 2017
- Independent laboratory analysis of dissolved micronutrients. Stockton University
- Analyzed results for poster presentation at student research symposium

Biostatistics I & II Fall 2016-Spring 2017
- Statistical analysis of biological data Stockton University
- Statistical analysis in Excel and WinSTAT

FY 2020
Atlantic Coastal Cooperative Statistics Program (ACCSP)
Funding Request Proposal – June 10, 2019
Revised – August 12, 2019

Applicant: South Carolina Department of Natural Resources (SCDNR)
Marine Resources Division, Charleston, SC

Principal Investigator: Amy Dukes, SCDNR Statistics Section Leader

Project Title: ACCSP Data Reporting from South Carolina's Commercial Fisheries
1) 100 % Trip-Level Catch and Effort Data Collection (70%)
2) Biological Sampling for Hard Part/Aging of Offshore Species (30%)

Project Type: Maintenance Project: One-year
(No change in scope of work, continued emphasis on Electronic Data Reporting)

Requested Award Amount: $**113,846** (Excludes 5% NOAA Administrative Fee)

Requested Award Period: One-year, September 1, 2020 thru August 31, 2021, or after receipt of funds

Objective: The objective of this study is to successfully execute two ACCSP Primary Program Priorities with South Carolina Commercial Fisheries:
Catch/Effort Data Collection (70%)
Biological Sampling (30%)

Currently, SCDNR is actively engaged in collecting consistent ACCSP standardized trip-level data for 100% of all marine and diadromous commercial fisheries in South Carolina. The proposed funding would allow SCDNR to maintain compliance with ACCSP data requirements and standards through the continuation of commercial catch and effort data collection, data entry, database management, and administrative support. It will also enable the collection of biological samples, including otoliths and length frequencies, from species in the Snapper/Grouper, Pelagic, and Coastal Migratory complexes landed commercially in South Carolina. These data serve as an integral aspect of the development, implementation, assessment and maintenance of fisheries management plans for Atlantic Coastal fish stocks.

Need:
It is crucial to assess comprehensive catch/effort data and to collect biological samples in order to effectively and efficiently manage fisheries. Fishery dependent data, provided by commercial fishermen, has a direct impact on fisheries management and the sustainability of the industry. The information gathered is used to evaluate the need for potential changes to fisheries regulations and to monitor commercial fishing quotas across the southeast. These data are used to support stock assessment analyses for state and federally managed species, and are responsible for the assessment of finfish stocks to identify fisheries trends and assess management priorities while meeting regulatory requirements under the Magnuson-Stevens Act. The Atlantic States Marine Fisheries Commission also needs reliable and detailed data to evaluate the effectiveness of Fisheries Management Plans.

Catch and Effort - Since 1976, South Carolina has required mandatory reporting (regulatory authority, Title 50, Section 50-5-380, SC Code of Laws) of monthly totals of commercial landings from licensed wholesale seafood dealers. Since 2003, these data have been provided on a trip-level basis. **Currently, 100% of all commercial fisheries products landed in South Carolina are required to be reported through ACCSP compliant trip-level logbooks/electronic applications.** These data are collected through a one ticket system, denoting that all fishing effort (provided by the harvester at the time of sell/purchase), pounds of catch and product values (provided by the purchaser) are obtained and reported by the licensed wholesale seafood dealer and/or bait dealers on logbook forms provided by the Agency. These logbooks were designed to be fishery/species-specific to allow detailed and complete catch per unit effort data to be recorded for each fishery type. The logbooks/electronic applications collect the following data fields: product volume (i.e. pounds, bushels), product price, disposition (i.e. gutted, whole) and market category (i.e. small, large), gear type (i.e. trawl, hook and line), area and sub-area fished (i.e. river system, port), commercial fisherman information (name and license), vessel name and registration numbers, number of crew, time fished (gear soak time), and specific information on amount of gear effort (i.e. number of nets/lines/traps, number of hooks per line, number of sets/hauls, line length). The logbooks are bound and are carbon copied, as they serve as business receipts for the harvesters, and dealers can use them as a bill of laden. Examples of three commercial trip-logbooks, Daily Crab, Offshore Finfish and Bait Dealer, are provided below in Appendix 1, 2 and 3. Currently there are 1,571 licensed commercial saltwater fishermen, 55 bait dealers, and 271 wholesale seafood dealers in South Carolina, of which 243 are reporting via paper logbook and 28 federal dealers. Commercial fishermen, wholesale seafood dealers, and/or bait dealers who fail to make accurate, timely and complete reports are subject to Law Enforcement actions, including fines and possible suspension of licenses.

Electronic data collection has continued to be a major focus in South Carolina, as National Marine Fisheries Service (NMFS) has collected electronic data from federally permitted seafood dealers since 2011 (Southeast Regional Office, SERO) and 2013 (Highly Migratory Species, HMS) in order to track species for quota monitoring. The initial outreach efforts by SCDNR have been restricted solely to federal dealers. Although the concept of electronic data reporting was not well received by the majority of dealers, the 24 federal dealers (still actively engaged in outreach and education for several new/retuning dealers) that are currently using the provided data platforms have successfully transitioned to this reporting method. A dedicated staff member was hired in October 2015 to focus on electronic data reporting, which was initially funded through ACCSP allocations in FY2014. The Commercial Outreach Coordinator's goal has been to provide outreach, education, and support to federal dealers and fishermen while initiating efforts to have state-only dealers utilize the electronic infrastructure. There are very few state only dealers that have shown interests or pilot tested the electronic platform. The coordinator continues to excel in this position with respect to best practices for commercial data collections, building relationships with existing federal dealers and partner agency staff, and providing technical support to dealers and federal partners with request to data requests/corrections. Additionally, work has begun with ACCSP staff to revise the existing SAFIS platform, which was developed in 2010, to ensure that all of the data parameters are updated. This process is very slow to progress giving the high demand on ACCSP staff with no increase in infrastructure. The final step, which in under developmental construction now, is to provide functional outreach tools on the agencies commercial data information website, and will include video tutorials, a frequently asked questions list, etc. for SAFIS users to utilize. To date, 8,496 commercial trips have been collected through SAFIS which includes 187 unique commercial fisherman. It is the Agency's intent to create a seamless transition to electronic data reporting for all dealers, while ensuring compliance and data integrity. Although electronic data collections are a priority, at this time, staff are not prepared to request that state legislation change regulations to require mandatory electronic data. As federal agencies continue to increase electronic monitoring programs for many fishing sectors, their momentum may serve as a catalyst to increase state only fishing sectors to report electronically as well. Quality of data remains the critical foundation for fisheries data collections, and provided that electronic reporting has not been well received by all, staff feel that at this time, requiring electronic data reporting would not result in maintaining the highest quality of data possible.

The requested funding for this project would allow SCDNR to continue to employ Fisheries Statistics Section (FSS) staff, including a Commercial Outreach Coordinator, Data Manager, Compliance Coordinator and a data entry position, as well as support for printing and postage costs associated with these data collections.

Biological Sampling - SCDNR currently conducts dock-side sampling efforts on commercially landed finfish, collecting biological samples including, but not limited to, otoliths and length frequencies. **ACCSP-compliant biological sampling data from the Snapper/Grouper complex and Coastal Migratory and Pelagic species are collected through the Southeast Fisheries Science Center (SEFSC) Trip Interview Program (TIP).** Through TIP, port agents often collect additional biological data including tissue (DNA), stomach and gonad samples from species over and above the sampling targets, as these species are of interest to SCDNR and are related to project goals under the Agency's overall mission to manage and protect South Carolina fisheries. These additional samples will be analyzed in-house under the direction of SCDNR Marine Resources Monitoring, Assessment, and Prediction (MARMAP) program staff, and will increase the amount of available data for future stock assessments. These additional samples will not utilize ACCSP requested funds except to cover the port agents' salaries and travel expenses, since these additional samples are taken cohesively.

The requested funding for this project would allow SCDNR to maintain these consistent biological sampling efforts by continuing to employ two port agents with the FSS.

Results and Benefits:

FSS staff and port agents facilitate the partnership between the commercial fishing sector and state/federal management entities to maintain positive working relationships between all parties. SCDNR will work to maintain open and effective lines of communication with all commercial fishermen, bait harvesters, and wholesale dealers to ensure that everyone understands the importance of timely, accurate and complete data submissions associated with the management of marine fisheries.

Catch and Effort - The trip-level data collected will provide comprehensive and comparable landings data, which will be used to evaluate the current effectiveness of fisheries management and to develop and set priorities for new Fisheries Management Plans in conjunction with state and federal partners and councils.

Biological Sampling - This level of biological sampling is vital for the evaluation of finfish stocks, and the resulting comprehensive and comparable dataset will be essential to set priorities for and evaluate the effectiveness of current and future fisheries regulations, quotas and management plans.

Data Delivery Plan:

All available South Carolina trip-level catch and effort data will be converted to ACCSP codes and follow all established standards. Data will be transmitted to ACCSP at minimum quarterly, followed by complete calendar year data being transmitted on or prior to typical March deadlines established by ACCSP. Additionally, when unique data needs are requested (i.e. related to quota monitoring), SCDNR staff will work with SERO, HMS, and ACCSP staff to provide the most accurate and complete data in order to fulfill the request.

Electronic data collections of offshore fisheries products from federally permitted dealers through SAFIS and Bluefin data applications continue to be a primary focus for the Agency. Electronic data allows for better efficiency with respect to quota monitoring efforts. SCDNR staff continue to work with federally permitted dealers to insure they understand and can utilize the available electronic applications to enter and submit data in order to meet compliance deadlines. This outreach effort has resulted in improved timeliness and completeness of this data, as well as the state managed fisheries data. QA/QC checks of the offshore federal data, within the

quarterly submission timeframe, will occur in order to ensure that the provided data is accurate and complete. The SAFIS data will be loaded directly into the data warehouse on a similar quarterly basis.

Approach:

Catch and Effort Tasks

1. Collection and entry of all commercial fisheries trip-level catch and effort data through a mandatory trip ticket reporting system in accordance with ACCSP protocols and standards.
    - SCDNR will continue to employ two Data Specialists, one Data Administrative Assistant, one Data Manager, one Commercial Outreach Coordinator, and one Section Manager Leader responsible for all commercial catch and effort compliance, data entry, editing, and submission to ACCSP.
    - Individual trip tickets will be required from dealers and tracked for compliance for all commercial fisheries products landed in South Carolina.
    - Non-compliance offenders will be reported to SCDNR Law Enforcement and are subject to action. Statistics staff will assist with prosecution efforts by providing evidence in court.
    - Trip tickets will be reviewed for completeness, edited as necessary, entered and verified.
    - Trip ticket logbooks will periodically undergo a review process in order to identify areas for data collection improvements, and to ensure that dealers understand all data fields.
    - Efforts to QA/QC licensing data will continue as necessary to ensure the cohesion and integrity of FSS databases.
    - Data will be converted to ACCSP codes and transmitted to ACCSP.
2. Editing and verifying commercial fisheries trip-level catch and effort data through electronic data reporting.
    - Staff will continue to focus efforts on compliance, outreach and education to federal dealers and continue to urge state dealers to utilize the ACCSP's Standard Atlantic Fisheries Information System (SAFIS) or Bluefin platforms to report catch and effort data electronically.
    - FSS staff will examine inconsistencies and as necessary edit catch and effort data reported between mandatory trip tickets and electronic data submissions.

Biological Sampling Tasks

1. Collection of biological samples from commercially landed species within the Snapper/Grouper, Coastal Migratory and Pelagic fisheries, in compliance with ACCSP Biological Sampling standards.
    - SCDNR will continue to employ one full-time and one part-time port agent to collect age structure (otoliths) and length frequencies from targeted species.
    - Port agents will focus their efforts on intercepting commercial vessel trips at specific wholesale dealers/docks where these species are typically landed.
    - As the catch is unloaded, specimens will be randomly selected (in order to avoid sampling bias), identified to species, length recorded and otoliths collected. Otoliths will be extracted through the gill plate in a manner that the market condition of the fish is not compromised.
    - Species selection does incorporate the ACCSP Biological Review Panel species list and/or Southeast Fisheries Science Center (SEFSC) staff recommendations. Port agents do have the ability to collect biological samples for species of interest to SCDNR.
    - Port agents help to ensure that wholesale seafood dealers are completing the mandatory trip tickets both accurately and in a timely manner.
2. Biological sampling data will be edited, entered and verified in the TIP online database and submitted on a monthly basis.
    - As part of the TIP protocol, in-person interviews will be conducted at the time of biological sampling to gather necessary catch and effort information from vessel captains.

- Catch and effort data will be compared and verified with the trip ticket logbook data. All data collected will be entered into the TIP online database following established protocols including QA/QC practices.
- Age structure samples (otoliths) will be prepared, packed and shipped to be analyzed at the SEFSC Beaufort Marine Laboratory for aging and data processing following TIP protocols.
- Once processed, these age and length samples will be used in stock assessments, primarily for age at length models and/or used to proportion unclassified finfish grouping to individual species (triggerfishes).

Geographic Location:
The project will be headquartered at the SCDNR Marine Resources Division facility in Charleston, South Carolina. Project personnel are responsible for all data collections for marine commercial fisheries from multiple ports along the South Carolina coast.

Project Accomplishments Goals and Measurement:
The success of this project will be measured by the following metrics:
Catch and Effort - SCDNR will continue to meet a data dissemination goal, which will deliver South Carolina landings data to ACCSP no more than 90 days after the end of each quarter (every three months). Biological Sampling - SCDNR will continue to achieve set TIP sampling targets yearly, with data entry into the TIP online database and delivery of collected samples monthly.

• Quality assured quality controlled data transmissions to ACCSP, submitted on time and in approved formats.
• Catch/effort and biological sample data collections program maintained through internal databases with electronic data collections from the SAFIS/Bluefin programs.
• Provide support to SC licenses wholesale seafood dealers, with focused efforts to improve data collection quality, timeliness and accuracy.
• Commercial landings from state and federal dealers will be effectively used to monitor quota species, track data compliance, verify licensed fishermen and there fishing activities, and support best management practices.

Program Priorities/ Project Component	Goal	Measurement
Catch and Effort	Collection of 100% of all SC commercial fishery products landed at trip-level in accordance with ACCSP standards.	Data entered, verified and delivered to the ACCSP no more than 90 days after the landing date.
Catch and Effort	Continuation of Electronic Data Reporting by Federally Permitted Dealers and advocate the initiation for state-only dealers.	Dealers reporting on a weekly basis, completely and accurately. NMFS SERO/HMS to enforce and regulate.
Biological Sampling	Collection of all species targeted and identified by the ACCSP Biological Committee and TIP as data deficient.	Number of samples collected by representing number of species.
Biological Sampling	Validate, enter, and edit all biological data into TIP on-line and provide samples to Beaufort Lab.	Timeliness and accuracy of data/samples provided.

Funding Transition:
SCDNR continues to have discussions with state representatives and legislators about securing reoccurring state appropriated funds to accomplish the ACCSP Catch/Effort and Biological Sampling priorities, however, at this time there is no direct long-term state funding available. Several funding proposals have been submitted to the SC Legislature for consideration; unfortunately, at this time the requested funds have not been approved. Efforts will continue to be made to attempt to procure state funding, and it is the goal of the Agency to secure state funds in the near future.

Milestone Schedule:

Catch and Effort	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**
Task 1 Collection of trip-level commercial catch data and related effort data in accordance with ACCSP standards.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		
Task 2 Data entry, editing and verification of fisheries trip-level reporting data.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	
Task 3 Conversion of data to ACCSP codes and data transmission to ACCSP in a timely manner.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	
Task 4 Report writing period.											**X**	**X**	**X**	**X**
Biological Sampling	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**
Task 1 Collection and preparation of data on length frequencies and hard-part samples for commercially landed Snapper/Grouper, Pelagic, and Coastal Migratory species.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		
Task 2 Preparation and shipment of hard-part samples to Beaufort Marine Lab in North Carolina for processing and aging.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		
Task 3 Data editing (coding), verification and entry into the TIP online database.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	
Task 4 Report writing period.											**X**	**X**	**X**	**X**

Cost Summary:

1. BUDGET FOR PROPOSAL PLANNING - FY2020

	ACCSP Operational Costs Request		SCDNR In-Kind Contributions	
Personnel Expenses: All current staff, no new hires.	**Monthly Time**	**Salary Funds**	**Monthly Time**	**Salary Funds**
Statistics Leader (Catch & Effort, & Biological - AWD)	0	$0	9	$41,404
Database Manager (Catch & Effort - EH)	2.5	$11,188	4	$17,900
Biologist I (Commercial Outreach - JD)	3	$9,558	3	$9,558
Data Administrator (Catch & Effort - VG)	3	$9,993	4	$9,994
Biologist I (Biological - DP)	6	$18,744	4	$12,498
Biologist I (Biological - EM)	6	$18,744	4	$12,498
Total Salary Costs	**$68,227**		**$103,852**	
Fringe Costs (38%)	**$25,926**		**$39,464**	
Indirect Costs (16.47%)	**$11,237**		**$17,104**	
Total Personnel Expenses	**$105,389**		**$160,420**	
Miscellaneous Expenses				
Printing & binding (forms, surveys, tickets) SCDNR currently has 9 logbook forms necessary to collect 100% mandatory trip-level data. Printing of the logbooks is based on size and quantity ordered. The average price per book last FY was $8.60. Typical usage of these logbooks varies from year to year. During the last fiscal year, just over 320 logbooks were distributed to dealers, with a replacement cost of $2,608.19.	$2,550		$1,000	
Postage (incoming, business reply mail) The yearly fee to hold a USPS Business Reply account is $945.00. SCDNR paid an additional $1,856 in returned mail during the 2019 FY. Providing free return mail is an incentive for accurate and timely reporting from dealers, and has proven to be very successful.	$500		$2,500	
Postage (outgoing, forms, notices) This amount reflects the average amount typically spent to send mail to dealers. Monthly reminder letters are sent to delinquent dealers, and upon request, user manuals, logbook, and additional forms are sent out to dealers.	$500		$1,500	
Office and Sampling Supplies General supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials, clip boards, fin-clip vials, filet knives.	$2,700		$1,000	
Travel Port Agents will travel to dealers to intercept commercial fishing vessels to collect Biological samples. Current rates for SCDNR vehicles are 50.5 cents per mile. Round trip daily trips can average as high 200 miles.	$2,207		$6,000	
Total Miscellaneous Expenses	**$8,457**		**$12,000**	
Total Costs	**$113,846**		**$172,420**	
Total Project Cost	**$285,266**			
Percentage Contribution	**40%**		**60%**	

2. BUDGET – FY19 – Approved By ACCSP

	ACCSP Operational Costs Request		SCDNR In-Kind Contributions	
Personnel Expenses: All current staff, no new hires.	**Monthly Time**	**Salary Funds**	**Monthly Time**	**Salary Funds**
Statistics Leader (Catch & Effort, & Biological - AWD)	0	$0	9	$40,590
Database Manager (Catch & Effort - EH)	4	$17,548	4	$17,548
Biologist I (Commercial Outreach - JD)	6	$19,308	3	$9,654
Data Administrator (Catch & Effort - VG)	3	$9,798	4	$13,064
Data Coordinator I (Catch & Effort - SM)	5	$14,080	4	$11,264
Biologist I (Biological - DP)	6	$18,378	4	$12,252
Biologist I (Biological - EM)	6	$18,378	4	$12,252
Total Salary Costs	**$97,490**		**$116,624**	
Fringe Costs (38%)	**$37,046**		**$44,317**	
Indirect Costs (28.55%)	**$27,833**		**$33,296**	
Total Personnel Expenses	**$162,370**		**$194,237**	
Miscellaneous Expenses				
Printing & binding (forms, surveys, tickets) SCDNR currently has 9 logbook forms necessary to collect 100% mandatory trip-level data. Printing of the logbooks is based on size and quantity ordered. The average price per book last FY was $9.12. Typical usage of these logbooks varies from year to year. During the last fiscal year, just over 300 logbooks were distributed to dealers, with a replacement cost of $2,736.	$2,000		$1,000	
Postage (incoming, business reply mail) The yearly fee to hold a USPS Business Reply account is $965.00. SCDNR paid an additional $1,598 in returned mail during the 2018 FY. Providing free return mail is an incentive for accurate and timely reporting from dealers, and has proven to be very successful.	$1,000		$1,500	
Postage (outgoing, forms, notices) This amount reflects the average amount typically spent to send mail to dealers. Monthly reminder letters are sent to delinquent dealers, and upon request, user manuals, logbook, and additional forms are sent out to dealers.	$500		$1,500	
Office and Sampling Supplies General supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials, clip boards, fin-clip vials, filet knives.	$1,000		$1,000	
Travel Port Agents will travel to dealers to intercept commercial fishing vessels to collect Biological samples. Current rates for SCDNR vehicles are 50.5 cents per mile. Round trip daily trips can average as high 200 miles.	$2,000		$8,000	
Total Miscellaneous Expenses	**$6,500**		**$13,000**	
Total Costs	**$168,870**		**$207,237**	
Total Project Cost	**$376,107**			
Percentage Contribution	**45%**		**55%**	

BUDGET NARAVTIVE
(Requested Funding Period, FY20)

Project:	**ACCSP Data Reporting from South Carolina's Commercial Fisheries**
	1) 100 % Trip-Level Catch and Effort Data Collection
	2) **Biological Sampling for Hard Part/Aging of Offshore Species**
FFO#:	**NOAA-NMFS-SE-2020- TBD**
Project Period:	**1 September 2020 – 31 August 2021**
1 Year Funding:	**$113,846**
Prepared by:	**Amy Dukes (PI)**

Personnel (Salaries) $68,227: Five SCDNR employees' salary time will be utilized with these funds. The five current employees are: Database Manager, for 2.5 months ($11,188); Commercial Outreach Coordinator, for 3 months ($9,558); Wildlife Biologist I (Port Agent) for 6 months ($18,744); Wildlife Biologist I (Port Agent) for 6 months ($18,744); and a Data Compliance Administrator for 3 months ($9,993).

Fringe Benefits $25,926: The current SCDNR fringe benefit cost is set at 38% for salary employees. These rates are within the maximum range set forth by NOAA.

Contractual: $3,550: The contractual budgeted funds will be used to cover expenses to the grant associated with monthly cell phone charges, printing, copying, and freight charges. A primary function of this project will entail the printing of carbon copied logbooks that will be distributed to licensed individuals to collect data. During last fiscal year, 320 logbooks were distributed to dealers, with an average price of $8.60 per book.

Supplies and Materials $2,700: General office supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials will be purchased with these funds. In addition, postage paid envelopes are distributed through a business reply account with the US Postal Service. These funds will cover the yearly accounting fees and postage, both to and from licensed individuals.

Travel $2,207: Vehicle mileage is to be covered under this category. Staff will travel to seafood docks to collect catch and biological data. The current SCDNR travel rate is 50.5 cents per mile.

Indirect Charges $11,237: The current SCDNR indirect cost is set at 16.47% which is only applied toward salaries and wages.

Totals: $113,846

BUDGET NARAVTIVE
(Approved Funding Period, FY19)

Project:	**ACCSP Data Reporting from South Carolina's Commercial Fisheries**
	1) 100 % Trip-Level Catch and Effort Data Collection
	2) **Biological Sampling for Hard Part/Aging of Offshore Species**
FFO#:	**NOAA-NMFS-SE-2019- TBD**
Project Period:	**1 September 2019 – 31 August 2020**
1 Year Funding:	**$168,870**
Prepared by:	**Amy Dukes (PI)**

Personnel (Salaries) $97,490: Six SCDNR employees' salary time will be utilized with these funds. The six current employees are: Database Manager, for 4 months ($17,548); Commercial Outreach Coordinator, for 6 months ($19,308); Wildlife Biologist I (Port Agent) for 6 months ($18,378); Wildlife Biologist I (Port Agent) for 6 months ($18,378); a Data Compliance Administrator for 3 months ($9,798); and a Data Coordinator for 5 months ($14,080).

Fringe Benefits $37,046: The current SCDNR fringe benefit cost is set at 38% for salary employees. These rates are within the maximum range set forth by NOAA.

Contractual: $3,500: The contractual budgeted funds will be used to cover expenses to the grant associated with monthly cell phone charges, printing, copying, and freight charges. A primary function of this project will entail the printing of carbon copied logbooks that will be distributed to licensed individuals to collect data. During last fiscal year, 350 logbooks were distributed to dealers, with an average price of $8.17 per book.

Supplies and Materials $1,000: General office supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials will be purchased with these funds. In addition, postage paid envelopes are distributed through a business reply account with the US Postal Service. These funds will cover the yearly accounting fees and postage, both to and from licensed individuals.

Travel $2,000: Vehicle mileage is to be covered under this category. Staff will travel to seafood docks to collect catch and biological data. The current SCDNR travel rate is 50.5 cents per mile.

Indirect Charges $27,834: The current SCDNR indirect cost is set at 28.55% which is only applied toward salaries and wages.

Totals: $168,870

Maintenance Projects History for Primary Program Priorities: Catch and Effort (white), Biological Sampling (grey) – Beginning in 2011, the funded proposal included both Primary Program Priorities.

Funding Fiscal Year	Amount	Time Period	Results/Comments
2001	$132,228	1 June 2001 – 31 May 2002 (extended thru 31 May 2003)	Implementation of ACCSP Commercial Module
2003	$94,760	1 June 2003 – 31 May 2004 (extended thru 30 April 2006)	Continuation of ACCSP Commercial Module
2004	$39,532	1 June 2004 – 31 May 2005	Biological Sampling. Grant money was awarded in August 2004. State hiring freeze in effect. One year no-cost extension awarded in May 2005.
2005 and 2006		1 June 2005 – 31 May 2006 (extended thru 30 November 2006)	Biological Sampling. State hiring freeze still in effect, lifted in Sept. 2005. Port sampler hired Oct. 2005. Award period extended to Nov. 2006.
2006	$60,990	1 May 2006 – 30 April 2007 (extended thru 30 April 2008)	Continuation of ACCSP Commercial Module
2007	$34, 958	1 May 2007 – 30 April 2008	Biological Sampling. Grant money was awarded in August 2007.
2008	$42,261	1 May 2008 – 30 April 2009	Biological Sampling.
2009	$0	1 May 2009 – 30 April 2010	Biological Sampling. No proposal submitted, approved for a 6-month no cost extension
2009	$0	1 May 2009 – 30 April 2010	Continuation of ACCSP Commercial Module. No proposal submitted, approved for a 6-month no cost extension to spend remainder of funds
2010	$92,098	1 July 2010 – 30 June 30 2011	Catch and Effort data collection from the Commercial Module
2010	$54,091	1 July 2010 – 30 June 2011	Biological Sampling.
2011	$191,807	1 July 2011 – 30 June 2012	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2012	$186,558	1 July 2012 – 30 June 2013	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2013	$163,627 * Post budget cut	1 July 2013 – 30 June 2014	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2014	$175,716	1 July 2014 – 30 June 2015	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2015	$165,824	1 July 2015 – 30 June 2016	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2016	$161,504	1 July 2016 – 30 June 2017	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2017	$163,221	1 July 2017 – 30 June 2018	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2018	$168,870	1 July 2018 – 30 June 2019	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.

ACCSP - Ranking Criteria Summary – Full Ranking Process

Proposal Type – Maintenance, no change in scope of work

Primary Program Priority – This proposal contains two Primary Program Priorities that fit the current ACCSP Program Design.

- Catch and Effort (70%) – SCDNR collects data from 100% of all commercial fisheries products landed in this state on a trip-level basis, following standardized data elements and code formats required by ACCSP. **Increased efforts to improve and further promote electric data reporting.** Metadata is not collected.
- Biological Sampling (30%) (**to be considered during the Project Quality Factors**) – SCDNR collects biological samples, including length measurements and otolith collections, from many species within the Snapper/Grouper complex, Coastal Migratory and Pelagic species. Twelve of the species sampled fall within the ACCSP Biological Sampling Priority Matrix.
- Data Delivery Plan - Data will be transmitted to ACCSP quarterly, ensuring that all SC trip-level catch and effort data has been converted to ACCSP codes and follow all established standards.

Project Quality Factors –

- Partners – Although this proposal does not have a multi-state partnership, it does have a regional impact. The South Atlantic Fisheries Management Council makes recommendations to NMFS-SERO based in part by SCDNR fisheries data collections, both independent and dependent data. The Catch and Effort data and Biological Sampling data provided to ACCSP impacts these regional recommendations.
- Funding Transition – SCDNR continues to have discussions with state representatives and legislators about securing reoccurring state appropriated funds to accomplish the ACCSP Catch/Effort and Biological Sampling priorities, however at this time there is no direct long-term state funding available. Several funding proposals have been submitted to the SC Legislature for consideration, unfortunately at this time, the requested funds have not been approved. Efforts will continue to be made to attempt to procure state funding, and it is the goal of the agency to secure state funds in the near future.
- In-kind Contribution - The agency does utilize other funding sources to offset the non-existent state funds, which represents the 55% in-kind contributions.
- Data Improvement – Through the initiation of electronic data collection, primarily from dealers that handle offshore fisheries products, SCDNR will be improving the timeliness of data. QA/QC checks of the data prior to SAFIS data loads to the warehouse will continue in order to ensure accurate and complete data.
- Secondary Program Priority – Biological Sampling (see above).
- Impact on Stock Assessments – The Catch and Effort data collected and provided to the ACCSP Data Warehouse is suitable to be provided for future stock assessments. In addition, the finfish lengths measured and otoliths collected through Biological Sampling efforts are also provided for stock assessments.

Other Factors –

- Properly Prepared – This proposal follows the guidelines under the ACCSP Funding Decision Process Document.
- Merit – These funds are essential to continue seamless commercial catch/effort and biological data collections in SC until reoccurring state appropriate funds can be established. A delay or stoppage in these data collections may be unfavorable for fisheries management and regulations.

ACCSP - Ranking Criteria Summary – Abridged Ranking Process

Achieved Goals – This project has and will continue to meet and endeavor to exceed established project goals. SCDNR staff diligently and consistently work with ACCSP staff to ensure quality data is provided in a timely manner in a clean format which is consistent with established data standards.

Data Delivery Plan - Data will be transmitted to ACCSP quarterly, at minimum, ensuring that all SC trip-level catch and effort data has been converted to ACCSP codes and follow all established standards. Any data refresh, based upon continuous QA/QC efforts by SCDNR staff, will be provided as necessary.

Level Funding – This proposal is the first in the "Step Down" process to reduce and eventually eliminate funding on long-term Maintenance project. The submitted proposal does match the maximum step down amount allowed in year 6, with a 33% reductions from previously funded project.

Properly Prepared – This proposal follows the guidelines under the ACCSP Funding Decision Process Document.

Merit – These funds are essential to continue seamless commercial catch/effort and biological data collections in SC until reoccurring state appropriate funds can be established. A delay or stoppage in these data collections may be unfavorable for fisheries management and regulations.

Appendix 1. Example of the logbooks used by SCDNR, Daily Crab Trip Ticket.

SOUTH CAROLINA TRIP TICKET (DAILY CRAB POT) 2-

DEALER NAME:	CRABBY JOE INC.				
DEALER NUMBER:	570345678				
FISHERMAN NAME:	MARY JOE CRABBE			TRAP ID #	T0001
FISHERMAN ID # or CUSTOMER ID #:	11CEM55090				
NO. OF CREW: (INCLUDE CAPT)	1	VESSEL NUMBER:	SC475DH		
TRIP START DATE:	07 / 01 / 15 (MO / DAY / YR)		UNLOADING DATE:	07 / 01 / 15 (MO / DAY / YR)	
NUMBER OF TRAPS PULLED:	50		SOAK TIME (HOURS):	24	

*CIRCLE WATERBODY WHERE **MOST** OF CATCH WAS MADE*

020	Ashley River	300	ICWW: Prices Inlet-Sullivans	420	South Edisto
030	Broad River	310	Little River	430	St. Helena Sound
050	Bulls Bay	330	May River	490	Stono River
070	Calibogue Sound	370	Murrells Inlet	510	Waccamaw River
110	Charleston Harbor	130	North Edisto	530	Wando River
090	Combahee River	410	Port Royal Sound	550	Winyah Bay
100	Cooper River	450	Santee River	241	Atlantic Ocean
290	Folly River	470	Savannah River		

SPECIES	CODE	VOLUME	UNITS (circle one)	UNIT PRICE	TOTAL
#1 (Lg. Males)	7001	4.2	BU LBS DZ	70.00	294.00
#2 (Lg. Females / Sm. Males)	7002	35	BU LBS DZ	1.50	52.50
#3 (Sm. Females)	7003	6	BU LBS DZ	50.00	300.00
MIXED #2 & #3	7004		BU LBS DZ		
JUMBO	7005		BU LBS DZ		
UNGRADED	7000		BU LBS DZ		
PEELERS	7028		EA DZ		
STONE CRAB CLAWS	7180	1	LBS	2.00	2.00
WHELKS	7750		BU LBS		
FLOUNDER	1209		LBS		
CATFISH	0660		LBS		
(List Species)					
				Bait 2 flats	-20.00
				Total	626.50

Dealer/Fisherman Use

Revised 4/2014

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WHITE SCDNR YELLOW DEALER PINK FISHERMAN

Appendix 2. Example of the logbooks used by SCDNR, Offshore Finfish Trip Ticket.

SOUTH CAROLINA TRIP TICKET (OFFSHORE FINFISH) 1- XXXXX

DEALER NAME	FISH R US	DEALER NUMBER	570123456
FISHERMAN NAME	JOHN WANNAFISH	FISHERMAN ID # OR CUSTOMER ID #	11WHJ55090
NO. OF CREW (INCLUDE CAPT)	4	VESSEL NAME	WANNA FISH
		VESSEL NUMBER	676543
TRIP START DATE MM/DD/YYYY	07 / 01 / 2014	UNLOADING DATE MM/DD/YYYY	07 / 06 / 2014

CIRCLE ALL GEARS CODES USED AND FILL IN INFO.

Code	Gear	# OF LINES	# OF HOOKS PER LINE	TOTAL HRS FISHED
611	ROD & REEL (manual)			
(613)	BANDIT REEL	4	3	52
616	ELECTRAMATE			
(660)	TROLL	1	1	4
665	MACKEREL TROLL			
400	GILL NET	LENGTH (YDS)		TOTAL SOAK TIME (HRS)

SURFACE LONGLINE / BOTTOM LONGLINE	
# OF SETS	
# OF HOOKS PER SET	
LENGTH (MILES)	
TOTAL SOAK TIME (HRS)	
DAYS FISHED	
HOURS FISHED	

TRAPS	
# TRAPS USED	
# HAULS	
TOTAL SOAK TIME (HRS)	

DIVE	
# DIVERS	
HOURS	
# OF SPEARS	
# OF DIVES	

GREEN STICK	
LINE LENGTH (FT)	
# OF HOOKS	
HRS. FISHED	

CIRCLE AREA WHERE MOST OF CATCH WAS MADE

(3379)	<= 60 MILES OFF LITTLE RIVER TO CAPE FEAR (3380-)		> 60 MILES, FRYING PAN SHOALS (3400-3500)		<= 60 MILES OFF SOUTHPORT - MOREHEAD CITY		<= 60 MILES OFF CHARLESTON (3240- 3200)		> 60 MILES OFF CHARLESTON CHAS. BUMP		BLAKE PLATEAU

Code	KIND	SIZE	DP	GEAR	LBS	BOAT PRICE	TOTAL
1423	Gag Grouper	U	GP	613	975	2.90	2827.50
1424	Scamp	U	GP	613	295	2.90	855.50
1416	Red Grouper	U	GP	613	26	2.35	61.10
1412	Rock Hind (Strawberry)	U	GP	613	34	2.85	96.90
1414	Snowy Grouper S	S	GP	613	150	2.55	382.50
1414	M	M	GP	613	321	2.65	850.65
1414	L	L	GP				
1414	Ungraded	U	GP				
1415	Yellowedge Grouper	U	GP				
1422	Black Grouper	U	GP				
1425	Yellowmouth	U	GP				
1426	Yellowfin Grouper	U	GP				
	Other Grouper	U	GP				
3777	B-liner 3/4 - 1	S	GP				
3776	1 - 2	M	GP				
3775	2 - 4	L	GP				
3765	Ungraded	U	GP				
3302	Red Porgy (Pinks)	U	GP				
3764	Red Snapper	U	GP	613	38	2.90	110.20
3763	Mutton Snapper	U	GP				
3767	Yellowtail Snapper	U	GP				
	Other Snapper	U	GP				
1790	Hogfish	U	GP	613	7	2.55	17.85
3355	Black Seabass S	S	RP				
3353	M	M	RP				
3351	L	L	RP				
3351	XL	XL	RP				
3360	Ungraded	U	RP				
3308	Knobbed Porgy (Jolt)	U	RP				
1441	White Grunt	U	RP				
4560	Triggerfish	U	RP				
5260	Moonfish	U	RP				
1810	Almaco Jack	U	GP				
1812	Greater Amberjack	U	GP				
1817	Banded Rudderfish	U	GP				
4474	Gray Tilefish	U	GP				

Code	KIND	SIZE	DP	GEAR	LBS	BOAT PRICE	TOTAL
4473	Golden Tilefish S	S	GP				
4475	M	M	GP				
4471	L	L	GP				
4470	Ungraded	U	GP				
0570	Cobia	U	GP				
1030	Dolphin	U	GP	660	80	2.30	184
4710	Wahoo	U	GP				
1940	King Mackerel	U	GP				
0180	Barracuda	U	GP				
1807	African Pompano	U	GP				
2420	Bluefish	U	RP				
1142	Eel	U	RP				
1590	Hake	U	RP				
4321	Swordfish 100+	X	CP				
4322	50-99	L	CP				
4323	25-49	M	CP				
4327	Chunks	U	CP				
4320	Ungraded	U	CP				
5131	Wreckfish	U					
0191	Barrelfish	U					
4655	Yellowfin Tuna	U	HG	660	42	2.90	121.80
4658	Blackfin Tuna	S	HG				
4656	Tuna, unclassified	M	HG				
3505	Shortfin Mako Shark	L					
3495	Blacktip Shark	U					
3503	Spiny Dogfish	U					
3518	A. Sharpnose	U					
3511	Smooth Dogfish	U					
3485	Blacknose	U					
3481	Finetooth	U					
3479	Shark fins	U					
	Other Shark	U					
	Albacore			660	220	.40	88.00
						TOTAL	

Dealer/Fisherman Use

SCDNR COPY

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Revised 1/2012 Rev.04/12/2013

Appendix 3. Example of the logbooks used by SCDNR, Bait Dealer Trip Ticket.

SOUTH CAROLINA BAIT TICKET 0000001

FISHERMAN NAME:	Lady Fishalot		FISHERMAN ID# Or CUSTOMER ID #:	03FTL79240	
NO. OF CREW (INCLUDE CAPT)	2	VESSEL NUMBER:	999999	VESSEL NAME:	Sea Robin
TRIP START DATE:	06 / 04 / 16		UNLOAD DATE:	06 / 04 / 16	

CIRCLE GEAR USED AND FILL IN INFORMATION

810	HANDLINES (ROD & REEL)	585	TRAPS		020	HAUL SEINE	
# OF LINES		#TRAPS USED		30	LENGTH OF NET (FT)		
# OF HOOKS PER LINE		# HAULS		1	TOAL SOAK TIME (HRS)		
TOTAL HOURS FISHED		TOTAL SOAK TIME (HRS)		48			

		TOTAL LENGTH OF NET(S)	TOTAL SOAK TIME (HRS)				
				995	BY HAND	978	BOTTOM LONGLINE
				760	GIG	685	FISH TROTLINE
882	HAND CAPTURE			733	CAST NET	680	CRAB TROTLINE
705	DIP NET	FEET		HOURS ACTIVELY FISHING		# OF SETS	
825	SET SHAD NET	FEET				# OF HOOKS PER SET	
885	DRIFT SHAD NET	FEET				TOTAL SOAK TIME (HRS)	
401	HERRING GILL NET	FEET				LENGTH (FEET) -FISH GEAR ONLY	
400	GILL NET	FEET					

CIRCLE WATERBODY WHERE MOST OF CATCH WAS MADE

241	Atlantic Ocean	290	Folly River	470	Savannah River
020	Ashley River	300	ICWW - Price Inlet - Sullivans	420	South Edisto
010	Black River	310	Little River	430	St. Helena Sound
050	Broad River	350	May River	840	Stono River
050	Bulls Bay	370	Murrells Inlet	510	Waccamaw River
070	Calibogue Sound	390	North Edisto	530	Wando River
110	Charleston Harbor	500	Pee Dee River	550	Winyah Bay
890	Combahee River	410	Port Royal Sound		
100	Cooper River	450	Santee River		

CODE	SPECIES	VOLUME	UNITS (CIRCLE ONE)	UNIT PRICE	TOTAL	FOR PRIMARY USE
7000	Blue Crab		BU LBS DZ			
7193	Fiddler Crab		BU LBS DZ			
7250	Whelks		BU			
7811	Mussels		BU			
7472	Clams		BU			
7890	Oysters		BU			
7899	Periwinkles		LBS			
8145	Jellyfish		LBS			
1970	Whiting		LBS EA			
4060	Spot		LBS EA			
0925	Atlantic Croaker		LBS EA			
2670	Pinfish		LBS EA			
3112	Silver Perch		LBS EA			
2341	Mullet		LBS EA			
3640	Spanish Mackerel		LBS EA			
2370	Mud Minnows	17	LBS EA	6.00	102.00	
1341	Eel		LBS EA			
2210	Menhaden		LBS EA			
3470	Threadfin Shad		LBS EA			
3474	American Shad		LBS EA			
1340	Gizzard Shad		LBS EA			
1730	Hickory Shad		LBS EA			
1689	Herring		LBS EA DZ BU			
0660	Catfish		LBS			
7301	Shrimp		LBS			

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Principle Investigator: Curriculum Vitae

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Bachelor of Science, Marine Science
August 1996 to May 1999

CAREER-RELATED EXPERIENCE:

Jan. 2008 To present — Department of Natural Resources, Charleston, SC
Marine Resources Division in the Office of Fisheries Management:
Serves as the Fisheries Management Section Leader, participating in data collection, management, and administration activities associated with the Fisheries Statistics Section

Supervises, coordinates, and oversees daily operations in the collection of both commercial (Trip ticket Program, Trip Interview Program) and recreational (For-hire logbook, MRIP, special projects/programs) fisheries dependent catch/effort data collections and biological sampling efforts; including but limited to establishing and standardizing operational procedures for field sampling and administrative activities, constituent education and outreach activities, data management (compliance, entry and QA/QC), transmission of data to state/federal/partner agency fisheries managers/data users, Commercial and For-hire License and Permit coordination and support, Law Enforcement coordination and support (Magistrate Court Appearances), report writing, grant submissions and administration (applying for funding opportunities, budgeting and allocations) for approximately $1 million dollars in state and federal funds. Directly supervise 7 staff, collaborate and assist in funding 17 employees. In addition, duties include serving as the agencies representative to several state and federal committees and working groups associated with the funding agencies including but not limited to the National Marine Fisheries Service (Fisheries Science Center), the Atlantic States Marine Fisheries Commission, the Atlantic Coastal Cooperative Statistics Program (Vice-Chair of the Operations Committee, Commercial Technical Committee), and the Atlantic Coastal Fisheries Cooperative Management Act. Active participate with the South Atlantic Fisheries Management Council meeting/discussions, and serves as a panelist with SEDAR Stock Assessments.

Serves as the Tournament Coordinator for the SC Governor's Cup Billfishing Series. The three goals of the Series are conservation, education, and research. All related activities ensure that the goals are meet and often exceeded. Fundraising and management of the 501-c-3 funds.

Sept. 2000- To Jan 2008 — Department of Natural Resources, Charleston, SC

ACE Basin National Estuarine Research Reserve (NERR): Participation in comprehensive research activities within the ACE Basin NERR. Manage data collection, sampling instrumentation, and compiling of databases in support of the Reserve's participation in the System-Wide Monitoring Program (SWMP). Responsible for entry,

verification, editing, and statistical analysis of all data; assist with compellation of technical reports; preparing and delivering of presentations at conferences and workshops; and managing the ACE Basin NERR research budget.

Feb. 2000- Department of Natural Resources, Charleston, SC
To Sept. 2000

Marine Resources Division in the Office of Fishery Management: Assisting in the execution of an East Coast fin fish management plan. Anadromous species of American Shad and both Atlantic and Shortnose Sturgeon were collected, evaluated, tagged and released. Knowledgeable in the principles and practices of fish, statistical analysis, equipment maintenance and boat handling. Additionally, American Eel (elver) Young of the Year Survey; responsible for project set-up, daily sample collection, database management and analysis. (Currently the PI of this project)

Sept. 1999- Department of Natural Resources, Charleston, SC
To Feb. 2000

Marine Resources Research Institute: Sorted plankton samples to collect and identify three species of post-larval Peneaus shrimp. Responsible for continuation of project organization and data management.

UNDERGRADUATE EXPERIENCE (established the principles and practices that propelled my career):

Jan. 1997 Peer-Mentoring Program, Coastal Carolina University, Conway, SC
To May 1999

Co-instructor with the Dean of Sciences for a three hour, fall semester class. Served as a mentor and advisor for freshman Marine Science students throughout their first year of study.

May 1997 - Sea World of Florida, Orlando, FL
To Aug. 1997

Internship, Marine Education Instructor and Animal Care Assistant.

Dec. 1996 Coastal Carolina University, Coke and Topsail Islands, NC
To Dec. 1997

Undergraduate research assistant for a NSF grant-funded project to examine the long-range effects of hurricane damage/erosion on coastal barrier islands and marsh ecosystems. Conducted pre and post hurricane on-site surveys of sediment core sample collection. Analysis and results for the project were presented through reports and oral presentations.

EQUIPMENT KNOWLEDGE:
Outboard Motor Boats
Fishing Gear (Gill, Fyke, Trammel and Trawl Nets, and Electrofishing)
Biological Sampling procedures (length, otolith and gonad removal)
YSI and Nutrient data loggers/samplers

ADDITIONAL SPECIAL SKILLS:
Grant Principle Investigator
Certified Federal Grant Project Leader for USFWS
Microsoft Office Products
Excellent Communication Skills to Diverse Audiences

United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
NOAA Beaufort Laboratory
101 Pivers Island Road
Beaufort, NC 28516 USA

August 9, 2019

Operations and Advisory Committee
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St
Suite 200A-N
Arlington, VA 22201

Dear Committee members,

Thank you for taking the time to review my proposal "Continued processing and aging of biological samples collected from U.S. South Atlantic commercial and recreational fisheries" and considering it for FY20 funding. I feel that I have addressed your comments in the proposal, but also want to take to opportunity to answer some of the comments in more detail here.

Please accept my apologies for not fully understanding the RFP and the maximum funding allowed as presented in Appendix A. I have amended the budget to meet the maximum allowed amount and provided more information in the budget narrative to address the questions regarding some of the budget items.

I appreciate the need to phase out maintenance projects and have made the leadership of the Southeast Fisheries Science Center (SEFSC) aware of the plan for the past few years. My supervisor and I have been consulting with leadership of the SEFSC regarding a transition plan. Within the priority-based resource (PBR) process, an activity plan has been submitted to the SEFSC requesting base funds to cover permanent federal employee positions and/or contract positions for fish ageing work at the Beaufort Laboratory. The activity plan is under review.

The level of samples the Beaufort Laboratory receives per year has required at least three contract staff in addition to the two federal employee positions to manage the databases and provide annual age data for stock assessments. Since the first proposal for funding for processing and ageing fish samples from the South Atlantic fisheries was submitted, the request has been made for three contract positions. Initially, the request was for one biologist and two technicians. As the government negotiated with new contract vendors, those position distinctions were changed. Starting with the FY18 funding request, the three contract positions were put under one category by the vendor. Thus the perceived change in the proposal request.

The SEFSC and I are grateful for the support of your organization over the years. The NOAA Beaufort Laboratory Life History Group has been able to produce substantial amounts of timely age data in support of SEDAR stock assessments because of the grant funding from ACCSP. I wish to thank you and the panel for reviewing my proposal.

Sincerely,

Jennifer Potts

Attachment:
FY2020 Maintenance Project Proposal

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries

Submitted by:
Jennifer Potts
NOAA National Marine Fisheries Service
SEFSC/Beaufort Laboratory
101 Pivers Island Rd.
Beaufort, NC 28516
Jennifer.Potts@noaa.gov

Applicant: NOAA Fisheries Service, Southeast Fisheries Science Center, Beaufort, NC

Principal Investigator:
Jennifer C. Potts

Project Title: Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational

Project Type: Maintenance

Requested Award Amount: $177,861

Requested Award Period: For one year, beginning after the receipt of funds

Original Date Submitted: June 10, 2019

Date of Revision Submitted: August 9, 2019

Objectives:

The primary objective of the proposed work is to continue processing and ageing ACCSP-prioritized reef fish species in support of stock assessments for those species. This project aims to cover 100% of the biological module through **item 1b, improvement in biological data, of the Program Goals as stated in the 2020 RFP, specifically by providing age data for 10 of the upper 25% of species in the Biological Sampling Priority matrix**. The goal of this project is to process prioritized age samples as they are received annually. Focal species have been and/or will be assessed through the Southeast Data, Assessment, and Review (SEDAR) process and periodically updated in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The NOAA Beaufort Laboratory receives the majority of the fishery-dependent age samples collected within the **U.S. South Atlantic. Our laboratory works closely with other regional ageing laboratories to provide age data inputs for the stock assessment models.** Thus, another objective of this study is **to participate in ageing workshops and exchange reference, or calibration sets, of processed otolith samples.** These collaborations will allow us to address, collectively, issues of **consistency in processing methodology and interpretation of age structures** between laboratories, allowing data sets to be combined for stock assessments. Staff at the NOAA Beaufort Laboratory have been actively involved in the **GSMFC/ASMFC Age Manual** update. The manual will further standardize processing and age reading methodology throughout the entire Atlantic coast. Also, because the NOAA Beaufort Laboratory receives biological samples from various state agencies and federally managed fishery-dependent surveys, the data associated with each sample will be verified, standardized to ACCSP protocols, and logged into the Beaufort bio-sample inventory (BFT) or the Bio-sample Database (BSD) linked directly to the NMFS Trip Interview Program and Southeast Region Headboat Survey databases, which can be shared with ACCSP. Metadata associated with the age data from fishery-dependent sources will be provided to ACCSP in accordance with the Atlantic Coast Fisheries Data Collection Standards (http://www.accsp.org/sites/default/files/ACCSP_StandardsandAppendices2012_Final05082012.pdf). All of these objectives directly fulfill the mission statement of the ACCSP 2014 – 2018 Strategic Plan.

Need:

NOAA Fisheries Service (NMFS) in the southeast region has instituted the Southeast Data, Assessment and Review (SEDAR) process for conducting stock assessments, through which model outputs are used to inform management in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). After more than 60 SEDARs, the most cited research recommendation has been the need for more comprehensive, validated, and consistent age composition data. In concurrence with the SEDAR and ACCSP recommendations is research conducted by Yin and Sampson (2004) and Siegfried et al. (2016). Their studies looked at the many factors influencing stock assessment models (e.g., length of data series, natural mortality, fishery selectivity curve, fishing mortality, recruitment, survey biomass index, fishery and survey age composition, fishing effort, and sampling error in catch data). Of the

factors affecting estimates of ending biomass and projected catch, Yin and Sampson's study suggests improvement to the models can be made with increased age composition sampling, for the least cost. Siegfried et al. found that increased age composition data, specifically commercial age composition, had the greatest effect on the accuracy of assessments.

NOAA Beaufort Laboratory is in a unique position of holding fishery-dependent age data for many of the most important reef fish species of the U.S. South Atlantic dating back to the 1970s. These collections have been greatly enhanced because state agency partners and NMFS Southeast Fisheries Science Center have placed greater emphasis on collecting age structures along with fish lengths from the fishery landings. Following the NMFS review of stock assessment science, a National Otolith Sample Size Working Group was formed by NMFS to explore the question of how many age structures are sampled and how many are needed for a reliable stock assessments. This group has brought a lot of attention to the need for more age structure sampling. ACCSP has also funded or is reviewing proposals for funding state agencies to collect biological samples from the commercial fishery. The Beaufort Laboratory now is receiving upwards of 25,000 age samples per year from commercial and recreational fishery landings contributed by **many agencies including the North Carolina Division of Marine Fisheries (NCDMF), South Carolina Department of Natural Resources (SCDNR), Florida Fish and Wildlife Commission (FWC), NMFS Headboat Survey, and NMFS Trip Intercept Program (TIP)**. These new samples will provide the age composition data for stock assessments, but funding is required for processing and ageing the samples.

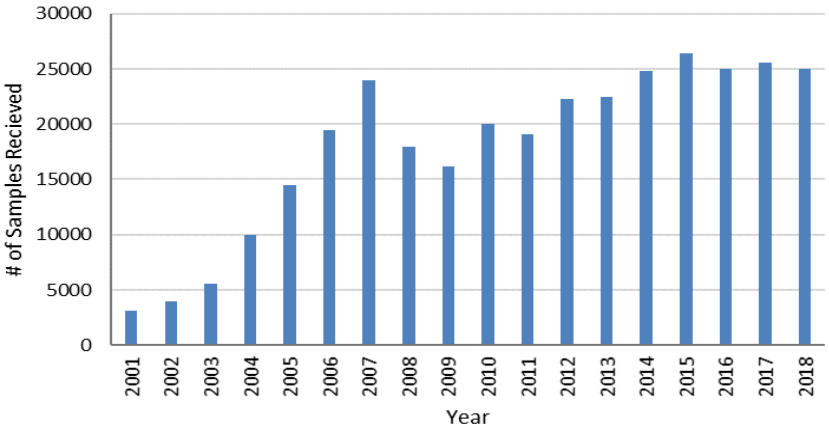
Another strong research recommendation from several SEDARs pertained to age and growth studies of the same species performed by more than one laboratory. Researchers have been asked to standardize processing techniques, be consistent in age determination analysis, and resolve ageing discrepancies between laboratories. **The NOAA Beaufort Laboratory works closely with SCDNR, NCDMF, FWC and NMFS Panama City Laboratory to exchange processed samples for age comparison studies. Recently, Virginia Marine Resources Commission (VMRC) and Old Dominion University (ODU)** have collaborated with **NOAA** Beaufort in ageing of blueline tilefish, snowy grouper and cobia. Funding is required to support workshops to discuss processing methodology and interpretation of the ageing structures. As a result of these workshops, consistency in ageing will be met and paired age readings will be used to create age error matrices that will be used as input data to stock assessment models.

Validation of ages is another critical factor in stock assessments. Consistency between age readers produces precision, but accuracy is more important. Several southeast regional laboratories are currently conducting age validation projects for reef fish species. NOAA Beaufort Laboratory has finished age validation studies on red porgy and gray triggerfish through chemical marking and rearing experiment and engaged in a similar study for vermilion snapper and black sea bass; SCDNR has conducted age validation studies on deep-water species such as blueline tilefish and wreckfish (Lytton et al, 2016) using bomb radio-carbon in otoliths; and NMFS Panama City has used bomb radio-carbon or radiometric age validation techniques on golden tilefish and speckled hind (Lombardi-Carlson and Andrew, 2015; Allen et al., 2013).

Funding will need to be sought for more in depth age validation of blueline tilefish and other deep-water species within their entire U. S. range (Atlantic and Gulf of Mexico). The regional laboratories are also collaborating with other state agencies and universities to expand the validation studies. These data will improve our between lab consistency in ageing, direct age workshops and improve stock assessments for management of the fisheries.

Ageing of reef fish species and fiscal support of that work at the Beaufort Laboratory have evolved over the years. Initially, ageing studies conducted by FTE staff of the Beaufort Laboratory were done on a species-by-species basis, but not specifically for stock assessment purposes. Those studies were also considered snap shots in time, rather than many years' worth of samples. Following the retirement of the lead scientist, leaving one FTE to carry on the work, and with the advent of the SEDAR process, a more concerted effort was needed to age fish for stock assessments. In 2003, one contract position was added to the lab funded through MARFIN funds, and the lab was able to provide a total of 4,300 ages for two species. MARFIN funded the ageing work through 2009, but then could no longer support it. Expanded annual stock assessment (EASA) funds were used to support one contract position, from 2008 - 2014. The number of assessments requested each year increased, and commensurately the number of age samples collected and sent to Beaufort increased (Figure 1). With the support for biological sampling by ACCSP, the Beaufort Laboratory turned to ACCSP for funding in 2012, 2013, 2015 - 2019, which is the primary source of funding for production ageing work at the Beaufort Laboratory. Through ACCSP funds for contracted support staff and NMFS FTE staff, the lab was able to show an increase in production processing from 5,000 to currently 24,000 age samples per year and from 4,300 to currently 18,000 actual ages per year for stock assessments. Also, the lab was able to process and age valuable samples collected prior to 1990 which included economically valuable species such as red snapper, gag, red grouper, black sea bass, gray triggerfish, and gray snapper. In addition, the Beaufort Laboratory has cleared the back-log of lane snapper age samples, which dated back to the early 1980s. These data were able to show potential shifts in age structure (e.g., age truncation), growth, and effects of minimum size limits over time. All of these elements are important indicators in stock assessments.

Figure 1. Number of age samples received at the Beaufort Laboratory 2001 – 2018.



Results/Benefits:

The NOAA Beaufort Laboratory has been collecting samples and ageing reef fish species for more than 40 years, and is able to provide those data for assessment models for species of the snapper grouper complex of the U. S. South Atlantic. Funding for this project would be directed at the processing and ageing of fish for the 2020 - 2021 proposed SEDAR species list, as well as continued processing of the highest priority species to ACCSP and in the SAFMC Snapper Grouper FMP. That work will begin during the summer of 2020, following the completion of the data input requirements for scamp, tilefish and snowy grouper. Also, ongoing efforts to stay up to date on black sea bass, vermilion snapper, gag, red snapper, red grouper, red porgy and greater amberjack will be continued. All age data provided from the Beaufort Laboratory have been included in stock assessments. The age data are broken down by year, fishery and gear, and state. For several of the species, the number of age samples has been inadequate for fully characterizing all years, fisheries and gears, and the request at the end of each SEDAR assessment has been for more comprehensive biological samples. The data provided will reduce uncertainty about the stock assessment models of important commercial and recreational species. Also, the data would be used to characterize fishery landings and provide information on year class strength, effects of fishing on age structure, and growth of fish in the population.

Ten species currently managed in the SAFMC Snapper Grouper FMP are listed in the upper 25% of the ACCSP Bio-Sampling Priority Matrix. Scamp is on a SEDAR "Research Track" schedule to start in early 2020, which includes the South Atlantic and Gulf of Mexico, with assessments to follow later in 2020. Data for snowy grouper and tilefish will be due to SEDAR in early 2020. In addition, gag will be assessed starting in mid-2020. Red snapper may start on a "Research Track" in January 2021, and gray triggerfish in June 2021. For the other species in the upper portion of the matrix, which include black sea bass and red grouper, the staff at the Beaufort Laboratory have been processing the annual age samples with a maximum lag time of one year. Past funding from ACCSP has allowed the lab to meet all of the needs of SEDAR without delays.

Along with the ten snapper-grouper species in the Priority Matrix, the Beaufort Laboratory includes seven additional species as our top priority for age processing (Table 1). Those fifteen species make greater than 75% of total samples received annually. To process and read the annual samples received would take at least 400 person days to complete. In Addition, of those species, lane snapper and white grunt have not undergone a SEDAR assessment, nor are they on the SEDAR schedule to date. The Beaufort Laboratory has inventoried over 25,000 white grunt samples dating back to the early 1980s. Over 600 days will be needed to process and read the backlog of white grunt. The estimate of time required does not include the time spent verifying all the data and updating the inventories, exchange of calibration sets with other laboratories and age workshops, data analysis and report writing.

During the past several years, there have been changes to the SEDAR schedule by the SEDAR Steering Committee that have caused the NOAA Beaufort Laboratory staff to shift their species of focus. Due to the changes, the staff has had to sub-sample the collection for particular species, namely vermilion snapper, gray triggerfish and red grouper, to meet shortened deadlines, thus possibly compromising the data for the stock assessment. The past funding from ACCSP has allowed the staff to process those samples previously excluded due to sub-sampling. Prioritized species of the SAFMC Snapper Grouper FMP are listed in Table 1 along with the number of age samples received in 2013 - 2018. The average annual cost estimate per species for processing and ageing of the samples has also been calculated and included in Table 1. The cost estimate does not include inter-laboratory calibration component of study. **Samples from yellowtail snapper, mutton snapper and black grouper are sent to Florida's FWC in cooperation with that lab to age those species. FWC returns the age data to the Beaufort Laboratory for inclusion in the BFT and BSD.**

Table 1. 2013-2018 Fishery-dependent age samples of the top priority species received at the NOAA Beaufort Laboratory. Average annual cost to process and age each species based on average salary cost and time per sample. Estimate does not include inter-laboratory calibration, age workshops, or data analyses.

Species	2013	2014	2015	2016	2017	2018	Cost
Black Sea Bass	2289	2196	2423	1448	1685	1248	$28,241
Blueline Tilefish	811	494	262	328	458	299	$16,834
Gag	734	890	650	585	516	691	$18,177
Gray Snapper	607	1336	1238	1325	713	596	$18,166
Gray Triggerfish	1008	1112	1125	1594	1527	1759	$39,628
Lane Snapper	544	830	562	950	1309	809	$15,762
Red Grouper	448	521	230	349	318	307	$10,909
Red Porgy	868	939	673	740	693	759	$25,512
Red Snapper	700	912	64	0	856	1255	$28,229
Scamp	647	825	452	752	547	621	$22,581

Snowy Grouper	644	818	861	787	726	955	$22,468
Tilefish	1035	911	558	895	836	742	$27,341
Vermilion Snapper	4219	4121	3751	5187	4545	5508	$104,995
White Grunt	1635	2374	2415	2649	1767	1604	$42,715
TOTAL	**16189**	**18279**	**15264**	**19605**	**16496**	**19171**	**$421,559**

The total number of otoliths or spines that can be processed and read in a single year is dependent on several factors, including the number of trained personnel in the lab, the type of processing required, and the difficulty in interpretation of the structure. Processing techniques include low-speed saws that may result in higher quality sections and allow for more than one section per sample, or a high-speed saw that results in one section and is adequate for easier to age fish. The two staff hired through ACCSP funds along with two FTEs will be able to process and read ~16,000 age samples in one year, which is a reduction from past years.

The people hired into these contract positions would be required to participate in SEDAR Life History Groups. They would become intimately knowledgeable of the data associated with the age samples and with the methodology to age the fish. They would contribute to discussion of each species as an expert. They would be required to contribute to analysis of the life history data inputs for the SEDAR assessment and contribute to the report writing.

Various state and federal laboratories each house their own collections of age samples, such as fishery-independent survey samples or special project samples. They will be working independently to process and read samples of many marine fish species. They will then work collaboratively by combining data with the other laboratories to give more complete life history information to assessment biologists. The funding of this proposal will ensure greater coordination between laboratories for exchanging processed samples and ensuring reader precision between laboratories.

Approach/Procedures:

Biological samples collected by port agents at various locations from North Carolina through the east coast of Florida will be shipped to the Beaufort Laboratory. Once received, staff will review the electronic and hard copy data for each sample, ensure the samples are properly labeled, sort the samples by species and store them for future processing. All sample data collected by port samplers will be entered into a searchable database that will be updated and maintained. **This information can be shared with ACCSP and NMFS SEFSC bio-sample databases. Staff will also respond to requests for samples from other regional ageing facilities, thus creating greater cooperation with those facilities.**

Staff of the NOAA Beaufort Laboratory will be responsible for processing the fishery-dependent age structures of species needed for SEDAR stock assessments. The samples will be sectioned

and aged following the methods of Potts and Manooch (1999) and Cowan et al. (1995) in concurrence with other fish ageing laboratories and the GSMFC/ASMFC Age Manual. Existing sectioning equipment will be provided by NMFS. The age data will be recorded for each sample and provided to assessment biologists. After the data have been vetted through the SEDAR process or published, they will be made available to ACCSP and the NMFS Bio-sample databases.

All staff involved with these studies will be trained by the principal investigator, who has 29 years of experience ageing marine fish. Also, they will be required to read reference collections and meet acceptable standards of between reader consistency with no bias. Image analysis software will be used to take pictures of the age samples, apply measurements to them and annotate the images for training purposes. NMFS is updating image analysis systems and computers in FY19 to keep abreast of technological changes. This equipment is required to perform the work and is being provided at no cost to ACCSP funds. The staff will cross train with researchers at other laboratories. Age workshops will be held to standardize sample processing methodology and interpretation of the age structures, followed by exchanges of each lab's calibration sets. Many of the ageing laboratories in the Southeast region have worked together and exchanged information in the past, making cooperation between these facilities easier.

NOAA Beaufort Laboratory will provide to ACCSP metadata for all age samples in accordance with ACCSP's standards included in Atlantic Coast Fisheries Data collection Standards part 3 (http://www.accsp.org/sites/default/files/ACCSP_StandardsandAppendices2012_Final05082012.pdf). "Other Biological Standards: Until these documents are completed and the methodologies approved as standard partners are encouraged to submit metadata on any biological data submitted to the ACCSP. These metadata parameters should include the following by species, for each data type (e.g., otoliths, fecundity, etc.): 1. Agency submitting data 2. Name of principle investigator 3. Description of interpretation methodologies used."

Geographic locations:

Biological samples for ageing will be collected from **commercial and recreational fishery landings from North Carolina through the east coast of Florida and the Florida Keys through routine, on-going sampling activities.** Recently, samples of deep-water reef fish species (e.g., blueline tilefish and snowy grouper) caught off Virginia and Maryland have been included in the stocks from the U.S. South Atlantic. Funding for this proposal will result in contract research support personnel to be located at NMFS/SEFSC, Beaufort, NC.

Consequences of Reduced Funding and Transition Plan :

With the requirement to cut maintenance projects entering year-5 of funding, a transition plan is being considered by the Southeast Fisheries Science Center (SEFSC). Managers at the Beaufort

Laboratory and the P.I. have been consulting with leadership of the SEFSC. Within the priority-based resource (PBR) process, an activity plan has been submitted to the SEFSC requesting base funds to cover permanent federal employee positions and/or contract positions for fish ageing work at the Beaufort Laboratory. The activity plan is under review.

The allowed request for funds for this proposal will result in the loss of some of the work we will be able to accomplish, if the SEFSC cannot provide support. The largest impact will be the loss of one contract staff. Not only will we loose that person's expertise, but we will not be able to process and age all annual samples for the priority species. One option may be to select to provide age data for every other year or every third year. This decision will be made with the input from stock assessment biologists. A consequence to that strategy will be the loss of tracking strong year classes. The funds will not allow for travel for the contract staff, which will limit their ability to participate in age workshops or other offsite training opportunities. The funds will not cover the supplies needed for the contract staff, which may have an additional effect of limiting the number of samples that can be processed. All of these concerns and impacts have been raised with SEFSC leadership and stock assessment staff.

LITERATURE CITED:

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Lombardi-Carlson, L., and A. H. Andrews. 2015. Age estimation and lead-radium dating of golden tilefish, *Lopholatilus chamaeleonticeps*. Environmental Biology of Fish 98:1787 – 1801.

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SEDAR. 2007. Consolidated SEDAR workshop recommendations for research, monitoring, and SEDAR procedures. Report from SEDAR, One Southpark Circle #306, Charleston, SC 29407. April 2007. 80p.

Siegfried, K. I., E. H. Williams, K. W. Shertzer, and L. G. Coggins. 2016. Improving stock assessments through data prioritization. Canadian Journal of Fisheries and Aquatic Science 73:1 – 9.

Yin, Y., and D. B. Sampson. 2004. Bias and precision of estimates from an age-structured stock assessment program in relation to stock and data characteristics. North American Journal of Fisheries Management 24(3):865-879.

Milestone Schedule:

TASKS	J	J	A	S	O	N	D	J	F	M	A	M
Receiving and storing hard parts	X	X	X	X	X	X	X	X	X	X	X	X
Processing hard parts	X	X	X	X	X	X	X	X	X	X	X	X
Ageing hard parts			X	X	X	X	X	X	X	X	X	X
Provide hard parts to cooperative institutions		X	X	X	X	X	X	X	X	X	X	X
Provide samples for reference collections		X	X	X	X	X	X	X				
Quarterly progress reports			X			X			X			
Final Report												X

Project Accomplishments Measurement:

The ultimate accomplishment measurement of this project will be the successful completion of all age data for SEDAR scheduled species in FY2020-2021. Five species are currently on the schedule for 2020– 2021 which include Scamp, snowy grouper, tilefish, gag, red snapper, and gray triggerfish. The work will have been begun prior to the funding of this project. Some processing has already been done on those species, but the high volume of snowy grouper, gag, red snapper, and gray triggerfish will take most of the staff's time to complete in time to meet the SEDAR schedule. Also, the lab intends to continue the ageing of samples collected in 2019 for the species listed in Table 1. As a result of age validation projects, gray triggerfish samples previously aged may need to be re-aged, creating a heavy workload on the staff.

Cost Summary:

	ACCSP	NMFS In-Kind	Total
Personnel Services/Salaries			
P.I. Salary		$94,400	$94,400
FTE Biologist salary		$64,000	$64,000
Contract staff (2)	$174,374		$174,374
Subtotal	**$174,374**	**$158,400**	**$332,774**
Fringe Benefits			
$158,500 *36%		$57,060	$57,060
Equipment		$49,100	$49,100
AGO Fee	$3,487		$3,487
TOTAL	**$177,861**	**$264,560**	**$442,421**

BUDGET NARRATIVE for REQUESTED FUNDING
July 1, 2020 – June 30, 2021

Category	Cost	Justification
Personnel	$174,374	Contract staff positions are negotiated pricing through the federal government. (1920 hrs x $45.41/hr x 2 staff).
AGO fee	$3,487	NOAA's Acquisitions and Grants Office charges a 2% fee to process contract services. The SEFSC has required all proposals that include contract services to include this fee.
Total Request	$177,861	

BUDGET NARRATIVE for NMFS IN-KIND FUNDING
July 1, 2020 – June 30, 2021

Category	Cost	Justification
Personnel	$158,400	Includes salary for PI and FTE biologist. The personnel are directly involved with the day to day processing and ageing of samples, laboratory management and data analyses.
Fringe Benefits	$57,060	Fringe benefits of the two FTE positions listed. The rate for calculating benefits is 36-38% per OPM website.

Equipment	$49,100	This proposal is not requesting any equipment to be purchased to accomplish the work. The equipment has been provided by NOAA and includes computers, saws and image analysis systems needed for two (2) staff to perform the work as laid out in this proposal. Cost basis is computed from current market value and depreciation. Image analysis systems required complete upgrades in FY19 due to technological advances that rendered older systems to become obsolete.
Total	$264,560	

Maintenance Project:
Table 2. History of related projects funded by ACCSP.

Funding Year	Project Title	ACCSP Funds	In-Kind Funds
2019	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	$300,550	$426,872 (NMFS had to cover cost not covered by award amount
2018	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	$251,600	$248,400
2017	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	$256,038	$232,809
2016	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	$254,706	$266,306
2015	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	250,831	$264,601
2013	Processing and ageing biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	$205,636 (partially funded; requested amount $249,946)	$98,800
2012	Processing and ageing biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	$236,440	$74,915

Table 3. Budget Narrative from FY 2019 (A), FY 2018 (B), FY 2017 (C), FY2016 (D), FY 2015 (E), FY 2013 (F), and 2012 (G) funding.

A. 2019

Category	Cost	Justification
Personnel	$285,000	Contract staff positions are negotiated pricing through the federal government. (2080 hrs x $45.67/hr x 3 staff). The purchase agreement with one vendor, whom we have used in the past, expired, and the new vendor cost was considerably higher. We anticipate an additional increase in the fee schedule, thus the higher hourly rate calculated in this request.
Travel	$2,000	Travel for 3 contract personnel to age workshop for 3 days ($2,000).
Supplies	$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
AGO fee	$8,550	As of July 2016 NOAA's Acquisitions and Grants Office charges a 3% fee to process contract services. The SEFSC has required all proposals that include contract services to include this fee.
Total Request	$300,550	Received $203,028

B. 2018

Category	Cost	Justification
Personnel	$245,000	Contract staff positions are negotiated pricing through the federal government. (2080 hrs x $39.26/hr x 3 staff).
Travel	$1,600	Travel for 3 contract personnel to age workshop for 3 days ($1,600).
Supplies	$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
Total Request	$251,600	

C. FY2017

Category	Cost	Justification
Personnel	$249,438	Contract Biologist position to take lead on project (2080 hrs x $43.10); Two contract technician positions to process age samples and assist in ageing (2 x 2080 hrs x $37.69). These labor costs are negotiated pricing through the federal government.
Travel	$1,600	Travel for 3 contract personnel to age workshop for 3 days ($1,600).
Supplies	$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
Total Request	$258,038	

D. FY2016

Category	Cost	Justification
Personnel	$252,480	Contract Biologist position to take lead on project (2080 hrs x $43.10); Two contract technician positions to process age samples and assist in ageing (2 x 2080 hrs x $39.14). These labor costs are negotiated pricing through the federal government.
Travel	$1,500	Travel for 3 contract personnel to age workshop for 3 days ($1,500).
Supplies	$3,726	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
Total Request	$254,706	

E. FY2015

Category	Cost	Justification
Personnel	$244,531	Contract Biologist position to take lead on project (2080 hrs x $42.25); Two contract technician positions to process age samples and assist in ageing (2 x 2080 hrs x $37.68). These labor costs are negotiated pricing through the federal government.
Travel	$1,300	Travel for 3 contract personnel to age workshop for 3 days ($1,300).
Supplies	$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
Total Request	$250,831	

F.FY2013

Category	Cost	Actual	Justification
Personnel	$218,828	$205,636 Note: All money went to contract labor cost. Supplies and travel were paid by other projects.	Contract Biologist position to take lead on project (1928 hrs x $41.50); Two contract technician positions to process age samples and assist in ageing (2 x 1928 hrs x $36.00). These labor costs are negotiated pricing through the federal government.
Travel	$6,600.00		Travel for 3 contract personnel to age workshop for 5 days ($3,600). Travel for two contract personnel to SEDAR Data Workshops for 7 days ($3,000). These personnel will be required to participate in SEDAR Life History groups in order to represent data they have recorded.
Vehicle	$616.00		Cost to use government vehicle for travel to Charleston, SC for age workshops and SEDAR meetings ($0.55/mi).
Supplies	$12,000		Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide boxes, saw blades, etc. Required upgrade of image analysis software used in training and creating digital reference.
Total Request	$249,946		

G. FY2012

Category	Cost	Justification
Personnel	$213,565	Contract Biologist position to take lead on project (1928 hrs x $40.77); Two contract technician positions to process age samples and assist in ageing (2 x 1928 hrs x $35.00). These labor costs are negotiated pricing through the federal government.
Travel	$6,000.00	Travel for 3 contract personnel to age workshop for 5 days ($3,000) – Age workshop for Blueline tilefish, gray triggerfish and snowy grouper; Travel for two contract personnel to SEDAR Data Workshops for 7 days ($3,000) – Participant in Life History group for SEDAR32 (blueline tilefish and gray triggerfish).
Vehicle	$616.00	Cost to use government vehicle for travel to Charleston, SC for age workshops and SEDAR meetings ($0.55/mi).
Supplies	$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide boxes, saw blades, etc.
Overhead	$11,259	Allowable NOAA overhead charge of 5% of total request ($225,181). Used for administrative costs and IT equipment for new contract personnel.
Total Request	$236,440	

Table 4. Accomplishments from the 2012 (A), 2013 (B), 2015 (C), 2016 (D), and 2017 (E) funding year cycles. Number of samples that have been sectioned and number of samples aged by species.

A. 2012

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Black Sea Bass	1,000	3,300	2011 - 2012
Blueline Tilefish	800	3,117	2003 - 2012
Gray Triggerfish	700	6,240	1990 - 2012
Snowy Grouper	2,400		2010 - 2012
Red Porgy	1,300		2012
Red Snapper	300		2012
Gag	6,000		2005 - 2012
Vermilion Snapper	3,120		2012

B. 2013

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Gag Grouper		6,551	2007 - 2012
Red Snapper		1,210	2010 - 2013
Gray Triggerfish		2,457	2012 - 2013
Gray Triggerfish from SCDNR collection		8,471	1991 - 2013
Blueline Tilefish		1,851	2012 - 2013
Black Sea Bass		1,935	2012 - 2013
Red Porgy	3,600		2012 - 2013
Tilefish	2,340		2011 - 2013
Vermilion Snapper	3,000		2012 - 2013
Scamp	1,200	300	1983 - 2013

C. 2015

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Tilefish		4,297	2011 - 2014
Blueline Tilefish	1,566	1,566	2014 - 2015
Red Grouper	742	742	2014 - 2015
Black Sea Bass		2,395	2012 - 2013
Vermilion Snapper	5,670	11,759	2012 - 2015
Gag Grouper		1,182	2014 - 2015
Scamp	5,913		1983 - 2015
Gray Snapper	4,448		2006 - 2014
Greater Amberjack	428		2006 - 2014

D. 2016

Species	# of Samples Sectioned	# of Samples Aged	SEDAR
Black Sea Bass		9,037	SEDAR 56
Vermilion Snapper	7,400	13,676	SEDAR 55
Gray Snapper	4,725	7,945	SEDAR 51
Greater Amberjack	687	131	Due 2018
Red Porgy	1635		Due 2018
Scamp	1,300	10,055	Due 2018
Lane Snapper	3971	1735	

E. 2017

Species	# of Samples Sectioned	# of Samples Aged	SEDAR
Cobia	242	242	SEDAR58
Greater Amberjack	120	2000	SEDAR59
Red Porgy	2043	4620	SEDAR60
Scamp	800	3600	Due 12/2018
Tilefish	1000	985	Due 6/2019
Snowy Grouper	1440		Due 6/2019
Gag		1200	
Red Grouper		420	
Vermilion Snapper	2812	742	
Lane Snapper	810	371	

F. 2018

Species	# of Samples Sectioned	# of Samples Aged	SEDAR Assessment Schedule (Est. start date)
Black Sea Bass	2	319	
Gag	286	614	Operational Assessment (June 2020)
Gray Snapper	991	219	
Graysby	173	173	Ecosystem species
Lane Snapper	212	500	
Red Grouper	1788		
Red Hind	932		Ecosystem species
Red Porgy	1232	8945	SEDAR 60
Scamp	1319		Research Track Assessment (Jan 2020)
Snowy Grouper	1988		Operational Assessment (Jan 2020)
Tilefish	1263	1219	Operational Assessment (June 2020)
Vermilion Snapper	4729	3199	

Summary of Proposal for Ranking Purposes

Proposal Type: ***Maintenance***

Primary Program Priority:

***Biological Sampling*: 100%** of age samples collected from the ten SAFMC Snapper Grouper FMP species within the top 25% priority matrix will be processed and aged. The age data will be loaded into Bio-Sample Database housed at the NMFS SEFSC and made available for the SEDAR process. After the age data are vetted through the SEDAR process, those data will be made available to the ACCSP database. Until the module for biological data is developed within ACCSP Data Warehouse, metadata for age data will be provided to ACCSP.

Project Quality Factors:

Multi-Partner/Regional Impact Including Broad Impact:

Age samples from species managed through the SAFMC Snapper Grouper FMP will be collected and shipped to the NOAA Beaufort Laboratory for processing and ageing for stock assessment purposes. These age samples will be representative of the commercial and recreational fisheries operating from Virginia and North Carolina through the east coast of Florida. The samples will be collected by various state agencies and NMFS sampling programs. In cooperation with these programs, the Beaufort Lab will standardize data, inventory, and process the samples.

The Beaufort Laboratory will work collaboratively with several state and federal laboratories and universities through age workshops and exchanges of reference collections to ensure consistency in age data for input to SEDAR assessments. The partners include NCDMF, SCDNR, FWC, VMRC, ODU, NMFS Panama City.

Contains funding transition plan/Defined end point:

Once the lab has cleared the back-log of samples dating back to the 1970s, less staff would be needed to process the annual age samples at the current rate of accrual. Samples from most of the priority species have had the back-log cleared. All new samples received from those species are processed annually. The back-log from one other primary species remains to be processed –White Grunt (n > 25,000). The Beaufort Lab will be requesting funding assistance to accomplish that work and then start to reduce the amount of contract labor required to keep abreast of the annual samples. Also, funding through federal congressional budgets to enhance stock assessment data inputs would allow the Beaufort Laboratory to hire permanent federal employees and not have to rely on funding from ACCSP. The SEFSC has established a Priority Based Resource (PBR) process, and leadership is reviewing activity plans for all work done with in the center. The Beaufort Laboratory has requested base funding for fish age and growth work for the past three years.

In-kind Contributions:

NMFS is providing 60% of the total project cost.

Improvement in data quality/quantity/timeliness:

Continued funding of this project would allow the Beaufort Laboratory to approach a level of processing of all age samples received from the South Atlantic Snapper Grouper fishery on an annual basis. When this level of processing is reached, the lab will be able to provide up-to-date age composition data for stock assessment purposes. The age samples would not need to be sub-sampled to meet schedule changes to SEDAR.

Potential secondary module as a by-product:

Other South Atlantic snapper grouper species in the SAFMC Research Prioritization Plan, but not in the current priority matrix will also be aged and data made ready for SEDAR assessments in the future.

Impact on stock assessments:

Funding of this project will address one of the top research recommendations coming from SEDAR and recent publications on improving the accuracy of stock assessments - more comprehensive, validated and consistent age composition data. Age workshops and reference collections will enhance consistency in methodology and age data between partner laboratories.

CURRICULUM VITAE

Jennifer Chrestensen Potts
Research Fishery Biologist
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EDUCATION

North Carolina State University B. S. 12/1988 Fisheries &Wildlife Sciences
East Carolina University M. S. 5/1997 Biology (Ecology)

PROFESSIONAL EMPLOYMENT

6/97 - present
Position: Research Fisheries Biologist.
NOAA/NMFS/SEFSC, Beaufort Laboratory, 101 Pivers Island Road, Beaufort, NC 28516-9722.

Responsibilities include Investigation Leader of Life History Team; collecting, cataloging, preparation and analysis of age samples; preparing manuscripts for peer review publication; Participation in SEDAR process – Life History Group Leader for South Atlantic assessments; training staff in ageing laboratory; reviewing proposals for federal government funding (i.e., MARFIN and S-K); reviewing manuscripts for peer review journals.

2/90 - 6/97
Position: Biological Technician (Fisheries).
NOAA/NMFS, Beaufort Laboratory, 101 Pivers Island Road, Beaufort, NC 28516-9722.

PUBLICATIONS

Peer Reviewed Publications (Selected)

Burton, M. L., J. C. Potts, A. Poholek, A. Ostrowski, and J. Page. 2019 Age, growth, natural mortality and reproductive seasonality of knobbed porgy from southeastern United States waters. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science, 11:231 – 245.

Eddy, C., Pitt, J., Oliveira, K., Morris, J. A., Jr., Potts, J., and Bernal, D. 2019. The life history characteristics of invasive lionfish (*Pterois volitans* and *P. miles*) in Bermuda. Envionmental Biology of Fishes, https://doi.org/10.1007/s10641-019-00877-4.

Potts, J. C., and M. L. Burton. 2017. Preliminary observations on the age and growth of dog snapper (*Lutjanus jocu*) and mahogany snapper (*Lutjanus mahogoni*) from the Southeastern U.S. PeerJ 5:e3167; DOI 10.7717/peerj.3167

Burton, M. L., J. C. Potts, J. Page, and A. Poholek. 2017. Age, growth, natural mortality and

reproductive seasonality of jolthead porgy, *Calamus bajanado,* from Florida waters. PeerJ 5:e3774; DOI 10.7717/peerj.3774.

Burton, ML, Potts JC. 2017. Age, growth and natural mortality of cubera snapper *Lutjanus cyanopterus* from the southeastern United States. Bulletin of Marine Science, 93(3):815 – 828 DOI 10.5343/bms.2016.1116.

Shertzer, K. W., J. Fieberg, J. C. Potts, and M.L. Burton. 2017. Identifying growth morphs from mixtures of size-at-age data. Fisheries Research, 185:83 – 89. DOI 10.1016/j.fishres.2016.09.032.

Burton, M. L., J. C. Potts and D. R. Carr. 2016. Age, growth and natural mortality of blackfin snapper *Lutjanus buccanella* from the southeastern United States and U.S. Caribbean. Gulf and Caribbean Research, 27:66-73. DOI: 10.18785/gcr.2701.10.

Potts, J. C., M. L.Burton, and A. R. Myers. 2016. Age, growth, and natural mortality of schoolmaster (*Lutjanus apodus*) from the southeastern United States. PeerJ 4:e2543; DOI 10.7717/peerj.2543

Burton, M. L., J. C. Potts and D. R. Carr. 2015. Age, growth, and natural mortality of yellowfin grouper (Mycteroperca venenosa) from the southeastern United States. PeerJ 3:e1099; DOI 10.7717/peerj.1099

Burton, M. L., J. C. Potts and D. R. Carr. 2015. Age, growth and natural mortality of coney, (*Cephalophilis fulva*) from the southeastern United States. PeerJ 3:e825;DOI 10.7717/peerj.825.

Burton, M. L., J. C. Potts, D. R. Carr, M. Cooper, and J. Lewis. 2015. Age, growth and mortality of gray triggerfish (*Balistes capriscus*) from the southeastern United States. Fishery Bulletin 113:27–39.

Burton, M. L., J. C. Potts, and D. R. Carr. 2014. Age, growth, and mortality of Yellowmouth Grouper from the southeastern United States. Marine and Coastal Fisheries: Dynamics, Management and Ecosystem Science 6:33-42.

Potts, J. C., and C. S. Manooch, III. 2002. Estimated ages of red porgy (*Pagrus pagrus)* from fishery-dependent and fishery-independent samples and comparison of growth parameters. Fishery Bulletin 100:81-89.

Potts, J. C., and C. S. Manooch, III**.** 2001. Differences in the age and growth of white grunt from North Carolina and South Carolina versus southern Florida. Bulletin of Marine Science 68:1-12.

Potts, J. C., C. S. Manooch, III, and D. S. Vaughan. 1998. Age and growth of vermilion snapper, *Rhomboplites aurorubens*, from the southeastern United States. Transactions of the American Fisheries Society 127:787-795.

Manooch, C. S., III, and J. C. Potts. 1997. Age and growth of red snapper, *Lutjanus campechanus*, collected from North Carolina through east coast of Florida. Journal of the Elisha Mitchell Society 113(3):111-122.

Manooch, C.S., III, and J.C. Potts. 1997. Age, growth, and mortality of greater amberjack from the southeastern U.S. Fisheries Research 30:229-240.

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast of Florida

Submitted by:

ACCSP Recreational Technical Committee

Proposal for FY19 ACCSP Funding

Applicant name:	ACCSP Recreational Technical Committee (RTC)
Project title:	Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast
Project type:	Maintenance Project
Requested award amount:	$104,899
Requested award period:	January 1 through December 31, 2020

Objectives

1) Continue to provide continuous long-term monitoring of the species composition and size distribution of regulatory discards in the recreational headboat[1] fishery along the U.S. Atlantic coast by filling the critical coverage gap in the South Atlantic region along Florida's Atlantic coast.
2) Continue to provide vital data needed to assess important managed fish stocks, particularly in the data poor South Atlantic region.

Need

For many important managed finfish stocks, regulatory discards make up all or a majority of the recreational catch. Size composition of recreational discards is an important fishery-dependent data need for management and age-based assessment of stocks throughout the U.S. Atlantic. These data cannot be collected using dockside sampling methodologies. Headboat mode is currently the only segment of the recreational fishery with consistent, long-term at-sea observer coverage, and these data serve as the sole source of information available on the size composition of recreational discards throughout the North, Middle, and South Atlantic regions[2].

In North and Mid-Atlantic states (ME through VA), the headboat segment of the recreational fishery is monitored through the Marine Recreational Information Program (MRIP), which provides catch statistics for all landed and discarded finfish. Catch data are collected by biologists as they ride along on trips and directly observe fish that are either harvested or discarded at-sea. The MRIP utilizes this survey to monitor catch-per-unit-effort (CPUE, needed to estimate total landings and discards) and the size composition of landed and discarded fish. In the South Atlantic (NC through FL), headboat catch and effort are monitored by NOAA Fisheries through the Southeast Region Headboat Survey (SRHS), instead of MRIP. The SRHS includes mandatory trip-level reporting (logbook reporting) and dockside sampling of landed catch. At-sea observer coverage in the South Atlantic region has been funded with support from ACCSP, and this important time-series provides biological data needed to monitor the species and size composition of released catch and validate self-reported logbook data for discards.

Coast-wide headboat observer coverage has been supported across all Atlantic coast states since 2005. Funds for base level sampling are provided through MRIP, and additional support through ACCSP has been requested by state partners annually to cover the cost of samples above the MRIP base (through this

[1] Headboats are a class of for-hire vessels that offer recreational fishing opportunities to large groups of individual anglers.

[2] Florida tested the use of observers on charter vessels on the Atlantic coast (2013-2015), but long-term funds were not available to continue coverage.

maintenance proposal). This additional sample has been requested to improve precision of catch and effort estimates in states where headboat mode is monitored through MRIP, and to extend coverage for biological sampling of discards in the South Atlantic region (NC-FL) where the headboat fishery is not monitored through MRIP. In 2016, ACCSP began coordinating the MRIP access point intercept survey for all modes (shore, private boat, charter, and headboat) from ME through GA, which allowed state partners to conduct surveys in the field in place of a federal contractor. Sampling efficiency has improved since the transition to state conduct, and existing MRIP funds are now able to cover headboat sampling at increased levels above base allocation without the need for additional assistance from ACCSP. In the South Atlantic region, where no base MRIP sample is allocated, three states (NC, SC and GA) are also able to conduct at-sea trips without the need for additional support from ACCSP. The only partner state that still relies upon ACCSP to support at-sea coverage is FL, where state conduct of the MRIP survey on the Atlantic and Gulf coasts has always been coordinated through Gulf States Marine Fisheries Commission (GSMFC). There are no funds in the Gulf region for headboat observer coverage on the Atlantic coast of Florida, and the state is requesting support from ACCSP to continue the headboat time series on the Atlantic coast in 2020 while alternatives are being explored. Florida is currently looking into methods to generate state funds that may be dedicated towards long-term monitoring of recreational fisheries for important managed species, including reef fishes; however, those funds are not anticipated to be available until after 2020.

Results and Benefits

Continued funding for this maintenance proposal will ensure coast-wide headboat observer coverage from ME through FL and continue the long-term time series that originated in 2005. Filling this important data gap along the eastern coast of FL is particularly important for assessment of important managed stocks in the South Atlantic region, such as red snapper, black sea bass, gray triggerfish, and others, that have stock boundaries between NC and Key West, FL. Length frequency data from recreational discards observed from headboats in NC through FL are routinely provided to NOAA Fisheries analysts for use in regional stock assessments conducted through the Southeast Data, Assessment and Review (SEDAR) process (for example, see working paper submitted for black sea bass SEDAR 56: http://sedarweb.org/docs/wpapers/S56_WP07_Lazarre_etal_HBAtSea_12.18.2017.pdf). Mortality of recreational discards is a significant source of fishery removals in the South Atlantic region, and is also an important data need for stock assessments. At-sea observer data collected from the headboat fishery in FL directly contributed to the recommended mortality rate of 28.5% for red snapper, which was reduced from 37% before circle hooks were required in 2011 (Sauls et al. 2015, SEDAR 2016). Catch-per-unit-effort for discards directly observed in headboat surveys conducted at-sea from NC through FL has become an important index of abundance for stock assessments in the data poor region of the South Atlantic, where fishery independent monitoring is inadequate for some species.

Data Delivery Plan

Catch estimates, CPUE, and biological data for the Atlantic coast from ME through VA are available to the public through the Marine Recreational Information Program and files are shared with ACCSP's Data Warehouse. Data collected from NC, SC, and GA are also delivered to ACCSP and available through the Data Warehouse. In order to provide the higher resolution of data that is available from FL (additional trip and fish level details), the state provides data files directly to state and federal analysts for use in stock assessments. All lengths, weights, ages, and associated trip and station level data for sampled fish are housed in a relational database (SQL) on servers maintained by the Florida Fish and Wildlife Conservation Commission (FWC). The FWC's servers are secure and data are backed up daily. FWC research staff routinely participate in stock assessments webinars and data workshops conducted through the Southeast Data, Assessment and Review (SEDAR) process to share data and analyses from this project. The state of Florida's Sunshine Law also establishes an open-access policy that requires all non-confidential data be made available to the public upon request.

Approach
Headboat vessels are randomly selected each month from the for-hire vessel directory for each state using a weighted systematic draw methodology. Operators from selected vessels are contacted in advance to arrange for observers to be on board during a scheduled fishing trip. Dependent upon the number of customers on board, one or two biologists accompany passengers during the scheduled trip. The biologists observe all anglers whenever possible during each trip, and randomly selects a subsample if every angler cannot be observed. The observer will identify each fish to species, record length to the nearest mm, and record the disposition (including harvested, released alive, released dead). In Florida, additional details collected for individual fish, including capture depth, capture location (latitude and longitude), hook location, hook type and size, release condition at the surface (if discarded), release method (whether released at the surface unvented, vented, or recompressed), and barotrauma symptoms. Red snapper in Florida are also marked with a conventional tag prior to release, and when managed species are harvested biological samples, including age structures, may be collected at the dock.

Geographic Location
ACCSP support is requested for the Atlantic coast of Florida, from the border with Georgia (30.6 degrees N latitude) through southeast Florida (24.5 degrees N latitude). This support will ensure continuous at-sea observer coverage along the entire U.S. Atlantic coast from ME through FL.

Ranking Criteria Summary

- There are 11 ACCSP funding priorities for recreational fisheries as identified by the Recreational Technical Committee (RTC). The following priorities addressed by this proposal are all included in the top 5 funding priorities identified by the RTC:
    1. Comprehensive for-hire data collection and monitoring
    2. Improved recreational fishery discard and release data
    3. Biological sampling for recreational fisheries separate from MRIP APAIS
    4. Improved spatial resolution

- Primary Program Priority: Biological Data (80%)
    - Species in the top quartile of ACCSP's Biological Priority matrix affected by this proposal:
        - Black Sea Bass, Snowy Grouper:
            - High priority overall for ACCSP.
            - Biological sampling is inadequate.
        - Gag, Red Grouper, Scamp, Gray Triggerfish, Tilefish, Red Drum
            - High priority in the South Atlantic region.
            - Biological sampling is inadequate.
        - Red Snapper:
            - High priority in the South Atlantic region.
            - Recreational harvest is only open 0 to 9 days per year, and discard lengths from headboat at-sea surveys represent up to 100% of biological samples in some years for this species.

- Secondary Program Priority: Catch, effort and landings data (20%)
    - Trips sampled in the South Atlantic (NC through FL) contribute to validation of logbook data for discards.
    - Additional data elements collected in FL contribute to discard mortality, which is required to estimate total removals from combined landings and discards.

- Data Delivery Plan:
    - Catch estimates, CPUE, and biological data from ME through VA are available through:
        - The Marine Recreational Information Program public website
        - The ACCSP Data Warehouse
    - CPUE and biological data from NC through GA are available through:
        - The ACCSP Data Warehouse
        - Routinely shared for use in regional stock assessments.
    - CPUE and biological data (lengths, weights, ages, and associated trip and fish level data) from FL are:
        - Housed in a relational database (SQL) on servers maintained by the Florida Fish and Wildlife Conservation Commission
            - Servers are routinely backed up
        - Available on request (and required by Florida's Sunshine Law)
        - Routinely shared for use in regional stock assessments.

- Multi-Partner/Regional:
    - The following ACCSP partners will benefit from this supplemental data collection:
        - One state: Florida Fish and Wildlife Conservation Commission
        - Two regional Fisheries Management Councils: South Atlantic and Gulf of Mexico (for Gulf stocks with ranges that include east FL)
        - Two branches of NOAA Fisheries, National Marine Fisheries Service: Southeast Fisheries Science Center and Southeast Regional Office

- In kind Contribution: $10,328 (9% of requested plus in-kind)

- Funding Transition Plan:
    - Earlier proposals for this maintenance project requested funds for 100% of add-on sample that was requested by up to 11 partner states from ME through FL.
    - Since ACCSP began coordinating state conduct of the MRIP Access Point Angler Intercept Survey (APAIS) in 2016, most state partners have transitioned to conducting add-on samples above base MRIP allocation at no additional cost.
    - FL is the only partner requesting ACCSP support in FY20. The state is exploring options that would potentially establish a dedicated funding stream to support monitoring of recreational fisheries targeting important reef fish stocks on the Gulf and Atlantic coasts. Funding will not be available in time to support this work in FY20, and ACCSP support is requested while the state continues to work towards a transition plan.

- Improvement in data quality/quantity:
    - This proposal requests funds to maintain a minimum level of data collection needed in the South Atlantic region by supporting 100% of headboat observer coverage on the Atlantic coast of Florida.
    - This proposal would ensure complete coverage of the Atlantic coast headboat fisheries from ME through FL for monitoring the size distribution of recreational discards.

- Impact on Stock Assessments:
    - Species impacted by this work are priorities for upcoming stock assessments, including:
        - Black Sea Bass, Scamp, Gray Triggerfish, White Grunt, Red Grouper, Vermilion Snapper, Red Snapper, Blueline Tilefish, Golden Tilefish, Black Grouper, Yellowtail Snapper, King Mackerel, Spanish Mackerel, and Greater Amberjack

are assessment priorities of the South Atlantic Fishery Management Council (SAFMC).
        - Ranges for King Mackerel and Cobia stocks in the Gulf of Mexico include portions of the Atlantic coast of Florida, and these stocks are assessment priorities of the Gulf of Mexico Fisheries Management Council (GMFMC).
        - Hogfish, Yellowtail Snapper, and Mutton Snapper stocks are assessment priorities of the state of Florida.
    - At-sea observer coverage does not exist in any other segment of recreational fisheries along the Atlantic coast, and this project is the only source of representative information available to characterize the size composition of recreational discards.
    - Fishery independent surveys in the South Atlantic are not adequate for assessing many stocks and do not extend through southeast Florida. Therefore, fishery dependent surveys are relied upon as a relative measure of stock abundance.
    - Additional data collected in Florida have contributed to estimated discard mortality, including:
        - Capture depth
        - Proportions of discards that suffer hook injuries
        - Proportions of discards that are vented or floating at the surface
        - Proportions of tagged Red Snapper discards that are released in various conditions and later recaptured

Milestone Schedule

A monthly milestone schedule is provided in Table 1. Gulf States Marine Fisheries Commission will run monthly sample draws for Florida vessels, and FL FWC will schedule and conduct assignments in the field each month to meet established sample targets each wave. Data will be reviewed by a state supervisor each month prior to electronic data entry, visual proofing and automated QA/QC checks will be conducted on electronic data to flag potential errors for follow up. Final data are available within three months after the completion of a year. FL FWC will prepare semi-annual (30 days following month 6 and 12) and final progress reports (90 days following month 12) as specified in the ACCSP Funding Decision Process Document. Reports will be submitted through NOAA Fisheries Southeast Regional Office.

Project Metrics

Table 2 provides sample targets for each two month period (wave). Progress toward goals for this project will be measured in numbers of vessel trips sampled each wave. Should sample targets not be reached in a particular wave (e.g., weeks of inclement weather result in a large portion of the vessels to cancel trips), those vessel trips will be "rolled over" to subsequent waves within the calendar year, with the total obtained for the year not to exceed the requested annual allocation. Field productivity will be measured by numbers of anglers observed, numbers of discarded fish measured prior to release, numbers of harvested fish measured and weighed, and numbers of harvested fish sampled for age structures during each assignment.

Cost Details

Requested Funds

A total of $104,899 is requested for this proposal. A summary of costs associated with this proposal for participating states is given in Table 3. Funds supporting at-sea headboat trips in Florida will be dispersed to NOAA's Southeast Fisheries Science Center (and charged a 5% administrative fee) before being dispersed to the state to conduct the work.

Budget narrative for cost summary provided in Table 3:

1. Personnel (a): Costs listed are for part time personnel necessary to complete at-sea trips.
2. Fringe (b): Medicaid and FICA costs, expressed as a percentage of total personnel.

3. Travel (c): travel costs are requested to pay for mileage to and from headboat sample sites and cover regular or reduced headboat passenger fare, which is paid for each observer in order to secure space on limited capacity vessels. Florida also requires payment of headboat fare so that state employees are covered by liability insurance for the vessel. Other costs include parking and highway tolls.
4. Total Direct Charges (i). Total personnel, fringe and travel. No supplies, equipment, or contractual services are requested.
5. Indirect Charges (j). The state of Florida assesses an overhead charge to grants to cover the costs of administrating the grant. For ACCSP, the overhead is capped at 25% of total direct charges.

In-Kind Contributions

In-kind contributions total $10,328 or 9% of the total cost (requested funds and in-kind contributions, combined). Included in this amount is the cost of supplies (measuring boards, scales, and other equipment); pre-printed data collection forms on waterproof paper; staff time for data entry, quality control, and database management; and oversight of field data collections.

Project History

The funding history for this maintenance proposal is summarized in Table 5. This proposal has decreased from previous years' award amounts. A summary of costs for the previous year (2019) is provided in Table 6. Eight states no longer request additional funds to support headboat add-ons above base sampling levels (MA, RI, CT, NY, MD, VA, NC, GA), and three states (ME, DE, SC) have discontinued additional sampling above base. The last remaining partner requesting ACCSP support (FL) is currently exploring options for the future that would establish a dedicated funding stream to support monitoring of recreational fisheries targeting important reef fish stocks on the Gulf and Atlantic coasts.

Project PI

Beverly Sauls, Florida Fish and Wildlife Conservation Commission, will oversee the conduct of this work in Florida (C.V. attached).

References

Sauls, B., A. Gray, C. Wilson and K. Fitzpatrick. 2015. Size distribution, release condition, and estimated discard mortality of Red Snapper observed in for-hire recreational fisheries in the South Atlantic. SEDAR41-DW33. SEDAR, North Charleston, SC.

SEDAR (Southeast Data, Assessment and Review). 2016. SEDAR41 Stock Assessment Report South Atlantic Red Snapper. SEDAR, North Charleston, SC.

Sustainable Fisheries Branch, National Marine Fisheries Service. 2011. Standardized discard rates of U.S. Black Seabass (*Centropristus striata*) from headboat at-sea observer data. SEDAR25-DW13. SEDAR, North Charleston, SC.

Sustainable Fisheries Branch, National Marine Fisheries Service. 2015. Standardized catch rates of Red Snapper (*Lutjanus campechanus*) from headboat at-sea-observer data. SEDAR41-DW14. SEDAR, North Charleston, SC.

Table 1. Milestones by year and month.

	2020												2021
Task	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1-3**
At-sea sampling	X	X	X	X	X	X	X	X	X	X	X	X	
Data entry and QA/QC		X	X	X	X	X	X	X	X	X	X	X	X
Data finalized													X
Report writing and submission							X						X
Participation in SEDAR webinars and data workshops as scheduled	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 2. Sample targets (in number of trips) by region and wave.

Region	Number of vessels in frame	Jan-Feb	Mar-Apr	May-Jun	July-Aug	Sep-Oct	Nov-Dec	Total
Northeast FL	9	5	10	10	10	10	5	50
Southeast FL	43	16	16	16	16	16	16	96
Total	46	21	26	26	26	26	21	146

Table 3. Cost summary for funds requested from ACCSP.

Description	Calculation	Requested from ACCSP
Personnel (a)		
Hourly biologists	8 hr/trip * $16.50/hr * 146 trips * 2 staff	$38,544
Fringe (b)		
Hourly biologists	35.45% of personnel	$13,664
Travel (c)		
Mileage for sampling trips	$0.445/mi x 146 trips * 80 mi * 2 staff	$10,395
Headboat fares	$70/trip * 146 trips * 2 staff	$20,440
Parking and tolls	146 trips * $3.00 per trip * 2 staff	$876
Totals		
Total Direct Charges (i)	Sum of personnel, fringe, travel	$83,919
Indirect Charges (j)	25% of total direct	$20,980
Total (k)	Sum of direct and indirect	$104,899

Table 4. Cost summary for in-kind contributions.

	In kind
Personnel (a)	
5% of time for one Research Administrator and two Assistant Research Scientists	$6,500
Fringe (b)	
34.50%	$2,243
Supplies (d)	
pre-printed forms on waterproof paper, measuring boards, scales	$425
Other (h)	
Mailing, copying, cell phone service	$1,160
Total	**$10,328**
Percent of total requested (k) plus in kind	**9.0%**

Table 5. ACCSP Funding Related to the For-Hire Headboat Fishery: 1999-2019.

Year	Project Description	Funds Received	# At-Sea Trips	Data Delivery
FY99	Outreach with SC for-hire constituents prior to For-Hire Pilot Study	$5,000		
FY00	For-Hire Pilot Study comparing three data methodologies in SC	$94,082		
FY01	Independent evaluation of SC For-Hire Pilot Study	$7,695		
FY02	Outreach with for-hire constituents & development of vessel directory prior to implementation of For-Hire Survey	$66,000		
FY03	Increase charter and party/headboat sampling levels from ME through GA (100% increase)	$418,972	456	X
FY04	Increase charter and party/headboat sampling levels from ME through GA (100% increase)	$533,410	456	X
FY05	Increase charter and party/headboat sampling levels from ME through FL (100% increase in general, FL HB sampling added)	$666,740	565	X
FY06	Increase charter (100% increase) and party/headboat (50% increase ME-GA, FL level funded) sampling levels from ME through FL	$389, 700	560	X
FY07	Increase charter (100% increase) ME through GA and party/headboat (50% increase) sampling levels from ME through FL	$391,940	357	X
FY08	Increase charter (100% increase) ME through GA and party/headboat (50% increase) sampling levels from ME through FL (excluding GA)	$359,753	310	X
FY09	Increase charter (100% increase in most waves) NH through GA and party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, GA)	$309,279	327	X
FY10	Increase charter (between 50-100%) NH through GA (excluding ME, CT, RI, MD, RI) and party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, SC, GA)	$376,092	293	X
FY11	Increase charter (between 50-100%) NH through GA (excluding ME, CT, RI, MD, RI) and party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, SC, GA)	$299,591	276	X
FY12	Increase party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, VA)	$159,573	285	X
FY13	Increase party/headboat (50% increase) sampling levels from NH to FL	$147,707	302	X
FY14	Increase party/headboat sampling levels from NH through FL	$155,490	314	X
FY15	Increase party/headboat sampling levels from NH through FL	$168,738	327	X
FY16	Increase party/headboat sampling levels from NH through FL (excluding SC)	$179,286	327	X
FY17	Increase At-Sea Sampling Levels for the Recreational Headboat Fishery on the Atlantic Coast	$155,373	247	X
FY18	Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast	$134,370	247	X
FY19	Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast	$107,187	165	X

Table 6: Prior complete year (2019) Cost Summary Budget Narrative.

NH		NJ		NC		FL	
Personnel (a)		**Personnel (a)**		**Personnel (a)**		**Personnel (a)**	
(10 hr/trip x $20.60/hr x 7 trips x 2 staff)	$2,884	(8 hr/trip x $19.00/hr x 18 trips x 0.5 tech staff) + (8 hr/trip x $13.00/hr x 18 trips x 1 hourly staff)	$3,240			(10 hr/trip x $15.00/hr x 120trips x 2 staff)	$36,000
Fringe (b)		**Fringe (b)**		**Fringe (b)**		**Fringe (b)**	
51.07%	$1,473	53.95% tech + 7.65% hourly	$881			35.45%	$12,762
Travel (c)		**Travel (c)**		**Travel (c)**		**Travel (c)**	
$0.54/mi x 7 trips x 54 mi	$204	[(100 mi/trip*18 trips)/20 mpg]*$4/gallon	$360	$0.54/mi x 20 trips x 80 mi	$864	$0.445/mi x 120 trips * 80 mi * 2 staff	$8,544
		Headboat fare ($55/trip x 18 trips x 2 staff)	$1,980	Headboat fare ($75/trip x 20 trips x 2 staff)	$3,000	Headboat fare (2 staff x $62/trip x 120 trips)	$14,880
		Parking and highway tolls	$200	Parking and Permits	$0	Parking and highway tolls	$251
Total Direct Charges (i)	**$4,561**	**Total Direct Charges (i)**	**$6,661**	**Total Direct Charges (i)**	**$3,864**	**Total Direct Charges (i)**	**$72,437**
Indirect (j)		**Indirect (j)**		**Indirect (j)**		**Indirect (j)**	
State indirect = 20% of TDC, charge 10% as per ASMFC policy	$456	15% of TDC	$999	26.8% of Salary and Wages	$ 0	State indirect = 25% of TDC	$18,109
Sum of Direct and Indirect (k)	**$5,017**	**Sum of Direct and Indirect (k)**	**$7,660**	**Sum of Direct and Indirect (k)**	**$3,864**	**Sum of Direct and Indirect (k)**	**$90,546**

Beverly J. Sauls, Research Administrator II
Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute
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Degrees
University of South Florida, M.S., College of Marine Science, Marine Resource Assess. Program, 2013
Christopher Newport University, B.S., Biology, 1993

Professional Experience
Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute,
Research Administrator II, May 2019 to present

- Direct and coordinate activities of the Fisheries Dependent Monitoring Program for commercial and recreational fisheries in Florida.

Associate Research Scientist and Research Scientist, September 2001 to April 2019

- Design, implement, supervise, and oversee the conduct of fishery-dependent data collection programs for recreational fisheries throughout the state of Florida, including:
    - Marine Recreational Information Program (MRIP)
        - Access Point Intercept Survey and For-Hire Telephone Survey
    - Supplemental biological sampling
    - At-sea observer programs on for-hire recreational fishing vessels in Gulf and Atlantic
    - Florida Gulf Reef Fish Survey certified through MRIP
    - Supplemental East Florida Red Snapper Recreational Survey

Maryland Department of Natural Resources, Fishery Management Plan Writer, Jan. 1994 to June 1998

- Led development of Fishery Management Plans for the Chesapeake Bay Program.

College of William and Mary, Virginia Inst. of Marine Science, Lab Technician, June 1989 to Dec. 1993

- Collected quantitative data utilizing radio and sonic telemetry and aerial surveys. Compiled over ten years of mark-recapture data for marine turtles and summarized migration patterns.

Appointments

- Atlantic Coast Cooperative Statistics Program: Recreational Technical Committee
- Gulf States Marine Fisheries Commission: Technical Coordinating Committee, Fisheries Information Network (Gulf FIN) Committee, and Data Management Subcommittee
- Southeast Data Assessment and Review (SEDAR): Data Workshop Panelist for South Atlantic and Gulf of Mexico stock assessments

Select Peer-Reviewed Publications

2017. Sauls, B., A. Strelcheck and R. Cody. Survey methods for estimating red snapper *Lutjanus campechanus* landings in a high-effort recreational fishery managed with a small annual catch limit. North American Journal of Fisheries Management 37: 302-313.

2014. Sauls, B. Relative survival of gags *Mycteroperca microlepis* released within a recreational hook-and-line fishery: application of the Cox regression model to control for heterogeneity in a large-scale mark-recapture study. Fisheries Research 150: 18-27.

2012. Sauls, B. and O. Ayala. Circle hook requirements in the Gulf of Mexico: application in recreational fisheries and effectiveness for reef fish conservation. Bulletin of Marine Science. 88: 667-979.

Response to Comments

Thank you for the opportunity to submit this final proposal, attached. Only one change was made to the proposal (highlighted below). Written responses to reviewers' comments are below:

Comment: Costs per trip have been steadily increasing FY18 - $544/trip; FY19 - $649/trip; FY20 $718/trip – any info as to why?

Reply: The FY2020 proposal includes one state (Florida), whereas previous years included multiple states. The cost per trip in Florida has gone down this year. In 2018 and 2019, we requested $90,546 to conduct 120 trips, at an average cost of $754.55 per trip. In 2020, we are requesting $104,899 to conduct 147 trips, at an average cost of $718.48 per trip. We are requesting 27 additional trips so that sampling may be conducted on the Atlantic coast of the Florida Keys.

Comment: Are there any discussions going on as to what will happen to FL sampling as this proposal is cut?

Reply: in the proposal we note, "the state is exploring options that would potentially establish a dedicated funding stream to support monitoring of recreational fisheries targeting important reef fish stocks on the Gulf and Atlantic coasts. Funding will not be available in time to support this work in FY20, and ACCSP support is requested while the state continues to work towards a transition plan." We cannot provide more details before we have appropriate approvals through our state Commission.

Comment: Given changes over time to proposal and now just a program for FL, title not overly representative of the actual proposal

Reply: The title now reads, "Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast of Florida."

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

A Maintenance Proposal

Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland – Year 2

Submitted By:

Carrie Kennedy
Maryland Department of Natural Resources
580 Taylor Ave, B-2
Annapolis, MD 21401
Carrie.Kennedy@maryland.gov

Primary Priority: Catch, effort, and landings data
Recreational Technical Committee Priority: Comprehensive For-Hire Data Collection and Monitoring

Applicant Name: Maryland Department of Natural Resources

Title: Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland

Project Type: Maintenance

Principal Investigator: Carrie Kennedy, Data and Quota Monitoring Program Manager

Requested Award Amount: $103,175

Requested Award Period: For one year, beginning after the receipt of funds

Original Date Submitted: June 10, 2019

Objective:

We propose to expand the number of vessels using FACTS™ electronic reporting and continue at-sea and dockside monitoring of Maryland's for-hire fishery in year 2 of this project. The tool allows for-hire captains to report daily harvest using cell phones, smartphones or computers. Daily harvest reports will also be verified through dockside monitoring facilitated by pre-trip notifications (or hails) submitted daily by the for-hire fleet. Additional at-sea sampling will be conducted to collect additional catch (discard) and effort data. Work will be conducted for March through December of 2021.

Need:

Maryland's Chesapeake Bay for-hire captains are required to hold either a Maryland Fishing Guide License or an Unlimited Tidal Fishing License. Vessels must have an additional charter decal in order to conduct charters of unlicensed anglers in Maryland, or to conduct trips targeting striped bass. Decals must be obtained for a vessel that can carry either 6 or less passengers (6 pack) or 7 or more passengers (Annotated Code of Maryland §4-745). Licensees are required to report catch data to the department (COMAR 08.02.13.06).

Maryland has had a for-hire logbook requirement since 1995 (Figure 1). At the same time, MRIP conducts the For-Hire Telephone Survey to estimate effort. For-hire harvest estimates are derived using for-hire intercepts of fishermen along with the effort data from logbooks. Maryland has an agreement with NOAA/MRIP to provide trip data to MRIP from vessels they select. Every wave, MRIP submits a list of vessels for each week during the wave and is provided with the trip information (date, number of trips, location, and number of anglers) by the end of the month after the wave (May 29, July 29, Sept 29, etc.). As in other states, Maryland's charter industry believes the estimates to be of questionable validity – especially since they provide data via logbooks. However, recent declines in reporting rates from 2013-2018 (95% to 62%, respectively) demonstrate that additional tools are required to provide harvest values so fisheries managers can understand for-hire fishing impacts. Unfortunately, MRIP cannot enforce industry accountability, requires additional effort and resources to manage, and often lacks buy-in from stakeholders. We also found a substantial discrepancy between Maryland's logbook-reported angler trips and Maryland's MRIP-estimated for-hire trips in state waters (Table 1), which does not seem to be accounted for by lack of compliance alone. Our hope is that this work will begin to highlight why this difference exists.

Table 1. Maryland logbook-reported angler trips compared to MRIP estimated for-hire anglers trips in state waters.

Year	All MD Logbook Reported Angler Trips	MRIP MD State Waters For-Hire Angler Trips	PSE
2013	111,582	132,807	15.4
2014	99,729	168,201	12.7
2015	75,892	141,152	11
2016	78,890	106,933	12.2
2017	81,516	194,097	9.7
2018	139,223	129,355	10.1

In 2006, the National Research Council completed an independent review of national recreational fisheries survey methods. Their primary finding regarding for-hire fisheries was that reporting should be mandatory (NRC 2006). However, they also noted that data collected through logbooks require verification and enforcement in order to be reliable. In 2013, Donaldson et al submitted a report to MRIP on their for-hire logbook pilot in the Gulf of Mexico. In their report, they included a series of recommendations for implementing a census-level logbook program. Recommendations include: reporting with built-in quality control features, industry-led design, ability of logbook to record and store records for later retrieval, timely reporting that can be enforced, and field validation. ACCSP then held a workshop on the Inventory and Comparison of For-Hire Data Collections in the Atlantic and Gulf of Mexico: Opportunities for Convergence in 2016. There was consensus at the workshop for, "reducing redundancy through convergence of existing programs or transitioning to a comprehensive single program is possible with the primary challenges coming from the socio-political aspects." Maryland has worked with the commercial industry to create a tool that should meet the recommendations of NRC and Donaldson et al.

To date, no single comprehensive for hire reporting and monitoring program, or standards, formally exist. Continuing and expanding this proposed pilot for an additional year would inform the discussion on the approach to comprehensive for-hire data collection and monitoring. ACCSP intends to use APAIS as validation of for-hire logbooks and catch estimation based on MRIP's SC For-Hire Logbook validation (Dukes et al., 2015). A different approach is proposed here which could provide states another option for for-hire data collection. This approach could be modified in future years to include APAIS intercepts as harvest validation in lieu of dockside monitors which would improve efficiency and reduce costs.

The Maryland Blue Crab fishery was declared a disaster in 2008. Using the federal funds received to mitigate the disaster, an industry-led "Blue Crab Design Team" (Team) began to meet to discuss different approaches to management. A significant recommendation was to improve reporting accountability. With their input, the Maryland Department of Natural Resources, and our partners Maryland Environmental Service, Electric Edge Systems Group, Versar, and Oyster Recovery Partnership designed an electronic reporting system which includes a hailing component: FACTS™ (https://www.fisheryfacts.com/index.cfm). It is a web-based reporting tool, with both a portal and a mobile interface. Start hails let the department know that a trip has started and to expect a report. It also allows the department to verify via "spot checks" that harvest reported is accurate. In 2012, we began to pilot the system, FACTS™, with the blue crab industry. In 2015, we extended the pilot to Chesapeake Bay finfish harvesters. Maryland has successfully deployed FACTS™ for its Chesapeake Bay commercial blue crab and finfish fleets (http://dnr.maryland.gov/fisheries/Pages/E-reporting/index.aspx) and it is proven to be an effective method for providing timely, verified harvest (Slacum et al. 2013, 2015). Nearly 13,000 trips were reported in 2018 using FACTS™. The system also serves as an important business tool, allowing commercial fishermen to track their harvest and effort as well as monitor and transfer individual quotas. The department uses the system for administrative purposes (permitting and quota monitoring), enforcement, and to target biological sampling efforts.

Since its inception, Maryland's for-hire industry has been requesting the ability to report harvest using Maryland's E-Reporting tool (FACTS™), but additional development costs and funding constraints kept Maryland from adding for-hire fleet reporting options. The first year funding for this project will allow for implementation of the system for the for-hire fleet in April 2020. The tool is designed to collect additional effort and catch data such as the number of lines fished, duration of fishing, gear type (e.g. circle hook) and discard data. Ensuring these data are collected and verified for a second year will be

invaluable for management, particularly for striped bass where dead discards are posing a significant conservation problem.

We intend to continue collecting additional catch and effort data through at-sea sampling trips arranged with the captains. At-sea sampling is designed to accomplish two objectives. The first objective will be to characterize for-hire fleet discards by documenting daily discards observed on vessels fishing throughout Chesapeake Bay. The second objective is to work with industry to design an approach to document discards in FACTS™ that is easy to use and maximizes precision. This proposal continues this effort through the 2021 season. At-sea monitoring will continue to further characterize for-hire fleet discards and fine tune the discard reporting process. We anticipate having at-sea monitors on 10% of the total number of trips verified (400 trips verified x 10% = 40 trips). At-sea monitors will document the total amount, species, and representative lengths from all discards occurring during a fishing trip. Monitors will also document time of day of each discard. In addition to helping develop the reporting process, collected discard information will be compared to all discard reports reported during the pilot.

Lastly, we believe this effort will allow us to improve our vessel list and vessel directory that is currently used to complete the MRIP for-hire survey. In any given pre-validation draw (typically about 60 vessels per week), we are only able to validate about 25 vessels because we do not have location information for the remaining 35 vessels. By requiring a landing location for all vessels reporting through FACTS™, a necessity to complete a harvest verification, we will have a more complete and current vessel list and directory (NRC 2006). A more robust vessel list and directory can lead to a more robust estimate – until we have 100% reporting via a for-hire logbook with hailing requirement.

Results and Benefits

Coastwide, this tool will be the model for comprehensive, verified state for-hire fishery data collection. It will also address the recommendations of the 2006 NRC and the ACCSP For-Hire Workshop (May 2016) to improve the timeliness of wave data; and maintain common data elements for for-hire trip reporting. The catch and effort data that will be available to our partners may provide information useful to in-season management.

In the long-term, the ability to verify harvest, along with collecting other catch and effort (discard) data, allows the modernized data system to replace the MRIP for-hire survey and provide managers with a more precise landings record. Maryland reporting rates would improve with the expanded use of the system. Robust discard data collected in real-time should allow for crafting of more appropriate management measures, potentially even in-season. These discard data are increasingly important for fisheries managers.

Striped bass are the primary target and harvest of the charter fleet in Maryland's Chesapeake Bay. More accurate and precise for-hire landings of such an important coastal species will be a benefit to fisheries managers and to the industry. We believe at-sea sampling of Maryland's Chesapeake Bay charter fleet will also capture samples from species not intercepted by APAIS data collection. For example, Maryland logbook data indicate an increase in both cobia and red drum catch in recent years (Table 3), where MRIP data do not show any catch of these species in the for-hire fleet. We anticipate that we will be able to collect additional biological samples (length and weight) of both of these species, which are in the top 25% of species needing additional samples as identified by the Biological Review Panel.

Table 3. Logbook-reported cobia and red drum catch (harvest and discards) in Maryland Chesapeake Bay charter boats.

	2015	2016	2017	2018
Cobia	577	107	168	473
Red Drum	405	1515	1036	1255

We expect this effort will allow us to improve our vessel list and vessel directory that is currently used to complete the MRIP for-hire survey. A more robust vessel list and directory can lead to a more robust estimate under the current MRIP for-hire survey. All users of for-hire estimates in Maryland will realize an improvement in the vessel list and vessel directory.

Data Delivery Plan

Data will be transferred directly from FACTS™ to the ACCSP Data Warehouse via application programming interface (API) daily. Additional discard data exceeding the current logbook requirements will also be collected and provided to management partners during the pilot also through an API.

Approach

Continued Dockside Monitoring Implementation and Trip Sampling

The FACTS™ platform incorporates modules for harvest verification by dockside monitors which ensures improved data quality, in addition to the provision of timely data. Dockside monitoring is integral to our approach and was tested during a pilot of the FACTS™ system for Maryland's commercial blue crab fleet. An essential finding was that verification was the best way to improve user accountability (Slacum et al. 2013, 2015). A recent pilot in the Gulf of Mexico had an equivalent finding (Donaldson et al. 2013). Similar dockside monitoring will be designed to appropriately sample up to 10% of the for-hire trips reported via FACTS™. As this is an expansion, and we anticipate up to 100 additional participants to be recruited for the second year, a higher number of trips will be monitored. For-hire captains participating in the FACTS™ program will be required to send a start hail and an end hail, with the estimated landing time and location. If conditions change on the water, best reporting practices dictate that they revise the start hail information. Failure to send an end hail, triggers automatic reminders by text. They will be required to comply with spot checks. Landing locations where spot checks will occur consist of public landings and public and private marinas. Locations will be grouped geographically into specific regions for planning and scheduling of daily spot checks. Monitoring regions may be defined around county boundaries or sub-county delineations, depending on reported locations. In addition, observers will be deployed on a portion of charter trips during the pilot to document discards. Data collected during observed trips will be compared to discard data from non-observed trips and discard documented in spot checks to verify the accuracy.

Dockside monitors will be provided a tablet and the existing FACTS™ harvest verification tool will be modified to collect for-hire logbook verification. At-sea sampling of charter boats will also be conducted by the dockside monitors. We believe at-sea sampling of Maryland's Chesapeake Bay charter fleet will capture samples from species not intercepted by APAIS data collection. We anticipate that we will be able to collect additional biological samples (length and weight) of both of these species, which are in the top 25% of species needing additional samples as identified by the Biological Review Panel.

The second year of the project expects to address catch and effort (80%), biological sampling (10%), and sociological and economic (10%).

An additional administrative specialist will be hired to assist with recruiting, training, and administrative processing necessary to enroll in the program.

Geographic Location

Maryland's state-licensed for-hire fleet conducts their fishery in Maryland's portion of the Chesapeake Bay. Maryland's coastal for-hire fleet operates under a more complex myriad of federal business rules. Should we receive funding, we will continue to focus on Maryland's Chesapeake Bay for-hire fleet. Based on the success of this pilot, funding requests in future years may address the needs of Maryland's Atlantic coastal fishery to comply with federal reporting requirements.

Milestone Schedule

Funds just became available from NOAA for the 2019 project, and no work has begun. Work is anticipated to being this fall, with implementation of the system for captains expected to begin in April 2020. If this proposal is funded, work would be conducted beginning March 2021.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Recruit and Train Volunteer Participants			X	X	X	X	X	X	X	X					
Dockside Monitoring and Trip Sampling				X	X	X	X	X	X	X	X	X			
Report Writing							X						X	X	X

Project Accomplishments Measurement

	Accomplishment Goal
Number of trips validated through dockside monitoring	600
Number of trips sampled for discard data	60

Number of licensees using FACTS™ to report for-hire logbook data: There are approximately 350 decals issued every year that are expected to report fishing effort and harvest. This pilot will be open to all 350 captains (100%) that wish to use the system. Currently, 21 of the licensees that already use FACTS™ also have a charter decal. By the end of the project period, it is anticipated that there will be 200 vessels in compliance with the pilot program. Routine training sessions will be held to incorporate new users throughout the pilot, in excess of the expected 100 new captains/operators, if necessary. The number of participants that are trained and use the system will be documented, and any users that choose to return to paper reporting will also be documented along with their reason(s). All trip-level logbook data will be supplied to ACCSP's Data Warehouse using an API.

Number of vessels reporting trips in FACTS™: Of the 75 Chesapeake Bay for-hire captains expected to join the first year, several of them have multiple vessels they use to carry for-hire trips. Therefore, 100

new vessels are the expected target number of vessels in the program. In Maryland, individuals are licensed to run commercial fishing businesses, but each vessel used to conduct for-hire trips in state waters must have a charter decal.

Number of trips reported and verified in FACTS™: By the end of the project period, it is anticipated that there will be approximately 6,000 for-hire trips reported via FACTS™. This represents approximately 60% of the current trips reported in state for-hire fisheries. The current annual reporting rate (number of reports received/number of reports expected) is approximately 62%; this tool is intended to reduce under-reporting of trips. The FACTS™ platform is designed to allow for harvest and effort verification, therefore capturing any trips that may be under (non) reported. Up to 10% of the reported trips will be verified per the dockside monitoring design.

Cost Summary and Outlook on Future Funding

MD DNR is committed to modernizing its fishery dependent reporting system and has been supporting the development of a comprehensive E-Reporting and management system since 2012. Annual system operations and user support (by MD DNR employees and outside contractors) is provided through state funding. System development has been completed through the use of contractors financed by state funds, but major system advancements have been accomplished with additional support from external grant funds. Maryland has already completed work on two of its fisheries, finfish and blue crab, and is now focused on further expanding the use of reporting capabilities for its for-hire fleet.

Federal Request (**$103,175)**

(a) Personnel (**$17,945)**: An administrative specialist will be hired by the department to assist with recruiting, training, and administrative processing necessary to enroll in the for-hire portion of the pilot FACTS program. This will be a short-term contractual position, with the state hourly rate being $15.47. It is estimated that the position will work six months (1,040 hours) plus additional weekly trainings during the evening (120 hours).

(b) Fringe Benefits: ($0)

(c) Travel: ($0)

(d) Equipment: ($0)

(e) Supplies: ($0)

(f) Contractual (**$81,219):**

Project and contract management ($36,409) - The MD DNR has already competitively procured a contract with the Oyster Recovery Partnership (ORP) Coastal Resource Assessment and Monitoring (CRAM) division to execute the E-Reporting with FACTS™ project and all sub-awards will therefore be managed by ORP. ORP's CRAM has expertise in the development of large scale resource assessments, fishery independent and dependent data acquisition and management, statistics, and stakeholder engagement. Representative projects include long-term management of Maryland's development of Maryland's E-Reporting system using FACTS™, including design, implementation and management of roving dockside monitors from 2012 to 2014, and 2019. Therefore, we can leverage the flexibility in ORP's hiring process that the state's process does not have. ORP will be responsible for: communicating with MD DNR;

communication between Project Team members; scheduling and implementing Team efforts, such as the hiring, training, and spot checking monitors. The budget for this portion of the project consists of staff time for the Program manager and one E-Reporting specialist to coordinate these events; compile project results and report; and process invoices. This task will also involve continued feedback and outreach to fishers actively using the system and will involve significant amounts of staff time to troubleshoot issues, and implement modifications to the system based on fisher's feedback or Team evaluation. ORP staff costs include salary and fringe.

Program Manager - WS ($84.01 x 180 hrs)	$15,122
E-reporting Specialist -KC ($51.17 x 416 hrs)	$21,287
TOTAL PROJECT MANAGEMENT	**$36,409**

For-Hire Dockside and At-sea Monitoring staff ($33,300) – The anticipated approach to verify for-hire logbooks by dockside monitors will be to hire four monitors that will be strategically located in areas where for-hire fleet activity is concentrated. Table 4. Provides the hourly costs associated with doing the dockside monitoring. The on-board sampling cost is based on 60 trips occurring with at-sea samplers (see Project Accomplishments Measurement) with a cost of $100 per trip for a total of $6,000.

Table 4. Cost Calculation of Dockside Monitors Time

	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Cost
Per week	60	60	45	40	40	40	35	35	35	
Hours/day/monitor	5	5	5	5	5	5	5	5	5	
Hours per month	300	300	225	200	200	200	175	175	175	
Total month @ Rate $14	4200	4200	3150	2800	2800	2800	2450	2450	2450	$27,300

Monitors Time	$27,300
At-Sea Sampling	$6,000
Total	$33,300

Field and Meeting Travel Expenses ($11,510) - This portion of the contractual budget is for expenses incurred by dockside monitors to travel to and from dockside monitoring and for travel to meetings. We anticipate travel for dockside monitor spot checks will range between 30 to 50 miles roundtrip and have budgeted using an average daily dockside monitor trip of 40 miles roundtrip. The anticipated number of trips is 450 trips between April and December and gas reimbursement is the current Federal standard of $.545/mile. Dockside monitors will also be required to attend 2 meetings for training and debriefs. The total number of anticipated miles is 19,320 miles. Additional travel budget is requested for members of the E-Reporting project team to conduct QA/QC of dockside monitoring activities and for training. In addition, travel to fisher training and feedback meetings is also budgeted. We anticipate a total of 1,800 miles of travel for these activities.

Mileage for dockside monitors ($0.545/mile x 19320 miles)	$10,529
Mileage for meetings, site visits, QA/QC of dockside monitors ($0.545/mile x 1800 miles)	$981

(g) Construction ($0)

(h) Other ($0)

(i) Total Direct Charges (**$99,165**)

(j) Indirect Charges (**$4,011) -** The state negotiated agreement rate with NOAA has expired, therefore the previous rate of 22.35% is used to estimate the indirect costs of the state contractual position see Appendix A.

Non Federal, In-Kind Contribution

(a) Personnel (**$34,295**): Following the already proven process of combined state and grant funding, the MD DNR will provide in-kind support by dedicating three staff (associated overhead and fringe benefits) to assist in the management and staffing of the Pilot Project. This is the approach used during the previous pilot projects resulting in Maryland's current E-Reporting system. In fact, all three staff participated in portions of each of the previous pilots and are integral members of MD's E-Reporting Team. While each staff has other duties to fulfill at the department, supporting this Pilot is a logical extension of those duties and will not jeopardize the success of the Pilot Project.

Program Manager I ($46.66 x 250 hrs)	$11,665
Administrator II ($37.13 x 500 hrs)	$18,565
Database Specialist II ($40.65 x 100 hrs)	$4,065
Total In-Kind Personnel	**$34,295**

(b) Fringe Benefits: ($0)

(c) Travel: ($800): For each of eight FACTS™ training session held monthly, March – August, the state will provide vehicles for transportation in lieu of mileage and the state will reimburse expenses for meals up to $25 per day.

(d) Equipment (**$2,500):** Roving dockside monitors staff will use four tablets with a service plan to collect data in the field. The cost of those tablets (4x$500) and the service plan ($500) is currently covered by state funds.

(e) Supplies: ($0)

(f) Contractual (**$43,600**):

Call Center ($4,000) - The call center is used by some fishers to report harvest. The cost of the call center is fully supported through funding by the MD DNR. We anticipate the call center will be used by some for-hire fishermen to report harvest during the project. The call center also provides a back-up for web-based reporting when user specific or internet specific technical issues occur. Having many options for fishers to report has been vital during previous pilots and has helped to alleviate concerns of some fishers that not having internet coverage would result in a reporting violation. We also receive valuable feedback from the call center through their interactions with fishers. The monthly call center fee is $3,000.00. We estimate 20% of the call center monthly effort will be required to support the Pilot Project.

FACTS™ ($36,000) - FACTS™ is a software as a service (SaaS) platform and the MD DNR is fully funding the annual costs to maintain access to fishers to report. All trips and harvest reported by project participants will require access to FACTS™ regardless of the platform (i.e., application, mobile web, etc.) used to report. The service fee to maintain the charter boat reporting module in FACTS™ will be $3,000 per month for the 12 month project.

Help Line ($3,600) - MD's E-Reporting program has a dedicated 24/7 helpline to support fishers with any problems or questions they have while E-reporting. The helpline will also be used to gather feedback from for-hire fishermen participating in the pilot project and for communication with roving monitors and observers during the pilot. The helpline has been extremely successful for data gathering and fisher satisfaction. The monthly helpline fee is $1,500.00. We estimate that 20% of the monthly use of the helpline will be to support the 12 month Project.

(g) Construction ($0)

(h) Other ($0)

Funding Transition Plan

To reduce costs in future years, APAIS personnel could be trained to conduct harvest monitoring activities on days when APAIS trips are not being sampled. It is expected that ACCSP will develop an application that allows APAIS personnel to collect such verifications not just in Maryland, but in other states as well. Once that app has been developed, start hail information, including expected landing location and time, will be sent to SAFIS via an application programming interface (API). In lieu of additional future funding, FACTS will continue to accept reports of for-hire fishermen without onboard monitoring or harvest verification. Should the department believe the process is appropriate for data collection, we could work with MRIP staff to work in concert or to replace the MRIP For-Hire Survey. In the meantime, if we do not pursue or receive funds for roving monitors in future years, the state will continue to cover the cost of FACTS ™ support and maintenance for data submission. Data will continue to be available to ACCSP via an API with SAFIS.

Table 5. Expanding Accountability in Maryland, Year 2 Budget Table

Description	Calculation	Federal Requested	Non-Federal In-Kind
(a) Personnel		**$17,945**	**$34,295**
Administrative Specialist	$15.47 x 1160hrs	$17,945	$0
Program Manager II	$46.66 x 250hrs	$0	$11,665
Administrator II	$37.13 x 500hrs	$0	$18,565
Database Specialist II	$40.65 x 100hrs	$0	$4,065
(b) Fringe		$0	$0
(c) Travel		$0	**$800**
(d) Equipment		$0	**$2,500**
	Tablets (4x$500)	$0	$2,000
	Service Plan	$0	$500
(e) Supplies		$0	$0
(f) Contractual		**$81,219**	**$43,600**
Project and contract management	Program Manager ($84.01 x 180hrs) E-reporting Specialist ($51.17 x 416 hrs)	$36,409	$0
For-Hire Dockside and At-sea Monitoring staff	$14 x 1950 hrs $100 x 60 trips	$33,300	$0
Field and Meeting Travel Expenses	Monitors Mileage $0.545 x 19320 miles Meeting Travel Exp $0.545 x 1800 miles	$11,510	$0
Call Center	$3,000 x 12 (months) x 20%	$0	$4,000
E-reporting System (FACTS™) Support and Maintenance	$3,000 x 12 months	$0	$36,000
Help Line	$1,500 x 12 months x 20%	$0	$3,600
(g) Construction		$0	$0
(h) Other		$0	$0
(i) Total Direct Charges		**$99,164**	
(j) Indirect Charges	Personnel costs x .2235	**$4,011**	
Total Costs		**$103,175**	**$81,195**
Total Breakdown		**56%**	**44%**
Total Project Value		**$184,370**	

Prior Year's Related Projects:
Funds just became available from NOAA for the 2019 project, and no work has begun. Work is anticipated to being this fall, with implementation of the system for captains expected to begin in April 2020.

Year	Title	Funded Amount	Description of Completed Data Delivery
2011	Improving Timeliness and Reporting Accuracy in Maryland: Expansion of Online Reporting for Maryland Commercial Fisheries	$106,947	Data collected via SAFIS
2013	Improving Timeliness and Reporting Accuracy in Maryland: Expansion of Online Reporting for Maryland Commercial Fisheries	$100,560	Data collected via SAFIS
2019	Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland	$154,396	Data will be available in SAFIS real time via API once data collection begins

2019 Budget Narrative: Expanding Accountability in Reporting (most recent year's funded proposal)

Total Non-Federal In-Kind Contribution- $129,329.00 (See budget table for specific dollar amounts)

MD DNR is committed to modernizing its fishery dependent reporting system and has been supporting the development of a comprehensive E-reporting and management system since 2012. Annual system operations and user support (by MD DNR employees and outside contractors) is provided through state funding. System development has been supported by state funds, but major system advancements have been accomplished with additional support from external grant funds. Maryland has already completed work on two of its fisheries, finfish and blue crab, and is now focused on developing reporting capabilities for its for-hire fleet.

(a) Personnel - MD DNR Staff (See budget table for specific dollar amounts) - Following the already proven process of combined state and grant funding, the MD DNR will provide in-kind support by dedicating three staff (associated overhead and fringe benefits) to assist in the management and staffing of the Pilot Project. This is the approach used during the two previous pilot projects resulting in Maryland's current E-reporting system. In fact, all three staff participated in portions of each of the two previous pilots and are integral members of MD's E-reporting Team. While each staff has other duties to fulfill at the Department, supporting this Pilot is a logical extension of those duties and will not jeopardize the success of the Pilot Project. See budget for specific staff time dedicated to this project.

(d) Equipment - $2,000
Tablets will be provided to the technicians for data entry during monitoring. Those tablets will be provided by the existing program.

(f) Non-Federal In-Kind E-reporting System Budget (See budget table for specific dollar amounts)

Call center- ($4,000) The call center is used by some fishers to report harvest. The cost of the call center is fully supported through funding by the MD DNR. We anticipate the call center will be used by some for-hire fishermen to report harvest during the project. The call center also provides a back-up for web-based reporting when user specific or internet specific technical issues occur. Having many options for fishers to report has been vital during previous pilots and has helped to alleviate concerns by some fishers that not being able to report is a violation. We also receive valuable feedback from the call center through their interactions with fishers. The monthly call center fee is $3,000.00. We estimate 20% of the call center of the call center monthly effort will be required to support the 12 month Pilot Project.

FACTS™ - ($31,200) FACTS™ is a software as a service (SaaS) platform and the MD DNR is fully funding the annual costs to maintain access to fishers to report. All trips and harvest reported by project participants will require access to FACTS™ regardless of the platform (i.e., application, mobile web, etc.) used to report. The monthly FACTS™ fee is $13,000.00. We estimate that 20% of FACTS™ use will be dedicated to the 12 month Pilot Project.

Help Line- ($3,600) MD's E-reporting program has a dedicated 24/7 help line to support fishers with any problems or questions they have while E-reporting. The help line will also be used to gather feedback from for-hire fishermen participating in the pilot project and for communication with roving monitors and observers during the pilot. The help line has been extremely successful for data gathering and fisher satisfaction. The monthly help-line fee is $1,500.00. We estimate that 20% of the monthly use of the help-line will be to support the 12 month Project.

Total Federal funding request - $154,376

The original federal request was $182,912. That number has been corrected downward to $154,376 due to the incorrect calculation of the indirect cost being applied to more than salary and fringe. The indirect cost rate applied was 22.35%. This rate expires 7/1/19 but will be applied here until a new agreement has been reached.

(f) Contractual services

Project and contract management- ORP personnel salary total is $16,164, salary fringe is $5,657 (35% of salary), $21,821 total.

The MD DNR has already competitively procured a contract with the Oyster Recovery Partnership (ORP) Coastal Resource Assessment and Monitoring (CRAM) division to execute the E-reporting with FACTS™ project and all sub-awards will therefore be managed by ORP. ORP's CRAM has expertise in the development of large scale resource assessments, fishery independent and dependent data acquisition and management, statistics, and stakeholder engagement. Representative projects include long-term management of Maryland's development of Maryland's E-Reporting system using FACTS™, including design, implementation and management of roving dockside monitors from 2012 to 2014. Therefore, we can leverage the flexibility in ORP's seasonal hiring process that the state's process does not have.

ORP will be responsible for: communicating with MD DNR; communication between Project Team members; scheduling and implementing Team efforts, such as the formal implementation and management of for-hire fleet outreach to fishers and industry meetings that include training fishers how to use the system and follow-up meetings to gather final feedback. The budget for this portion of the project consists of staff time for the Program manager and one E-reporting specialist to coordinate these events; guide the design, development and implementation of the

roving monitor and by-catch discard program; manage the development of the for-hire reporting module; integrate feedback from fishers to modify the system; communicate progress with MD DNR; compile project results and report; and process invoices. This task will also involve continued feedback and outreach to fishers actively using the system and will involve significant amounts of staff time to troubleshoot issues, and implement modifications to the system based on fisher's feedback or Team evaluation.

Requirements Validation and Systems Development- $57,729
This task involves staff time for Electric Edge Systems Group staff to attend meetings with MD DNR to gather business rules to design the for-hire-fleet reporting module (these meetings will be coordinated and facilitated by ORP). This task also includes programming time to customize the existing FACTS™ system to account for for-hire harvest reports, and develop the roving monitor interface so monitors can verify actively fishing for-hire vessels. Internal systems tests and external testing with industry to customize the system will be part of this task, as well as the integration of for-hire hails and harvest reports into ACCSP's data warehouse through the existing API.

For-Hire Dockside Monitoring and By-catch Discard Program- $61,273
This task includes the design and implementation of dockside monitoring and by-catch discard program. Funds will be used to support Versar, Inc. staff in the development and implementation of the overall approach used to verify for-hire reporting at the dockside to include survey design and dockside monitor FACTS™ interface (scheduling and reporting). Funds will also be used to coordinate, schedule and perform quality control and assurance site visits of dockside monitors during the project. Funds will support the analysis of dockside monitoring data to evaluate effectiveness and determine optimal monitoring. A large portion of these funds (approximately $25,000.00, see Table 4.) will be dedicated to hiring and supporting dockside monitors. These funds are budgeted using a total of 4 dockside monitors to target approximately 350 for-hire trips between April and December. It is anticipated that some trips will intercept more than one for-hire vessels and those trips will provide enough additional successful spot checks to bring the total number of successful spot checks to 400 or 10% of anticipated reported trips during the project. Previous dockside monitoring work in Maryland has shown that monitors require approximately 5 hours to travel to and from and to conduct spot checks on any given day, and perform administrative duties. Therefore, 5 hours was used to budget each spot check. Funding to support the design and analysis of the by-catch discard program is also included ($100/trip to captain plus staff hours) to support on the water data collection and analysis.

Table 4. Cost Calculation of Dockside Monitors Time

	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Cost
Per week	50	50	40	35	35	35	35	35	35	
Hours/day/monitor	5	5	5	5	5	5	5	5	5	
Hours per month	250	250	200	175	175	175	175	175	175	
Total month @ Rate $14	3500	3500	2800	2450	2450	2450	2450	2450	2450	$24,500

For-Hire Dockside Monitoring, QA/QC, and Meeting Travel Expenses- $8,676
This portion of the budget is for expenses incurred by dockside monitors to travel to and from dockside monitoring and for travel to meetings. The anticipated approach to verify for-hire logbooks by dockside monitors will be to hire four monitors that will be strategically located in

areas where for-hire fleet activity is concentrated. We anticipate travel for dockside monitor spot checks will range between 30 to 50 miles roundtrip and have budgeted using an average daily dockside monitor trip of 40 miles roundtrip. The anticipated number of trips is 350 trips between April and December and gas reimbursement is the current Federal standard of $.545/mile. Dockside monitors will also be required to attend 2 meetings for training and debriefs. The total number of anticipated miles is 14,320 miles.

Additional travel budget is requested for members of the E-reporting project team to conduct QA/QC of dockside monitoring activities and for training. In addition, travel to fisher training and feedback meetings is also budgeted. We anticipate a total of 1,600 miles of travel for these activities.

(j) Indirect Costs – $4,877

See Appendix A for state negotiated rate agreement (22.35%). Indirect costs only apply to salary and fringe only. The initial budget applied the indirect rate to the entire request, but has since been corrected.

Summary
Proposal Type: Maintenance

Primary Program Priority:
Catch and Effort (80%)
There are approximately 350 decals issued every year that are expected to report fishing effort and harvest. This pilot will be open to all 350 captains (100%) that wish to use the system. Currently, 21 of the licensees that already use FACTS™ also have a charter decal. We expect approximately 6,000 vessel trips to be reported through FACTS™, this represents 60% of the logbook-reported trips. Data collected through this program will meet all 8 of the data standards for for-hire census data (ACCSP 2012).

Data Delivery Plan: Data will be transferred directly from FACTS™ to the ACCSP Data Warehouse via application programming interface (API) daily. Additional discard data exceeding the current logbook requirements will also be collected and provided to management partners during the pilot.

Project Quality Factors:
Multi-partner/Regional impact including broad applications

Coast wide, this tool will be the model for comprehensive, verified state for-hire fishery data collection. It will also address the recommendations of the 2006 NRC recommendations and the ACCSP For-Hire Workshop (May 2016) to improve the timeliness of wave data; and maintain common data elements for for-hire trip reporting. Lastly, it addresses priorities of the Recreational Technical Committee: Comprehensive For-Hire Data Collection and Monitoring, Improved recreational fishery discard and release data, and Biological sampling for recreational fisheries separate from MRIP APAIS. The MRIP for-hire survey is expected to benefit from the improvements in the vessel list and vessel directory. ACCSP is a partner in the data delivery and communication processes.

Funding Transition Plan: To reduce costs in future years, APAIS personnel could be trained to conduct harvest monitoring activities on days when APAIS trips are not being sampled. It is expected that ACCSP will develop an application that will allow APAIS personnel to collect such verifications not just in Maryland, but in other states as well. Once that app has been developed, start hail information, including expected landing location and time, will be sent to SAFIS via an application programming interface (API). In the meantime, if we do not pursue or receive funds for roving monitors in future years, the state will continue to cover the cost of FACTS ™ support and maintenance for data submission. Data will continue to be available to ACCSP via an API with SAFIS.

In-Kind Contribution: 44% (see page 13)

Improvement in data quality/quantity/timeliness
Data collected through this program will meet all 8 of the data standards for for-hire census data (ACCSP 2012); currently data are expected to be reported weekly, with an annual reporting rate of 75%. Under this pilot, all data collected through the system will be transferred directly from FACTS™ to the ACCSP Data Warehouse via application programming interface (API) daily. Under the current reporting logbook requirements, data is supplied to the Data Warehouse via a semi-annual data feed.

Potential Secondary Module:
Biological Sampling (10%)
Maryland logbook data indicate an increase in both cobia and red drum catch in recent years where MRIP data do not show any catch of these species in the for-hire fleet. We anticipate that we will be able to collect additional biological samples (length and weight) of both of these species, which are in the top 25% of species needing additional samples as identified by the Biological Review Panel.

Sociological and Economic (10%)
One of the primary benefits of a hailing system is the ability to enforce reporting and to ensure that licensees not submitting reports are truly not fishing. The Committee on Economics and Social Sciences identified the need to address latent effort and number of operators guiding for-hire trips.

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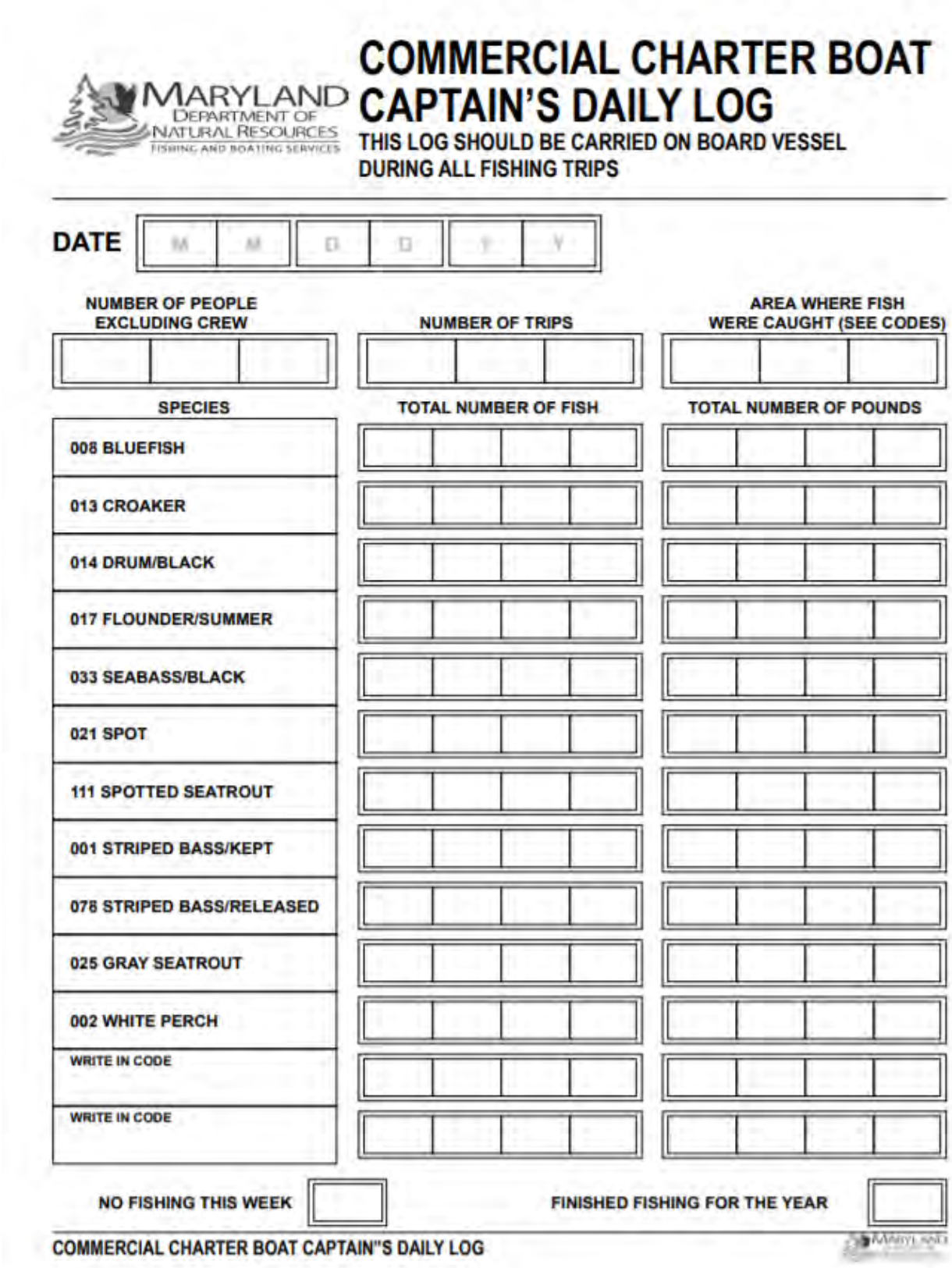

Figure 1. Charter Boat Captain's Daily Log
(http://dnr.maryland.gov/fisheries/Documents/Comchartcaptdailylog.pdf)

Carrie A Kennedy
Maryland Department of Natural Resources
580 Taylor Ave, B-2
Annapolis, MD 21401

EXPERIENCE

Maryland Department of Natural Resources
Fishing and Boating Services **January 2015-Present**
Program Manager I **Annapolis, Maryland**
Data and Quota Monitoring Program Manager

- Manage staff responsible for implementing new E-reporting with FACTS™ initiative.
- Manage staff responsible for commercial harvest reporting.
- Manage staff responsible for monitoring harvest of quota-limited species, including striped bass.
- Manage staff responsible for issuing eligible commercial permits.

Responsibilities also include advising managers on closing and opening quota-monitored species; coordinating Industry Workgroups; proposal development and submission in support of electronic reporting; and recommending changes to commercial permitting regulations.

Maryland Department of Natural Resources
Fisheries Service **November 2008-**
January 2015
Program Manager I **Annapolis, Maryland**
Coastal Fisheries Program Manager

- Manage staff responsible for Coastal Bays Finfish Investigation.
- Manage staff responsible for Atlantic Bluefin Tuna/ Billfish Catch Card Program.
- Manage staff responsible for coastal fisheries permits and quota monitoring.

Responsibilities also included advising coastal fisheries management decisions; coordinating Coastal Fisheries Advisory Committee and Spiny Dogfish Industry Workgroup; meeting ASMFC, MAFMC, and NMFS guidelines for Maryland.

Maryland Department of Natural Resources
Fisheries Service **June 2005-November**
2008
Natural Resources Biologist III **Annapolis, Maryland**
Commercial Striped Bass Project Leader, duties include:

- Maintain Microsoft Access database of harvest, permits, and striped bass harvest tags. Distribute harvest permits and tags.
- Monitor progress toward Maryland's quota daily through check station system.
- Maintain ArcView GIS and Microsoft Access databases of all registered pound net sites in the state of Maryland. Register and transfer pound net sites in accordance with regulation.
- Maintain Microsoft Access database of registered haul seines in the State of Maryland. Inspect and seal haul seines in accordance with regulation.
- Supervision of Natural Resource Biologist I and Administrative Specialist.

Maryland Department of Natural Resources
Fisheries Service **April 2005-June 2005**
Natural Resources Biologist II **Annapolis, Maryland**
Fisheries Management Plan Coordinator, Job Duties:
Responsible for writing/updating fisheries management plans. Attended ASMFC meetings and Chesapeake Bay Program meetings as a Fisheries Service Representative. Wrote legislative updates on fisheries management plans.

Maryland Fisheries Service representative to:
-National Marine Fisheries Service Highly Migratory Species Advisory Panel (2010-2015)
-Atlantic Coastal Cooperative Statistics Program's Operation Committee (2006-2012)
-Atlantic Coastal Cooperative Statistics Program's Recreational Technical Committee (2008-2011)

LEADERSHIP COURSEWORK

Introduction to Adaptive Leadership, MATTeam, Assoc. of Fish and Wildlife Agencies, July and August 2017
Supervisor Development Certificate Program, Anne Arundel Community College, July 2015 – January 2016
Conflict, Management Assistance Team, Assoc. of Fish and Wildlife Agencies, October 2014
Disorder to Order, Management Assistance Team, Assoc. of Fish and Wildlife Agencies, July 2014
Leader as Supervisor, Management Assistance Team, Assoc. of Fish and Wildlife Agencies, May 2013
Consent Building, Institute of Participatory Management and Planning, February 2010

EDUCATION

St. Mary's College of Maryland
St. Mary's City, Maryland
Bachelor of Arts May 1999

State and Local Governments
Indirect Cost Negotiation Agreement

EIN: 52-6002033

Organization:

Maryland Department of Natural Resources
580 Taylor Avenue, B-4
Annapolis, MD 21401-2352

Date:

Report No(s).:

Filing Ref:
Last Negotiation Agreement
dated November 13, 2017

The indirect cost rates contained herein are for use on grants, contracts, and other agreements with the Federal Government to which 2 CFR Part 200 applies for fiscal years beginning on or after December 26, 2014 subject to the limitations in Section II.A. of this agreement. Applicable OMB Circulars and the regulations at 2 CFR 225 will continue to apply to federal funds awarded prior to December 26, 2014. The rates were negotiated by the U.S. Department of the Interior, Interior Business Center, and the subject organization in accordance with the authority contained in applicable regulations.

Section I: Rates

Type	Effective Period From	Effective Period To	Rate*	Locations	Applicable To
Fixed Carryforward	07/01/18	06/30/19	20.27%	All	1/
Fixed Carryforward	07/01/18	06/30/19	18.56%	All	2/
Fixed Carryforward	07/01/18	06/30/19	19.18%	All	3/
Fixed Carryforward	07/01/18	06/30/19	20.83%	All	4/
Fixed Carryforward	07/01/18	06/30/19	14.03%	All	5/
Fixed Carryforward	07/01/18	06/30/19	13.17%	All	6/
Fixed Carryforward	07/01/18	06/30/19	30.27%	All	7/
Fixed Carryforward	07/01/18	06/30/19	29.30%	All	8/
Fixed Carryforward	07/01/18	06/30/19	36.67%	All	9/
Fixed Carryforward	07/01/18	06/30/19	22.35%	All	10/
Fixed Carryforward	07/01/18	06/30/19	12.73%	All	11/

1/ Forest Service
2/ Wildlife & Heritage Service (Non-PR)
3/ Wildlife & Heritage Service (PR)
4/ Park Service
5/ Natural Resources Police (Non-PR)
6/ Natural Resources Police (PR)
7/ Resource Assessment Service
8/ Chesapeake & Coastal Services (Non-DJ)
9/ Chesapeake & Coastal Services (DJ)
10/ Fishing & Boating Services (Non-DJ)
11/ Fishing & Boating Services (DJ)

***Base:** Total direct salaries and wages, <u>including</u> fringe benefits. The rate applies to all programs administered by the non-federal entity. To determine the amount of indirect costs to be billed under this agreement, direct salaries and wages and related fringe benefits should be summed and multiplied by the rate. All other program costs should be eliminated from the calculation.

Treatment of fringe benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs; fringe benefits applicable to indirect salaries and wages are treated as indirect costs.

STATE OF MAINE
DEPARTMENT OF
MARINE RESOURCES
MARINE RESOURCES LABORATORY
P.O. BOX 8, 194 MCKOWN POINT RD
W. BOOTHBAY HARBOR, MAINE 04575-0008

JANET T. MILLS
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

August 6, 2019

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St. Ste. 200 A-N
Arlington, VA 22201

Dear ACCSP:

We are pleased to submit the revised proposal titled "FY20: Managing 100% Lobster Harvester Reporting in Maine" for your consideration. This is a new project to help the Maine Department of Marine Resources (MEDMR) come into compliance with ASMFC's Addendum 26 requirement that the MEDMR move from 10% lobster reporting to 100% electronic lobster reporting. The deadline for this Addendum to be fully implemented is currently January 1, 2024; however, new right whale management measures are being developed through the Atlantic Large Whale Take Reduction Plan and will require information on vertical lines in the lobster fishery prior to this deadline. To comply with and track the pending vertical line reductions resulting from these measures, DMR is aiming for implementation of the 100% reporting requirement as early as 2021.

The MEDMR does not currently have the funds or staff needed to support the program at the 100% reporting level. We are proposing to create nine new positions that have been identified as necessary to successfully roll out 100% electronic lobster harvester reporting. Please view all graphs in color. This proposal addresses the following 2020 ranking criteria: catch and effort, data delivery plan, regional impact, funding transition plan, in kind contribution, improvement in data quality and timeliness, impact on stock assessment and properly prepared. For a summary of the proposal for ranking purposes, please see page 20. Please contact Robert Watts at the MEDMR with any questions. Thank you for your consideration of this proposal.

In our original proposal, committee members asked that we address the questions below. We are addressing them in this cover letter, but also in the report where applicable.

+ Do non-active license holder need to submit a report (monthly, annual etc.)? Appears, from Table 1, that going to 100% reporting would require all 5,925 license holders report

All license holders regardless of activity will be required to report for each month they hold a current license. Any license holder issued a license during the current year will be required to report for each month their license was valid regardless of fishing activity.

o Does the 4,389 harvesters reporting to a dealer mean that only 73% of license holders are active or they may be active but don't need to or did not sell to a licensed dealer?

The 4,389 figure represents the number of harvesters that sold at least 1 pound to a dealer. There may be more active harvesters that never sell to a dealer, but we have no way to currently quantify this until we move to 100% harvester reporting.

+ What is meant by the "offline electronic reporting application"? The use of offline is confusing for an electronic reporting system.

The "offline electronic reporting application" means that this reporting application does not require an internet connection for harvesters to enter their data. An internet connection would only be required to submit reports to ACCSP.

+ Is 100% data auditing required – either by ME or ACCSP – to ensure data is valid? Proposal indicates 100% auditing will be conducted with 100% reporting. Maybe I'm mixing with validation and/or cross-referencing with dealer reports? Is there a utility in the 100% audit and how will this be done? This aspect needs clarification on why and how. –

MEDMR does intend to audit 100% of all individual records that are submitted. Many of these audits will be simple gross audits (over the trip, gear quantity, spatial audits, etc.); however, the data submitted through the new mobile application will have validations built-in for pre-submission checks. Harvesters will not be able to enter certain gear/species combinations, certain dispositions for certain species and gear quantity checks for instance. Many of these audits will be canned within the audit database and will be added to a routine check. The dealer/harvester audits are performed annually and start by looking at yearly totals with a 2,000 pound discrepancy. Dealer/harvester audits are not performed on a trip by trip basis.

+ Not clear how the MARVIN system, data entry and staff needs fits with this proposal. This proposal is for 100% electronic reporting, no paper/manual entry of reports (a big part of the MARVIN program) – why would this proposal begin to fund those positions? If not intent, need to clear up proposal to remove any ambiguity.

This proposal is designed to help fund the transition from 10% harvester reporting to 100% harvester reporting where most harvesters will be required to report electronically. MEDMR understands that not everyone will be able to report electronically so a paper option must still be available. The positions being funded will be doing very little data entry and will mostly be assisting harvesters with reporting questions along with other data entry duties.

+ Proposal states that ME will require "nearly" 100% electronic reporting – will there be exemptions or allowances for non-electronic reports? Is there going to be staff to enter data for the paper data entry? Please provide clarification on this based on existing paper reports and staffing for this task.

Like our answer above. MEDMR does not anticipate 100% electronic reporting will occur. We are aware of some harvesters that are unable to report electronically and therefor need a paper option. This paper option for lobster harvesters will be at the discretion of the Commissioner's office and the Landings Coordinator's discretion.

+ New reporting program will submit reports through the LEEDS system? Compliance approach mentions review of reports submitted in LEEDS. Also, won't the new system require particular fields to be completed in order for submission? If require particular fields, this could remove the step of staff checking for complete submissions and data entry mentioned in proposal.

The new applications for iOS® and Android® will be submitting all reports directly into SAFIS. All reports submitted through Maine LEEDS will be submitted directly to MARVIN. All electronic reporting systems will have some level of validation before users can submit data. The compliance for electronic reporting is automated, only paper reports are deemed "incomplete" as all electronic reports must be complete before submission is allowed.

+ Is ASMFC allowing 5 years to reach the goal of 100% reporting. Has the AWTRT officially tightened this deadline?

AWTRT has not held a vote on a specific deadline for 100% reporting; however, the AWTRT has recommended on more than one occasion that fisheries move to 100% reporting as soon as possible. MEDMR strongly agrees with this recommendation because our ability to achieve and monitor the consensus goals of the AWTRT is tied to the availability of these data in the short term. MEDMR believes that the January 2021 date is necessary to meet the data guidelines outlined in Addendum 26, the needs of the AWTRT, and work out any data collection and data management issues well before the 2024 deadline.

+ It is difficult to determine the staff and resources needed to switch to electronic and increase reporting. A slower implementation would allow for a more realistic assessment of the needed resources.

The MEDMR has discussed and decided against the idea to ramp up from the current number of harvesters selected to report to 100% reporting. It has determined the best way forward is to go directly to 100% harvester reporting. For MEDMR to provide excellent customer service from the beginning, the number of positions proposed are what we feel are necessary to provide the best level of customer service while being as fiscally responsible as possible. Each position created will be a limited period position and each year MEDMR will evaluate these new positions to determine if they are still needed. We anticipate that by year 3 to 5 we might be able to the number of positions as harvesters become more versed with the reporting programs.

+ Page 14: Matching contributions are 10 positions and mobile application development. Are the new positions distinct from the positions listed as in-kind? If cost sharing, and these are 9 new positions…what will the new staff be working on when not lobster 100% reporting. Please provide clarify in the proposal.

The positions listed as "in-kind" are current MEDMR staff either working directly in the Landings Program or Licensing Division. The Landings Program staff time only includes time these positions work on the harvester portion of the Landings Program and Licensing Division staff time only include the time they are addressing issues related to the Landings Harvester Program. The nine new positions requested in this grant will mostly focus their time on lobster harvester reporting but will also help cover any other "harvester reporting" questions as well. With the addition of almost 5,600 harvesters to mandatory reporting, there's not a lot of anticipated downtime and would be focused on harvester reporting tasks only. Two of the new positions proposed will be cross trained to assist with the Landings and Licensing programs as the impact to requiring 100% lobster reporting will have a significant impact on both programs. Requiring an additional 5,600 harvesters to report annually will increase the number of licenses that are delinquent and unable to be renewed the first time which will burden the Licensing and Landings staffs with extra communication time with industry.

A calculation error was noticed when reviewing the preproposal. A new in-kind figure has been supplied and any point changes have been noted in the Summary of Ranking for ACCSP Proposals (page 20).

+ Page 8 (now page 9): Regarding encouraging electronic reporting, why does reporting via new DMR application provide less/limited analytics for harvesters? A new tool should provide more fishing trends analytics to incentivize harvester to use tool. Restate to clarify the DMR application is going to provide analytics.

This has been reworded. The new MEDMR application will provide harvesters with some basic "canned" analytics built into the program that will allow the end user to quickly look at basic trends that will be helpful with their fishing practices.

+ $197K in 30% DMR Indirect is very expensive, on par with the total cost of a typical ACCSP proposal; can select budget lines be excluded from Indirect in order to reduce?

These indirect funds are a necessity to help defray and offset the administrative costs associated with the ASMFC's directive to increase MEDMR's lobster reporting from its current rate to 100%. The anticipated increase to ~300,000 new harvester records and overall ~700,000 records (dealer and harvester) supplied to ACCSP's Data Warehouse will account for roughly 42% of all reports stored in the Data Warehouse. The increase in harvester reports received by MEDMR will be roughly 538%. These indirect monies are utilized to help cover the administrative costs not covered directly by this grant proposal and help offset any burden MEDMR assumes with fulfilling their ASMFC reporting requirements.

+ Can ACCSP handle the anticipated significant increase in data records (doubling current) associated with 100% Maine lobster reporting?

According to Julie Defilippi Simpson they can.

+ Sustainability and dependency of program on these funds? Please provide additional language on the funding transition, including the possible reduction of staff.

This is a huge issue that MEDMR has been looking for other funding sources and will continue to look for other sources. Staff reductions have been mentioned in a previous comments answer. MEDMR will continue to look at ways to streamline the Landings Program's operation and will continue to try and automate as many processes (compliance and audits for instance) that will cut down on staffing needs. The reason so many staff are included in this proposal is for the initial roll out and anticipated help that industry will need and the ability to assist industry within a reasonable amount of time to answer their questions.

Sincerely,

Robert B. Watts II
Marine Resources Scientist III
rob.watts@maine.gov
(207) 633-9412

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street. Suite. 200A-N
Arlington, VA 22201

FY20: Managing 100% Lobster Harvester Reporting in Maine

Total Cost: $837,251

Submitted by:

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Erin L. Summers
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Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Robert Watts, Marine Resource Scientist

Project Title: FY20: Managing 100% Lobster Harvester Reporting in Maine

Project Type: New Project

Requested Award Amount (without the NOAA administration fee): $837,251

Requested Award Period: One year after receipt of funds

Objectives:

The objective of this proposal is to comply with Addendum XXVI (http://www.asmfc.org/uploads/file/5a9438ccAmLobsterAddXXVI_JonahCrabAddIII_Feb2018.pdf) of ASMFC's (Atlantic States Marine Fisheries Commission) American lobster Fisheries Management Plan (FMP) which requires MEDMR increase the percentage of trip level landings information MEDMR collects from commercial lobster harvesters from 10% (approximately 600 harvesters) to 100% (approximately 6,000 harvesters). Addendum XXVI requires 100% reporting (electronic reporting is recommended but not mandatory) by January 2024 in addition to other new required fields that become mandatory in January 2020. Requiring the MEDMR to implement 100% reporting will cause MEDMR to increase landings and licensing staff by a total of 9 currently non-existent positions to effectively manage, monitor and audit what will be a 538% increase in the number of trip level reports the MEDMR receives on an annual basis.

MEDMR is currently participating in the Atlantic Whale Take Reduction Team (AWTRT) process, which has recently recommended to NMFS that vertical lines associated with the Maine lobster fishery should be reduced by 50%. While the AWTRT has not made any specific recommendations regarding reporting requirements for the fishery, the issue will be discussed by the AWTRT in the spring of 2019. AWTRT has not held a vote on a specific deadline for 100% reporting; however, the AWTRT has recommended on more than one occasion that fisheries move to 100% reporting as soon as possible. MEDMR strongly agrees with this recommendation because our ability to achieve and monitor the consensus goals of the AWTRT is tied to the availability of these data in the short term. MEDMR believes that the January 2021 date is necessary to meet the data guidelines outlined in Addendum 26, the needs of the AWTRT, and work out any data collection and data management issues well before the 2024 deadline. Additionally, MEDMR is interested in moving the timeframe for 100% electronic lobster harvester reporting up to as early as 2021 to track and document the 50% reduction in vertical lines that will be required. Provided this accelerated timeframe, the MEDMR does not have the funding to create the positions necessary to effectively administer, collect, audit and distribute the data required in Addendum XXVI. **It is the intent of MEDMR to self-fund the creation of a new offline mobile application for both iOS® and Android® platforms through dedicated technology funds. This program will be built to accept reports from all fisheries and meet NMFS electronic reporting requirements. This new program will have dynamic entry pages and be completely table driven allowing the entry pages to display more concise field descriptions based on species and gears fished. There will be built in data validations, favorites and basic end user analytics.** The MEDMR anticipates putting this new offline reporting application out to RFP shortly after this pre-proposal is due. **The primary tasks will be electronic reporting software training, regulation compliance, data audits, data entry and general outreach. Staff will also focus on harvester outreach to help industry understand the importance of the accurate and timely reporting. Electronic reporting will be required for commercial lobster harvesters and heavily pushed for those that still report other fisheries on paper. The focus on expansion of electronic reporting will require the MEDMR to spend a significant**

amount of time on outreach, explaining the reporting system to harvesters and troubleshooting any issues that might arise. There is no plan to mandate electronic reporting for all other fisheries currently, as this is not an ACCSP requirement.

Need:

Maine currently requires harvesters from 12 fisheries to report trip level landings on a monthly basis. Two other quota monitored fisheries (Atlantic herring and Atlantic menhaden) have daily quota monitored reporting requirements in addition to their monthly reporting requirements. **When the MEDMR implements 100% lobster reporting, the number of new harvesters (see Table 1) will require significant resources tracking compliance, entering and auditing a 538% increase in the number of reports received from approximately 60K to ~333K. In 2018, approximately 6,000 lobster harvesters were licensed to fish in Maine.** Of those 6,000 harvesters, MEDMR dealer reports indicate 4,389 harvesters sold at least once to a licensed dealer. All 5,925 license holders regardless of activity will be required to report for each month they hold a current license. Any license holder issued a license during the current year will be required to report for each month their license was valid regardless of fishing activity. During the 2018 season, MEDMR required 10% of all licensed harvesters report daily trip level information. These 10% (525 active harvesters which include commercial and non-commercial harvesters) accounted for just over 26,000 trip records. Overall in 2018, MEDMR required just under 4,900 licenses to report trip level information. The number of individual licenses required to report will increase to just under 9,700 when 100% lobster harvester reporting becomes mandatory.

Of those 6,000 licensed harvesters, ~1,500 (25%) of them will be required to report to National Marine Fisheries Service (NMFS) since they possess a federal lobster permit. **Regardless of their federal permit status, MEDMR will work with all harvesters to ensure all landings are reported either to MEDMR or NMFS since the collected data will benefit all partners. MEDMR staff will also audit all records with a state landed of Maine but defer any changes to federal data to NMFS.**

Table 1: Increase in Individual Harvester Reporting Expected in Maine

Moving from 10% to 100% Lobster Reporting						
Year	Total Trips Entered	Lobster Only Trips Entered	10% Active Lobster Licenses	100% Lobster Licenses	All Other Licenses Reporting	Total Licenses Reporting
2014	59,238	29,944	524	5,773	3,625	4,289
2015	57,404	29,556	533	6,014	3,217	3,886
2016	61,608	30,721	565	6,009	3,658	4,367
2017	61,689	29,636	536	5,997	4,082	4,778
2018	59,888	26,162	525	5,925	4,145	4,879
100% Year 1	322,800	292,038		5,925	3,745	9,670

*Increase in the number of harvesters and reports expected when MEDMR implements 100% lobster harvester reporting.

In 2016 MEDMR converted to a new online licensing and landings system, called Maine LEEDS (**L**icensing **E**nforcement and **E**nvironmental **D**ata **S**ystem). Using this system, harvesters and dealers will be able to:

- Renew a license you previously held
- Apply for a new license you've never held before
- Order tags (for certain licenses)
- Reprint your license
- Upgrade a license (if applicable)

- Pay administrative fees
- Report landings
- Upload documents to the department
- Change your password to the system

This web application has been an extremely useful tool that will allow for more "self-service" for harvesters and dealers, will improve customer satisfaction and increase MEDMR staff efficiency. **In late spring 2018, MEDMR started allowing harvesters to enter their data through the LEEDS system. Since the first record entered directly by a harvester occurred on 5/28/2018, 94 harvesters have entered 1,031 records that in the past MEDMR data entry staff would have had to enter.** Having industry enter their own information also saves staff time because paper reports do not need to be opened or processed through the mail, scanned into our LEEDS system or entered by hand. Staff have spent significant time training and creating outreach material (videos, electronic user guides, etc.) and communicating directly with industry.

MEDMR intends on requiring (with some potential exemptions based on to be determined criteria) 100% electronic harvester reporting for lobster, halibut, herring and menhaden. **Halibut, herring and menhaden are quota monitored species that MEDMR has identified as benefiting from requiring state only harvesters to report electronically. Currently all herring and menhaden harvesters are required to submit daily emails along with their trip-level monthly paper report. Requiring daily electronic reporting would save the harvesters from double reporting.** The offline mobile application MEDMR is proposing to build through its own funds would allow harvesters with multiple reporting fisheries the ability to use one program to fulfill all their requirements whether they are state only or federal. **Of the 1.35 million trips entered for 2018 in the data warehouse, 31% of them were landed in Maine which exceeds any other state (Figure 1 – view in color). This figure includes both dealer and harvester records. If MEDMR had required 100% harvester reporting in 2018, the number of warehouse records for 2018 would have been 1.61 million (when extrapolating 10% lobster to 100% lobster) and MEDMR would have accounted for 42.6% of all records (dealer and harvester) landed in ACCSP's Warehouse.** These records were submitted by both "state-only" harvesters (those that only report to MEDMR) as well as federal harvesters (those that report to fulfill both NMFS and MEDMR reporting requirements). **Because all state licensed harvesters are required to report to the MEDMR regardless if they have federal reporting requirements or not, MEDMR works with NMFS to collect data from federally permitted harvesters so they do not need to double report. MEDMR staff devotes time and resources to help all harvesters that submit data to NMFS and MEDMR.**

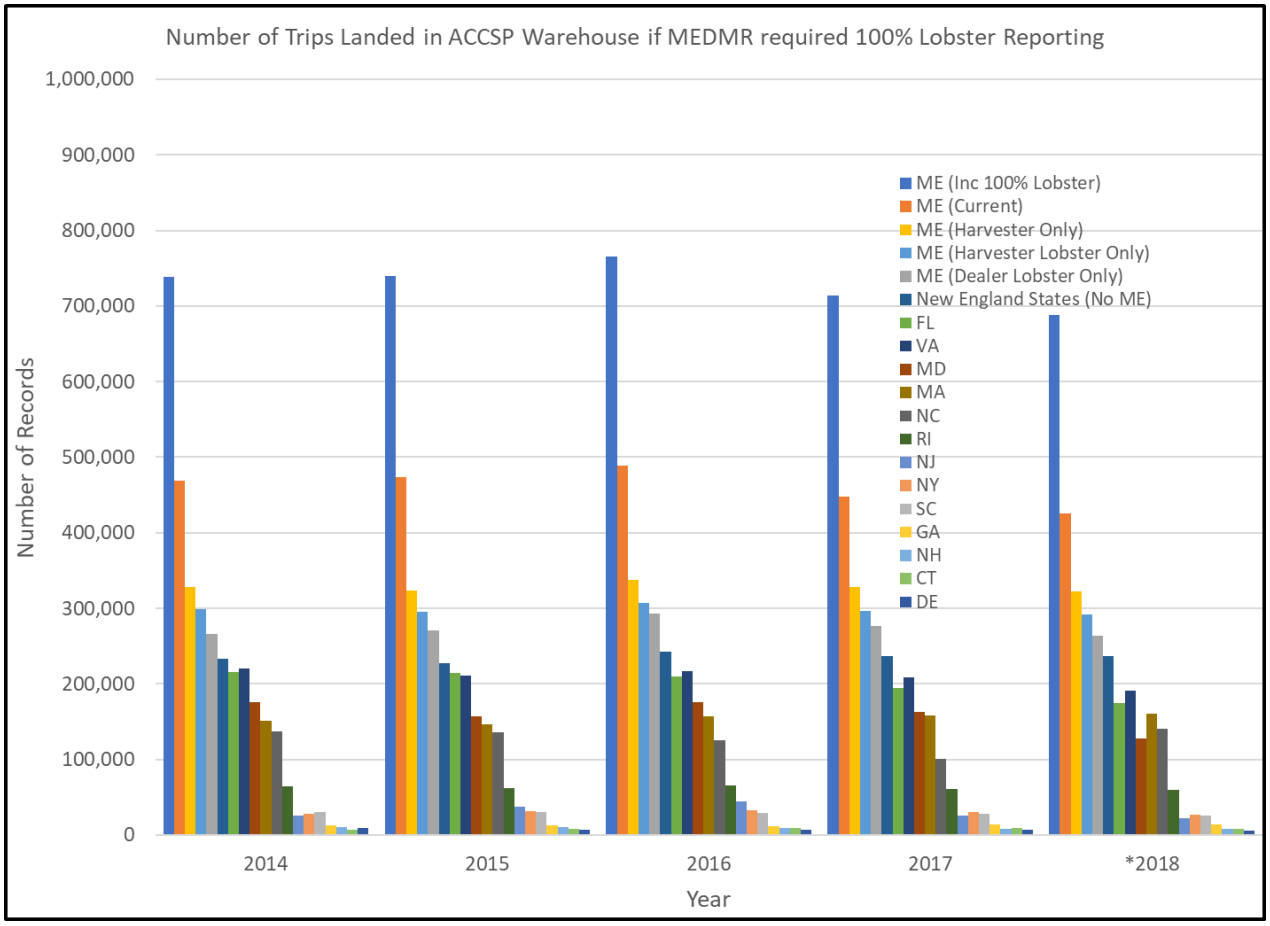

Figure 1: Number of Reported Trip Records by State Landed in ACCSP Data Warehouse

Once MEDMR requires 100% lobster harvester reporting the volume of phone calls and data requests will increase. Throughout the year, approximately 40% to 60% of all harvesters are out of compliance for at least one month of reporting. In 2018 there were 4,879 individual licenses from all 12 fisheries that required harvester reporting and MEDMR sent out approximately 2,900 compliance letters and fielded thousands of calls a month relating to reporting questions and compliance/license renewal status. Doubling the total number of harvesters required to report (many lobster harvesters are required to report other fisheries) will increase these figures and require more staff and staff time to provide industry with an acceptable level of customer service.

More staff will be needed to assist with audits and the increase in data that will require auditing. The increase in data will increase the time it takes to complete audits. The implementation of 100% lobster harvester reporting will allow the MEDMR to audit and compare 100% of our lobster dealer and harvester data. These two datasets alone account for over 500,000 records annually and will take significant staff resources to complete. MEDMR currently matches up what the 10% harvester reports indicate against what dealers reported for the same individuals. Any discrepancies over 2,000 pounds for the year are flagged and further research is conducted. While the data submitted through an electronic means will certainly help reduce the amount of data that MEDMR staff will need to audit through built in data validations, there are audits that will still need run (such as dealer vs harvester) that will take up significant staff time the first few years of 100% reporting.

The first few years will require significant outreach with industry. **Communicating with industry and fielding electronic reporting questions will be the biggest time burden the landings program will face. Currently, less than 2% of all harvester records submitted to MEDMR are not key entered by MEDMR staff. Electronic reporting will be a cultural shift for the lobster fishery, which will require diligent customer**

service and an intuitive reporting application. MEDMR will be funding the development of a new harvester reporting application that will be user friendly and meet the reporting needs of all MEDMR reporting fisheries, as well as meet NMFS eVTR reporting requirements. MEDMR spent significant time testing ACCSP's eTRIPs V2, which was greatly improved over the previous versions. However, there are still significant concerns about the number of reporting pages it took to complete, the agility of a program that is not table driven, and the ease of use for different fisheries. The program MEDMR is designing will work on both Android® and iOS® and meet all federal requirements (including NERO, SERO and HMS) so federal harvesters will be able to utilize this system. All data collected through the new MEDMR funded harvester applications will be submitted directly to ACCSP through the newly developed API (requirements are listed here https://www.accsp.org/wp-content/uploads/safis_unified_api_reference_v3.pdf). The funding source for the new mobile applications are through dedicated technology funding within MEDMR's budget. These funds must be used for advancing technologies and cannot be used for personnel.

The number of trip records that MEDMR staff entered into MARVIN (MEDMR's database that contains all sampling, biological and landings data that MEDMR collects) has increased 490% since 2007 (Figure 2 – view in color), which was the last year the MEDMR did not require 10% lobster harvester reporting. When harvesters submit paper reports, they are entered into the MARVIN database. MARVIN is used for reports submitted on paper because it is a faster method of data entry and MEDMR uses this tool to audit the data before sending a copy of it to ACCSP. Routines are configured to convert the MARVIN data to ACCSP codes before they are uploaded to the ACCSP warehouse.

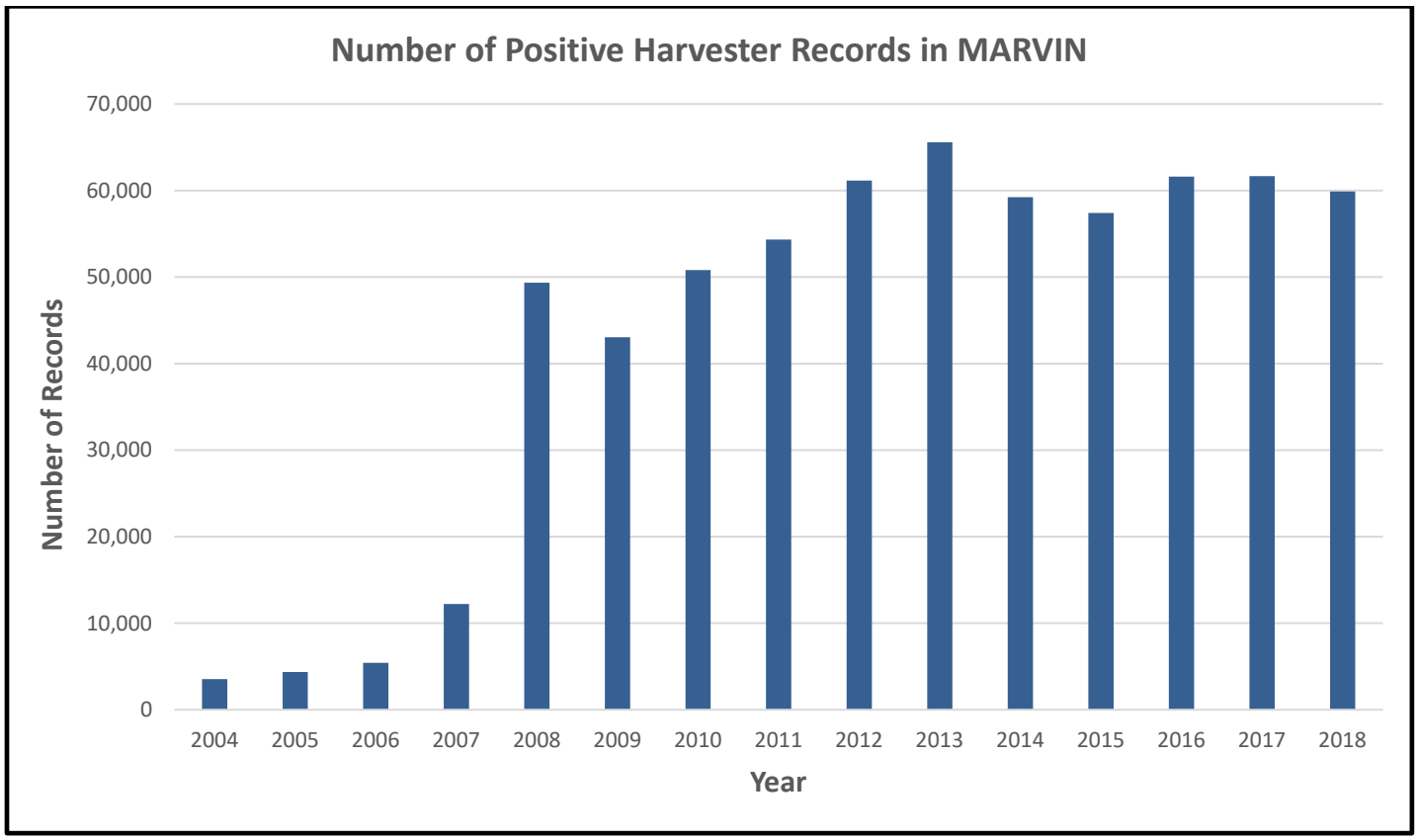

Figure 2: Number of Positive Trip Records Entered by MEDMR Staff into MARVIN

Landings data entered in MARVIN are uploaded to the ACCSP data warehouse. The significant increase in the amount of data entry, outreach/education and auditing are the single greatest challenge facing the

landings harvester (including lobster) program staff. MEDMR currently funds seven positions that work at least part-time on harvester reporting. Currently no positions working on the harvester program are funded by ACCSP grants. MEDMR is now requesting funding for nine new positions.

This proposal is designed to help fund the transition from 10% harvester reporting to 100% harvester reporting where most harvesters will be required to report electronically. MEDMR understands that not everyone will be able to report electronically so a paper option must still be available. The positions being funded will be doing very little data entry and will mostly be assisting harvesters with reporting questions along with other data entry duties.

Summary of staffing:

MEDMR Landings Program staff involved in harvester reporting who are fully funded by MEDMR:

- Scientist IV: makes decisions on the general Landings Program direction.
- Scientist III: oversees the Landings Program, participates in ACCSP committees, transfers data to ACCSP; reporting technology development and responds to data requests.
- Scientist II: manages the day-to-day operations of the Landings Program, is responsible for database development, responds to data requests and updates the Landings Program web page. This position also audits data, and monitors licenses and compliance.
- Specialist II: provides one-on-one outreach with the harvesters; trains harvesters how to report electronically or on paper; follows up on compliance issues. This position audits data from "state-only" and "NMFS" harvesters. See the *Approach* section below for further details on auditing. This position is also assigned tasks in the dealer-reporting project.
- Office Associate II: Primary contact for incomplete reports, rejects reports, primary contact for compliance and reporting questions, notifies new harvesters of reporting requirements, assists with audit research.
- Office Associate II: corresponds with industry regarding new suspension authority for failure to report on time; identifies and notifies delinquent reporters; follows protocols for suspending licenses; works with the licensing division to ensure licenses are re-issued when reports have been submitted.
- Office Associate I: opens and processes mail and enters data into MARVIN.

Proposed new MEDMR Landings Program staff to be funded by ACCSP grant:

- Marine Resource Scientist II (1 position): Oversee the daily operations of harvester reporting program, including but not limited to scheduling of duties, directly supervising four employees, managing harvester data audits, database maintenance and assisting with reporting writing.
- Marine Resource Scientist I (2 positions): Oversee the rollout of the new offline harvester reporting application, outreach with industry and overseeing data audits. These two positions will be one of the primary contacts for industry members that have reporting program questions.
- Marine Resource Specialist II (2 positions): Help run data audits and correct erroneous data, primary data audit researcher for dealer vs harvester audits and will assist the Marine Resource Scientist I's with any industry technical outreach questions.
- Office Specialist I Supervisors (2 positions): Supervise four Office Associate II positions. One position will be located in our Augusta, ME office and the other at the West Boothbay Harbor, ME Laboratory. Both positions will assist with incomplete reports, handle in-person report drop-off, report rejections, compliance mailings and calls and data audits.
- Office Specialist I (1 position): Will work primarily within the Licensing Division renewing licenses and be cross trained to assist with Landings duties (like the Office Associate II below). This position is needed because of the extra time Licensing will have to spend rejecting delinquent harvesters that in the past were not required to report.

- Office Associate II (1 position): Will have similar duties to the Office Associate I's listed above in current staff funded by MEDMR but will be based out of our Augusta office and will be cross-trained to assist our Licensing Department when help is needed.

The MEDMR has discussed and decided against the idea to ramp up from the current number of harvesters selected to report to 100% reporting. It has determined the best way forward is to go directly to 100% harvester reporting. For MEDMR to provide excellent customer service from the beginning, the number of positions proposed are what we feel are necessary to provide the best level of customer service while being as fiscally responsible as possible. Each position created will be a limited period position and each year MEDMR will evaluate these new positions to determine if they are still needed. We anticipate that by year 3 to 5 we might be able to the number of positions as harvesters become more versed with the reporting programs.

Finding funding to help defray the costs for this federally mandated requirement is something that the MEDMR has been looking for and will continue to look for. MEDMR will also look for ways to bring the overall costs down through either staff reductions as the program evolves or any and all in-house or outside sources. MEDMR will continue to look at ways to streamline the Landings Program's operation and will continue to try and automate as many processes (compliance and audits for instance) that will cut down on staffing needs. The reason so many staff are included in this proposal is for the initial roll out and anticipated help that industry will need and the ability to assist industry within a reasonable amount of time to answer their questions.

It is essential that this harvester reporting program meet its funding needs, which are born as a result of ASMFC's requirement that MEDMR collect trip level harvester reports from 100% of all licensed commercial lobster harvesters. The implementation of new lobster fishery regulations in the Atlantic Large Whale Take Reduction Plan to reduce the threat of entanglement to endangered right whales is expediting the timeframe to increase reporting to 100% faster than Addendum XXVI required**. Requiring 100% lobster reporting will add another tool for monitoring Maine's commercial fisheries, which are large and economically important to the U.S. seafood industry.** According to the NMFS commercial fisheries database (as of 5/20/2019), Maine was ranked as the second highest state on the Atlantic Coast in commercial value ($643 million of which $484.5 million were lobster) and fourth highest in whole pounds landed (276.6 million of which 119.6 million were lobster) in 2018. **This comprehensive harvester reporting program also addresses ASMFC compliance issues for several fisheries, including American lobster, Atlantic herring, American eel and Atlantic menhaden.**

This grant does not include any funding for the offline mobile harvester reporting application. The MEDMR will fully fund the original programming, programmatic updates and maintenance costs associated with this project. The MEDMR will continue to fund the monthly maintenance fees. MEDMR will continue to try to identify alternative sources of funding for the harvester reporting project, but the State of Maine is continuing to face budget challenges and there are few options for state funding to cover the total cost.

Results and Benefits:

The data collected so far through MEDMR's harvester reporting program have shown how valuable this information is for Maine's fisheries. **Currently MEDMR requires 12 fisheries to submit trip level harvester reports and lobster is the only fishery not collecting 100% of harvester trips (Figure 3 shows all non-confidential fisheries trips reported over past 5 years). Maine's commercial lobster fishery is by far the largest lobster fishery on the East Coast in both volume and number of individuals.** There are just under 6,000 licensed harvesters of which MEDMR currently only selects 10% to report. Even with selecting only 10% of harvesters in the lobster industry, MEDMR scientists have learned more about the fleet characteristics, gear configurations and fishing patters for full time and part time fishermen involved in this fishery than they have been able to with the current sampling programs. Other fishery managers are now analyzing landings data to

learn more about the fishing fleet and the makeup of other fisheries. **Requiring 100% reporting will only increase the MEDMR's knowledge base and increase the amount of data collected. Since most data will be submitted to SAFIS and all data stored in the ACCSP Warehouse, this large dataset will be available to all partners.**

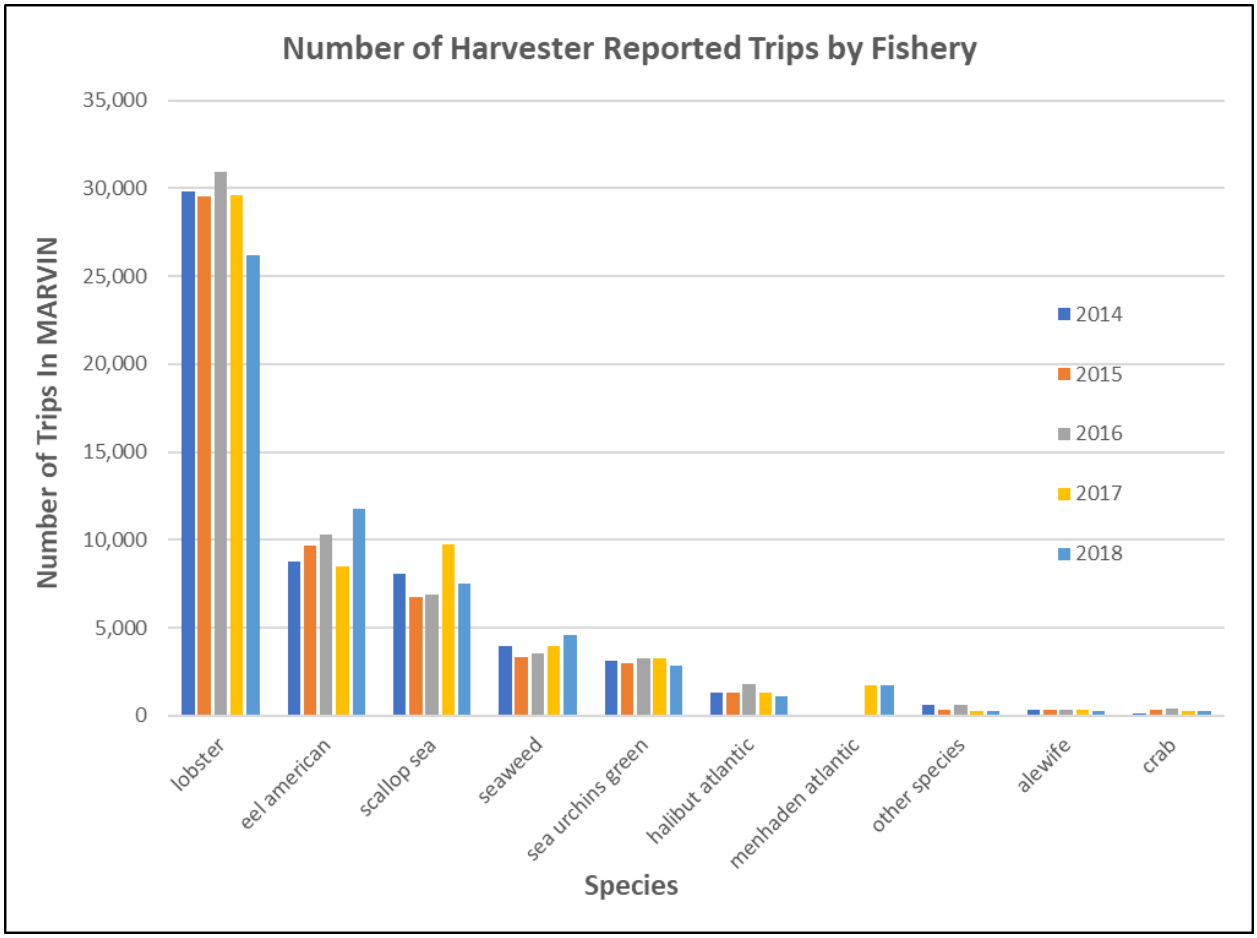

Figure 3: Number of Harvester Reported Trips by Fishery from Harvester Data

This grant will allow MEDMR to meet ASMFC's Addendum XXVI target of 100% harvester reporting in the lobster fishery by January 2024. This timeline is potentially being sped up by protected species issues and could require 100% trip level reporting in the lobster fishery by January 2021. This grant will allow MEDMR the ability to fund positions needed to ensure the data collected are as accurate as possible through more data auditing, especially linking dealer and harvester reports together though our "dealer vs harvester reporting" audits where we match up each harvester report to the dealer report and their total landings are scrutinized. Addendum XXVI does not necessarily require 100% electronic reporting; however, MEDMR will require nearly 100% lobster harvester electronic reporting and know that harvesters in other fisheries are looking to move from paper reporting to electronic reporting when this option is available in an intuitive offline application. MEDMR anticipates that any new harvesters that report on paper will be offset by those the currently report on paper but will be required to switch to an electronic reporting option and the data entry staff currently employed will be sufficient. Staff are fielding more calls each day asking about electronic reporting and are promoting our Maine LEEDS online reporting, but most want a mobile friendly reporting option. **MEDMR is already uploading data reported to MARVIN to ACCSP every six months and intends to start uploading every month; which benefits all partners.**

Metadata for the harvester program will be updated as needed according to the Federal Geographic Data Committee (FGDC) and the Content Standard for Digital Geospatial Metadata (CSDGM) standards where appropriate. The resulting metadata will be reported to ACCSP as text and XML.

This project will help MEDMR meet the data collection standards of ACCSP. All partners will benefit, as all data will be uploaded to ACCSP and many of the species landed in Maine have a broad geographic range which includes many other agencies in their management. Partners will benefit from the technologies built and lessons learned from the offline harvester reporting application MEDMR intends to have built within the next year as this will be available to any partner.

Approach:

1. Enforce compliance

MEDMR staff will enforce compliance of the trip level reporting regulation through these methods:

- **Provide initial outreach and technical support needed for harvesters to report trip level landings to MEDMR. Meet with harvesters in a group setting and one on one as needed to explain reporting procedures, install application, troubleshoot issues with reporting, and explain consequences for failing to report.**
- **Review paper reports submitted for completeness and verify the submissions in Maine LEEDS. If reports are incomplete, MEDMR will contact industry to correct reporting mistakes. If a harvester cannot be contacted by phone, the report will be returned for correction. Reports submitted electronically are deemed complete upon submission.**
- **Send delinquent harvesters not included in the suspension process emails indicating what they are missing and send automated notifications within the Maine LEEDS program when a report is received or not.**
- **Complete suspension notices monthly to those harvesters involved in the halibut, herring, menhaden and elver fisheries that are delinquent enough to meet the minimum notification criteria as outlined in the suspension law (Attachment 4).**
- **Complete follow-up suspension notices monthly to those harvesters that are delinquent enough to meet the minimum notification criteria as outlined in the suspension law (Attachment 4).**
- **MEDMR will suspend harvester licenses for those who fail to report in a timely manner. See Attachment 4 for the law, which dictates suspension procedures MEDMR will follow.**

2. Data entry

Paper reports and electronic reports entered through the Maine LEEDS system will go directly into MARVIN and then uploaded to the ACCSP Warehouse at least every 6 months once it has been thoroughly audited.

The MEDMR will be contracting out with a third-party vendor to build a data entry application that has been discussed above. This reporting program will include point of entry validations for harvester, vessel, gear, gear to various other variables (i.e. fisheries, gear quantities), gear quantities, locations, pounds, dispositions for example. The data entered through these new applications will utilize ACCSP's API and all data will be submitted directly into SAFIS.

3. Encourage electronic reporting

MEDMR staff will encourage harvesters who report on paper to report using one of the two electronic reporting methods MEDMR will offer (Maine LEEDS or our own Offline Electronic Reporting Application). MEDMR staff will train all harvesters who are required to report electronically regardless if they have reporting obligations to NOAA or not.

MEDMR believes that electronic reporting will benefit industry as much as it benefits MEDMR. If harvesters enter their own data through the MEDMR proposed application, they will have the ability to run basic analytics within the application to view their own trends and harvest information. MEDMR will benefit by reducing the amount of staff time spent entering data. If MEDMR was not able to offer an electronic reporting option, the number of data entry staff required to handle approximately 320,000 records per year would be at least 7 or 8 individuals in addition to what is being currently proposed. Electronic reporting will not only save MEDMR staff data entry time, we will be able to automate many of our daily reporting processes, include data validation at the point of harvester entry and automate compliance and spend more time on data audits and outreach with industry.

4. Continue outreach with industry to promote buy-in.
MEDMR staff will continue to work with harvesters to explain the purpose and benefits of harvester reporting. Staff will attend the annual Maine Fishermen's Forum and present a Landings Program poster explaining the importance of accurate reporting as well as displaying preliminary data by fishery. We also anticipate holding a workshop to demonstrate the two electronic reporting options available to industry to help promote buy in. Staff will work with established industry organizations, such as the MEDMR advisory councils, lobster zone councils, and dealer and harvester associations to reiterate the program goals and show results of mandatory reporting. Staff will also focus on explaining the statutory authority for suspending licenses for those who fail to report on time, and how this will help gather more accurate data.

5. Audit of harvester data submitted.
Staff will audit data submitted monthly. Paper data will be audited twice per month; electronic audits sent via email from SAFIS will be corrected weekly. SAFIS audits for "state-only" harvesters will be corrected via an ODBC connection to a view of the Maine data. **Audits concerning federal harvesters will be vetted through the NMFS Northeast Region. MEDMR staff will audit electronic data submitted by federal harvesters because these harvesters submit data in order to also fulfill MEDMR reporting requirements. MEDMR performs basic audits of records to catch potential oversights from NMFS audits.** MEDMR also compares dealer-reported landings with harvester-reported landings and identifies both parties if there are any discrepancies. In these audits, MEDMR contacts dealers and harvesters when discrepancies are discovered and works to correct records or recover missing data.

MEDMR does intend to audit 100% of all individual records that are submitted. **Many of these audits will be simple gross audits (over the trip, gear quantity, spatial audits, etc.); however, the data submitted through the new mobile application will have validations built-in for pre-submission checks. Harvesters will not be able to enter certain gear/species combinations, certain dispositions for certain species and gear quantity checks for instance. Many of these audits will be canned within the audit database and will be added to a routine check. The dealer/harvester audits are performed annually and start by looking at yearly totals with a 2,000 pound discrepancy.** Dealer/harvester audits are not performed on a trip by trip basis.

6. Transmission of harvester data to ACCSP.
MEDMR will continue to upload harvester data from MARVIN to the ACCSP data warehouse once every two months. In each data feed, the following fields are uploaded to the warehouse according to ACCSP protocols: cf_license_nbr, iss_agency, trip_type, supplier_trip_id, port, state, coast_guard_nbr, state_reg_nbr, trip_start_date, trip_start_time, trip_end_date, trip_end_time, num_crew, num_anglers, vtr_number, vessel_permit, sub_trip_type, reporting_source, fuel_used, fuel_price, charter_fee, distance, in_state, area_code, sub_area_code, local_area_code, latitude, longitude, gear, lma, gear_quantity, gear_sets, fishing_hours, hours_days, total_gear, gear_size, mesh_ring_length, mesh_ring_width,

stretch_size, target_species, avg_depth, species_itis, disposition, market_code, grade_code, unit_of_measure, sale_disposition_flag, dealer_license_nbr, date_sold, reported_quantity, price, dea_iss_agency, catch_source, catch_latitude, catch_longitude, supplier_catch_id. MEDMR enters data daily and audits data weekly, so the data uploaded to the warehouse are a mix of pre- and post-audited records. MEDMR does not keep track of what percentage of the uploaded records are "reloads" due to errors, but simply reloads all the data in MARVIN to the warehouse once every three months. **In addition, the data supplied by the MEDMR offline mobile application will be sent directly to SAFIS daily.**

The MEDMR does not upload data from MARVIN to SAFIS because MEDMR staff continually audit data each week, so the data that are uploaded to the warehouse are a mix of pre- and post-audited records. The reloading of data from MARVIN to the Warehouse is an automated process that the MEDMR loads into a temporary table provided by the Warehouse. If we were to perform the same upload method to SAFIS we would need the ability to mass delete records from SAFIS (which we do not have the ability to do at this time) before records are reloaded to avoid creating duplicate records.

7. Report metadata to ACCSP.

Metadata will be created with ESRI ArcCatalog 10 in order to conform to the FGDC (Federal Geographic Data Committee) standards and specifications. As specified by the federal standard, MEDMR metadata will include the following main sections with detailed information on: identification information, data quality information, spatial data organization information, spatial reference information, entity and attribute information, distribution information, metadata reference information, citation information, time period information and contact information. Created metadata will be available in text and XML formats.

Geographic Location: Operations will be based out of Boothbay Harbor, Maine and the project will take place throughout Maine.

Milestone Schedule:

	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Enforce harvester compliance	X	X	X	X	X	X	X	X	X	X	X	X
2. Data enter harvester reports	X	X	X	X	X	X	X	X	X	X	X	X
3. Encourage electronic harvester reporting	X	X	X	X	X	X	X	X	X	X	X	X
4. Industry outreach to promote industry buy-in	X	X	X	X	X	X	X	X	X	X	X	X
5. Audit harvester data	X	X	X	X	X	X	X	X	X	X	X	X
6. Upload harvester data to ACCSP		X		X		X		X		X		X
7. Report metadata to ACCSP												X
8. Semi-annual reports						X						X
9. Annual reports												X

Project Accomplishments Measurement:

Goal	Measurement	2019*
Enforce Harvester Compliance	Number of compliance letters to harvesters	
Enforce Harvester Compliance	Number of harvesters suspended for failing to report timely	
Harvester Data Entry	Number of trip records by year landed in data warehouse	
Harvester Data Entry	Number of positive trip records by year landed in MARVIN	
Harvester Data Entry	Number of positive trip records by year landed in SAFIS	
Encourage Electronic Reporting	Number of harvesters submitting positive reports in SAFIS	
Transmit Harvester Data to Data Warehouse	Frequency of data submitted by year landed	
Outreach	Number of custom data requests	

Cost Summary: FY19 Managing 100% Lobster Harvester Reporting in Maine			
3/1/2020 - 2/28/2021			
Personnel[A]	**Description**		**Cost**
1 Marine Resource Scientist II (to be created)	full time position for 12 months	1 @ $48,201	$50,079
2 Marine Resource Scientist I (to be created	full time position for 12 months	2 @ $41,562	$90,680
2 Marine Resource Specialist II (to be created)	full time position for 12 months	2 @ $34,816	$75,698
2 Office Specialist I Supervisory (to be created)	full time position for 12 months	2 @ $32,698	$72,468
1 Office Specialist I (to be created)	full time position for 12 months	1 @ $31,138	$34,424
1 Office Associate II (to be created)	full time position for 12 months	1 @ $31,138	$31,741
		Subtotal	**$355,090**
Fringe Benefits[A]			
1 Marine Resource Scientist II (to be created)	Includes health, dental, workers comp, FICA, life insurance and retirement		$32,551
2 Marine Resource Scientist I (to be created			$58,942
2 Marine Resource Specialist II (to be created)			$49,204
2 Office Specialist I Supervisory (to be created)			$47,104
1 Office Specialist I (to be created)			$22,376
1 Office Associate II (to be created)			$20,632
		Subtotal	**$230,809**
		Total Personnel	**$585,899**
Travel			
1 vehicle[B]	1 car * $188.67/mo * 12 mo		$2,264
Mileage fee	1 car * 1,000 mi per mo * $.1533/mi * 12 mo		$1,840
Toll allowance	Estimated		$100
5 Overnight stays[C]	5* $150/night		$750
Per diem (includes extended days)	(5 overnights + 5 extended days) * $65/day		$650
		Total Travel	**$5,604**
Supplies			
Filing Supplies	folders, folder labels, year labels		$500
Other			
Printing and binding of harvester report forms	1000 logbooks * $2.50 per logbook		$2,500
Postage for logbooks	Mail 1000 logbooks * $4.75 per logbook		$2,375
Postage for info packets and letters	($0.50*3250 compliance letters)		$1,625
Software (Adobe DC Professional)	8 copies at $329.65/copy		$2,637
Technology (equipment, licenses)			$500
Enhancements to Maine LEEDS system	Automate compliance for electronic reporting		$40,000
Telecommunication charges[D]	5 phones * $40/mo * 12 mo		$2,400
		Total Supplies	**$52,537**
		Subtotal	**$58,141**
Total Direct Costs			**$644,039**
Indirect Costs (30%)			**$193,212**
Total Award to DMR			**$837,251**

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train harvesters how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists, one each for the two scientists and one scientist II working on the project.

Partner Contribution for ACCSP Purposes	
Scientist IV (7% time)	$9,115
Scientist III (50% time)	$49,083
Scientist II (50% time)	$53,708
Specialist II (25% time)	$18,710
Office Associate I (85% time)	$47,568
Office Associate I (100% time)	$74,381
Office Associate II (100%)	$65,626
Office Associate II (15%)	$10,531
Office Associate II (15%)	$9,750
Office Associate II (15%)	$8,513
Office Associate II (100%)	$65,626
Mobile Harvester Reporting App Development	$150,000
	$562,610

Budget Narrative for FY2020 proposal:

Personnel and Fringe Benefits: The new positions proposed in this proposal (1 Marine Resource Scientist II, 2 Marine Resource Scientist I, 2 Marine Resource Specialist II, 2 Office Specialist I Supervisory, 1 Office Specialist I and 1 Office Associate II). These positions are funded full time (100%) by this award and are a Department of Marine Resources' employees. Salary and benefits for this employee are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Scientists and Specialists are the employees who will be travelling. The travel is for holding electronic harvester reporting workshops, visiting harvesters to install reporting software, training harvester staff how to electronically report or troubleshooting reporting problems. Staff provide harvesters with one-on-one training first via phone but then in person if individuals need further assistance with the reporting system and help troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are unusual unless the harvester can only meet inland. These harvesters must be trained in the use of electronic reporting and in some cases a group informational setting will not be enough for some to learn how to report their landings information.

The monthly fee for the vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Nissan Rogue SUV which is a state-owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple harvester appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary. The rates were calculated through the GSA website for posted rates.

Supplies: Filing supplies are needed each year but as more harvesters eventually shift to electronic reporting the need for filing supplies will decrease. The filing supplies include folders used to store individuals log sheets, labels (year and name) and protective coatings for these labels.

Other: The MEDMR will try and push electronic reporting as much as possible and will require waivers to report on paper for lobster reporting. To help cut down on costs, MEDMR will try and have harvesters print their own paper forms when necessary from the MEDMR website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that harvesters use for their records, or to resend should the original gets lost in the mail. Many harvesters like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks. Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to harvester meeting locations. Staff often needs to call NMFS or the programmer when installing software or troubleshooting reporting issues in the field. All Landings Program staff use Adobe DC Pro to enter or audit paper reports or .PDF's that have been received electronically. The cost for this program has been set by our OIT Department. The line for Maine LEEDS enhancement is the programmatic cost to streamline MEDMR's compliance with harvester data submitted to SAFIS. MEDMR will need to create a SQL Server table to pull any data submitted by a harvester from the ACCSP Warehouse with Maine permits and flip their Maine LEEDS compliance record to submitted. This feature will be a large time saver for MEDMR and will save at least one full-time staff position.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 30%. See Attachment 3 for the Negotiated Indirect Cost Agreement. These indirect funds are a necessity to help defray and offset the administrative costs associated with the ASMFC's directive to increase MEDMR's lobster reporting from its current rate to 100%. The anticipated increase to ~300,000 new harvester records and overall ~700,000 records (dealer and harvester) supplied to ACCSP's Data Warehouse will account for roughly 42% of all reports stored in the Data Warehouse. The increase in harvester reports received by MEDMR will be roughly 538%. These indirect monies are utilized to help cover the administrative costs not covered directly by this grant proposal and help offset any burden MEDMR assumes with fulfilling their ASMFC reporting requirements.

Attachment 3: Negotiated Indirect Cost Agreement

MAXIMUS
Cost Allocation Methodology and Process

Office of Acquisition Management – Grants Management Division
1401 Constitution Ave., NW, HCHB Rm 6412
Washington, DC 20230, Attn: Indirect Cost Program

CERTIFICATE OF INDIRECT COSTS

This is to certify that I have reviewed the indirect cost rate proposal prepared and maintained herewith and to the best of my knowledge and belief:

(1) All costs included in this proposal dated Jan 9, 2019 to establish indirect cost billing rates for July 1, 2018 through June 30, 2019 are allowable in accordance with the requirements of the federal awards to which they apply and 2 CFR Part 200 , "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards". This proposal does not include any costs which are unallowable as identified in the applicable federal cost principles. For example, advertising contributions and donations, bad debts, entertainment costs or fines and penalties.

(2) All costs included in this proposal are properly allocable to federal awards on the basis of a beneficial or causal relationship between the expenses incurred and the agreements to which they are allocated in accordance with applicable requirements. Further, the same costs that have been treated as indirect costs have not been claimed as direct costs. Similar types of costs have been accounted for consistently and the Federal Government will be notified of any accounting changes that could affect the rate.

(3) The indirect cost rate calculated within the proposal is 30.71%, which was calculated using an indirect cost rate base type of Modified Total Direct Costs. The calculations were based on actual costs from fiscal year July 1, 2017 thru June 30, 2018 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2018.

Subject to the provisions of the Program Fraud Civil Remedies Act of 1986, (31 USC 3801 et seq.), the False Claims Act (18 USC 287 and 31 USC 3729); and the False Statement Act (18 USC 1001), I declare to the best of my knowledge that the foregoing is true and correct.

Organization Name: State of Maine, Department of Marine Resources

CFO Signature: Gilbert M. Bilodeau Date: 1/10/19

Name/Title Authorized Official: Gilbert M. Bilodeau, Director, Natural Res Ser Ctr

Dept Head Signature: Date: 1/9/19

Name/Title Authorized Official: Patrick Keliher, Commissioner

Department of Marine Resources

INTEROFFICE MEMORANDUM

TO: FILE

FROM: PATRICK KELIHER, COMMISSIONER

SUBJECT: RATE USED FOR COST ALLOCATION

DATE: 5/23/19

In accordance with OMB Circular A-87, the Department of Marine Resources has submitted to the U.S. Department of Commerce a departmental cost allocation plan for use during state fiscal year 2018 ending June 30, 2018. The indirect cost rate proposal is 30.71%. I am authorizing the use of the lesser rate of 30% to be used during this period.

ACCSP
"FY20: Managing 100% Lobster Harvester Reporting in Maine"
(Mar 1, 2020 – Feb 28, 2021)

Patrick Keliher, Commissioner

Attachment 4: Authority to Suspension Licenses for Delinquent Reporters

An Act to Improve the Quality of the Data Used in the Management of Maine's Fisheries

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 12 MRSA §6301, sub-§6 is enacted to read:

6. Ownership identified. If a license issued under chapter 625 is issued to a firm, corporation or partnership, the individual who owns the highest percentage of that firm, corporation or partnership must be identified on the license application. When 2 or more individuals own in equal proportion the highest percentages of a firm, corporation or partnership, each of those owners must be identified.

Sec. 2. 12 MRSA §6412 is enacted to read:

§ 6412. Suspension of license or certificate for failure to comply with reporting requirements

1. Authority to suspend. The commissioner, in accordance with this section, may suspend a license or certificate issued under this Part if the holder of the license or certificate fails to comply with reporting requirements established by rule pursuant to section 6173. A license or certificate suspended under this section remains suspended until the suspension is rescinded by the commissioner. The commissioner shall rescind a suspension when:

A. The commissioner determines and provides notice to the holder of the suspended license or certificate that the holder has come into compliance with the reporting requirements established by rule pursuant to section 6173; and

B. The holder pays to the department a $25 administrative fee.

When a suspension is rescinded, the license or certificate is reinstated. Until the suspension is rescinded, the holder of the suspended license or certificate is not eligible to hold, apply for or obtain that license or certificate.

2. Process for suspension for failing to comply with weekly reporting. If the commissioner determines that a person who holds a license or certificate under this Part has failed to comply with a weekly reporting requirement established by rule pursuant to section 6173, the commissioner shall notify the person at the telephone number provided on the application for the license or certificate and by e-mail if an e-mail address is provided on the application. If the license or certificate holder has not complied with the reporting requirements within 2 days after the commissioner has provided the notice, the commissioner shall mail a notice of suspension to the license or certificate holder by certified mail or the notice must be served in hand. The notice must:

A. Describe the information that the license or certificate holder is required to provide pursuant to this Part that the department has not received; and

B. State that, unless all the information described in paragraph A is provided to the department or the license or certificate holder requests a hearing, the license or certificate will be suspended in 3 business days after the license or certificate holder's receipt of the notice.

If the license or certificate holder has not complied with the reporting requirements or requested a hearing within 3 business days after receipt of the notice, the commissioner shall suspend the license or certificate.

3. Process for suspension for failing to comply with monthly reporting. If the commissioner determines that a person who holds a license or certificate under this Part has failed to comply with a monthly reporting requirement established by rule pursuant to section 6173, the commissioner shall notify the person at the telephone number provided on the application for the license or certificate and by e-mail if an e-mail address is provided on the application. If the license or certificate holder has not complied with the reporting requirements within 45

days after the commissioner has provided the notice, the commissioner shall mail a notice of suspension to the license or certificate holder by certified mail or the notice must be served in hand. The notice must:

A. Describe the information that the license or certificate holder is required to provide pursuant to this Part that the department has not received; and

B. State that, unless all the information described in paragraph A is provided to the department or the license or certificate holder requests a hearing, the license or certificate will be suspended in 3 business days after the license or certificate holder's receipt of the notice.

If the license or certificate holder has not complied with the reporting requirements or requested a hearing within 3 business days after receipt of the notice, the commissioner shall suspend the license or certificate.

4. Hearing. A license or certificate holder receiving a written notice of suspension pursuant to this section may request a hearing on the suspension by contacting the department within 3 business days of receipt of the notice. If a hearing is requested, the suspension is stayed until a decision is issued following the hearing. The hearing must be held within 3 business days of the request, unless another time is agreed to by both the department and the license or certificate holder. The hearing must be conducted in the Augusta area. The hearing must be held in accordance with:

A. Title 5, section 9057, regarding evidence, except the issues are limited to whether the license or certificate holder has complied with reporting requirements established by rule pursuant to section 6173;

B. Title 5, section 9058, regarding notice;

C. Title 5, section 9059, regarding records;

D. Title 5, section 9061, regarding decisions, except the deadline for making a decision is one business day after completion of the hearing; and

E. Title 5, section 9062, subsections 3 and 4, regarding a presiding officer's duties and reporting requirements, except that notwithstanding Title 5, section 9062, subsection 1, the presiding officer must be the commissioner or the commissioner's designee.

Summary of Proposal for ACCSP Ranking

Proposal Type: New Proposal

Primary Program Priority and Percentage of Effort to ACCSP modules:

Catch and Effort (10 points): 100% of licensed lobster (and 11 other fisheries) must report trip level information. Most of these reports will be electronic.

Data Delivery Plan (2 Points): All electronic data through the MEDMR offline application will be submitted into SAFIS daily. All data entered into MEDMR's MARVIN database and will be sent to the ACCSP Data Warehouse on at least a bi-annual basis after all data have been thoroughly audited.

Project Quality Factors:

Regional Impact (5 Points): all partners will benefit, as all the data collected will be uploaded to ACCSP. Regional management organizations, such as ASMFC, will benefit from the trip level information from Maine. Partners may also benefit from the technologies/procedures tested in the new offline MEDMR mobile application. MEDMR will contract to have a mobile app built for harvesters to use to meet the 100% lobster reporting requirement mandated in ASMFC Addendum XXVI. MEDMR will pay for all start-up costs associated with this project and shared findings with ACCSP. Partners will be able to utilize (the developer might charge a support fee) this application once built if they so choose.

Funding transition plan (4 Points): MEDMR will continue to look for other funding sources; however, with the timeline of 100% lobster reporting being pushed forward from the date set in Addendum XXVI, MEDMR will need help to achieve the requirements coming in the next few years. MEDMR intends to pay for the development of an offline mobile harvester reporting application that will meet MEDMR, NMFS NERO and SERO along with HMS reporting requirements. MEDMR will pay for the ongoing monthly maintenance fee associated with this program. Currently, the MEDMR does not have any plans to require electronic reporting for all fisheries but intends on pushing electronic reporting. Geographical restrictions prevent all harvesters from having reliable high-speed internet access at this time.

In-kind Contribution (3 Points): the partner contribution is listed on page 14.

Improvement in Data Quality/Timeliness (4 Points): MEDMR can audit data at a more detailed level, including checking harvester reported data against dealer reported data. MEDMR encourages reporting timeliness through outreach with harvesters and is working with Marine Patrol to ensure industry understands the importance of submitting accurate and timely information. The Maine State Legislature also passed law that authorizes license suspensions for those who fail to report on time which has improved the timeliness and quality of the data submitted for the fisheries that utilize this law.

Potential secondary module as a by-product (in program priority order) (3 points): The offline application that MEDMR envisions will be able to eventually link up with certain dealer reports and accept tracker data which will revolutionize the way spatial data could be used to determine many effort fields and dealer and harvester reports are matched up.

Impact on Stock Assessment (3 Points): Regional management organizations which carry out stock assessments will benefit from the detailed landings data reported from Maine. This information is used in stock assessments for many species that are managed by regional agencies.

Innovative (3 points): The offline reporting application that MEDMR is planning on having built will be completely table driven and allow for reporting screens to change on a partner level basis. This program will include all NMFS NERO, SERO, HMS and MEDMR required fields along with the ability to eventually link up with trackers and potentially dealer reports to create an integrated reporting program.

Properly Prepared (1 Points): MEDMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

Merit (3 points): This proposal allows MEDMR to comply with mandatory ASMFC requirements. The MEDMR currently provides more data to the data warehouse than any other state and accounts for over 30% of all records landed in the Data Warehouse. MEDMR are always looking for ways to collect data in a timely and efficient manner.

Robert B. Watts II
Maine Department of Marine Resources
(207) 633-9412
rob.watts@maine.gov

June 2019

PROFILE:

- Knowledge of Maine and federal regulations pertaining to commercial fishing and associated reporting requirements through working with the Department of Marine Resources and the National Marine Fisheries Service.
- Knowledgeable of Maine's fishing industries and how they operate.

EDUCATION:

B.S. Marine Science, Maine Maritime Academy, Castine, ME 2002

EMPLOYMENT EXPERIENCE:

May 2016 – Present **Marine Resource Scientist III**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Oversees Maine's Environmental Monitoring Program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP), serving on the Operations Committee, Commercial Technical Committee, Information Systems Technical Committee, Standard Codes Committee and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

Jan 2014 – Jan 2016 **Marine Resource Scientist III (Acting Capacity)**
June 2015 – Apr 2016 **Marine Resource Scientist II**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.

- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP) through serving on the Commercial Technical Committee, Information Systems Technical Committee and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

Feb 2012 – Apr 2015 **Marine Resource Scientist I**
Maine Department of Marine Resources

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises five Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees outreach to industry.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings.

Oct 2007 – Jan 2012 **Marine Resource Specialist II**
Maine Department of Marine Resources

- Oversee daily operations of the harvester landings program.
- Notify new harvesters about reporting requirements.
- Maintain databases used for data audits and data entry.
- Monitor reporting compliance database and notifies harvesters if they are delinquent.
- Supervise two Landings Program personnel.
- Oversees IVR reporting.
- Prepare data requests from various sources

Jul 2005 – Oct 2007 **Marine Resource Specialist I**
Maine Department of Marine Resources

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Created publications, updated regulation handouts and updated the recreational fishing website as needed.

May 2001 – Jun 2005 **Conservation Aid**
Maine Department of Marine Resources

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Acted as a liaison between the State of Maine and the recreational anglers, answered anglers questions about fishing regulations.

Erin L. Summers
Maine Department of Marine Resources
(207) 633-9556
erin.l.summers@maine.gov

June 2019

Profile:

- Work collaboratively with state, federal, academic, conservation, and industry partners to reduce whale entanglements
  and mortality in marine mammals and sea turtles through bodies such as the Atlantic Large Whale Take Reduction team and Atlantic Large Whale Disentanglement Network.
- Build research programs to provide baseline data on large whale life history, ecology, and habitat use in Maine's coastal rocky bottom habitats. Design new and emerging methodologies to inform management decisions.
- Oversee research and monitoring programs within the Division of Biological Monitoring at DMR, including the lobster programs, surveys for scallops, sea urchin, shrimp, and herring, recreational fisheries program, inshore trawl survey, and the landings and reporting group.
- Represent the Department of Marine Resources in stakeholder meetings, including those for wind energy permitting, Natural Resource Damage Assessments, department wide research and priority setting, etc.
- Member of the Atlantic Scientific Review Group advising NOAA Fisheries on marine mammal stock assessments

Education:

MA Biology: Boston University Marine Program	Woods Hole, Ma.	5/02
BA Biology, Spanish minor: Truman State University	Kirksville, Mo.	5/00

Employment:

Jan 2017 – present: **Marine Resource Scientist IV**
Maine Department of Marine Resources
West Boothbay Harbor, Me

- Oversee Division of Biological Monitoring, including Commercial Landings Program, Benthic group (lobster, scallops, urchins), and Pelagics group (herring, groundfish, shrimp, and recreational fishing)
- Lead Scientist for DMR's Large Whale Conservation Program
- Member of the Atlantic Large Whale Take Reduction Team

Feb 2006 – Jan 2017: **Marine Resource Scientist II**
Maine Department of Marine Resources

- Lead scientist for DMR's Large Whale Conservation Program
- Secured grant funding, wrote reports, tracked budgets to support research projects
- Completed projects to support management decisions for the Atlantic Large Whale Take Reduction Plan, including tagging humpback whales, right whale habitat surveys, passive acoustic surveys, gear density surveys, testing alternative fishing gear, characterizing fishing practices, etc.
- Oil Spill Response Coordinator
- Assist with GIS coordination

Jan 2010 – May 2010: **Adjunct Faculty**

Unity College
Unity, Me

- Taught upper level course in the biology of Marine Mammals

Feb 2004 – Feb 2006: **Marine Mammal Research Specialist**
University of New England
Biddeford, Me

- Lead Research technician on project to track and predict right whale habitat use and distribution
- Analysis of remotely sensed data and right whale sightings in the Bay of Fundy Critical Habitat
- Assisted with report writing and budget tracking
- Completed project and published paper analyzing right baleen using stable isotope analysis
- Completed project and published papers satellite tagging and tracking basking sharks off the coast of New England

Sept 2002 – Feb 2004: **Research Technician**
Cetacean and Sea Turtle Team, NOAA Fisheries Service
Beaufort, NC

- Lead technician tracking and analyzing movements of satellite tagged dolphins
- Perform field work including fishing gear and dolphin aerial surveys, boat based dolphin biopsy and photo-identification surveys, satellite tagging dolphins, responding to strandings, etc.
- Participate in necropsies as needed

Oct 2000 – June 2002: **Laboratory Technician**
Marine Biological Laboratories
Woods Hole, Ma

- Manage daily operations of the laboratory of marine veterinarian, Roxanna Smolowitz
- Run experiments and document methodologies and results
- Prepare media, samples, histology slides, and other lab bench work

Proposal for funding made to the
Coordinating Council and the Operations Committee
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Ste. 200A-N
Arlington, VA 22201

FY20: Use of Geographic Data and SAFIS Data Sources to Evaluate an Aggregate Landings Commercial Fishing Management Program

Submitted By:
Nichole Ares
Rhode Island Department of Environmental Management
Division of Marine Fisheries
3 Fort Wetherill Rd
Jamestown, RI 02835
nichole.ares@dem.ri.gov

Applicant Name: Rhode Island Department of Environmental Management, Division of Marine Fisheries

Project Title: **FY20: Use of Geographic Data and SAFIS Data Sources to Evaluate an Aggregate Landings Commercial Fishing Management Program**

Project Type: New Proposal

Requested Award Amount: $35,414

Requested Award Period: For one year, beginning after the receipt of funds.

Primary Program Priority: Commercial and Recreational Catch and Effort Module

Date Submitted:
Project Supervisor: John Lake, Supervising Biologist
Principal Investigator: Nichole Ares, Principal Biologist
Project Staff: Richard Balouskus, Principal Biologist

Objectives:

- Use data collected by SAFIS eTRIPS-Mobile (eTRIPS-M) to evaluate metrics of an aggregate commercial fishing pilot program.
- Evaluate low cost vessel monitoring system (VMS) technology as an enforcement tool for compliance to aggregate landing limits.
- Create standard methodology for using SAFIS fisherman and dealer data sources combined with geographic data to pilot programs to evaluate effects on quota consumption rate, number of trips taken, and changes in fishing methods.

Background:

For years, discussions on an aggregate program have circled around the summer flounder, or fluke (*Paralichthys dentatus*) and black sea bass (*Centropristis striata*) commercial fisheries in Rhode Island (RI). These two species' commercial quotas have traditionally been managed through specific season quotas, changes in possession limits throughout the year, and in some cases closures during certain days of the week. Given the high demand of the species and level of participation (especially in the summer), and the low state quota allocations, the daily possession limits of these species are low (50 pounds per day in the summer). With the species' increased prevalence in recent years, commercial fishermen have reported that the low fluke and black sea bass daily limits result in greater discards. Additionally, the low possession limits are resulting in fishermen operating in poor conditions to ensure the fish are caught so the operation can be profitable.

With the variability of fish stocks, low quotas, and subsequently, low possession limits combined with raising fuel and vessel maintenance costs, fisheries managers are being asked to provide more flexible fishing operation practices to the fishing industry. One of the common programs suggested are aggregate programs. These programs would allow fishermen more flexibility in fishing practices through the utilization of a weekly possession limit instead of a daily limit. Such programs could potentially decrease costs to the fishermen by decreases days at sea (fuel and vessel maintenance costs decrease) while also increasing safety as fishermen could pick which days are the best weather wise. Aggregate programs could also decrease discards, and thus, discard mortality in some fisheries, especially at times when possession limits are low.

Despite these benefits, there are concerns that need to be considered in aggregate programs. Such programs may favor a given sector or individual businesses depending on how they operate. Further, such programs could increase catch rates, which can lead to quicker quota consumption and result in shorter fishing seasons due to early closures. There are also economic concerns that an increase in fish landed will oversaturate the market and drive prices down. Additionally, the enforcement of a program and accountability of the participants is difficult; possession limits differ from vessel to vessel given the flexible system. This results in a possession limit that is impossible to enforce without a record of the prior day/weeks landings values. To ensure proper operation of this type of program, more stringent reporting is required, as well as access to the reports. Additionally, a program that is difficult to enforce has the potential to increase illegal fishing activity due to the potential difficulties in accountability. While ideas on how such an aggregate program would impact the prosecution of these fisheries and what the potential mechanisms should be to manage and enforce the program, have been debated, they are largely untested.

A series of public meetings were held between 2017 and 2018 to discuss potential new management programs, including gear specific quotas, sector programs, expanded aggregate

programs, removing seasons and possession limit changes, and others. There was a large amount of public comments over the validity of some of the programs, with an aggregate program being the preferred option by the fishing industry. Therefore, in the fall of 2018, the Rhode Island Marine Fisheries Council (RIMFC) voted to adopt a Pilot Aggregate Program for the 2019 calendar year that can assess the efficacy of an aggregate program, where participants would be held to a weekly aggregate limit (daily limit x days open) in lieu of a daily limit, with the option to run the program again in 2020 as either a pilot or a larger more open program. In December 2018, new regulations were established (Rhode Island Marine Fisheries Regulations (RIMFR), Part 12- Research Pilot Aggregate Program, 2018). The program requires participants have at a minimum 4 years of history participating in the fisheries in RI confirmed through SAFIS dealer reports and catch and effort reports, so the impacts of the aggregate program could be compared to prior fishing practices. Both fisheries will continue to be managed separately (separate quotas, seasons, and possession limits) and participants are eligible to utilize both aggregates within the regulations set forth. All participants are also required to have a Vessel Monitoring System (VMS) device on their vessel and allow RIDEM Office of Law Enforcement (RIDEM OLE) and RIDMF staff have access to the data collected. The cost of the VMS device is the responsibility of the fishermen. The VMS device is meant to address concerns over compliance issues and will be used to confirm trip counts reported by the fishermen. Additionally, all participants must report their catch and effort information prior to offloading their catch into eTRIPS-M. This is to assist in the enforceability of the program (possession limit compliance) and to improve data quality through limiting recall bias.

An application for the program was made available for all RI commercial fishermen licensed to participate in the fluke and black sea bass fisheries in late 2018. All applications from individuals who met the requirements (fishing history, willingness to install a VMS device, agreeable to electronic reporting) were considered for inclusion in the program. The goal of the application process was to ensure as many fisheries as possible were represented (otter trawl, pot, gillnet, and rod and reel fisheries) as well as variability in the scale of the fisheries (small day boats and larger offshore vessels). Twelve participants were chosen to represent multiple gear types; 3 otter trawl fishermen, 1 lobster pot fisherman, 3 gillnet fishermen, 1 rod and reel fisherman, 3 multi-gear fishermen, and a fish pot fisherman. This participant pool represents both state-only and federally permitted vessels. The program is currently underway, with all participants officially having started their fishing year.

Need:

State partners are being asked to create more flexible management programs to address efficiency, safety at sea, and reduce bycatch rates. This pilot aggregate program allows fishery managers an opportunity to collect data to model what potential impacts are on the commercial fishery if the program is expanded to the entire fishery. In order to complete this analysis, RI is requesting funding to allow for a complete analysis and resulting report to be developed. The report will be made available to all partners who request it. Funds being made available in September 2020 will allow all 2019 data to be collected prior to analysis; if the program is expanded to include more vessels in 2020 as anticipated it would also allow for the inclusion of the additional data in the analysis.

Aggregate landing programs are just one approach to managing fisheries more efficiently. Other potential initiatives include allowing multiple licensed fishermen to harvest from one vessel, allowance of vessel to harvest multiple state possession limits in one trip, and allowance

for certain gear types to access closed areas. There is a need to create standard methodology to assess the impacts of flexible management on the related fisheries, which this initial analysis will help support. Standard methodology will allow for comparison of various management measures in both a quantitively and qualitatively manner. To provide the necessary accountability to potential flexible management practices multiple data sources must be evaluated and compared to ensure data accuracy and reporting compliance.

Currently the ACCSP does not have geographic data standards. This project as well as the FY2018 joint RIDMF and MADMF project which is creating an API for VMS data sources "Integration of Vessel Monitoring Systems and Electronic Reporting in SAFIS and SAFIS Applications through API Development and Field Testing of Multiple Hardware Options" are both necessary first steps to start using VMS data sources to manage inshore fisheries. This proposal will complement the 2019 proposal by creating standard methodologies for use with VMS data sources. The work represented here will help to identify data standards for geographic data sources. It is essential that ACCSP remain at the forefront of emerging fisheries technologies such as VMS. Failure to do so is detrimental to the continued success of the program as increased data needs are required to support fisheries management. The enhanced data needs to be collected, stored, and available for use; inability to collect and disseminate this data will be detrimental to fisheries management in the future.

Approach:

This project will use SAFIS Dealer Reports (eDR) and eTRIPS-M to collect landings catch and effort data from participants (currently 12 in 2019 with a potential increase in participation in 2020) in the RIDMF Summer Flounder and Black Sea Bass pilot aggregate landing program. VMS data will also be collected from the Faria Beede Sentry Boat Tracking and Monitoring system for comparison to the SAFIS sourced data. Details about the VMS device can be found here: (https://fariabeede.com/site_manuals/Faria_Beede-fm-002-0049_A_WD300_FB-Sentry.pdf). Geodata from the VMS devices will stay with RI until an ACCSP standard is developed. Once developed, geodata can be included in the ACCSP database. Location data (latitude and longitude) from the eTRIPS-M reporting will be included in the transmission to ACCP and available for access.

Data will be analyzed and standard methodologies for comparing the two data sources will be evaluated. The analysis will include but not be limited to trip counts, catch rates, areas fished, and gear types used. VMS data will be primarily used by enforcement officers to ensure participants are adhering to the regulations of the program but will be used in the analysis to track trip counts to help model fishermen behavior and track compliance with the reporting requirements. Other areas where data standardization is needed will be identified. **Comparison of past fishing behavior (4 years of history) to new behavior will be evaluated. The potential impacts on expanding the aggregate program will be examined and modeled. Observed changes in behavior relative to the pilot program will be modeled for expansion to the entire fishery. Methodologies for evaluation of the pilot program will be documented and shared with interested parties. The geofencing capability built into the Faria Beede VMS software will assist in both the data analysis of trip counts, area fished, and distance traveled. RIDEM OLE will have full access to the VMS data for purposes of regulatory compliance.**

Results and Benefits:

The overall goal is to provide the ability to manage programs that meet the demands of the industry, without compromising the fishing seasons by harvesting quota at an increased rate and maintaining healthy fish stocks. The resulting analysis will help fisheries managers determine the ability of low cost VMS to provide accountability for fisheries management, where geographic data standards need to be established, create standard methods for using landings, catch and effort, and VMS data to evaluate flexible management programs. While the analysis being done is RI specific, **all partners will benefit from the creation of VMS data standards,** as this proposal and others currently ongoing highlight the need for the development of these standards through proper ACCSP protocols. Additionally, **other partners might utilize the results of the RI program to consider the impacts of implementing the program within their state,** petition for conservation equivalency, development of regulations for similar programs, and addressing the technological needs to support and manage the program. If additional states want to establish the management program, it should be fairly simple. The VMS devices utilized are cost effective, the data reporting software used is free, so the largest hurdles would be implementing regulations.

This project also increases the quality and timeliness of catch and effort data collected by requiring data submitted to SAFIS via eTRIPS-M, a tablet and smartphone-based reporting system. eTRIPS-M is a relatively new product this project will father its use as a standard data collection tool. Already using eTRIPS -M for the pilot has aided in addressing bugs in the application, which is valuable to all partners. Requiring on board data recording via eTRIPS-M increases data quality by reducing recall bias. Data quality is paramount in regional stock assessments and management of fisheries both in RI and coastwide.

With low possession limits come larger discards of fish in some fisheries. By allowing the fishermen to aggregate limits, the number of trips executed should be reduced resulting in the **decreased discard rates of both regulatory and non-regulatory discards.**

Data generated from analyses, including days in which quota is achieved before and during an aggregate program, and changes in days fished with an aggregate program, will provide critical data that is required to understand the social and economic responses of such a program.

Data Delivery Plan:

All landings data and catch and effort data collected by RI is entered in SAFIS. All catch and effort data will be collected through eTRIPS-M and stored in SAFIS. All dealer reports (landings) are entered electronically into SAFIS eDR twice a week by the dealers. **Once entered, all data is immediately available to ACCSP and other program partners who utilize SAFIS and the SAFIS tables within the warehouse. This data is also incorporated into the warehouse tables during the yearly uploads and available for warehouse users annually. All proposed geographic data standards and analysis methodologies developed by the program will be made available to all partners, including the results on catch rates by gear and information from RIDEM OLE on their ability to enforce the program. If possible, VMS data will be submitted to ACCSP via the API under development.**

Geographic Location:

The project will be administered out of the Rhode Island Division Marine Fisheries office in Jamestown, RI. The scope of the project covers all of RI and adjacent state and federal waters fished by RI license holders.

Program Accomplishment Measurement Metrics:

The success of the project will be measured by the following metrics:

Goal	Metric
Data entered into eTRIPS Mobile by pilot program participants.	Number of trips submitted.
Successful monitoring of participants.	Enforcement can successfully access VMS and reports from participating vessels without issue.
Data QA/QC from participants and ensuring format and fields successfully aid in addressing analytical needs.	Tabular data with aggregated information across the participants.
Data collected is utilized to measure the impacts of expanding the program.	Report containing descriptive statistics, modeled catch rates, and simulations to assess uncertainty in data.
Methodology for verifying trips entered in SAFIS Dealer and eTRIP-M with VMS data established.	VMS track lines or geofence triggers are used to verify SAFIS trip counts.

Table 1. Milestone Schedule

Activity	Month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data collection	X	X	X	X	X	X	X	X	X	X	X	X			
Data QA/QC	X	X	X	X	X	X	X	X	X	X	X	X			
Monitoring Participants Catch Rates	X	X	X	X	X	X	X	X	X	X	X	X			
Analyses Geographic Data, Catch Rate of Participants, Compare their Rates and Quota Benchmarks to Previous Years							X	X	X	X	X	X			
Model the impacts of expanding the aggregate program							X	X	X	X	X	X			
Semi and Annual Report Writing							X					X	X	X	X

Requested Budget FY 2019 (August 1, 2019 to July 31, 2020)

Item	ACCSP Share	Direct State Share	Total
Supervising Biologist (FTE 4%)		$3,942	$3,942
Principal Biologist (FTE 27%)	$30,204		$30,204
Indirect Charges (RIDEM FTE 17.25%)	$5,210	$678	$5,890
Total Personnel	$35,414	$4,622	$40,035

TOTAL:

Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	$35,414	$5,890	$40,035
Percentage	88%	12%	100%

COST DETAILS:

Description of Budget categories and expenses for this project.

a. Salary

Each person spends a fraction of their time working on this grant in a team effort. The annual salaries for personnel and the percentage of their time spent on this project are as follows:

From ACCSP:

i. **Principal Biologist:** 27% ACCSP funded position (salary and fringe) to act as support to the ACCSP Coordinator; 27% of salary for one year = $30,204.

From RIDEM as match:

i. **Supervising Biologist:**

Approximately 4% of annual salary and fringe equals $3,942.

b. Fringe benefits

Annual fringe benefits rates for all employees include the following:

Retirement 24%
Deferred Compensation 0.4%
FICA 6.2%
Medicare 1.45%
Health care $21,937/year
Dental $ 1,132/year
Vision Mercer - $165/year
Assessed Fringe 4,25%
Retiree Health 6.75%

c. Equipment
No equipment will be purchased on this grant.

d. Supplies
No supplies will be purchased on this grant

e. Construction
There will be no construction as part of this grant.

f. Other
There is nothing in this category

g. Total Direct Charges
This is the sum of all direct charges to the grant, listed above.

j. Indirect charges.
Indirect charges are only calculated using RIDEM personnel charges. The negotiated Indirect Rate for fiscal year 2019 is 17.25%.

Summary of Proposal for Ranking

Proposal Type: New Proposal
Primary Program Priority: Catch and Effort **(100%)**
Project Quality Factors:
Partners

- **Multi-Partner/Regional impact including broad applications** – This proposal is specific to RI catch and effort fishing data collection and management of fluke and black sea bass fisheries. However, both fluke and black sea bass are jointly managed species and the data collected are used in coastwide stock assessments. Additionally, the program analysis could be utilized in other states experiencing similar demand in flexibility of fishing practices through aggregate fishing programs to examine the impacts to their commercial industry or model their own pilot program. The VMS data collection and potential inclusion into ACCSP in the future could be both utilized by other partners if it becomes available, and the methodologies surrounding the data in management use will be made available to all partners.

Funding

- **Contains funding transition plan –** The project is to complete a data analysis on the pilot project. Once the analysis is complete no additional funding would be required unless the project is expanded to additional years and additional participation and further analyses need to be completed.
- **In-kind contribution-** 12% of the budget is contributed by RIDMF in kind.

Data

- **Improvement in data quality/quantity/timeliness –** Data collected by the fishermen (catch and effort) is required to be documented within SAFIS eTRIPS Mobile prior to offloading their catch. This improves the quality of the data by reducing recall bias. The timeliness of the data is also increased as the data is immediately viewable by law enforcement and uploaded to SAFIS once an internet connection is available.
- **Potential secondary module as a by-product –** Social and economic data can be derived from the raw data source and can be shared with social and economic scientists to develop models to investigate what potential benefits aggregate programs have on the fishing industry. The raw data source also provides insight into human social behavior and how fishermen react to changes in management. Additionally, the integration of VMS data can be used to assist in ocean planning projects as it provides a more robust source of fishermen use of fishing grounds. The program can also be expanded in the future to include the collection of bycatch data, although at this time that data is not required to be reported.
- **Impact on stock assessment -** This project is specific to fluke and black sea bass fisheries, both species are regionally managed, and the data can be used in and to support stock assessments of both species.

Appendix B: Curriculum Vitae for Principal Investigator

Nichole L. Ausfresser Ares Nichole.Ares@gmail.com **(**978) 833- 4017

Education

Roger Williams University — Bristol, RI
Bachelor of Science in Marine Biology — Dec. 2010
Minor in Mathematics

Atlantic States Marine Fisheries Commission
Introduction to Stock Assessment — October 2015
Intermediate Stock Assessment Training — December 2017

Work Experience

Rhode Island Department of Environmental Management — February 2016-Present
Principal Biologist

- Coordinate and improve the Atlantic Coastal Cooperative Statistics Program (ACCSP) in Rhode Island.
- Monitor commercial fishing quotas, lead quota management meetings and determination of seasonal closures and possession limit changes.
- Reporting compliance for ~1500 RI commercially licensed fishermen. Including tracking compliance, training and support to fishermen on report submissions and utilization of the electronic reporting system. Supervise and train staff on data entry of collected catch and effort data. Audit data quality of submitted reports.
- Data accuracy and quality of dealer reported landings data for the ~140 RI commercial licensed seafood dealers. Correction of inaccuracies in data, training new seafood dealers, and retraining dealers with data entry issues.
- Serve on ACCSP committees, including Commercial Technical Committee, Information Systems Committee and Standard Codes Committee.
- Assist in field work as necessary including but not limited to otter trawl, ventless lobster pot, beach seine, fyke net, and ventless fish pot surveys.
- Write and submit project plans, compliance reports, and grant proposals.

Atlantic States Marine Fisheries Commission — May 2014- February 2016
Fisheries Specialist 1- ACCSP Coordinator

- Coordinate and improve the Atlantic Coastal Cooperative Statistics Program (ACCSP) in Rhode Island under the supervision of Rhode Island Division of Fish and Wildlife Marine Fisheries Section.
- Monitor commercial fishing quotas, lead quota management meetings and determination of seasonal closures and possession limit changes.
- Track reporting compliance for ~1500 RI commercially licensed fishermen. Train fishermen and seasonal staff on report submissions. Audit data quality of submitted reports.
- Audit and correct data of dealer reported landings data for the ~140 RI commercial licensed seafood dealers. Train new seafood dealers and retraining dealers with data entry issues.
- Write and submit project plans, compliance reports, and grant proposals.
- Member of various ACCSP committees, including Commercial Technical Committee and Information Systems Committee.

- Assist in field work as needed, including beach seine, lobster ventless pot, and otter trawl surveys.

East West Technical Services LLC Feb. 2012- May 2014
At-Sea Monitor and Scallop Observer
- Organize fishing trips with federal commercial fishermen of the North Eastern United States.
- Collect catch and discard data on groundfish (trawl, gillnet, and longline) and scallop dredge fishing vessels. Identify all species brought on board and take biological measurements and samples including; length, weight, scales, vertebrae, and otoliths.

Rhode Island Department of Environmental Management June. 2011-Dec. 2011
Division of Fish and Wildlife- Marine Fisheries Student Researcher April 2013-Oct. 2013
- Data and logbook entry using Microsoft Access, Microsoft Excel, SAFIS, and Telnet.
- Contact fishermen when questions arise with logbook submissions.
- Assist in field work sampling in beach seine, otter trawl, clam suction, clam dredge, lobster pots, fish pots, and finfish port sampling.
- Fish aging structure removal (operculum, scales, and otoliths) and preparation.

Research Experience
Roger Williams University June 2009- June 2011
- Project goals are to examine mercury bioaccumulation in fish tissues, examine selenium concentrations in tissues, and examine selenium mercury relationships.
- Includes sampling methods of rod & reel and otter trawl surveys, the extraction of muscle, liver, brain tissues, and otoliths. Preparing tissues samples for atomic absorption spectroscopy and inductively coupled plasma mass spectroscopy. Use of Microsoft Excel and SAS to analyze the data, PowerPoint to present data at conferences. Organize the laboratory and help keep scientific equipment running correctly.
- Mentor: Dr. David L. Taylor, Assistant Professor

Technology, Skills, and Certifications
- Proficient in Microsoft Word, PowerPoint, Excel, Access, and Picture Manager, SAFIS info systems, Telnet, HTML, Adobe DreamWeaver, Oracle Databases (SAFIS Interface and Business Objects), and R.
- Familiar with SQL.
- Large dataset management
- Certified PADI Open Water Scuba Diver
- RIDEM Certificate of Boating Safety Education
- U.S Coastguard Auxiliary Boating Safety Course
- Fisheries sampling techniques including fish and invertebrate identification, trawl, beach seine, lobster and fish pots, gillnets, and dissections.

Proposal for funding made to the
Coordinating Council and the Operations Committee
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Ste. 200 A-N
Arlington, VA 22201

FY20: SAFIS Expansion of "*SAFMC Release*" and "*NC DMF Catch U Later*" Discard Reporting Applications

Submitted By:

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August 12, 2019

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St. Ste. 200 A-N
Arlington, VA 22201

We are pleased to submit the proposal titled, "**FY20: SAFIS Expansion of "SAFMC Release" and "NC DMF Catch U Later" Discard Reporting Applications".** This proposal has been revised from the original proposal submitted on June 10, 2019 to address reviewers' questions and recommendations. In the original proposal, committee members asked that we address the following questions and recommendations. We have addressed them below (see red text) and within the proposal where applicable.

Questions

+ Will this program be available on Android and iOS, are they phone or tablet specific? Please clarify this in the text. *Added language to include iOS and Android functionality for both phones and tablets*

+ Has ACCSP been approached to discuss the storage needs of photos and will they incur any additional costs to store these photos? What kind of changes to their database structure will be needed to accept and store these photos both in SAFIS and the Warehouse? – *Yes, database structure exists and storage is available. Language has been added to the proposal to indicate this.*

+ Has there been any discussion to utilize image analysis software, knowing the scaling might be an issue it might be worth testing the ability of the software against human judgement to create an algorithm to automate the process in the future? – *Investigation of new technologies is being done. Please clarify this in the proposal text.*
SAFMC Release submitted images will be reviewed initially by SAFMC staff. When submitting photos, participants are asked to submit pictures of a whole fish, ideally with a measuring tape or other object of known size in the photo. Length validation will be done by SAFMC staff when possible.

QC of Catch U Later submitted images will be accomplished using MRIP certified APAIS technicians, DMF Biologists, and Stakeholders (i.e. For-Hire Captains). Length data will be ascertained by calibrating the pixel length of fish images with an item of known length (e.g. coin).

The automation of these process has great potential but is outside the scope of this investigation. (Added language to 'Approach' section Task D)

+ Benefits and/or disadvantages of producing different apps/programs to collect very similar information? Proposal mentions the two projects are different, don't see those differences or why taking the existing app to modify slightly to address other project

needs is not feasible. *Added language regarding the selection of users for each application (open access for SAFMC vs. statistical sample of users for NC DMF. Data collected through NCDMF Catch U Later will be used to specifically address species composition of discarded generic flounder). This comment shows a misunderstanding by the reviewer regarding the purpose of this proposal which is to develop a platform that can be easily modified to address future project needs from all stakeholders. Added language in the need section to explicitly address management benefits for NC DMF.*

+ Proposal does get into the need for standardization of apps and data collected which is great but seems contradictory to some previous statements in proposal. *Standardization between applications provided a framework of available data elements that can be mixed and matched by other interested parties to create a data collection stream to address future research objectives. This is explicitly stated in the first paragraph of the results and benefits section.*

+ Are the differences between programs the targeted species and then capturing the associated data specific/unique to those fisheries?
There are two pilots that are being created; however, they are using the same code base. The proposal is to generalize this application for use by other partners/species. Please clarify this in the proposal text.
Absolutely, SAFMC has immediate data needs for scamp as well as other reef fish that are also subjected to barotrauma. NCDMF has immediate data needs for the decomposition of generic flounder discards. Explicitly stated in the first three paragraphs of the Need section of the proposal.

+ Don't understand the reference to changes, branding and appearance to SAFIS application – are the current apps not SAFIS developed or compatible?
Pilots are being individually branded. The general application will be a SAFIS application. Please clarify this in the proposal text. The general application will be a SAFIS application and there will be partner options available. Language has been added to the proposal to indicate this.

+ Rec discard lengths are a critical data gap in red drum stock assessments. NC Catch U Later will be adding Red Drum. Can drum discard lengths be collected in other states as well, either via the SAFMC tool, or subsequent expansion of the NC tool to other states? *– The SAFIS application will be available to all partners/regions/species. Please clarify this in the text. Absolutely, the purpose of this proposal is to create a vehicle to address coastwide deficits in discard information.*

Recommendations

+ NMFS SEFSC Beaufort Lab attempted length analysis via photograph image analysis. Suggest contacting Beaufort for lessons learned. *Project PI's followed up with the Operations Team member who provided this recommendation. In the past, NMFS Beaufort staff had submitted an unfunded proposal to attempt length analysis via*

photograph image analysis. Currently SAFMC and Beaufort staff are collaborating on a project attempting similar length analysis with historic photos. This project is just getting started, but the project team will share lessons learned as available with this project's PIs and other ACCSP partners.

+ In stock assessment section, please add section on importance of discard lengths as a significant data gap. Consider contacting stock assessment leads (e.g., Jeff Kipp at ASMFC for red drum) to determine how discard lengths are used in SAs. Data application may inform data collection design. *The 'Stock Assessment and Management Benefits and Impact' section includes language noting this and provides specific examples from the recent South Atlantic Red Grouper and South Atlantic Red Drum assessments.*

+ Please include explanation of the photo standards and/or instructions.
When submitting photos for SAFMC Release, participants are asked to submit pictures of a whole fish, ideally with a measuring tape or other object on known size in the image.

NCDMF plans to instruct panelists to take photographs of discarded catch with an item of known size to calibrate pixel length. This will be accomplished with the open access software Image J provided through the National Institute of Health. https://imagej.nih.gov/ij/

+ Travel - $25K for 2-day workshop seems high, notably $5K meeting space; can travel budget be reduced, maybe hosting for free at Fort Johnson, Morehead DMF, or another location easy for anglers to get to? *Suggested participants for the proposed workshop include ACCSP staff, Harbor Light Software staff, ACCSP partners SAFMC, NC DMF, GA DNR, and RI DEM, and ACCSP committee representatives (see 'Approach' section, Task E). The workshop budget was based on costs used to estimate SEDAR workshops. Workshop location is to be determined and although it may be possible to find less expensive meeting space, that can often lead to additional travel costs (e.g. rental cars, taxi/uber, etc. may be needed to get participants to meeting locations).*

Best,

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Applicant Name:	South Atlantic Fishery Management Council (SAFMC) North Carolina Division of Marine Fisheries (NC DMF)
Project Title:	**FY20: SAFIS Expansion of "*SAFMC Release*" and "*NC DMF Catch U Later*" Discard Reporting Applications**
Project Type:	New
.	
Requested Award Amount:	**$118,500**
Requested Award Period:	One year upon receipt of funds
Submission Date:	June 10, 2019; revised version submitted August 12, 2019

FY20 Atlantic Coastal Cooperative Statistics Program (ACCSP) Proposal for the SAFMC and NC DMF

OBJECTIVE:

- Combine two similar released fish reporting applications (*SAFMC Release* and *NC DMF Catch U Later*) into ACCSP SAFIS as a single, flexible and customizable release and discard reporting tool that is available to other partners.
- Expand the SAFIS application to increase the species that can be reported.
- Begin planning for development of an integrated, customizable data collection application to provide more efficient data collection and reduce future needs for individual applications.

NEED:

Losses to fish stocks from catch and release mortality is an increasingly significant component of the total mortality experienced by many stocks. Because such fish are not available for sampling by typical dockside monitoring programs, and observer coverage ranges from limited in commercial and for-hire fisheries to non-existent in private recreational fisheries, there is often no information available to characterize these losses for stock assessment modeling. Lack of certainty in species identification is another concern with the 'self-reported' data that are used to estimate releases. As a result, improving information on released fish is a common stock assessment research need and is often a top priority in agency research plans. In the 2017 ACCSP Recreational Technical Committee prioritization, increased information on released fish was tied for the #2 priority. In the ACCSP request for 2020 proposals, information on releases and discards as well as APAIS/MRIP independent biological sampling for recreational fisheries are the #2 and #4 priorities respectively. Discard characterization and information on discard reduction practices are priorities in the South Atlantic Council's Research and Monitoring Plan for 2018-2022.

The South Atlantic Council (SAFMC) developed the reporting application *SAFMC Release* through its Citizen Science Program to provide information on released Scamp Grouper to be considered for use in an upcoming stock assessment and for future management. *SAFMC Release*, programmed by Harbor Light Software, provides a streamlined approach for fishermen to provide a picture of discarded fish along with additional details such as length, release location and depth, condition, and use of barotrauma reduction techniques. Because there is a severe lack of details on discarded fish across all fishery sectors, this app was developed for and is being promoted to all sectors - commercial, for-hire, and private recreational fisheries. ACCSP has been an important partner in developing *SAFMC Release* and will provide a portal for data submission and warehousing. For this project, the *SAFMC Release* component will be expanded to allow reporting of shallow water groupers: Red, Gag, Black, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby.

North Carolina Division of Marine Fisheries (NC DMF) has plans to develop "*Catch U Later",* a reporting app for recreational discards to enable separation of flounder releases into individual species, to collect information on the size of released fish and information on capture location. Flounders, Red Drum, Spotted Seatrout, and Weakfish are among the most targeted recreational

species in North Carolina. As fisheries management implements creel and size limits as well as seasonal closures the ratio of discarded fish to legal harvest has continued to grow. Indeed, between 2012-2017 discard ratios have ranged between (84-90%) for flounder species, (77-97%) for Red Drum, and (77-95%) and (77-93%) for Spotted Seatrout and Weakfish, respectively. Importantly, there is no current data collection program to represent the size at age distribution of discarded fish. Despite high angler preference for flounder and trout, ambiguity exists concerning identification. This confusion presents a unique challenge for fisheries management in that discard information provided by the recreational angling community may be inadvertently errant. To date the partitioning of discarded catch for these species is accomplished by applying the ratio of species within the observed harvest. However, this methodology is not ideal due to the assumption that discarded individuals share the same spatiotemporal distribution as those harvested. This concern is underscored by demonstrated ontogenetic differentials in habitat utilization and migratory patterns for these congener species. The proposed app will also be developed by Harbor Light Software and will build on some of the functionality of *SAFMC Release*, such as the ability to provide pictures of fish. While both the SAFMC and NC DMF projects are quite different, there will be a strong similarity in the tools – the apps – used by each. The SAFMC *Release* allows open registration for use of the application, while North Carolina *Catch U Later* users are statistically drawn from a list of licensed saltwater anglers. Data collected from the *Catch U Later* application will be used to determine the ratio of constituent flounder species within generic flounder discards. For this project, the NC DMF component will be expanded to allow reporting of trout (i.e., Spotted Seatrout, Weakfish), kingfish, and Red Drum.

Being able to collect photographic data and tie them to a fishermen's species identification, offers an approach to address concerns with self-reported data reliability. It provides a new data stream but creates challenges for QA/QC as validation of such data can't be readily automated or contrasted with other data sources. Current plans for QA/QC are labor intensive and require highly skilled personnel; such approaches are not efficient and may not be practical as these programs expand, and the amount of reports increases. There are examples that use trained volunteers to validate species identification. The Cornell Lab of Ornithology's eBird uses a combination of automated filters and a network of volunteer regional experts to work together to verify eBird data. To start, NC DMF will use existing staff as well as experts in the fishery to help identify species reported through the app. If these types of data collection methods are going to be successful, and expanded to address fisheries with extensive releases, a more efficient QA/QC process is needed.

Collecting information on released fish is just one of the challenges faced by ACCSP partners that has potential to be addressed through innovative electronic tools. Given the astounding proliferation of apps to impact nearly all aspects of people's lives today, and the willingness of the public to openly share information and experiences, it is not surprising that apps are increasingly viewed as a promising approach for collecting fisheries data. Electronic applications offer obvious benefits to the challenge of collecting information on fish that are not going to be kept and therefore are not available to traditional fishery sampling efforts. They can also be developed to address nearly any fisheries data collection need, leading to reduced errors, improved timeliness, and lowered labor demands as has been shown in the transition of MRIP APAIS from paper to electronic data collection. The relative ease with which applications can

now be developed may be good for finding innovative solutions, but it carries the risk of excessive "stovepiping" that results in unique data streams that are difficult to coordinate with other data streams. There is also the risk that a multitude of highly specific applications will impose excessive maintenance costs and lead to confusion amongst the fishing and scientific communities. Therefore, oversight and intentional design are required to ensure that applications collect valid information and that the data collected can be properly placed within the context of other ongoing reporting and monitoring activities, and coordination is required to prevent a proliferation of similar but ultimately incompatible data streams. ACCSP is uniquely situated to address design and data quality concerns through its existing program standards, and to provide coordination through its regional partnerships and infrastructure.

RESULTS AND BENEFITS:

The result of this project will be to provide a release information application that is more flexible and scalable to meet different partner and fishery needs and is able to support multiple projects that can be configured to address specific discard questions across fisheries sectors and jurisdictions. The intent is that the basic framework developed through this project will be further improved and expanded through future projects. Additional project components, such as exploring QA/QC approaches, will address some of the unique challenges that will arise when a flexible application is used to collect new types of data. The benefit to developing these tools within the SAFIS system is that doing so will ensure they meet ACCSP data quality and accessibility standards, are compatible with existing data collection programs, are available to all partners, and are kept up to date.

The release reporting application developed through this project is envisioned as the first step in building an innovative released and discarded fish information platform, consisting of a core application with iOS and android functionality for both phones and tablets and specific profiles tailored to unique projects and data needs that will function similar to E-Trips. ACCSP staff were involved in the development of this proposal. Database structure already exists in SAFIS and the Data Warehouse to accept photos and adequate storage is available. Observer funding across most fisheries along the Atlantic Coast has never been adequate, likely never will be, and many fisheries, such as the private recreational or the commercial snapper grouper hook and line, are challenging to sample through conventional observer techniques due to their sheer volume of participants and small vessels. Although a few specific fisheries are highlighted in this project, the proportion of catch attributed to releases is increasing in many of the popular fisheries along the Atlantic Coast, indicating that other ACCSP partners likely share the needs addressed by this project. Rhode Island Department of Environmental Management (RIDEM) Marine Fisheries has expressed interest in the utility of this app to be able to better characterize recreational discards in both the striped bass and bluefish fisheries. A recent Atlantic States Marine Fisheries Commission Striped Bass assessment found the stock to be overfished and undergoing overfishing. Release mortality accounts for a large portion of removals with recreational discard mortality accounting for 48% in 2017. Having better data to characterize the lengths of released fish, the effect of regulations on strong year classes, and information to better refine mortality rates (e.g. hook type) could be of use to managers and for the next assessment. Innovative monitoring approaches that rely upon technology and fishermen participation are necessary to fill the enormous data gap associated with released fish. Electronic reporting technology is rapidly

developing and offers a potential solution to collecting information on fish that are not available for sampling by scientists.

This project also proposes to begin developing plans for a comprehensive and flexible reporting tool that could be applied to a variety of fisheries data issues. This is a complex undertaking that would build off of the release reporting tool to allow reporting of more types of data, potentially addressing areas such as fishery independent monitoring and biological sampling. The long-term goal is to develop a menu-driven tool that partners could use to easily create a customized app by selecting specific data fields, without the need to develop stand-alone apps for each new project or data challenge. Partners would benefit by being able to create and use an electronic tool without incurring extensive development costs, and ACCSP would benefit by reducing the need for continual API and report development. A generic tool of this type could prove particularly useful as ACCSP moves from the traditional catch and effort data sources and into warehousing the next tier of fisheries data - biological and socio-economic. The project scope and approach developed through a planning team and workshop under this project would form the basis of a future proposal to build the generic app.

Primary Program Priority Addressed by this Project

The released fish reporting applications proposed to be combined and incorporated in SAFIS will provide a tool for collecting biological information on the component of catch that is released, addressing the 2020 Request for Proposal priority 1b and Recreational Technical Committee priority 2. The applications will collect biological and fishery data that is independent of APAIS/MRIP, addressing Recreational Technical Committee priority 4.

The specific benefits to each data type, the rank of the target species within priority matrices, and impacts to stock assessment included in the app, are addressed for each component below.

SAFMC Release & NCDMF Catch U Later

Primary Program Priority: Biological Sampling: 90%

For the SAFMC module, biological information will be collected on released shallow water groupers in both commercial and recreational fisheries. Scamp, Gag, and Red Grouper are in the top 25% of the biological sampling priority matrix. The commercial snapper-grouper hook and line fleet is #5 in the bycatch priority matrix.

- Data Collected for each trip: trip type (commercial, recreational, headboat, charter), date, user (ACCSP ID)
- Data Collected for each fish released: species (user's determination), length (based on ACCSP standards), location, depth, time, fate (dead or alive release), hook type, use of barotrauma mitigation (descending device, venting, line cut), and photograph (to validate and evaluate user IDs and lengths)
- Users may also file a 'no fish released' report

For the NC DMF module, biological information will be collected on recreational releases for three species of flounder (Summer, Gulf, and Southern), three species of kingfish (Southern, Northern, and Gulf), Spotted Seatrout, Weakfish, and Red Drum. Weakfish and Red Drum are in the top 25% of the biological sampling priority matrix.

Secondary Module as a by-product: Catch and Effort: 10%

A ratio of Southern, Summer, and Gulf flounder to total flounder by year, month, and area fished will be determined from a statistically drawn and trained panel of NC *Catch U Later* users. These proportions will be applied to the estimates of left-eyed flounder released (unobserved Type B2) catch to produce estimates of discards for each of the specific flounder species. This methodology will also be used for kingfish and trout.

Stock Assessment and Management Benefits and Impact:

Given the lack of information on discarded and released fish, the impact of this project to stock assessments is substantial. Stock assessments rely upon accurate information on total catch and removals from the stock and accurately allocating those removals to year classes. For fish that are landed, these requirements can be addressed through straightforward methods such as catch reporting or creel surveying to estimate removals and dockside sampling to collect length measurements and age samples (used by methods such as age-length keys to assign fish to age classes). Surveying and dockside sampling approaches cannot work when the fish are released on the water. Using the South Atlantic as an example that is in no way unique, no information is available to classify the size composition of released fish in the commercial snapper grouper hook and line fleet, the private recreational fleet, or the charter fleet. In some areas, fisheries observers are used to collect information on released fish. Observer coverage is limited due to high cost. Moreover, even if funding were available, logistics and liabilities remain a concern for some fisheries such as the commercial hook and line snapper grouper fishery which is prosecuted mostly by small vessels, and private recreational fisheries. Extremely limited observer coverage is available for the headboat fleet (primarily funded through ACCSP), but changes in fleet size and behavior raise concerns about the validity of such data to characterize removals from other fishery sectors. This lack of information is a major source of assessment uncertainty, as assumptions must be made to assign released and discard fish into length and thus age classes for the stock assessment.

In years past the lack of accurate information on discarded fish was not a major assessment concern or source of uncertainty, as landed fish generally accounted for the majority of stock removals. However, this is changing as regulations and fishing behavior are leading to increased discarding. For example, in the recent assessment of Red Drum (SEDAR 44[1]), the Review Panel noted catch and release fishing was increasing and as a result estimated total removals from the stock was increasingly sensitive to discard mortality rates and discard losses. The Panel also questioned the validity of an assumption that the length frequency of discarded fish was similar to tagged fish. The assumption was necessary due to the lack of any data on the size of released fish that could be used to assign mortalities from release to appropriate length classes. There are several reasons why such an assumption may be invalid and a source of bias in the assessment results, but the total lack of data precludes even an effort to determine the direction of bias or magnitude of uncertainty. The Review Panel considered this data lack significant and an important issue in the Red Drum assessment.

[1] SEDAR. 2015. SEDAR 44 – Atlantic Red Drum Stock Assessment Report. SEDAR, North Charleston SC. 890 pp. available online at: http://sedarweb.org/sedar-44.

Consider some other examples for target fish of this study. The most recent assessment (SEDAR 53[2]) indicated that over fifty percent of the fishing mortality experienced by Red Grouper is due to discard losses. Given that this stock was found to be overfished and overfishing was occurring, these discard removals are significant, and therefore the assumptions made regarding their size composition are critical. In this instance, the length composition and selectivity for the discard losses was based on observer records from the headboat fishery and it was assumed that these data were representative of all fishery sectors. As noted above, there are no data to test this assumption so its impact on assessment uncertainty and bias is unknown. Similarly, harvest to discard ratios for flounder are 9:1 in North Carolina. A discard mortality rate of 10% applied to released flounder results in total removals due to discard losses that are equivalent to harvest. It is not practical to collect information on discards of flounder by private anglers in small vessels through observers. Since even modest improvements in the information available to characterize discard removals and improve discard mortality estimates could improve stock assessments when the discard losses are significant, alternative methods of collecting the necessary information to properly characterize the size and thus age composition of discarded fish should be pursued.

A similar lack of information exists to classify the depth where fish are captured and released and the use of barotrauma reducing actions such as venting or descending. Depth and barotrauma reduction are significantly correlated with release mortality rates, but it is difficult to refine the overall release mortality rate applied for a stock assessment without finer scale information on released fish.

Small improvements in estimates of discard mortality, based on data rather than assumption, can result in large changes in the estimated removals from a fish stock. Based on the results of ACCSP-funded headboat observer studies, as cited in the 2019 Recreational Technical Committee proposal, the Red Snapper release mortality was reduced from 37% to 28.5% due to the use of circle hooks. Applying this percentage change to the estimated 2018 MRIP discards reduces the discard losses to the population by 274,000 fish. This is quite a difference when considered in light of the allowable 2018 recreational harvest of 29,656 fish. This is also relevant for flounder given the current method applies a ratio of observed catch, which is not an accurate representation of released fish. The ability to accurately characterize discards could substantially improve stock assessments and management decisions.

Data Delivery Plan:

The reporting applications will deliver data directly to ACCSP through an API, building on the existing API that currently accepts data from *SAFMC Release*. Data will be submitted by users, directly through the application, when they are connected to a network.

[2] SEDAR. 2017. SEDAR 53 – South Atlantic Red Grouper Assessment Report. SEDAR, North Charleston SC. 159 pp. available online at: http://sedarweb.org/sedar-53.

APPROACH:

Task A: Create and add enhancements based on the existing implementations of *SAFMC Release* and *NC Catch U Later* applications to create SAFIS application with partner options.

Harbor Light Software

- Set up separate profiles for specific projects addressed in the app. For this project, that includes NC inshore versus SAFMC offshore users. The project profiles will ensure users are asked questions relevant to the project that matches their trip. Architect the application to be more flexible in supporting the additional data collection needs that other partners may have.
- Add additional species:
    - SAFMC - shallow water grouper
    - NCDMF - Red Drum, kingfish, and Spotted Seatrout/Weakfish
- Investigate new technologies which assist the accurate determination of length from photographs taken by the mobile devices hosting the application
- Modification of communication with the ACCSP-provided API to insure proper communication of data between the client application and ACCSP databases. ACCSP databases will store transaction records as well as photographs of discarded catch.
- Incorporate analytics data to gain insights into usage patterns of the application such as geographic usage of the application or ease of use of particular features. Similarly, incorporate error reporting features to proactively be alerted to reliability issues with the application after it has been deployed.
- QA/QC the application before releases
- Manage the deployment of the application directly to beta users, and ultimately maintaining a presence in the Google Play Store and Apple App Store
- Provide second-tier technical support for issues found with the application, including correcting errors found in the implementation of the required features

SAFMC/NC DMF

- QA/QC and test application

ACCSP

- Update the API as needed
- Update reports as needed and allow easy access to photos that are linked to the trip records.

Task B: Public Outreach (SAFMC/NC DMF)

- Notify current participants of *SAFMC Release* and *NC DMF Catch U Later* of transition to SAFIS application
- Recruit new participants, to further participation in the existing projects and expand participation for the new species
- Notify ACCSP partners of the new SAFIS application

Task C: SAFIS Application Deployment (ACCSP)

- SAFIS application deployed
- Reports available in Data Warehouse to view/download data

Task D: Data collection, QA/QC, and analysis (NC DMF/SAFMC)

- Data successfully submitted via app to SAFIS/Data Warehouse
- SAFMC provide QA/QC for data collected through their projects; edit/correct as necessary; when submitting photos participants are asked to submit pictures of a whole fish, ideally with a measuring tape or other object of know size in the image (e.g. soda can); photos will initially be reviewed by SAFMC staff and length validation will be done when possible
- NC DMF provide QA/QC for data collected through their projects; QC of Catch U Later submitted images will be accomplished using MRIP certified APAIS technicians, DMF Biologists, and Stakeholders (i.e. For-Hire Captains). Length data will be ascertained by calibrating the pixel length of fish images with an item of known length (e.g. coin). The automation of these process has great potential but is outside the scope of this investigation.
- Data made available for assessment and management as necessary
- Determine proportions for released Southern, Summer, and Gulf flounder to total flounder released by year, month, and area fished. Same for kingfish and trout
- Explore long term solutions for addressing QA/QC and validation needs of the photographic and species identification data, considering volunteers and citizen science approaches

Task E: Planning for next phase of integrated, customizable generic application

- Conduct one in-person and multiple webinar scoping meetings with ACCSP, Harbor Light Software, and ACCSP partners SAFMC, NC DMF, GA DNR, and RI DEM, and ACCSP committee representatives (e.g. Commercial Tech, Recreational Tech, Information Systems, Operations, etc.) to develop needs and objectives for an integrated, flexible app
- Organize a design team including ACCSP, Harbor Light, ACCSP committee representatives, and other interested parties to further develop application plans and prepare a proposal to develop the app

Metadata

Additional information will be recorded during the project to ensure released fish data is properly addressed in management and stock assessment analyses. This includes regulations such as seasons and size and bag limits that directly affect release rates; location and trip type; depth; use of descending devices.

GEOGRAPHIC LOCATION:

The SAFIS application will collect data in NC inshore and coastal waters via the NC DMF component and collect data in coastal South Atlantic waters from North Carolina through the East Coast of FL to the FL Keys via the SAFMC component. The geographic scope of the project includes all ACCSP partners in all regions, as they will be able to use or modify the base application to meet specific project needs.

FUNDING TRANSITION PLAN:
Project contains a defined end point. This is a one year project.

MILESTONE SCHEDULE:
Table 1. Milestone Schedule

Task	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Create and add enhancements to existing base code	x	x	x	x	x							
Update API and reports	x	x	x	x	x							
Feedback from users and incorporating changes/fixes in application			x	x	x	x	x					
Public/Partner Outreach					x	x	x	x	x	x		
SAFIS Application Deployment						x						
Data Collection, QA/QC & Analysis			x	x	x	x	x	x	x	x		
Planning for next phase of integrated, customizable generic application			x	x	x	x	x	x	x	x		
Semi and Annual Report Writing						x				x	x	x

PROJECT ACCOMPLISHMENTS MEASUREMENTS:

Table 2. Project Accomplishments Measurements

Project Component	Goal	Measurement
Create and add enhancements to SAFIS Application	Modify existing applications to general framework and gather initial feedback	SAFIS application developed, tested, and ready for deployment
Public Outreach	Promote program and inform users of the transition in application	Users are aware and able to transition to new application and new users are recruited to participate in the additional species
SAFIS Application Deployment	Have application easily accessible and available	Application accessible through app stores
Data Collection, QA/QC, & Analysis	Users submit data on the targeted species using the application	QA/QC completed; data available for management and stock assessment, as needed; long term QA/QC approaches evaluated
Planning for next phase of integrated, customizable generic app	Describe the need and identify potential data collection activities and scope potential electronic reporting solutions	Create a development and implementation plan for a generalized electronic data collection tool

COST SUMMARY (BUDGET):

Item	ACCSP Share	Partner Share	Total
PERSONNEL COSTS			
SAFMC Personnel Julia Byrd, Citizen Science Program (10%) John Carmichael, Deputy Director (5%)		 $7,800.00 $6,961.20	 $14,761.20
SAFMC QA/QC process part time position	$24,000		$24,000.00
NC DMF Personnel Drew Cathey, Biologist II (10%) Chris Wilson, Biologist Supervisor (5%)		 $4,710.10 $3,277.80	 $7,987.90
NC DMF QA/QC process part time position	$24,000		
CONTRACT			
Contractor Software Development	$45,000		$45,000
SUPPLIES			
Recruitment/Retention Promotional Items	$500	$1000	$1500
TRAVEL			
In-person meeting	$25,000		$25,000
TOTAL	**$118,500.00**	**$23,749.10**	**$142,249.10**
Percentage	**83%**	**17%**	**100%**

BUDGET NARRATIVE:

Personnel ($48,000): Personnel funds will be used by SAFMC and NC DMF to each hire QA/QC process part time position. Personnel cost is estimated at $20/hour for a total of 1200 hours for each position. The positions will assist with Task D: Data Collection, QA/QC, and Data Analysis. Job duties will include assisting with QA/QC and exploring long term solutions for addressing QA/QC and validation needs of the photographic and species identification data, considering volunteers and citizen science approaches.

Supplies ($500): SAFMC will utilize supply funds to print promotional materials (e.g. wallet cards, postcards) to inform users of transition to new SAFIS application and recruit new users. Funds will also be used to purchase small promotion items (e.g. fishing towels, measuring tapes, etc.) to help increase recruitment and retention rates of participants.

Contractual ($45,000): Harbor Light Software will develop the application software, using the software written for the existing *SAFMC Release* and *NC DMF Catch U Later* applications as core reference with enhancements for branding, additional species, modifications to the ACCSP API and flexibility for supporting different data collection profiles. Harbor Light will also provide second-tier technical support, management of the deployment of the application through respective app stores, perform technical feasibility analysis of image-based length determination technologies and identify architectural enhancements to support a wider range of data collection applications.

Travel ($25,000): Travel funds will be used for the in-person workshop associated with Task E to develop needs and objectives for an integrated, flexible application. Workshop will be two days with approximately 20 participants. Estimated costs include meeting space ($5000), participant travel ($10,000) and lodging, per diem, and miscellaneous participant costs ($10,000).

Summary of Proposal for Ranking

Proposal Type: New

Primary Program Priority: Biological Sampling - 90%

- The released fish reporting applications proposed to be combined and incorporated in SAFIS will provide a tool for collecting biological information on the component of catch that is released, addressing 2020 Request for Proposals priority 1b and Recreational Technical Committee priority 2. The applications will collect biological and fishery data that is independent of APAIS/MRIP, addressing Recreational Technical Committee priority 4.
- For the SAFMC module, biological information will be collected on released shallow water groupers, in both commercial and recreational fisheries. Scamp, Gag, and Red Grouper are in the top 25% of the biological sampling priority matrix. The commercial snapper-grouper hook and line fleet is #5 in the bycatch priority matrix.
- For the NC DMF module, biological information will be collected on recreational releases for three species of flounder (Summer, Gulf, and Southern), Weakfish, and Red Drum. Weakfish and Red Drum are in the top 25% of the biological sampling priority matrix.

Data Delivery Plan:

- The reporting applications will deliver data directly to ACCSP through an API, building on the existing API that currently accepts data from *SAFMC Release*. Data will be submitted by users, directly through the application, when they are connected to a network.

Project Quality Factors:

- **Multi-partner/Regional impact including broad applications:** This project will combine two similar released fish reporting applications (*SAFMC Release* and *NC DMF Catch You Later*) into ACCSP SAFIS as a single, flexible and customizable release and discard reporting tool with multiple modules that can be available to other partners. The geographic scope of the project includes all ACCSP partners in all regions, as they will be able to use or modify the base application to meet specific project needs. The SAFMC component collects data through the South Atlantic and across all sectors for species with significant release mortality concerns. The NC DMF component collects data in inshore and coastal NC waters.

- **Contains funding transition plan:** Project contains a defined end point. This is a one year project.

- **In-kind contribution:** 17%

- **Improvement in data quality/quantity/timeliness**
  - Provides improvement in data quality and quantity.
  - There is currently no data available to separate NC flounder discards into individual species, and no data to assign discards to length classes.

- There is currently no data available to assign released shallow water groupers to length classes other than limited headboat observer effort

- **Potential secondary module as a by-product: Catch and effort - 10%.** A ratio of Southern, Summer, and Gulf flounder to total flounder by year, month, and area fished will be determined from a statistically drawn and trained panel of NC *Catch U Later* users. These proportions will be applied to the estimates of left-eyed flounder released (unobserved Type B2) catch to produce estimates of discards for each of the specific flounder species. This methodology will also be used for kingfish and trout.

- **Impact on stock assessment**
  Stock assessment impacts are significant. Assessments rely upon accurate catch data for individual species, accurate assignment of catches to length and thus age classes, and accurate accounting of total population removals including release mortality. This project may help provide such information for fisheries for which it is now lacking.

Other Factors:

- **Innovative**
  The project is innovative, applying rapidly developing electronic reporting technology to the problem of obtaining critical biological information for released fish.

Andrew M. Cathey

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Professional Preparation:

East Carolina University, PhD, Interdisciplinary Biological Sciences, 2013
Appalachian State University, BS, Ecology and Environmental Biology, 2004

Professional Experience:

Biologist/Chief Data Analyst, North Carolina Division of Marine Fisheries: Nov 2017-Present
Statistician, North Carolina Division of Marine Fisheries: Jul 2014-Nov 2017
PhD Candidate, East Carolina University: Oct 2011-Dec 2013
Graduate Research Assistant, East Carolina University: June 2007-Oct 2011
Research Specialist, Brody School of Medicine, East Carolina University: 2005-2007

Research/Work Experience:

11/01/2017-Present *North Carolina Division of Marine Fisheries-Biologist/Data Analyst*
08/11/14-11/01/17 *North Carolina Division of Marine Fisheries-Statistician*
08/01/09-12/13/13 *East Carolina University Department of Biology-Graduate Research Assistant*

Teaching:

08/01/12-05/06/13	Instructor of Record-East Carolina University, Greenville, North Carolina, Ecology
08/01/08-05/06/11	Teaching Assistant-East Carolina University, Greenville, North Carolina, Introduction to Biology Laboratory

Professional Memberships:

Coastal and Estuarine Research Federation
South Eastern Estuarine Research Society
American Fisheries Society
Sigma Xi

Publications and Technical Reports:
Cathey AM (2016). Evaluating an Ongoing Recreational Flounder Gigging Mail Survey using Dockside Intercepts. *North Carolina Division of Marine Fisheries Final Project Report*. Grant Number 2007-F206

Cathey AM (2015). Assessing Electronic Mobile Devices for the Collection of Recreational Fishing Data. *NOAA Final Project Report*, Task Title: Assessing the Use of Electronic Mobile Devices in Recreational Angling Data, Grant Number EA-133F-12-BA-0034

Cathey AM, Miller NR, Kimmel DG (2014). Spatiotemporal Stability of Trace and Minor Elemental Signatures in Early Larval Shell of the Northern Quahog (Hard Clam) Mercenaria mercenaria. *Journal of Shellfish Research* 33(1):247-255

Cathey AM, Miller NR, Kimmel DG (2012) Microchemistry of Juvenile *Mercenaria mercenaria* shell: Implications for Modeling Larval Dispersal. *Marine Ecology Progress Series* 465:155-168

Presentations:

Coastal and Estuarine Research Federation, Society, Estuaries, and Coasts: Adapting to Change. Daytona Beach Florida, November 6-10, 2011.
Poster Presentation: Shell Microchemistry of Juvenile *Mercenaria mercenaria*: Spatiotemporal Patterns and Implications for Modeling Larval Dispersal.

South Eastern Estuarine Research Society. Morehead City and Beaufort North Carolina, April 11-13 2012.
Oral Presentation: Shell Microchemistry of Juvenile *Mercenaria mercenaria*: Spatiotemporal Patterns and Implications for Modeling Larval Dispersal.

Coastal and Estuarine Research Federation, The Changing Coastal and Estuarine Environment a Comparative Approach. Mar Del Plata Argentina, November 11-14, 2012.
Oral Presentation: Shell Microchemistry of Larval *Mercenaria mercenaria*: Implications for modeling Larval Dispersal.

American Fisheries Society, 145th Annual Meeting. Portland Oregon, August 16-20, 2015.
Oral Presentation: Assessing Electronic Mobile Devices for the Collection of Recreational Fishing Data.

Awards:
"*Best Graduate Student Oral Presentation*" Southeastern Estuarine Research Society; Semiannual Meeting, Morehead City and Beaufort, North Carolina. April 11-13, 2012.

"*National Shellfisheries Association Sandra Shumway Best Student Paper in the Journal of Shellfish Research Award*" In Volume 33: *Spatiotemporal Stability of Trace and Minor Elemental Signatures in Early Larval Shell of the Northern Quahog (Hard Clam) Mercenaria mercenaria.*

JULIA BYRD

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EDUCATION: UNIVERSITY OF CHARLESTON, SC, Charleston, SC

-**Masters of Environmental Studies**, focus on environmental and marine biology, December 2004

WAKE FOREST UNIVERSITY, Winston-Salem, NC

-**Bachelor of Science** in **Biology**, Minor in **Environmental Studies**, May 2000

WORK EXPERIENCE:

Citizen Science Program Manager, South Atlantic Fishery Management Council (SAFMC; March 2019 – present)

- Provide programmatic leadership and support for the SAFMC's Citizen Science Program
- Develop and deliver training programs to work with participants to design and implement citizen science projects
- Foster collaboration between researchers, scientists, and fishermen to support projects
- Develop grant proposals for citizen science projects and assist in program partners in developing grants
- Serve as PI or co-PI on grant supported citizen science projects addressing SAFMC research priorities
- Assist in developing and delivering outreach materials and training related to the Citizen Science Program and projects
- Communicate scientific, technical issues to a variety of audiences
- Build relationships with fishery professionals and stakeholders throughout the Southeast U.S. to help engage more people in the SAFMC's Citizen Science Program.

Southeast Data Assessment and Review (SEDAR), South Atlantic Fishery Management Council (SAFMC)
SEDAR Coordinator (August 2012 – February 2019)

- Plan, coordinate and manage SEDAR stock assessment projects and procedural workshops. Duties include project management, work planning, timeline development, brainstorming strategies, problem solving, event planning, and facilitation.
- Chair and/or facilitate SEDAR stock identification, data, assessment and procedural workshops. Experience includes facilitating variety of group discussions engaging scientists, managers, fishermen, and other stakeholders in order to lead groups through productive discussions and explore different points of view.
- Build relationships with fishery professionals and stakeholders throughout the Southeast U.S. to help engage more people in the SEDAR Stock Assessment Program.
- Communicate scientific, technical issues to a variety of audiences
- Lead re-design of the SEDAR website and serve as SEDAR webmaster.
- Assist with coordination and facilitation of SAFMC's Snapper Grouper Visioning Project
- Assist with the development of the SAFMC's Citizen Science Program. Duties included helping coordinate and facilitate SAFMC's Citizen Science Workshop, helping develop SAFMC's Citizen Science Blueprint, and assisting the Citizen Science Program Manager in developing infrastructure for the Program.
- SAFMC's representative on the Atlantic Coastal Cooperative Statistics Program Operations Committee
- Instructor for Marine Recreational Education Program, Southeast – Science Workshop 2017
- Participate in SCDNR's in-water sea turtle regional abundance and health assessment survey as Chief Scientist or Scientific Crew

South Carolina Department of Natural Resources, Office of Fisheries Management (OFM)
Wildlife Biologist III (August 2005 – August 2012)

- Supervise and coordinate OFM's recreational fisheries dependent data collection and biological sampling, including survey design, field activities, data analysis, report writing, and grants administration

- Provide technical assistance including periodic summaries of fishery and habitat data, and reports requested through routine monitoring of marine resources landings and survey data
- Serve as PI or co-PI on grant supported projects that focus on monitoring, research, or assessment activities designed to provide data necessary to marine fisheries resource managers and decision makers
- Conduct presentations for advisory committees, the general public, and other scientists on a variety of fisheries management and conservation issues
- Analyze commercial and recreational fisheries data from a variety of internal and external data sources
- Work on developing state legislation and public outreach for SCDNR initiatives
- Serve on the SCDNR's Rules and Regulations and Accountability Report Committees providing key outreach materials for the general public and the SC legislature
- Participate and serve as a Chief Scientist for SCDNR's in-water sea turtle regional abundance and health assessment survey
- Develop and manage databases for a variety of fisheries information
- Liaison between SCDNR's State Finfish Survey and the National Marine Fisheries Service Marine Recreational Information Program
- Protected Species liaison for OFM
- Coordinate and respond to NOAA Fisheries proposed rules published in the Federal Register
- SCDNR liaison for the National Saltwater Angler Registry
- SCDNR liaison for the Marine Recreational Information Program
- Help organize and participate in outreach and educational events
- Supervise, develop, and coordinate saltwater commercial and for-hire licensing data QA/QC
- Supervise biologists and hourly employees
- Participate in SEDAR data workshops

PROFESSIONAL MEMBERSHIPS:

- SC Chapter of the American Fisheries Society
- SC Fisheries Workers Association (2006-2017; President 2007-2008)
- ACCSP Recreational Technical Committee (2010-2012; Vice Chair 2011-2012)
- MRIP Angler Registry Database Work Group (2008-2012)
- Atlantic Large Whale Take Reduction Team (2010-2012)
- ACCSP Operations Committee (2015-present)

SELECTED TECHINCIAL PUBLICATIONS AND PRESENTATIONS:

- Byrd, J., J. Carmichael, and J. Neer. 2017. The Importance of Peer Review in SEDAR Stock Assessments. American Fisheries Society Annual Meeting, Tampa, FL. (Oral presentation)
- VonHarten, A. and J. Byrd. 2016. Building a Fishery Citizen Science Program in the U.S. South Atlantic to Improve Management and Policy. 4th International Marine Conservation Congress. (Oral presentation and helped facilitate focus group.)
- Carmichael, J., A. VonHarten, and J. Byrd. 2016. Efforts to Develop a South Atlantic Fishery Management Council Citizen Science Program. NOAA Fisheries Quantitative Ecology and Socioeconomics Training Program Webinar Series. (webinar presentation)
- SEDAR. 2015. SEDAR Procedural Workshop 7: Data Best Practices. SEDAR, North Charleston, SC. 151pp. (editor)
- Arendt, M., J. Byrd, A. Segars, P. Maier, J. Schwenter, D. Burgess, J. Boynton, J.D. Whitaker, L. Liguori, L. Parker, D. Owens and G. Blanvillain. 2009. Examination of local movement and migratory behavior of sea turtles during spring and summer along the Atlantic coast off the southeastern United States. South Carolina Department of Natural Resources, University of Georgia, and College of Charleston, Final Report to NOAA Fisheries, Contract Number NA03NMF4720281, 177p.

Proposal for Funding made to:

Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

Rhode Island Department of Environmental Management Proposal: Voice Recognition using Dragon Speech within Dockside Interceptor Application (DIA)

Submitted by:

Rhode Island Department of Environmental Management
Fish and Wildlife Division
235 Promenade Street
Providence, RI 02908

Applicant Name:	Rhode Island Department of Environmental Management Division of Fish and Wildlife.
Project Title:	Voice Recognition using Dragon Speech within Dockside Interceptor Application (DIA).
Project Type:	New Project (second year)
Principal Investigators:	Mike Bucko, RI DEM
Requested Award Amount:	$60,540.80
Requested Award Period:	One year upon receipt of funds
Original Date Submitted	June 10, 2019

Objective:

This project proposal, Voice Recognition using Dragon Speech within Dockside Interceptor Application (DIA), is a follow-up project focused on integrating voice to text capability into the Dockside Interviewer Application tablets, extending functionality developed during 2019 to prototype speech recognition. The goal of this project is to develop, test, and implement a hands-free voice recognition data recording module to be utilized in the field by ACCSP Fisheries Technicians to record type 3* and type 9** catch data. The module will be added into the Dockside Reporter tablet application (DIA) already in use on the Atlantic Coast.

The existing project focused on creating and using the native speech recognition capabilities in Android and Windows. The native speech recognition capabilities for these platforms both require an active internet connection, which is problematic while sampling off shore. The project has incorporated changes to the Dockside Reporter application to the design of type nine and type three data collection to accommodate integration of speech recognition into the application. The result of the project thus far has been positive and has been demonstrated that this functionality can be added into the DIA. This project "Voice Recognition to Text" represents an inexpensive approach to using an electronic fish board. The original android prototype dockside reporting application originally had the capability to connect with an electronic fish board, this utility was abandoned because of both cost and functionality issues.

However, the existing project has highlighted limitations in the native Google and Windows cloud-based speech recognition technologies in addition to the requirement of a reliable network connection. These technologies suffer from latencies sending data back and forth across the internet, and the tools available to optimize recognition results are still immature and not adequate for handling the specialized vocabularies found in a fisheries data collection application. While the existing effort has been valuable for prototyping application design, it is inadequate for deployment in real-world data collection environments outside the range of WIFI or cellular data connections.

This new proposal builds upon the results of the 2019 project. The Windows prototype from the 2019 project was based on the Android implementation and was ported with just enough functionality to test the speech recognition. This application will be fully completed to be feature equivalent with the Android release and will have Nuance Dragon speech recognition software integrated into the application. The Dragon software is only available on Windows but implements speech recognition directly on the PC running the application and does not need an internet connection. Additionally, the Dragon software contains utilities to improve speech recognition accuracy and performance, such as training for speaker-dependent recognition and the creation of custom vocabularies to handle tasks such as recognizing the hundreds of potential species names might be spoken into the application.

**Type 3 data described by APAIS protocols is lengths and weights of available individual catch (whole fish)*
***Type 9 data described by APAIS protocols is the observed and unobserved lengths of discarded whole fish caught on head boats*

Need:

Using technology that uses speech recognition for direct data input while handling fish sampled on a head boat holds the potential to greatly increase the efficiency and accuracy of the fishery technician in the field. A hands-free data recording utility would allow the fishery technician to measure fish faster than current keyboard entry systems or requiring the user to tap a screen to select items from lists. This increase in efficiency would allow for more interviews to be completed on head boat trips which in turn would result in more type 9 biological samples of recreational discards. This increased efficiency would allow the fishery technician to focus on the task of identifying and measuring the fish and thus increase both the accuracy and precision of the length data being collected. Furthermore, beyond this specific project, the increased use of speech recognition technology would have value in other data collection applications and could be applied to many fishery dependent and independent sampling programs.

The existing speech recognition technology requires a connection to a cellular signal which is not always available while sampling at sea onboard headboats. Therefore, alternate technology is required which can perform recognition using only the hardware in the mobile device such as a tablet.

Prototyping existing network-based speech recognition technologies has indicated that recognition accuracy is not robust enough to deploy with actual users in real world fishing environments. The Dragon software contains utilities that can greatly increase the efficiency of the hands-free process by eliminating the need to work through translation errors.

Approach:

The approach to this plan makes several (dependent) assumptions:

- The ACCSP continues to develop its Dockside Interceptor Application (DIA).
- The application programming interface (API) developed during that project is further modified, if necessary, to facilitate data collected from the project.
- All software enhancements to the ACCSP Dockside Validation tool developed under this proposal will be done in conjunction with the ACCSP, and the source code will belong to the ACCSP for future modifications, enhancements, or license by the ACCSP if desired. The software will be available for use by all partners.

Task 1: Test a voice recognition program to record data input from a Bluetooth microphone without a connection to the internet into the current Dockside Interceptor Application (DIA). The MS Windows Surface Go tablet will be the platform used to integrate Dragon Speech software into the DIA.

The project proposes to use existing ACCSP tablet-based reporting software (DIA) already in use for the MRIP APAIS. The DIA is currently used in collecting APAIS data from GA to ME. The design of the type 3 and type 9 interfaces took into consideration the addition of voice to text capability during the first phase of the project. The Android platform is currently being ported to the MS Windows platform with additional voice to text testing using Windows Speech Services technology used in the Windows 10 "Cortana" voice to text feature.

The existing prototype software design within the DIA that can process voice to text data inputted via a Bluetooth microphone will be enhanced to use the Dragon technology on Windows instead of the Google or Cortana prototyped implementations. Custom vocabularies will be created for use by fisheries technicians in the field on actual head boat trips.

The enhanced application and "voice to text" functionality will be tested on board the RIDMF R/V John H Chafee during the initial phases. Observers will ride along with the trawl survey to test the functionality of the microphone and recognition accuracy, while recording lengths and weight of fish using both pencil and paper forms for comparison. Two staff will be required to test the application, one will measure the fish and call out the lengths into the Bluetooth microphone while the other will document the lengths of the same fish on a traditional paper form. This approach will eliminate individual sampling bias generated from measuring fish as an error source during testing to allow for better evaluation of the voice to text technology. When satisfied the application is working as intended, it will be tested on board head boats using the same two sampler method as on the R/V Chafee. These trips will not coincide with trips already being sampled for APAIS. If possible, trips onboard head boats from the two major companies in Rhode Island will be used to test the utility of the application and account for different conditions from vessel to vessel, particularly noise levels. Sampling at sea will take place on four half day head boat trips. This sample size should be adequate to determine if the application is functioning as intended.

Results and Benefits:

The first phase of this project identified two major problems with using an open source platform for voice to text translation. Both Google translator and MS Windows Cortana require constant connectivity to the internet to be functional. Additionally, there is inherent lag time between action and reaction due to functioning over the internet. The lack of vocabulary customization has also revealed problems using the two open source platforms. Dragon speech software is currently only offered for MS Windows platforms. Dragon Speech is considered one of the premier products on the market for voice translation. The functionality of Dragon speech solves both issues identified by phase one of the project. It is questionable whether the voice to text type 3 and type 9 data collection would be functional in the field without the work proposed for phase 2.

The original proposal FY18 required constant connectivity to the internet. Each partner would incur a monthly cost for each android tablet, furthermore, some head boat assignments would need Satellite

service to connect offshore. These costs are eliminated by moving to the windows platform which would not need internet connectivity. All the software coding is easily transportable if in the future, Dragon Speech developed standalone product for android.

As of July 2019, funds were available in the original FY18 project to purchase the Dragon Speech software package. We have purchased "Dragon Profession Group 15 (Federal Gov. Package) maintenance and support Package and in doing so have reduced this proposal amount by $2,169.72.

Although using MS Windows tablets represents a change in the current methodology for using the DIA via Android, it is a much more robust operating system capable of housing a wider range of software such as Dragon speech and would be considered an upgrade to Android. Currently DIA is deployed for MRIP APAIS on Android tablets. The life expectancy of these tablets is likely 3 – 4 years. At that point the Android devices could be replaced with MS Windows tablets with the voice to text capability proposed by this project. Using MS Windows as a platform would not necessarily replace the Android devices as all data is coming into ACCSP via an already developed API capable of accepting data from both sources. Thus, two platforms could be deployed in the field - one for general assignments and one for head boat ride alongs if the cost of the MS Windows tablets are cost prohibitive for coastwide deployment.

Geographic Location:

The location and scope of this project would cover all of Rhode Island and adjacent state waters fished by Rhode Island Head boat Captains. The work would be based out of the RIDFW Marine Section located in Jamestown, RI.

Table 1. Milestone Schedule (start date dependent upon time of grant award)

	Month											
Task	1	2	3	4	5	6	7	8	9	10	11	12
Development and troubleshooting of software for tablet application	X	X	X	X	X	X	X	X	X	X	X	
Field tests at sea R/V Chafee							X	X				
Field Tests on at sea Head boats									X	X	X	
Report Writing												X

Project Goals and Metrics

1. The DIA functions on Windows tablets using Dragon Speech.
2. Bluetooth microphone linked to MS Windows tablet DIA and voice-to-text data entry is functioning as intended. When activated, speech recognition collected data will go into the appropriate fields.
3. Audible feedback mechanisms will be evaluation validating whether data has been recorded correctly. The audible feedback will help the fisheries technician determine whether the data has been successfully captured for each field utilizing voice to text.
4. Sea trials comparing the DIA voice to text against current methodologies are conducted and error rates are compared.
5. Usability and application design feedback will be collected during trials to iteratively improve the speed and accuracy of data entry using speech.

Table 2. Cost Summary. Please Note: All related hardware was purchased during phase one of this project.

Item	ACCSP Share	Partner- in-kind	Total
PERSONNEL COSTS			
RIDEM Personnel John Lake (10% of FTE staff time)		$6,000	$6,000
CONTRACT			
Contractor Software Development and Support 353 hours @ $170/hour	$60,010		$60,010
SUPPLIES			
Head Boat Fare 8 trips @ $50 each	$400		$400
Mileage 30 miles @ $0.545 / mile (8@$16.35)	$130.80		$130.80
Dragon Professional Group 15.0 (Federal Gov Package) Software, Annual Subscription, Maintenance and Support Package (4 Licenses)	$0		$0
TOTAL	**$60,540.80**	**$6,000**	**$66,540.80**
Percentage	**91%**	**9%**	**100%**

Software D Software Development

Harbor Light Software, the developers of the Dockside Interceptor application will perform the integration of the Dragon speech technology into the application. Harbor Light Software is the vendor on the existing DIA speech product has developed the existing prototype integration of the Google and Windows speech capabilities.

Harbor Light Software will:

- Add support for the Dragon technology
- Work to incorporate usability feedback from field trials to improve the usability of the speech function
- Make any required modifications to the existing Dockside application to handle any new data reporting requirements necessitated by changes to the APAIS server API
- QA/QC the application before releases
- Manage the deployment of the application to users as required, in conjunction with distribution processes currently employed by the ACCSP
- Provide second-tier technical support for issues found with the application, including correcting errors found in the implementation of the required features

Summary of Proposal for Ranking Purposes

Proposal Type: NEW

Primary Program Priority:

Catch and Effort: 50% – This project will continue the ongoing work towards the implementation and validation of an ACCSP approved APAIS Program to collect recreational catch data (type 3 and type 9) from Party / Charter and Head boat vessels.

Data Delivery Plan:

- All data collected from the ACCSP Dockside Validation tool and all software developed will utilize https protocol for secure data transmission.
- All data transmitted to the ACCSP databases will be sent in accordance with the ACCSP's current published API's supporting this electronic validation solution.

Project Quality Factors:

Multi-Partner/Regional impacts

This project is building off previously funded multi-partner/Regional project the APAIS tablet DIA which is doing NOAA MRIP survey. The Regional impact are from States from Georgia to Maine. This proposal would further the utilities of APAIS DIA tablet in collecting recreational biological and harvest data coastwide of TWELVE Partners.

Greater than year 2 contains funding transition plan and/or justification for continuance

This last year is a two-year project.

In-kind contribution:

RIDFW will provide 9% in kind funding derived from 10% of an FTE Biologist's time to implement, evaluate, and report the results of the project ($6,000).

Improvement in data quality/quantity/timeliness

This project will increase data quality/quantity and timeliness by:

- Providing a hands-free data recording system for at sea and dockside measurement of fish which will allow fishery technicians to focus more on the sampling by removing tablet input. The data will be instantly transcribed on the tablet
- The hands-free utility will allow fisheries technician to measure more type 3 and type 9 catches because they will not be spending as much time recording data allowing faster movement between sampling events which will increase quantity of data.

Potential secondary modules as a by-product:

- Biological:25% This application is designed to enhance the collection of type 3 catch.
- Bycatch/Release: 25% This application is designed to enhance the collection of type 9 catch with has been identified as a priority of the ACCSP Recreational Technical Committee.

Impact on stock assessment:

- The increase in Recreational Bycatch data and Biological data from 12 partners from (GA – ME) will greatly improve stock assessments.

Other Factors:

If successful, the technology utilized in this project could be expanded to enhance commercial port sampling and observer program functionality by providing a paperless hands-free electronic method to collect specimen lengths and eliminate the need for transcription / key entry of the data into a database.

Innovative:

Bluetooth headsets, and voice recognition is a new concept for dockside and at sea collection of fishery dependent data. If successful it could have far reaching impacts and cost saving for both fisheries dependent and independent sampling techniques. The innovation is the ability of having no cellular connection for voice to text translations for Headboat assignments.

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Education

B.S., Physics, 1978
UMASS - Dartmouth, North Dartmouth, MA

Work History

Rhode Island APAIS Lead Biologist – ASMFC (Oct 2015 – Present)
DEM –RIDFW Coastal Fishing Laboratory, Wakefield RI

- Acts as contact person for constituent questions regarding survey protocol
- Maintains and coordinates APAIS field sampler assignments (dockside & at sea)
- Performs daily/weekly field staff oversight and monitors weekly assignments
- Leads staff training on procedures and fish identification
- Performs phone validations for 10% of all intercepts completed (by sampler)
- Maintains state site registry information
- In consultation with MRIP, recommends base & add-on site allocation requests to ACCSP for site assignment draws
- Submits weekly data and assignment tracking to ACCSP for entry and processing
- Participates in data collection and data QA/QC
- Provides for-hire vessel directory changes as identified by field staff
- Conduct field interview assignments as needed, following APAIS survey procedures;
- Participates in ACCSP and MRIP APAIS meetings

Bucko's Tackle, Fall River, Ma
Manager/owner, 1978 - 2016
I have worked all aspects of the job from billing to retail sales and handling employees at Bucko's Tackle.

Experience

ACCSP, Arlington, VA
Advisor, 2004 - 2015
Represented Rhode Island recreational fishing in recreational data collection also attended MRFSS Constituents Wave Review from 2005 to 2009.

2009 - 2011
ACCSP ADVISOR COMMITTEE, CHAIRMAN, Arlington VA
As chairman of the ACCSP Advisor Committee, I have attended all the Operation Committee meeting and the Annual Coordination Council meeting presenting Advisory Committee rankings.

ACCSP, Arlington, VA
ACCSP Advisor on Recreational-Technical Committee, 2006 - 2015
My involvement on this committee is to represent first the ACCSP Advisory Committee as well as Rhode Island recreational fishermen.

Brookhaven National Laboratory, Brookhaven NY
Lab Technician, 1976 - 1978
I worked at the high energy lab on a work study program from Umass Dartmouth. My job was to provide support in building high energy detectors and wiring them into a CRAY computer.

General Manager, 1977 – 1978
Umass radio Station WUMD, North Dartmouth MA
My job was managing all aspect of the radio station. As manager I worked with a 7-member executive board. We managed 50 students operating the station.
• We helped develop a long-term strategic plan to increase the radio station power to ensure continued and future operations radio stations with the FCC.
•We worked with the executive board in adding by-laws to improve continued operation of the radio station and to have it remain as a student operated station.

Accomplishments

• My current career accomplishment at the ACCSP was developing the "Guidelines for ACCSP Advisors". Evolved in the basic format which was used as an outline. I wrote many of the key roles and sections of this guideline manual.

•Served on the Recreational Technical Committee from May 2011-2012, during which time we were involved redesigning the Recreational Data Standard for the ACCSP to be put in the 3rd Edition of ACCSP Program Design.

• The Recreational Technical Committee has been working on the State conduct of APAIS on the Recreational Technical committee from 2014 to 2015.

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201
703.842.0780 | 703.842.0779 (fax) | www.accsp.org

June 10, 2019

To the members of the Operations and Advisory Committees:

The FY2020 Administrative Budget contains two changes. Primarily, the budget includes additional funding for personnel in the form of partial funding for the Recreational Program Manager (15%), full funding of the ACCSP IT Manager and Software Developer (from 50% in FY19), and inclusion of an additional Data Coordinator position required due to the increasing volume of data being managed by the program. Supplemental justification for these personnel changes is attached as an appendix to this cover letter.

Additionally, the ASMFC has increased its overhead rate from 15% to 16.13%.

Attachment I of the FY2019 Administrative Budget request, the 2019 ASMFC Strategic Plan (Goal 3), provides an overview of the high level tasks and milestones expected for the coming year.

Sincerely,

Geoff White and Julie Defilippi Simpson,

Co-Acting Directors, ACCSP

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201
703.842.0780 | 703.842.0779 (fax) | www.accsp.org

Appendix I: Justification for personnel changes

Partial Funding of Recreational Program Manager

The Recreational Program Manager manages the MRIP survey implementation and guides recreational and for-hire data standards. In this role, a portion of those responsibilities pertain to activities that are outside of the scope of the funding authority for the MRIP state conduct. These activities include, but are not limited to, recreational standards, proceedings of the Recreational Technical Committee and other ACCSP committees, and involvement in the SEFHIER project. As such, a 15% portion of the financial responsibility for this position is being assumed by this grant.

Full Funding of ACCSP IT Manager and Software Developer

With the Commission's hiring of a Facilities and Technology Administrator, the duties of this position have changed to take on more software development. As a result of the shift in this role, the ACCSP, in the form of this grant, is again taking on full financial responsibility for this position. ACCSP funded this position at 50% last year.

Additional Data Coordinator

The continued success of the ACCSP in recent years has resulted in an increase in the volume of annual data, with biannual loads processing over 3,000,000 rows of data from roughly 35 sources. The demand for custom data requests rises as ACCSP gradually becomes a primary source for data intensive activities such as management actions and stock assessments along the coast. The growth of the program and expansion into additional modules intensifies the work of the technical committees, with the Data Team responsible for staffing the Standard Codes Committee, Commercial Technical Committee, Biological Review Panel, and Bycatch Prioritization Committee.

The development of the program and demand for data have outgrown the current load and dissemination processes and levels of QA/QC that were first established a decade ago. The Data Team must consistently coordinate with partners to ensure that the ever changing landscape of data on the coast come together in a precise and judicious manner. Current levels of staffing are strained under the continuing increase in the volume of data and the expansion into the full implementation of the biological module.

An additional staff member on the Data Team will allow for the continued maintenance and improvement of our load, dissemination, and QA/QC processes resulting in more dependable and timely data.

Funding Proposal
FY20 ACCSP Administrative Budget

Applicant Name:	Atlantic States Marine Fisheries Commission
Project Title:	Administrative Support to the Atlantic Coastal Cooperative Statistics Program
Principal Investigator:	TBD, Director, ACCSP
Requested Award Amount:	$2,012,744
Request Type:	Maintenance/Administrative
Requested Award Period:	March 1, 2020 through February 28, 2021

A. Goals

The Atlantic Coastal Cooperative Statistics Program (ACCSP) is a state-federal cooperative partnership between 23 entities responsible for fisheries management, and fisheries data collection on the Atlantic Coast: the 15 Atlantic coast states and the District of Columbia, two federal fisheries agencies (Commerce's NOAA Fisheries and Interior's U.S. Fish and Wildlife Service), three regional fisheries management councils (New England, Mid-Atlantic, and South Atlantic), the Potomac River Fisheries Commission, and the Atlantic States Marine Fisheries Commission (ASMFC). Partner agencies are listed in the original ACCSP Memorandum of Understanding.

The Program was established in 1995 to design, implement, and conduct marine fisheries statistics data collection programs and to integrate those data into a single data management system that will meet the needs of fishery managers, scientists, and the general public.

By establishing and maintaining data collection standards and providing a data management system that incorporates state and federal data, ACCSP will ensure that the best available statistics can be used for fisheries management.

B. Objectives

1. Manage and expand a fully integrated data set that represents the best available fisheries data;
2. Continue working with the program partners to improve fisheries data collection and management in accordance with the evolving ACCSP standards within the confines of limited funds;

3. Explore the allocation of existing Program funds and work with partners to pursue additional funding;
4. Maintain strong executive leadership and collaborative involvement among partners at all committee levels;
5. Monitor and improve the usefulness of products and services provided by the ACCSP;
6. Collaborate with program partners in their funding processes by providing outreach materials and other support to demonstrate the value of ACCSP products and the importance of maintaining base support for fishery-dependent data collection programs to state partners and their executive and legislative branches as well as to all other partner agencies; and,
7. Support nationwide systems as defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

C. Need

Various state and federal fishery management agencies on the Atlantic coast collect data on the status and trends of specific fish populations and the fisheries that utilize these resources; however, it is often difficult to develop sound recommendations to fisheries managers due to inconsistencies in the way data are collected and managed. The various data sets often cannot be integrated to provide accurate information at the state, regional, or coast-wide level. In addition, the disparate manner in which these data are collected and managed places duplicative burdens on fishermen and dealers reporting to multiple state and federal agencies and regions. Due to rapidly changing stock conditions, within-season regulatory changes and catch quotas have become common fishery management strategies. Timely and accurate harvest information for both recreational and commercial fisheries is required to determine the need for and effects of these management measures.

The Atlantic Coastal Fisheries Cooperative Management Act of 1993 mandated a cooperative state-federal program for the conservation of Atlantic coastal fisheries. Section 804 of the Act requires the Secretaries of Commerce and the Interior to develop a program to support state fisheries programs and those of the ASMFC, including improvements in statistics programs. Since the mid-1990s, the ASMFC has provided administrative support for this coordinated effort to improve data collection and management activities.

In 1995 the states, the ASMFC, and the federal fishery management agencies on the Atlantic coast entered into a Memorandum of Understanding (MOU) to develop and implement a cooperative state-federal statistics program that would meet the management needs of all participating agencies. All program partners signed the MOU for the ACCSP at the Commission's 54th Annual Meeting in Charleston, SC. Following signing, an Operations Plan was developed to outline the specific tasks and timetables required to develop and initiate implementation of this program. Annual Operations Plans are developed by the ACCSP to provide guidance on further development and implementation of the Program.

D. Results and Benefits

The ACCSP developed and adopted 1999, 2004 and 2012 versions of the Program Design (now renamed Atlantic Coast Fisheries Data Collection Standards), which document the standards and protocols for collection and management of commercial, recreational, and for-hire fisheries statistics. Program partners developed and approved minimum data elements for collection of catch, effort, biological, social, and economic statistics. The ACCSP also developed standard codes and formats to ensure consistency of all data collected under the Program. These standards require periodic review and revision as the needs of fisheries managers and the state of the art of fisheries science change.

In 2000, the first version of the Data Warehouse was made available to the program partners. Since then, it has grown to encompass a 50 plus year time series of fisheries-dependent catch and effort data. Loading of biological data has begun. These data are constantly reviewed and updated as needed.

In 2004, the first version of the Standard Atlantic Fisheries Information System (SAFIS) was deployed. This system is used to collect Program-compliant data from commercial and recreational fishermen and dealers and is now deployed from Maine to Georgia. SAFIS is an ongoing and evolving system, requiring support, review and revision.

The ACCSP will continue to reduce duplication of effort by dealers and fishermen, make more efficient use of limited funds, promote education of resource users, and provide a more complete information base for formulating management policies, strategies, and tactics for shared resources. An integrated multi-agency program using standard protocols for reporting compatible information will lead to more efficient and cost-effective use of current federally and state funded data collection and management programs. The ACCSP will reduce the burden on the fishing industry to provide information in multiple formats to multiple agencies, and will provide more accurate and timely information to achieve optimum public benefits from the use of fishery resources along the Atlantic coast. The ACCSP will ensure the timely dissemination of accurate data on commercial and recreational fisheries for use in stock assessments and fisheries management through a comprehensive and easily accessible data management system.

E. Approach

The ACCSP is managed collaboratively by committee: the Coordinating Council, composed of high level fisheries policy makers from all the program partners, is the governing body; the Operations Committee provides guidance in standards setting and funding priorities. An Advisory Committee provides industry input into the process. A number of other technical committees provide input into various aspects of the process.

Program planning builds on basic principles related to the goals stated in the ACCSP MOU:

- Development of data collection standards and the implementation of data collection programs will be done cooperatively, across jurisdictional lines;
- Consistent coast-wide data collection standards will be implemented by all program partners that include data on all fishing activities -- commercial, recreational and for-hire fisheries;
- Once achieved, data collection improvements will be maintained;
- These data will be loaded and maintained in a central data repository and provided to data users through a user-friendly query system;
- Program planning will be done collaboratively, by consensus;
- The program will be responsive and accountable to partner and end-user needs; and
- Focus on activities that yield maximum benefit.

The Goal 3 of the ASMFC Strategic Plan (Attachment I) details activities to be conducted by ACCSP staff and committees under the FY20 Administrative Budget. Note that activities in support of the Marine Recreational Information Program are separately funded and therefore not included in this plan.

The ACCSP initially developed common standards collaboratively, by consensus, then began to work with program partners to implement the standards, according to a commonly agreed upon priority. All ACCSP technical committees, except for the Advisory Committee which is composed of industry and recreational representatives, are composed of managers and staff of the partner agencies and set policy by consensus. Only the Coordinating Council votes directly on motions.

The standards, known as the Atlantic Coast Fisheries Data Collection Standards, for data collection and management are developed and maintained by ACCSP Technical Committees, with review and oversight by the Operations Committee, and advice from the Advisory Committee. The ACCSP Coordinating Council makes policy level decisions to adopt the program standards. The full-time ACCSP staff coordinates all activities conducted by the ACCSP.

The Atlantic Coast Fisheries Data Collection Standards documents all completed standards and provides the basic framework for full implementation of the ACCSP by all program partners. Administrative support of ACCSP activities is provided by the ASMFC and funded through overhead charges. The ACCSP is continuously evolving as technology and the needs of management and science change over time. Therefore the *Standards* and supporting systems are still in development. Support for the implementation of ACCSP modules is provided by staff in various jurisdictions. To this end, funding is required to provide for full-time staff for all ACCSP activities, as well as for travel and meeting expenses.

The ACCSP Director, reporting to the Executive Director of the ASMFC, provides leadership for the Program, overall programmatic management and guidance, and is responsible for the day-to-day operations. The ACCSP Program Coordinator provides assistance to the Director, coordinates Program activities and provides staff support for program and technical committees

by drafting, maintaining and coordinating program documents, and publicizes the availability and benefits of the Program. The Software Team Leader coordinates the development and management of ACCSP data management systems. The ACCSP IT Manager manages the information systems infrastructure. The Data Team Leader provides guidance for all data related activities. The Recreational Program Manager manages MRIP survey implementation and guides recreational and for-hire data standards. The Information Systems Specialist, Data Coordinators and Fisheries Programmer provide programming services and system support required to develop and fine-tune the data management systems, assist users as they access the system and provide quality management and control. The Data Coordinators also complete custom data requests, QAQC existing data, maintain data feeds, and directly participate in data intensive activities such as a stock assessment data workshops. The Information System staff provides expert consultations to partners as they implement new reporting and licensing/permitting systems. They also will continue to support development of SAFIS.

ACCSP staff will follow the Goal 3 of the ASMFC 2019 Strategic Plan during FY20, in consultation with all partners. Specific tasks to be accomplished during the period include initiation and maintenance of Partner data feeds from the commercial, recreational, and biological modules; conduct major redesign of SAFIS; complete Federal Information Security Management Act security audit and adjust security protocols as needed; and support of other partner projects (such as the SE SEFHEIR project) by providing technical expertise as necessary.

The ASMFC has basic responsibility for the logistics of all committee meetings which support the development of the ACCSP, including: the ACCSP Coordinating Council, the ACCSP Operations Committee, the Advisory Committee, the Outreach Committees (one which is jointly administered with ASMFC), the Recreational Technical Committee, Commercial Technical Committee, Information Systems Committee, Biological Review Panel, Bycatch Prioritization Committee, Standard Codes Committee, ASMFC Assessment Science Committee (used by ACCSP), and ASMFC Committee on Economic and Social Science (used by ACCSP). Full-time ACCSP personnel staff these committees for planning of work, providing minutes and other documents, and other follow-up.

The ACCSP has helped foster an improved atmosphere of cooperation among its partners. The Program has succeeded in establishing coast-wide fisheries data standards that all program partners have agreed to adopt. Data collection and management systems will be developed and deployed as the standards and Partner needs evolve. Program partners remain engaged in the process, and the program has made substantial progress towards its goals.

1. Geographic Location: Atlantic Coast (Maine through Florida); systems are being developed for coordination with Gulf of Mexico

2. Milestone Schedule: See Goal 3 of the ASMFC 2019 Strategic Plan (Attachment 1)

This is a continuation from previous projects. Table 1 contains the base administrative budget amounts by year since implementation began in 1999.

Table 1. Administrative funding for ACCSP from 1999-2019

Year	Funding	Number of Staff
1999	$907,902	3
2000	$681,451	3
2001	$1,054,466	5
2002	$1,178,677	6
2003	$1,302,768	7
2004	$1,298,319	8
2005	$1,409,545	8
2006	$1,380,598	8
2007	$1,489,189	8
2008	$1,447,620	9
2009	$1,527,996	9
2010	$1,509,899	9
2011	$1,530,699	9
2012	$1,509,555	9
2013	$1,582,780	9
2014	$1,718,447	9.5
2015	$1,731,666	9.5
2016	$1,623,360	9.5
2017	$1,855,113	9.5
2018	$1,854,249	9.5
2019	$1,816,503	9.5

3. Cost Summary: The ACCSP requests $1,748,699 for administrative support, committee travel and systems operations during FY20. The addition of the 16.13% overhead rate raises the request to $2,012,744.

The funds used for the ACCSP shall be accounted for separately from all other ASMFC funds.

4. Personnel

Program personnel funded through this grant, except the Recreational Program Manager, are dedicated 100% to the ACCSP and are full-time employees of the Atlantic States Marine Fisheries Commission. Note that personnel associated with the MRIP state conduct and 85% of the Recreational Program Manager are funded under separate authority and not accounted for in this document. Fringe benefits which include health care, vision, dental, annual and sick leave are calculated at 27%. ASMFC salaries are kept confidential, thus only totals are displayed. In addition an agreement has been put in place with NMFS Highly Migratory Species (HMS) to partially fund the Information Systems Specialist who is responsible for maintaining HMS data

feeds. Note that the vacant Data Coordinator is a new position required due to the increasing volume of data being managed by the Program.

- ACCSP Director - vacant (to be filled in 2019)
- Program Coordinator – vacant (to be filled in 2019)
- ACCSP IT Manager and Software Developer (100% previously 50%) – Edward Martino
- Recreational Program Manager (15%) – Geoff White
- Software Team Leader - Karen Holmes
- Senior Fisheries Programmer – Nicolas Mwai
- Data Team Leader – Julie Defilippi Simpson
- Information Systems Specialist - Jennifer Ni
- Senior Data Coordinator – Joseph Myers
- Senior Data Coordinator – Heather Konell
- Data Coordinator – Michael Rinaldi
- Data Coordinator (new) – vacant (to be filled in 2019)

Salaries and Wages	
Total Salary	$ 1,067,095
Benefits @27%	$ 288,116
Total Costs	$ 1,355,211

5. Travel

Travel is broken down into two general categories; committee meetings and staff travel. The bulk of travel is in support of committee meetings. While significant savings have been achieved by using remote meeting technologies (such as online meetings), face-to-face meetings are often required to complete the tasks assigned. In general, each committee will have at least one face-to-face meeting during the year. In addition to staff travel to support committee meetings, staff travel is needed for implementation planning, data collection activities, outreach efforts, and information system development meetings with partners.

The Program funds fares to and from the meeting site, per diem according to Office of Personnel and Management guidelines and facilities costs for the meeting itself. (The daily rate per meeting includes cost of airfare or mileage, lodging, meals and other travel related expenses.) Reimbursable participants include state fisheries directors and biologists, state and university scientists, law enforcement personnel and citizen advisors from Maine through Florida. Meetings will be held in various locations on the Eastern Seaboard, including but not limited to: Annapolis, MD; Norfolk, VA; Charleston, SC; Philadelphia, PA; Alexandria, VA; Providence, RI; Jacksonville, FL; Washington, D.C.

The travel budget is based on an estimated $260 per day multiplied by meetings multiplied by days multiplied by membership plus staff.

Committee Travel	Meetings	Days	Membership	Total	Staff	Total	Grand Total
Advisory Committee	1	1.5	11	$4,290	1	$390	$4,680
Biological Review panel	1	1	12	$3,120	1	$260	$3,380
Bycatch Prioritization	1	1	14	$3,640	1	$260	$3,900
Commercial Technical Committee	1	1	14	$3,640	1	$260	$3,900
Coordinating Council (with ASMFC)	4	0.5	12	$6,240	2	$1,040	$7,280
Operations Committee	2	2	12	$12,480	2	$2,080	$14,560
Outreach	1	1	10	$2,600	1	$260	$2,860
Recreational Technical	1	2	14	$7,280	1	$520	$7,800
Information Systems Committee	1	1	13	$3,380	1	$260	$3,640
Total Committees				$46,670		$5,330	$52,000
Staff Travel							
Partner Coordination	4	2	2	$4,160			
Data Support (Stock Assessment etc)	3	2	2	$3,120			
IT Support	3	1	1	$780			
Outreach	4	2	1	$2,080			
GulfFIN Coordination	2	1.5	1	$780			
NJ Staff Travel				$4,000			
SAFIS Support	10	1	4	$10,400			
Total Staff Travel				$25,320			
Grand Total							**$77,320**

Attachment II provides the FY19 schedule of the funding cycle and calendar of meetings, which serves as a tentative schedule for FY20.

6. Supplies

Supply costs include supplies not covered by the ASMFC overhead. This includes ACCSP specific materials for outreach, smaller information systems items such as network switches and cables.

Supplies	
Misc Hardware (cables, network hubs etc)	$4,651
Backup Tapes	$1,000
Total	$5,651

7. Equipment

ACCSP maintains several large server systems and related hardware in support of the Data Warehouse, website, SAFIS and administrative functions. These systems typically have a 5 year life cycle after which they require upgrade or replacement. In cases of the larger items, lease options have been explored, but it appears that, in part due to current staffing, it is more cost effective to own and maintain the equipment internally.

Included are the costs are normal life cycle replacements of laptop and desktop systems, assuming replacement of 3 systems annually. Costs are based upon current market surveys and an estimate of our needs. We assume the replacement of one major infrastructure component (server, router, firewall, etc.) yearly.

Equipment	
Infrastructure Replacements (servers, UPS systems, etc.)	$18,000
Desktop/Laptop Systems	$4,500
Total	**$22,500**

8. Other Costs

Hardware and software support are supplied by a number of different vendors and includes costs associated with licensing and maintenance fees (such as *Oracle* licensing).

The Program maintains three high speed internet connections and associated infrastructure in support of the server systems. The first is the primary internet connection used by all incoming and outgoing public traffic. The second is a dedicated line to the NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO). This second line provides full time secure connectivity requested by the Region. The third connection, using an entirely different technology and provider provides redundancy to the primary connection in case of failure. The system is configured to automatically fail over in the event of a failure of the primary internet connection.

Outside vendors include Hewlett Packard for systems hardware and software support; Oracle for database management systems support; DLT Solutions and Trident Solutions for hardware support. All pricing is based on the GSA schedule.

Communications supports high-speed internet connectivity for ACCSP and related systems and a direct secure connection to the GARFO Data Center in Gloucester, MA. Costs are based upon negotiated contracts with Cogent Communications, Level 3 Communications and Verizon.

Software maintenance and development workload at times exceeds staff's resources. Contract services will be utilized to provide services that staff may be unable to perform.

E-Reporting Support

Funds are requested for electronic reporting outreach and support activities. Interest among state Partners and harvesters has been steadily rising and a steady stream of new users are adopting the system where agencies will accept electronic reports though SAFIS. In addition, recent and pending management actions mandate electronic reporting. SAFIS eTrips in both the mobile and on-line versions are likely to be used by the majority of harvesters as the reporting tool. In addition, the majority of trips will be reported to the SAFIS system regardless of the tool selected.

Funds requested include both costs associated with the initial deployment and ongoing support. Initial startup costs include but are not limited to in-person training workshops for harvesters and Partner Agency personnel and published training guides and videos that will be available via the ACCSP website. ACCSP continue to contract for help desk support for SAFIS which would include 24/7 helpdesk support, a toll free number to contact support personnel and a helpdesk ticketing program designed to keep track of all requests and provide feedback to the Program.

Other Expenses	**2020**
Software Support	$60,000
Hardware Support	$7,500
Communications/ Internet Connectivity	$27,500
Printing (outreach)	$2,500
Contract Services	$175,000
Total	**$272,500**

Budget Summary

Budget Summary	2020
Personnel	$1,067,095
Fringe Benefits	$288,116
Travel	$77,320
Equipment	$22,500
Supplies	$5,651
Other	$272,500
Total Program	$1,733,182
ASMFC Overhead	$279,562
Sub Total	$2,012,744

ATLANTIC STATES MARINE FISHERIES COMMISSION

Five-Year Strategic Plan 2019-2023

The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value.

Theodore Roosevelt

Introduction

Each state has a fundamental responsibility to safeguard the public trust with respect to its natural resources. Fishery managers are faced with many challenges in carrying out that responsibility. Living marine resources inhabit ecosystems that cross state and federal jurisdictions. Thus, no state, by itself, can effectively protect the interests of its citizens. Each state must work with its sister states and the federal government to conserve and manage natural resources.

Beginning in the late 1930s, the 15 Atlantic coastal states from Maine to Florida took steps to develop cooperative mechanisms to define and achieve their mutual interests in coastal fisheries. The most notable of these was their commitment to form the Atlantic States Marine Fisheries Commission (Commission) in 1942, and to work together through the Commission to promote the conservation and management of shared marine fishery resources. Over the years, the Commission has remained an effective forum for fishery managers to pursue concerted management actions. Through the Commission, states cooperate in a broad range of programs including interstate fisheries management, fisheries science, habitat conservation, and law enforcement.

Congress has long recognized the critical role of the states and the need to support their mutual efforts. Most notably, it enacted the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act) in 1993, which built on the success of the Atlantic Striped Bass Conservation Act of 1984. Acknowledging that no single governmental entity has exclusive management authority for Atlantic coastal fishery resources, the Atlantic Coastal Act recognizes the states' responsibility for cooperative fisheries management through the Commission. The Atlantic Coastal Act charges all Atlantic states with implementing coastal fishery management plans that will safeguard the future of Atlantic coastal fisheries in the interest of both fishermen and the nation.

Accepting these challenges and maintaining their mutual commitment to success, the Atlantic coastal states have adopted this five-year Strategic Plan. The states recognize circumstances today make the work of the Commission more important than ever before. The Strategic Plan articulates the mission, vision, goals, and objectives needed to accomplish the Commission's mission. It serves as the basis for annual action planning, whereby Commissioners identify the highest priority issues and activities to be addressed in the upcoming year. With 27 species currently managed by the Commission, finite staff time, Commissioner time and funding, as well as a myriad of other factors impacting marine resources (e.g., changing ocean conditions, protected species interactions, offshore energy, and aquaculture), Commissioners recognize the absolute need to prioritize activities, dedicating staff time and resources where they are needed most and addressing less pressing issues as resources allow. Efforts will be made to streamline management by using multi-year specifications where possible and increase stability/predictability in fisheries management through less frequent regulatory changes. A

key to prioritizing issues and maximizing efficiencies will be working closely with the three East Coast Regional Management Councils and NOAA Fisheries.

Mission

The Commission's mission, as stated in its 1942 Compact, is:

> *To promote the better utilization of the fisheries, marine, shell and anadromous, of the Atlantic seaboard by the development of a joint program for the promotion and protection of such fisheries, and by the prevention of physical waste of the fisheries from any cause.*

The mission grounds the Commission in history. It reminds every one of the Commission's sense of purpose that has been in place for over 77 years. The constantly changing physical, political, social, and economic environments led the Commission to restate the mission in more modern terms:

> *To promote cooperative management of marine, shell and diadromous fisheries of the Atlantic coast of the United States by the protection and enhancement of such fisheries, and by the avoidance of physical waste of the fisheries from any cause.*

The mission and nature of the Commission as a mutual interstate body incorporate several guiding principles. They include:

- States are sovereign entities, each having its own laws and responsibilities for managing fishery resources within its jurisdiction
- States serve the broad public interest and represent the common good
- Multi-state resource management is complex and dependent upon cooperative efforts by all states involved
- The Commission provides a critical sounding board on issues requiring cross-jurisdictional action, coordinating cooperation, and collaboration among the states and federal government

Vision

The long-term vision of the Commission is:

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Values

The Commission and its member states have adopted the following values to guide its operations and activities. These values affirm the Commission's commitment to sustainable

fisheries management for the benefit of recreational and commercial fishermen and coastal communities. They also acknowledge the growing importance of managing fisheries in a more holistic and adaptive way, seeking solutions to cross cutting resource issues that lead to long-term ecological and socio-economic sustainability.

- Effective stewardship of marine resources through strong partnerships
- Decisions based on sound science
- Long-term ecological sustainability
- Transparency and accountability in all actions
- Timely response to new information through adaptive management
- Balancing resource conservation with the economic success of coastal communities
- Efficient use of time and fiscal resources
- Work cooperatively with honesty, integrity, and fairness

Driving Forces

The Commission and its actions are influenced by a multitude of factors. These factors are constantly evolving and will most likely change over the time period of this Strategic Plan. However, the most pressing factors affecting the Commission today are changing ocean conditions, resource allocation, the quality and quantity of scientific information, competing ocean uses, a growing demand to address ecosystem functions, and interactions between fisheries and protected species. The Strategic Plan, through its goals and broad objectives, will seek to address each of these issues over the next five years.

Changing Ocean Conditions

Changes in ocean temperature, currents, acidification, and sea level rise are affecting nearly every facet of fisheries resources and management at the state, interstate, and federal levels. Potential impacts to marine species include prey and habitat availability, water quality, susceptibility to disease, and spawning and reproductive potential. The distribution and productivity of fishery stocks are often changing at a rate faster than fisheries stock assessments and management can keep pace with. Several Commission species, such as northern shrimp, Southern New England lobster, Atlantic cobia, black sea bass, and summer flounder are already responding to changes in the ocean. In the case of northern shrimp and Southern New England lobster, warming ocean waters have created inhospitable environments for species reproduction and survivability. For cobia, black sea bass, and summer flounder, changing ocean conditions have contributed to shifts in species distributions, with some species expanding their ranges and others moving into deeper and/or more northern waters to stay within preferred temperature ranges. Where shifts are occurring, the Commission may need to reconsider state-by-state allocation schemes and make adjustments to our fishery management plans. For other species depleted due to factors other than fishing mortality (e.g., habitat degradation and availability, predation), the states will need to explore steps that can be taken to aid in species recovery. And, if a stock's viability is compromised, Commission resources and

efforts should be shifted to other species that can be recovered or maintained as a rebuilt stock.

Allocation

As noted above, resource allocation among the states and between various user groups will continue to be an important issue over the next five years. Many of the Commission FMPs divvy up the available harvestable resource through various types of allocation schemes, such as by state, region, season, or gear type. The changing distribution of many species has further complicated the issue of resource allocation with traditional allocation schemes being challenged and a finite amount of fishery resources to be shared. Discussion may be difficult and divisive, with some states (and their stakeholders) wanting to maintain their historic (traditional) allocations, while others are seeking a greater share of the resource given increased abundance and availability in their waters. States will need to seek innovative ways to reallocate species so that collectively all states feel their needs are met. What will be required to successfully navigate these discussions and decisions is the commitment of the states to work through the issues with honesty, integrity, and fairness, seeking outcomes that balance the needs of the states and their stakeholders with the ever changing realities of shifting resource abundance and availability.

Science as the Foundation

Accurate and timely scientific information form the basis of the Commission's fisheries management decision-making. Continued investments in the collection and management of fishery-dependent and -independent data remain a high priority for the Commission and its member states. The challenge will be to maintain and expand data collection efforts in the face of shrinking state and federal budgets. Past and current investments by state, regional and federal partners of the Atlantic Coastal Cooperative Statistics Program (ACCSP) have established the program as the principal source of marine fishery statistics for the Atlantic coast. State and regional fishery-independent data collection programs, in combination with fishery statistics, provide the scientific foundation for stock assessments. Many data collection programs will continue to be strained by budget restrictions, scientists' workload capacities, and competing priorities. The Commission remains committed to pursuing long-term support for research surveys and monitoring programs that are critical to informing management decisions and resource sustainability.

Ecosystem Functions

Nationally, there has been a growing demand for fisheries managers to address broader ecosystem functions such as predator-prey interactions and environmental factors during their fisheries management planning. Ecosystem science has improved in recent years, though the challenges of comprehensive data collection continue. A majority of the Commission's species are managed and assessed on a single species basis. When ecosystem information is available, the Commission has managed accordingly to provide ecosystem services. The Commission remains committed to seeking ecological sustainability over the long-term through continuing its work on multispecies assessment modeling and the development of ecosystem-based reference points in its fisheries management planning process.

Competing Ocean Uses

Marine spatial planning has become an increasingly popular method of balancing the growing demands on valuable ocean resources. More specifically, the competing interests of commercial and recreational fishing, renewable energy development, aquaculture, marine transportation, offshore oil exploration and drilling, military needs, and habitat restoration are all components that must be integrated into successful ocean use policies. The Commission has always emphasized cooperative management with our federal partners; however, the states' authorities in their marine jurisdictions must be preserved and respected. The Commission will continue to prioritize the successful operation of its fisheries, but it will be imperative to work closely with federal, state, and local governments on emerging ocean use conflicts as they diversify into the future.

Protected Species

Like coastal fishery resources, protected species, such as marine mammals, sea turtles, and listed and candidate fish species, traverse both state and federal waters. The protections afforded these species under the Marine Mammal Protection Act and Endangered Species Act can play a significant role in the management and prosecution of Atlantic coastal fisheries. The Commission and the states have a long history of supporting our federal partners to minimize interactions with and bycatch of marine mammals and sea turtles. The listing of Atlantic sturgeon under the Endangered Species Act has added a whole new level of complexity in the ability of the Commission and its member states to carry out their stewardship responsibilities for these important diadromous species. The species spends the majority of its life in state waters and depend on estuarine and riverine habitat for their survival. Listing has the potential to jeopardize the states' ability to effectively monitor and assess stock condition, as well as impact fisheries that may encounter listed species. It is incumbent upon the Commission and its federal partners to work jointly to assess stock health, identify threats, and implement effective rebuilding programs for listed and candidate species.

More recently, the depleted status of the Northern right whale population and the potential impacts to this population by entanglement in fishing gear, particularly lobster and crab gear, has heighted concern for both whales and the lobster industry.

Increased Cooperation and Collaboration among the States and between the States and Our Federal Partners

Demands for ecosystem-based fisheries management, competing and often conflicting ocean uses, and legislative mandates to protect marine mammals and other protected species, further complicate fisheries management and require quality scientific information to help guide management decisions. There is a growing concern among fishery managers that some "control" over fisheries decisions and status has been diminished due to political intervention and our inability to effect changing ocean conditions and other environmental factors that impact marine resources. Fisheries management has never been more complex or politically charged. State members are pulled between what is best for their stakeholders versus what is best for the resource and the states as a whole.

While the issues may seem daunting, they are not insurmountable. In order for the Commission to be successful, the states must recommit to their collective vision of "Sustainable and Cooperative Management of Atlantic Coastal Fisheries," recognizing that their strength lies in working together to address the fisheries issues that lie ahead. Given today's political and environmental realities, the need for cooperation among the states has never been more important. It is also critical the states and their federal partners seek to strengthen their cooperation and working relationships, providing for efficient and effective fisheries management across all agencies. No one state or federal agency has the resources, authority, or ability to do it alone.

GOALS & OBJECTIVES

The Commission will pursue the following eight goals and their related strategies during the five-year planning period, from 2019 through 2023. It will pursue these goals through specific objectives, targets, and milestones outlined in an annual Action Plan, which is adopted each year at the Commission's Annual Meeting to guide the subsequent year's activities. Throughout the year, the Commission and its staff will monitor progress in meeting the Commission's goals, and evaluate the effectiveness of the strategies. While committed to the objectives included in this plan, the Commission is ready to adopt additional objectives to take advantage of new opportunities and address emerging issues as they arise.

Goal 1 - Rebuild, maintain, fairly allocate, and promote sustainable Atlantic coastal fisheries

Goal 1 focuses on the responsibility of the states to conserve and manage Atlantic coastal fishery resources for sustainable use. Commission members will advocate decisions to achieve the long-term benefits of conservation, while balancing the socio-economic interests and needs of coastal communities. Inherent in this is the recognition that healthy and vibrant resources benefit stakeholders. The states are committed to proactive management, with a focus on integrating ecosystem services, socio-economic impacts, habitat issues, bycatch and discard reduction measures, and protected species interactions into well-defined fishery management plans. Fishery management plans will also address fair allocation of fishery resources among the states. Understanding changing ocean conditions and their impact on fishery productivity and distribution is an elevated priority. Successful management under changing ocean conditions will depend not only on adjusting management strategies, but also in reevaluating and revising, as necessary, the underlying conservation goals and objectives of fishery management plans. Improving cooperation and coordination with federal partners and stakeholders can streamline efficiency, transparency, and, ultimately, success. In the next five years, the Commission is committed to ending overfishing and working to rebuild overfished Atlantic coast fish stocks, while promoting sustainable harvest of and access to rebuilt fisheries. Where possible, the Commission will seek to aid in the rebuilding of depleted stocks, whose recovery is hindered by factors other than fishing pressure.

Annual action planning will be guided by the following objectives:

- Manage interstate resources that provide for productive, sustainable fisheries using sound science
- Strengthen state and federal partnerships to improve comprehensive management of shared fishery resources
- Adapt management to address emerging issues
- Practice efficient, transparent, and accountable management processes
- Evaluate progress towards rebuilding fisheries
- Promote sustainable harvest of and access to rebuilt fisheries
- Strengthen interactions and input among stakeholders, technical, advisory, and management groups

Goal 2 – Provide sound, actionable science to support informed management actions

Sustainable management of fisheries relies on accurate and timely scientific advice. The Commission strives to produce sound, actionable science through a technically rigorous, independently peer-reviewed stock assessment process. Assessments are developed using a broad suite of fishery-independent surveys and fishery-dependent monitoring, as well as research products developed by a broad network of fisheries scientists at state, federal, and academic institutions along the coast. The goal encompasses the development of new, innovative scientific research and methodology, and the enhancement of the states' stock assessment capabilities. It provides for the administration, coordination, and expansion of collaborative research and data collection programs. Achieving the goal will ensure sound science is available to serve as the foundation for the Commission's evaluation of stock status and adaptive management actions.

Annual action planning will be guided by the following objectives:

- Conduct stock assessments based on comprehensive data sources and rigorous technical analysis;
- Characterize the risk and uncertainty associated with the scientific advice provided to decision-makers
- Provide training to enhance the expertise and involvement of state and staff scientists in the development of stock assessments
- Streamline data assimilation within individual states, and among states and ASMFC
- Proactively address research priorities through cooperative state and regional data collection programs and collaborative research projects, including stakeholder involvement
- Explore the use of new technologies to improve surveys, monitoring, and the timeliness of scientific products
- Promote effective communication with stakeholders to ensure on-the-water observations and science are consistent

- Utilize ecosystem and climate science products to inform fisheries management decisions

Goal 3 - Produce dependable and timely marine fishery statistics for Atlantic coast fisheries

Effective management depends on quality fishery-dependent data and fishery-independent data to inform stock assessments and fisheries management decisions. While Goal 2 of this Action Plan focuses on providing sound, actionable science and fishery-independent data to support fisheries management, Goal 3 focuses on providing timely, accurate catch and effort data on Atlantic coast recreational, for-hire, and commercial fisheries.

Goal 3 seeks to accomplish this through the activities of the Atlantic Coastal Cooperative Statistics Program (ACCSP), a cooperative state-federal program that designs, implements, and conducts marine fisheries statistics data collection programs and integrates those data into data management systems that will meet the needs of fishery managers, scientists, and fishermen. ACCSP partners include the 15 Atlantic coast state fishery agencies, the three Atlantic Fishery Management Councils, the Potomac River Fisheries Commission, NOAA Fisheries, and the U.S. Fish and Wildlife Service.

Annual action planning will be guided by the following objectives:

- Focus on activities that maximize benefits, are responsive and accountable to partner and end-user needs, and are based on available resources.
- Cooperatively develop, implement, and maintain coastwide data standards through cooperation with all program partners
- Provide electronic applications that improve partner data collection
- Integrate and provide access to partner data via a coastwide repository
- Facilitate fisheries data access through an on-line, user-friendly, system while protecting confidentiality
- Support technological innovation

Goal 4 – Protect and enhance fish habitat and ecosystem health through partnerships and education

Goal 4 aims to conserve and improve coastal, marine, and riverine habitat to enhance the benefits of sustainable Atlantic coastal fisheries and resilient coastal communities in the face of changing ecosystems. Habitat loss and degradation have been identified as significant factors affecting the long-term sustainability and productivity of our nation's fisheries. The Commission's Habitat Program develops objectives, sets priorities, and produces tools to guide fisheries habitat conservation efforts directed towards ecosystem-based management.

The challenge for the Commission and its state members is maintaining fish habitat under limited regulatory authority for habitat protection or enhancement. Therefore, the Commission will work cooperatively with state, federal, and stakeholder partnerships to achieve this goal. Much of the work to address habitat is conducted through the Commission's Habitat and Artificial Reef Committees. In order to identify fish habitats of concern for Commission managed species, each year the Habitat Committee reviews existing reference documents for Commission-managed species to identify gaps or updates needed to describe important habitat types and review and revise species habitat factsheets. The Habitat Committee also publishes an annual issue of the *Habitat Hotline Atlantic*, highlighting topical issues that affect all the states.

The Commission and its Habitat Program endorses the National Fish Habitat Partnership, and will continue to work cooperatively with the partnership to improve aquatic habitat along the Atlantic coast. Since 2008, the Commission has invested considerable resources, as both a partner and administrative home, to the Atlantic Coastal Fish Habitat Partnership (ACFHP), a coastwide collaborative effort to accelerate the conservation and restoration of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes. As part of this goal, the Commission will continue to provide support for ACFHP, under the direction of the National Fish Habitat Partnership Board.

Annual action planning will be guided by the following objectives:

- Identify fish habitats of concerns through fisheries management programs and partnerships
- Educate Commissioners, stakeholders, and the general public about the importance of habitat to healthy fisheries and ecosystems
- Better integrate habitat information and data into fishery management plans and stock assessments
- Engage local state, and regional governments in mutually beneficial habitat protection and enhancement programs
- Foster partnerships with management agencies, researchers, and habitat stakeholders to leverage scientific, regulatory, political, and financial support
- Work with ACFHP to foster partnerships with like-minded organizations at local levels to further common habitat goals

Goal 5 – Promote compliance with fishery management plans to ensure sustainable use of Atlantic coast fisheries

Fisheries managers, law enforcement personnel, and stakeholders have a shared responsibility to promote compliance with fisheries management measures. Activities under the goal seek to increase and improve compliance with fishery management plans. This requires the successful coordination of both management and enforcement activities among state and federal agencies. Commission members recognize that adequate and consistent enforcement of fisheries rules is required to keep pace with increasingly complex

management activity and emerging technologies. Achieving the goal will improve the effectiveness of the Commission's fishery management plans.

Annual action planning will be guided by the following objectives:

- Develop practical compliance requirements that foster stakeholder buy-in
- Evaluate the enforceability of management measures and the effectiveness of law enforcement programs
- Promote coordination and expand existing partnerships with state and federal natural resource law enforcement agencies
- Enhance stakeholder awareness of management measures through education and outreach
- Use emerging communication platforms to deliver real time information regarding regulations and the outcomes of law enforcement investigations

Goal 6 – Strengthen stakeholder and public support for the Commission

Stakeholder and public acceptance of Commission decisions are critical to our ultimate success. For the Commission to be effective, these groups must have a clear understanding of our mission, vision, and decision-making processes. The goal seeks to do so through expanded outreach and education efforts about Commission programs, decision-making processes, and its management successes and challenges. It aims to engage stakeholders in the process of fisheries management, and promote the activities and accomplishments of the Commission. Achieving the goal will increase stakeholder participation, understanding, and acceptance of Commission activities.

Annual action planning will be guided by the following objectives:

- Increase public understanding and support of activities through expanded outreach at the local, state, and federal levels
- Clearly define Commission processes to facilitate stakeholder participation, as well as transparency and accountability
- Strengthen national, regional, and local media relations to increase coverage of Commission actions
- Use new technologies and communication platforms to more fully engage the broader public in the Commission's activities and actions

Goal 7 – Advance Commission and member states' priorities through a proactive legislative policy agenda

Although states are positioned to achieve many of the national goals for marine fisheries through cooperative efforts, state fisheries interests are often underrepresented at the national level. This is due, in part, to the fact that policy formulation is often disconnected from the processes that provide the support, organization, and resources necessary to implement the policies. The capabilities and input of the states are an important aspect of

developing national fisheries policy, and the goal seeks to increase the states' role in national policy formulation. Additionally, the goal emphasizes the importance of achieving management goals consistent with productive commercial and recreational fisheries and healthy ecosystems.

The Commission recognizes the need to work with Congress in all phases of policy formulation. Several important fishery-related laws will be reauthorized over the next couple of years (i.e., Atlantic Coastal Act, Magnuson-Stevens Fishery Conservation and Management Act, Interjurisdictional Fisheries Act, Atlantic Striped Bass Conservation Act, and Anadromous Fish Conservation Act). The Commission will be vigilant in advancing the states' interests to Congress as these laws are reauthorized and other fishery-related pieces of legislation are considered.

Annual action planning will be guided by the following objectives:

- Increase the Commission's profile and support in the U.S. Congress by developing relationships between Members and their staff and Commissioners, the Executive Director, and Commission staff
- Maintain or increase long term funding for Commission programs through the federal appropriations process and other available sources.
- Engage Congress on fishery-related legislation affecting the Atlantic coast
- Promote member states' collective interests at the regional and national levels
- Promote economic benefits of the Commission's actions (return on investment)

Goal 8 – Ensure the fiscal stability & efficient administration of the Commission

Goal 8 will ensure that the business affairs of the Commission are managed effectively and efficiently, including workload balancing through the development of annual action plans to support the Commission's management process. It also highlights the need for the Commission to efficiently manage its resources. The goal promotes the efficient use of legal advice to proactively review policies and react to litigation as necessary. It also promotes human resource policies that attract talented and committed individuals to conduct the work of the Commission. The goal highlights the need for the Commission as an organization to continually expand its skill set through training and educational opportunities. It calls for Commissioners and Commission staff to maintain and increase the institutional knowledge of the Commission through periods of transition. Achieving this goal will build core strengths, enabling the Commission to respond to increasingly difficult and complex fisheries management issues.

Annual action planning will be guided by the following objectives:

- Conservatively manage the Commission's operations and budgets to ensure fiscal stability
- Utilize new information technology to improve meeting and workload efficiencies, and enhance communications

- Refine strategies to recruit professional staff, and enhance growth and learning opportunities for Commission and state personnel
- Fully engage new Commissioners in the Commission process and document institutional knowledge.
- Utilize legal advice on new management strategies and policies, and respond to litigation as necessary.

Atlantic Coastal Cooperative Statistics Program

1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201
703.842.0780 | 703.842.0779 (fax) | www.accsp.org

This list includes dates for fiscal year 2019, including ACCSP committee meetings, relevant dates of the funding cycle, as well as meetings or conferences ACCSP typically attends or which may be of interest to our partners. If you have any questions or comments on this calendar please do not hesitate to contact the ACCSP staff at info@accsp.org.

Jan 21-23:	APAIS Mid-Atlantic Training – Lewes, DE
Jan 29-31:	NEFMC Meeting – Portsmouth, NH
Feb 4-5:	Biological Review Panel Annual Meeting – Savannah, GA
Feb 6-7:	Bycatch Prioritization Committee Annual Meeting – Savannah, GA
Feb 5-7:	ASMFC Meeting/Coordinating Council Meeting – Arlington, VA
Feb 12-14:	MAFMC Meeting – Virginia Beach, VA
Feb 26-28:	APAIS New England Training – New Bedford, MA
Mar 1:	Start of ACCSP FY19
Mar 4-8:	SAFMC Meeting – Jekyll Island, GA
Week of Mar 11:	Commercial Technical Committee Annual Meeting – TBD
Week of Mar 11:	Information Systems Committee Annual Meeting – TBD
Week of Mar 25:	Operations and Advisory Committees Spring Meeting – Webinar (10am)
Week of Apr 8:	Recreational Technical Committee – Webinar
Apr 9-11:	MAFMC Meeting – Avalon, NJ
Apr 16-18:	NEFMC Meeting – Mystic, CT
Apr 29-May 2:	ASMFC Meeting/Coordinating Council Meeting; ACCSP issues request for proposals – Arlington, VA
Jun 4-6:	MAFMC Meeting – New York, NY
Jun 10:	Initial proposals are due
Jun 10-14:	SAFMC Meeting – Stuart, FL
Jun 11-13:	NEFMC Meeting – Portland, ME
Jun 17:	Initial proposals are distributed to Operations and Advisory Committees
Week of Jul 8:	Review of initial proposals by Operations and Advisory Committees – Webinar (10am)
Week of Jul 22:	Feedback submitted to principal investigators
Aug 6-8:	ASMFC Meeting/Coordinating Council Meeting – Arlington, VA
Aug 12:	Revised proposals due
Week of Aug 12:	APAIS Wave 4 Meeting – TBD
Aug 12-15:	MAFMC Meeting – Philadelphia, PA
Aug 19:	Revised proposals distributed to Operations and Advisory Committees
Week of Aug 26:	Preliminary ranking exercise for New Advisors and Operations Members – Webinar
Sep 16-20:	SAFMC Meeting – Charleston, SC
Sep 24-25:	Annual Advisors and Operations Committee Joint Meeting (in-person; location TBD)
Sep 24-26:	NEFMC Meeting – Gloucester, MA
Oct 8-10:	MAFMC Meeting – Durham, NC
Oct 27-31:	ASMFC Annual Meeting/Coordinating Council Meeting – New Castle, NH
Dec 3-7:	SAFMC Meeting – Kitty Hawk, NC
Dec 3-5:	NEFMC Meeting – Newport, RI
Dec 10-12:	MAFMC Meeting – Annapolis, MD

Our vision is to produce dependable and timely marine fishery statistics for Atlantic coast fisheries that are collected, processed, and disseminated according to common standards agreed upon by all program partners.

Plan for Condensing Technical Committees

Why change the structure of ACCSP's Technical Committees?

- The TCs are burdensome for both Partners and Staff.
    - Members often represent their agency on multiple committees, meaning a heavier ACCSP-related workload and less time for each committee.
    - Staff spend a lot of time organizing meetings, putting together meeting materials, and getting new members up to speed.
    - As members of committees often overlap, time is wasted by all parties presenting the same information to each group so that the non-overlapping members are informed.

- They are an inefficient means of gathering input from partners.
    - Often only 1 employee's perspective is provided for an entire agency.
    - Each partner has a representative on each committee. Representation is sometimes unfamiliar with technical requirements, making it challenging to liaise with partner organizations.

- Progress on tasks is slow.
    - Infrequent communication/engagement (only 1-2 meetings/year) means the committees spend a lot of time reviewing tasks/projects and recapping previous decisions.
    - Passing issues between TC's delays response time.
    - Membership turnover slows committees down.

- The current division of the TCs is obsolete.
    - The modules used to be more separate than they are now. For-hire and commercial data collection needs and methods are converging, and integrated reporting vision includes linkages to biological and at-sea observer data.

How can we adjust the structure of the TCs to address these challenges?

- Condense all existing TCs (with current membership) into one broader TC to provide a broader range of perspectives at the outset of a project.
    - The Program will not be limited to working within the confines of one TC for a given project.

- Use a combination of ad-hoc and standing working groups to accomplish projects and routine tasks. Full TC will meet to discuss cross-disciplinary items and then standing and ad hoc workgroups will break out to cover specific items.

- Increase in efficiency in that discussions won't need to be passed from group to group and work will be able to happen faster.
- Examples of ad hoc WGs:
    - Integrated Reporting Group
    - Aquaculture WG

- Examples of standing WGs: (Provided only for illustrative purpose)
    - Trip Reporting
    - Dealer Reporting
    - Sampling (biological, bycatch, etc.)
    - IS policy (change management)
    - Standard Codes

- Solicit volunteers from the ACCSP Technical Committee for a project, rather than relying on a previously designated representative. This is intended to increase engagement.
    - This allows TC members to volunteer for projects that are either a) interesting to them and/or b) important to their respective agency.
    - This approach would further clarify partner priorities.
    - Additional volunteers from partners are welcome and flexibility in membership is key. Equal representation is not always paramount, because not all tasks are of equal importance to the partners.

- Adopt a more task-oriented and organized approach to projects.
    - Develop project charters at the outset to define the scope and objectives of the working group, and to identify relevant stakeholders.
    - Once projects are complete, report results to the broader TC. Then dissolve working group to provide closure.

Atlantic States Marine Fisheries Commission

Spiny Dogfish Management Board

October 29, 2019
8:00 - 9:30 a.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(C. Batsavage)*	8:00 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from August 2019	8:00 a.m.
3.	Public Comment	8:05 a.m.
4.	Consider Addendum VI for Final Approval **Final Action** • Review Options and Public Comment Summary (*K. Rootes-Murdy*) • Consider Final Approval of Addendum VI	8:15 a.m.
5.	Review and Revise (If Needed) 2020/2021 Specifications (*K. Rootes-Murdy*) **Possible Action**	9:00 a.m.
6.	Consider Approval of 2019 FMP Review and State Compliance (*K. Rootes-Murdy*) **Action**	9:15 a.m.
7.	Elect Vice-Chair *(C. Batsavage)* **Action**	9:25 a.m.
8.	Other Business/Adjourn	9:30 a.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

Spiny Dogfish Management Board
October 29, 2019
8:00– 9:30 a.m.
New Castle, New Hampshire

Chair: Chris Batsavage (NC) Assumed Chairmanship: 10/19	Technical Committee Chair: Scott Newlin (DE)	Law Enforcement Committee Representative: Moran
Vice Chair: VACANT	Advisory Panel Chair: VACANT	Previous Board Meeting: August 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NC, NMFS, USFWS (13 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the Agenda. Individuals that wish to speak at this time must sign in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Draft Addendum VI for Final Approval (8:15 – 9:00 a.m.) Action

Background

- Due to the lack of a Spiny Dogfish Board in May 2019, the Policy Board recommended the Board initiate an addendum to consider allowing commercial quota transfers between regions to enable full utilization of the coastwide quota
- In August, the Board approved the draft addendum for public comment (**Briefing Materials**)
- Public comment period was open from August 22 through September 23. Public Hearings were held in NH, RI, and via webinar. (**Briefing Materials**)

Presentations

- Review of management options and public comment by K. Rootes-Murdy

Board actions for consideration at this meeting

- Select management options
- Approve final document

5. Review and Revise (If Needed) 2020/2021 Specifications (9:00 – 9:15 a.m.) Possible Action
Background • In October 2018, the Board set multi-year specifications for spiny dogfish for the 2019-2021 fishing seasons. • Earlier this month the Mid-Atlantic Fishery Management Council met to review and consider the 2020 fishing year specifications and made no changes.
Board actions for consideration at this meeting • Adjust 2020 fishing year specifications (if needed)

6. Consider Approval of 2019 FMP Review and State Compliance (9:15 – 9:25 a.m.) Action
Background • State compliance reports are due July 1. • The Plan Review Team reviewed each state report and drafted the 2019 FMP Review. (**Briefing Materials**)
Presentations • Overview of the 2019 Fishery Management Plan Review by K. Rootes-Murdy
Board actions for consideration at this meeting • Accept the 2019 Fishery Management Plan Review and approve *de minimis* requests

7. Elect Vice-Chair

8. Other Business/Adjourn

Spiny Dogfish

Activity level: Low

Committee Overlap Score: low (some overlaps with Coastal Sharks)

Committee Task List
• TC – July 1st: Annual compliance reports due

TC Members: Scott Newlin (DE, TC Chair), Tobey Curtis (NOAA), Jason Didden (MAFMC),Lewis Gillingham (VA), Greg Skomal (MA), Mike Frisk (NY), Lee Paramore (NC), Conor McManus (RI), Greg Hinks (NJ), Angel Willey (MD), Matt Gates (CT), Kathy Sosobee (NOAA), Michael Frisk (NY), Matt Cieri (ME), Kirby Rootes-Murdy (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

SPINY DOGFISH MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
August 7, 2019

These minutes are draft and subject to approval by the Spiny Dogfish Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Spiny Dogfish Management Board Meeting
August 2019

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INDEX OF MOTIONS

ATTENDANCE

Board Members

Sen. David Miramant, ME (LA)
Megan Ware, ME, proxy for P. Keliher (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Kevin Sullivan, NH, proxy for D. Grout (AA)
G. Ritchie White, NH (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Dan McKiernan, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Eric Reid, RI, proxy for S. Sosnowski (LA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Sen. Craig Miner, CT (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
Joe Cimino, NJ (AA)
Russ Allen, NJ, proxy for T. Fote (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Mike Luisi, MD, Administrative proxy
Robert Brown, MD, proxy for R. Dize (GA)
Sen. Monty Mason, VA (LA)
Rob O'Reilly, VA, proxy for S. Bowman (AA), Chair
Bryan Plumlee, VA (GA)
Michael Blanton, NC, proxy for Rep. Steinburg (LA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Mike Ruccio, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Kirby Rootes-Murdy
Max Appelman
Dustin Colson Leaning

Guests

Heather Corbett, NJ DFW
Arnold Leo, E. Hampton, NY
Brad Stevens, Univ. of MD
John Whiteside, SFA

The Spiny Dogfish Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Wednesday, August 7, 2019, and was called to order at 10:40 o'clock a.m. by Chairman Robert O'Reilly.

CALL TO ORDER

CHAIRMAN ROBERT O'REILLY: My name is Robert O'Reilly, and I'm the Chair of the Spiny Dogfish Management Board. We have a fairly short time period today. After my welcome here to you, I wanted to say bon matin, je suis Robert, in order of all the French lessons I had to take through life, and so good morning.

APPROVAL OF AGENDA

CHAIRMAN O'REILLY:I am asking the Board about the agenda. Are there any changes to the agenda? Seeing none the agenda stands.

APPROVAL OF PROCEEDINGS

CHAIRMAN O'REILLY: Concerning the approval of the proceedings from October, 2018, are there any changes or deletions? To give you a very brief refresher that meeting a year ago, we spoke about the stock assessment update.

Jason Didden from the Mid-Atlantic Council gave a presentation. We also had discussions, which are still going on about the federal trip limit. Also there was a setting of the 2019 to '21 specifications. It can't be ignored that there has been a 60 percent decrease in the coastwide quota in a four year period.

It can't be ignored that there was a situation where some states are worried that perhaps the coastwide quota will be met. That is a little over 20 million pounds, and I think in the 2016/17 season it was about 25 million pounds, so that can happen. The main concern there is if the coastwide quota shuts down that can affect the marketing even more so than the market has already been challenged over the years. I wanted to mention that.

PUBLIC COMMENT

CHAIRMAN O'REILLY: At this time is there any public comment on matters that are not on the agenda? I see none so we'll proceed forward.

CONSIDER DRAFT ADDENDUM VI FOR PUBLIC COMMENT

CHAIRMAN O'REILLY: The main situation today for us to consider is Draft Addendum VI going out for public comment. Kirby Rootes-Murdy will present that information to you now.

MR. KIRBY ROOTES-MURDY: This is an outline of my presentation. I'm going to go through an overview of the document, kind of how we got here, statement of the problem, background information, and the management options that are included, what the Board action is for consideration today, and take any questions from you.

As part of the overview, just a reminder of how we got here today, in May of this year the Policy Board directed the Spiny Dogfish Board to initiate an addendum to allow unused quota to be transferred between the northern region states to the states that have a state-specific allocation. The motion also specified that the Addendum would allow for quota overage forgiveness, similar to the language in the summer flounder, scup and black sea bass FMP. In response to this motion the Spiny Dogfish Plan Development Team drafted this Addendum with the following recommendations.

To consider a more general approach to allowing quota transfers that include a region, not just from the northern region states to southern states, and the second is to discard the concept of an overage forgiveness, due to the complications presented by the existing unused quota rollover provisions.

But the complication is that, with this FMP, it currently allows that up to 5 percent of a state or region's unused allocation can be rolled over to the next fishing year if the stock is rebuilt. That is above the biomass target. In that situation when we have a rebuilt stock, the annual accounting could become very challenging.

In instances where a jurisdiction is willing to transfer quota, and planning to roll over additional quota, as well as in situations where that jurisdiction receives additional quota and rolls over that quota as well. For those reasons the Plan Development Team recommended not including it in this Addendum.

In terms of the statement of the problem, the FMP currently allows only quota transfers between states with an individual state quota. Regions cannot currently transfer quota. Full utilization of the coastwide quota may not be possible for the 2019 fishing year, due to this quota transfer limitation.

The quota for this fishing year 2019 has been reduced to approximately 46 percent from the previous year's fishing quota, based on the 2018 stock assessment update. What could happen is that some states may have to close their fishery early, while other parts of the coast, regions, may have unused quota that might not be able to be transferred to those states.

Some background regarding this FMP. The fishery for spiny dogfish operates on a fishing year of May 1 through April 30. The Commission has a complementary fishery management plan to the federal joint fishery management plan between the Mid-Atlantic Council and the New England Fishery Management Council.

We've had a number of addenda that specifies how quota provisions work, what the allocations are. But the most recent one that outlines what the current quota allocations are, are laid out in Addendum III. It established the northern region of Maine through Connecticut, and state-specific allocations for the states of New York through North Carolina.

It also specifies the payback provision of quota overages. Right now if a state or region goes over their quota in a given fishing year, that amount of overage is then deducted from the following year's allocation to that state or region. Up on the screen is also what the allocations are that have been in place since 2011. In terms of the commercial fishery for spiny dogfish, landings along the Atlantic coast follow a seasonal migration that coincides with the resources movement across the coast throughout the year. In recent years the highest proportion of landings in the northern region has occurred during the months of July, August, and September. For the states of New York through North Carolina, nearly all landings occur from November through April.

The fishery in the northern region is largely concluded by November, just as the fishery in the southern part of this range ramps up. In terms of the total commercial landings, they've tracked closely with the coastwide quota for most of the first 12 years of quota management, from fishing year 2000 up to 2011, after which landings plateaued while the quota continued to increase.

You can really see that from about 2012 onward, until about 2018. Landings during 2012 to 2018 averaged 20.93 million pounds, while the coastwide quota averaged 42 million pounds. For fishing year 2019, the coastwide quota has been reduced to 20.52 million pounds to avoid overfishing the stock amidst declining biomass.

Over the last three years, less than half of the cumulative coastwide quota has been landed, though similar landings in 2019 would achieve nearly 100 percent of that newly reduced quota level. Please note that the commercial landings

we have for 2018 are preliminary, and they change.

For this Addendum, we have one management issue currently and two management options to deal with that. The first is status quo for adjusting the quota transfer provisions. Under a status quo scenario Option 1 there would be no change. Quota transfers would still only be allowed between states with an individual quota.

Option 2 would allow quota transfers between all states and regions. Regions could participate in quota transfers through mutual agreement of each state in the region. How this would work is that each state's Administrative Commissioner or proxy would have to agree in writing to this transfer. The same provisions we have in place for the state transfer rules between New York through North Carolina would also apply.

Transfers do not permanently affect allocation, and quota management and accountability are based on that transfer adjusted quota in a given fishing year. An additional component of this option is that all transfers could occur during the fishing year, and up to 45 days after the end of the fishing year.

The idea here being that if you get close to the end of the fishing year, and a state decides to close due to concern about an overage, or another state goes over their quota and finds out after the fishing year has ended that there would be a grace period of up to 45 days, for those states to get the transfer needed to cover their overage.

For Board action today this Board should consider whether to add or adjust the current draft options. The other consideration is whether to approve this document for public comment. If approved, final approval of the document would likely occur at the Annual Meeting in October. With that I'll take any questions.

CHAIRMAN O'REILLY: Questions for Kirby. Adam.

MR. ADAM NOWALSKY: Where do we stand as a Board, given that we were given a directive from the Policy Board to draft an addendum with two items in it? The PDT came back and said one is not practical. Because the PDT said so we disregard what the Policy Board directed us to do? I would just like some clarification on where we stand as a Board, given that we were given such specific direction.

MR. ROOTES-MURDY: Thanks Adam for that question. Just as context, this topic came up during the Policy Board and based on some preliminary advice from staff, the thinking was including a quota forgiveness policy similar to summer flounder, or to scup and black sea bass excuse me, would be beneficial in dealing with the potentially reduced quotas in future years.

When we went back and looked at what that FMP outlines and how it compares to spiny dogfish FMP, as I noted earlier in my presentation this could present some real challenges in trying to do accounting annually, and those situations were really close, or if the resource is above the biomass target and rebuilt. It's a recommendation from the PDT. That is where it stands currently.

CHAIRMAN O'REILLY: Follow up, Adam.

MR. NOWALSKY: That would leave us as a Board to make a decision today whether we want to go forward with this Addendum without that provision, based on the advice of the PDT, but contradicting what we were asked to do by the Policy Board. But if we were to go back and say we would like an option drafted for forgiveness, is that something the PDT could come forward with in a future revision?

MR. ROOTES-MURDY: Yes.

CHAIRMAN O'REILLY: Okay other questions? Excuse me, David Borden.

MR. DAVID V. BORDEN: I have a comment Mr. Chairman; if not appropriate I'll hold off.

CHAIRMAN O'REILLY: Any specific questions for Kirby concerning what he outlined and the two options? Mike Luisi.

MR. MICHAEL LUISI: Kirby, you may have said this but I may have missed it. Are the transfer provisions here one directional? Is it just from the northern region to the states, or can it go the other way as well?

MR. ROOTES-MURDY: It can go both ways. That was the recommendation of the PDT, and that is how we drafted up the option.

CHAIRMAN O'REILLY: Are there other questions specific to the options that were presented right now? If not, David Borden.

MR. BORDEN: I'll make this quick, Mr. Chairman. I support the action. To Adam's point, I would like to see that concept included, and in the spirit of trying to solicit more public input, I think it would be beneficial to include the concept of elimination of the federal trip limit. I know there was a subcommittee at the Mid-Atlantic, Mr. Chairman that you served on that dealt with that issue.

One of the dilemmas on the federal trip limit is there are four parties that are actually involved in that. We are just one of the parties, and we don't control federal regulations on the trip limit. I think it would be beneficial if in fact we included that concept in the document, and solicited public input up and down the states.

I spoke to both Dan and Jason about this concept, and I think that the two states would be willing to assist the Commission staff in preparing an alternative for inclusion in the document. I would propose we include that and Adam's concept in the document, and authorize it to go out to public hearing.

CHAIRMAN O'REILLY: Okay so I will get some feedback from Kirby in a second. But one of the things the Mid-Atlantic Council has stated is they have this on their list, and it is relatively low is the way it was described by Jason Didden. However, if there is enough interest coming back on this item with the federal trip limit, it can be brought up in 2020.

That has already been established by the Mid-Atlantic Council, and Kirby may have some ideas as to whether these are just concepts or information that are included as subsets within the fact that there is a main item here, which is to allow these regional transfers. I would have to ask him for his guidance there.

MR. ROOTES-MURDY: Yes I'll take a stab at it. David, can you clarify whether you're looking to have an option in this document that outlines a situation where we maintain that federal trip limit versus not having a federal trip limit? I ask because as you stated, again the Commission doesn't set the federal trip limit that is set by the Mid-Atlantic Council and the New England Fishery Management Council's recommendations to GARFO. It would not actually be an option if that was to be proposed that the Commission could enact this or make any changes to it.

MR. BORDEN: My response to that is and actually I talked to Dan a little bit about this. At this stage all we're trying to do is gather public input on this. I think the Work Group and the Chair can correct this if this is wrong, specifically the Mid Group that discussed this concept the other day. One of their conclusion was they wanted to go out to their constituents and seek input on this, and this is a perfect opportunity to do it.

If we're going to circulate a document, we simply include that concept. Then we get all the input from the processors in all the states, fishermen. Then that information is then used to inform future positions as a Commission. I'm not looking for a regulatory action in here as

much as I'm looking for, include the concept and solicit the public input on it.

CHAIRMAN O'REILLY: Toni Kerns.

MS. TONI KERNS: David, I just want to summarize what I think I heard you saying, to make sure that we would capture it correctly. That we are seeking public input on a recommendation to NOAA Fisheries, the Mid-Atlantic Council and the New England Fishery Management Council to eliminate the federal trip limit to allow for the individual state trip limits, or a region trip limit to enforce the quota systems that we have established, or maintain the quota systems.

MR. BORDEN: That's correct, well stated.

CHAIRMAN O'REILLY: Eric Reid.

MR. ERIC REID: Yes I think it's actually pretty good timing, because the basis for this action is to maximize the use of quota. If you were to question the public on would you use more quota if there was no federal trip limit? That is an easy way to get that ask in the document, because that is the basis as to how do we use more quota, and if that's one way to use more quota than is transferred, the numbers are going to look a little different.

CHAIRMAN O'REILLY: Mike Luisi.

MR. LUISI: I certainly support the concept and getting that public feedback will be important. Based on what you said Rob, regarding where this is currently sitting on the Council's priority. That feedback may become very important in October and December of this coming year, or talking with the Executive Committee about priority setting for 2020. I think it's a good idea.

CHAIRMAN O'REILLY: Joe Cimino.

MR. JOE CIMINO: Poor choice of seating, thank you Mr. Chair. Just for the record, I think with what we saw today on some of these slides, I might respectively disagree with Eric on the timing, since with a 60 percent cut in the quota we are looking at a time where we might be reaching the quota as things are. I just want to put that caution out there.

CHAIRMAN O'REILLY: Stew Michels.

MR. STEWART MICHELS: That is a good point about reaching the quota, but I was wondering. This won't slow up development of this measure will it?

MR. ROOTES-MURDY: It's a good question, and the wheels in my head are turning right now, in trying to make sense of what the specific language we would include in this document, based on the discussion today, and how this progresses. It could potentially change our time table, but we kind of need to see how this Board discussion plays out.

CHAIRMAN O'REILLY: Okay I recognize there are comments in the back, but we're going to go through a couple more at the Board, and then I'll come out there if you have a burning comment that's fine. Jason.

DR. JASON McNAMEE: It's to that last point. I guess as we were discussing this I thought, since in particular with the last thing that David brought up. We're not asking for a regulatory action. I was thinking, this might be one where we could turn around so Dan and I could turn around some language quickly that we could then vet through e-mail, sort of a straw poll, rather than having to recycle back on it. There is just an idea, because I also don't want to delay the action, and I thought that might be a mechanism.

CHAIRMAN O'REILLY: Toni Kerns.

MS. KERNS: The Boards have in the past conditionally approved documents, so you could approve the document as today with the addition of the option for overage forgiveness, we'll just call that for now, as well as the

recommendation for NOAA Fisheries and the Councils. We could then send that document out to you, ask for a quick turnaround approval, and then send it out for public comment.

I would just remind everybody that this is a document that we were hoping the states would do the majority of the public comment for, and not have hearings where you needed staff, because it was just a simple issue. We didn't set aside money in the budget to do hearings for spiny dogfish this year. We can find some ways to cover some hearings if we need to, but just to keep that in mind.

CHAIRMAN O'REILLY: Mike Ruccio.

MR. MIKE RUCCIO: I would welcome Jason's suggestion. I'm a little, concerned is probably not the right word, but I would like to see language on this. I understand this has been a concern for the states for a number of years, and they've wanted to try to get traction into either modifying or rescinding the federal trip limit.

But I think the way that Toni had kind of characterized this more as how would regions or states structure trip limits, as opposed to going out and scoping on removing the federal trip limit, because it seems there is a disconnect there in terms of the authorities. I mean it's nice to ask that but that is the purview of the Councils to have to deal with.

The phrasing of it I think can be done in a way that gets at what people are looking for, but still kind of contains it within what's appropriate for the Commission to go out and get more public input on. As Chairman Luisi said, I think that can be valuable this fall as the Councils are setting the priorities that there is a good response to that. I welcome it, I would like to see that language, and if we can do that outside of this meeting quickly, and not delay the timing that sounds preferable.

CHAIRMAN O'REILLY: Chris Batsavage.

MR. CHRIS BATSAVAGE: Speaking to the option that the PDT didn't recommend including in this Addendum. Again that thing with the reasons Kirby stated I agree with, especially with the timing that we're looking at is my understanding. In order for this to be in place for this fishing year, this has to go for a final approval at the annual meeting to allow time, if there is any excess quota in the northern region to be available to transfer to the southern regions. If there is any little hiccup in that time table that may not be feasible for this year, and I think this year is the most critical, with the 46 percent reduction. I guess if staff has concerns on trying to hash that option out in the document, and getting it to this time period. I guess something the Board really needs to consider, as far as whether that's worth doing.

CHAIRMAN O'REILLY: Kirby has a comment here.

MR. ROOTES-MURDY: Just to clarify. We are in the current fishing year right now, 2019. That is going to run through April 2020. Whether the Board decides to take action on this document at the Annual Meeting or the February meeting in 2020, it would still be within the same fishing year. I think that's one thing I just want to clarify. Then on what to include in the document, we've heard about the additional language regarding the federal trip limit.

That would definitely be something. If this Board is interested including that I want that to be made clear, so we can start drafting that up. Then the other is regarding a point that Adam brought up. If there is no objection to including an option on quota forgiveness, then that would likely be another issue item. But I want to make sure that that is clear, stated on the record that you all are interested in having that also included in this document.

CHAIRMAN O'REILLY: Dan.

MR. DANIEL McKIERNAN: I apologize, I'm kind of thinking as I'm going here, and talking to

David before the meeting started. But I think there could be some unintended consequences, because the southern states or the states below, I guess Connecticut, they have state-by-state quotas. It makes sense for those states to have whatever trip limit they want.

But is this a precursor? I guess I'm asking this of my colleagues from Rhode Island. Is this a precursor to having state-by-state quotas in the northeast or New England, because I think fishermen may demand that if they see different trip limits in the two states, but fishing on a common quota? I know this is complicated, and it is kind of late minute, last breaking stuff. But I'm getting a little squirrelly about the unintended aspects of this.

CHAIRMAN O'REILLY: Okay I'm glad we started early. I will look to your colleagues to maybe provide some information. I can tell you David Borden indicated there had been a call that Kirby posted, among states from New York to North Carolina last week. It wasn't completely clear, but there was definitely support on removing the federal trip limit.

David Borden also a day before that call, and I understand he had some tremendous computer problems going on, but he did provide us with a document that sort of outlined some of the information you're asking about, Dan. If it's okay I will turn to David.

MR. BORDEN: I'll just answer Kirby's question, or the question I am not proposing state-by-state quotas in the north.

CHAIRMAN O'REILLY: Okay, are we satisfied with the questions and the comments? I did have someone standing up in the back. I'll allow just a brief question or comment, whichever you have. I can't see who you are back there, but come on up. I couldn't see you back there that far, John.

ATTORNEY JOHN WHITESIDE: Good morning, Attorney John Whiteside of Sustainable Fisheries Association. I kind of wanted to just wrap up a couple things. I really want to stress the comment that was made a short time ago about the timing is critical on this that any comments and other aspects of what's been discussed over the last 20 minutes.

If it's delayed past the October meeting that is really going to have an impact, potentially a really negative impact on allowing the southern states to achieve their quota, even if there is excess quota in the north that hasn't been landed. That is really something I just wanted to bring forward to the Commission, and stress that if there are comments related to federal trip limits, if that's broken apart from this that will be something I would be fully in support of. Breaking those two things apart, and let this go forward to allow the southern states to maximize the quota.

CHAIRMAN O'REILLY: Okay thanks, John. Any other comments before we tackle the three items that Kirby has outlined? We're looking at if there is going to be new language, I know that Jason had offered to do that with staff and help out. Then Toni Kerns has suggested that that could be distributed prior to it going out for public comment.

Adam rightly has some interest in the procedure on the forgiveness, and so that is something that has to be considered. I hope someone is getting busy writing down a motion, and then the third item of course are the two options, status quo or allow region-to-region transfer. Mike Luisi asked a good question.

The transfer can work in either direction. Keep in mind that if there is a transfer that it's going to require north to south, which last meeting we heard is by December something could occur, or earlier. Then each state in the northern region, Connecticut to Maine would be signing off on that; good chance to get familiar with everyone all at once. Those are the three issues, and I'll look to see how

someone wants to be creative here. Ritchie White.

MR. G. RITCHIE WHITE: On one of the issues I would ask Adam, and certainly I always support the process, so I appreciate Adam bringing it up. I guess a question Adam; do you think that the Policy Board if they had had the PDT information would have still required two options?

MR. NOWALSKY: Well I'm flattered that you think I could think for the Policy Board, but no way could I answer that. There is no way I could answer that.

MR. WHITE: Follow up.

CHAIRMAN O'REILLY: Certainly, Ritchie.

MR. WHITE: I mean you have a big chunk of the Policy Board here right now. I think it's something that we should decide today. I guess I favor not including that in this document, and if it comes back with something that we have to address in the future, we would have a new document, because clearly we're not going to be able to solve the trip limit in this document either to solve it. I mean we can get information. That would be my take.

CHAIRMAN O'REILLY: I'm looking over at Toni.

MS. KERNS: It's the pleasure of the Board. I wasn't 100 percent, having a small conversation when Kirby went over part of this. The rollover provision is a slightly complicated issue. One, because it's only allowed when the stock is not overfished and overfishing is not occurring, and the second complication to the issue is that the rollover provision is only in our plan.

If we actually enacted the rollover provision then we would have a different quota than what the federal government would have in place, because they do not allow rollover provisions. One thing that Kirby and I had talked about originally, when we were trying to figure out whether or not the PDT should leave this in the document or not is we could say; well in years that the rollover provision cannot be enacted you could do the forgiveness, in the years that it could that that forgiveness provision does not come into play.

You could leave, which this gets very complicated, leave the 5 percent that could go to the states, but any other quota could be put into the forgiveness provision that was still on the table. But again, I think it's up to this Board, because this Board didn't meet that is why we took up the action at the Policy Board level before.

It wasn't necessarily that the Policy Board was coming down on this Board; it's just that we didn't have a Dogfish Board Meeting, and it was an issue that was important to members of this Board. They asked to have it on the Policy Board agenda last time. There are a couple ways that we could creatively address this provision, or we could wait and address it at a later date.

I don't know when we would have it on the agenda. I mean there is this complicating factor though that if it ever does come into play you would have a different quota. That is something that the Board would actually have to think about is if they wanted to have a different quota than that of our federal partners.

CHAIRMAN O'REILLY: I'll get right to you, Megan. I certainly remember the last time that there was a little bit of getting sideways on different quotas, and that it resulted in the following meeting, coming back to make sure there wasn't a sideways situation between quotas. I certainly remember that. I just don't know, Adam whether this is something that could be a work in progress. Is it something that the Board could work on itself later on as an addendum? In other words, what type of timeline do you see for this being settled? Adam.

MR. NOWALSKY: Joe could speak more to this, but I'll just say that there is interest in this provision from New Jersey. I spoke from both that perspective, as well as just asking the question we were tasked to do something, now we're saying we're not doing it. What is the implication of it?

I think Toni cleared that up some in saying well because the Dogfish Board didn't meet there were enough members here. That is why it came from the Policy Board. I think I'm comfortable that we addressed that aspect of it on the record. The question now comes, is there enough interest in other states to have the forgiveness provision here? Do states think it's an issue that needs to be in here, and does it warrant a review of those proposals to come back to the Board for review before we send this document out, or could we limit it to the suggestions that Toni made, or some subset of the suggestions, such as status quo as an option for forgiveness, and an option where forgiveness is only allowed where the rollover provision is not enacted.

I think I heard her state those two. I think that would be a step in the right direction, and it sounds like that would not need to go back to the PDT. It sounds like something I'm clear enough on what those options would be that they could go in the document. The document could be provisionally approved today, circulated for final review by the Board, and then go out to public comment. But it would ultimately be the will of the Board. I would support that direction on the issue of the forgiveness, if the will of the Board allows that today.

CHAIRMAN O'REILLY: Megan.

MS. MEGAN WARE: I'm just wondering if overage forgiveness and transfers are somewhat duplicative in what they're trying to achieve. If I was a state with an overage, and there was an overage forgiveness, and then we approve this transfer provision, I would ask for a transfer from another state. I think there are multiple ways to address that overage. I'm wondering if we need both of those passed.

CHAIRMAN O'REILLY: I'm going to ask for a motion. David Borden.

MR. BORDEN: I would like to move, if the staff wants to put that up I'll go slowly, because I haven't written it out**. I will move provisional approval of the Draft for public hearing purposes, subject to the inclusion of the provision that Toni just characterized, and the inclusion of a concept of eliminating the federal trip limit.** If I get a second to this I will comment so the record is clear on this last point.

MR. ROOTES-MURDY: Dave, will you give us a minute to try to take that and put it into a motion, because there was some referencing to previous discussion.

CHAIRMAN O'REILLY: Okay, we'll have a pause.

MR. ROOTES-MURDY: Yes, we're going to need that I think read into the record, but just to be clear with this motion. We do currently have state and regional trip limits in place for state waters.

CHAIRMAN O'REILLY: David Borden how does that read to you? Does that capture?

MR. BORDEN: Mr. Chairman that is fine with me. **I just want to make sure it reflects the point that Toni has made on the issue of the overage forgiveness.** I think what she characterized was two options there; so that this is orderly I'll make that as a motion that can be perfected by additional discussion. If I get a second then I would suggest discussion on it.

CHAIRMAN O'REILLY: You'll have friendly amendments is what you're suggesting, okay. Emerson Hasbrouck, are you seconding it?

MR. EMERSON HASBROUCK: I'll second that motion.

CHAIRMAN O'REILLY: Okay so we have a motion and a second. Ritchie White.

MR. WHITE: I'm trying to understand this, David. The process will be that the Technical Committee or PDT will draft the language for the forgiveness option that we will see by e-mail, but we won't see it at a meeting. I'm afraid I'm not comfortable with that.

CHAIRMAN O'REILLY: Stew Michels.

MR. MICHELS: I'm trying to understand the overage forgiveness option, ultimately would that result in a recommendation to NOAA, I mean as I understand it that is inconsistent with the Federal Plan.

MR. ROOTES-MURDY: The original idea and I think this is what people are still grabbing onto, was the quota forgiveness policy that's in place for scup and black sea bass. Under that we have the state allocations in the Commission's Plan. In a situation where the coastwide quota is not exceeded, if there is a state allocation where that quota had been exceeded, so long as the coastwide has not been exceeded it is forgiven. That is the concept that as staff we've been working under in terms of what was directed by the Policy Board.

CHAIRMAN O'REILLY: Dan McKiernan.

MR. McKIERNAN: As I mentioned earlier, I'm really uncomfortable having state trip limits, but I do favor regional trip limits. I wouldn't support this motion unless the reference to state trip limits were taken out, because if we don't have state-by-state allocations, and we have regional quota, then we need the same trip limits. I want to eliminate state trip limits, I want regional trip limits. I want Rhode Island and us to have the same trip limits if we go forward with this.

MR. ROOTES-MURDY: You do.

MR. McKIERNAN: We do now. But I don't want Rhode Island and Massachusetts to have different trip limits after this is enacted, fishing on a common quota.

CHAIRMAN O'REILLY: Go ahead, Kirby. We're moving off in some directions right now. It's okay.

MR. ROOTES-MURDY: Just to clarify what the FMP currently is versus what this motion is proposing. We currently have state-by-state trip limits, all right. The Board specifies what the regional trip limit is. They can do it annually and they can specify it up to multiple years. Unless this motion I think is perfected to exclude state or regional trip limits, you currently have those things in place and that would continue.

MR. McKIERNAN: Even in New England where there is a regional quota, there is state trip limits option?

MR. ROOTES-MURDY: Yes. Each of the states set their own trip limits, right. For example, some states like Maine set a trip limit that's actually lower than what the regional trip limit is, because that is their preference.

MR. McKIERNAN: To continue my argument. Unless I'm guaranteed that with the elimination of the federal trip limit that we're going to have the same trip limits in our region, because we're fishing on a common quota, then I will oppose this motion.

CHAIRMAN O'REILLY: May I come back to you, Megan? Mike Ruccio had his hand up.

MR. RUCCIO: I'm a little uncomfortable with the language as it stands on the portion regarding the federal commercial trip limit. Again I think I understand what the objective is, but there has already been a recommendation to the Councils to consider rescinding that trip limit. As I understood it what the function here

is, is to scope on if there is support for either state or regional trip limits and possibly what those might be in the absence of the federal trip limit, which I think is a little bit different ask than making the recommendation again.

I want to see if that is kind of consistent with how people are viewing this, because I think as it's worded it's redundant to conversation that has already occurred regarding the disposition of the federal trip limit. I think that is known. I'm trying to get at how this is different than what has already occurred, relative to eliminating the federal trip limit.

CHAIRMAN O'REILLY: I too thought that really the situation was to have this federal trip limit issue move ahead a little faster than where it's destined to be right now, and get to, it's going to take at least two framework meetings is what I understand. I thought that was the intent of what we were talking about earlier to draw emphasis on the need to consider the federal trip limit a little more quickly than maybe it's planned right now. Megan, you did have your hand up.

MS. WARE: Maybe this is a little bit of what Mike was saying. I was having a sidebar over here. But I guess my question to David is; are you looking to have a recommendation to NOAA in the Addendum, or are you looking to, I'll say scope on the issue, and if it's the latter. I'll look to Toni.

But I think in one of the Herring Days-Out Addendum there was an issue that didn't have management alternatives, but it was just an open ended question that was part of the public comment. I'm wondering if that would be an avenue to take in this instance, to just have an open-ended question in the Addendum to get feedback.

CHAIRMAN O'REILLY: David, your name came up.

MR. BORDEN: To answer Megan's question. I think the intent is to scope on it. This goes back to the point that Mike Ruccio made. If we change the language on the third line there, if we were to change the language and include some language that we would scope the concept, it might be clearer. Scope on the concept of eliminating the federal trip limit, does that allay the concerns, in other words this body has other than an advisory role, we have no role in setting the federal trip limit. We can just provide advice. If you do what I'm suggesting here, all you are going to do is get advice, consolidate the advice, and that would inform a future position that's all. It's not a regulatory action.

CHAIRMAN O'REILLY: Emerson, does the modification sit well with you?

MR. HASBROUCK: Yes, I'm fine with that.

CHAIRMAN O'REILLY: Chris Batsavage.

MR. CHRIS BATSAVAGE: I think that clarification works for that. I had some similar thoughts that Megan had regarding the overage forgiveness that it seems like that could already be done in the Plan by having 45 days to balance the books, for lack of a better term. But I'm okay with including this in the Addendum, only if staff thinks that we could do all of this and have it ready for final action at the Annual Meeting.

CHAIRMAN O'REILLY: Mike Luisi.

MR. LUISI: I'm just wondering if we just started out with something really simple and then just complicated it, you know made it too complicated. I'm trying to think through the connectivity with the Council on this. Whether it might be another direction that we take here today, to go forward with the document as Kirby presented it, but have this Board write a memo.

Write a letter which could be direct to both the New England and Mid-Atlantic Councils,

suggesting that they elevate this on their list of priorities for 2020. We take this whole thing up in a 2020 action rather than complicating what was a very simple document, just a thought.

CHAIRMAN O'REILLY: We have two suggestions, one the transferability is still there. Does that sort of mitigate the situation with such a low coastwide quota that we're in? I guess secondly Mike Luisi's suggestion, which might carry as much weight, I don't know. I would need to have some comments on that because we have sort of complicated the initial situation from where we left off last time at the Board, so comments on either of those suggestions. Stew.

MR. MICHELS: Just to point out that I believe the Board suggested such action last year of the Councils, and that ultimately didn't happen this year.

CHAIRMAN O'REILLY: Go ahead.

MR. ROOTES-MURDY: I'll pass it off to Toni, because she wants to answer.

MS. KERNS: I just want to clarify. I think from what I heard from Adam, and to keep it simple in terms of overage forgiveness it would just be one option, to allow for overage forgiveness in the years that we do not enact the quota rollover. Am I correct in that is what you said, Adam?

MR. NOWALSKY: That was what I suggested, but I did not make this motion. But that was what I said and support that way forward.

MS. KERNS: I think that that is something that we could easily add to the document. I think the background of the document has the information that they are ready, and for the transfers this coincides with that same type of information, so they could just be one simple option in the document to be added.

MR. ROOTES-MURDY: I can follow up and just clarify. There would be an additional two options, status quo and one that will allow this. You could be in a situation if both of those are selected, where the resource is not rebuilt but the quota forgiveness is in place. The other would be when the resource is rebuilt then the quota forgiveness is not allowed, but you can have the 5 percent rollover, just to make sure that this potential option is clear to me and staff.

CHAIRMAN O'REILLY: Is there further comment or discussion on the motion? Chris Batsavage.

MR. BATSAVAGE: Just to clarify from staff and Toni's comments about this should be a pretty straightforward option for overage forgiveness. That basically means that the document can be ready for final action by the Annual Meeting in October, right?

MR. ROOTES-MURDY: Yes.

CHAIRMAN O'REILLY: Mike Ruccio.

MR. RUCCIO: Just for my own clarification before we presumably vote on this. Will we see language on how the forgiveness will function? Because I'm not clear on how the 5 percent relates to potential quota disconnects, and that is obviously of concern to me. If it's as simple as when the criteria are triggered it functions as black sea bass and scup does now, and we would be on level terms in terms of quota.

That is a perfect description for me, I get that. If it's something different I'm going to have to kind of dig into it and understand it, I think before we not necessarily here, but if we're looking at the language. We might have concerns about that. I just want to be forthright about that.

CHAIRMAN O'REILLY: I think Kirby outlined the same situation, but Toni is here too. But my understanding is that yes it would be a situation if the coastwide quota is not met then that is what they're looking forward to. I think that that is what the situation is now. We're in a

very tough season coastwide quota wise, so I understand where this all came from. But if Toni or Kirby has anything to add that's fine.

MS. KERNS: Kirby said this before, but I want to make sure everybody heard it that quota forgiveness would be tied to the status of the stock then, because the 5 percent rollover is only allowed when the stock is rebuilt, so quota forgiveness would not be applied then during a rebuilt resource, because we could potentially use the quota rollover. Is that what you were getting at, Adam? I just want to make sure that that is clear to everybody.

MR. NOWALSKY: I don't think I was providing clarification on that point. I think I would have to defer to you as staff with the expertise in what the Plan calls for to explain; this is the implication of that decision, and then the Board. I appreciate; again I'm flattered you keep coming back to me. But this is a Board motion. This is a Board action.

MS. KERNS: I think from a staff perspective it would be the cleanest and easiest way to address quota forgiveness. If the Board then wants to reconsider quota rollover at any point in time, due to its incompatibility with the federal plan then you could consider that in the future.

CHAIRMAN O'REILLY: Ritchie White, and Megan after that.

MR. WHITE: Would it be possible to write out that option now, take a ten minute recess so that we can see it? I'm uncomfortable with this coming out in an e-mail, and then if somebody is uncomfortable with some wording or something then you're stuck with it.

CHAIRMAN O'REILLY: Yes. Megan, did you have something?

MS. WARE: Yes. Maybe Ritchie has solved that but I'm a little concerned that we're moving really quick on this one issue of overage forgiveness, and I don't want us to rush into something that maybe isn't fully thought out. I was going to maybe make a motion to amend to strike that. If Adam you want to open up another addendum to address that and maybe rollovers, I'm happy to consider that. But I think it might be a little short for this. I'm happy to defer to the Board if you guys want to see draft language in ten minutes, or I can make a motion.

CHAIRMAN O'REILLY: Let the writing begin, and we'll just have a few minutes to go over that. Ritchie White has had concerns all throughout, so I think it's worthwhile, and maybe for some others who haven't spoken up to see what it would look like, rather than wait for the e-mail. Thank you. We have a ten minute break, and we're still on time so all is well. Be back by 11:50.

(Whereupon a recess was taken.)

CHAIRMAN O'REILLY: Okay the Spiny Dogfish Management Board is back in session. Kirby is going to give you some information.

MR. ROOTES-MURDY: Based on the Board's discussion, we have drafted out what the potential language that could be included in the Addendum, based on the idea of including a quota overage forgiveness similar to scup and black sea bass. In the Summer Flounder, Scup, Black Sea Bass Plan, Addendum XX on Pages 3 and 4 have language about how a state overage of their quota, but the coastwide quota has not been exceeded is included in there.

The concept is generally simple. That is if you are over your state quota but the coastwide quota has not been exceeded, there is a forgiveness. There is then also a reconciliation process that allows for those states that have the underage to pool their underage together to cover effectively the overage. We have a table in that Addendum that lays out how that math works out. We've tried to perfect the language that is taken from that Addendum, for

this Board's consideration today to be specific regarding the status of the resource. If the stock is above the biomass target, then this quota overage forgiveness would not be allowed. That is some clarifying comments on the language that has been drafted and included on the board currently.

CHAIRMAN O'REILLY: Questions, Megan.

MS. WARE: This is I think a lot to be putting into a document right now without fully thinking it through. **I'm going to make the motion to amend to strike overage forgiveness from this Addendum.**

CHAIRMAN O'REILLY: Okay, we'll wait for that to appear. We have a motion; move to amend to strike quota forgiveness from this Amendment by Megan Ware. Do we have a second? Okay Bryan Plumlee seconds the motion. Okay discussion on the motion, keep in mind we are time challenged at this point, but no one is going to chase me down afterwards.

I don't see any hands, so we're going to call the question. I want to take about 30 seconds to caucus. Is that enough time? Let's do 30 seconds. **Okay I'm going to read the motion again for the record. Move to amend to strike quota forgiveness from this motion, which is the motion above. Could I have a show of hands for all those who are in support of the motion?**

Opposed like sign. The motion carries 11 to 1. Are there any abstentions? I should have asked you that. Did anyone want to abstain? A little after the fact question. No that's good, my record is clean. Thank you. Okay that brings us back to the main motion. Has that been altered? You're working on the main motion. Mike Ruccio.

MR. RUCCIO: I know they are still working on the language, but just a question of whether or not there is any need to retain provisional approval with the removal of the overage forgiveness. It's not the only concept within Addenda VI as we previously discussed. Is there still language that we anticipate seeing after the fact?

Because we've already modified the language on the federal trip limit, and clarified that that is just to be scoping on that concept. I don't think there is a regulatory component to that. But if I understand it we're voting on taking this out to public hearing now, right?

CHAIRMAN O'REILLY: I do understand. I look to Kirby for maybe some certainty.

MR. ROOTES-MURDY: Again, the motion on the board right now would only add language asking for feedback regarding the elimination of the federal trip limit.

MR. RUCCIO: Correct, but I think my question was whether or not provisional is still required.

CHAIRMAN O'REILLY: Provisional should go.

MR. RUCCIO: I thought that was predicated on us discussing overage forgiveness, and the need to have some language that would go out to the Board in the interim between now and whatever public scoping happens. I guess I'm asking if this is final approval for the scoping document.

CHAIRMAN O'REILLY: Toni Kerns.

MS. KERNS: It's a decision of the Board. It's not required regardless, but that was a contingency that the Board put on, on adding language to the document. They wanted to see it before it went back out. We would still send the additional language back out to the Board for your review. We would ask for a quick turnaround and then move forward. But if the Board wants to move in a different direction now that it's only this scoping information, then that is the prerogative of the Board.

MR. RUCCIO: Thanks for clarifying.

CHAIRMAN O'REILLY: I get the sense that this is okay. Is there anyone who has a problem with the way the motion is written right now, the writing of it? I don't think you need a caucus, so I'm just going to ask the question**. All those in favor of the motion please raise your hand. Keep your hands up for a second while I read it in the motion, don't let them down.**

Move provisional approval of Draft Addendum VI for public comment subject to the addition of scoping on the concept of eliminating the federal commercial trip limit to be replaced by the state trip limits (North Carolina-New York) and northern region trip limit. Okay that's good exercise. Kirby has counted, opposed like sign, abstentions. Seeing none, the motion carries unanimously, 12 to 0. Thank you very much. Is there any other business to come before the Board? The next person you see up here next time will be Chris Batsavage. Thank you very much.

MS. KERNS: Thank you, Rob.

ADJOURNMENT

CHAIRMAN O'REILLY: We are adjourned.

MS. KERNS: For those of you that haven't heard, Rob is retiring. I think that is what he was getting at there.

(Whereupon the meeting adjourned at 12:00 o'clock a.m. on August 7, 2019)

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM VI TO THE SPINY DOGFISH INTERSTATE FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT

Commercial Management: Quota Transfers between Regions

August 2019

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Atlantic States Marine Fisheries Commission Seeks Your Input on Spiny Dogfish Management

The public is encouraged to submit comments regarding this document during the public comment period. Comments will be accepted until 5:00 p.m. EST on **September 23, 2019**. Regardless of when they were sent, comments received after that time will not be included in the official record.

You may submit public comment in one or more of the following ways:

1. Attend public hearings held in your state or jurisdiction.
2. Mail, fax, or email written comments to the following address:

Kirby Rootes-Murdy
1050 North Highland St., Suite 200 A-N
Arlington, VA 22201
Fax: (703) 842-0741
comments@asmfc.org (subject line: Spiny Dogfish Draft Addendum VI)

You may also refer comments to your state's members on the Spiny Dogfish Management Board or Spiny Dogfish Advisory Panel; however, only comments submitted to the Commission or given at a public hearing will be included in the public comment summary presented to the Board. If you have any questions please call 703.842.0740.

Commission's Process and Timeline

May 2019	ISFMP Policy Board Tasks Staff to Develop Draft Addendum VI
May – July 2019	Staff Develops Draft Addendum VI for Public Comment
August 2019	Spiny Dogfish Board Reviews Draft Addendum VI and Considers Its Approval for Public Comment
August – September 2019	**Board Solicits Public Comment and States Conduct Public Hearings**
October 2019	Board Reviews Public Comment, Selects Management Options and Considers Final Approval of Addendum VI
TBD	Provisions of Addendum VI are Implemented

1. INTRODUCTION

The Atlantic States Marine Fisheries Commission (ASMFC) is responsible for managing spiny dogfish (*Squalus acathias*) in state waters (0–3 miles from shore) under the authority of the Atlantic Coastal Fisheries Cooperative Management Act, and has done so through an interstate fishery management plan (FMP) since 2003. The states of Maine through North Carolina have a declared interest in the fishery and are responsible for implementing management measures consistent with the interstate FMP.

Spiny dogfish is managed in federal waters (3–200 miles from shore) through a joint FMP of the Mid-Atlantic Fishery Management Council (MAFMC) and the New England Fishery Management Council (NEFMC). These two councils make recommendations on management to the National Oceanographic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), which is responsible for implementing management based on the input from the two councils and per the requirements of the Magnuson-Stevens Fishery Conservation and Management Act.

At its May 2019 meeting, the ASMFC's Interstate Fisheries Management Program Policy Board approved the following motion:

Move to direct the Spiny Dogfish Management Board to initiate an Addendum to allow unused quota allocated to the northern states collectively to be transferred in the second half of the fishing year to the states that have state-specific allocations. This action is intended to promote full utilization of the overall commercial quota. It is intended that these proposed transfers shall only be allowed if there is unanimous consent among the northern states regarding the timing and the amount. Also, the Board shall include quota overage forgiveness language similar to that in Addendum XX of the Summer Flounder, Scup, and Black Sea Bass FMP where in the event the overall annual quota of black sea bass and scup (during the summer) among the states is not exceeded, then individual state overages are forgiven.

At its August 2019 meeting, the Spiny Dogfish Management Board agreed with the Plan Development Team's recommendations to: 1) consider a more general approach to allowing quota transfers that include a region (e.g., not just from northern states to southern states); and 2) discard the concept of quota overage forgiveness due to the complications presented by the existing provision for unused quota rollover. In addition, the Management Board voted to include a scoping question on the concept of eliminating the federal commercial trip limit.

Accordingly, this draft document considers options to add quota transfer abilities for multi-jurisdictional regions for the commercial spiny dogfish fishery along the U.S. Atlantic coast, and seeks public input on the merits of having both state and federal commercial trips limits and whether to recommend to federal mangers the elimination of the federal commercial trip limit in favor of state/regional commercial trip limit management.

2. OVERVIEW

2.1 Statement of the Problem

Interstate management of the spiny dogfish commercial fishery includes both state-specific and regional shares of the coastwide quota. At present, quota transfers are only possible between states with individual state quotas, whereas regions have not been granted the authority to donate or receive quota via transfers. Consequently, regions are unable to share in the benefits of quota transfers, which include assisting in the full utilization of the coastwide quota and avoiding quota payback requirements for unintended quota overages. This situation may be exacerbated during the 2019–2020 fishing year due to a 46% reduction in the coastwide quota. If landings in the 2019-2020 fishing year remain status quo, the coastwide quota would not be exceeded but some states could face an early quota closure.

2.2 Background

2.2.1 *Quota Management*

The spiny dogfish commercial fishery operates on a May 1–April 30 fishing year (FY; e.g., FY 2019 refers to 5/1/2019 to 4/30/2020). The Federal FMP includes an annual coastwide quota, the amount of which is specified by the Councils and Commission and implemented by NOAA Fisheries. Since the implementation of the Federal FMP in 2000 (MAFMC and NEFMC, 1999) and the Interstate FMP in 2003 (ASMFC, 2002), the coastwide quota has been allocated in several variants of seasonal and regional quotas.

In 2011, under Addendum III (ASMFC, 2011), the interstate FMP established regional (ME–CT) and state-specific (NY, NJ, DE, MD, VA, and NC) allocations of the coastwide quota, which remain in place (Table 1). States have the responsibility to close the spiny dogfish commercial fishery in their state once their (state or regional) quota has been reached. Addendum III also authorized quota transfers, but only for states with individual quotas. State-to-state quota transfers were common practice for other Commission-managed species at the time, and a process for quota transfers involving a region was not considered.

Table 1. Spiny Dogfish Allocations since 2011

	Northern Region (ME-CT)	NY	NJ	DE	MD	VA	NC
Allocation	58%	2.707%	7.644%	0.896%	5.92%	10.795%	14.036%

2.2.2 Commercial Fishery

U.S. commercial spiny dogfish landings along the Atlantic coast follow the seasonal migration of spiny dogfish. In recent years, the highest proportions of landings in the northern region (ME–CT) have occurred during the months of July, August, and September (Figure 1). For the states of New York to North Carolina, nearly all landings occur from November through April (Figure

2). The fishery in the northern region is largely concluded by November, just as the fisheries to the south ramp up.

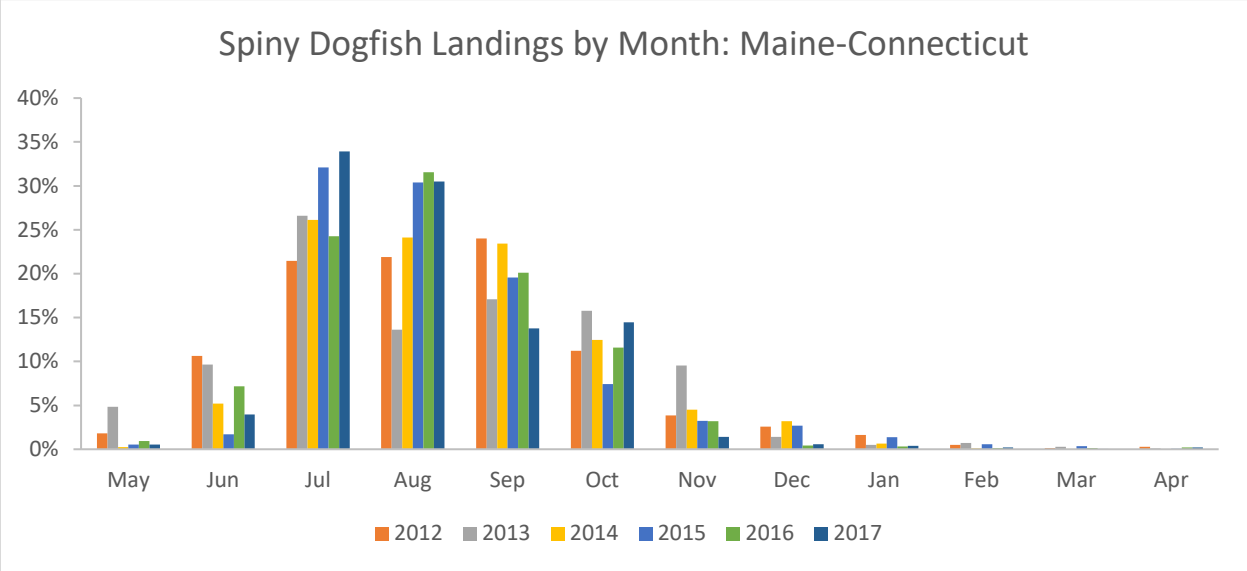

Figure 1. Proportion of Landings by Month for Maine–Connecticut, FYs 2012–2017. Source: ACCSP 2019.

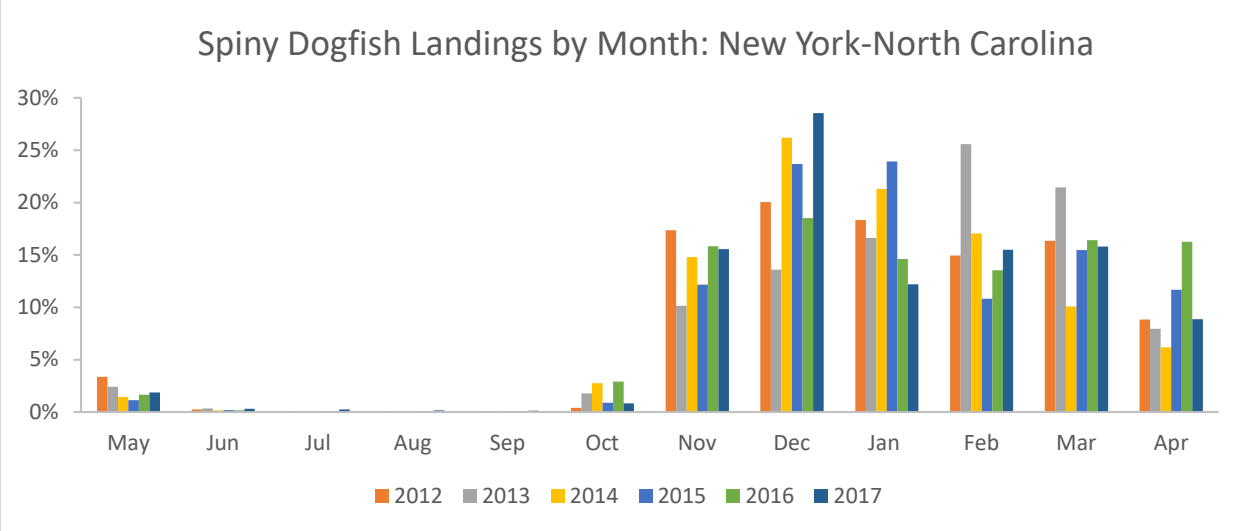

Figure 2. Proportion of Landings by Month for New York–North Carolina, FYs 2012–2017. Source: ACCSP 2019.

Total commercial landings closely tracked the coastwide quota for most of the first 12 years of quota management (FY 2000–FY 2011), after which the landings plateaued while the quota continued to increase (Figure 3). Landings during FY 2012–FY 2018[1] averaged 20.93 million

[1] Commercial landings for FY2018 are preliminary and subject to change.

pounds, while the coastwide quota averaged 42.02 million pounds. For FY2019, the coastwide quota has been reduced to 20.52 million pounds to avoid overfishing the stock amidst declining biomass (NEFSC, 2018). Over the last three years (FY2016–2018), less than half of the cumulative coastwide quota has been landed, though similar landings in FY2019 would achieve nearly 100% of the newly reduced quota level.

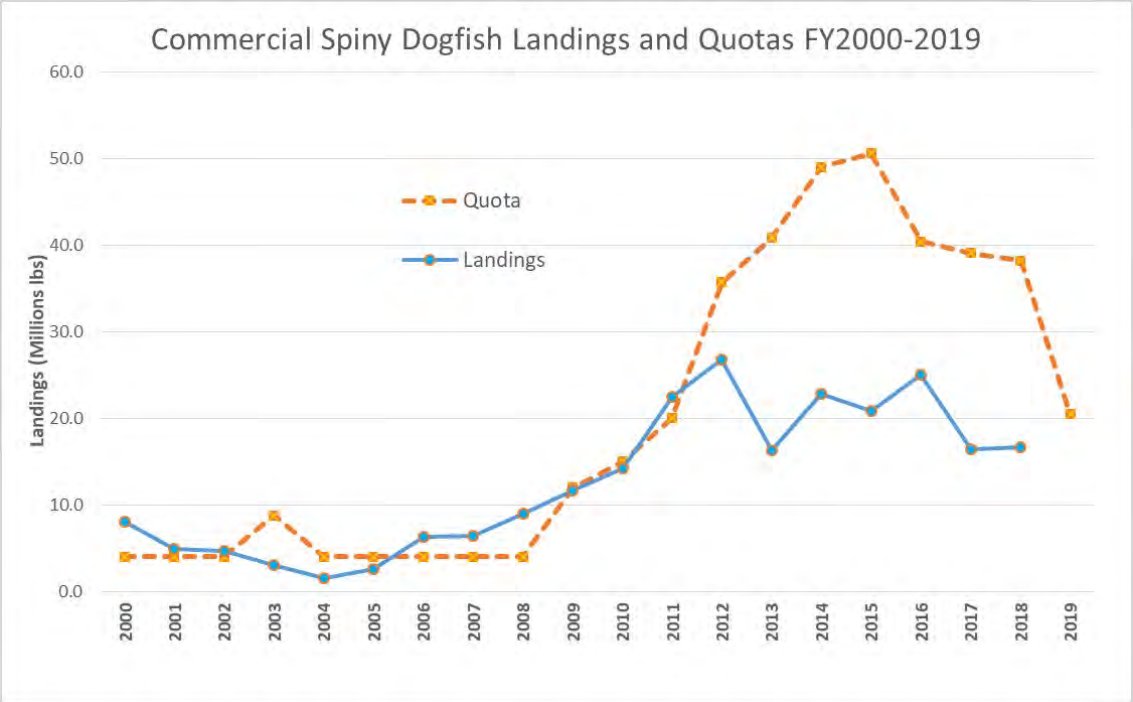

Figure 3. Coastwide Landings and Quotas FY2000-2019. Source: Unpublished NOAA dealer reports

At a more local level, fishery performance relative to quotas varies both among states/regions and year-to-year within a state/region. During the last three years (FYs 2016–2018), the percent of annual quota used by a state or region ranges from 0% to 94%, and up to 118% exclusive of transfers (Table 2). Only Virginia has had consistently high landings compared to available quota, notably including FY 2018 when a quota transfer was necessary to avoid an early closure of the state's fishery. While more variable, the fisheries of the northern region, New Jersey, and Maryland have demonstrated the capacity to land a majority of their quota on a single year basis. North Carolina's landings are significant, yet the fishery has taken less than half the state's available quota in each of the last three years. New York's and Delaware's landings qualify for *de minimis* status.

While only Virginia's landings in FY 2018 (and FYs 2016 and 2017) would exceed its FY 2019 quota, three additional states/regions (ME–CT, NJ, and MD) had landings in at least one of the last three years that would surpass their FY 2019 quotas. These trends suggest that there may not be enough quota among the states with state-specific quotas to satisfy all their fisheries, while it's possible the northern region could have unused quota to share.

Table 2. State/Regional Spiny Dogfish Quota and Percentage of Quota landed from FY 2016 to 2018. FY 2019 included for comparison. Source: FY 2016-2017 State data for ME-DE; VA-NC from ACCSP 2019. MD FY 2016-2019 and all state FY 2018 from Preliminary NOAA Quota Monitoring Reports.

State/Region	FY 2016		FY 2017		FY 2018		FY 2019
	Quota^	Landings	**Quota**	Landings	**Quota**	Landings^^	**Quota**
		% of Quota		*% of Quota*		*% of Quota*	
ME-CT	**24,876,989**	15,758,302	**22,677,836**	10,807,726	**22,153,577**	8,471,582	**11,903,243**
		63.34%		*47.66%*		*38.24%*	
NY	**1,161,069**	40,692	**1,058,429**	48,212	**1,033,961**	46,487	**555,716**
		3.50%		*4.56%*		*4.50%*	
NJ	**3,278,616**	2,853,557	**2,988,782**	1,860,862	**2,919,689**	1,271,966	**1,568,900**
		87.04%		*62.26%*		*43.57%*	
DE	**384,307**	150	**350,333**	0	**342,235**	0	**183,893**
		0.04%		*0.00%*		*0.00%*	
MD	**2,539,169**	2,378,766	**2,314,703**	550,536	**2,261,193**	719,676	**1,214,957**
		93.68%		*23.78%*		*31.83%*	
VA	**4,630,122**	3,605,861	**4,220,814**	2,530,376	**6,123,239**	4,870,717	**2,215,484**
		77.88%		*59.95%*		*79.54%**	
NC	**6,020,231**	418,860	**5,488,036**	757,279	**3,361,166**	1,367,414	**2,880,640**
		6.96%		*13.80%*		*40.68%*	
Coastwide	**42,890,503**	25,056,188	**39,099,717**	16,541,575	**38,195,060**	16,747,942	**20,522,832**
		58.42%		*42.31%*		*43.85%*	

^FY 2016 Quotas include 5% Quota Rollover

^^2018 Landings are preliminary and subject to change

*Virginia's final quota for FY 2018 includes a 2 million pound transfer from North Carolina; Virginia's FY 2018 landings represent 118% of its initial quota level.

3. PROPOSED MANAGEMENT PROGRAM

This addendum considers modifying the current quota transfer provisions as outlined in *Section 3.2*: *State Quota Transfers* of Addendum III to the Interstate Fishery Management Plan for Spiny Dogfish.

<u>Quota Transfers Options:</u>

Option 1: Status Quo

Under this option, the quota transfer provisions as outlined in Section 3.2 of Addendum III remain unchanged. Quota transfers are allowed only for states with an individual (not regional) quota.

Option 2: Allow Quota Transfers between all states and regions

Under this option, quota transfer is allowed between all states and regions. This alternative adds the ability for a region to participate in a quota transfer through the mutual agreement of each state in the region. Specifically, the Administrative Commissioner (or proxy) from each

state in the region must agree to the transfer in writing. The Executive Director or designated ASMFC staff will review and approve all transfer requests before the quota transfer is finalized.

As with transfers between states, transfers involving regions do not permanently affect the shares of the coastwide quota. Agreements for transfer of quota are to be forwarded to the Board through Commission staff. Once a quota transfer is finalized, quota management for the year (i.e., quota closures and overage accountability) is based on the transfer-adjusted quota amount. All quota transfers must occur within 45 days of the end of the fishing year.

4. PUBLIC SCOPING QUESTION

NOAA Fisheries annually establishes a federal commercial trip limit as a requirement for vessels with a federal spiny dogfish permit. As part of the annual federal specification process, both Councils make recommendations to NOAA Fisheries on what the federal commercial trip limit should be for the upcoming fishing year. As part of the Commission's FMP, the states of NY-NC annually establish commercial trip limits for state permit holders and the Commission's Spiny Dogfish Board establishes a regional trip limit for the states of ME-CT. For vessels fishing with both a state and federal permit, the more restrictive trip limit must be followed regardless of where they are fishing. As part of the Commission's FMP, the states set commercial trip limits to achieve their annual state and regional quotas. The Commission does not establish the federal commercial trip limit, but it can make recommendations to the Councils and NOAA Fisheries on this management measure during the federal specifications process.

The Commission is seeking scoping comments on the following question:

Should the Commission recommend that the federal commercial trip limit be eliminated and replaced by the state-by-state trip limits where they exist (NY–NC) and a regional trip limit where it exists (Northern Region of ME-CT)?

As part of scoping public comment on this question, it is important for the public to understand that the Commission would only be making a recommendation to the Councils and NOAA Fisheries. If the Councils decided to evaluate eliminating the federal commercial trip, it would likely require a framework management action which would be developed over the course of at least two Council meetings. If the Councils and NOAA Fisheries ultimately chose to eliminate the federal commercial trip limit, this action would be effective no earlier than FY2021.

5. COMPLIANCE SCHEDULE

If the existing spiny dogfish management plan is revised by approval of this draft addendum, the measures would be effective immediately.

6. LITERATURE CITED

Atlantic States Marine Fisheries Commission (ASMFC). 2002. Interstate Fishery Management Plan for Spiny Dogfish. 107p.

Atlantic States Marine Fisheries Commission (ASMFC). 2011. Addendum III to the Interstate Fishery Management Plan for Spiny Dogfish. 7p.

Mid-Atlantic Fishery Management Council (MAFMC) and New England Fishery Management Council (NEFMC). 1999. Spiny Dogfish Fishery Management Plan. NOAA Award No. NA57 FC0002. 292 pp.

Northeast Fisheries Science Center (NEFSC). 2018. Update on the Status of Spiny Dogfish in 2018 and Projected Harvests at the Fmsy Proxy and Pstar of 40%. Report to the Mid Atlantic Fishery Management Council (MAFMC) Scientific and Statistical Committee (SSC) August 31, 2018. 82 pages.

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Spiny Dogfish Management Board

FROM: Kirby Rootes-Murdy, Senior FMP Coordinator

DATE: October 1, 2019

SUBJECT: Public Comment Summary on Spiny Dogfish Draft Addendum VI

The following pages represent a draft summary of all comment received by ASMFC on Spiny Dogfish Draft Addendum VI as of 5:00 PM (EST) on September 23, 2019 (closing deadline).

A total of 7 written comments were received on Draft Addendum VI. These included two organizations and the remainder from commercial fishermen and concerned citizens. Three public hearings were held in two jurisdictions, one virtually (webinar). Six individuals are estimated to have attended the hearings.

There were few comments provided specific to the proposed options and scoping question in Draft Addendum VI. Two individuals and one organization (Sustainable Fisheries Association) indicated their support for Option 2: Allow Quota Transfers between all states and regions. Reasons cited in support of this option were an interest in fully utilizing the coastwide quota and allowing all jurisdictions to benefit from quota transfers. One individual representing the New Hampshire Commercial Fishermen's Association supported Option 1: Status Quo. No reasons were cited.

Few comments were received on the public scoping question regarding should the Commission recommend to the Councils and NOAA Fisheries that the federal commercial trip limit be eliminated and replaced by state and regional trip limits. The Commission does not establish the federal commercial trip limit, but it can make recommendations to the New England and Mid-Atlantic Fishery Management Councils and NOAA Fisheries on this management measure during the federal specifications process. As part of the Commission's public comment process, the public was encouraged to provide comments on this question to help inform future recommendations from the Commission to the Councils and NOAA Fisheries on the management of spiny dogfish in federal waters.

One individual supported maintaining the federal trip limit and another individual supported recommending elimination of the federal trip limit. Reasons cited in support of recommending maintaining the federal trip limit focused on concern about flooding the market. Eliminating the federal trip limit may lead to states setting higher trip limits which might lead to more landings,

ultimately resulting in a lower price per pound. They indicated that regardless of the market incentives, fishermen would likely fish at a higher trip limit if allowed. Additionally, the individual noted concern that although states manage the commercial fishery using a quota system, eliminating the federal trip limit may result in a 'derby' fishery.

Reasons cited in support of recommending eliminating the federal trip limit focused on challenges the market currently poses to the fishery, specifically, that it's not economical to make fishing trips when the trip limit is low and price per pound is also low. Other points of concern included that the current federal trip limit constrains the states from collectively achieving the annual coastwide quota and results in high discard rates. Lastly, the individual noted that allowing the states the same flexibility to set trip limits similar to how state quotas are managed in the summer flounder, scup, and black sea bass FMP would likely work well.

The New England Fishery Management Council expressed a number of concerns about the Commission's process in collecting public comment on the scoping question regarding eliminating the federal trip limit. It stated that it was not appropriate for the Commission to seek public comment on this question as the topic is not currently under development for changes in management by either the New England or Mid-Atlantic Fishery Management Councils. Additionally, it was noted that the Addendum does not identify a problem that needs to be addressed by a change in the possession limit and cited concern that the Commission's process for collecting public comment on this topic is too limited given there were only two public hearings and a public hearing webinar.

In addition to comments specific to the proposed management in Draft Addendum VI, the following general comments were also provided:

• Individual who regularly does bottom fishing around Block Island has seen high abundance of spiny dogfish and wants Addendum VI to be as liberal as possible to allow the biomass to be maximally harvested.
• Individual stated he/she does not want full utilization of the quotas. Instead, wants the quota cut by 50% immediately in all regions.
• Individual who gillnet fishes for spiny dogfish and is in favor of shifting state quota transfers to other states in an effort to achieve a better price.

- Individual takes issue with the NEFSC trawl survey; states that 80% of the female population are not surveyed by the trawl gear due it being off the bottom and 90% of the male population are not in the survey area. Indicates that management is based on incorrect science, which has led to lower quotas and has forced the closing of processing plants in the south. The reduced quotas created a market opening in Europe for other countries producing dogfish. The individual wants information on the amount of spiny dogfish imported into the U.S. and requests that ASMFC Staff be required to provide import data. The individual indicates that ASMFC must comply with Article 1 Section 1 of the Commission's Compact to prevent physical waste by mandating an industrial use for spiny dogfish. Additionally, the individual wants to do away with Draft Addendum VI and require a processing plant be opened in North Carolina or Virginia with supplemental funding from NOAA NMFS, the Regional Councils, and ASMFC. Requests that the ASMFC and MAFMC research how to rename spiny dogfish rather than completing Draft Addendum VI. States that historical dogfish in 1890s (biomass) comprised 17% of the biomass (target); in 2016, (biomass) comprised 80% of biomass target. Reiterates need to stop development of Draft Addendum VI

Summaries of the public hearings can be found next and are ordered from north to south. This is then followed by letters sent by organizations and letters sent by individuals.

Draft Addendum VI to the Spiny Dogfish Interstate Fishery Management Plan
New Hampshire Public Hearing

September 3, 2019
Urban Forestry Center
Portsmouth, NH
Commissioners: Doug Grout and Cheri Patterson (NH FG)
5 participants

3.1 Quota Transfers Options

- 1 individual, representing the NH Commercial Fishermen's Association, supported Option 1: Status quo.
- The New England Fishery Management Council (NEFMC) currently has no position on Quota Transfers Options.

Public Scoping Question

- The NEFMC opposes ASMFC's process in garnering comments for an unclear problem and circumvents the Council public process with which the fishing industry has a large voice in determining whether the federal FMPS' possession limits of dogfish be eliminated. Written statement from the NEFMC is attached for the record.

Draft Addendum VI to the Interstate Fishery Management Plan for Spiny Dogfish for Public Comment

Atlantic States Marine Fisheries Commission
September 3, 2019
Portsmouth, New Hampshire

-- PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
Tom Nies	NEFMC	Portsmouth NH
Ellen Goethel		Hampton NH
Peter White		Portsmouth NH
Jeremy Hawker	NHFG	

Draft Addendum VI to the Spiny Dogfish Interstate Fishery Management Plan
Rhode Island Public Hearing

September 16, 2019

Narragansett RI

Staff: Conor McManus and Scott Olszewski (RIDEM DMF)

Commissioners: Jason McNamee (RIDEM DMF) and David Borden (AOLA)

Summary: The hearing was held, but no one from the public attended to provide comments on the issues at hand.

Draft Addendum VI to the Spiny Dogfish Interstate Fishery Management Plan
Public Hearing Webinar

September 18, 2019

1 Participant

Staff: Kirby Rootes-Murdy (ASMFC)

Other: Chris Batsavage (NC DMF), Nichola Meserve (MA DMF), Jason Didden (MAFMC)

3.1 Quota Transfer Options → 1 supports Option 2: Allow Quota Transfer between all states and regions

- 1 individual indicated their preference for Option 2: Allow Quota Transfer between all states and regions. Reason cited was that states should not be penalized if they close their fishery early and that available quota should be able to transferred across the coast between states and regions. They also cited how quota transfers have been very effective and helpful in other fishery, such as for bluefish, and that extending this management tool for states and regions involved in the spiny dogfish fishery would be best.

Public Scoping Question

- 1 individual indicated their preference for not eliminating the federal trip limit. Reason cited was the current market conditions: there are only two fish processing facilities along the coast; the price per pound is currently low; and while there is interest in trying to catch a higher trip limit, there is concern that would further lower the price. Another dynamic is that while the trip limit could be raised, doing so might introduce smaller, lower quality fish into the market, which could potentially affect the price as well.

  While the individual acknowledged there are state and regional quotas in place to constrain landings through the Commission's FMP, they expressed concern that a higher trip limit could result in a more 'derby' style fishery. Additionally, this individual believed that fishermen would fish at a higher trip limit even if it resulted in lower price per pound as result of 'flooding the market'. In summary, they expressed concern that eliminating the federal trip would create a scenario where spiny dogfish fishermen would be landing more fish for less money.

Good Evening. My name is Thomas Nies. I am the Executive Director of the New England Fisheries Management Council and I am here speaking on behalf of the Council.

The fishery for Spiny Dogfish in federal waters is managed by a fishery management plan that was adopted under the provisions of the Magnuson-Stevens Act (MSA). This is a joint fishery management plan of the Mid-Atlantic and New England Fishery Management Councils. The Mid-Atlantic Council is the lead Council for this FMP. Most spiny dogfish landings are harvested under the provisions of this FMP - we estimate that roughly 90 percent of dogfish landings are by federal permit holders.

The New England Council does not yet have a position on the quota transfer provisions that are being considered in Addendum VI to the Interstate Fisheries Management Plan for Spiny Dogfish. We are, however, concerned that this scoping hearing is seeking public comment on eliminating the federal FMP's possession limits. The Mid-Atlantic and New England Councils have not yet decided to pursue an action that would consider changes to the federal possession limit. It does not seem appropriate for ASMFC to ask a question about a management measure that is not yet under development at the same time as the Commission is seeking comments on a change to the ISFMP. We are concerned that this may confuse fishermen about the actions under development, and/or those fishermen who are not closely following the Commission process will not respond to the scoping question. The Addendum also does not identify a problem that needs to be addressed by a change in the possession limit, leaving unanswered what the rationale is for the proposal. Finally, only one option is presented for comment, suggesting a pre-determined response to an undefined problem.

The Spiny Dogfish Advisory Panel met via webinar on August 19, 2019 to develop a Fishery Performance Report. The purpose of that document is to provide the Scientific and Statistical Committee information about fishing effort, market trends, etc. During the course of that meeting, AP members briefly discussed the ASMFC idea to eliminate the federal trip limit and rely on states to set trip limits. Only two advisors voiced an opinion; both were against this suggestion. Some AP members expressed the concern that all fisherman's voices would not be accounted for in the ASMFC process. Given the limited number of scoping hearings that are being held, this is also a concern of the New England Council. It is our understanding that only two public hearings and one webinar are being held for a fishery that takes place from Maine to North Carolina.

In summary, the NEFMC prefers comments and suggestions on federal management be obtained through the Council process, not ASMFC scoping hearings on an unrelated action.

September 23, 2019

Kirby Rootes-Murdy
Senior Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 N. Highland St, Suite A-N
Arlington, VA 22201

VIA EMAIL ONLY

Re: Comments to Spiny Dogfish FMP – Draft Addendum VI

Dear Kirby:

I am writing to you on behalf of the members of the Sustainable Fisheries Association (SFA) regarding the Spiny Dogfish Fishery Management Plan Draft Addendum VI.

The SFA supports Draft Addendum VI as it has been proposed to allow commercial quota to be transferred between all regions and states to enable the full utilization of the coastwide commercial quota and avoid quota payback for unintended quota overages.

Thank you for your consideration of and attention to this issue.

Sustainable Fisheries Association, Inc.
By
/s/
John F. Whiteside, Jr.
General Counsel
John@JWhiteside.com

Sustainable Fisheries Association, Inc.
678 State Road
Dartmouth, MA 02747
(508)991-3333

Kirby Rootes-Murdy

From: Comments
Sent: Friday, September 6, 2019 3:47 PM
To: Kirby Rootes-Murdy
Subject: FW: spiny dogfish draft addendum VI

Follow Up Flag: Follow up
Flag Status: Completed

From: Richard Pastore [mailto:rpengri@gmail.com]
Sent: Thursday, August 22, 2019 1:58 PM
To: Comments <comments@asmfc.org>
Subject: spiny dogfish draft addendum VI

I regularly bottom fish the waters around and south of block island ri. spiny dogfish are the biggest pain in the ass I've run into during my entire 69 years of fishing. not only are their numbers overwhelming when they're on the bite but they will suck down a squid bait in heartbeat out competing everything else around including cod, fluke,scup and black sea bass. additionally they perform their shark death spin when they're next to the boat and have an amazing ability to spear me with their caudal fin spike as they whip it around like an alligator when I'm trying to de-hook them. amendment VI should be as liberal as possible to allow the "biomass" aka "pain-in-the-ass" to be maximally harvested . PLEASE!
regards

Richard L. Pastore P.E.
RP Engineering, Inc
121 Suffolk Drive
North Kingstown, RI 02852
401 885 7255
www.RPENGRI.COM

Kirby Rootes-Murdy

From: Comments
Sent: Friday, September 6, 2019 3:47 PM
To: Kirby Rootes-Murdy
Subject: FW: Comment On Spiny Dogfish Management Proposal

Follow Up Flag: Follow up
Flag Status: Completed

From: jean public [mailto:jeanpublic1@gmail.com]
Sent: Saturday, August 24, 2019 12:40 PM
To: Comments <comments@asmfc.org>; PETA Info <info@peta.org>; The Pew Charitable Trusts <info@pewtrusts.org>; humanelines <humanelines@hsus.org>; INFORMATION@sierraclub.org
Subject: Re: Comment On Spiny Dogfish Management Proposal

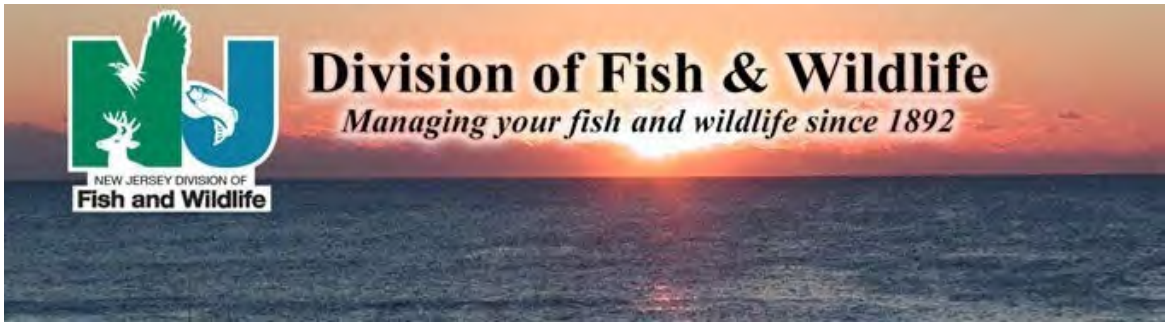
public commetn on spinry dogfish overfishing plan

i do not want to enable full "utilizatoin" of quotas. i want quota cut by 50% immediately in all regions. the overfishing going on per this sneaky asmfc organizatoin, which is slanted to commercial fish profiteers and not workinf in the best interests of the entire american public citizenry. this is the first time i have ever seen anything allowed for the public to comment on anything this sneaky asmfc does. usually this sneaky slanted biased organization working only for commercial fish profiteers doesnt want the public to knoiw what they do in secret. asmfc is a very sneaky closed orgaqnziation. hard to find out anything about what they do. this comment is for the public record. please receipt. jean publiee jeanpublic1@gmail.com

To All Applicable Commercial Spiny Dogfish Fishermen: The Atlantic States Marine Fisheries Commission (ASMFC) has released draft addendum VI to the spiny dogfish fishery management plan for public comment. Public comments will be received and considered until September 23, 2019, at 5pm. Comments on the draft addendum should be submitted via email to comments@asmfc.org and should include the subject line, "Spiny Dogfish Draft Addendum VI", via fax to (703) 842-0741, or to the address: Kirby Rootes-Murdy 1050 N. Highland St, Suite A-N Arlington, VA 22201 A public hearing will be held online and by phone by the ASMFC on September 18th, 2019, at 6pm. To attend the hearing by phone, dial (888) 585-9008 and enter room number 853-657-937. To attend the online webinar, please visit https://attendee.gotowebinar.com/register/1750824234161238785. The complete draft addendum can be found on the ASMFC website at http://www.asmfc.org/aboutus/public-input. Below is a summary of the proposed changes to the management plan: The Draft Addendum proposes allowing commercial quota to be transferred between all regions and states to enable the full utilization of the coastwide commercial quota and avoid quota payback for unintended quota overages. The Commission's FMP allocates the coastwide quota to the states of Maine-Connecticut as a regional allocation and to the states of New York-North Carolina as state-specific allocations. Currently, the FMP only allows quota transfers between states with individual allocations, with regions excluded from benefitting from quota transfers. The 2019-2020 coastwide quota was reduced by 46% due to declining biomass. If landings in the 2019-2020 fishing year remain the same as 2018-2019 landings, the coastwide quota may not be exceeded but some states could face early closures due to reaching their allocation and being unable to access available unused quota from the northern region through quota transfers. The Draft

Addendum also includes a scoping question on whether the federal commercial trip limit should be eliminated and replaced by state and regional trip limits. This issue is under consideration due to concern that the coastwide quota has been substantially underutilized over the past seven years and the federal commercial trip limit is viewed by some as an additional constraint on the fishery beyond the commercial trip limits implemented for state permit holders. The Commission does not establish the federal

On Fri, Aug 23, 2019 at 12:26 PM Division of Fish and Wildlife <NJFishandWildlife@public.govdelivery.com> wrote:



Attend public hearing via phone or online

The Atlantic States Marine Fisheries Commission (ASMFC) has released Draft Addendum VI to the Spiny Dogfish Fishery Management Plan for public comment. A public hearing will be held online and by phone by the ASMFC on September 18 at 6:00 p.m.

Attend by phone: Call 888-585-9008 and enter room number 853-657-937

Attend online

Complete draft addendum

Summary and comment instructions (pdf)

NEW JERSEY DIVISION OF
Fish and Wildlife
www.njfishandwildlife.com

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Kirby Rootes-Murdy

From: Comments
Sent: Friday, September 6, 2019 3:46 PM
To: Kirby Rootes-Murdy
Subject: FW: spiny dogfish draft addendum VI

Follow Up Flag: Follow up
Flag Status: Completed

From: Donald Miller [mailto:stickmanmiller@gmail.com]
Sent: Wednesday, August 28, 2019 9:33 AM
To: Comments <comments@asmfc.org>
Subject: spiny dogfish draft addendum VI

I Donald Miller am for the new management plan of the spiny dogfish of shifting state quota transfers to other states. I gill net out Barnegat Light N.J. , and yes we target the dogfish. We all are looking for a better price we need help there. Thank You. stickmanmiller@gmail.com

Kirby Rootes-Murdy

From: Comments
Sent: Thursday, September 19, 2019 10:20 AM
To: Kirby Rootes-Murdy
Subject: FW: dogfish comments & Re: James Sulikowski Arizonan do you have email & phone

I think I sent you this before but I'm not sure. This is the last one we received.

-----Original Message-----
From: James Fletcher [mailto:unfa34@gmail.com]
Sent: Friday, September 13, 2019 9:44 AM
To: JASON DIDDEN; Comments
Subject: dogfish comments & Re: James Sulikowski Arizonan do you have email & phone

ANY NEWS ON JAMES: IS IT POSSIBLE nmfs COMMERCE OR THE DEPARTMENT OF STATE ARRANGED A BETTER POSITION SO HIS EXPERTISE ON CHIPFISH WOULD DISAPPEAR?
WE NOW HAVE A DOGFISH PLAN THAT DOES NOT ACCOUNT FOR 80% OF FEMALE NOT SURVEYED BY TRAWL GEAR DUE TO BEING OFF BOTTOM & 90% OF MALE CHIP FISH DUE TO BEING IN NON SURVEYED AREA. ALSO A STATEMENT THAT 80% OF DOGFISH STOMACH CONTENT IS CTENOPHOREA IS TOTALLY INCORRECT.
PREVIOUS MANAGEMENT BASED ON INCORRECT SCIENCE CREATED LOWER QUOTAS & FORCED CLOSING OF PROCESSING PLANTS IN SOUTH.
LOWER QUOTAS BASED ON 80% INCORRECT [SCIENCE BASED ASSUMPTIONS} CREATED A MARKET OPENING IN EUROPE FOR IMPORTS FROM OTHER COUNTRIES PRODUCING DOGFISH.
INCORRECT SCIENCE MISSING 80% OF FEMALES & UNKNOWN PORTION OF MALES AS NO SURVEY IS CONDUCTED FOR MALES. CREATED A EXCUSE FOR CONSERVATION GROUPS TO REQUEST SHIPPING LINES NO LONGER ALLOW SHARK PRODUCTS TO BE SHIPPED BASED ON INCORRECT SCIENCE.
NO AGENCY HAS COME FORWARD WITH THE AMOUNT OF SHARK / DOGFISH PRODUCTS IMPORTED INTO U.S. IF ANY. ASMFC STAFF SHOULD BE REQUIRED TO PROVIDE IMPORT INFORMATION.
THE SCIENCE SET QUOTAS THAT CAUSED LOGISTIC PROBLEMS WHEN SHIPPING FROM SOUTH TO THE BLESSED NORTHERN PROCESSORS.
ASMFC MUST COMPLY WITH ARTICLE 1 SECTION 1 OF COMPACT PREVENT PHYSICAL WASTE BY MANDATING A INDUSTRAL USE FOR DOGFISH OR RENAMING THE FISH SO AMERICAN CONSUMMERS WILL UTILIZE.
SCRAP DRAFT ADDENDUM VI
REQUIRE A PROCESSING PLANT BE OPENED IN N.C. OR VA WITH SUPPLEMENTAL FUNDS FROM NOAA NMFS COUNCIL & ASMFC MANDATED TO SUPPLY MONEY TO COMPENSATE THE PROCESSOR OR PROCESSORS.
ASMFC & COUNCIL SHOULD RESEARCH HOW TO RENAME THIS FISH RATHER THAN DOING ADDENDUM VI.
HISTORICALLY DOGFISH IN 1890'S COMPRISED 17% OF BIOMASS NOW 2016 ABOVE 80% OF BIOMASS IN OCEAN AND ASMFC PROPOSES QUOTA TRANSFERS INSTEAD OF RENAMING THE FISH FOR MARKET ACCEPTABILITY, SCRAP ADDENDUM VI focus instead on ASMFC RENAMING THE FISH TO CONSUMER ACCEPTABLE NAME. JAMES FLETCHER UNFA 123 APPLE RD MANNS HARBOR NC. 27953

On 8/19/2019 4:32 PM, Didden, Jason wrote:
> Not right now, but I just send him a facebook friend request so maybe soon.
>
> -----Original Message-----
> From: James Fletcher <unfa34@gmail.com>
> Sent: Monday, August 19, 2019 12:28 PM
> To: Didden, Jason <jdidden@mafmc.org>
> Subject: James Sulikowski Arizonan do you have email & phone

>
> Jason do you have any contact information? Where do we gain any science NOW? UP A SCIENCE CREEK & NO HONEST SCIENCE!
> DO Tagw show males stay off bottom more inshore than females?
>
> --
> James Fletcher
> United National Fisherman's Association
> 123 Apple Rd.
> Manns Harbor, NC 27953
> 252-473-3287
>

--
James Fletcher
United National Fisherman's Association
123 Apple Rd.
Manns Harbor, NC 27953
252-473-3287

Kirby Roots
ASMFC
1050 North Highland St., Suite 200 A-N
Arlington, VA 22201

Dear Mr. Roots

I have been a long term fisherman out of Rhode Island and have fished for 40 plus year in the monkfish, skate, black sea bass, summer flounder, lobster and scup fisheries. During that time I have also fished for dogfish commercially on a number of occasions. I was unable to attend the recent public hear and offer the following comments.

In regards quota transfers, I support option 2 provided all states mutually agree to the amount and timing. This a nothing more than common sense, - since you want to have a system that allows the full quota to be harvested annually.

The public scoping issues is more complex, but to be sure, I support RI and the other states recommending the elimination of the federal trip limit. The State of Rhode Island, Marine Fisheries staff, should have the flexibility to work with fishermen like myself, to craft state specific regulations that are tailored to our different circumstances. I have listened to a number of the advisory panel discussions over the years and am convinced that the federal trip limit constrains the ability to catch the annual quota, as well as supply enough product to attract buyers. Dogfish are a low value product (generally 15 cent a pound to the boats) which at a 6000 pound trip limit x .15 cent pound only generate $900. This is an inadequate incentive to target dogfish especially when they move offshore and cost go up, which they do seasonally. It is also not economic for dealers to truck them to New Bedford, given the low trip limit and the fact that very few fishermen want to participate in the fishery, as it is way too much work to earn a few hundred dollars at best.

RI fishermen only have limited access to dogfish in State waters for a month or so in the spring and fall and in order to have a fishery we need to be able to target then in federal waters. Costs go up when you go that far and it is just not economic to chase them to gross $900 a day. Discards have been significant in most years and could be reduced with higher trip limits.

My last point relates to flexibility. States have different views on the preferred commercial trip limit for their respective jurisdictions, and the current one size fits all federal trip limit has proven limiting for many states leading to a substantial under-harvesting of the coastwide quota. States in the Mid Atlantic area have the ability to adjust their trip limit in state waters and address some of the concerns noted above for RI, and we should have the same options. Reason being, The States agencies have more flexibility to tailor their regulations to meet the individual state needs of their respective constituents. This concept works well in summer flounder, scup, and black seas bass fishery, and I have no doubt it will work well in dogfish.

So my response is yes your question : Should the Commission recommend that the federal commercial trip limit be eliminated and replaced by the state-by-state trip limits where they exist (NY–NC) and a regional trip limit where it exists (Northern Region of ME-CT)?c

I am happy to discuss by phone if needed. (401-935-8372)

Sincerely '

Kevin Sullivan,

2019 REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN FOR

SPINY DOGFISH
(*Squalus acanthias)*

2018/2019 FISHING YEAR

Spiny Dogfish Plan Review Team
Kirby Rootes-Murdy, Atlantic States Marine Fisheries Commission, Chair
Dr. Gregory Skomal, Massachusetts Division of Marine Fisheries
Tina Moore, North Carolina Department of Environmental Quality
Peter Burns, NOAA Greater Atlantic Regional Fisheries Office
Tara Scott, NOAA Fisheries Headquarters

Developed August 2019

Executive Summary

The Mid-Atlantic (MAFMC) and New England Fishery Management Councils (NEFMC) have managed spiny dogfish within the U.S. EEZ since 1999. The Atlantic States Marine Fisheries Commission (ASMFC) implemented a complementary Fishery Management Plan for state waters in 2002.

Spiny dogfish was declared rebuilt in 2008 when female SSB exceeded the target level for the first time since implementation of the Interstate FMP. Spiny dogfish are not overfished and overfishing is not occurring (NEFSC 2018). Female SSB was estimated to be 106,753 metric tons (253.84 million pounds) in 2018. In 2017, F on exploitable females was estimated to be 0.202 and has remained below the target level since 2005.

In 2018, total spiny dogfish harvest (commercial and recreational harvest) along the Atlantic coast was estimated at 16.92 million pounds (7,677 metric tons). U.S. commercial landings were estimated at 16.74 million pounds (7,597 metric tons). Atlantic coast landings from Canada were estimated at 45 metric ton (99,208 pounds). Landings from distant water fleets were estimated at 0 pounds. U.S. recreational harvest was estimated at 35 metric tons (77,168 pounds).

The commercial quota for the 2018/2019 season was 38.19 million pounds, and commercial landings for the 2018/2019 season were estimated at 16.74 million pounds. No regions or states exceeded their quota during the 2018/2019 season.

In 2018, all states have implemented management programs consistent with the Interstate FMP and Addendum I-V for Spiny Dogfish. New York and Delaware requested *de minimis* status for the 2019/2020 fishing season.

Table of Contents

I. Status of the Fishery Management Plan

Date of FMP Approval:	November 2002
Amendments	None
Addenda	Addendum I (November 2005) Addendum II October 2008) Addendum III (April 2011) Addendum IV (August 2012) Addendum V (October 2014)
Management Unit:	Entire coastwide distribution of the resource from the estuaries eastward to the inshore boundary of the EEZ
States with Declared Interest:	Maine – North Carolina
Active Boards/Committees:	Spiny Dogfish Management Board, Advisory Panel, Technical Committee, and Plan Review Team

In 1998, NMFS declared spiny dogfish overfished and initiated the development of a joint fishery management plan (FMP) between the Mid-Atlantic (MAFMC) and New England Fishery Management Councils (NEFMC) in 1999. NMFS approved the Federal Fishery Management Plan (FMP) in September 1999, but implementation did not begin until May 2000 at the start of the 2000/2001 fishing year.

In August 2000, the Atlantic States Marine Fisheries Commission (Commission) took emergency action to close state waters to the commercial harvest, landing, and possession of spiny dogfish when Federal waters closed in response to the quota being fully harvested. With the emergency action in place, the Commission had time to develop an interstate FMP, which prevented the undermining of the Federal FMP and further overharvest of the coastwide spiny dogfish population. Needing additional time to complete the interstate FMP, the Commission extended the emergency action twice through January 2003. During that time, the majority of spiny dogfish landings were from state waters because states had either no possession limits or less conservative possession limits than those of the Federal FMP.

The Commission approved the Interstate FMP for Spiny Dogfish in November 2002 (first implemented for the 2003-2004 fishing year). In general, the Interstate FMP ("FMP") for spiny dogfish compliments the Federal FMP. The goal of the FMP is "to promote stock rebuilding and management of the spiny dogfish fishery in a manner that is biologically, economically, socially, and ecologically sound." In support of this goal, the FMP established the following objectives:

1. Reduce fishing mortality and rebuild the spawning stock biomass to prevent recruitment failure and support a more sustainable fishery.
2. Coordinate management activities between state, Federal, and Canadian waters to ensure complementary regulations throughout the species range.
3. Minimize the regulatory discards and bycatch of spiny dogfish within state waters.
4. Allocate the available resource in a biologically sustainable manner that is equitable to all the fishers.
5. Obtain biological and fishery related data from state waters to improve the spiny dogfish stock assessment that currently depends upon data from the Federal bottom trawl survey.

The original Interstate and Federal FMPs established an annual quota that was allocated via fixed percentages between two seasonal periods: 57.9% to Period I (May 1st to October 31st) and 42.1% to Period II (November 1st to April 30th). When the quota allocated to a period is exceeded, the amount over the allocation is deducted from the same period in the subsequent fishing year. The periods could have separate possession limits that were specified on an annual basis. The FMPs also allowed for a five percent rollover of the annual coastwide quota once the stock is rebuilt, and allows each state to harvest up to 1,000 spiny dogfish for biomedical supply or scientific research.

In November 2005, the Spiny Dogfish and Coastal Sharks Management Board (Board) approved Addendum I to the Interstate FMP for Spiny Dogfish. Addendum I provides the Board with the flexibility to establish spiny dogfish specifications (quota and possession limits) for up to five years. The MAFMC and the NEFMC took similar action under Framework 1 (providing flexibility to adopt specifications for up to five years without the requirement of annual review and approval by NOAA Fisheries), which became effective February 2006.

In October 2008, the Board approved Addendum II, which established regional quotas in place of the FMPs semi-annual period allocation[1]. Under the addendum, 58% of the annual quota was allocated to the states of Maine to Connecticut (Northern region), 26% was allocated to the states of New York to Virginia (Southern region), and the remaining 16% was allocated to North Carolina. The Board allocated a specific percentage to North Carolina because spiny dogfish are not available to their fishermen until late into the fishing season when most of the quota has already been harvested. The addendum also implemented accountability measures whereby any overage of a regional or state quota would be deducted from the corresponding region/state in the subsequent fishing year.

In March 2011, the Board approved Addendum III, which was implemented prior to the 2011/2012 fishing year. The addendum divided the combined Southern region and the North Carolina quotas from Addendum II (i.e., 42% of the annual coastwide quota) into state-specific shares (Table 2) for those states of New York – North Carolina. Also, the addendum permits

[1] The seasonal allocation scheme was eliminated from the Federal FMP in August, 2014.

those states to implement possession limits that best suits their needs, and allows for quota transfer (states in the Northern region continue to implement the Federal possession limit as well as continue to share 58% of the coastwide quota and thus do not have individual quotas necessary for transfers). Lastly, the addendum allows for rollovers of up to five percent of that state or regions final allocation. The Board has continued to implement the allocation percentages described in Addendum III, and may revisit those allocations at any time through the adaptive management process (e.g., an addendum).

In August 2012, the Board approved Addendum IV. This Addendum addressed the differences in the definitions of overfishing between the NEFMC, MAFMC, and the ASMFC. The Board adopted the fishing mortality (F) threshold to be consistent with the Federal plan. Overfishing is defined as an F rate that exceeds the $F_{threshold}$. The $F_{threshold}$ is defined as F_{MSY} (or a reasonable proxy thereof) and based upon the best available science. The maximum fishing mortality threshold (F_{MSY}) or a reasonable proxy may be defined as a function of (but not limited to): total stock biomass, spawning stock biomass (SSB), or total pup production, and may include males, females, both, or combinations and ratios thereof, which provide the best measure of productive capacity for spiny dogfish. Currently F_{MSY} = 0.2439 which is that level of F that allows for the production of 1.5 female pups per female that will recruit to the spawning stock biomass.

In October 2014, the Board[2] approved Addendum V. The addendum mandates that all spiny dogfish must be landed with fins-naturally-attached to the corresponding carcass (i.e., the removal of any fin of spiny dogfish at-sea in state waters is prohibited). The addendum modified the FMP to maintain consistency with the Shark Conservation Act of 2010, which prohibits the removal of all shark fins (except smooth dogfish) at-sea.

In May 2019, the ISFMP Policy Board directed the Board to initiate an addendum to allow for quota transfers between the northern region and southern states (NY-NC). In August, the Board approved Draft Addendum VI for public comment. The draft addendum proposes allowing commercial quota to be transferred between all regions and states to enable the full utilization of the coastwide commercial quota and avoid quota payback for unintended quota overages. The Board will consider final action on the addendum in October.

II. Status of the Stocks

Stock size estimates (e.g., female SSB) for spiny dogfish rely heavily on fishery-independent data collected during the NEFSC spring bottom trawl survey. Due to mechanical problems, the 2014 survey was unable to sample strata in the mid-Atlantic region. As a result, the 2015 assessment update for spiny dogfish was unable to produce reliable estimates of stock size for

[2] In May 2014, the Spiny Dogfish and Coastal Shark Management Board became two independent management boards. Accordingly, from this date forward, the "Board" only refers to the Spiny Dogfish Management Board. Also in 2014, the Board and Commission approved South Carolina's, Georgia's and Florida's request to be removed from the requirements of the FMP due to minimal reported catches of spiny dogfish and with the understanding that their interest in the FMP may be reconsidered if catch and/or landings increase.

2014, as well as stock size projections utilized for annual specifications. Accordingly, at the direction of the MAFMC and the Science and Statistical Committee (SSC), the NEFSC examined alternative methods to smooth out the effects of the missing 2014 survey data on projected estimates of SSB, F, and other stock status indicators (NEFSC 2015b). A Kalman filter approach was ultimately chosen as the best method to smooth out the effects of the missing data, and to project SSB forward. In 2016, while all core survey strata were completed, the survey was delayed and the effects of the delay in survey timing on the abundance indices are unknown (NEFSC 2017). In 2017 and 2018, the survey was completed on time and all core strata were surveyed.

Based on results of the 2018 stock assessment update, and in comparison to the biological reference points below, spiny dogfish are not overfished and overfishing is not occurring (NEFSC 2018). The MAFMC's SSC recommended not applying the kalman filter to the three year moving average of 2016-2018 given the survey data were available and gap filling was not needed. Spiny dogfish was declared rebuilt in 2008 when female SSB exceeded the target level for the first time since implementation of the Interstate FMP. Female SSB has remained above the threshold level and was estimated to be 106,753 metric tons (253.84 million pounds) in 2018 (Table 1 and Figure 1). In 2017, F on exploitable females was estimated to be 0.202 and has remained below the target level since 2005 (Table 1 and Figure 2).

	Female Spawning Stock Biomass (SSB)	Fishing Mortality (F)
Target	B_{msy} Proxy = SSB_{max} (the biomass that results in the maximum projected recruitment) = 106,753 metric tons	There is no F target defined for management use at this time
Threshold	½ of SSB_{max} = 79,644 metric tons	F_{msy} Proxy = 0.244

The next benchmark stock assessment for spiny dogfish is tentatively scheduled for spring 2022. In the interim, in order to inform fishery specifications, the NEFSC will conduct annual data updates to summarize the most recent information on the status of spiny dogfish. The 2018 assessment update utilizes catch and landings data from 1982-2017, and NEFSC spring survey data from 1968-2017 (as noted, the survey was incomplete in 2014 and the 2016 survey was delayed). From 2009-2015, female SSB estimates based on area swept by NEFSC bottom trawl during spring surveys were above the target-level (NEFSC 2017). The 2016 estimate increased, while the 2017 estimate decreased; in 2018 the estimate decreased further from 2017.It is important to note that these estimates from the assessment update are not based on outputs of the stochastic assessment model and cannot be directly compared to the SSB targets and thresholds.

III. Status of the Fishery

In the U.S., majority of spiny dogfish commercial fisheries operate in state waters targeting aggregations of large females. As a result, an estimated 83% of the commercial landings (2018)

are comprised of females, which is consistent with the long-term pattern (NEFSC 2019).

In 2018, total landings along the Atlantic coast were estimated at 16.92 million pounds (7,677 metric tons) which is a 14% decrease relative to 2017 and below average for the time series (Table 2). In 2018, U.S. commercial landings were estimated at 16.74 million pounds (7,597 metric tons). Atlantic coast landings from Canada were significant from the early 1990s to the mid-late 2000s (hovering around 4.5 million pounds or 2,000 metric tons). In 2018, landings from Canada were estimated at 99,208 pounds (45 metric tons), which is more in line with the short term trend (Table 2). In 2018, landings from distant water fleets were estimated at 0 pounds. Recreational harvest is estimated via the Marine Recreational Information Program (MRIP). NOAA Fisheries has implemented improvements to the MRIP survey methodology for estimating recreational catch. A multi-year transition of the methods was completed in 2018, requiring the catch estimates for 1981–2017 to be calibrated for comparison to all subsequent years' estimates. In 2018, recreational harvest (A + B1) of spiny dogfish on the Atlantic coast was estimated at 21,468 fish or an estimated 77,162 pounds[3] (54 metric tons) which is a 73% reduction relative to 2017 (Table 2). Landings estimates for the U.S. commercial and recreational sectors, Canada, and distant water fleets are detailed in Table 2.

In 2018, total dead discards from the U.S. commercial and recreational sectors were estimated at 6.95 million pounds (3,154 metric tons), which is a 17% decrease relative to 2017 (Table 3). Recreational releases (B2, or fish caught by recreational anglers and released back to the water) were estimated at 8.2 million pounds (3,726 metric tons). Applying a 20% post-release mortality rate (NEFSC 2019), 2018 recreational dead discards were estimated at 1,642,883 pounds (745 metric tons), which is a 4% increase relative to 2017 levels (1,572,335 pounds). Commercial dead discards for U.S. fisheries are estimated by multiplying total discards by gear-specific mortality rates (NEFSC 2018). In 2018, U.S. commercial dead discards were estimated at 5.31 million pounds (2,409 metric tons), with the largest proportion attributed to otter trawls (82%).

IV. Status of Management Measures and Issues

Specifications

The spiny dogfish commercial fishery runs from May 1-April 30. The coastwide quota for the 2018/2019 season was set at 38.19 million pounds. For the northern region, the maximum possession limit was set at 6,000 pounds. Possession limits for states of New York-North Carolina vary by state and are detailed in Table 6.

Quotas

Per Addendum III, 58% of the annual quota is allocated to the northern region (states from Maine-Connecticut), and the remaining 42% is allocated to the states of New York-North Carolina via fixed percentages. Table 4 details 2018/2019 commercial quotas by region and state. Addendum III also specifies that when the quota allocated to a region or state is exceeded in a fishing season, the amount over the allocation will be deducted from the

[3] Assuming the average weight of landed and discarded spiny dogfish is 5.12 pounds or 2.5 kilograms.

corresponding region or state in the subsequent fishing season. All regions and states harvested within their quota the previous fishing year, therefore no deductions were applied to 2018/2019 quotas. While transfers are allowed under Addendum III, they have been uncommon in recent years. For fishing year 2018 Virginia received a commercial quota transfer of two million pounds that prevented a potential overage of their state quota. Additionally, Addendum IV allows states and regions to roll over 5% of its allocation from the previous fishing year when the stock is above the biomass target; given the stock projection in 2017 indicates that the stock was below the biomass target, no quota was eligible for rollover (Table 4). According to the NOAA Quota Monitoring Data, commercial landings from the 2018/2019 fishing year were estimated at 16.74 million pounds (7,597 metric tons), which is approximately 43% of the coastwide quota and a 1.2% decrease relative to the previous season (Table 4). Massachusetts (31%), Virginia (19%), and New Jersey (5%) accounted for the majority of commercial landings by weight (Table 4).

From 2000-2011, the U.S. spiny dogfish commercial fishery, for the most part, had fully utilized its quota (MAFMC 2017a). However, in recent years (2012-present), the commercial fishery has significantly underutilized its quota. The MAFMC Advisory Panel (2019) noted that markets are critical for stimulating fishing activity and that the low level of harvest relative to the quota in recent years is primarily due to low price per pound and effort, not biomass. Vessels generally have no problem catching their limits. Being such a low value fishery (hovering around $0.20/pound in most recent 10-years; MAFMC 2018), even a small increase in price could stimulate fishing activity. Participation in the fishery has been further discouraged due to general public sentiment regarding sharks and shark fins which has created regulatory issues (e.g., foreign and domestic import and shipping bans) and other barriers to the market (e.g., the species common name dissuades many consumers).

V. Status of Research and Monitoring

Under the Interstate FMP for Spiny Dogfish, the states are not required to conduct any fishery dependent or independent studies. The Interstate FMP requires an annual review of recruitment, spawning stock biomass, and fishing mortality, which relies heavily on the NEFSC's spring trawl survey data. However, states are encouraged to submit any spiny dogfish information collected while surveying for other species. Table 5 details state implemented fishery-independent monitoring information relative to spiny dogfish compiled from annual state compliance reports. Please see individual reports for more information.

Exempted Fishing Permits (scientific/education permits)
States may issue exempted fishing permits for the purpose of biomedical supply, educational, or other scientific purposes. In 2018, North Carolina issued 46 exempted fishing permits for scientific collection not specific to spiny dogfish. Of these permits, three reported interactions with spiny dogfish and all were released.

VI. Annual State Compliance

The following lists the specific compliance criteria that a state or jurisdiction must implement in order to be in compliance with the Interstate FMP for Spiny Dogfish (*Section 5.1*):

1. States are required to close state waters to the commercial landing, harvest and possession of spiny dogfish for the duration of the seasonal period when the commercial quota is projected to be harvested in their state or region.
2. States are required to report landings weekly to NOAA Fisheries
3. Dealer permits issued pursuant to state regulations must submit weekly reports showing at least the quantity of spiny dogfish purchased (in pounds), the name, and permit number of the individuals from whom the spiny dogfish were purchased.
4. States in the northern region are required to implement possession limits as determined through the annual specification process.
5. States may issue exempted fishing permits for the purpose of biomedical supply not to exceed 1,000 spiny dogfish per year.
6. State regulations must prohibit "finning" as described in Addendum V.

Additionally, each state must submit a compliance report detailing its spiny dogfish fisheries and management program for the previous fishing year. Compliance reports are due annually on July 1st (Table 6) and must include at a minimum:

1. the previous fishing year's fishery and management program including activity and results of monitoring, regulations that were in effect and harvest, including estimates of non-harvest losses;
2. the planned management program for the current fishing year summarizing regulations that will be in effect and monitoring programs that will be performed, highlighting any changes from the previous year; and
3. the number of spiny dogfish exempted fishing permits issued in the previous fishing year, the actual amount (in numbers of fish and pounds) collected under each exempted fishing permit, as well as any other pertinent information (i.e. sex, when and how the spiny dogfish were collected). The report should also indicate the number of exempted fishing permits issued for the current fishing year.

Under the Spiny Dogfish FMP, a state may request *de minimis* status if its commercial landings of spiny dogfish are less than 1% of the coastwide commercial total. If granted, the state is exempt from the monitoring requirements of the commercial spiny dogfish fishery for the following fishing year. However, all states, including those granted *de minimis* status, must continue to report any spiny dogfish commercial or recreational landings within their jurisdiction via annual state compliance reports. New York and Delaware have requested *de minimis* status for the 2019/2020 fishing season (Table 6).

VII. Plan Review Team Recommendations

Based on annual state compliance reports, the PRT determined that all states have implemented regulations that meet the requirements of the Interstate FMP for Spiny Dogfish and Addenda I-V. Also, New York and Delaware meet the requirements for *de minimis* status in the 2019/2020 fishing year.

Members of the PRT noted that states have improved in providing compliance reports that are standardized and uniform in format and should continue doing so moving forward. Additionally, the PRT indicated the need to continue monitoring the resource based on the results of the 2018 assessment update that indicated a recent declining trend in female SSB. The PRT expressed support for keeping spiny dogfish on the current assessment schedule (currently scheduled for benchmark stock assessment to be completed in 2022).

VIII. Research Recommendations

The following research priorities pertaining to spiny dogfish were identified in Special Report No. 89 (2013):

Fishery-Dependent Priorities
High

- Determine area, season, and gear specific discard mortality estimates coastwide in the recreational, commercial, and non-directed (bycatch) fisheries.
- Characterize and quantify bycatch of spiny dogfish in other fisheries.
- Increase the biological sampling of dogfish in the commercial fishery and on research trawl surveys.
- Further analyses of the commercial fishery is also warranted, especially with respect to the effects of gear types, mesh sizes, and market acceptability on the mean size of landed spiny dogfish.

Fishery-Independent Priorities

- Conduct experimental work on NEFSC trawl survey gear performance, with focus on video work to study the fish herding properties of the gear for species like dogfish and other demersal groundfish.
- Investigate the distribution of spiny dogfish beyond the depth range of current NEFSC trawl surveys, possibly using experimental research or supplemental surveys.
- Continue to analyze the effects of environmental conditions on survey catch rates.

Modeling / Quantitative Priorities

- Continue work on the change-in-ratio estimators for mortality rates and suggest several options for analyses.
- Examine observer data to calculate a weighted average discard mortality rate based on an assumption that the rate increased with catch size.

Life History, Biological, and Habitat Priorities

- Conduct a coastwide tagging study to explore stock structure, migration, and mixing rates.
- Standardize age determination along the entire East Coast. Conduct an ageing workshop for spiny dogfish, encouraging participation by NEFSC, NCDMF, Canada DFO, other interested agencies, academia, and other international investigators with an interest in dogfish ageing.
- Identify how spiny dogfish abundance and movement affect other organisms.

Management, Law Enforcement, and Socioeconomic Priorities

- Monitor the changes to the foreign export markets for spiny dogfish, and evaluate the potential to recover lost markets or expand existing ones.
- Update on a regular basis the characterization of fishing communities involved in the spiny dogfish fishery, including the processing and harvesting sectors, based upon Hall-Arber et al. (2001) and McCay and Cieri (2000).
- Characterize the value and demand for spiny dogfish in the biomedical industry on a state by state basis.
- Characterize the spiny dogfish processing sector

IX. References

Mid-Atlantic Fisheries Management Council (MAFMC). 2018. Spiny Dogfish Advisory Panel Information Document. Prepared by Jason Didden, Council Staff. 6 pages.

Mid-Atlantic Fisheries Management Council (MAFMC). 2018. Spiny Dogfish Advisory Panel Fishery Performance Report. 4 pages.

Northeast Fisheries Science Center (NEFSC). 2018. Update on the Status of Spiny Dogfish in 2018 and Projected Harvests at the Fmsy Proxy and Pstar of 40%. Report to the Mid Atlantic Fishery Management Council (MAFMC) Scientific and Statistical Committee (SSC) August 31, 2018. 82 pages.

Special Report No. 89 of the Atlantic States Marine Fisheries Commission. 2013. Research priorities and recommendations to support interjurisdictional fisheries management.

X. Tables

Table 1: Spiny dogfish female spawning stock biomass (SSB) in millions of pounds and fishing mortality (F) point estimates, 1991-2017. A Kalman Filter was applied to the 2015 point-estimate. Point-estimates from 1991-2014 via the Kalman filter were not available at the time of this report. Although the absolute values will change after the Kalman filter is applied, the time series trend is similar. Source: NEFSC 2018.

Year	Female SSB	F
1991	516	0.082
1992	594	0.177
1993	485	0.327
1994	410	0.465
1995	294	0.418
1996	266	0.355
1997	252	0.234
1998	202	0.306
1999	114	0.289
2000	116	0.152
2001	136	0.109
2002	143	0.165
2003	129	0.168
2004	118	0.474
2005	105	0.128
2006	234	0.088
2007	312	0.090
2008	429	0.110
2009	360	0.113
2010	362	0.093
2011	373	0.114
2012	476	0.149
2013	466	NA
2014	NA	0.214
2015	371	0.126
2016	257	0.211
2017	235	0.202

Table 2: Landings estimates (pounds) of spiny dogfish off the Atlantic coast by commercial fisheries of the United States, Canada, and foreign fleets, and U.S. recreational harvest, 1986-2018. All values in pounds. Source: NEFSC 2019 and MRIP.

Year	Canada	Distant Water Fleets	U.S. Commercial	U.S. Recreational	Total Landings
1986	44,092	811,300	6,057,436	520,290	7,433,119
1987	619,498	306,442	5,959,859	707,683	7,593,483
1988	2,205	1,426,389	6,845,658	767,208	9,041,460
1989	368,172	564,383	9,903,197	485,016	11,320,768
1990	2,885,848	866,416	32,475,331	473,993	36,701,588
1991	676,818	515,881	29,049,484	529,109	30,771,292
1992	1,913,610	147,710	37,165,286	381,399	39,608,005
1993	3,163,630	59,525	45,509,707	412,264	49,145,126
1994	4,012,408	4,409	41,441,357	321,875	45,780,049
1995	2,107,617	30,865	49,775,493	196,211	52,110,185
1996	950,191	520,290	59,823,640	59,525	61,353,646
1997	983,261	471,789	40,457,417	242,508	42,154,974
1998	2,325,874	1,338,204	45,476,080	79,366	49,219,525
1999	4,609,860	1,221,359	32,748,858	182,983	38,763,062
2000	6,042,863	886,257	20,407,500	8,818	27,345,439
2001	8,421,648	1,492,528	5,056,497	55,116	15,025,789
2002	7,901,358	1,044,990	4,847,674	789,254	14,583,275
2003	2,870,415	1,417,571	2,579,437	119,049	6,986,472
2004	5,207,312	727,525	2,164,011	787,049	8,885,898
2005	5,004,487	727,525	2,528,114	92,594	8,352,720
2006	5,377,068	22,046	4,957,360	163,142	10,519,616
2007	5,255,814	68,343	7,723,004	284,396	13,331,558
2008	3,466,368	288,805	9,057,020	520,290	13,331,778
2009	249,122	180,779	11,854,242	224,871	12,509,014
2010	13,228	279,987	11,993,133	26,455	12,312,803
2011	273,373	315,261	20,899,798	127,868	21,616,299
2012	143,300	302,033	23,501,249	99,208	24,045,790
2013		134,482	16,120,181	147,710	16,402,373
2014	119,049	68,343	23,481,408	238,099	23,906,899
2015	2,205	50,706	19,098,623	97,003	19,248,537
2016	81,571	52,911	26,669,288	310,851	27,114,621
2017	119,049	0	19,257,356	286,601	19,663,006
2018	99,208		16,747,942	77,162	16,924,312

Table 3: Total dead discards estimates (pounds) from the U.S. Atlantic coast spiny dogfish fishery by sector, 1981-2018. Commercial dead discards estimated via applying gear-specific mortality rates to discard estimates. Source: MRIP and NEFSC 2019.

Year	Commercial	Recreational (20% B2)	Total Dead Discards
1981	43,625,021	141,978	43,766,998
1982	50,245,935	177,692	50,423,628
1983	49,177,576	324,079	49,501,656
1984	46,931,730	1,096,137	48,027,867
1985	39,768,479	184,306	39,952,785
1986	38,222,379	622,144	38,844,523
1987	35,239,087	411,823	35,650,910
1988	35,307,210	601,420	35,908,630
1989	34,724,970	875,675	35,600,645
1990	41,754,621	830,701	42,585,322
1991	28,668,217	1,146,402	29,814,619
1992	41,401,992	577,170	41,979,161
1993	25,898,443	858,479	26,756,922
1994	18,435,804	654,331	19,090,135
1995	23,812,762	392,863	24,205,625
1996	13,136,779	205,030	13,341,809
1997	9,255,656	537,045	9,792,702
1998	7,305,008	460,325	7,765,333
1999	9,865,123	399,477	10,264,600
2000	6,128,182	370,376	6,498,558
2001	10,236,492	1,271,184	11,507,675
2002	10,392,799	1,099,664	11,492,464
2003	7,998,031	1,746,500	9,744,531
2004	12,011,321	2,982,410	14,993,731
2005	10,775,411	2,186,542	12,961,953
2006	10,847,557	2,574,996	13,422,553
2007	12,456,478	2,660,094	15,116,572
2008	9,843,805	2,442,719	12,286,524
2009	11,735,909	3,180,385	14,916,294
2010	8,146,291	2,134,513	10,280,804
2011	9,533,163	2,615,120	12,148,283
2012	10,081,275	1,903,028	11,984,303
2013	9,875,386	5,295,056	15,170,442
2014	10,657,861	7,724,988	18,382,849
2015	6,783,726	1,886,273	8,669,999
2016	7,122,686	4,001,826	11,124,513
2017	6,756,168	1,572,335	8,328,503
2018	5,310,158	1,642,883	6,953,041

Table 4: Commercial quotas and landings estimates in pounds for May 1, 2018 - April 30, 2019 by region and state. There was no adjust to quotas due to the biomass estimate was below the target. Due to confidentiality, NY-NC landings estimates have been redacted. Source: NOAA Quota Monitoring Page, week ending April 27, 2019.

State	Fixed Percent Allocation	Preliminary Quota	Adjusted Quota	Estimated Landings
Northern Region	58.00%	22,153,577	22,153,577	8,471,682
NY	2.71%	1,033,961	1,033,961	
NJ	7.64%	2,919,689	2,919,689	
DE	0.90%	342,235	342,235	
MD	5.92%	2,261,193	2,261,193	
VA	10.80%	6,123,239	6,123,239	
NC	14.04%	3,361,166	3,361,166	
Total	**100%**	**38,195,822**	**38,195,822**	**16,747,942**
% of quota harvested				**43.8%**
% diff. relative to previous fishing year (2017/2018 landings = 16,541,575 lbs.)				**-1.2%**

Table 5: State implemented fishery-independent monitoring programs that encounter spiny dogfish. Source: annual state compliance reports, 2018. Note: this list is not comprehensive.

Fishery-Independent Monitoring Programs That Encounter Spiny Dogfish	Number of Spiny Dogfish Encountered	Comments
ME-NH Inshore Trawl survey	27 (spring), 395 (fall)	decrease in both seasons from 2017
RI DFW, Monthly and seasonal trawl survey	13	decrease from 55 in 2017
CT Long Island Sound Trawl Survey	5	Spring; down from 2017
NJ Ocean Stock Assessment (trawl) Survey	1,891 lbs	significant decrease from 2017
DE Bay Bottom Trawl (30- and 16-foot)	51 (30-ft)	down from 2017, majority caught in November
NC DMF Gill Net Survey	20	increase from 2017

Table 6: State-by-state compliance with the Interstate Fishery Management Plan for Spiny Dogfish, 2018/2019 reporting period. Source: annual state compliance reports, 2018. 'C' is compliant; 'NC' is noncompliant.

State	Report Submitted (Due July 1)	De Minimis Request	Biomedical Permit Harvest	Finning Prohibition	Possession limit (pounds per trip)
Maine	C	No	No	C	5,000
New Hampshire	C	No	No	C	6,000
Massachusetts	C	No	No	C	6,000
Rhode Island	C	No	No	C	6,000
Connecticut	C	No	No	C	6,000
New York	C	Yes	No	C	5,000
New Jersey	C	No	No	C	6,000
Delaware	C	Yes	No	C	10,000[#]
Maryland	C	No	No	C	up to 10,000*
Virginia	C	No	No	C	6,000
North Carolina	C	No	Yes	C	20,000

Maximum trip limit increased to 6,000 lbs following notification of the Federal trip limit increase. Specific implementation dates vary by state.

[#] It is unlawful for DE commercial fishermen to possess spiny dogfish taken from federal waters in excess of the federal possession limit

* MD – possession limits range from 1,000 lbs to 10,000 lbs depending on permit category

XI. Figures

Figure 1: Spiny dogfish spawning stock biomass, 1991 – 2018. Point-estimate for 2015 was derived via application of a Kalman filter. NEFSC 2018.

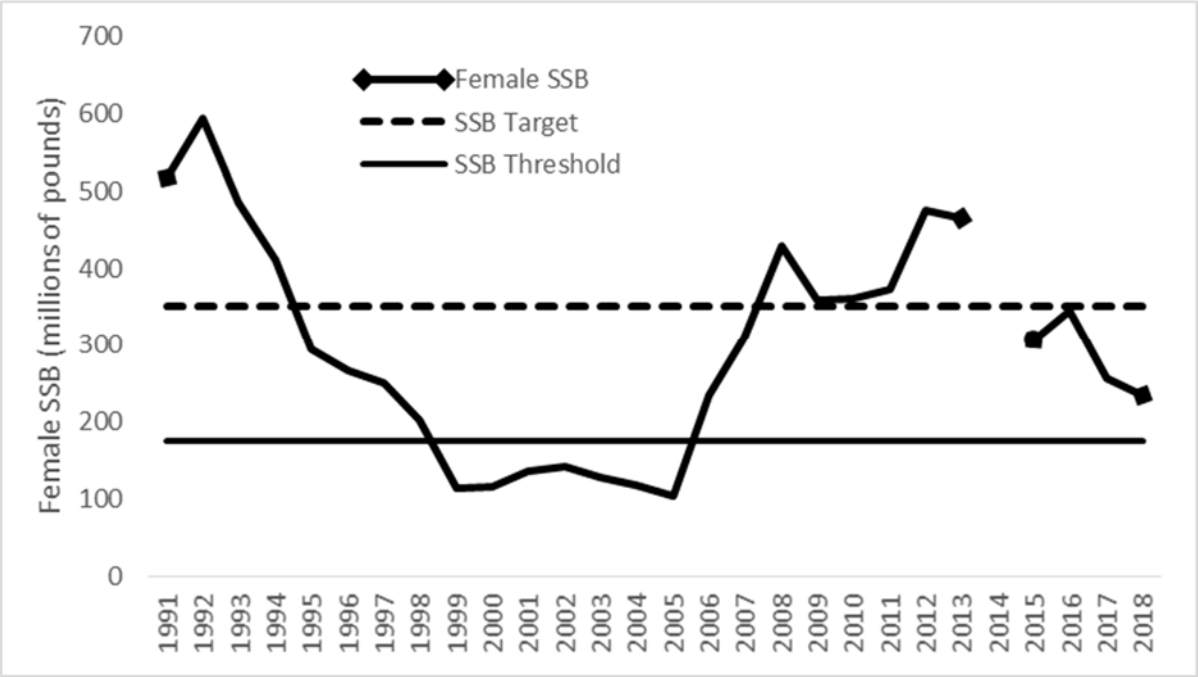
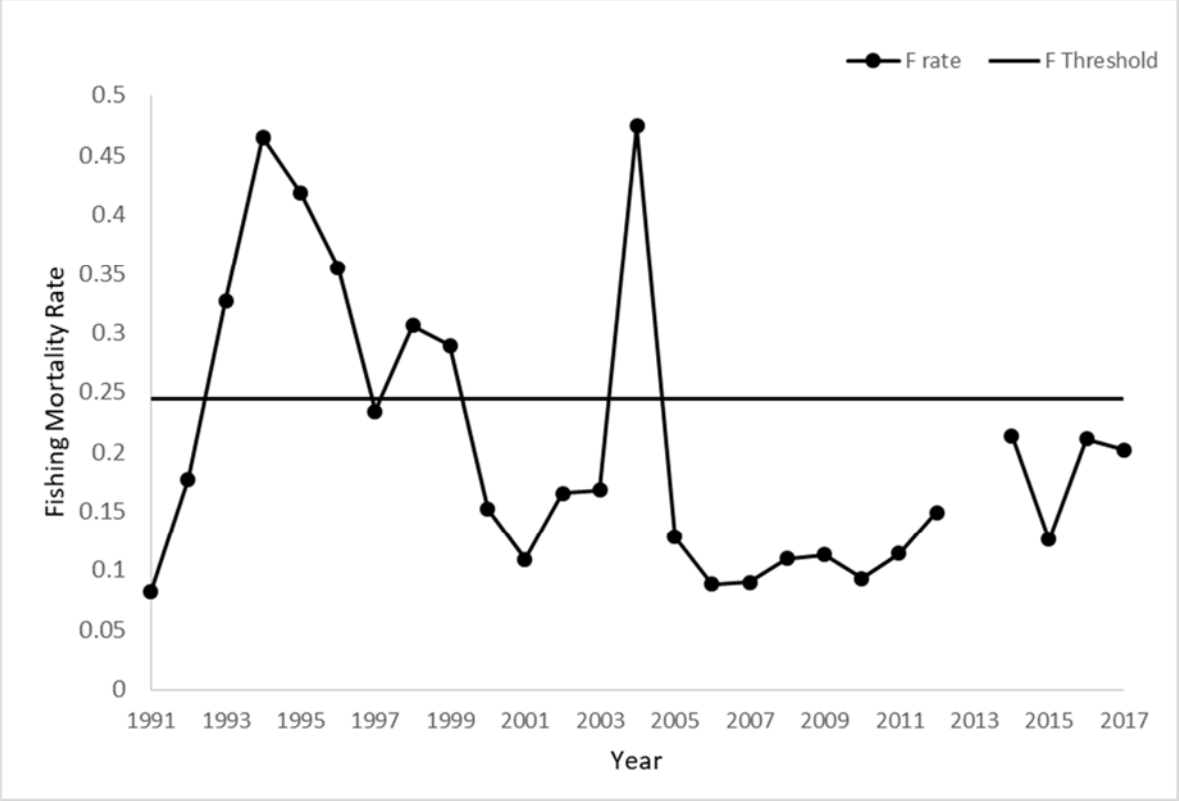


Figure 2: Fishing mortality rates in the spiny dogfish fishery, 1991 – 2017. Source: NEFSC 2018.



Atlantic States Marine Fisheries Commission

Horseshoe Crab Management Board

October 29, 2019
9:45 – 11:45 a.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(M. Rhodes)*	9:45 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from August 2019	9:45 a.m.
3.	Public Comment	9:50 a.m.
4.	Review Delaware Bay Ecosystem Technical Committee and Adaptive Resource Management Subcommittee Report (*J. Sweka*) • Recommended Updates to the ARM Model	10:00 a.m.
5.	Consider Re-initiation of Postponed Draft Addendum VIII (*M. Rhodes*) **Possible Action**	10:40 a.m.
6.	Set 2020 Harvest Specifications **Final Action** • Review Horseshoe Crab and Red Knot Abundance Estimates and 2019 ARM Model Results (*J. Sweka*) • Set 2020 Harvest Specifications (*M. Rhodes*)	11:10 a.m.
7.	Consider 2019 Fishery Management Plan Review and State Compliance (*M. Schmidtke*) **Action**	11:30 a.m.
8.	Other Business/Adjourn	11:45 a.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

Horseshoe Crab Management Board Meeting
Tuesday, October 29, 2019
9:45 – 11:45 a.m.
New Castle, New Hampshire

Chair: Dr. Malcolm Rhodes (SC) Assumed Chairmanship: 10/17	Horseshoe Crab Technical Committee Chair: Jeff Brunson (SC)	
Vice Chair: Joe Cimino (NJ)	Horseshoe Crab Advisory Panel Chair: Allen Burgenson (MD)	Law Enforcement Committee Representative: Doug Messeck (DE)
Delaware Bay Ecosystem Technical Committee Chair: Wendy Walsh (FWS)	Adaptive Resource Management Subcommittee Chair: Dr. John Sweka (FWS)	Previous Board Meeting: August 6, 2019
Voting Members: MA, RI, CT, NY, NJ, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (16 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 6, 2019 Board Meeting

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Review Delaware Bay Ecosystem Technical Committee and Adaptive Resource Management Subcommittee Report (10:00 - 10:40 a.m.) Possible Action

Background

- In September 2019, the Delaware Bay Ecosystem Technical Committee (DBE TC) and Adaptive Resource Management (ARM) Subcommittee met to discuss incorporation of horseshoe crab population estimates from the Catch Multiple Survey Analysis (CMSA) model, used in the 2019 Benchmark Stock Assessment, into the ARM Framework.
- During this meeting, the DBE TC and ARM Subcommittee developed consensus recommendations for incorporating the CMSA estimates and updating other aspects of the ARM Framework. These recommendations were submitted for Board review in a memo from the committee chairs (**Briefing Materials**).

Presentations

- DBE TC and ARM Subcommittee Recommendations to Update the ARM Framework by J. Sweka

Board actions for consideration at this meeting

- Recommend an Update and Review of the ARM Framework to begin in 2020.

5. Consider Re-initiation of Postponed Draft Addendum VIII (10:40 - 11:10 a.m.) Possible Action

Background

- In August 2016, the Board passed the following motion, initiating Draft Addendum VIII to the Horseshoe Crab Fishery Management Plan (FMP):

  Move to initiate an addendum to the HSC management plan to address the ARM Subcommittee's recommendation to the ARM framework regarding 1) mortality associated with the biomedical industry; and 2) bait harvest packages which allow female horseshoe crab harvest as presented in Appendix C of the framework review.

- In October 2016, the Board passed the following motion, postponing development of Draft Addendum VIII until after completion of the next benchmark stock assessment:

  Move to postpone development of Draft Addendum VIII until after the 2018 Benchmark Stock Assessment has been completed for Delaware Bay. Motion by Michael Luisi; second by Roy Miller.

- In October 2017, the ARM Subcommittee provided simulations of two methods for incorporating biomedical mortality into the ARM Framework. Neither of these methods significantly altered ARM model results.
- In May 2019, a Benchmark Stock Assessment was completed and approved for management use. This assessment included data on the biomedical use of horseshoe crabs, producing population estimates through the CMSA model that have been recommended by the ARM Subcommittee and DBE TC for incorporation into the ARM Framework.

Board actions for consideration at this meeting

- Consider whether development of postponed Draft Addendum VIII should resume.

6. Set 2020 Harvest Specifications (11:10 - 11:30 a.m.) Final Action

Background

- In September 2019, the DBE TC and ARM Subcommittee met to review results of 2018-2019 horseshoe crab and red knot population abundance surveys in the Delaware Bay region.
- The Virginia Tech Trawl Survey was conducted in 2018, so the ARM Subcommittee used population estimates from this survey to estimate horseshoe crab abundance in the Delaware Bay region (**Briefing Materials**).
- The ARM model was run using estimated abundances of horseshoe crabs in fall of 2018 and red knots in spring of 2019 to provide a recommendation for harvest specifications for Delaware Bay states in 2020 (**Briefing Materials**).

Presentations

- Horseshoe Crab and Red Knot Abundance Estimates and 2019 ARM Model Results by J. Sweka

Board actions for consideration at this meeting

- Consider ARM harvest recommendations and set specifications for states in the Delaware Bay region in 2020.

7. Consider Approval of the 2019 FMP Review and State Compliance (11:30 - 11:45 a.m.) Action

Background

- State Compliance Reports were due March 1, 2019.
- The Plan Review Team reviewed each state report and compiled the annual FMP Review (**Supplemental Materials**).
- The Potomac River Fisheries Commission, South Carolina, Georgia, and Florida have requested and meet the requirements of *de minimis* status.

Presentations

- Overview of the FMP Review by M. Schmidtke

Board actions for consideration at this meeting

- Accept 2019 FMP Review and State Compliance Reports.
- Approve *de minimis* requests.

8. Other Business/Adjourn

Horseshoe Crab

Activity level: Medium

Committee Overlap Score: Low (SAS overlaps with BERP)

Committee Task List

- TC – Communicate with Kepley Biosystems' to determine whether trials should be conducted for OrganoBait
- ARM & DBETC – Incorporate Catch Multiple Survey Analysis horseshoe crab population estimates into the ARM model
- TC – March 1st: Annual compliance reports due
- ARM & DBETC – Fall: Annual ARM model to set Delaware Bay specifications, review red knot and VT trawl survey results

TC Members: Jeff Brunson (SC, TC Chair), Derek Perry (MA), Natalie Ameral (RI, Vice Chair), Deb Pacileo (CT), Catherine Ziegler (NY), Samantha Macquesten (NJ), Jordan Zimmerman (DE), Steve Doctor (MD), Ellen Cosby (PRFC), Adam Kenyon (VA), Jeffrey Dobbs (NC), Eddie Leonard (GA), Claire Crowley (FL), Linda Stehlik (NMFS), Chris Wright (NMFS), Joanna Burger (Rutgers), Gregory Breese (USFWS), Mike Millard (USFWS), Kristen Anstead (ASMFC), Michael Schmidtke (ASMFC)

Delaware Bay Ecosystem TC Members: Wendy Walsh (USFWS, DBE TC Chair), Amanda Dey (NJ), Henrietta Bellman (DE, DBE TC Vice Chair), Jordan Zimmerman (DE), Steve Doctor (MD), Adam Kenyon (VA), Jim Fraser (VA Tech), Eric Hallerman (VA Tech), Mike Millard (USFWS), Greg Breese (USFWS), Kristen Anstead (ASMFC), Michael Schmidtke (ASMFC)

ARM Subcommittee Members: John Sweka (USFWS, ARM SC Chair), Larry Niles (NJ), Linda Barry (NJ), Henrietta Bellman (DE), Jason Boucher (DE), Steve Doctor (MD), Wendy Walsh (USFWS), Conor McGowan (USGS/Auburn), David Smith (USGS), Jim Lyons (USGS, ARM SC Vice Chair), Jim Nichols (USGS), Kristen Anstead (ASMFC), Michael Schmidtke (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

HORSESHOE CRAB MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
August 6, 2019

These minutes are draft and subject to approval by the Horseshoe Crab Management Board
The Board will review the minutes during its next meeting

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ATTENDANCE

Board Members

Dan McKiernan, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Bob Ballou, RI, proxy for J. McNamee (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
David Borden, RI (GA)
Sen. Craig Miner, CT (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Jim Gilmore, NY (AA)
Emerson Hasbrouck, NY (GA)
Joe Cimino, NJ (AA)
Russ Allen, NJ, proxy for T. Fote (GA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Lynn Fegley, MD, proxy for B. Anderson (AA)
Robert Brown, MD, proxy for R. Dize (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Pat Geer, VA, proxy for S. Bowman (AA)
Bryan Plumlee, VA (GA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Malcolm Rhodes, SC (GA)
Mel Bell, SC, proxy for Sen. Cromer (LA)
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Rep. Thad Altman (FL) LA
Chris Wright, NMFS
Martin Gary, PRFC

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Dustin Colson Leaning
Mike Schmidtke
Kristen Anstead

Guests

Nora Blair, Charles River Labs
Syma Ebbin, UCONN

The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, August 6, 2019, and was called to order at 3:00 o'clock p.m. by Chairman Malcolm Rhodes.

CALL TO ORDER

CHAIRMAN MALCOLM RHODES: All right let's everyone take our seats. My name is Malcolm Rhodes; I'm the Chairman of the Horseshoe Crab Management Board. To my immediate right is Dr. Mike Schmidtke; who is the ASMFC staffer in charge of this area. I want to welcome everyone here.

APPROVAL OF AGENDA

CHAIRMAN RHODES: Everyone should have gotten previous notes on the agenda. Are there any changes to the agenda? Seeing none, we'll take that as accepted.

APPROVAL OF PROCEEDINGS

CHAIRMAN RHODES: And we received the minutes from the last meeting. Emerson.

MR. EMERSON HASBROUCK: I would like to correct the proceedings from the May meeting to show that Emerson Hasbrouck was present as a Board member. I'm not listed here under the attendance, but in the body of the minutes there are my comments that are in there, so I was here.

PUBLIC COMMENT

CHAIRMAN RHODES: Excellent, so noted. With that change, any others, seeing none we'll accept those. Are there any public comments on matters that are not coming before the Board? There was no one signed up for it, so we'll move on to the fourth order of business.

CONSIDER MANAGEMENT RESPONSE TO 2019 HORSESHOE CRAB BENCHMARK STOCK ASSESSMENT

CHAIRMAN RHODES: At the last meeting Joe Cimino ran it beautifully, we got through the 2019 Horseshoe Crab Benchmark Stock Assessment.

It sounded like there was a lot of great discussion about what went on with that. Because of the lengths of those discussions and some salient points, the management response, certain parts of the management response had been touched on. But the Board as a whole did not come up with any plans at that point. That is where we are right now. At this point I'm going to turn the meeting over to Mike, and we will move forward from there.

DR. MIKE SCHMIDTKE: I don't have a lengthy presentation, it really is just one slide, and it's a reminder of some of the points that were brought up at the last meeting, after going through the benchmark stock assessment. These were some of the potential responses based off of the information from the assessment itself, as well as some actions that were delayed prior to the assessment taking place.

First of all, incorporation of the catch survey analysis population estimates into the ARM model. That direction was given by the Board and that process is underway. The ARM Subcommittee and the Delaware Bay Technical Committee will be meeting in person in September, to discuss exactly how this will take place, as well as how to present this information to the public, taking into account all of the aspects of that estimate related to confidentiality of biomedical information. The next point had to do with management changes in the New York region, if the Board would want any to be made. The New York region, as a reminder was given a poor status by the stock assessment.

This status reflected declining indices in that region, nearly all of the indices that were looked at from the New York region were declining. As a reminder to the Board there is this poor status, but

it's not the same thing as overfishing necessarily, because an overfishing threshold has not been established for this population.

In addition, the quotas that have been established for the states have not been exceeded for New York and Connecticut during that time. It's not necessarily the same thing as overfishing, but it is a poor status that indicates a declining population in that area. The next part is draft Addendum VIII, which was postponed.

The plan initially is to take this up at the October, 2019 meeting when there is a bit more time for discussion if that's necessary, and finally if the Board wants to consider any form of a review to the ARM model, the most recent ARM review was conducted in 2016, and that was a short term review.

Addendum VII defines a long term review that could be conducted of the ARM model that has not been done since the ARM Management Framework has been put into place. If the Board wanted to consider that that is a direction you all could go, but with the knowledge that there would need to be a significant investment of time and/or Commission funds, in order to make something like that happen. That is all I have, Mr. Chair and I'll turn it back over to you.

CHAIRMAN RHODES: Okay thank you for that synopsis, and kind of an idea of where we're going. In the intervening time I know the New York region has had several visits. We've had some phone conferences, and at this point if you all are ready, would New York or Connecticut have any state responses they would like to put before the Board?

MR. JAMES J. GILMORE: We've been talking with Connecticut, but let me give a little background on this. It's what we understand is going on. New York's harvest quota is 360,000 crabs a year. We reduced that several years ago, first down to about 175,000, we've gone down to 150,000. We've done about a 60 percent reduction in our harvest quota.

In addition to that we've incorporated significant monitoring. We have trip limits, we have essentially adjustments to those trip limits quite frequently during the year, and in fact I just closed the fishery last week, so there will be no fall fishery this year. We're getting to the point right now that the problem of trying to continue to reduce harvest in New York is really probably not at the root of what the problem is.

One thing and I've stated this before at this Board, well let me say it more generically, because I do teach fisheries management. Moratoriums on healthy species are the worst thing you can do, because this is the problem it creates. When the moratorium was put into New Jersey, and I'm not faulting Jersey, because it was done by their Legislature, so the other reason why we never want Legislature to manage fisheries is because they create problems like this. When the crabs were essentially open in both states, they were going for about $0.25 a pound. When the fishery was closed in Jersey they shot up to about $3.00 a pound. Anybody that knows this fishery, you get a pickup truck and a refrigerator and you're in the fishery.

We had quite a significant amount of poaching. We increased our law enforcement activities, in fact we were doing coordination with some of the County helicopters to catch these guys, but it's just such a big fishery, and it's such a good way to make profits. That all being said we're looking at ways to do additional management.

The first thing that we can add on at this point is that we were essentially going to go what Jersey is already doing, and require bait bags, and see if that can essentially reduce the amount of harvest that we're going to need. We are looking at some possible closures, but we don't really know how to do that yet, particularly around the big spawning period.

We're working on that right now, and our preference obviously is to do this as just a state action without having to do an addendum, so

everyone has to do a lot of work. But again, I'm not optimistic that anything we do at this point is going to help, until we get a better sense of how to manage this fishery with a moratorium in it.

I've talked to Jersey, and again they understand this is a Legislative action, and they've done things to try to help out. I'm not sure if there are other things they do, and I'll let them talk to that. But the data when we dissect it a little bit it's very, very clear. The closer you get to the western part of Long Island in towards New Jersey, the numbers get worse.

It's clearly that action that was done by their Legislature is having an effect on the population. My final statement, and I'll give it over to Justin to add into it is that the action that the Jersey Legislature did, did exactly the opposite of what we needed to do. It's having a negative effect on the population. Maybe in Delaware Bay it's helping them, in terms of keeping the population up, but on the entire regional area right now it's having a detriment. I'll turn it over to Justin.

CHAIRMAN RHODES: Justin.

DR. JUSTIN DAVIS: I think my remarks will largely mirror a lot of what Jim just said. We don't share a boarder with New Jersey, so we don't necessarily have the same concerns relative to that in the moratorium in New Jersey. But we do, I guess sort of feel that our fishery and imposing further restrictions on our fishery is probably not going to produce a significant effect on the horseshoe crab population.

We have a very small scale fishery. It's really about a dozen fishermen participating in the fishery. Our harvest has been constant at about half of our quota for a number of years now. That being said, we also would prefer to approach this from a state level action. We have begun taking a look at measures that might potentially reduce harvest, such as reducing possession limits, or reducing the amount of time that we're open.

We are open for a pretty restricted period as is. We're open for about six weeks and we're closed on the weekends during that period, so we already have a very short season. We've begun taking a look at potential measures that might help reduce harvest. We would approach that through our state regulatory process, which could take anywhere from six months to a year, depending on how lucky we get and how the chips fall out.

That is where we're at right now. In Connecticut we're starting to take a look at measures that might reduce harvest and hopeful for the next year to continue those discussions and move our regulatory process to address it. I will also say that we're working in conjunction with New York on developing regulations for the whelk fishery in Long Island Sound. We would also be looking to mandate bait bags in that fishery, and hopefully reduce the amount of bait required.

CHAIRMAN RHODES: Thank you both very much, I'll open it up to the rest of the Board for any questions or thoughts or concerns. Chris.

MR. CHRIS WRIGHT: Jim, when you closed the fishery this year how much harvest was there at that point?

MR. GILMORE: I don't know the exact number, but it was around 150,000. I think we might have been slightly over. But it's shut down now.

CHAIRMAN RHODES: Dan.

MR. DANIEL McKIERNAN: Yes for the record, Massachusetts adopted the Rhode Island lunar closures about ten years ago, and we think that this has had a real positive impact on recruitment. It was originally just May and June, and we even backed it up into April. For the better part of ten weeks we don't allow any harvest over a five day period of the new and full moons.

CHAIRMAN RHODES: Stewart.

MR. STEWART MICHELS: Jim, that 150,000 horseshoe crab cap, I guess several questions; one is that sex specific at all? Then the other one is that in regulation, or is that just kind of an administrative policy of yours? Are there mandatory paybacks?

MR. GILMORE: Let me take them one at a time. It's not a sex fishery, because in New York it's different than Delaware Bay, it's pretty much a 50/50 split, so a male only fishery would make no sense. Essentially those numbers are not specifically in regulations, but the ability to manage it is. We've had great success keeping it around that 150.

I think one year it got a little bit ahead of us, and we went up to 170,000, but we've generally stayed at that 150,000. Sorry, the last one Stew was? Yes there is no payback provision in it whatever. I will add as Justin had said about the bait bags. We've already put a rulemaking in place to implement those in New York, so that is already in process.

CHAIRMAN RHODES: Joe.

MR. JOE CIMINO: Just to address some of Jim's comments. As you mentioned there was a conference call with Connecticut and New York. New Jersey sat in on that. New Jersey does require bait bags in the whelk fishery. They also require receipts. Anyone that is using horseshoe crab as bait needs to have receipts. I spoke to our law enforcement division and they said in both of those instances on their stops there is really good compliance, especially for the bait bags, since as Jim mentioned, these crabs are quite expensive.

The other thing that they noted was that in general these guys are already using less than a horseshoe crab, or whatever they feel is effective. I don't know what else New Jersey can do. On that conference call the only other suggestion was consideration of alternative baits, but I think this Board is very familiar with that and it doesn't seem like a viable option at this time. I'll leave it at that.

CHAIRMAN RHODES: Dan.

MR. McKIERNAN: Yes what we've discovered in Massachusetts is a lot of the whelk potters were using green crabs. The legislature had put a bounty on green crabs with funding that we distributed to the towns to remove invasive green crabs, and those became one of the bait components. A lot of our whelk fishermen are using kind of a buffet of baits; a piece of horseshoe crab, some green crabs, a dogfish head, a herring. Some guys use mussels. We've sort of evolved. We think our use of horseshoe crabs is down because of that.

CHAIRMAN RHODES: Thank you, great time, very nonselective snails. Do any other people want to address? Seeing that I guess the Board at this point has to decide what sort of response. Our choices will be looking at the measures the two states have implemented, and follow up with them, or do we want to have something more statutory from the Board? I'm going to turn that over to the Board. Bob.

MR. ROBERT BALLOU: I'll take the bait, Mr. Chair. I feel comfortable allowing New York and Connecticut initiate state action. Tracking that action, I think it is incumbent upon the Board to track that action, and to continue tracking the monitoring, trawl survey results to see if there is any cause and effect. I would be comfortable with that approach.

CHAIRMAN RHODES: Any further? Is everyone comfortable with that approach seeing no objection, Toni?

MS. TONI KERNS: There is no objection. I think that if we can make the timing work out we can provide that report to the Board when we do our annual compliance reports. I can work with Jim and Justin and Mike to see if that would line up well to having the annual tracking of those measures.

CHAIRMAN RHODES: Fantastic, thank you. Dan.

MR. McKIERNAN: I have a question. Is it New York and Connecticut's intent to have rules in place by next spring?

MR. GILMORE: Yes, New York is like I said. The bait bag issue is already in our rulemaking process, and then if we're going to do the additional measures like I said we're considering some sort of a seasonal closure. We have an order that we're doing. We're trying to do whelk and this at the same time. The whole idea would be to have this in place for the next year.

DR. DAVIS: I'm cautiously optimistic that Connecticut might be able to have rules in place by spring 2020 as well.

CHAIRMAN RHODES: Fantastic. Other responses from the report were Addendum VIII, which specifically deals with two points. One is accounting for the mortality from biomedical harvest, and then for possible female horseshoe crab harvest in Delaware Bay when certain triggers are hit. Does anyone have any feel for either of those at this point?

DR. MIKE SCHMIDTKE: We don't need to necessarily address Addendum VIII within this meeting here. Like it's on the screen it can be taken up at the 2019 meeting. But just to give some background on the points that Mr. Chair just brought up. For the incorporation of the biomedical mortality there were a couple of different looks at this from the ARM Subcommittee.

Both indicated that whether biomedical mortality is incorporated or not incorporated into the ARM model, and regardless of which way it is incorporated of reducing the harvest packages, or adding it as a mortality term in the model itself it has not changed the results. It would not have changed any of the results from the harvest packages that were produced from that model.

In looking at kind of additional points from the stock assessment, in looking at how the Catch Survey Analysis population estimates are going to be incorporated into the ARM model, really if the best population estimate from that analysis is used in the ARM model, then that would incorporate biomedical information inherently from that estimate, because it would be there as part of the model.

One of the tricky parts, and one of the things that the ARM Subcommittee and Delaware Bay TC would need to discuss is how that information could be incorporated and conveyed in some way publicly, so that can be used in management. That is something that will be taken up at that September meeting. On the points of the harvest packages and the potential for female harvest in the Delaware Bay that is something that was looked at a few times in the interim as well.

The bottom line of is it that unless the horseshoe crab females or the red knots hit their population thresholds, no matter how many additional packages get put into the mix, there will be no female harvest unless those thresholds get exceeded. That is kind of the takeaways of some of the analysis that has been done since draft Addendum VIII was initiated, and then to the point that we currently are, since it was postponed and potentially being taken back up in October.

CHAIRMAN RHODES: Are there any questions? Is everyone comfortable with that? Stew.

MR. MICHELS: I'm sorry, so the question as to whether the catch survey model should be incorporated into the ARM process that's going to happen in September?

DR. SCHMIDTKE: It's kind of already a work in progress, like we're planning the meeting right now, but the meeting will occur in September for the Subcommittee and the TC to discuss exactly how to do that and how to present that information for the Board.

CHAIRMAN RHODES: All right, is everyone comfortable with where we are right now, with the response and where we're moving forward? Chris.

MR. WRIGHT: The peer review of the stock assessment, the Chair specifically mentioned that the bycatch really needs to be addressed. He suggested that the Board figure out a way of getting to that number. It seems like the significance that he stressed in his report was pretty alarming to me. I think we need to discuss that and just figure out, how do we get to those numbers so we can make better decisions in the future?

CHAIRMAN RHODES: Is the Board comfortable if we task the TC to look at that as they go over this data, and see if they can come up with a way of modeling that into it? Roy.

MR. ROY W. MILLER: Mr. Chairman, what would be the assignment, to examine the discard mortality rate or to suggest ways to reduce the discard mortality rate, which is it?

CHAIRMAN RHODES: I think at this point it's going to be trying to get a number for the discard mortality rate, before we can affect that it would be having a number that they're comfortable with that we can use for our analyses.

DR. SCHMIDTKE: I think one point that would need to be considered with that as far as like the timeline that the TC would be working with, and the possibility of completing the task is the access to the data. Somebody that is involved in the TC would need to be able to have access to the Northeast Fishery Observer Program data, because that was the primary data from which the discards were estimated in the assessment. One of the big difficulties for why those estimates were so broad and not as well defined as we maybe would have liked them to be, was because there wasn't anybody on the SAS that had ready access to those data.

DR. KRISTEN ANSTEAD: Just for some clarification. As part of the stock assessment we did use the Northeast Science Fishery Centers data to do bycatch estimates. There were a lot of comments during the peer review that they thought that some of those methods could be refined to be better, and that it would take some work and some collaboration with the Northeast Fishery Science Center.

I think certainly the TC could examine, maybe at a state level and make some suggestions about what they think the mortality rates are for each of the gears that could be encountering horseshoe crabs. But as far as the methods and the analysis of the data that is going to be a partnership really with the Northeast Fisheries Science Center to kind of work together to get that data to be in better shape for a similar analysis.

CHAIRMAN RHODES: Okay. Mike.

DR. MICHAEL ARMSTRONG: A question for Mike, or maybe Kristen, jumping to the last bullet. If we were to at some meeting go down the long term ARM review. My understanding is that all the fundamental parts of the ARM would be reassessed and open to change, including those thresholds that Mike, you just spoke about. We can have all the harvest packages we want, but based on where the thresholds are right now, you're not going to open up female harvest. But if we go into the long term review, are those thresholds also open for reassessment?

DR. SCHMIDTKE: I need one second just to check the language of the Addendum and make sure.

MS. KERNS: If I remember correctly, and I did not go back and double check the document. But the thresholds in the document were based on some scientific information that was provided to us. Yes, we could go back and review the scientific information and change the thresholds, but it would still be based on scientific information.

I think whether or not those would change much is if the information that backed them changed. If there hasn't been much change in the information that is the source for that threshold, then probably not much change would occur. But through the addendum process, if you change the entire ARM

modeling, then we would go through the Addendum to do that. Does that make sense, Mike?

DR. ARMSTRONG: Yes, thanks. I'm just reflecting that those were created ten years ago or more, I think. Maybe some things have changed.

CHAIRMAN RHODES: Stew.

MR. MICHELS: I think among the things that have changed are some of the surveys that are being used to provide those estimates of just exactly where we are, relative to those utility functions. It might be a good time to take a shot at that long term ARM review.

CHAIRMAN RHODES: Well those are good points. I know the ARM Working Group is going to meet in September, and although they're not set up to go along with that I'm sure the discussion will work towards that. There may be some clear answers for everybody.

OTHER BUSINESS

CHAIRMAN RHODES: Is there any other business to come before this Board? Yes, Stew.

MR. MICHELS: I'm sorry, are we going to charge the TC then with investigating some of these issues, like the bycatch and digging a little bit deeper into that? One of the issues I'm a little concerned with are the conversion factors that have been applied along the coast. If we could drill down on that I think it would be helpful.

CHAIRMAN RHODES: Those have all been noted and will be looked at. Any other business, all right and Mike has one more bit.

DR. SCHMIDTKE: Just giving the Board an update. When the initial agenda went out it did include an item for the FMP review, and we typically tried to do that within a meeting or two of when the Compliance Reports are due. That is delayed this year. We have not received all of the Compliance Reports yet. But we are hoping to have all of the data that we need to conduct the FMP review in October. I just wanted to let the Board know.

ADJOURNMENT

CHAIRMAN RHODES: Great, if there is no other business, then we can stand adjourn, and we're back on time. Thank you all.

(Whereupon the meeting adjourned at 3:30 o'clock p.m. on August 6, 2019)

Atlantic States Marine Fisheries Commission

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703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

October 8, 2019

To: **Horseshoe Crab Management Board**

From: **John Sweka (Adaptive Resource Management Subcommittee Chair) and Wendy Walsh (Delaware Bay Ecosystem Technical Committee Chair)**

RE: **Update and Review of the ARM Framework**

On September 11-12, 2019, the Adaptive Resource Management (ARM) Subcommittee and Delaware Bay Ecosystem Technical Committee (DBETC) met in Arlington, VA, to discuss how to accomplish the Horseshoe Crab Management Board's (Board) task to incorporate horseshoe crab population estimates from the Catch Multiple Survey Analysis (CMSA) model into the ARM Framework. During this meeting, John Sweka proposed a suite of potential revisions to the Framework that incorporate new information and data that was used in the benchmark assessment in addition to the CMSA population estimates. These revisions generally shift aspects of the ARM model from being theoretical or based on older literature values to being based on empirical and more recent data.

The committees discussed these potential revisions and formed consensus recommendations that they believe are necessary for the ARM Framework to move forward in managing horseshoe crabs in the Delaware Bay using the best science available. These recommendations are listed below for the Board's consideration:

1. **For input into the ARM Framework annually, combine the primiparous and multiparous abundances from the Virginia Tech Trawl Survey with a half year of mortality applied to the estimates. This would apply to the ARM Framework immediately.**

2. **Move forward with using CMSA model for estimation and projection as the underlying horseshoe crab population model in the ARM Framework. Reassess ARM utility of female horseshoe crab harvest as a function of female abundance.**

3. **Update red knot survival and mass gain model with most recent data. Evaluate red knot model weights.**

4. **Use of CMSA accounts for biomedical mortality in the ARM Framework (a previous Board task).**

5. **First, request the disclosure of confidential biomedical data for use in the base run CMSA estimate. If Board does not agree with making the request or the companies say**

no to the disclosure: Run the CMSA with the confidential biomedical data with 15% applied mortality, without biomedical data, and with non-confidential coastwide biomedical data with 15% applied mortality. The harvest package will be made based on the population estimates from the CMSA that includes confidential data, as it represents the best data set available. Publish 0% biomedical and coastwide biomedical population estimates as population bounds.

6. **Reevaluate definition of Delaware Bay crabs and the implications towards the population estimates and harvest allocations.**

The proposed changes to the ARM Framework would be conducted over a year or two and would require an external peer review.

John Sweka, the ARM Subcommittee Chair, will be attending the 2019 ASMFC Annual Meeting to discuss these recommendations in greater detail and answer questions. For additional information on discussions surrounding these recommendations, please reference the September 11-12 Meeting Summary, which will be included in the 2019 Annual Meeting Briefing Materials and may be found on the Commission's horseshoe crab species webpage.

Atlantic States Marine Fisheries Commission

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Horseshoe Crab Adaptive Resource Management Subcommittee
Meeting Summary

September 11, 2019

Adaptive Resource Management Subcommittee Members: Jim Lyons (Chair, USGS), Lindy Barry (NJ), Jason Boucher (DE), Steve Doctor (MD), Larry Niles (CWF), Dave Smith (USGS), John Sweka (USFWS), Wendy Walsh (USFWS)

ASMFC Staff: Michael Schmidtke, Kristen Anstead

Public: Brett Hoffmeister (HSC AP Vice Chair, ACC), Nora Blair (Charles River), Joe Smith, Jordan Zimmerman (DE), Mike Millard (DBETC, USFWS), Amanda Dey (DBETC, NJ)

On the Phone: Greg Breese (DBETC Chair, USFWS)

The Adaptive Resource Management (ARM) Subcommittee (SC) met on September 11, 2019, in Arlington, Virginia. The meeting's goals were to define the value used for horseshoe crab abundance in the ARM Framework, discuss how to incorporate horseshoe crab population estimates from the Catch Multiple Survey Analysis (CMSA) model used in the 2019 benchmark stock assessment into the ARM Framework, discuss other potential revisions to the ARM Framework, compile a set of recommendations based on these discussions for consideration by the Delaware Bay Ecosystem Technical Committee (DBETC), and elect a new Chair and Vice Chair.

Following the comments by the peer review panel for the 2019 benchmark stock assessment for horseshoe crab, the Board tasked the ARM SC with considering the incorporation of population estimates for horseshoe crab in the Delaware Bay from the CMSA and the estimate of natural mortality into the ARM Framework since both values represent the best available data. Previously, the Board had tasked the ARM SC with accounting for biomedical mortality in the Framework, but tabled the proposed options until after the benchmark assessment.

The ARM SC discussed the definition of the current ARM Framework. Kristen Anstead presented aspects of the Framework that are not clearly defined in Addendum VII or previous ARM reports. One of these is the inclusion of primiparous crabs in annual adult abundance estimates from the Virginia Tech (VA Tech) Benthic Trawl Survey, which are used as an input to the ARM Framework. The ARM SC concluded that from a biological standpoint, primiparous crabs caught by the VA Tech Survey (conducted annually in the fall) would contribute to the number of eggs available to red knots the following spring and should be included in the adult population estimate. However, the ARM Framework currently does not account for mortality that occurs during the time lag between the VA Tech Survey and the red knot stopover. The ARM SC agreed that this should be accounted for moving forward by applying half of the annual total adult mortality rate estimated from the benchmark stock assessment (0.274) to primiparous and multiparous male and female crab abundance estimates from the VA Tech Survey. The ARM SC also determined that population estimates made using the swept area delta distribution are those that are and will be used as inputs for the ARM Framework.

John Sweka presented potential changes to the ARM Framework that would more directly connect it to the CMSA model and replace several of the current Framework's theoretical assumptions with empirical estimates. One of these changes is to estimate a spawner-recruit relationship for horseshoe crabs and use it to project the assessment's CMSA model into the future to estimate male, female, and total carrying capacities (K). This relationship would view primiparous crabs as recruits, thus estimating the number of primiparous crabs based on the number of spawners (multiparous and primiparous females) from 10 years (female age of maturity) earlier. Initially, due to limited data, a hockey-stick spawner-recruit model could be used. However, each additional year abundance data would provide an additional data point that could eventually lead to the use of a Ricker model, which is probably more representative of horseshoe crab reproductive biology and behavior. Use of the CMSA population estimates includes other changes to the ARM such as inclusion of bait harvest, discard, and biomedical mortality and improved estimates of natural mortality. Currently, the CMSA model is only applied to females due to convergence issues in fitting a model for males. However, further efforts to model males can be made, and they can be estimated and projected in the interim using sex ratio information. Sweka also suggested an update of red knot information used in the ARM model, including survival rates, mass gain, and model weighting.

The ARM SC discussed several aspects of the potential revisions. The SC noted that egg survival is likely more contingent on weather conditions during and shortly after spawning than the number of spawners. At the same time, the SC recognized that a certain number of spawners must be present to produce recruits. Limited data and poor fitting models are common for spawner-recruit relationships for many species, but the value of being able to project recruitment forward based on even this limited data has value for estimating population characteristics such as K. The model fit could also improve over time with data from additional years of all surveys in the CMSA and stage information now being collected by NJ and DE state surveys. Inclusion of actual removals information in the ARM model is an improvement, which can be made even better through improved estimates of discards and associated mortality. The SC discussed the possibility that use of this method could change K and influence harvest package selection. This could lead to the same, increased, or decreased bait harvest. However, the SC agreed that the proposed methodology is an improvement because it is more defensible. The SC recommended to move forward with using the CMSA model for estimation and projection as the underlying horseshoe crab population model in the ARM Framework. The SC also recommended reassessment of the ARM utility of female horseshoe crab harvest as a function of female abundance.

Dave Smith informed the ARM SC of a project that will be undertaken at the USGS Leetown Science Center to transfer the ARM Framework from its current software (ASDP) to MDPSolve, a software written in the more widely used MATLAB programming language. This project could incorporate the proposed ARM revisions. After completion, the model could be housed with the Commission and staff could be trained to run it.

The ARM SC discussed inclusion of biomedical data in the ARM Framework. Two methods for doing so had been discussed and tested in earlier meetings. However, through the use of the CMSA horseshoe crab population estimates, the ARM SC considers biomedical use of horseshoe crabs and associated mortality adequately accounted for.

The ARM SC discussed how to publicly present ARM information including population estimates and harvest package results, given the use of confidential information in CMSA abundance estimates. The ARM SC agreed that the ability to publish population estimates from the CMSA base run would be most accurate, and that the Commission should request permission to publish this estimate from the

biomedical companies. Given denials of past requests for this permission, the ARM SC also considered other options for presenting results if this request is not made by the Board or is denied by the companies.

The ARM SC considered use of a moving average of biomedical mortality over multiple years, as well as a simulation based on a moving average and standard deviation. Use of the coastwide biomedical mortality applied to the Delaware Bay region was also considered. While this would underestimate the population in the region it would produce a publicly viewable number that could be recognized as a lower bound. Given the small impact of biomedical use observed by the stock assessment, this conservative estimate still likely would not change harvest package selection. The ARM SC also discussed use of 0% biomedical mortality, which would also give a publicly viewable upper abundance estimate and likely the same harvest package as the CMSA base run. Use of either the coastwide or 0% biomedical mortality was not preferred because of known directional bias. Therefore, the ARM SC recommended that the ARM model be run with the CMSA using both the 0% biomedical mortality and the coastwide biomedical mortality attributed to the Delaware Bay region. Population estimates from both methods would be published as population bounds and the resulting harvest package, if the same, would be used in management. If the harvest package differed, the more conservative harvest package would be used in management. This recommendation was revised after further discussion with the DBETC.

The ARM SC discussed the definition of Delaware Bay-origin crabs and the current use of abundance estimates from the VA Tech Survey, given the survey's sampling area relative to stock structure and movement information used in the assessment. The ARM SC noted that crabs that spawn in Delaware Bay may also spawn in other areas, such as coastal bays of Maryland or Virginia, in other years. Tagging information shows movement and exchange among different parts of the Delaware Bay region. The ARM SC discussed coverage of the Delaware Bay region (considered from the Virginia-North Carolina state line through New Jersey). The VA Tech Survey does not cover the northernmost and southernmost extremes of this region, but does cover a large majority of the region. Also, the majority of horseshoe crabs observed in New Jersey's Ocean Trawl Survey are in strata that are within the VA Tech Survey sampling area. The ARM SC decided that the population estimate from VA Tech should not be altered due to spatial coverage. The ARM SC did discuss movement of crabs south of the Delaware Bay and current consideration of portions of Maryland and Virginia crabs to not be of Delaware Bay origin. Given new information on horseshoe crab movement in this region since the ARM Framework was established, the ARM SC recommended that the percentages of Maryland and Virginia crabs considered to be of Delaware Bay origin or part of the Delaware Bay regional population be reevaluated.

The ARM SC elected a new Chair, John Sweka, and Vice Chair, Jim Lyons.

Horseshoe Crab Adaptive Resource Management Subcommittee and Delaware Bay Ecosystem Technical Committee
Joint Meeting Summary

September 12, 2019

Delaware Bay Ecosystem Technical Committee Members: Greg Breese (Chair, USFWS), Henrietta Bellman (DE), Amanda Dey (NJ), Steve Doctor (MD), Mike Millard (USFWS), Wendy Walsh (USFWS), Jordan Zimmerman (DE)

On the phone: Eric Hallerman (VT), Adam Kenyon (VA)

Adaptive Resource Management Subcommittee Members: Jim Lyons (Chair, USGS), Lindy Barry (NJ), Henrietta Bellman (DE), Jason Boucher (DE), Steve Doctor (MD), Larry Niles (CWF), Dave Smith (USGS), John Sweka (USFWS), Wendy Walsh (USFWS)

ASMFC Staff: Michael Schmidtke, Kristen Anstead

Public: Brett Hoffmeister (HSC AP Vice Chair, ACC), Nora Blair (Charles River), Joe Smith

A joint meeting of the Delaware Bay Ecosystem Technical Committee (DBETC) and Adaptive Resource Management (ARM) Subcommittee (SC) took place on September 12, 2019, in Arlington, Virginia. The meeting's goals were to review and discuss the ARM SC's proposed changes to the ARM Framework, develop recommendations for the Horseshoe Crab Management Board (Board) about the proposed changes, review 2018 horseshoe crab and 2019 red knot surveys, and elect a new Chair and Vice Chair.

Jim Lyons and John Sweka presented the ARM SC's recommended changes to the ARM Framework for the DBETC's review and consideration for approval. Following a presentation of the proposed revisions, the DBETC asked questions and made some revisions. The consensus recommendations by the DBETC and ARM SC to the Board are:

1. **For input into the ARM Framework annually, combine the primiparous and multiparous abundances from the Virginia Tech Trawl Survey with a half year of mortality applied to the estimates. This would apply to the ARM Framework immediately.**

2. **Move forward with using CMSA model for estimation and projection as the underlying horseshoe crab population model in the ARM Framework. Reassess ARM utility of female horseshoe crab harvest as a function of female abundance.**

3. **Update red knot survival and mass gain model with most recent data. Evaluate red knot model weights.**

4. **Use of CMSA accounts for biomedical mortality in the ARM Framework (a previous Board task).**

5. **First, request the disclosure of confidential biomedical data for use in the base run CMSA estimate. If Board does not agree with making the request or the companies say no to the disclosure: Run the CMSA with the confidential biomedical data with 15% applied mortality, without biomedical data, and with non-confidential coastwide biomedical data with 15%**

applied mortality. The harvest package will be made based on the population estimates from the CMSA that includes confidential data, as it represents the best data set available. Publish 0% biomedical and coastwide biomedical population estimates as population bounds.

6. **Reevaluate definition of Delaware Bay crabs and the implications towards the population estimates and harvest allocations.**

The proposed changes to the ARM Framework would be conducted over a year or two and would require a peer review.

The committees reviewed the results of the 2018 Virginia Tech Trawl Survey by Eric Hallerman, New Jersey Ocean Trawl and Delaware Bay Trawl by Lindy Barry, and Delaware 16' and 30' Trawls by Jordy Zimmerman. As in previous years, the immature and newly mature male and female horseshoe crabs show variability and no trend. Mature males and females in the coastal area show an increasing trend since 2002, although the committee members had some disagreement about the interpretation of that trend and what statistical test was used. The swept area estimate of mature female horseshoe crabs in the region for fall 2018 was 7.3 (95% CI: 4.1- 10.5) million.

Jim Lyons presented the 2019 red knot mark-resight survey conclusions and population estimates. The pattern of red knot arrivals in the Delaware Bay in 2019 suggested an early arrival and a relatively high persistence probability. The estimated stopover population was 45,133 (95% CI: 42,269–48,393), similar to the estimate in 2018 of 45,221 (95% CI: 42,568–49,508). This superpopulation estimate accounts for turnover in the population and probability of detection. Mandy Dey gave an update on the status of red knot which stated that peak stopover in the Delaware Bay has been low and stable for a decade and horseshoe crab eggs have not shown an increase. Both reports noted that there has been a shift of red knot distribution to New Jersey beaches and few birds detected on Delaware beaches.

The horseshoe crab population estimates from the Virginia Tech Trawl Survey and the red knot estimates from mark-resight have been forwarded to Conor McGowan, who runs the current ARM model, to generate the 2020 fishing season's harvest package. Additionally, Joe Smith discussed some recent work his research group has conducted regarding horseshoe crab egg density trends which indicates that beaches are not saturated with eggs to levels that compare with previous (1990s) estimates.

The DBETC elected a new Chair, Wendy Walsh, and Vice Chair, Henrietta Bellman.

Horseshoe Crab Harvest Recommendations Based on Adaptive Resource Management (ARM) Framework and Most Recent Monitoring Data

Report to the Delaware Bay Ecosystem Technical Committee by the ARM Subcommittee

September 2019

This report summarizes annual harvest recommendations. Detailed background on the ARM framework and data sources can be found in previous technical reports[1].

Objective statement

Manage harvest of horseshoe crabs in the Delaware Bay to maximize harvest but also to maintain ecosystem integrity and provide adequate stopover habitat for migrating shorebirds.

Alternative harvest packages

These harvest packages were compared to determine which will best meet the above objective given the most recent monitoring data. Harvest is of adult horseshoe crabs of Delaware Bay origin.

Harvest package	Male harvest (×1,000)	Female harvest (×1,000)
1	0	0
2	250	0
3	500	0
4	280	140
5	420	210

Population models

Population dynamics models that link horseshoe crabs and red knots were used to predict the effect of harvest packages. Three variations in the models represent the amount and type of dependence between horseshoe crabs and red knots. Stochastic dynamic programming was used to create a decision matrix to identify the optimal harvest package given the most recent monitoring data.

Monitoring data

Sources of data for horseshoe crab abundance were a set of trawl surveys conducted by Virginia Tech university.[2] Red Knot abundance estimates are taken from a mark-resight estimate for red knot abundance[3]. These data and methods can be evaluated in the respective reports from those studies.

Horseshoe crab abundance (millions)			Red knot abundance (×1,000)	
Year	Male	Female	Year	Male and female
2018 (Fall)	16.6	7.9	2019 (Spring)	4.5133

Harvest recommendations

Decision matrix was optimized incorporating recommendations on red knot stopover population estimates and associated calibration of red knot threshold[4]. I followed the accepted procedure used in all past years where the empirical abundance estimates did not exactly fit the discretized population size "bins." For each empirical estimate I use the closest discretized abundance "bin" that was not larger than the estimate, in other words I rounded down to the nearest bin.

Recommended harvest package	Male harvest (×1,000)	Female harvest (×1,000)
3	500	0

Quota of horseshoe crab harvest for Delaware Bay region states. Allocation of allowable harvest under ARM package 3 (500K males, 0 females) was conducted in accordance with management board approved methodology in *Addendum VII to the Interstate Fishery Management Plan for Horseshoe Crabs*. Note: Maryland and Virginia total quota refer to that east of the COLREGS line.

	Delaware Bay Origin HSC Quota		**Total Quota**	
State	**Male**	**Female**	**Male**	**Female**
Delaware	162,136	0	162,136	0
New Jersey	162,136	0	162,136	0
Maryland	141,112	0	255,980	0
Virginia	34,615	0	81,331	0

References

[1] McGowan, C. P., D. R. Smith, J. D. Nichols, J. Martin, J. A. Sweka, J. E. Lyons, L. J. Niles, K. Kalasz, R. Wong, J. Brust, M. Davis. 2009. A framework for the adaptive management of horseshoe crab harvests in the Delaware Bay constrained by Red Knot conservation. Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab Technical Committee.

ASMFC Horseshoe Crab Stock Assessment Subcommittee. 2009. Horseshoe crab 2009 stock assessment report. Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab Technical Committee.

ASMFC 2009. Terms of Reference and Advisory Report to the Horseshoe Crab Stock Assessment Peer Review. Stock Assessment Report No. 09-02.

[2] Virginia Tech Trawl Survey report, January 15, 2019

[3] Jim Lyons' 2019 estimate in the 10 September, 2019 Memo

[4] ARM's recommendations for improved estimates of red knot stopover population size and associated calibration of red knot threshold

Results of the 2018 Horseshoe Crab Trawl Survey:

Report to the Atlantic States Marine Fisheries Commission Horseshoe Crab and Delaware Bay Ecology Technical Committees

David Hata and Eric Hallerman

Department of Fish and Wildlife Conservation
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

15 January 2019

Abstract

To properly manage the mid-Atlantic horseshoe crab (*Limulus polyphemus*) fishery, a time-series of data on relative abundance of all demographic groups is needed. We conducted a trawl survey in the coastal Delaware Bay area and the lower Delaware Bay, quantifying mean catch per 15-minute tow and comparing relative abundance of demographic groups with results from previous years. Mean catch-per-tow of immature and newly mature horseshoe crabs in the coastal Delaware Bay area have been variable since 2002 with no trend. Mean catch-per-tow of mature females and males are correlated, and both appear to display an increasing trend over time. Mean catches of immature and mature crabs in lower Delaware Bay are generally larger than catches in the coastal area, although usually not statistically significantly so. Mean catch-per-tow and population estimates of newly mature males are correlated with values for newly mature females of the same year-class the following year. Our findings will be used to parameterize the Adaptive Resource Management model used to set annual harvest levels for horseshoe crabs.

Introduction

To properly manage the mid-Atlantic horseshoe crab (*Limulus polyphemus*) fishery, accurate information on relative abundance levels and trends is needed. The Adaptive Resource Management model (McGowan et al. 2011) adopted by the ASMFC

requires annual, fishery-independent indices of newly-mature recruit and adult abundances. The purpose of this project was to conduct a horseshoe crab trawl survey along the Mid-Atlantic coast in order to: (1) determine horseshoe crab relative abundance, (2) describe horseshoe crab population demographics, and (3) track inter-annual changes in horseshoe crab relative abundance and demographics. Here, we report our cumulative results through the fall 2018 trawl survey.

In summer 2017, we provided the Adaptive Resource Management (ARM) Subcommittee population estimates of horseshoe crabs in the DBA and LDB surveys to inform the ARM model runs. Herein, we present the population estimates through the 2018 survey, incorporating the station location and stratum assignment corrections described in the 2017 report. Gear catchability has not been evaluated for these estimates, so they should be considered conservative.

Methods

The 2018 horseshoe crab trawl survey was conducted in two areas (Figure 1). The coastal Delaware Bay area (DBA) survey extended in the Atlantic Ocean from shore out to 22.2 km (12 nautical miles), and from 39º 20' N (Atlantic City, NJ) to 37º 40' N (slightly north of Wachapreague, VA). This area was previously sampled from 2002 to 2011, and again in 2016 and 2017. The lower Delaware Bay (LDB) survey area extended from the Bay mouth to a line between Egg Island Point, New Jersey and Kitts Hummock, Delaware. The LDB was previously sampled from 2010 to 2012 and in 2016 and 2017. Due to frequent and prolonged weather delays, the surveys were conducted over a protracted period from 11 September to 19 November 2018.

The DBA survey area was stratified by distance from shore (0-3 nm, 3-12 nm) and bottom topography (trough, non-trough) as in previous years. The LDB survey area was stratified by bottom topography only, as in previous years. Sampling was conducted aboard a 16.8-m chartered commercial fishing vessel operated out of Ocean City, MD. We used a two-seam flounder trawl with an 18.3-m headrope and 24.4-m footrope, rigged with a Texas Sweep of 13-mm link chain and a tickler chain. The net body consisted of 15.2-cm (6-in) stretched mesh, and the bag consisted of 14.3-cm (5 5/8-in) stretched mesh. Tows were usually 15-minutes bottom time, but were occasionally shorter to

avoid fishing gear (e.g., gill nets, crab and whelk pots) or vessel traffic. Start and end positions of each tow were recorded when the winches were stopped and when retrieval began, respectively. Bottom water temperature was recorded for each tow. We sampled 41 stations in the DBA survey and 9 stations in the LDB.

Horseshoe crabs were culled from the catch, and either all individuals or a subsample were examined for prosomal width (PW, millimeters) and identified for sex and maturity. Maturity classifications were: immature, newly mature - those that are capable of spawning but have not yet spawned, and mature - those that are have previously spawned. Newly mature and mature males are morphologically distinct, and are believed to be classifiable without error. However, some error is associated with distinguishing newly mature from immature females. All examined females that were not obviously mature (i.e., bearing rub marks) or immature (too small or soft-shelled) were probed with an awl to determine presence or absence of eggs. Females with eggs but without rub marks were considered newly mature. Females with both eggs and rub marks were considered mature. Initial sorting classifications were: presumed adult males (newly mature and mature), presumed adult females, and all immature. Up to 25 adult males, 25 adult females, and 50 immatures were retained for examination. The remainder were counted separately by classification and released. Characteristics of the examined subsamples were then extrapolated to the counted portions of the catch.

In each stratum, the mean catch per 15-minute tow and associated variance were calculated using two methods, i.e., either assuming a normal-distribution model or a lognormal delta-distribution model (Pennington, 1983). Stratum mean and variance estimates were combined using formulas for a stratified random sampling design (Cochran, 1977). The approximate 95% confidence intervals were calculated using the effective degrees of freedom (Cochran, 1977). Annual means were considered significantly different if 95% confidence limits did not overlap. Stratified means calculated using the lognormal delta-distribution model are not additive - i.e., means calculated for each demographic group do not sum to the mean calculated using all crabs. Means calculated using the normal-distribution model are additive, within rounding errors.

Annual size-frequency distributions, in intervals of 10-mm prosomal width, were calculated for each sex/maturity category by pooling size-frequency distributions of all stations (adjusted for tow duration if necessary) in a stratum in a year to calculate the relative proportions for each size interval. Those proportions then were multiplied by the stratum mean catch-per-tow that year to produce a stratum size-frequency distribution. Stratum size-frequency distributions then were multiplied by the stratum weights and added in the same manner as calculating the stratified mean catch per tow. Areas under the distribution curves then would represent the stratified mean catch per tow at each size interval.

The average 15-minute tow in the DBA was 1.23 kilometers at 4.9 KPH. The average 15-minute tow in the LDB was 1.22 km at 4.9 KPH. Valid net-spread measurements were obtained from 45 tows and averaged 9.8 meters. We used the net-spread (S, in meters)/tow speed (C, in KPH) relationship developed from previous trawl surveys to estimate net-spread for collections in which net-spread was not measured ($S = 13.84 - 0.858 \times C$).

For each tow, catch density (catch/km^2) was calculated from the product of tow distance (in km) and estimated net-spread (converted from meters to km) assuming that all fishing was done only by the net, and that there was no herding effect from the ground gear (sweeps):

$$\text{catch/km}^2 = \text{catch/[tow distance (km)} \times \text{net-spread (km)]}.$$

Within each stratum, the mean catch per square-kilometer and associated variance were calculated assuming a normal-distribution model and a lognormal delta-distribution model. Stratum mean densities and variance estimates were combined to produce a stratified mean density ($\bar{x}_{st}$) using formulas for a stratified random sampling design as with the catch-per-tow estimates described above. Population totals were estimated by multiplying stratified mean density ($\bar{x}_{st}$) by survey area (DBA = 5127.1 km^2; LDB = 528.4 km^2):

$$\text{Population total} = \bar{x}_{st} \times (5127.1 \text{ or } 528.4 \text{ km}^2).$$

Results

Delaware Bay area

Stratified mean catches-per-tow for all demographic categories were relatively consistent from 2016 to 2018 (Tables 1 and 2; Figure 2). Stratified mean catches of mature females and males have been variable over the time-series, but are significantly correlated ($r = 0.866$; $T = 5.75$; $p < 0.001$; $n = 13$). Mean catches of mature males and females appear to be increasing over the time-series (males: $r = 0.729$; $T = 3.54$; $p = 0.005$; $n = 13$, females: $r = 0.599$; $T = 2.48$; $p = 0.031$), although males were relatively less abundant in 2018 than in the previous two years. Yearly trends from the delta- and normal-distribution models followed similar patterns for all demographic groups.

Mean catches of newly mature males are correlated with mean catches of immature females 171-230 mm PW and approximately the same age ($r = 0.762$; $T = 3.90$; $p = 0.002$; $n = 13$), and with mean catches of newly mature females the following year ($r = 0.749$; $T = 3.39$; $p = 0.008$). However, mean catches of immature females 171-230 mm are not correlated with mean catches of newly mature females the following year ($T = 2.08$; $p = 0.068$; $n = 11$), nor with the combined catches of newly mature females and immature females 231-300 mm the following year ($T = 1.61$; $p = 0.141$; $n = 11$).

Lower Delaware Bay

This was the sixth year of sampling within the Delaware Bay. Stratified mean catches of immature female crabs in 2018 were about half of those in 2016, the largest means observed, but were not significantly less, based on overlapping confidence limits (Tables 3 and 4; Figure 3). In addition, mean catches of mature females and males were much lower than in 2017, although again not significantly different based on overlapping confidence limits.

Size distributions

Size-frequency distributions of immature horseshoe crabs in the DBA survey display considerable variability (Figure 4). Modal groups are generally indistinct, except for one large group of both females and males in 2009. However, that modal group, which would presumably be larger in size the following year, becomes indistinct again in

2010. Size-frequency distributions from the lower Delaware Bay do not show that modal group in 2010 either (Figure 5).

We had previously reported that mean prosomal widths of mature male and female crabs in the DBA survey displayed slight but detectable decreases over time (Hata and Hallerman 2017). Those trends appear to continue through the 2018 survey, and also include newly mature females and males (Table 5; Figure 6). In addition, decreasing trends in mean PW were observed for mature females and males in the lower Delaware Bay survey, but an increasing trend was detected for newly mature males.

Sex ratios

Mature males were typically more than twice as numerous as mature females throughout the survey time-series. Sex ratios (M:F) from mean catch-per-tow in the DBA surveys ranged from 1.84 in 2005 to 3.63 in 2016, averaging 2.47 over all years. The ratio of newly mature males to females was highly variable, ranging from 0.10 in 2003 to 2.25 in 2004, and averaged 1.12. This may reflect sampling effects, temporal variability in recruitment to the newly mature class relative to survey period, or differences in year-class abundance because females are believed to mature a year later than males.

Sex ratios of mature horseshoe crabs were higher within the lower Delaware Bay than on the coast. Sex ratios (M:F) ranged from 2.61 in 2010 to 6.15 in 2016, averaging 3.84. As on the coast, sex ratios of newly mature crabs within the Bay were variable, and ranged from 0.45 to 5.97, averaging 3.07. The higher sex ratios within Delaware Bay may reflect a tendency for male horseshoe crabs to remain near the spawning beaches.

Population estimates

Annual population estimates of immature crabs in the DBA survey mirror trends observed in the catch-per-tow estimates, and have been variable over time with a large peak in 2009 (Tables 7 and 8). Similarly, population estimates of newly mature crabs increased from 2002 to 2008, but have remained consistently low since 2009. Estimated numbers of mature males and females have significantly increased over the time-series (males: $r = 0.708$; $T = 3.33$; $p = 0.007$; $n = 13$, females: $r = 0.567$, $T = 2.28$; $p = 0.043$).

Population estimates of newly mature females are significantly correlated with estimates of newly mature males the previous year ($r = 0.745$; $T = 3.35$; $p = 0.009$; $n = 11$), as observed for mean catches per tow above. Assuming males entering the newly mature category are of the same year-class as females entering that category the following year, annual trends for males may forecast similar trends for females.

Population estimates of immature crabs in lower Delaware Bay have been consistent with coastal estimates since the LDB survey began in 2010 (Tables 9 and 10). On average, 32% of the total number of immature females and 36% of immature males occurred within Delaware Bay, although the LDB sampling area composed only 9.3% of the total combined area. In 2018, 18% of immature females and 26% of immature males occurred within the Bay. Considerably fewer newly mature and mature crabs were in the Bay compared to the coast. About 11% of the combined population of newly mature females occurred within the Bay, while 14% of newly mature males were in the Bay. In 2018, only 6 and 4% of newly mature females and males, respectively, occurred within Delaware Bay. About 24% of mature females and 29% of mature males occurred within the Bay on average, with 19 and 23%, respectively, occurring within the Bay in 2018. Within the combined survey population, the sex ratio of mature males:females ranged from 2.24 to 4.07, and averaged 3.09, with a ratio of 2.24 in 2018.

Effects of sampling period

The 2018 DBA survey was conducted from mid-September to mid-November, although most sampling was completed by mid-October. The average bottom water temperature in 2018 was the highest in the time series (Table 6; Figure 7). Because of adverse weather, the 2018 lower Delaware Bay survey was completed nearly a month later than in previous years, and a month later than the majority of the DBA survey. As a result, the average LDB water temperature was 10 C° cooler than the average DBA temperature. Horseshoe crabs that were within the Bay during most of the DBA survey because of the warm temperature, and not enumerated, may have moved out of the Bay by the time the LDB survey was conducted, and again not enumerated. This may have resulted in underestimates of horseshoe crabs in both survey areas and contributed to the apparent decrease in mature M:F ratios in both survey areas since 2016.

When comparing survey time-frames and water temperatures, it appears that the mean catches of immature crabs are correlated with mean sampling dates but not with water temperature (Table 7). In contrast, mean catches of mature crabs were correlated with mean water temperatures. Within the lower Delaware Bay, mean catches were not correlated with mean water temperatures or sampling dates.

Horseshoe crab tagging

We tagged a total of 509 adult horseshoe crabs in 2018, 224 females and 285 males. Of these, 235 were tagged in the coastal DBA area, and 274 were tagged within the LDB survey area. In addition, we captured one horseshoe crab in the DBA survey that was tagged within Delaware's Rehoboth Bay/Indian River Bay complex during the 2018 spawning season, but more precise information was not yet available.

Key findings

1. Mean catch-per-tow of immature male and female horseshoe crabs in the coastal Delaware Bay area have been variable since 2002 with no trend, and remain below the peak of 2009.
2. Mean catch-per-tow of newly mature crabs in the coastal Delaware Bay area have remained below peaks in 2007 (males) or 2008 (females) and show no long-term trend.
3. Mean catch-per-tow of mature males and females in the coastal Delaware Bay area have been variable throughout the time-series, but show increasing trends since 2002.
4. Mean catch-per-tow of immature horseshoe crabs in the coastal Delaware Bay area may be related to sampling date. Mean catch-per-tow of mature horseshoe crabs may be related to water temperature.
5. Annual mean prosomal widths of newly mature and mature horseshoe crabs in the coastal Delaware Bay area show decreasing trends.

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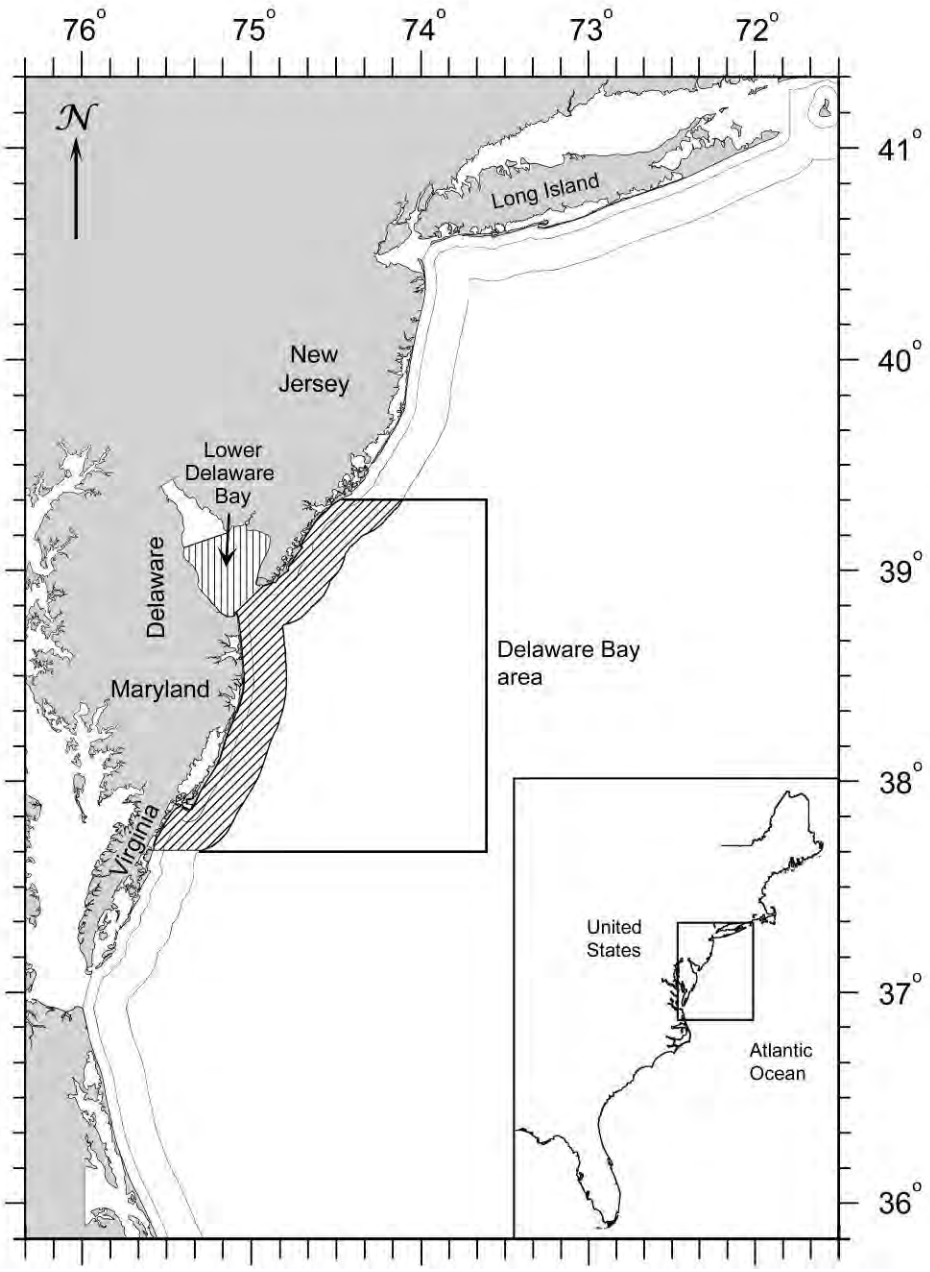

Figure 1. Fall 2018 horseshoe crab trawl survey sampling area. The coastal Delaware Bay area (DBA) and Lower Delaware Bay (LDB) survey areas are indicated. Mean catches among years were compared using stations within the shaded portions of the survey areas.

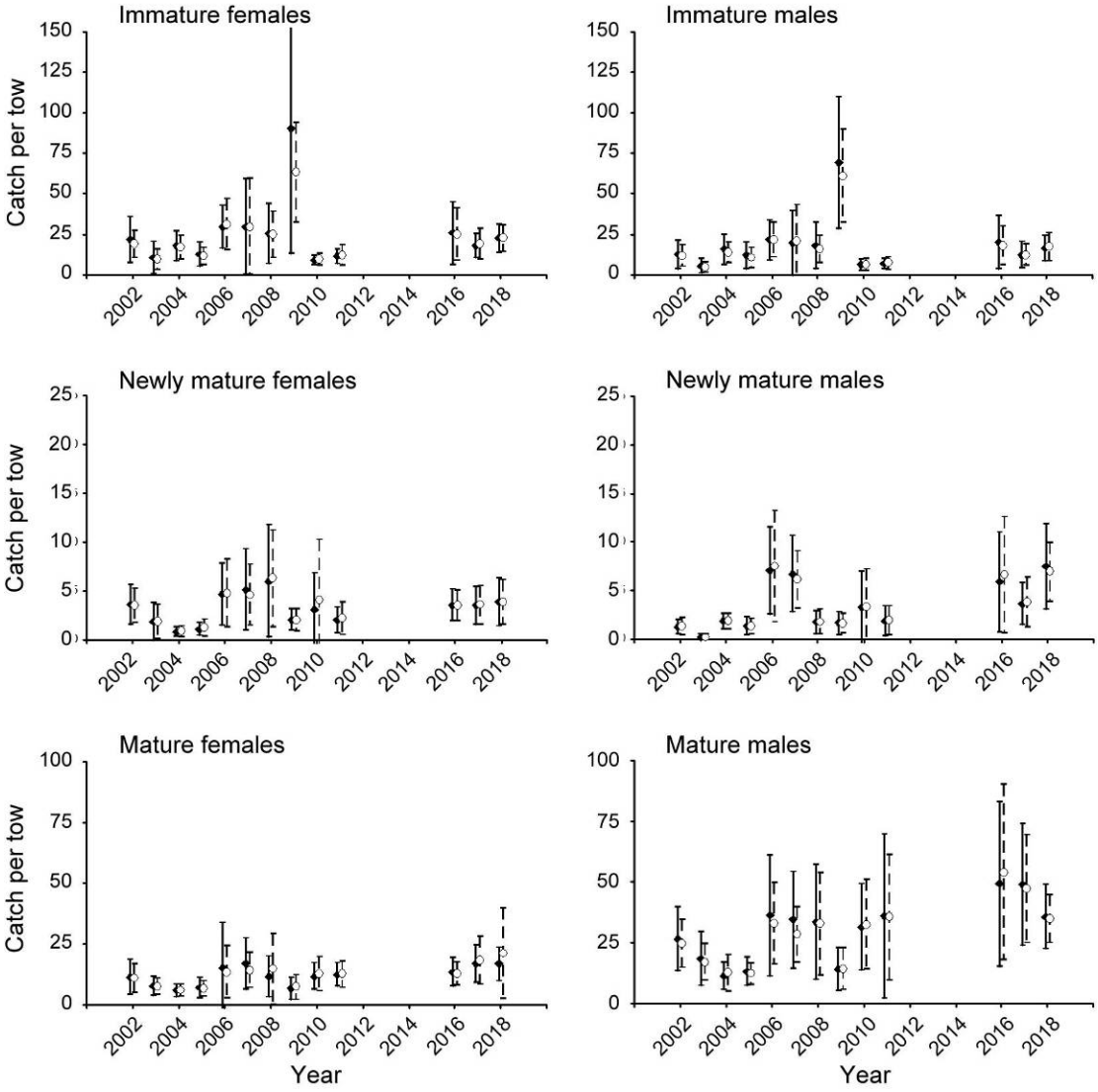

Figure 2. Plots of stratified mean catches per 15-minute tow of horseshoe crabs in the coastal **Delaware Bay area** survey by demographic group. Vertical lines indicate 95% confidence limits. Solid symbols and lines indicate the **delta distribution** model. Open symbols and dashed lines indicate the **normal distribution** model. Data are from Tables 1 and 2. Note differences in *y*-axis scales.

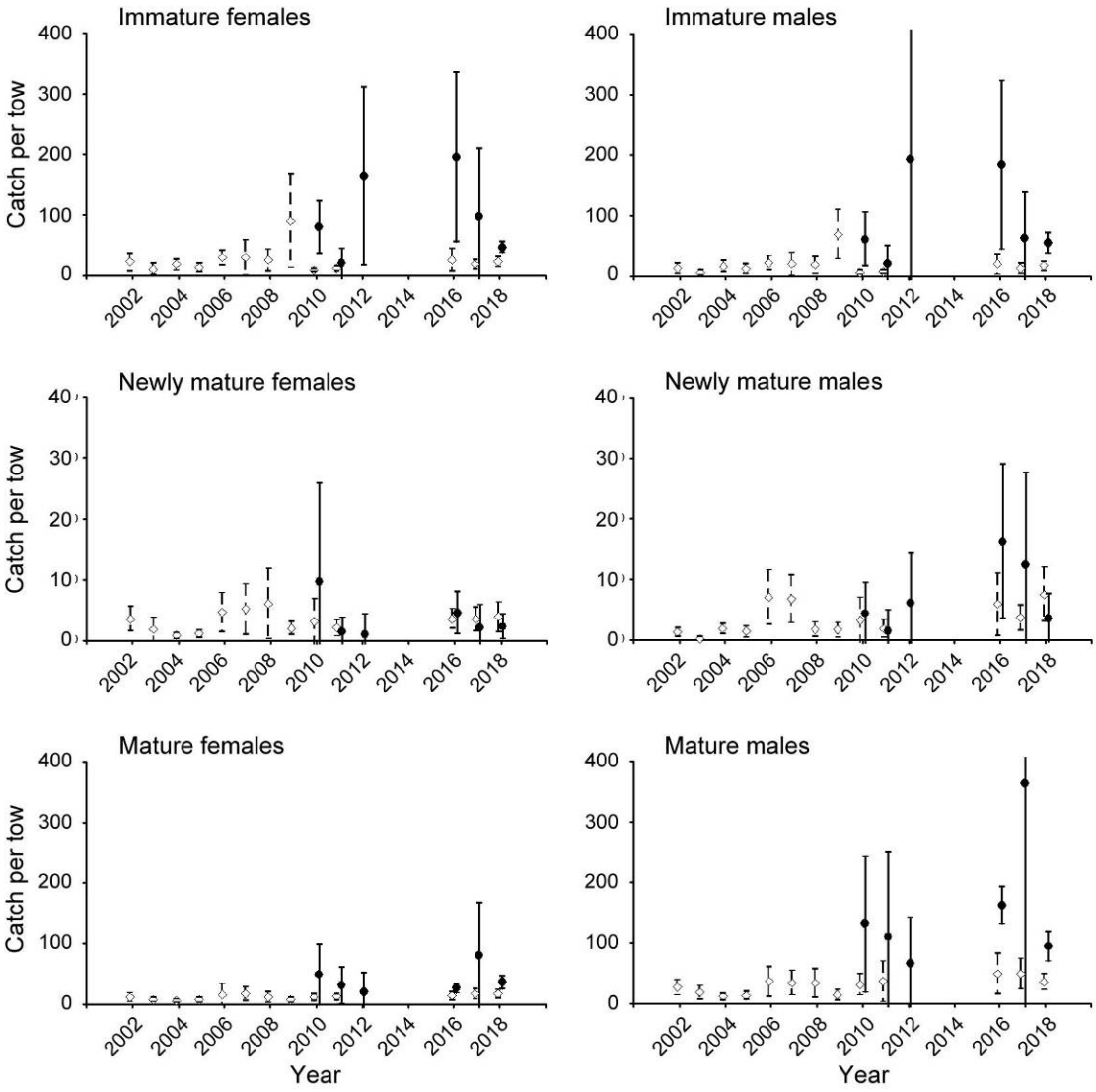

Figure 3. Stratified mean catches per tow of horseshoe crabs in the **lower Delaware Bay** survey by demographic group, with coastal **Delaware Bay area** survey means for comparison. Vertical lines indicate 95% confidence limits. Only the **delta distribution** model means are presented for clarity. Solid symbols and lines indicate the lower Delaware Bay survey. Open symbols and dashed lines indicate the coastal Delaware Bay area survey. Note differences in *y*-axis scales.

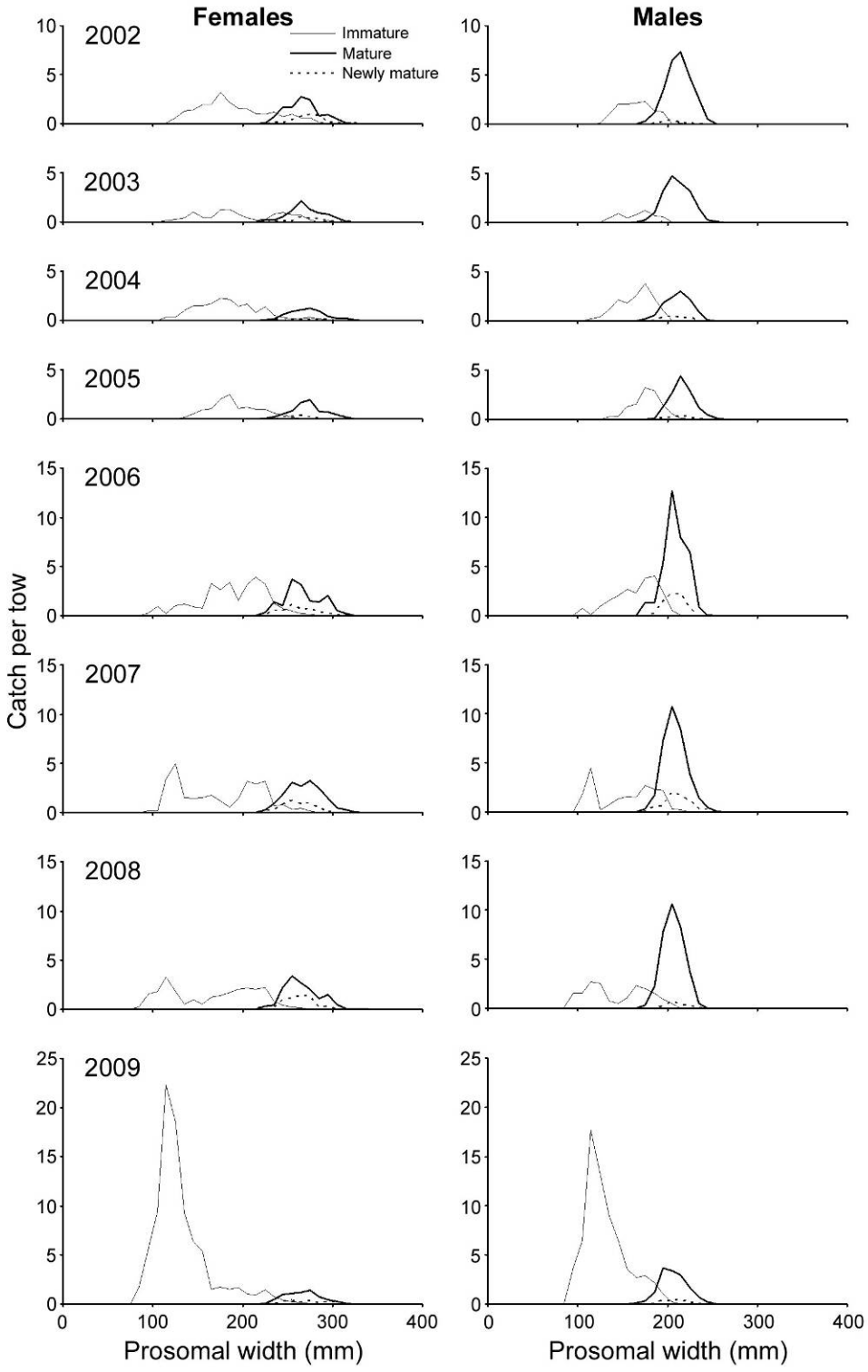

Figure 4. Relative size-frequency distributions of horseshoe crabs, by demographic group and year, in the coastal **Delaware Bay area** trawl survey. Relative frequencies are scaled to represent stratified mean catches in Table 1.

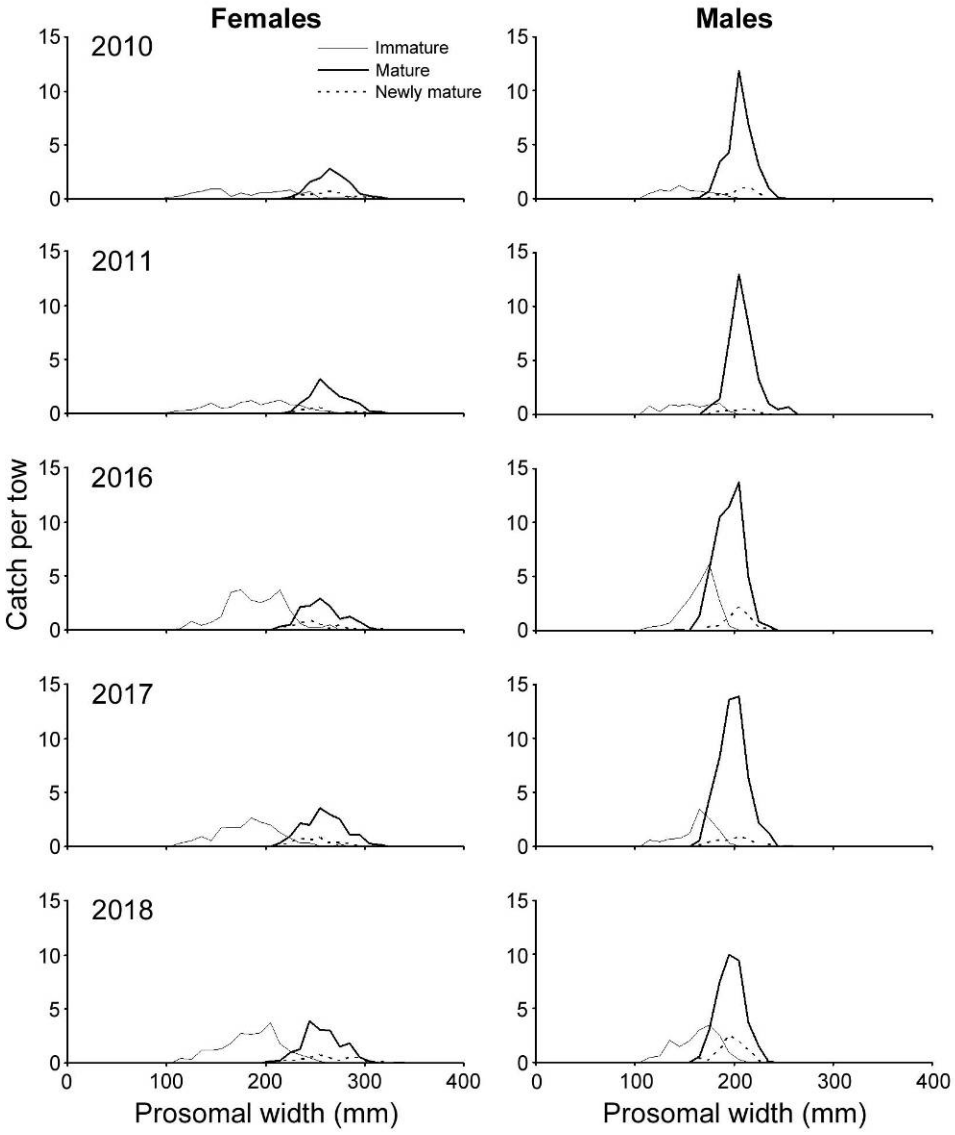

Figure 4 (continued).

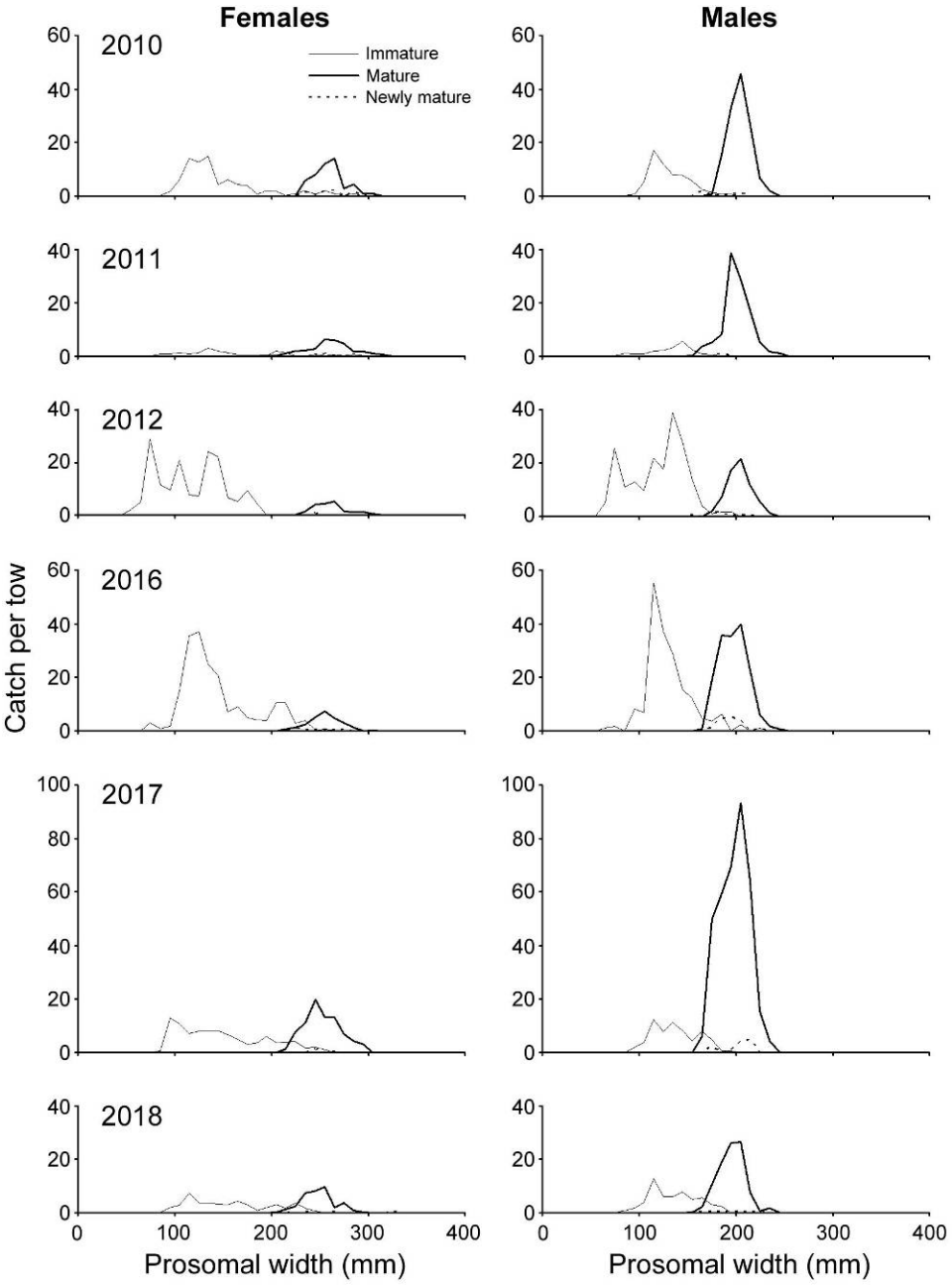

Figure 5. Relative size-frequency distributions of horseshoe crabs, by demographic group and year, in the **lower Delaware Bay** trawl survey. Relative frequencies are scaled to represent stratified mean catches in Table 3.

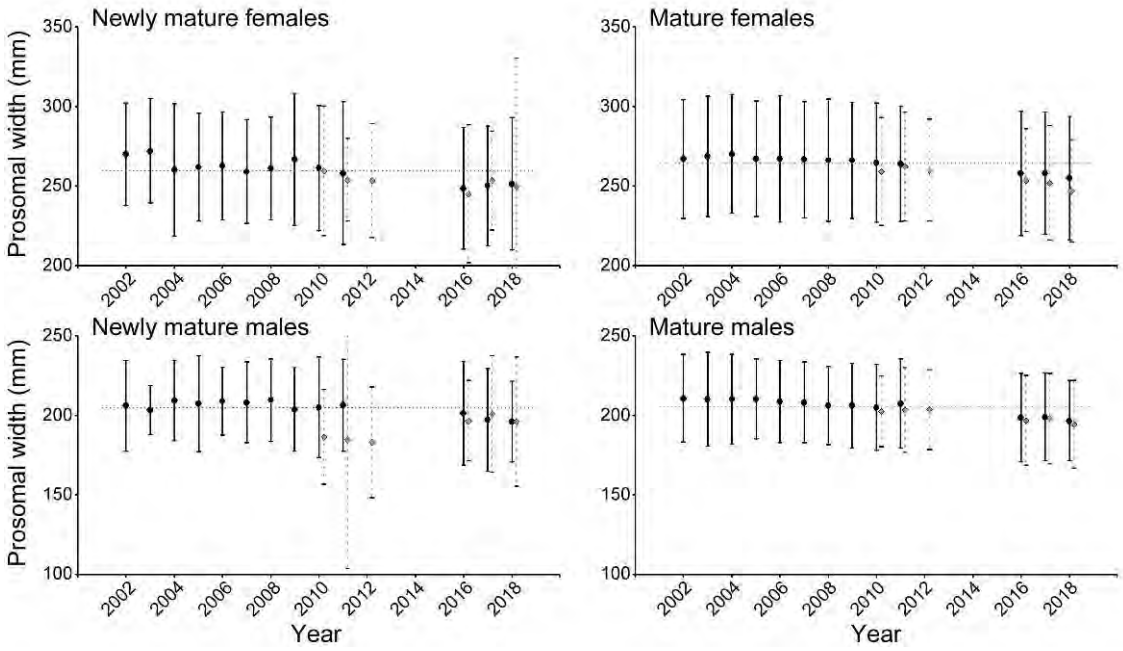

Figure 6. Mean prosomal widths (mm) (± 2 standard deviations) of mature and newly mature female and male horseshoe crabs in the Delaware Bay area (solid symbols and lines) and lower Delaware Bay (grey symbols and lines) surveys. Horizontal lines indicate overall means for all horseshoe crabs in the Delaware Bay area survey.

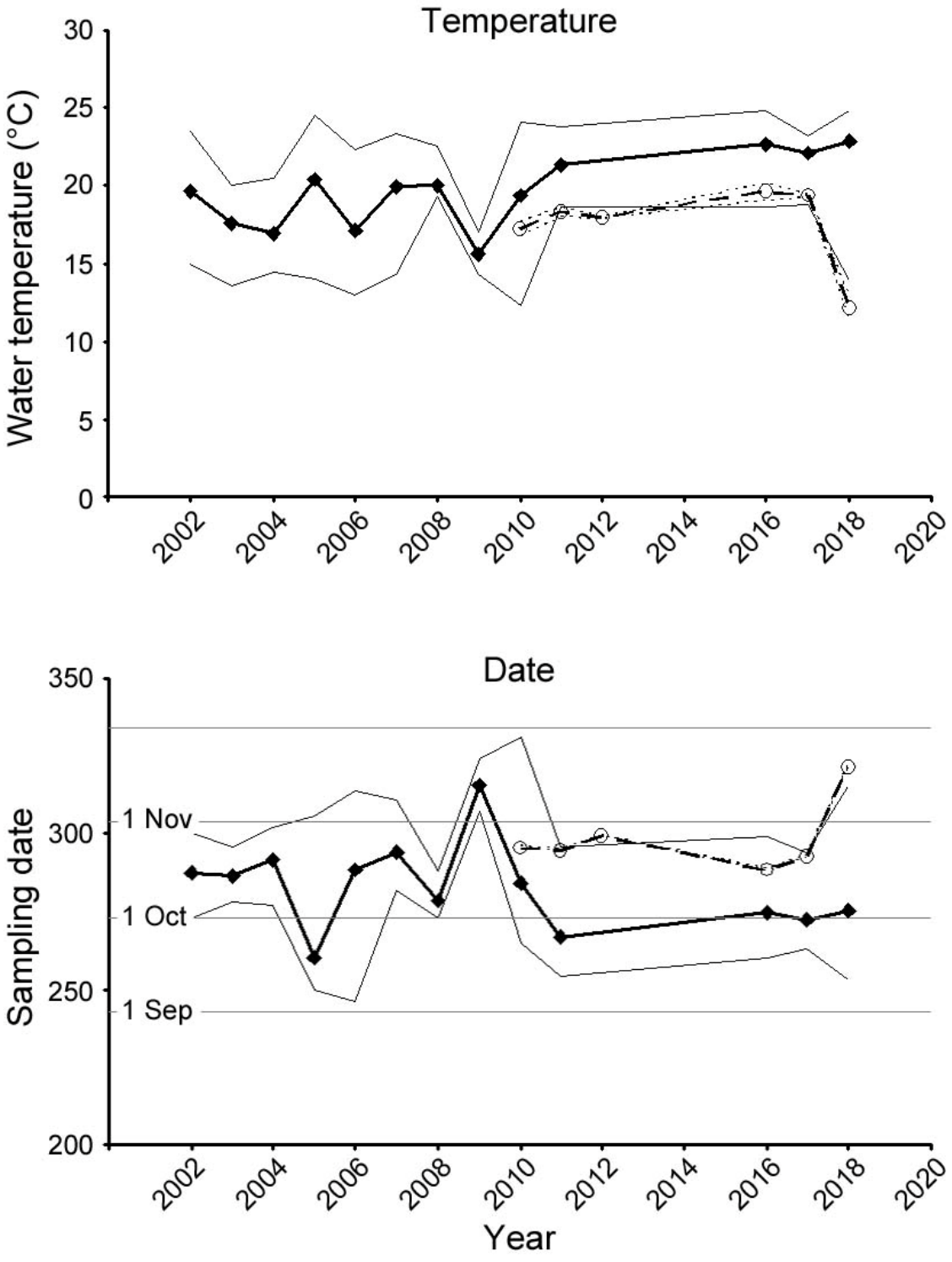

Figure 7. Plots of mean bottom water temperatures and ordinal sampling dates (days since 1 January) in the coastal Delaware Bay area and lower Delaware Bay trawl surveys. Solid symbols and lines indicate coastal Delaware Bay area. Open symbols and dashed lines indicate lower Delaware Bay. Approximate calendar dates are indicated by dashed lines for reference (ordinal dates are shifted by one day for leap years).

Table 1. Stratified mean catch-per-tow of horseshoe crabs in the coastal **Delaware Bay area** survey, 2002-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **delta distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2002	21.9	36.1	7.6	0.31	6.8	2002	12.6	21.4	3.9	0.33	4.2
2003	10.5	20.4	0.7	0.43	4.6	2003	5.4	9.9	0.9	0.39	2.1
2004	17.9	27.2	8.6	0.25	4.5	2004	15.7	25.0	6.4	0.29	4.5
2005	12.7	19.9	5.5	0.28	3.5	2005	11.9	20.0	3.8	0.33	3.9
2006	29.5	42.8	16.3	0.21	6.3	2006	21.6	33.9	9.2	0.25	5.4
2007	29.6	59.4	-0.2	0.41	12.2	2007	19.5	39.6	-0.6	0.42	8.2
2008	25.3	43.7	6.9	0.33	8.3	2008	18.0	32.4	3.6	0.35	6.3
2009	90.2	167.4	12.9	0.39	35.5	2009	69.0	109.7	28.3	0.29	19.8
2010	9.0	11.9	6.1	0.16	1.4	2010	6.1	9.5	2.8	0.27	1.6
2011	11.4	15.9	6.9	0.19	2.2	2011	6.9	10.1	3.7	0.23	1.6
2016	25.8	45.1	6.5	0.36	9.2	2016	20.0	36.6	3.5	0.39	7.9
2017	17.9	25.4	10.4	0.19	3.4	2017	12.3	20.5	4.2	0.27	3.3
2018	22.5	31.2	13.9	0.18	4.1	2018	16.5	24.4	8.7	0.22	3.7
Mature females						Mature males					
2002	11.4	18.5	4.2	0.30	3.4	2002	26.6	39.7	13.4	0.24	6.3
2003	7.7	11.7	3.7	0.25	1.9	2003	18.4	29.6	7.3	0.28	5.2
2004	5.9	8.6	3.3	0.21	1.3	2004	11.4	17.1	5.7	0.24	2.8
2005	7.2	11.4	3.0	0.27	2.0	2005	13.2	19.1	7.3	0.21	2.8
2006	15.3	33.8	-3.2	0.44	6.7	2006	36.2	60.9	11.4	0.28	10.1
2007	16.9	27.5	6.2	0.30	5.1	2007	34.3	54.4	14.3	0.28	9.7
2008	14.4	23.3	5.4	0.29	4.2	2008	33.5	57.2	9.8	0.33	11.2
2009	6.7	11.2	2.3	0.32	2.1	2009	14.1	22.8	5.3	0.30	4.2
2010	11.8	17.3	6.3	0.22	2.6	2010	31.5	49.2	13.8	0.27	8.6
2011	12.3	17.1	7.6	0.18	2.2	2011	36.0	69.8	2.2	0.41	14.7
2016	13.5	19.5	7.6	0.21	2.9	2016	49.2	83.1	15.2	0.29	14.3
2017	16.9	24.8	9.0	0.23	3.9	2017	48.9	74.0	23.9	0.25	12.2
2018	16.8	23.7	9.9	0.20	3.3	2018	35.7	48.9	22.5	0.17	6.2
Newly mature females						Newly mature males					
2002	3.6	5.6	1.6	0.26	0.9	2002	1.3	2.0	0.5	0.28	0.4
2003	1.8	3.8	-0.1	0.49	0.9	2003	0.2	0.5	-0.1	0.84	0.2
2004	0.8	1.3	0.3	0.30	0.2	2004	1.8	2.6	1.0	0.21	0.4
2005	1.1	1.7	0.5	0.28	0.3	2005	1.3	2.3	0.4	0.33	0.4
2006	4.6	7.8	1.5	0.30	1.4	2006	7.1	11.6	2.6	0.36	2.7
2007	5.1	9.3	0.9	0.39	2.0	2007	6.7	10.6	2.8	0.28	1.9
2008	6.0	11.8	0.2	0.44	2.7	2008	1.8	2.9	0.6	0.32	0.6
2009	2.0	3.1	0.9	0.26	0.5	2009	1.7	2.8	0.5	0.34	0.6
2010	3.0	6.8	-0.7	0.59	1.8	2010	3.2	7.0	-0.5	0.55	1.8
2011	2.0	3.3	0.7	0.31	0.6	2011	1.9	3.4	0.4	0.37	0.7
2016	3.5	5.2	1.9	0.23	0.8	2016	5.9	11.0	0.7	0.42	2.5
2017	3.5	5.5	1.6	0.27	0.9	2017	3.6	5.8	1.5	0.29	1.0
2018	3.9	6.3	1.4	0.30	1.2	2018	7.5	11.9	3.1	0.27	2.1

Table 2. Stratified mean catch-per-tow of horseshoe crabs in the coastal **Delaware Bay area** survey, 2002-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **normal distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2002	19.1	27.6	10.5	0.22	4.1	2002	11.7	18.3	5.0	0.27	3.2
2003	9.5	15.9	3.0	0.32	3.1	2003	4.9	8.1	1.8	0.30	1.5
2004	17.0	24.5	9.5	0.21	3.6	2004	14.0	20.3	7.6	0.22	3.1
2005	11.5	17.0	6.1	0.23	2.6	2005	10.6	16.7	4.4	0.28	2.9
2006	31.1	46.9	15.3	0.24	7.5	2006	21.5	32.0	11.1	0.23	5.0
2007	29.8	59.6	0.0	0.41	12.2	2007	20.5	43.2	-2.3	0.45	9.3
2008	24.6	38.9	10.3	0.27	6.6	2008	15.9	24.2	7.6	0.24	3.8
2009	63.1	93.8	32.4	0.24	14.9	2009	61.0	89.8	32.1	0.23	14.0
2010	9.4	13.0	5.7	0.19	1.8	2010	6.4	10.1	2.6	0.29	1.8
2011	12.2	18.5	6.0	0.25	3.0	2011	7.3	11.2	3.3	0.26	1.9
2016	25.1	41.1	9.0	0.31	7.7	2016	18.1	29.9	6.3	0.31	5.7
2017	19.1	28.7	9.6	0.24	4.6	2017	12.4	19.3	5.5	0.26	3.3
2018	22.5	30.6	14.5	0.17	3.8	2018	17.2	25.9	8.6	0.24	4.1
Mature females						Mature males					
2002	11.0	17.0	4.9	0.26	2.8	2002	24.6	34.4	14.8	0.19	4.7
2003	7.5	10.9	4.1	0.22	1.6	2003	17.0	24.7	9.4	0.21	3.6
2004	6.0	8.3	3.7	0.19	1.1	2004	12.6	20.2	5.1	0.29	3.6
2005	6.8	10.0	3.5	0.22	1.5	2005	12.3	16.7	7.8	0.17	2.1
2006	13.5	24.2	2.7	0.31	4.2	2006	32.8	49.5	16.1	0.22	7.4
2007	14.2	21.3	7.1	0.24	3.4	2007	28.4	39.9	16.8	0.20	5.6
2008	16.5	31.0	2.0	0.41	6.8	2008	32.7	53.7	11.7	0.31	10.0
2009	7.3	12.3	2.2	0.33	2.4	2009	14.2	22.9	5.5	0.29	4.1
2010	12.7	19.7	5.7	0.26	3.3	2010	32.5	50.9	14.1	0.27	8.8
2011	12.6	18.1	7.2	0.20	2.6	2011	35.4	61.4	9.5	0.32	11.5
2016	12.8	17.4	8.2	0.17	2.2	2016	53.9	90.0	17.8	0.30	16.2
2017	18.2	28.0	8.4	0.26	4.8	2017	47.2	69.3	25.1	0.23	10.8
2018	21.1	39.6	2.5	0.41	8.7	2018	34.9	44.9	24.9	0.14	4.8
Newly mature females						Newly mature males					
2002	3.5	5.3	1.7	0.24	0.9	2002	1.3	2.2	0.4	0.31	0.4
2003	1.8	3.6	0.1	0.45	0.8	2003	0.2	0.5	-0.2	0.84	0.2
2004	0.8	1.4	0.3	0.33	0.3	2004	1.8	2.6	1.0	0.21	0.4
2005	1.2	2.1	0.3	0.35	0.4	2005	1.3	2.1	0.5	0.29	0.4
2006	4.8	8.2	1.4	0.33	1.6	2006	7.5	13.2	1.8	0.36	2.7
2007	4.6	7.7	1.5	0.32	1.5	2007	6.1	9.1	3.2	0.23	1.4
2008	6.3	11.3	1.3	0.37	2.3	2008	1.8	3.1	0.5	0.34	0.6
2009	2.0	3.1	0.9	0.26	0.5	2009	1.6	2.6	0.6	0.30	0.5
2010	4.0	10.3	-2.3	0.74	3.0	2010	3.3	7.2	-0.6	0.56	1.9
2011	2.2	3.9	0.5	0.38	0.8	2011	1.9	3.5	0.4	0.38	0.7
2016	3.5	5.1	1.9	0.22	0.8	2016	6.6	12.6	0.6	0.43	2.9
2017	3.6	5.5	1.6	0.27	1.0	2017	3.8	6.4	1.3	0.32	1.2
2018	3.9	6.2	1.6	0.28	1.1	2018	6.9	10.0	3.9	0.21	1.5

Table 3. Stratified mean catch–per-tow of horseshoe crabs in the **lower Delaware Bay** survey area in 2010-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **delta distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2010	79.7	122.2	37.3	0.21	16.5	2010	61.2	105.5	16.9	0.30	18.1
2011	19.7	45.2	-5.9	0.47	9.2	2011	20.2	50.7	-10.4	0.55	11.0
2012	164.3	311.8	16.9	0.32	53.1	2012	192.6	548.4	-163.3	0.43	82.7
2016	196.0	335.5	56.6	0.29	57.0	2016	184.2	322.9	45.5	0.32	58.7
2017	96.7	210.0	-16.7	0.46	44.1	2017	62.9	137.6	-11.7	0.46	29.0
2018	47.2	56.2	38.1	0.08	3.8	2018	55.1	71.8	38.4	0.12	6.8
Mature females						Mature males					
2010	48.8	98.9	-1.2	0.40	19.5	2010	130.3	242.6	18.1	0.34	43.7
2011	30.3	60.4	0.2	0.36	10.8	2011	110.2	249.0	-28.6	0.45	50.0
2012	19.1	51.6	-13.4	0.40	7.6	2012	66.8	141.1	-7.4	0.35	23.3
2016	26.3	33.9	18.7	0.12	3.2	2016	161.7	192.5	131.0	0.08	13.3
2017	80.6	167.1	-5.8	0.39	31.1	2017	362.7	868.5	-143.2	0.50	182.2
2018	36.2	46.6	25.8	0.12	4.3	2018	94.3	117.9	70.7	0.11	10.0
Newly mature females						Newly mature males					
2010	9.7	25.8	-6.3	0.64	6.2	2010	4.4	9.5	-0.8	0.46	2.0
2011	1.4	3.8	-0.9	0.58	0.8	2011	1.4	4.9	-2.2	0.94	1.3
2012	1.0	4.4	-2.3	0.76	0.8	2012	6.1	14.2	-2.0	0.48	2.9
2016	4.6	8.0	1.1	0.31	1.4	2016	16.2	29.0	3.5	0.30	5.0
2017	2.1	5.9	-1.7	0.65	1.4	2017	12.4	27.6	-2.7	0.44	5.4
2018	2.3	4.4	0.2	0.35	0.8	2018	3.6	7.6	-0.5	0.44	1.6

Table 4. Stratified mean catch-per-tow of horseshoe crabs in the **lower Delaware Bay** survey area in 2010-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **normal distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2010	79.5	116.5	42.6	0.19	15.1	2010	60.4	95.7	25.1	0.25	15.3
2011	21.3	54.2	-11.5	0.55	11.8	2011	21.5	57.2	-14.3	0.60	12.9
2012	165.5	287.6	43.4	0.30	49.9	2012	183.9	360.1	7.8	0.34	63.4
2016	186.5	284.7	88.3	0.22	40.1	2016	167.9	249.7	86.0	0.21	34.6
2017	90.8	176.0	5.6	0.37	33.2	2017	58.2	109.0	7.5	0.36	20.7
2018	47.1	55.6	38.6	0.08	3.6	2018	54.9	69.6	40.2	0.11	6.2
Mature females						Mature males					
2010	49.1	99.8	-1.7	0.40	19.7	2010	128.0	227.9	28.2	0.30	38.9
2011	28.6	49.9	7.4	0.27	7.7	2011	100.3	187.7	13.0	0.31	31.5
2012	18.7	46.2	-8.9	0.34	6.4	2012	65.3	111.7	18.8	0.28	18.1
2016	26.2	33.4	19.0	0.11	3.0	2016	161.8	192.4	131.1	0.08	13.3
2017	80.5	165.0	-4.0	0.38	30.4	2017	303.4	531.7	75.2	0.27	82.2
2018	36.2	47.2	25.1	0.12	4.3	2018	94.7	120.3	69.0	0.11	10.8
Newly mature females						Newly mature males					
2010	9.6	24.9	-5.7	0.62	5.9	2010	4.3	9.1	-0.5	0.43	1.9
2011	1.4	3.8	-0.9	0.58	0.8	2011	1.4	4.9	-2.2	0.94	1.3
2012	1.0	4.4	-2.3	0.76	0.8	2012	6.1	14.1	-1.9	0.47	2.9
2016	4.5	8.0	1.1	0.30	1.3	2016	16.0	27.2	4.9	0.27	4.3
2017	2.1	5.9	-1.7	0.65	1.4	2017	12.4	25.7	-1.0	0.42	5.2
2018	2.3	4.3	0.3	0.34	0.8	2018	3.6	7.6	-0.5	0.44	1.6

Table 5. Results of correlation analyses of mean prosomal width (mm) and survey year for newly mature and mature males and females from the Delaware Bay area and lower Delaware Bay surveys. Statistics presented are number of years included, *n*; *T*-score; probability, *p*; and correlation coefficient, *r*. A negative correlation coefficient indicates a decreasing regression slope.

Maturity group	*n*	*T*	*p*	*r*
Delaware Bay area				
2002-2018				
Mature females	13	-10.00	<0.001	-0.949
Newly mature females	13	-5.89	<0.001	-0.872
Mature males	13	-12.36	<0.001	-0.966
Newly mature males	13	-4.03	0.002	-0.772
Lower Delaware Bay				
2010-2018				
Mature females	6	-5.21	0.006	-0.934
Newly mature females	6	-2.00	0.116	-0.707
Mature males	6	-5.34	0.006	-0.936
Newly mature males	6	4.12	0.015	0.900

Table 6. Mean, minimum (min) and maximum (max) bottom water temperature (C°) and ordinal sampling date (numerical calendar date from 1 January) for survey collections in the Delaware Bay area and Lower Delaware Bay. For reference, 1 September is ordinal date 243 in non-leap years.

	Water temperature			Ordinal date		
	mean	max	min	mean	max	min
Delaware Bay area						
2002	19.7	23.5	15.0	287	300	273
2003	17.5	20.0	13.5	287	296	278
2004	16.9	20.5	14.5	292	302	277
2005	20.4	24.5	14.0	260	306	250
2006	17.1	22.3	13.0	288	314	246
2007	20.0	23.3	14.3	294	311	282
2008	20.1	22.6	19.3	279	288	273
2009	15.6	17.0	14.3	316	324	307
2010	19.4	24.1	12.3	284	331	265
2011	21.3	23.8	18.6	267	296	254
2016	22.7	24.8	18.6	275	299	260
2017	22.1	23.2	18.8	272	294	263
2018	22.8	24.8	13.9	275	315	253
Lower Delaware Bay						
2010	17.2	17.7	16.7	295	296	295
2011	18.3	18.6	18.0	294	295	294
2012	18.0	18.0	17.9	299	299	299
2016	19.6	20.1	19.0	288	289	288
2017	19.3	19.5	19.2	292	293	292
2018	12.2	12.8	11.3	321	322	321

Table 7. Correlations between annual mean catches-per-tow of horseshoe crabs with mean bottom water temperature and ordinal sampling date in the Delaware Bay area survey and the lower Delaware Bay survey, by demographic group. The Delaware Bay area surveys included 12 years, and the lower Delaware Bay surveys included five years. Statistics presented include correlation coefficient, *r*; *T*-score; and probability, *p*. Data are from Tables 1, 3, and 5.

	Water temperature			Ordinal date		
	r	*T*	*p*	*r*	*T*	*p*
Delaware Bay area						
Immature females	-0.478	-1.81	0.098	0.755	3.82	0.003
Immature males	-0.481	-1.82	0.096	0.723	3.48	0.005
Mature females	0.624	2.65	0.023	-0.261	-0.90	0.389
Mature males	0.708	3.32	0.007	-0.371	-1.32	0.212
Newly mature females	0.295	1.02	0.327	0.039	0.13	0.900
Newly mature males	0.374	1.34	0.209	-0.023	-0.08	0.940
Lower Delaware Bay						
Immature females	0.486	1.11	0.328	-0.435	-0.97	0.388
Immature males	0.338	0.72	0.513	-0.269	-0.56	0.606
Mature females	0.153	0.31	0.772	-0.150	-0.30	0.777
Mature males	0.445	0.99	0.376	-0.398	-0.87	0.434
Newly mature females	0.032	0.06	0.952	-0.216	-0.44	0.682
Newly mature males	0.558	1.34	0.250	-0.514	-1.20	0.296

Table 7. Estimated population (in thousands) of horseshoe crabs in the coastal **Delaware Bay area** survey, 2002-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **delta distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2002	9,470	15,665	3,275	0.31	581	2002	5,483	9,284	1,683	0.33	357
2003	4,585	8,848	321	0.43	388	2003	2,303	4,217	390	0.39	174
2004	7,774	11,770	3,778	0.25	379	2004	6,810	10,895	2,725	0.29	387
2005	5,630	8,856	2,404	0.28	306	2005	5,260	8,839	1,681	0.33	337
2006	12,928	18,691	7,164	0.21	533	2006	9,327	14,554	4,100	0.24	442
2007	13,684	27,486	-118	0.41	1,100	2007	8,966	18,246	-314	0.42	740
2008	10,933	18,650	3,216	0.32	684	2008	7,841	13,917	1,766	0.35	532
2009	39,032	72,868	5,197	0.39	2,998	2009	29,864	47,269	12,460	0.28	1,654
2010	3,954	5,220	2,688	0.16	120	2010	2,686	4,144	1,229	0.26	139
2011	4,965	6,945	2,985	0.20	189	2011	3,092	4,547	1,637	0.23	139
2016	11,699	20,462	2,935	0.36	817	2016	9,102	16,649	1,555	0.39	701
2017	7,505	10,708	4,302	0.19	276	2017	5,091	8,465	1,717	0.27	269
2018	10,173	14,285	6,061	0.19	378	2018	7,507	11,173	3,842	0.23	333
Mature females						Mature males					
2002	4,959	8,084	1,834	0.30	289	2002	11,584	17,335	5,834	0.24	539
2003	3,379	5,160	1,599	0.25	167	2003	8,069	13,029	3,110	0.29	454
2004	2,735	4,043	1,426	0.23	122	2004	5,150	7,788	2,511	0.25	251
2005	3,138	4,942	1,333	0.27	164	2005	5,844	8,461	3,228	0.22	245
2006	6,611	14,330	-1108	0.42	542	2006	15,825	26,060	5,589	0.27	844
2007	7,746	12,704	2,789	0.31	462	2007	15,795	25,104	6,487	0.28	873
2008	6,311	10,202	2,419	0.29	360	2008	14,647	24,995	4,299	0.33	952
2009	2,975	4,971	979	0.32	186	2009	6,240	10,197	2,283	0.30	369
2010	5,178	7,616	2,740	0.23	228	2010	13,963	21,910	6,015	0.28	749
2011	5,290	7,282	3,297	0.18	182	2011	15,060	29,000	1,120	0.40	1,179
2016	6,024	8,635	3,413	0.21	245	2016	21,941	37,216	6,665	0.29	1,260
2017	7,185	10,525	3,844	0.23	319	2017	20,664	31,208	10,119	0.25	1,001
2018	7,326	10,520	4,131	0.21	298	2018	15,749	21,880	9,619	0.18	564
Newly mature females						Newly mature males					
2002	1,537	2,400	675	0.26	79	2002	548	869	227	0.28	30
2003	794	1,633	-45	0.49	76	2003	78	221	-65	0.84	13
2004	358	575	141	0.29	20	2004	789	1,127	451	0.21	32
2005	479	753	206	0.27	25	2005	597	1,002	191	0.33	39
2006	2,051	3,509	594	0.31	123	2006	3,113	5,113	1,113	0.31	188
2007	2,373	4,339	408	0.40	183	2007	3,129	4,972	1,287	0.28	171
2008	2,571	4,984	158	0.43	218	2008	757	1,254	261	0.31	46
2009	885	1,361	410	0.26	45	2009	725	1,240	210	0.34	48
2010	1,338	2,990	-314	0.59	153	2010	1,422	3,070	-226	0.55	153
2011	845	1,360	331	0.30	49	2011	749	1,335	164	0.36	53
2016	1,608	2,357	860	0.23	71	2016	2,608	4,884	331	0.42	212
2017	1,480	2,274	687	0.26	76	2017	1,523	2,392	654	0.28	83
2018	1,773	2,923	622	0.31	108	2018	3,341	5,367	1,316	0.29	186

Table 8. Estimated population (in thousands) of horseshoe crabs in the coastal **Delaware Bay area** survey, 2002-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **normal distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2002	8,222	11,875	4,568	0.21	344	2002	5,076	7,998	2,155	0.28	273
2003	4,089	6,860	1,317	0.32	255	2003	2,114	3,462	766	0.30	123
2004	7,376	10,616	4,135	0.21	305	2004	6,033	8,786	3,281	0.22	260
2005	5,104	7,521	2,687	0.23	227	2005	4,673	7,414	1,932	0.28	255
2006	13,714	20,988	6,439	0.25	672	2006	9,378	13,971	4,786	0.23	428
2007	13,692	27,335	48	0.41	1,088	2007	9,350	19,735	-1,035	0.45	828
2008	10,595	16,578	4,612	0.26	544	2008	6,897	10,443	3,350	0.23	314
2009	27,375	40,519	14,232	0.23	1,242	2009	26,435	38,730	14,140	0.23	1,162
2010	4,102	5,706	2,497	0.19	152	2010	2,781	4,423	1,139	0.29	156
2011	5,426	8,433	2,420	0.27	284	2011	3,301	5,219	1,382	0.28	182
2016	11,292	18,441	4,144	0.30	668	2016	8,185	13,512	2,858	0.31	498
2017	7,948	11,818	4,077	0.23	364	2017	5,082	7,829	2,335	0.26	257
2018	10,115	13,839	6,391	0.18	346	2018	7,768	11,653	3,882	0.24	358
Mature females						Mature males					
2002	4,779	7,431	2,128	0.26	243	2002	10,711	14,972	6,450	0.19	400
2003	3,308	4,851	1,764	0.22	144	2003	7,454	10,827	4,082	0.21	312
2004	2,767	3,919	1,615	0.20	109	2004	5,586	8,875	2,297	0.28	308
2005	2,957	4,323	1,592	0.22	124	2005	5,408	7,322	3,494	0.17	181
2006	5,867	10,517	1,218	0.31	353	2006	14,461	21,734	7,188	0.23	637
2007	6,553	9,864	3,243	0.25	313	2007	13,100	18,506	7,694	0.20	514
2008	7,172	13,336	1,008	0.40	561	2008	14,244	23,240	5,247	0.30	838
2009	3,230	5,523	936	0.33	211	2009	6,319	10,255	2,383	0.29	360
2010	5,588	8,698	2,478	0.26	289	2010	14,396	22,600	6,192	0.27	765
2011	5,388	7,629	3,147	0.20	205	2011	14,858	25,890	3,825	0.33	951
2016	5,735	7,770	3,700	0.17	193	2016	24,017	40,197	7,837	0.30	1,416
2017	7,785	12,033	3,537	0.27	403	2017	19,985	29,245	10,724	0.23	884
2018	9,463	18,463	464	0.44	818	2018	15,264	19,849	10,680	0.15	433
Newly mature females						Newly mature males					
2002	1,509	2,278	741	0.24	72	2002	561	925	196	0.31	33
2003	787	1,547	26	0.45	69	2003	78	222	-66	0.84	13
2004	367	613	120	0.32	23	2004	786	1,120	452	0.20	31
2005	531	908	154	0.34	36	2005	580	927	233	0.29	33
2006	2,122	3,705	540	0.33	139	2006	3,377	6,076	678	0.38	251
2007	2,129	3,584	674	0.33	135	2007	2,841	4,214	1,468	0.23	129
2008	2,697	4,780	613	0.36	192	2008	776	1,315	237	0.33	50
2009	883	1,366	399	0.26	45	2009	708	1,157	259	0.31	43
2010	1,770	4,532	-992	0.74	255	2010	1,464	3,180	-252	0.56	159
2011	882	1,495	269	0.34	58	2011	766	1,343	190	0.36	54
2016	1,583	2,304	863	0.22	68	2016	2,939	5,588	290	0.43	248
2017	1,502	2,323	680	0.27	79	2017	1,590	2,623	557	0.32	98
2018	1,780	2,866	695	0.29	101	2018	3,064	4,466	1,663	0.22	131

Table 9. Estimated population (in thousands) of horseshoe crabs in the **lower Delaware Bay** survey area in 2010-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **delta distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2010	3,510	5,199	1,822	0.20	1,306	2010	2,632	4,476	788	0.29	1,426
2011	870	1,931	-191	0.44	723	2011	881	2,160	-397	0.52	871
2012	8,021	15,084	958	0.32	4,814	2012	9,381	21,965	-3,204	0.42	7,484
2016	9,046	15,558	2,534	0.29	5,037	2016	8,429	14,813	2,044	0.32	5,110
2017	4,536	10,029	-956	0.47	4,044	2017	2,920	6,458	-618	0.47	2,605
2018	2,211	2,803	1,619	0.10	436	2018	2,597	3,516	1,678	0.15	735
Mature females						Mature males					
2010	2,117	4,260	-25	0.39	1,578	2010	5,657	10,247	1,067	0.32	3,379
2011	1,348	2,599	96	0.33	853	2011	4,829	10,570	-912	0.43	3,913
2012	938	2,522	-646	0.39	697	2012	3,263	6,864	-338	0.35	2,142
2016	1,274	1,710	837	0.15	358	2016	7,735	9,709	5,761	0.10	1,527
2017	3,674	7,501	-153	0.38	2,609	2017	16,794	40,517	-6,929	0.51	16,170
2018	1,771	2,588	953	0.18	602	2018	4,616	6,600	2,631	0.18	1,535
Newly mature females						Newly mature males					
2010	414	1,087	-260	0.63	496	2010	187	409	-35	0.46	163
2011	65	170	-40	0.58	72	2011	58	208	-93	0.94	103
2012	50	214	-114	0.76	72	2012	301	710	-109	0.49	279
2016	206	357	55	0.30	117	2016	727	1,268	186	0.29	398
2017	88	249	-73	0.66	110	2017	542	1,100	-16	0.40	411
2018	115	220	9	0.36	78	2018	148	290	7	0.40	113

Table 10 Estimated population (in thousands) of horseshoe crabs in the **lower Delaware Bay** survey area in 2010-2018, with standard deviation (sd) and coefficient of variation (CV), calculated using the **normal distribution** model, by demographic group. Also included are the estimated upper and lower 95% confidence limits (UCL, LCL).

	mean	UCL	LCL	CV	sd		mean	UCL	LCL	CV	sd
Immature females						Immature males					
2010	3,503	5,155	1,851	0.18	1,216	2010	2,588	4,056	1,120	0.24	1,175
2011	938	2,311	-435	0.53	936	2011	935	2,437	-567	0.58	1,024
2012	8,125	14,222	2,027	0.31	4,716	2012	9,023	17,690	356	0.35	5,907
2016	8,618	13,190	4,046	0.22	3,536	2016	7,725	11,638	3,812	0.21	3,027
2017	4,325	8,829	-178	0.41	3,316	2017	2,731	5,408	53	0.38	1,971
2018	2,209	2,780	1,638	0.10	420	2018	2,595	3,529	1,661	0.15	722
Mature females						Mature males					
2010	2,124	4,340	-91	0.41	1,631	2010	5,600	9,916	1,285	0.30	3,177
2011	1,290	2,239	340	0.27	647	2011	4,479	8,332	625	0.31	2,627
2012	915	2,242	-412	0.34	584	2012	3,188	5,456	921	0.28	1,669
2016	1,264	1,647	880	0.13	315	2016	7,727	9,570	5,883	0.10	1,475
2017	3,654	7,307	2	0.36	2,490	2017	13,805	23,702	3,908	0.26	6,746
2018	1,782	2,666	898	0.19	651	2018	4,647	6,901	2,393	0.19	1,659
Newly mature females						Newly mature males					
2010	418	1,097	-260	0.63	500	2010	185	391	-22	0.43	152
2011	65	170	-40	0.58	72	2011	58	208	-93	0.94	103
2012	50	214	-114	0.76	72	2012	302	719	-114	0.50	284
2016	205	355	55	0.28	110	2016	716	1,176	256	0.25	339
2017	88	249	-73	0.66	110	2017	541	1,090	-9	0.40	405
2018	114	226	3	0.35	76	2018	149	296	1	0.41	114

Atlantic States Marine Fisheries Commission

American Eel Management Board

October 29, 2019
1:15 - 2:15 p.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(M. Gary)*	1:15 p.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from August 2019	1:15 p.m.
3.	Public Comment	1:20 p.m.
4.	Consider Approval of Coastwide Cap Overages Policy **Final Action** (*K. Rootes-Murdy*)	1:30 p.m.
5.	Consider Approval of 2019 FMP Review and State Compliance (*K. Rootes-Murdy*) **Action**	2:00 p.m.
6.	Other Business/Adjourn	2:15 p.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

American Eel Management Board
October 29, 2019
1:15 – 2:15 p.m.
New Castle, New Hampshire

Chair: Marty Gary (PRFC) Assumed Chairmanship: 10/17	Technical Committee Chair: Jordan Zimmerman (DE)	Law Enforcement Committee Representative: Beal
Vice Chair: Lynn Fegley (MD)	Advisory Panel Chair: Mari-Beth DeLucia	Previous Board Meeting: August 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, VA, NC, SC, GA, FL, D.C., PRFC, USFWS, NMFS (19 votes)		

2. Board Consent:

- Approval of Agenda
- Approval of Proceedings from August 2019

3. Public Comment- At the beginning of the meeting, public comment will be taken on items not on the Agenda. Individuals that wish to speak at this time must sign-up at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Board Chair will not allow additional public comment. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Approval of Coastwide Cap Overages Policy (1:30 – 2:00 p.m.) Final Action

Background

- In 2018, the Board approved Addendum V to address management of the new coastwide cap and removal of state allocations for the yellow eel fishery. A Board working group was formed to develop a Coastwide Cap Overage Policy.
- The Board working group met multiple times from December 2018-October 2019 to develop a draft Coastwide Cap Overage Policy (**Briefing Materials**)

Presentation

- Coastwide Cap Overages Policy by K. Rootes-Murdy

Board actions for consideration at this meeting

- Consider approval of the Coastwide Cap Overages Policy

5. Consider Approval of 2019 FMP Review and State Compliance (2:00 – 2:15 p.m.) Action
Background • State compliance reports are due September 1. • The Plan Review Team reviewed each state report and drafted the 2019 FMP Review. (**Supplemental Materials**)
Presentations • Overview of 2019 Fishery Management Plan Review by K. Rootes-Murdy
Board actions for consideration at this meeting • Accept the 2019 Fishery Management Plan Review and approve *de minimis* requests

6. Other Business/ Adjourn

American Eel

Activity level: Low

Committee Overlap Score: Medium (SAS overlaps with BERP, Atlantic herring, horseshoe crab)

Committee Task List
• TC –July 2019: review of Maine's aquaculture proposal • TC – September 1st: Annual compliance reports due

TC Members: Jordan Zimmerman (DE, TC Chair), Ellen Cosby (PRFC, Vice Chair), Ryan Harrell (GA), Kimberly Bonvechio (FL), Bradford Chase (MA), Chris Adriance (DC), Robert Atwood (NH), Sheila Eyler (USFWS), Alex Haro (USGS), Wendy Morrison (NOAA), Carol Hoffman (NY), Todd Mathes (NC), Patrick McGee (RI), Jennifer Pyle (NJ), Troy Tuckey (VIMS), Danielle Carty (SC), Keith Whiteford (MD), Gail Wippelhauser (ME), Tim Wildman (CT), Kirby Rootes-Murdy (ASMFC)

SAS Members: Greg Hinks (NJ), Bradford Chase (MA), Matt Cieri (ME), Sheila Eyler (USFWS), Laura Lee (NC), John Sweka (USFWS), Troy Tuckey (VIMS), Keith Whiteford (MD), Kristen Anstead (ASMFC), Kirby Rootes-Murdy (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

AMERICAN EEL MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
August 6, 2019

These minutes are draft and subject to approval by the American Eel Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the American Eel Management Board Meeting
August 2019

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INDEX OF MOTIONS

ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Sen. David Miramant, ME (LA)
Cheri Patterson, NH, proxy for D. Grout (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
G. Ritchie White, NH (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Dan McKiernan, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Phil Edwards, RI, proxy for J. McNamee (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
David Borden, RI (GA)
Justin Davis, CT (AA)
Sen. Craig Miner, CT (LA)
Bill Hyatt, CT (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Heather Corbett, NJ, proxy for J. Cimino (AA)
Russ Allen, NJ, proxy for T. Fote (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Loren Lustig, PA (GA)
Andy Shiels, PA, proxy for T. Schaeffer (AA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Roy Miller, DE (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Robert Brown, MD, proxy for R. Dize (GA)
Lynn Fegley, MD, Administrative proxy
Bryan Plumlee, VA (GA)
Pat Geer, VA, proxy for S. Bowman (AA)
Mike Blanton, NC, proxy for Rep. Steinburg (LA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Ross Self, SC, proxy for R. Boyles (AA)
Malcolm Rhodes, SC (GA)
Spud Woodward, GA (GA)
Doug Haymans, GA (AA)
Rep. Thad Altman, FL (LA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Marty Gary, PRFC
Chris Wright, NMFS
Sherry White, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Bob Beal
Toni Kerns
Kirby Rootes-Murdy
Dustin Colson Leaning
Kristen Anstead

Guests

Bill Anderson, MD DNR
Mel Bell, SC DNR
Sam Chin, NOAA
Russell Dunn, NOAA
Syma Ebbin, UCONN
Jim Gilmore, NYS DEC
Walker Golder, Natl Audubon Society
Desmond Kahn, Newark, DE
Arnold Leo, E. Hampton, NY
Jason McNamee, RI DEM
Tim Sartwell, NOAA

The American Eel Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, August 6, 2018, and was called to order at 1:30 o'clock p.m. by Chairman Martin Gary.

CALL TO ORDER

CHAIRMAN MARTIN GARY: All right we're going to go ahead and get started. It sounds like a couple folks might still be lingering outside, but we're on a tight schedule. We have about an hour. I would like to welcome everybody to the American Eel Management Board. My name is Marty Gary from Potomac River Fisheries Commission; I'll be your Chairman.

Your Vice-Chairman is Lynn Fegley from Maryland. Seated at my right in a minute or two will be Kirby Rootes-Murdy, who is the Senior Fishery Management Plan Coordinator for this species, and Kristen Anstead, who is our Stock Assessment Scientist that works with American eels.

APPROVAL OF AGENDA

CHAIRMAN GARY: Our first item on the agenda is approval of the agenda.

Are there any changes, additions, modifications to the agenda? Seeing none, it is approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN GARY: The second item on the agenda, Approval of Proceedings from the October 2018 meeting, is there any changes, any corrections with the proceedings from October 2018? Seeing none, we have approved those proceedings.

PUBLIC COMMENT

CHAIRMAN GARY: Next up is Public Comment. Kirby, do we have anybody that has signed up? We are on a tight schedule. We have one person who has signed up. Desmond Kahn. If you could come up to the public microphone, and if you could limit, Desmond, to about two minutes or so, please, thank you.

MR. DESMOND M. KAHN: Thank you, Mr. Chairman. Real quickly, I just wanted to alert the Management Board to some new research on American Eels, which I published this spring in the Journal Fisheries. This concerns some new data on trends in abundance and fishing mortality of America eels. I was inspired to pursue this research by a comment made by Craig Pugh, one of the Delaware Commissioners.

What I did was use a source of data that the stock assessment did not use in the last assessment, and that is a source of data that is used for many assessments, and that is the Marine Recreational Information Program, or MRIP data on catches and trips. What I did was construct a mean catch per trip index of relative abundance for American eels, and I used the whole Atlantic coast.

This is a very broad coverage index, and one thing you learn when looking at this is that most eels that are caught by the recreational fishery are discarded by the fishermen. Primarily it seems to be a bycatch, and the majority is discarded. But for purposes of estimated abundance, we've always used the total catch, including discards. This data is used for the striped bass assessment, the weakfish assessment, the bluefish assessment, and probably some other species. What it shows is that while American eel for the period of 1981 to 2014, their peak abundance was in 1981. They did go into a steep decline until about '95, but ever since 2003 their trend in abundance has been increasing.

They've increased as of 2014 up to the point where they're back up to half the level they were in '81, which is the peak during that period. I just wanted to inform the Board, and

there are various comments on the stock assessment, so I hope this could contribute to future assessments. Thank you very much.

CHAIRMAN GARY: Thank you, Desmond, I appreciate your comments.

BOARD WORKING GROUP RECOMMENDATIONS FOR ADDRESSING A COASTWIDE CAP OVERAGE

CHAIRMAN GARY: The next up on our agenda, we're going to have an update from Kirby on the Board Working Group recommendations for addressing a coastwide cap overage. As most of you know, we have passed a while back Addendum V to the fishery management plan.

There is a two-year trigger in place. Kirby is going to go through this. There is a Work Group that has been formed. They've met several times. I've listened in on all of those meetings, and there has been a lot of work, and we have a little bit to do. But Kirby, can you present that the Work Group.

MR. KIRBY ROOTES-MURDY: It's a very quick presentation, because it's just an update. For everyone's information we have a Work Group. The membership I have up on the screen now, it includes Marty Gary. For the state of Maine, Pat Keliher has designated Megan Ware to take part in this group. Cheri Patterson from New Hampshire, Lynn Fegley from Maryland, John Clark from Delaware, Pat Geer with Virginia, Chris Batsavage with North Carolina, and Ross Self from South Carolina.

As Marty laid out, Addendum V which was approved a year ago this month implements a new coastwide cap of 916,473 pounds. There is also a new management trigger as part of this Addendum, moving forward, a 10 percent overage which is greater than 1.008 million pounds for two consecutive years, triggers management action.

When it comes to that management action, previously there had been state-by-state allocations in which the states would be responsible for their quota, but currently under the new Addendum there is no allocation, so states that are harvesting 1 percent of that coastwide harvest are responsible for the reduction if that management trigger is tripped.

The Working Group has met over the last year a number of times to develop basically a policy on how that reduction strategy would be carried out. There are two main challenges that the Work Group has focused on during their meetings over the last year, the first being that if the coastwide cap is exceeded, you know there is this marginal difference between it being exceeded and hitting that management trigger.

You can go up to just shy of 10 percent of an overage annually, without there being any management action that is required. The second that we've talked about at this Board before is the lag time in which data becomes available for us to know if we have gone over the coastwide cap, or if a management trigger has been tripped. We often get data for the previous fishing year, usually between the late-spring through the summer. We are in the current fishing season in which we would be wanting to effectively take action to reduce harvest if need be, and so there is a one-year lag in terms of trying to get action to address an overage.

These are two of the main challenges the group has struggled with, and has talked through. The draft document is continuing to be worked on, and the group has thought through a number of overage scenarios and reduction strategies, and will be fleshing those out over the next few calls. The next step is for this Work Group to meet again later this month, and to continue work in developing this document, and for it to be presented to the Board at the Annual Meeting.

The previous plan had been to present a draft document to you all today, but given some additional discussions by the group, it was determined that it would be best for the document to be fleshed out a little bit more with the decision tree, to really address some of these scenarios where the management trigger has not been tripped, but an overage has occurred of the coastwide cap, and how best to try to address that to prevent that management trigger from being tripped. With that I'll take any questions. Thank you very much.

CHAIRMAN GARY: There is no action or motions needed by the Board today. But if there are any questions about the Work Group's efforts, Kirby can take those now. Are there any questions for Kirby? I just wanted again to thank all the members of the Work Group. I think we have good, broad representation from both some of the lower harvesting states on both ends of the geographic spectrum.

Up and down the coast, as well as the Chesapeake region, where a lot of the higher landings of yellow eels occur, there has been a lot of effort that's been put into those meetings. We'll have information for you at the October Annual Meeting.

REVIEW AND CONSIDER APPROVAL OF THE 2020 AQUACULTURE PROPOSALS

CHAIRMAN GARY: Next up on the agenda will be the Review and Consideration of Approval for 2020 Aquaculture Proposals**,** and we have two, Kirby.

MR. ROOTES-MURDY: For my presentation today I'll go through the Maine proposal and the North Carolina proposal. The Technical Committee's review of those two proposals, Law Enforcement Committee's feedback, and I'll take any questions from you all. First the Technical Committee was presented Maine's summary of the 2019 fishing year earlier this summer.

Effectively Maine harvested 130 pounds of their 200 pound allocation to grow out glass eels to the yellow eel life stage. American Unagi is the company that is working in Maine on this aquaculture allocation, and they contracted with several commercial eel fishermen, they all worked together to help make this program run smoothly this year.

Each fisherman had between 10 to 20 pound allocations to fish their fyke nets, and took their catch to buying stations with a swipe card system, as required by Maine Department of Marine Resources. It was a slow start to the season, due to the cold spring in the region, and most of the fishing took place from mid-April through May. American Unagi, as I said harvested only 130 pounds of their 200 allocation, and this was a decision made by the facility to try and not stress the capacity they have in the facility for growing out these animals. For the first year of this allocation they wanted to ensure that they were more successful, rather than trying to harvest all the way up to their allocation. Law Enforcement visited the facility and had no issues with the program. In terms of their proposal for the upcoming year, 2020, there are no changes in the facility or monitoring, and they plan to try to harvest the full 200 pounds.

For North Carolina, we received a summary of their 2019 fishing season. Todd Mathes presented an update on this year's fishing season, as well as their two-year proposal for the American Eel Farm that has submitted a proposal annually since about 2016. The American Eel Farm fishermen fished fyke nets, about 14 of 22 possible weeks, primarily from January 1 through March 30, ending about six weeks earlier than they had set their season.

Dip nets were only used on one occasion, and fishing primarily occurred in canals and

tributaries of the Lake Mattamuskeet area. In total 13.82 pounds of glass eels, which are approximately 42,000 eels were harvested, and approximately 980 of them were released alive. Catch per unit data was collected, but some of the caveats included differences in net dimensions, changing harvest locations, gear modifications, inconsistent fishing effort, periods of no fishing, and recorded weights that included water.

In terms of the changes that they're proposing, they are putting forward another two-year proposal. The first change is that they are interested in moving the fishing year from starting on a calendar basis of January 1, to starting November 1, and going to March 31. It would cover two calendar years.

They are also going to change the time in which they needed to leave the nets open from noon to 3:00 o'clock p.m., this was primarily to address the need to get to some of these sites that are further away from the facility, so ease of transportation to get there to address the nets. Other changes are a move to record the actual number of eels harvested, or weight of glass eels harvested.

Basically, previously they had been trying to measure the weight, but they hadn't been able to do it to a precise level. The goal now is to record to the nearest 0.1 pounds of glass eels, and for any dip nets used. There will be changes to the weekly CPUE reporting. They will be increasing that, and they will also now be required to call in to North Carolina DMF prior to leaving the site of what their total harvest was for that trip.

The Technical Committee reviewed both of these proposals last month, and regarding Maine's proposal no concerns were raised. For North Carolina's proposal there was a minority opinion concerning moving the start date to November 1. Basically the concern stemmed from whether this would present any law enforcement issues.

But overall the Technical Committee indicated that this would likely not be an issue, and if anything might provide more information about abundance in the fall. They were going off of, in terms of this interest in starting November 1. American Eel Farm had heard from some South Carolina fishermen that there might be higher abundance in the fall than previously known, and they also were interested in looking at some of the Beaufort Bridge, ichthyoplankton sampling program that seemed to indicate that there might be the presence of glass eels around that time as well. The Technical Committee, their primary recommendations were that for future proposals to include more information on the attributes of the harvest locations, the specific amount of the previous year's harvest. Much of these proposals when we've had the Technical Committee review them in a given year, have as a supplement offered up what their summary is.

But the group is looking to have that just rolled in with their proposal for the next year. Then also to require CPUE reporting for each of the harvest sites, so for example North Carolina is doing this on theirs, because they have only this one site where they're doing glass eel harvest, whereas for Maine currently, there is a CPUE that is calculated, but across all of the sites combined for the state.

The Technical Committee was interested in moving more towards a CPUE value for each of those sites that are harvested, as part of that glass eel aquaculture allocation. Overall the Technical Committee recommended approval of both proposals. The Law Enforcement Committee was also presented these proposals by e-mail, notified of the changes, and they did not indicate any concern or objections to these proposals as presented. With that that concludes my presentation. I'll take any questions. Thank you.

CHAIRMAN GARY: Questions for Kirby on either of the two proposals. Dan.

MR. DANIEL McKIERNAN: Question about the call-in that the North Carolina fishermen do to the agency. Is it just dropping a message on somebody's voice mail, or is it something a little more sophisticated?

MR. ROOTES-MURDY: That's a good question, Dan. I might have to go to Chris Batsavage to give some more clarity on that.

MR. CHRIS BATSAVAGE: They call into our Communications staff, the phones are monitored 24 hours a day, and so they're actually talking to someone and not leaving a voice mail.

CHAIRMAN GARY: Cheri Patterson.

MS. CHERI PATTERSON: My question has to do with is there anything in the Addendum that allows for the straddling of a calendar year in the quota?

MR. ROOTES-MURDY: Thanks for the question. Currently the language in the Addendum references the allocation on an annual basis, but it doesn't have anything specific to calendar year versus fishing year.

CHAIRMAN GARY: Pat Geer.

MR. PATRICK GEER: Kirby, I don't know if this should go to the TC or to Chris in North Carolina, but looking at the North Carolina plan, they put a whole lot of effort. It says 73 days with over 15,000 hours of fishing, and they only caught roughly 10 pounds of glass eels, because they caught three pounds with dip nets. Did the TC discuss those numbers? I mean there is a lot of effort going in for the little amount that they're harvesting.

MR. ROOTES-MURDY: I think I failed to get into that detail about what they harvested in 2019, looking back at my presentation. I had it up on the screen, but I didn't speak to it. They harvested 13.82 pounds, which is the highest amount that they've harvested in the three years or so that they have put forward proposals. But unfortunately they had a total mortality event on all of those eels that were harvested in June. I believe it was an issue with the feed. That is what was communicated to us on the call.

When the Technical Committee considered that change, in terms of them increasing and having some more success this year, there were some notes about how adjusting the season may allow for them to have more success if they are possibly seeing eels in the fall. But again that is anecdotal information from some fishermen in South Carolina. Right now we don't have great data to demonstrate for sure whether or not they will be successful being able to harvest glass eels at that time of year.

MR. GEER: Because as a business model it's going to be pretty hard, you know 13 pounds is just not going to be, they're not going to make a profit on that little amount even if they kept it alive.

MR. ROOTES-MURDY: I can't speak to the full business model that this aquaculture farm American Eel Farm in North Carolina is operating under, but I do believe they have other sales of eels at different life stages, so yellow eels I believe they are selling them for bait. But I don't know the full extent of what their business is.

HAIRMAN GARY: Other questions for Kirby on either proposal. Eric Reid.

MR. ERIC REID: One of the things the TC is recommending is the CPUE. But if you look at the caveats, what is it really going to do unless you're calibrating every net and site and everything else, as far as a requirement goes? I

don't know why that would even be in there, it seems a little confounding.

MR. ROOTES-MURDY: It's a fair observation. There are definitely caveats with how this data is collected. The Technical Committee didn't express any concerns about the CPUE data that was coming out of the North Carolina proposal currently. What they were looking to have more information on was regarding Maine's proposal, because currently, as I said that CPUE data is aggregated at the state level.

I mean the harvest is broken down on a county basis, but it doesn't have the CPUE at the site level, whereas the North Carolina one, we only have information on a small number of sites, and CPUE is calculated on those, and that's where the Technical Committee was hoping to get more information for any proposal coming forward that has it specific to the site.

CHAIRMAN GARY: Follow Eric?

MR. REID: Thank you for that I appreciate that. I have no problem with the North Carolina proposal. Mr. Chairman whenever you want a motion I'll give you a motion, but what are the chances of because two of their best weeks, not their best weeks, were right at the end of March. I mean they only caught a pound and a half, five pounds. So you had five pounds twice. But what is the likelihood if they don't catch any when they want to open up in November and December, and they catch a few halfway through March and say, hey we're catching a few, we would like to leave it open, because we have 186 pounds left to be caught. It just seems to me they want to close the fishery when they were catching a few.

MR. ROOTES-MURDY: I think something for this Board to consider in reviewing these proposals, and considering approval of them is if there are any specifications that you would prefer to have on that allocation. One thing for this Board to keep in mind is that these proposals have operated under generally a calendar year basis, right.

They've outlined when their season starts and ends, usually in January through late in the spring. The proposal has outlined their start date and their end date. It does straddle two different calendar years. There is no language currently about them looking to extend their season beyond the end of their season in March, so if that is of concern then this Board can make those stipulations known.

CHAIRMAN GARY: Pat Keliher.

MR. PATRICK C. KELIHER: I'm having a little trouble. I'm trying to figure out why we would need to deal with CPUE when we're talking about a handful of harvesters in a few locations. How is that going to benefit management? There are so many factors that are going to impact CPUE outside of the control of the harvesters.

I mean, somebody could put a new in front of that fyke net. It could be weather driven. You know some rivers don't fish. It is good one year, as a river right beside it. It is unclear to me what benefit recording CPUE is going to be as it pertains to just the aquaculture harvest. If we're really looking for CPUE to benefit management, shouldn't we be talking about maybe a different approach as it pertains to the entire fishery, not just the aquaculture quota?

MR. ROOTES-MURDY: Again this was just an observation made during the call, and the group was in agreement on recommending that if possible to collect this information at the sites.

CHAIRMAN GARY: Adam Nowalsky.

MR. ADAM NOWALSKY: I would be interested in hearing some feedback on the state that reviewed the proposal, from the TC, from staff. Given the mortality event that occurred last year, we essentially just threw away 42,000

eels. Done, gone, no benefit from it. What is going on at the facility? What reviews in place to make sure this isn't going to happen again that something similar isn't going to happen?

I think we've got a question. Do we have a wise use of this resource, if this is what happened to the eels last year? I've got a real concern about that, and I would like to hear some feedback from the state that reviewed the proposal or staff, about what's in place that this is going to have a better outcome in future years, and this is a reasonable use of this resource.

CHAIRMAN GARY: Chris, are you comfortable commenting on that?

MR. BATSAVAGE: Yes. I guess part of it is the timing of the mortality event, it occurred after the plan was submitted, not that that would necessarily change our minds, as far as bringing it forward. As Kirby mentioned, they actually had quite a bit more success in collecting glass eels this past year than they had in the last few. It was just unfortunate they didn't survive the tank rearing.

I mean in terms of inspection, our enforcement officers go in there to make sure that they're following what is laid out in the plan from a regulatory standpoint, not necessarily from – we don't evaluate them on whether or not they are going to be productive and profitable. You know we really don't do that for any of our permits.

But I think your point is well taken, as far as the concern the Board has, as far as just the lack of success seeing these things through to the adult stage. From our perspective, they're following the provisions of the plan, no enforcement issues, not a huge burden on staff to monitor this aquaculture plan. With that we don't really have any concerns with it, but your points are well taken.

CHAIRMAN GARY: Other questions on the proposals, or we can entertain a motion. Cheri Patterson.

MS. PATTERSON: Yes, I would like to move to approve the 2020 aquaculture proposals with the TCs recommendations, and also following the addendum to harvest up to 200 pounds per calendar year, not fishing year.

CHAIRMAN GARY: Get that on the board. Do we have a second to this motion? Pat Geer. I'm going to go ahead and read this in.

MR. ROOTES-MURDY: Just a quick clarification. As you're aware, one of the proposals was for 2 years. The North Carolina proposal is a two-year program. Can you just specify with this motion whether this is an approval of that proposal for two years, or if it is for one?

MS. PATTERSON: Yes, for two years.

CHAIRMAN GARY: Just to be clear, this will be for both Maine and the North Carolina proposal for two years. Go ahead, Kirby.

MR. ROOTES-MURDY: We were just trying to clarify that one of the proposals is for two years, right. That is the North Carolina proposal. Maine's proposal is just for one year, so the motion is clarifying that it's just approval of these proposals, with one of them that will carry for two years.

MS. PATTERSON: You want that wording is what you're telling me, because the proposals are indicating that Maine is one year and North Carolina is two years.

CHAIRMAN GARY: One last clarification, Kirby, go ahead.

MR. ROOTES-MURDY: Cheri, I just want to be clear. For the 2020 aquaculture proposal, as indicated we already have a harvest that has occurred for North Carolina in 2019. Does this

motion, can you clarify what it means for when North Carolina can begin their fishing season for this allocation?

MS. PATTERSON: Yes, North Carolina can proceed with their proposal for November 1, however they have already harvested slightly less than 14 pounds, so they can only harvest up to 200 each calendar year.

CHAIRMAN GARY: Senator Miner.

SENATOR CRAIG A. MINER: When I was listening to the discussion earlier, I didn't hear much about the state of Maine's proposal. I did hear about the review of their proposal, and it didn't seem like there were any issues. I wonder if splitting this motion wouldn't be the cleanest way to do it, so that any of the nuances of the proposal for North Carolina could be handled through a separate motion, rather than have it be done the way it's being done.

I have some concern about what occurred, and if there was a reoccurrence up to 200 pounds that would be an even more significant concern. I wonder why we would be approving a two-year proposal for North Carolina, not a one-year proposal. Anyway that was the reason for my request to consider a different motion.

CHAIRMAN GARY: Ritchie White.

MR. G. RITCHIE WHITE: Would we not have the ability to readdress these in a year if there was another episode, another mortality episode? In other words, we would have the ability to undo the second year if there was some reason. That's a question.

CHAIRMAN GARY: Kirby.

MR. ROOTES-MURDY: Yes again, I think this is for the Board to specify if you guys want to make it contingent on how the first year plays out, in terms of monitoring, performance of harvest, law enforcement review.

CHAIRMAN GARY: Ritchie, follow up?

MR. WHITE: Short of having that in the motion, we would not then have the ability at the end of the first year if there was an event for us to take action. I guess Toni might be able to answer.

CHAIRMAN GARY: Toni.

MS. TONI KERNS: Ritchie, I think we can ask for a review of how the fishing year went, just like we did I think a couple years ago. If there is something that alarms the Board you can revoke the proposal for the second year, or revoke yes the proposal, the allocation for the second year.

CHAIRMAN GARY: It's the Board's pleasure as to how we proceed with the existing motion. We'll pull it back. Ray Kane.

MR. RAYMOND W. KANE: Why don't we split this motion? I mean Maine is going to come back next year with a report, and why don't we leave the two states independent of one another? Why not split this motion?

CHAIRMAN GARY: Is the maker of the motion amendable to that Cheri? All right, so we're going to split the motion. Toni.

MS. KERNS: It would just be good to say is there any objection to splitting the motion, because it is property of the Board now, and so therefore.

CHAIRAMN GARY: **Is there an objection to splitting the motion? Seeing none; we're going to proceed with a split of the motion,** while we're putting this up, Cheri.

MS. PATTERSON: The first part of the motion, can you bring up the one used prior to this? Pat, feel free to jump in, you're the second. **Move to approve Maine's 2020 aquaculture proposal with the TC's recommendations.**

That would be the first one, Maine's 2020 aquaculture.

CHAIRMAN GARY: Does that capture your motion, Cheri and seconder, Pat?

MR. GEER: Then the North Carolina one will just be the same, move to approve North Carolina's 2020 aquaculture proposal with the TC's recommendation, because within the plan it says it's for two years. If you want to be more specific we could say two years if you want, if that is the pleasure of the Board.

MS. KERNS: Pat, because we split the motion we're going to hold off on that second half, and just talk about this first, and then get to North Carolina.

CHAIRMAN GARY: All right discussion, Justin Davis.

DR. JUSTIN DAVIS: Just a point of clarification. Were there any TC recommendations relative to Maine's 2020 proposal, as in recommendations for changes or additions to the proposal?

MR. ROOTES-MURDY: Well as mentioned there was an interest in trying to collect CPUE at the harvest site location, as well as whether including information on attributes of the harvest location. I had it up on the previous slide; it is Slide 6, the attributes of the harvest location, the previous year's harvest, as well as requiring CPUE reporting from each harvest site. Basically the Technical Committee is looking to try to get some more information about some of the information on each of these locations, and then as I said before, in the actual report the proposal they're sending in what the harvest was, because each year now we've received generally a summary after the fact in a memo, or in the actual presentation and not the written proposal.

CHAIRMAN GARY: Doug Haymans.

MR. DOUG HAYMANS: Not that I see it in here, but wasn't there also some discussion about a grow-out; grow out to the yellow eel life stage?

CHAIRMAN GARY: Kirby, can you address that?

MR. ROOTES-MURDY: Sure. Last year the Board specified that the 200 pound glass eel allocation was for glass eels to be grown out to the yellow eel life stage for Maine, because the language in Addendum IV specifies that the eels can be grown out to the state's legal eel size. For nearly all other states along the coast that is 9 inches at least.

CHAIRMAN GARY: Does that answer your question? Doug, you have a follow?

MR. HAYMANS: Well, since that is not part of that motion does it need to be? It wasn't in their proposal either, does it need to be?

MR. ROOTES-MURDY: Yes, it needs to be specified in the motion if it's going to be the requirement to grow out the glass eels to the yellow life stage.

MR. HAYMANS: Is that the desire is to require grow out to the yellow eel life stage?

MR. ROOTES-MURDY: As mentioned before, it was specified by the Board at the Board meeting last year, so it is the pleasure of this Board. To be clear that's just to make it absolutely transparent that the grow out operation will be growing out these glass eels harvested to the yellow eel life stage, which American Unagi has indicated that is their plan, but the motion specified that because of the state regulatory language.

CHAIRMAN GARY: Cheri, as maker of the motion would you like to add that in?

MS. PATTERSON: Yes, go ahead and add that in, thank you.

CHAIRMAN GARY: I think that achieves what you were asking, Doug. Emerson Hasbrouck.

MR. EMERSON C. HASBROUCK: I'm a little unclear here. We needed to include that language for Maine. Why is it that we do not need to include that language for North Carolina?

MR. ROOTES-MURDY: As indicated, all other states, including North Carolina, their legal eel size is 9 inches, right? That has been determined by the Technical Committee to be the recommended yellow eel stage that these eels can be harvested at. Maine currently has language that allows for the harvest of less than 9 inch eels, so this is to specify that the grow-out of those eels in Maine would be at the yellow eel stage. North Carolina already has a minimum size on what those eels would be caught, and in turn sold at.

CHAIRMAN GARY: Follow, Emerson?

MR. HASBROUCK: Then it's implicit that for North Carolina they need to raise those eels to the state's minimum size, and then I've got a follow up on that.

MR. ROOTES-MURDY: Yes.

MR. HASBROUCK: What happens when they all die? They didn't raise them to the minimum size; does that put them in conflict with our program that allows this to occur?

MR. ROOTES-MURDY: I don't believe so, because they all died.

CHAIRMAN GARY: I don't think they went to market, Emerson, I think that's the point, but I understand what you're saying. Chris Batsavage.

MR. BATSAVAGE: Just to clarify the question Emerson had. Marine Patrol collected the dead glass eels after it was reported that they died, so they are in our possession, thanks.

CHAIRMAN GARY: Other questions? All right so are we ready to go ahead and vote on this motion? Are we going to take these one at a time, Kirby**? This is the Maine proposal. All those in favor raise your hand, those opposed, any abstentions, any null votes? The motion passes 17, 0, 0, and now we'll move to the next proposal.** Go ahead, Pat.

MR. GEER: Move to approve North Carolina's 2020-2021 aquaculture proposals with the TC's recommendation, and eels harvested will be grown out to the yellow eel life stage, (minimum 9").

CHAIRMAN GARY: All right we have a motion by Pat Geer. Do we have a second to that motion? Cheri Patterson.

MS. PATTERSON: Thank you, we're trying to add in the calendar year provision.

MS. KERNS: Marty, you split the motion, so it is not a new motion. It's still Cheri and Pat's motion; it's okay as long as Cheri is okay with adding that additional language about eel being harvested to the yellow eel life stage. But in order to keep us in the rules of Roberts Order, we would keep it. Yes thank you for putting Cheri in there as the maker and the seconder would still be Pat.

CHAIRMAN GARY: The maker stays Cheri Patterson, second Pat Geer. Do we have the motion as you intended, Cheri?

MS. PATTERSON: Can we add in there to have an annual review?

CHAIRMAN GARY: Pat Geer.

MR. GEER: Since the other one had specifically said the size after yellow eel life stage, put in parentheses (minimum 9").

CHAIRMAN GARY: Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Just a quick question. North Carolina is interested in starting their harvest November 1, so if they started harvesting eels November 1st of this calendar year, 2019. Are those eels counted against the 186 pounds they have remaining on their current proposal and approval, or are they sort of starting their 2020 200 pound allocation?

I think the answer is they are part of the 186 that they have left over. But I think we need to make that very clear that they can harvest the remainder of their quota in this calendar year, 2019. Then they start a new 200 pounds January 1, 2020. But that is my interpretation, but I think that everyone around the Board agrees to that.

CHAIRMAN GARY: I can see a lot of nodding heads. That's your intent, Cheri?

MS. PATTERSON: Yes that was my intent. Pat, is that your intent?

MR. GEER: I agree.

CHAIRMAN GARY: Pat Keliher.

MR. KELIHER: In a sense this is a three-year proposal, if we're going to expand on 2019, and then allow for a potential harvest in 2020 and 2021. It's now a three-year proposal, because you're allowing them to harvest, so it goes away from even their existing proposal we've expanded upon it as a Board.

If that is the way the Board goes, I'm not going to object. I think they've got challenges in North Carolina associated with this proposal that have been raised. I would like to see them succeed, but I am cautious. I would want to be cautious about wanting to expand this too much more.

CHAIRMAN GARY: Senator Miner.

SENATOR MINER: To the point about 2019 being I guess the current allocation that we're in. Is there any disagreement with Pat's statement that that allocation currently exists, and could still be fished on I think you were saying in November as part of this year's allocation. This would add two more years to that**. If that is true, I would propose an amendment to this that would make it for an additional year, 2020, as opposed to 2020 and 2021. Then have the review and see how it looks in 2020.**

CHAIRMAN GARY: Senator Miner, are you amending the motion?

SENATOR MINER: Yes, please to just make it 2020.

CHAIRMAN GARY: Twenty nineteen to 2020?

SENATOR MINER: Well, I think I may not be correct, but I don't think we're actually amending the current calendar year that we're in. I don't remember what the original motion was for the year that we're in. But assuming that the motion was that there would be fishing available in 2019 calendar year up to 200 pounds. How they administer that in North Carolina is up to North Carolina. I assume they keep track from the spring season to the fall season. It just occurs there differently than it does in New England, so the 2020 would be one more year.

CHAIRMAN GARY: Cheri.

MS. PATTERSON: Considering that this is a two-year proposal that is supposed to start in 2020. That's what it is. It's going to start in 2020, right? They can't fish this year in November or December. This is a 2020 proposal.

CHAIRMAN GARY: Kirby, you can clarify?

MR. ROOTES-MURDY: Cheri, I'm sorry. I want to make sure we're getting this right for this motion. You're saying that they can't start November 1, they can start their fishery January 1, 2020, and they would be able to fish in 2020 after the season that they had laid out, so it would be January 1 through March 31, but they could start again in November of later that year. That's what you're specifying. Okay.

CHAIRMAN GARY: We had Senator Miramant; do you still want the microphone?

SENATOR DAVID MIRAMANT: No, thank you, that was answered.

CHAIRMAN GARY: Roy Miller.

MR. ROY W. MILLER: Mr. Chairman, the way I read this, and I have to assume that the attorney representing this company will read this motion carefully. As it reads to me, they can harvest 200 pounds per calendar year. That means they could harvest 400 pounds, as I read this. Was that our intent?

By spanning the sampling period from November, spanning over into the new calendar year it has confused things. When it says they can harvest up to 200 pounds per year, if you read that literally, that means they could take a total of 400 pounds, 200 pounds in 2020 and 200 pounds in 2021.

CHAIRMAN GARY: Chris, could you add some clarity?

MR. BATSAVAGE: I don't know, I'll try, because it is admittedly there is a disconnect with the calendar year under the Addendum, and the fishing year, which this plan proposes. When we looked at the plan we talked about how to account for the harvest under the fishing year, but keeping in compliance with the calendar year.

You had the statement, and the other part I want to go back to is the aquaculture plan that they had in 2019 ended in May, so there is not a current aquaculture plan in place in North Carolina. If this one is approved it presumably will start November 1st. When they start, hypothetically they start November 1; they can land up to 186 pounds of glass eels during the 2019 calendar year, because they already landed 14 pounds. However, if they did land, or so they land 186, and the following fishing year, this is a 200 pound allocation per fishing year. They've been limited to 14 pounds, and then they would have to wait until November, and start fishing again.

It's going to be a little extra math on our part, as far as making sure that they don't take more than 200 pounds of eels any given calendar year, which will be spanning two fishing years, and they don't take more than 200 pounds of eels during any given fishing year, which would be November through March. It's kind of hard to explain on the fly, but this is something that staff has talked about and has considered. Due to the call-in mechanism in place in the plan, we feel like we can keep track of that and making sure that they don't go out of compliance.

CHAIRMAN GARY: Bob.

EXECUTIVE DIRECTOR BEAL: I think we've got ourselves in a little bit of a procedural spot. We've got a motion to amend without a second, and we've got the main motion that has been perfected by staff, I think to capture a lot of the conversation that's been going on, you know following the motion to amend.

What staff has done is made sure it's clear that no fishing can take place at the end of this calendar year, and that the intent is for 2020 and 2021, to allow fishing consistent with the new proposal from North Carolina in the months that they proposed. Hopefully that is all captured in the motion that's up on the board.

One way out maybe if there is no second to the motion to amend, then that one goes away. Then we'll need to reread the main motion into the record, and we can move forward from there. But I don't want to cut off debate or lobby for either side, so just sort of highlighting the kind of spot we are in procedurally.

CHAIRMAN GARY: We are running a little bit short on time, and so maybe consistent with what Bob mentioned, let's give the amendment by Senator Miner an opportunity. We would need a second. If we don't get that second, as Bob mentioned, we pull this back. Is there a second to Senator Miner's motion? Ray Kane.

Is there discussion again? We'll call the question. **Move to amend to remove 2021, motion by Senator Miner, seconded by Ray Kane. All those in favor raise your hand please, those opposed, abstentions, 1, null votes. The motion passes 10, 6, 1.** We're going to get this adjusted on the board, just a moment. Okay so we're back to the motion, I'm going to read it into the record. Go ahead, Eric.

MR. REID: Sorry Mr. Chairman. What we're doing is we are not approving North Carolina's 2020 aquaculture proposal, because they're proposing to go fishing in November and December, and we're changing their fishing season in 2020 from January, February, March, and adding November and December. Is that correct? I would just as soon make a motion to accept the plan as it is and let it go. North Carolina says they can enforce it. We're going to be up to 15,000 hours of horsing around with this and have our CPUE pretty crappy here before this is over. I don't know why we're picking away at that. Let them do what they want, it's their money, and North Carolina can handle the enforcement.

CHAIRMAN GARY: Ritchie.

MR. WHITE: I would like to hear the intent of the maker of the motion to amend. Now was your intent that North Carolina will have the chance at a two-year proposal, and you just want to review it at the end of 2020, and then give them another year, or do you want this to just be a one-year proposal and they're back to the drawing board?

SENATOR MINER: My proposal is for it to be a one-year program, which they can administer. Understanding that they would begin fishing, I guess in the spring, and then have another opportunity to fish in the fall, until they reach 200 pounds in the calendar year of 2020. If I recall when I made the motion, the original motion had not been clarified to include that there would be no fishing in November and December of this year. I don't think the motion changes that at all, even though it's now added.

Next spring they would begin fishing, and they would have an opportunity, just like they do in Maine, to catch enough glass eels to begin that aquaculture program in 2020, even though it will be in two waves, or maybe they'll catch them all in the spring of next year. I have no idea what's going to happen.

Then we would still have the opportunity to review it, and they could make another request for a continuance under that proposal. I'm concerned about a review of a two-year plan that has a value on the street, never mind grown out, of something around $400,000.00. When it starts to get to that number, I think people will argue about it. Rather than giving them an understanding that they would have a two-year proposal, I feel more comfortable with a one-year proposal.

CHAIRMAN GARY: We have Chris Wright and then Cheri. I would remind everybody we're already over, so we'll try to wrap this up quickly if we can.

MR. CHRIS WRIGHT: If there is going to be a review, would that happen at the winter meeting?

MR. ROOTES-MURDY: Thanks, Chris, this is Kirby. What you're asking is that because they won't be harvesting any eels later this fall, and their fishing season is kind of bifurcated on the beginning of 2020 and the end of 2020 that they will report out on how the fishing year 2020 went would be in the winter meeting of 2021.

MR. WRIGHT: Right, so then they would have a chance to submit another proposal for the following 2021 year, correct?

MR. ROOTES-MURDY: I think that could be possible. I will point out that right that would be somewhat in the middle of their fishing season, so that is just something for the Board to keep in mind that if there is the interest in maintaining that for the 2021 fishing season, it would be the end of, well from February onward and then November through December, but it would be the Board's discretion on how to specify it then if need be.

MR. WRIGHT: Right, and that might cause a problem, because then it might foreclose their opportunity in 2021, and I think we should be clear that when we make this decision on this motion that they have an opportunity to actually submit a proposal in early 2021 and to get it approved. I mean it seems like you're foreclosing their opportunity for that second year.

CHAIRMAN GARY: Kirby. Senator Miner, can you clarify?

SENATOR MINER: Sure, we're in August. In August we found out what happened this spring, and it would seem to me that in the August meeting at the very latest next year, we could have an update. I would argue we could have an update in May. I think North Carolina will know how the spring fishing went.

I don't think that would necessarily foreclose anything. I would certainly be willing to reconsider a motion next May or next August, just as we are today about another request for another year of fishing. I just think I would feel better having had that conversation by this time next year to provide that opportunity.

CHAIRMAN GARY: We have Cheri and then Chris, and hopefully we can wrap up.

MS. PATTERSON: The way that first sentence reads is we're approving the North Carolina's aquaculture proposal. Oh, I'm sorry it got changed to 2020 only. Sorry. The last sentence, if you go back to the original sentence, maybe then you can move the last sentence to say the Board will be provided with an annual review to approve the second year.

CHAIRMAN GARY: Cheri, because the motion is property of the Board, you would need to amend, we believe. Would you be willing to amend the existing motion? Toni, is that right, what I'm thinking?

MS. PATTERSON: Yes, we were trying to take a shortcut. I think we're getting too wrapped around the axle to have these guys be able to fish over a straddled year, a fishing year as opposed to two calendar years. It almost seems like we have to be nimble enough next year to be able to allow them to fish that second year, without having to go through a whole different proposal.

CHAIRMAN GARY: All right so we have a motion there, any last comments or suggestions? Chris.

MR. BASTSAVAGE: I understand and appreciate the Board's concerns, just with allowing these kinds of activities with glass eels, due to how valuable they are, and just keeping track of them. But I kind of feel like this motion rewrites

the plan significantly. They wanted to do a fishing year to where they are fishing continuously from November through March.

I don't think they contemplated having a multi-month break between March and November in their fishing activity. I think for all practical purposes, this motion would give them three months to fish, as Chris Wright indicated. We come back and report to the Board the activities, in May or August, and then I guess that would maybe let them start fishing again in November, assuming that they could go November to March, or this plan to be approved for just a January through March fishing year, which is two months less than what they were doing in the previous plan. I can't support the motion. I think it's ventured too far away from what the American Eel Farm proposed, what we thought would be workable.

CHAIRMAN GARY: Maureen Davidson.

MS. MAUREEN DAVIDSON: In light of what Chris just said that we're sort of taking away some of their planned fishing. I would like to ask if it's possible, since the proposal from North Carolina expired May 30, would we be able to have your new proposal start November 1, so that you would be able to fish November and December in 2019.

Then the plan would include the fishing that would happen from January through March, and then we could decide what we would do with November 2020 through March of 2021. But at least for the first year we could try and prevent them from losing November through December, by just changing the date of when your proposal starts.

CHAIRMAN GARY: Chris, does that help you?

MR. BATSAVAGE: If I understand correctly, the proposal starts November right now for 2019, if the plan that we submitted was approved. It already was November through March, so it was a two-year plan, November 2019 to March 2020, and then November 2020 to March 2021. This motion would not allow the November part of that. It would really just; it makes it for all practical purposes be January through March, unless I'm misunderstanding what you're asking.

CHAIRMAN GARY: We're really trying our best to provide the flexibility that they're requesting, but finding it's an incredible challenge. Unless somebody can solve this and bust this riddle, I've got Adam and then Lynn. Please, let's see if we can get through this and move forward in one way, shape or another form.

MR. NOWALSKY: When I think of the time that we've put into this now, and the potential that it was 600 pounds of glass eels over the last three years. We're contemplating another two years. That's 1,000 pounds of glass eels. There are probably people out there in the audience thinking, wow; the economic value I could have provided with this if you had given them to me instead.

Clearly we're struggling with concerns about these proposals, about the way this company has conducted business. I would ask North Carolina at this point, if we move to postpone this decision today, do they think they could go back, discuss these concerns with the company, and perhaps bring another proposal back to us that we could take up at the Annual Meeting for 2020 and beyond. That would be a way I would look to move forward at this point.

CHAIRMAN GARY: Chris.

MR. BATSAVAGE: I guess either the plan; yes if it was postponed then yes we would talk to staff, and then meet back up with the folks in the American Eel Farm and see what they want to do. I mean I guess that is an option, because I think the concerns expressed by the Board are pretty clear, at least what they proposed just doesn't sit well with many. If that is what the

Board wants to do, we can go back to the American Eel Farm and see if they want to put in something that maybe eases some concerns in time for the annual meeting.

CHAIRMAN GARY: If that's the pleasure of the Board, we would need a motion to that extent. Kirby, could you please clarify?

MR. ROOTES-MURDY: Yes, just so the Board is aware. The language in Addendum IV says that aquaculture plans must be submitted by June 1 of the proceeding fishing year, and approval must be determined by the Board by September 1.

CHAIRMAN GARY: Roy Miller.

MR. MILLER: Mr. Chairman, with the Board's indulgence I would like to offer a substitute motion that I hope clears this matter up. Move to approve North Carolina's aquaculture proposal to harvest up to 200 pounds in the 2020 to 2021 fishing season, (Nov 1, 2020-March 31, 2021). Eels harvested will be grown out to the yellow eel life stage (minimum size 9").

CHAIRMAN GARY: Wait to get that up.

MR. ROOTES-MURDY: Roy, can you just clarify again what the dates are in the fishing year?

MR. MILLER: All right, my colleagues say they want to start this November, so the dates would change to 2019 to 2020, instead of 2020 to 2021, and it would start November 1, 2019 to March 31, 2020.

CHAIRMAN GARY: We have a second by Pat Keliher. Okay we have a motion on the table, is there a discussion, brief one? Cheri Patterson.

MS. PATTERSON: I'm just questioning whether that fits the Addendum that's my only concern is the Addendum indicates calendar year, I believe, and now it's changing to fishing year? No?

MR. ROOTES-MURDY: No. As I mentioned earlier in my presentation, it doesn't specify calendar year. It speaks to annually.

CHAIRMAN GARY: Go with Ray Kane, then Emerson Hasbrouck and then Chris.

MR. KANE: We have the understanding that North Carolina will be able to come back to us a year from now at the August meeting with a report on the November 1, '19 to March 31, 2020, right?

CHAIRMAN GARY: Ray, I'm sorry. Could you say it just one more time? By what point in time were you saying the report come back?

MR. KANE: This time next year.

CHAIRMAN GARY: Okay, confirmed. We'll go to Emerson Hasbrouck.

MR. HASBROUCK: I have no problems with the substitute motion. But my concern goes back to an issue I raised, I don't know how long ago, half an hour ago. Maybe I'm the only one who's concerned here. We say here, we said it with Maine that they will be grown out to the yellow eel life stage.

What happens if there is a mortality event, total or partial, and they're not grown out to that life stage? That is the first part of my question. The second part is did anybody in North Carolina verify that there was a complete die-off in those 13.8 pounds or whatever it was, it did in fact die?

CHAIRMAN GARY: I thought Chris had mentioned law enforcement did verify that mortality event. Chris Wright.

MR. WRIGHT: My question was answered in the previous one.

CHAIRMAN GRAY: Roy Miller.

MR. MILLER: Mr. Chairman, I would like to just clean up the motion a little bit. In the second line I would insert the word for between proposal and up, so it reads proposal for up to 200 pounds for and strike the second there, for 2019 to 2020. I think that cleans it up, thank you.

CHAIRMAN GRAY: Acceptable to the seconder, Pat, any further discussion? Pat.

MR. KELIHER: Mr. Chairman, I just want the record to reflect that this Board does have the ability to revisit this after we report back next year and change our mind in regards to the second year if need be.

CHAIRMAN GARY: Kirby is confirming.

MR. ROOTES-MURDY: Just to clarify, Pat. The motion currently on the board is only for a one-year proposal.

CHAIRMAN GARY: Adam Nowalsky.

MR. NOWALSKY: Where does this motion leave the TC recommendations?

CHAIRMAN GARY: Kirby.

MR. ROOTES-MURDY: I guess the question is really to the makers of the motion. If you want to make it clear on the record that your motion is encompassing that then we can make sure that language is in this, but if you want to just speak to it and make sure that it's inclusive of Technical Committee recommendations, I think this Board has discussed this enough to clarify that that is of interest to this Board.

CHAIRMAN GARY: Roy, do you want to add that language?

MR. MILLER: Yes, we could add that language.

CHAIRMAN GARY: Consistent with the Technical Committee's recommendations.

MR. MILLER: Yes.

CHAIRMAN GARY: All right we're going to go ahead and call the question**. I'll go ahead and read the motion in. Move to substitute to approve North Carolina's aquaculture proposal for up to 200 pounds for 2019-2020 (Nov 1, 2019-March 31, 2020) consistent with the Technical Committee's recommendations. Eels harvested will be grown out to the yellow eel life stage (minimum 9"), motion by Mr. Miller, second by Mr. Keliher.**

All those in favor please raise your hand, opposed, abstentions, and null votes. The motion passes 16, 0, 1. Thank you all. We've run over, but is there any other business. We're all looking to make sure it gets done. **All right is there any objection to the main motion? Seeing none, it passes by consent.**

ADJOURNMENT

CHAIRMAN GARY: **Is there any other business to bring before the Board? Seeing none, this meeting is adjourned.**

MS. KERNS: Before everybody goes away really quick. I just want to introduce Dustin Colson Leaning; he is here at the front of the table. He's the Commission's newest staff member. He is working on summer flounder, scup, bluefish, winter flounder, and northern shrimp. If you get a chance just to come say hello this week and welcome him to the Commission family. He started in July but this is his first full week of Commission meeting week fun, and this was a great meeting to introduce him to motion taking. Thank you.

(Whereupon the meeting adjourned at 2:50 o'clock p.m. on August 6, 2019)

DRAFT POLICY TO ADDRESS COASTWIDE CAP OVERAGES FOR THE YELLOW EEL COMMERICAL FISHERY

This document is intended to provide guidance to the American Eel Management Board (Board) in the event that the Coastwide Cap of 916,473 pounds of American eel is exceeded in a given year. Addendum V states the following regarding the management trigger and the response:

Issue 2 Management Trigger
Starting in 2019, the coastwide landings are annually evaluated against a two-year management trigger. If the coastwide cap is exceeded by 10% (10% of the coastwide cap= 91,647 pounds; coastwide cap + 10%= 1,008,120 pounds) for two consecutive years, the Board is required to alter the management program as specified below in Issue 3 to ensure the objectives of the management program are achieved.

Issue 3 Allocation
The yellow eel fishery is managed without state-specific quotas through adaptive management. If the management trigger is tripped (Issue 2), only states with landings greater than 1% of the coastwide landings, in the year(s) when the management trigger is tripped, will be responsible for reducing their landings to achieve the coastwide cap in the subsequent year. States with landings greater than 1% of the coastwide landings will work collectively to achieve an equitable reduction to the coastwide cap. For states with landings less than 1% of the coastwide landings, if in subsequent years a state's landings exceeds 1% of the coastwide landings after reductions have been applied, that state must reduce their individual state landings in the subsequent year to return to the less than 1% level[1].

A management objective under Addendum V is to manage landings to the Coastwide Cap (Cap). Annual landings are not finalized until the spring of the following fishing year. Therefore, if an overage occurs, a year lag will likely occur before full action is taken to reduce harvest to the Cap. For example, a Cap overage in 2019 would not be determined until 2020, and action would likely be delayed until 2021 since some states do not have authority to act within the same fishing year when the overage is determined.

One way to proactively manage the yellow eel fishery is to closely monitor landings and encourage states to take voluntary action when it is clear an overage has occurred in the previous year. By engaging with states before the management trigger is tripped, but after landings have exceeded the Coastwide Cap, a lengthy addendum process can be avoided and more immediate action can be taken to ensure the fishery is managed to the Cap. This proactive approach encourages vigilance and voluntary action in the first year of an overage, and provides opportunity for collaborative, rapid action to prevent an overage in the second consecutive year, thereby preventing the triggering of mandatory management action through an addendum.

Thus, to improve the expediency in reacting to an overage, it is recommended that preliminary commercial yellow eel landings from ACCSP Data Warehouse be made available for the Board's

[1] To clarify, reduction measures apply when the management trigger is tripped. States are not held to a landings level until coastwide landings have exceeded the Coastwide Cap.

consideration prior to the ASMFC Spring Meeting, annually. Based on the preliminary data review, if it's determined that the Cap has likely been exceeded in one year the Board will convene a work group (WG) consisting (at a minimum) of one representative from each jurisdictions that harvested more than 1% of the coastwide landings in the year of the overage. The charge of the workgroup is to consider the overage relative to the decision trees (Figure 1) and determine if, and how, the Board should recommend voluntary action by those states that harvested more than 1% of the coastwide landings (1% states).

Response Strategy When Cap is exceeded in One Year

Once convened by the Board, the WG will review the magnitude and the pattern of the overage relative to the decision trees (Figure 1) to determine the need for voluntary action. "Pattern" refers to whether landings of American eel increased in all states or in some states while harvest decreased in others. "Magnitude" refers to the extent of the overage and, for individual states, the amount of harvest increase relative to the previous year. It will be important for the WG to examine potential reasons for increasing harvest, such as increased effort, increased availability of eels, improved market conditions, etc. Once the Board recommends states decrease landings it will be up to the states to take action.

States may utilize (but are not restricted to) the following voluntary methods to reduce eel harvest as considered by the American Eel Management Board in Draft Addendum II (2007):

- Seasonal restrictions,
- Gear limits, and
- Size limits.

Note: Harvest reductions were not approved by the Board and were not included in Addendum II (2008).

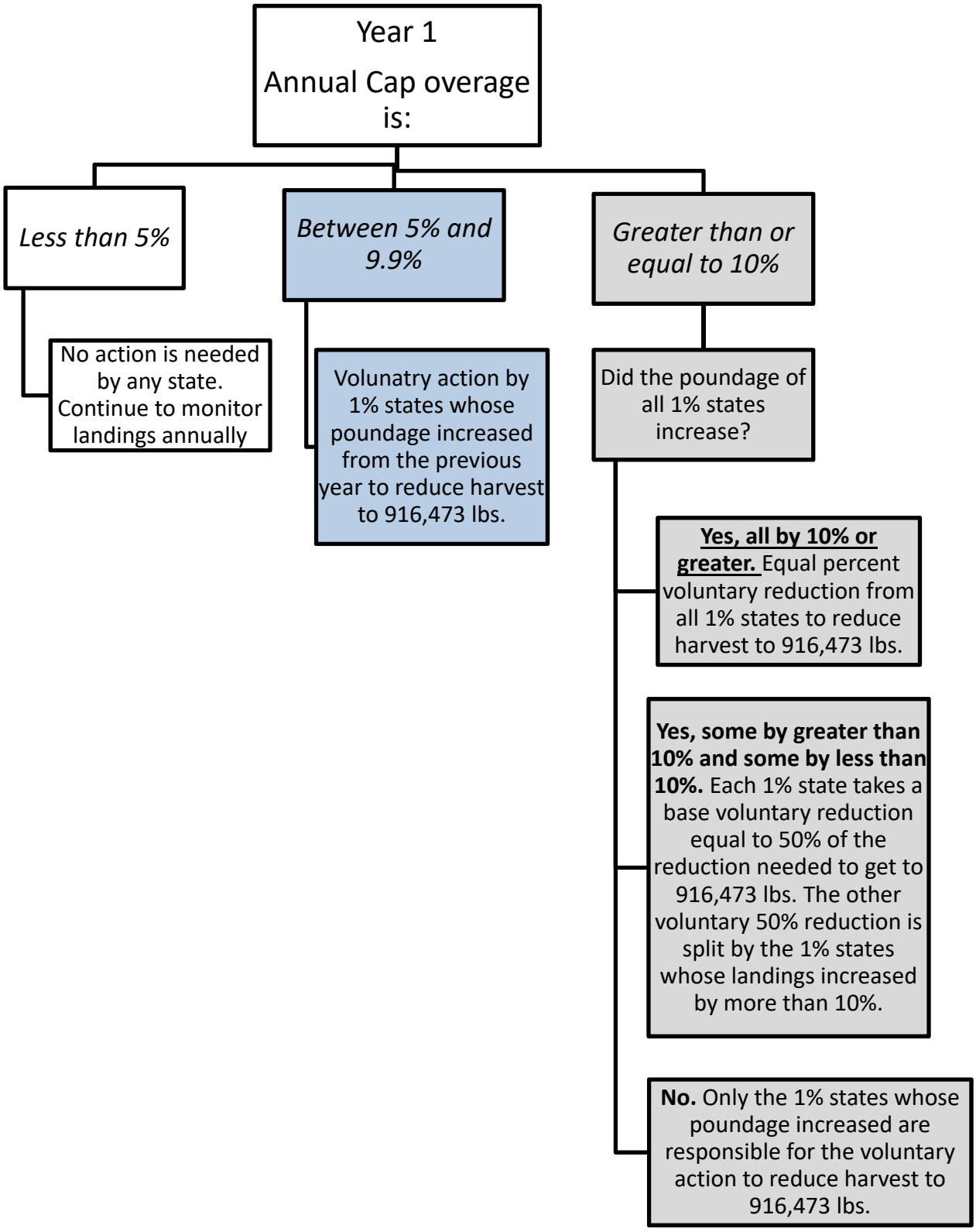
Seasonal restrictions are the simplest method of reducing harvest, but there was strong opposition to the seasonal restrictions from the Advisory Panel when proposed for Draft Addendum II. However, those seasonal closures were designed to increase escapement of silver eels and occurred in the fall during times of maximal fishing effort, so it is conceivable that a seasonal closure could be designed that would reduce harvest without imposing a severe hardship on the fishery. The Board considered a maximum size limit as a method to allow more escapement of silver eels and increase the eggs-per-recruit (EPR). A range of size limits were presented in the Draft Addendum ranging from a 19" maximum size limit, which was estimated to increase EPR by 138%, but at a reduction of 40% to the harvest, to a 23" maximum size, which only increased EPR by 3.8% and reduced harvest by less than 10%. A larger minimum size also will reduce harvest if harvest reduction is the sole goal. Size limits could either be enforced by gear modifications or by grading the eels on the water. Gear modifications can impose a large financial burden on harvesters, depending on the number of pots fished and length limit. If a minimum length is used, eel pots can be modified by installing an escape panel of a mesh size that would only retain eels above the minimum length, while if a maximum eel length is used, the funnel(s) on the eel pots can be modified by restricting the circumference. A grader can also be used to comply with length limits at a lower cost to the harvesters than gear modification. Grader bars can be set to pass all eels below a minimum length or to hold all eels above a maximum length. Although the Advisory Panel favored grading for complying with a maximum length limit during the Draft Addendum II deliberations, the Law Enforcement Committee thought on-water enforcement of the length limit by grading would be difficult.

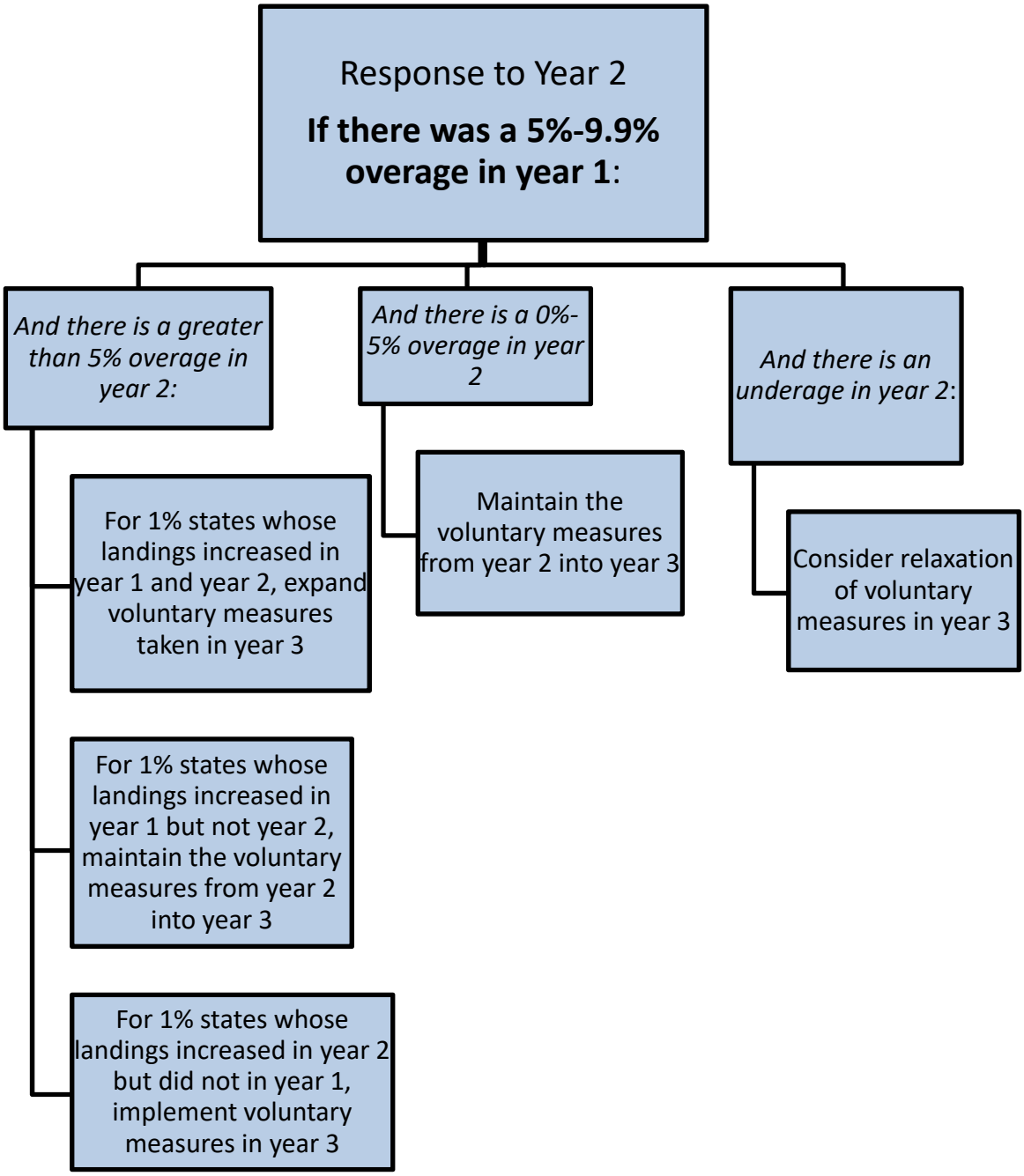
Response Strategy if the Two-Year Management Trigger is Tripped

If a review of landings at the Commission's spring meeting indicate the Two-Year Management Trigger has been met, the Board will initiate an addendum to reduce landings to or below the cap. A Plan Development Team (PDT) will be convened to draft an addendum (Table 1). The PDT will consider a variety of actions to reduce harvest back to the Cap including but not limited to: 1) an equal percent reduction taken only from the 1% states whose harvest increased in the overage year(s); 2) an equal percent reduction taken from all 1% states regardless of whether their harvest increased or decreased; 3) each 1% state takes a base reduction that is less than the total reduction needed, and the remainder of the reduction is taken only by those 1% states who had substantially increased harvest leading up to the overage year. The PDT should consider the impacts of calculating a reduction in harvest from a single overage year, the 2 years over which the trigger was reached or from a baseline within the last 5 years using a maximum of 3 years that ensures equitable reductions.

Once action is taken to reduce harvest to the Cap (either voluntary after the first year of an overage or required after the management trigger is tripped), actions will remain in place until the coastwide harvest returns to a level that is at or below the Cap. At this point, states may propose adjustments to the Board recognizing the process will begin again if another year's overage occurs or a management action is enacted.

Figure 1. Decision Tree for Management Response to Coastwide Cap Overage




Response to Year 2
If there was a 5%-9.9% overage in year 1:
And there is a greater than 5% overage in year 2:
And there is a 0%-5% overage in year 2
And there is an underage in year 2:
For 1% states whose landings increased in year 1 and year 2, expand voluntary measures taken in year 3
Maintain the voluntary measures from year 2 into year 3
Consider relaxation of voluntary measures in year 3
For 1% states whose landings increased in year 1 but not year 2, maintain the voluntary measures from year 2 into year 3
For 1% states whose landings increased in year 2 but did not in year 1, implement voluntary measures in year 3

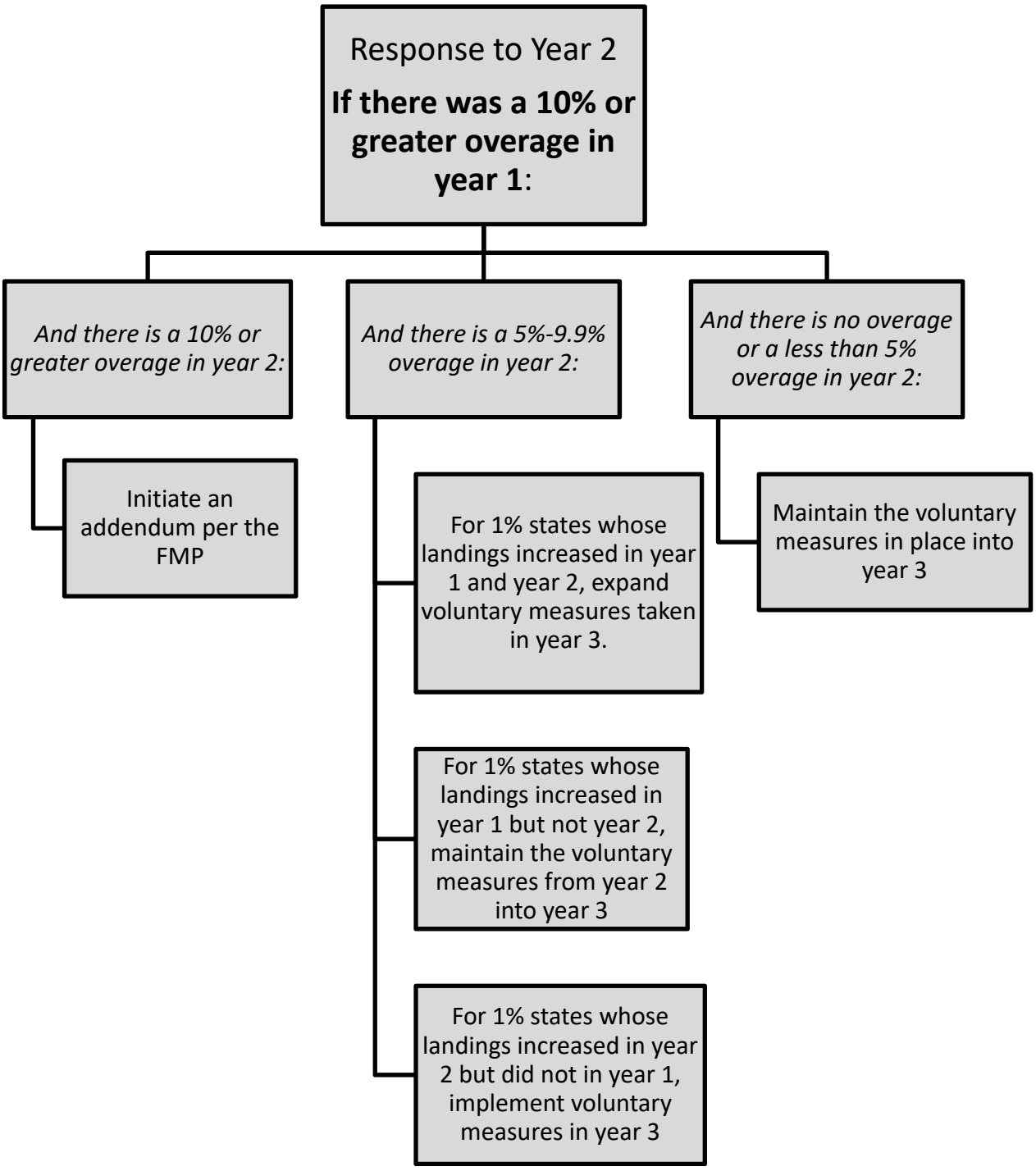

Response to Year 2
If there was a 10% or greater overage in year 1:
And there is a 10% or greater overage in year 2:
Initiate an addendum per the FMP
And there is a 5%-9.9% overage in year 2:
For 1% states whose landings increased in year 1 and year 2, expand voluntary measures taken in year 3.
For 1% states whose landings increased in year 1 but not year 2, maintain the voluntary measures from year 2 into year 3
For 1% states whose landings increased in year 2 but did not in year 1, implement voluntary measures in year 3
And there is no overage or a less than 5% overage in year 2:
Maintain the voluntary measures in place into year 3

Table 1. Example Timeline if Two Year Management Trigger is tripped based on Decision Trees

Date	Action
Spring 2020	Board review 2019 landings. It is determined an overage => 10% of the Cap occurred. Board convenes workgroup.
Summer 2020	Workgroup reviews the overage relative to decision trees and develops report with recommended action for Board consideration.
August 2020	Board considers Workgroup report and recommends states take voluntary action as soon as possible. Voluntary measures are implemented as soon as possible for 2020 fishing year.
Spring 2021	Board reviews 2020 landings. It is determined an overage =>10% of the Cap occurred. **Management trigger tripped**. Board initiates Addendum.
Summer 2021	Staff and PDT develop Draft Addendum.
August 2021	Board approves Draft Addendum for Public Comment.
Fall 2021	Public comment period for Draft Addendum.
October 2021	Board finalizes and approves Draft Addendum.
January 2022	Addendum implemented.

COLUMN
PERSPECTIVE

Trends in Abundance and Fishing Mortality of American Eels

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American Eel. Photo credit: EricksonSmith/Flickr

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A range of findings on the status of American Eels *Anguilla rostrata* has been published. The most extreme report occurred in 2014, when the International Union for the Conservation of Nature placed the species on its Red List, meaning that the Union considered it endangered. The trend in abundance of American Eels is consequently of concern for conservation biology and fishery management. Here, I present a new index of American Eel relative abundance in the estuarine waters along the U.S. Atlantic coast from 1981 through 2014, consisting of the total American Eel catch per trip by recreational anglers. Abundance was highest in 1981 and then declined through 1995 to about one-sixth of the 1981 value. By 2003, abundance began an irregular increase; by 2014, it was approximately one-half of the 1981 value. Combining commercial landings with the index of relative abundance produces the trend in fishing mortality, which has been relatively low during both the period of declining abundance and the period of increasing abundance, although it increased temporarily during the period of lower abundance from 1995 through 2002. I include a discussion of the Atlantic States Marine Fisheries Commission's 2012 stock assessment and explore some general issues in stock assessment of American Eels.

The American Eel *Anguilla rostrata* begins life in the Sargasso Sea, where spawning occurs from February to April (Shepard 2015). Eggs hatch into the larval stage, the leaf-shaped leptocephali. Many of these larvae drift northward with the Gulf Stream, although some drift into the Caribbean and Gulf of Mexico and some reach the northern shore of South America. According to some authors, the northward-drifting larvae leave the Gulf Stream and swim across the continental shelf toward coastal estuaries, although other writers contend that directed swimming does not occur until metamorphosis into the glass eel stage, which occurs from October through March (Shepard 2015). Glass eels arrive at the mouths of streams in estuaries during winter through spring, at roughly 1 year of age, and transform into pigmented elvers within a few days of arrival in brackish water or freshwater (Shepard 2015). Many elvers migrate up rivers and streams beyond tidewater, whereas others remain in estuaries. As elvers grow, they are referred to as yellow eels, although a clear demarcation between the two stages seems lacking. After growing for 3–30 years, yellow eels metamorphose into sexually mature silver eels, which migrate downstream and out into the Atlantic to the Sargasso Sea to spawn and die. American Eels are targeted by a commercial fishery in most of the states along the U.S. Atlantic coast as well as in Atlantic Canada.

In 2014, the International Union for the Conservation of Nature (IUCN) placed the American Eel on its Red List of endangered species (Jacoby et al. 2014; https://www.iucnredlist.org/details/full/191108/0). The report by the IUCN is one of a series of reports in Canada and the USA since 2006 with various findings on the status of the American Eel. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2006) stated that American Eels were of "special concern." The following year, the U.S. Fish and Wildlife Service (USFWS 2007) reported that American Eels were neither "…threatened nor endangered…" in the USA.

Photo of a large American Eel collected from Manatawny Creek, Pennsylvania, and held by Kevin O'Donnell (left) and Paul Overbeck (right) during a survey of eel populations in streams of the Delaware River watershed, July 2001 (see Horwitz et al. 2010). Photo courtesy of Rich Horwitz, Academy of Natural Sciences of Philadelphia.

In 2012, the Atlantic States Marine Fisheries Commission (ASMFC), which manages the fishery for American Eels on the U.S. Atlantic coast, conducted a stock assessment, which reported that the status of eels was "depleted," although the ASMFC failed to define that term in any way (ASMFC 2012). Model results in the ASMFC (2012) assessment, however, which showed relatively low biomass by the terminal year (2010) indicated that lower abundance had occurred three times previously in the 20th century. Additionally, in 2010, a second COSEWIC report found the species to be "threatened" (COSEWIC 2012). Cairns et al. (2014) reported a decline in abundance over two generations (32 years) in Canada but also found that "Trends over one generation (16 years) show an improvement relative to trends over two generations." Despite this, Cairns et al. (2014) reported that over this last generation (16 years), "…standing stock indices have declined for three of the four geographic areas." Cairns et al. (2014) did not attempt to develop a composite index for Canadian waters. In the next year, the USFWS issued a second finding that the American Eel was neither threatened nor endangered in the USA (Shepard 2015).

Aside from technical reports, several peer-reviewed papers have commented on the status of American Eels since the end of the 20th century. In an earlier paper, Haro et al. (2000) presented evidence for a decline in American Eel abundance in North America previous to that year. Secor (2015) wrote that the "American Eel… has been in freefall for the last two decades, with continental phase juveniles declining threefold or more…," citing the ASMFC (2012) assessment. Jessop and Lee (2016) reviewed some of the above literature and other information, including population genetics research. They did not state a general status of American Eels, although they noted that, "The threat status designations proposed or applied throughout its range suggest general concern for the species."

In the assessment information for the IUCN's classification of the American Eel as endangered, Jacoby et al. (2014) did not present new data or analysis. Instead, they discussed available data and assessments, especially the ASMFC (2012) stock assessment and the COSEWIC (2006, 2012) reports. The latter two reports gave great weight to the well-documented and severe decline of the American Eel stock in Lake Ontario and the upper St. Lawrence River area. The IUCN report (Jacoby

et al. 2014), however, stated that abundance is now increasing in Lake Ontario. Jacoby et al. (2014) did state, "…it was not felt that the species was at an immediate risk of extinction" but that it was "outside safe biological limits"; despite this qualification, the IUCN chose to list the species as endangered.

To evaluate the claim of the IUCN that American Eels are endangered with extinction, we can consider that if a species is endangered, its abundance must be extremely low or, at a minimum, its abundance must be trending downward to a very significant extent. For a species subjected to a commercial fishery to be in danger of extinction, it would first have to become so uncommon as to be commercially extinct—that is, a directed fishery would become financially unfeasible. Commercial landings of American Eels are from a highly directed pot fishery in estuaries. If this species was endangered, its abundance would decline to the point that the income from landings could not cover the expenses of boat, gear, fuel, and bait. If commercial extinction was at play, American Eel landings would decline steeply and eventually would disappear.

The IUCN's claim that American Eels are endangered can be seen as a hypothesis to be evaluated in light of current data. The objective of this paper is to conduct such an evaluation. To do so, I introduce a previously unutilized source of data on trends in American Eel abundance in estuarine waters of the U.S. Atlantic coast: the estimates of catch in numbers produced by the Marine Recreational Information Program (MRIP), a large-scale, ongoing coastwide survey of recreational catch and fishing effort, conducted from 1981 to the present by the National Marine Fisheries Service (NMFS). I develop an index of relative abundance using the annual mean total catch of eels per trip, including eels released by anglers (discards), for the period 1981–2014. I then combine commercial landings from that period with the index of relative abundance to estimate the trend in commercial fishing mortality in the form of relative fishing mortality (relative *F*). I also discuss some of the results produced in the ASMFC (2012) stock assessment, which was cited as a major source of data for the IUCN's decision to list American Eels as endangered with extinction. My conclusion is that the available data do not support the claim that American Eels are endangered.

METHODS

To estimate the trend in American Eel abundance through 2014, I developed a catch per unit effort index of relative abundance (Quinn and Deriso 1999:15) from estimates of recreational catch and effort for the entire U.S. Atlantic coast, which were provided by the NMFS MRIP. The data were downloaded in June 2015 from the MRIP website (NMFS, Fisheries Statistics Division; https://www.st.nmfs.noaa.gov/SASStoredProcess/do?). Similar indices developed from this data set are employed as primary tuning indices in the ASMFC's stock assessments of species with recreational catch, such as Striped Bass *Morone saxatilis*, Bluefish *Pomatomus saltatrix*, and Weakfish *Cynoscion regalis*.

The MRIP has two components. One component is a survey of anglers to estimate fishing effort in terms of recreational fishing trips. This survey has operated via a telephone survey employing random-digit dialing in the coastal counties, with add-ins to account for anglers from non-coastal counties. The second component, known as the Access Point Angler Intercept Survey (APAIS), is a survey of catch by anglers who are interviewed in person either while fishing at shore access points or as they return from shore or boat fishing trips. The average catch over all anglers interviewed is the mean catch per trip, or catch rate. To estimate the total catch of a species, MRIP multiplies the estimated catch per trip by the estimated total number of trips. However, the explicit results of the APAIS are not available to users of the MRIP website. These catch rates can be calculated, however, by dividing the estimated total catch by the estimated total number of trips (R. Andrews, NMFS, personal communication). That is what I have done here.

In 2015, MRIP initiated changes to the APAIS, including adding some interviews conducted after dark. Since American Eels are nocturnal, this change could possibly have increased the likelihood of anglers catching eels; whether this increase in catchability occurred will require further analysis, so no index values after 2014 were included in this article.

The steps to obtain the data from the MRIP website include (1) selection of a catch query at the website; (2) selection of the years needed; (3) selection of the time period, which was "Annual" for the present case; and (4) selection of the geographic area, which was the "Atlantic coast" in this analysis. Note that selection of smaller areas, like individual states, will reduce the precision of estimates, although whole coastal regions, such as the Mid-Atlantic, can often produce acceptable precision. The next steps are (5) selection of the species (for American Eel, the "Other Species" button must be used); and (6) selection of the "Type of Fishing" (for this situation, "all modes combined" is required).

For the next step (step 7), "Fishing Area" must be selected. American Eels are known to live primarily in estuarine or freshwater areas as juveniles or yellow eels. The MRIP divides data among three fishing areas: Inland; State Territorial Sea (which does not include inland areas) from 0.00 to 4.83 km (0 to 3 mi) from shore; and the Federal Exclusive Economic Zone from 4.83 to 321.87 km (3 to 200 mi) from shore. The MRIP defines the "Inland" area as "inshore saltwater and brackish water bodies such as bays, estuaries, sounds, etc. It does not include inland freshwater areas." Investigation of the MRIP catch data showed that although the distribution of reported American Eel catch among these fishing areas has been somewhat variable, for the last 10 years, 96% of the catch on average was reported from Inland waters, so catch–effort data employed here were restricted to Inland waters.

The next selection (step 8) is the "Type of Catch." This is a critical selection with regard to American Eels, because the choices include harvested (landed) catch that was available for inspection by the interviewer (type A); landed catch that was not available for inspection by the interviewer (type B1); catch that was released alive (type B2); or total catch (including types A, B1, and B2). Examination of the catch data showed that the proportion of American Eels that had been released alive increased over time from about 40% in 1981 to 90% by 2014. To monitor trends in abundance, I used the total catch, including discards, designated by MRIP as type A + type B1 + type B2. Use of the total catch per trip is the best practice for estimation of trends in abundance. Doing so avoids the distorting effects on landed catch of changes in minimum size limits and creel limits as well as cultural changes in landings versus releases.

The last choice (step 9) in the query form is Information, meaning either numbers of fish, weight in pounds, or weight in kilograms. This is another critical choice, because of the high proportion of American Eels released alive. No weight

data can be collected for fish released alive, and for abundance (as opposed to stock biomass), numbers are required. The high discard rates result in very low recreational landings by weight, as was reported in the ASMFC (2012) assessment (see Discussion). The output chosen for this data was in numbers of fish. Estimated catch in numbers, when output by MRIP, includes the proportional SE (PSE) of the estimate, providing a measure of precision.

The next set of estimates required is the number of angler fishing trips, which are selected by the same criteria as the Catch estimates where possible. For this output, the user returns to the Query index and selects an Effort Query. Here, the years covered must be selected, followed by the Wave (the portion of the year covered), which is annual for this purpose. The next selection is the Geographical Area; here, it is the Atlantic coast. The next selection is Type of Fishing—in the present case, all modes combined. The final selection is Fishing Area (Inland in this analysis). As with the estimated catch, the estimated trips have estimated PSEs included.

The index of relative abundance presented here is the annual mean catch per trip, which is actually the average of the APAIS results for American Eels as outlined above. To recreate the catch rate estimate produced by the APAIS, I divided the estimated total catch per year by the estimate of the total number of trips for that year to obtain the catch per trip, or catch rate. I developed a 95% confidence interval around the ratio of catch per trip ($\hat{R} = Y/X$, where Y is the total catch per year and X is the total number of trips per year), by first employing the delta method (Casella and Berger 2002) to estimate the variance of $1/X$. This estimate of variance was then used to calculate the variance of the product of two random variables following Goodman (1960; M. Christman, University of Florida, personal communication; see Appendix A for the derivation).

Using commercial landings data and the index of relative abundance, I estimated the trend in commercial fishing mortality of American Eels on the U.S. Atlantic coast in Inland waters. This method is analogous to Ricker's (1975: equation 1.17) presentation of Baranov's catch equation, solved for F:

$$C = F \times \bar{N},$$

where C is the catch (landings or total amount of fish killed by a fishery), F is instantaneous fishing mortality, and $\bar{N}$ is the average population size over the period of time under consideration (1 year in this case). The equation can be rewritten to define fishing mortality (rate of fishing) as:

$$F = C/\bar{N}.$$

The relative analogue of absolute fishing mortality, relative F, is defined as:

$$\text{Relative } F = (\text{annual landings})/(\text{mean annual index of relative abundance}).$$

The units of absolute fishing mortality can be interpreted as landings (catch) per unit of mean abundance per year, or the proportion of the stock landed per year. This makes intuitive sense. Similarly, the units of relative F are landings (catch) per unit of relative abundance, which is the ratio of catch per unit of relative abundance. In the present case, these units are kilograms (pounds) of American Eels landed per mean catch per trip; however, the value of relative F, similar to that of relative abundance, is in its trend.

RESULTS

The estimated annual total catch in numbers of American Eels reported by MRIP in inland waters of the Atlantic coast during the early 1980s ranged roughly between 175,000 and 200,000 and then declined irregularly until 1993, when the estimates were below 50,000 (Figure 1). Catch remained relatively low through 2002. The 2003 estimate then climbed above 100,000. The estimate then increased with fluctuations through 2014 to roughly 150,000. Precision of the catch estimates was acceptable, with PSEs averaging 26%, but in 2010 and 2014, the PSEs were slightly over 50%.

The MRIP estimated the total number of recreational fishing trips in inland waters of the Atlantic coast at about 15 million in 1981. Annual estimates then increased steadily until they had doubled to 30 million by 2008, when the Great Recession began (Figure 2). Estimated trips then declined to 23 million by 2014. The average PSE was only 2.6%.

The catch per trip (Figure 3) serves as an index of relative abundance for 1981–2014, showing that abundance during this period peaked in 1981–1982 at a value of 0.0120, meaning that about 12 eels were caught, primarily as bycatch, for every 1,000 angler trips. Abundance then declined irregularly until the mid-1990s, when it reached its nadir of an average of 0.0017 during 1995–2002. During this period, 17 eels were caught for every 10,000 trips, about one-seventh as many as in 1981–1982. After about 7 years at this lower abundance, the index began an irregular climb in 2003 until reaching an average of 0.0060 for 2010–2014, meaning that about six eels were caught for every 1,000 angler trips. This was a return to one-half of the catch per trip from 1981–1982. The precision of this index improves at lower values; it averages 26% as a proportional SE.

The U.S. commercial landings of American Eels have been relatively stable since the mid-1990s (Figure 4) and have been dominated by landings in the mid-Atlantic region, consisting of states from New York through Virginia. In 2013, for example, 85% of American Eel landings on the Atlantic coast occurred in this region. Given the stable commercial landings, there has been no visible movement toward commercial extinction.

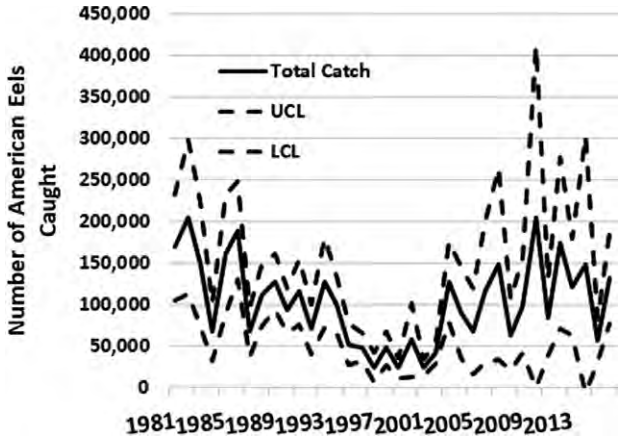

Figure 1. Estimated total recreational catch of American Eels (UCL and LCL = upper and lower 95% confidence limits), including discards, during 1981–2014 in estuarine waters of the U.S. Atlantic coast (source: Marine Recreational Information Program, National Marine Fisheries Service).

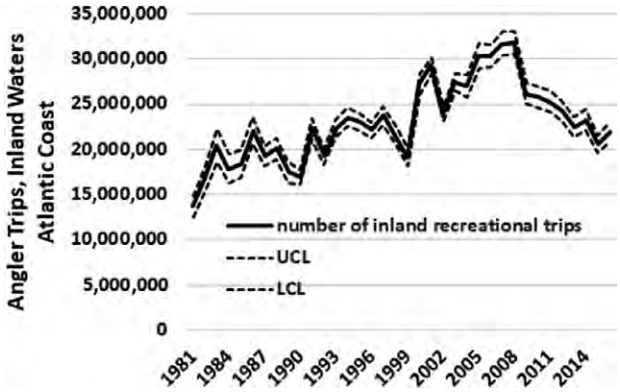

Figure 2. Estimated recreational fishing effort (number of recreational fishing trips; UCL and LCL = upper and lower 95% confidence limits) in estuarine waters of the U.S. Atlantic coast during 1981–2014 (source: Marine Recreational Information Program, National Marine Fisheries Service).

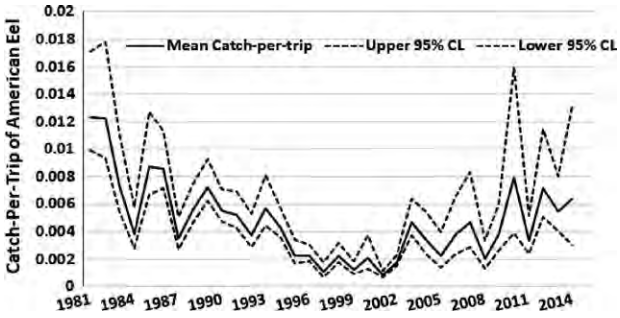

Figure 3. Estimated total catch of American Eels per trip (CL = 95% confidence limit), including discards, in the recreational fishery during 1981–2014 in estuarine waters of the U.S. Atlantic coast (source: Marine Recreational Information Program, National Marine Fisheries Service).

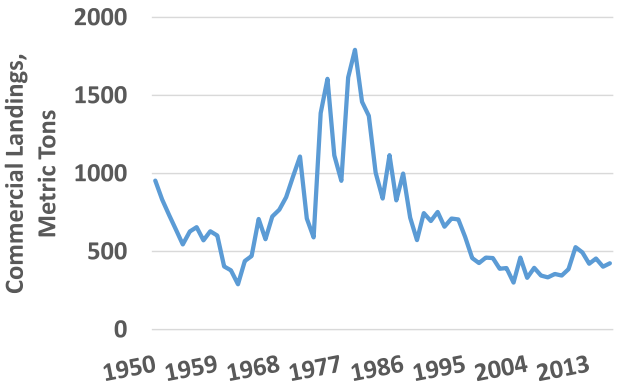

Figure 4. Total commercial landings of American Eels (lbs) along the U.S. Atlantic coast, 1950–2016 (source: National Marine Fisheries Service).

Commercial fishing mortality was at a relatively low level beginning in 1981 (Figure 5) and remained so until the nadir of abundance began in 1995. At that point, fishing mortality increased to a higher level, roughly double that of the earlier period. After 2002, when abundance began to rise, fishing mortality returned to the original, lower level.

If fishing mortality was the cause of the decline in abundance from 1981 through 1994, then relative *F* would probably

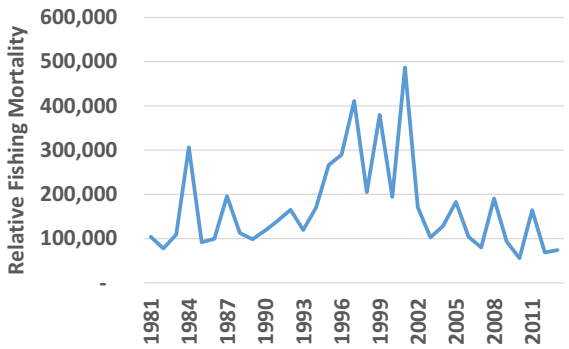

Figure 5. Relative commercial fishing mortality of American Eels (lbs landed per mean catch per trip) on the U.S. Atlantic coast during 1981–2014.

have been higher during that period of decline than it was during the later period of increasing abundance from 2003 through 2014. I tested this hypothesis of unequal fishing mortality between the period of decline and the period of increase with a *t*-test, and the hypothesis was rejected ($t = 1.26$, df = 24, not significant). Consequently, there is no evidence that estimates of relative *F* were higher during the period of declining abundance from 1981 to 1994 than they were during the later period of increasing abundance from 2003 to 2014. This result does not support a hypothesis that increased fishing mortality was responsible for the initial decline during the 1980s and early 1990s.

Note that this analysis cannot determine the absolute value of fishing mortality; it could have increased from 0.1 to 0.2, from 0.2 to 0.4, or any of a host of possibilities. The fact that the increase in the index of abundance occurred immediately after the higher level of fishing mortality, however, indicates that fishing was not so intense, even at the higher level, that it eliminated the ability of the stock to rebuild. The other major factor suggesting that the absolute level of fishing mortality was low is the fact that the entire freshwater component of the stock was out of reach of the fishery.

DISCUSSION

At a fishery meeting in Delaware in 2015, Craig Pugh, a waterman who is the mayor of Leipsic, Delaware, and the proxy for Delaware's Legislative Representative to the ASMFC, which manages the American Eel fishery on the Atlantic coast, said that if biologists "…tell us eels are going extinct, we say you're crazy, because we have them falling out of our crab pots." American Eels enter pots fished for blue crabs *Callinectes sapidus* and consume the bait, usually Atlantic Menhaden *Brevoortia tyrannus*. Some biologists might dismiss such a comment as anecdotal evidence; however, I tend to give substantial weight to the observations of watermen who spend many days on the water and have scores to hundreds of interactions with fish and crustaceans each year. This incident piqued my interest in the status of American Eels.

If the American Eel were endangered, as the IUCN claimed in 2014 (Jacoby et al. 2014), its abundance would have declined recently or would have been very low for the recent period. In fact, the index of relative abundance presented here for the U.S. Atlantic coast, based on recreational fishing data, indicates that abundance has increased over the period 2002–2014. The index declined dramatically from 1981 through 1995 to about one-seventh of its original level but

then increased beginning in 2003, and by 2014, it was roughly half the level observed in 1981. Second, to obtain some handle on the absolute abundance of American Eels, we can see that roughly 453,592 kg (1 million lbs) have been landed annually for the last 15 years in a very stable fishery. The examination of relative *F* presented here does not support the idea that this level of fishing is detrimental to the status of eels, since abundance has increased since 2002 with this level of yield.

A valuable aspect of the index of relative abundance based on recreational data presented here is that it is integrated over the entire U.S. Atlantic coast through the statistical survey methodology implemented by MRIP. The catch and effort data are obtained with consistent methodology over the entire U.S. coast. The resulting coastwide index is appropriate for a stock that is distributed over an even greater expanse than the U.S. Atlantic coast—from Greenland into northern South America. Since American Eels are not usually targeted by recreational fishermen, as shown by the high release rate, and since they are largely nocturnal, their catchability by the survey is relatively low.

The claim that a species subject to a fishery is endangered, such as the claim made by the IUCN about American Eels (Jacoby et al. 2014), if incorrect, can have negative impacts on fisheries. Potential consumers of American Eels may avoid them, which would reduce the market for the fishery, and managers may be pressured into excessively conservative and precautionary policies, resulting in underfishing of the eel resource and reductions in income and employment opportunities for coastal communities. Responsible utilization of this resource is the best management goal for human society, as opposed to extreme conservation and underfishing.

The IUCN report (Jacoby et al. 2014) cited the stock assessment (ASMFC 2012) as a major source of information on the status of the American Eel. The primary model employed in the ASMFC assessment, a depletion-based stock reduction analysis, was judged by the peer reviewers to be unacceptable for judging stock status in that "…the overfishing and overfished status in relation to the biomass and fishing mortality points cannot be stated with confidence" (ASMFC 2012); therefore, post-review, the assessment was enjoined from drawing conclusions on those parameters.

Although the estimated status of the American Eel stock from the ASMFC (2012) model in terms of the level of fishing was judged to be unreliable, the model also estimated trends in stock biomass going back to the 19th century, and the review panel accepted those results. The results indicated that compared to the estimated abundance level in 2010, American Eels had been at lower stock biomass levels three times in the 20th century and had recently rebounded to a relatively small extent. However, despite that finding of some rebound, the peer review report stated that "The Panel review concluded the American Eel population is *depleted* in U.S. waters. The stock is at or near historically low levels."

This model output, like the output of all mathematical models, is produced by making various assumptions and choices. Consequently, this model result should be (1) viewed with caution, (2) considered to be a hypothesis, and (3) tested against actual data. When compared to the data considered here, the model result of a relatively low level of recovery for American Eels by 2010 does match up well to the index of relative abundance for 2010 (Figure 3), which had increased to that of some years in the late 1980s and early 1990s. In the ensuing years since 2010, however (i.e., 2011–2014), the index increased noticeably.

Besides the population model, the ASMFC (2012) assessment included a large amount of data that were geographically dispersed, including numerous indices developed from surveys in the waters of individual states, which were challenging to integrate. The assessment combined these individual indices into three integrated indices by using generalized linear models. The assessment, however, presented none of the fit statistics for any of the various models carried out, making it difficult for reviewers or readers to evaluate the fit of the trend analyses presented. One integrated index included data sources going back 40 years, a second included data sources going back 30 years, and the last included data sources going back 20 years. The 40-year index showed no trend; the 30-year index showed a declining trend during the 1980s and then was flat; and the 20-year index showed a gradual increase. Consequently, these various indices contradicted each other, showing no consistent trend in relative abundance. The trend in the recreational index presented here contrasts with each of the three integrated indices presented in the ASMFC (2012) assessment. The present index declined steeply for 14 years beginning in 1981, remained at a nadir for about 7 years, and then gradually increased to an intermediate level beginning in 2003. The initial decline is consistent with the report of a decline by Haro et al. (2000) previous to that year.

The recreational catch data in the MRIP survey are reported in both weight and numbers. The ASMFC (2012) assessment did not present any data on the recreational catch in numbers, but reported (in Section 4.3, Recreational Fisheries) that the recreational catch of American Eels in weight had declined greatly in both the South Atlantic and North Atlantic regions from the 1980s to the 2000s based on MRIP data. The MRIP estimate of catch in weight is based on American Eels actually landed by recreational anglers, as estimated by the APAIS. To obtain an estimate of catch in weight, personnel conducting the APAIS must have access to landed eels to either weigh directly or to measure so that the length measurements can be converted to weight. Such data have been difficult to obtain in recent years, since only a small proportion of eels caught have been landed (only 10% by 2014). This seems to be due to a cultural shift among recreational anglers against retaining, and, presumably, eating eels.

The paucity of data also seriously reduces precision. Although this lack of precision was not reported in the ASMFC (2012) assessment, since 2003 most of the PSEs of the weight estimates have exceeded 50%, meaning that the 95% confidence intervals cannot be distinguished from zero. In sum, the MRIP estimates of American Eel weight landed by the recreational fishery appear to be increasingly unreliable through the time series.

The increase since 2002 in total numbers of American Eels caught (Figure 1) is opposite the declining trend in landed weight reported in the ASMFC (2012) assessment. Since the assessment reported recreational landings in weight only and did not include total catch in numbers, the assessment may have proceeded under the influence of the wrong signal from the recreational fishery—one of stock decline as opposed to a signal of increasing catch in recent years.

The ASMFC (2012) stock assessment makes a questionable claim in its Introduction, stating that "The seeds of the current depletion lay in part in a fishing up/fishing down episode that occurred on American Eels in the 1970s into the

1980s as export demand rose" (ASMFC 2012:4). The statement assumes, without providing a basis, that eel abundance trends are controlled by fishing. Long-term trends in fish abundance are partly or largely the result of recruitment trends. Research discussed below reports that oceanic phenomena influence patterns in European Eel *A. anguilla* recruitment. The above statement by the ASMFC implies that fishing "into the 1980s," in part, caused the stock to be "depleted" all the way into 2010. How would this occur? Since new recruits continually appear on the Atlantic coast, and since they would have replaced almost all eels landed during the 1980s, the statement seems to imply that fishing reduced the spawning stock, which then reduced the recruitment (i.e., that recruitment overfishing occurred). However, there is no evidence that this happened. On the basis of genetic evidence, Cote et al. (2013) proposed that the annual spawning stock of American Eels could comprise 50–100 million fish. If this estimate is correct, the relatively low level of landings—even at the fishery peak decades ago—would have an effect on the spawning stock that would be difficult to detect.

The cause of the extended decline in abundance during the 1980s and 1990s and of the increasing trend since 2002 indicated by the index presented here is unknown. Cote et al. (2013) reported that genetically based surrogates for abundance were shown to be "…positively influenced by variation during high (positive) NAO [North Atlantic Oscillation] phase." Research on trends in European Eel abundance has produced evidence that oceanographic phenomena in the Sargasso Sea are correlated with trends in a large-scale index of recruitment (Knights 2002; Friedland et al. 2007). No wide-scale index of recruitment has been presented for American Eels, but such a mechanism could be at work with this species as well.

Most sampling studies have found the large majority of American Eels in both freshwater and saline sites to be female, although the sex ratio is highly variable among sites, according to Cairns et al. (2014), who estimated the average proportion of males at 19%. However, Shepard (2015) stated that in "… productive habitats, particularly estuaries with high densities of eels, most mature as males while those in headwaters and northern latitudes grow more slowly and mature as large, fecund females." He also stated that "Eels that move upstream tend to be female… Yellow eels in upstream reaches of rivers and inland lakes tend to be larger, older females—males are extremely rare in these habitats," citing Helfman et al. (1987) and Oliveira (1999) . Consequently, a significant but unknown proportion of female spawning stock biomass resides in freshwater.

This spawning biomass maturing from freshwater seems to have been missed by the assessment (ASMFC 2012), which was restricted to data from tidal waters. The U.S. commercial fishery is conducted in tidal water, except for some weirs fished in the fall of the year for down-running silver eels in New York and Maine. Even in tidal water, commercial fisheries for American Eels may be prosecuted in only a small proportion of eel habitat.

The freshwater component of the stock, described as mostly female, is almost completely protected from the commercial fishery. When migrating downstream toward the Sargasso Sea to spawn, silver eels tend to reduce and eventually stop feeding and are less susceptible to commercial eel pots once they enter tidal water. These females—many of them large—that are migrating out of freshwater are consequently underrepresented in fishery samples and thus in the ASMFC (2012) stock assessment to the extent that it is based on samples of fishery landings.

Research findings on American Eel abundance in nontidal freshwater indicate that eel biomass can be high. Horwitz et al. (2010), sampling streams in the Delaware River watershed, found noticeable variability among dams in the amount of blockage they provided to eel passage. In stream reaches with little blockage, however, median eel biomass comprised 33% of total fish biomass (R. Horwitz, Academy of Natural Sciences of Philadelphia, personal communication). Machut et al. (2007), surveying tributaries of the Hudson River, reported that "eels were the most numerous fish within the Hudson River tributaries," ranging up to 155 eels/100 m^2. Machut et al. (2007) found that dams reduced upstream density, however, by "at least a factor of 10." Hitt et al. (2012) reported that after removal of a large dam on the Rappahannock River, Virginia, density of American Eels in headwater tributaries up to 150 km distant increased annually for the next 6 years. These reports suggest that removal of dams or installation of effective fishways would be positive management measures to benefit American Eels by increasing the carrying capacity of their environment.

Sinclair (1998) introduced relative F using the mean catch per tow from a research survey cruise conducted over a few weeks as an index of relative abundance, rather than using an average over a year as was done here. Strictly speaking, since such a survey does not provide an index of the mean relative abundance for a year but only for one point in time during a year, Sinclair (1998) actually estimated relative exploitation, the relative equivalent of the proportion of a stock present at the beginning of a year that is caught in the ensuing year (see Ricker 1975: equation 1.11 for the relationship between exploitation [u] and F).

A major advantage of relative F as used here is that accurate estimation of the trend in fishing mortality does not require estimation of natural mortality, which can rarely be accurately estimated. In contrast, accurate estimation of absolute fishing mortality from catch-at-age modeling is usually dependent on accurate estimation of natural mortality, and these estimates of absolute F are biased to the same degree that estimates of natural mortality are biased whenever absolute F is estimated as:

$$F = Z - M,$$

Photo of an American Eel. Photo courtesy of Jim Uphoff, Maryland Department of Natural Resources.

where Z is total instantaneous mortality; and M is total instantaneous natural mortality. This method is often used in catch-at-age modeling.

Estimation of natural mortality seems particularly problematic for anguillid eels due to their semelparous life history. For this life history, successful spawning produces death, and the age of spawning varies by latitude and between freshwater and brackish-water habitat (Shepard 2015). Since estimation of M often relies on estimation of average maximum life span, T_{MAX} (Hewitt and Hoenig 2005; Then et al. 2015), the fact that successful semelparous spawners die as a result of their success presents a difficulty. The idea behind use of the life span to estimate the average mortality is that to attain a given life span, a certain mortality rate is required, on average (i.e., a lower mortality rate is required, on average, to attain a longer life span). For a semelparous species, however, life expectancy is governed by the spawning mortality rather than the accumulated mortality over the life span of the animals (J. Hoenig, Virginia Institute of Marine Science, personal communication). In the case of eels, if they adhered to iteroparous spawning, they could potentially live to older ages. If so, their natural mortality rate would be estimated to be relatively low by the T_{MAX} method.

ACKNOWLEDGMENTS

An early version of this paper was posted on the University of Washington's Seafood 101 site, for which I want to thank Ray Hilborn and Max Mossler. Jim Uphoff, Jordan Zimmerman, and John Clark provided very helpful comments on the manuscript. Kevin Friedland provided scientific support. I also appreciate the three anonymous reviewers for their help.

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APPENDIX A

Derivation of the Model-Based Estimator of the Variance of the Ratio $\hat{R}$

The following derivation is from M. Christman, University of Florida (personal communication).

Step 1. Use the delta method (Casella and Berger 2002) to obtain an estimate of the variance of $1/\bar{X}$. The result is:

$$\widehat{\text{var}}\left(\frac{1}{\bar{X}}\right) = \frac{1}{(\bar{X}^2)^2}\widehat{\text{var}}(\bar{X}).$$

Step 2. Use the result from Goodman (1960) for the variance of a product of two random variables.

If the two quantities used in the ratio are independent, then the estimate of the ratio's variance is given in equation (5) of Goodman and can be written for this case as:

$$\widehat{\text{var}}(\hat{R}) = \frac{Y^2}{(\bar{X}^2)^2}\widehat{\text{var}}(X) + \frac{1}{X^2}\widehat{\text{var}}(Y) - \frac{1}{(\bar{X}^2)^2}\widehat{\text{var}}(X)\widehat{\text{var}}(Y).$$

Atlantic States Marine Fisheries Commission

Weakfish Management Board

October 29, 2019
2:30 – 4:00 p.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order *(J. Clark)* 2:30 p.m.

2. Board Consent 2:30 p.m.
   - Approval of Agenda
   - Approval of Proceedings from October 2018

3. Public Comment 2:35 p.m.

4. 2019 Stock Assessment Update (*E. Levesque*) 2:45 p.m.
   - Presentation of 2019 Assessment Update Report

5. Consider Management Response to Stock Assessment Update (*J. Clark*) 3:15 p.m.
   Possible Action

6. Consider Approval of 2019 Fishery Management Plan Review and State Compliance (*M. Schmidtke*) **Action** 3:40 p.m.

7. Elect Vice-Chair (*J. Clark*) **Action** 3:55 p.m.

8. Other Business/Adjourn 4:00 p.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

Weakfish Management Board Meeting
Tuesday, October 29, 2019
2:30 – 4:00 p.m.
New Castle, New Hampshire

Chair: John Clark (DE) Assumed Chairmanship: 8/19	Technical Committee Chair: Erin Levesque (SC)	Law Enforcement Committee Representative: Jason Walker (NC)
Vice Chair: Vacant	Advisory Panel Chair: Billy Farmer (NC)	Previous Board Meeting: October 24, 2018
Voting Members: MA, RI, CT, NY, NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (15 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 24, 2018

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. 2019 Stock Assessment Update (2:45 – 3:15 p.m.)

Background

- An update of the most recent benchmark assessment was recently completed by the Technical Committee (TC) (**Briefing Materials**).
- This update incorporated data through 2017, including the new, calibrated Marine Recreational Information Program (MRIP) estimates of recreational catch, into the Bayesian statistical catch-at-age model used in the 2016 benchmark assessment.
- Total mortality in 2017 was above both the target and threshold values, indicating that total mortality is too high. Similar to the benchmark, natural mortality remained high in the most recent years. Fishing mortality in 2017 was above its target but below its threshold value. Spawning stock biomass (SSB) has shown a slight increase in recent years, but was still well below its threshold value in 2017, indicating the stock is depleted.

Presentations

- 2019 Stock Assessment Update by E. Levesque

5. Consider Management Response to Stock Assessment Update (3:15 – 3:40 p.m.) Possible Action

6. Consider 2019 FMP Review and State Compliance Reports (3:40 – 3:55 p.m.) Action

Background • State Compliance Reports are due on September 1. The Plan Review Team (PRT) reviewed each state report and compiled the annual FMP Review. Massachusetts, Connecticut, and Florida have applied for *de minimis* (**Supplemental Materials**).
Presentations • Overview of the FMP Review by M. Schmidtke.
Board actions for consideration at this meeting • Accept 2019 FMP Review and State Compliance Reports. • Approve *de minimis* requests for MA, CT, and FL.

7. Elect Vice Chair (3:55 a.m. – 4:00 a.m.) Action

8. Other Business/Adjourn

Weakfish Board

Activity level: Low

Committee Overlap Score: Medium (Atlantic Croaker TC, Bluefish TC, Tautog TC, Winter Flounder TC)

Committee Task List
• Technical Committee – 2019: Conduct stock assessment update – **Completed** • Technical Committee – September 1: Compliance Reports Due

TC Members: Erin Levesque (SC, Chair), Sam Truesdell (MA), Christopher Parkins (RI), Paul Nunnenkamp (NY), Tim Daniels (NJ), Michael Greco (DE), Harry Rickabaugh (MD), Ellen Cosby (PRFC), Alexa Kretsch (VA), Tracey Bauer (NC), B.J. Hilton (GA), Dustin Addis (FL), Katie Drew (ASMFC), Michael Schmidtke (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

WEAKFISH MANAGEMENT BOARD

The Roosevelt Hotel
New York, New York
October 24, 2018

These minutes are draft and subject to approval by the Weakfish Management Board.
The Board will review the minutes during its next meeting.

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INDEX OF MOTIONS

ATTENDANCE

Board Members

David Pierce, MA (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Jason McNamee, RI (AA)
Justin Davis, CT, proxy for P. Aarrestad (AA)
Sen. Crain Miner, CT (LA)
Bill Hyatt, CT (GA)
Emerson Hasbrouck, NY (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Michael Falk, NY, proxy for Sen. Boyle (LA)
Heather Corbett, NJ, proxy for L. Herrighty (AA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Ed O'Brien, MD, proxy for Del. Stein (LA)
Lynn Fegley, MD, proxy for D. Blazer (AA)
Russell Dize, MD (GA)
Rob O'Reilly, VA, Chair
Steve Bowman, VA (AA)
Sen. Monty Mason, VA (LA)
Bryan Plumlee, VA (GA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Michael Blanton, NC, proxy for Rep. Steinburg (LA)
Marcel Reichert, SC, proxy for M. Rhodes (GA)
Robert Boyles, SC (LA)
Spud Woodward, GA (GA)
Doug Haymans, GA (AA)
Jim Estes, FL, proxy for J. McCawley (AA)
Rep. Thad Altman, FL (LA)
Martin Gary, PRFC
Derek Orner, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Steve Anthony, Law Enforcement Representative

Staff

Bob Beal
Toni Kerns
Katie Drew
Mike Schmidtke
Jessica Kuesel

Guests

Bill Anderson, MD FNR
Rachel Baker, NOAA
Brett Hoffmeister, Falmouth, MA
Phil Langley, PRFC
Lewis Gillingham, VMRC
Arnold Leo, East Hampton, NY
Julia Socrates, NYS DEC
Steve Train, ME (GA)
Jack Travelstead, CCA

The Weakfish Management Board of the Atlantic States Marine Fisheries Commission convened in the Terrace Ballroom of the Roosevelt Hotel, New York, New York; Wednesday, October 24, 2018, and was called to order at 10:15 o'clock a.m. by Chairman Rob O'Reilly.

CALL TO ORDER

CHAIRMAN ROB O'REILLY: A c'est á vous that's French for sit down, we're going to go. My performance is monitored closely by the ASMFC staff; and I certainly wouldn't want to get a bad report. We're going to start; and I think it's a good time before I get into the agenda. I'm going to turn to Roy Miller while you're settling down. Roy has an announcement that he would like to make; so Roy, you go ahead and start with that.

MR. ROY W. MILLER: I would just like to remind the folks at this wonderful meeting that there is an opportunity available to all of us out in the hallway to do some good for the Take-A-Kid-Fishing Program. Participation apparently thus far has been a tad on the low side; because we've had such a busy schedule.

But if you can possibly carve out a few minutes to step across the hallway into the angling area and participate in the casting program, and are willing to make your contribution to receive a nice tee shirt and support the program. I'm sure the Take-A-Kid-Fishing Program would welcome your participation; and the folks that put that together would welcome it as well, so thank you for that quick opportunity.

APPROVAL OF AGENDA

CHAIRMAN O'REILLY: Thank you, Roy. We're going to go on with the agenda; and you do have the ability to be here for a short time today. The agenda is set for 45 minutes. What I would like to do is get some consent items out of the way. You have the agenda; are there any changes or modifications to the agenda?

Seeing none; I'm going to have that by consent on approval.

APPROVAL OF PROCEEDINGS

CHAIRMAN O'REILLY: And also we have proceedings from February, 2018. Are there any comments on the proceedings from February, 2018? By consent we'll approve those.

PUBLIC COMMENT

CHAIRMAN O'REILLY: At this time we have the public comment for those individuals who have something to inform the Board of or ask of the Board; but who signed up and items that are not on the agenda.

I don't have anything here; but I will ask if there is anyone who wishes to speak to the Board at this time.

TECHNICAL COMMITTEE REPORT ON COMMERCIAL DISCARDS

CHAIRMAN O'REILLY: Not seeing any; we'll move to the Technical Committee Report on Commercial Discards. Dr. Drew and Dr. Schmidtke are here. They have been working with the Technical Committee on this report; and Mike will give a report now.

DR. MIKE SCHMIDTKE: At the last Weakfish Board meeting the Board tasked the Technical Committee with looking at discard data from the Northeast Fisheries Observer Program; as well as Vessel Trip Reports to look and see if occurrences of commercial trips approaching the 100 pound trip limit or exceeding the 100 pound trip limit have increased, and to characterize fisheries that have substantial weakfish discards, to determine if different trip limits are needed.

The Technical Committee approached this task by gathering trip level data from the states; as well as looking at federal trip reports and information from the Northeast Fisheries Observer Program. A subgroup of Weakfish TC members was formed; and those three TC members gained confidential access and worked

with Katie and myself to look at the data that was there.

Data were divided up and filtered out to look at the number and percentage of trips that were greater than or equal to 100 pounds; as well as the number and percentage of the poundage that came from those trips that were greater than or equal to 100 pounds. We also looked at some gillnet gear specific information; as well as trips greater than or equal to 90 pounds, just to cover some bases in case we were missing any trends not conveyed by our initial analyses.

Here we see the trends for percentage of trips greater than or equal to 100 pounds from the state data and the federal data. As you can see there is kind of a mix up of those trends; but nothing really stands out as strongly increasing, it is fairly flat line for most. The motivation for this task came primarily from anecdotal reports out of North Carolina and Virginia; and as you can see towards the end of those time series, 2016 shows that one year increase for Virginia that is bolded in the red.

Then North Carolina the bolded blue line also showed an increase at the end of the time series. Nothing on the long term; but there is that one year that we saw there. Similar type of trend was conveyed through the percentage of pounds that were caught on these trips greater than or equal to 100 pounds.

The same type of thing in 2016 Virginia showed that one year increase; and then there was a slight uptick for North Carolina at the end of the time series, both for the state and the federal data. Looking at the information from the Fisheries Observer Program, as far as the percentage of weakfish pounds discarded.

There was really a less clear trend there; a lot more variation looking at the time period that we were investigating. The trends that we were talking about before weren't even strongly evident in this dataset. The conclusions that the TC formed were that there was no increasing trend in discards that would be a cause for concern.

They noted single year increases for Virginia and North Carolina corroborate the anecdotal reports; but they do not suggest a longstanding increase. They would not recommend any management changes at this time. However, if these anecdotal reports continue in future years, then a similar analysis could be conducted to see if there is some type of longstanding trend that becomes apparent. With that I can take any questions.

CHAIRMAN O'REILLY: Questions for Mike. Jay.

MR. JASON McNAMEE: I saw there is logbook data; states federal VTRs. Did you guys investigate, and I'm not suggesting to repeat the analysis, but just to offer some of the electronic reporting that's going on. I wonder that might be a dataset that could be interrogated to get a little bit more refined data.

I think a lot of those; I guess they're mostly projects at this point. But I think the folks who participate in them have been fairly consistent for a few years. That might be another data source to not only get numbers and pounds, but also some information about a length structure as well.

DR. KATIE DREW: Are you referring to recreational or commercial electronic reporting?

MR. McNAMEE: There is both going on; yes just a general look at the electronic rather information that is available, just as another. There is always so much variability in the consistency in the reporting on some of the kind of standard forms, you know creates a lot of that variability. Some of these electronic reporting platforms whether they be commercial or recreational I think, would be valuable for these types of analyses.

DR. DREW: Obviously the electronic reporting on the commercial side was included in the trip level data that we looked at on the commercial side. But we could certainly in the future look into the recreational component of that as well; and as you say maybe just get some more length structure information out of that compared to what we looked at.

CHAIRMAN O'REILLY: Adam Nowalsky.

MR. ADAM NOWALSKY: I think the Board task was very specific; in terms of the scope of what we wanted looked at and analyzed and appreciate the direct response to that. Jay brought up one additional dataset. Was there any conversation, my understanding is you had four conference calls to go ahead and do this analysis.

But was there discussion about other sources you think the Board might ask you to look at that might give you more information? I heard some anecdotal information about bycatch for example in the shrimp fishery. Is that a dataset you could look at? Did you have any discussion about what other fisheries the Board could potentially task you to look at to give us more information?

DR. SCHMIDTKE: We didn't talk specifically about shrimp; the example that you brought up. I know kind of the way that the data was queried; they looked for any trips where weakfish were caught. They looked across a number of different fisheries where those would have been the target species; but weakfish happened to be caught there. I'm not sure of other data sources. We tried to shake as many trees as we could; as far as the state, the federal, the Observer Program as well. But if there are additional items to look at I'm sure that the TC could take another look at those.

CHAIRMAN O'REILLY: Other questions. Tom Fote.

MR. THOMAS P. FOTE: When we first started doing the weakfish; one of the big problems was actually the shrimp fishery, because the discards of shrimp in both South Carolina and North Carolina on croaker, spot, and immature weakfish. We really haven't talked about that in years. I haven't seen any real data.

I know on the offshore ones, on the flynet fishery and a few others we put a fish excluding devices on that basically was it. But I have no idea what we've been doing with them since the last benchmark stock assessment in 2009; and I would like to get an update on that. North Carolina could be helpful.

CHAIRMAN O'REILLY: Chris Batsavage.

MR. CHRIS BATSAVAGE: To Tom Fote's question. I forget which amendment it was; it might have been Amendment 3, closed the use of flynet trawls south of Cape Hatteras. That was one of the big conservation actions to reduce discards and high catches of weakfish along the range; particularly south of Cape Hatteras where there were heavy concentrations in the wintertime.

There is also some mesh size restrictions put in place; I think during that same amendment that were also for trawls and for gillnets, also designed to reduce discards of weakfish. Since 2009, directly for weakfish, it was the management measures put in place, which essentially made it a bycatch fishery is what we followed, as well as the other states.

Indirectly just with the shrimp trawl fishery in North Carolina, there has been work to add excluder devices, bycatch excluder devices to the trawls to just reduce overall bycatch of finfish. The Marine Fisheries Commission approved additional reduction devices to be put in place in Pamlico Sound starting next summer, I believe. Like I said, it doesn't directly address weakfish; but since shrimp trawl bycatch was brought up as an issue identified in the past, I

thought I would just add that information for the Board's benefit.

CHAIRMAN O'REILLY: Tom Fote.

MR. FOTE: You still have the rule in place that you can't bait; because it used to be the bycatch became used, and they used it for crab bait and things like that. I think when Bill Hogarth basically put a rule in many years ago that they couldn't do that. They couldn't sell it anymore, so there was no value on bringing the discard in.

CHAIRMAN O'REILLY: Chris Batsavage.

MR. BATSAVAGE: To answer that. There is I guess it's called a scrap fish or a scrap fish limit for high volume fisheries such as the flynet fishery, the long haul seine fishery that caps the amount of bait, basically that the boats can bring in. Weakfish would be part of that bait component at times.

I can't remember where it shakes out. It's not top of the list; but that's been in place for a while. I can't remember if that was put in place during Amendment 3 or not; but there's been nothing additional. I will say though; just in terms of those two fisheries, the long haul seine and the flynet fishery in North Carolina. The effort is very minimal now compared to 25 years ago.

CHAIRMAN O'REILLY: John Clark.

MR. JOHN CLARK: Mike, was there any investigation of what was being targeted by the gillnet fisheries that were investigated; and whether they were fishing in any places that were different in this?

DR. SCHMIDTKE: There wasn't anything like target species. It really probably would have been difficult to discern target species with the datasets that were looked at. We could have seen other species that were caught with weakfish in gillnets; but not necessarily if those were targeted specifically. Once we saw that there wasn't anything apparent from the gillnet specific; there wasn't anything further that went into species within gillnets.

CHAIRMAN O'REILLY: Chris Batsavage.

MR. BATSAVAGE: I had a question on the discard analysis in this paper. Clearly it didn't show any trends. I was wondering; were there any particular fisheries or gear types that showed a higher tendency of weakfish discards, and with the weakfish discards shown in the figure, it's in percentages. What was the range of pounds of weakfish discarded in these trips; was it tens of pounds, thousands of pounds or did it vary pretty widely throughout the years and states?

DR. DREW: We don't have the exact poundage right now. We could look into that. I think part of the issue is that the sample size is very low; and that is really what's driving this incredible variability is that this is from the Federal Observer Program, and as a result they're not really sampling a lot of trips that would encounter weakfish very often.

I think the high variability is really driven by the few number of samples. Even if we could give you some numbers on that I wouldn't necessarily trust them to reflect what's really happening; especially at the state level, where probably that discarding is a bigger concern than what you're going to see in the Federal Observer Program.

CHAIRMAN O'REILLY: Any additional questions. My thought is that this is really good of the Technical Committee and Katie and Mike to go forward with this analysis. I don't think it's over; I think there will be more coming our way. My understanding of the discards, the first alert I had from that was actually from North Carolina in 2016.

Then I know that Chris Batsavage also received reports as well of over the hundred pounds with discards. In Virginia the discards are a little different; whereas the North Carolina situation

was well offshore, about 30 miles offshore is what I was informed. For the croaker fishery going on in the winter, but that was not 2017 that was 2016.

In the Virginia situation it's more state waters; following the migration up the coast and back down the coast. There certainly have been reports from industry that the hundred pounds is pretty tough to adhere to; and there are discards. I think there will be more information on this. I think the opportunity to gain more information is to keep up the contacts with our industries; because they're the ones who have informed us of the situation. If we keep in touch with them it's even possible at some time to get some observer coverage; in state waters even. I think that is the future route here.

We are hoping that we do see more weakfish. That is the aim here. I think probably the early work done now is good; and we'll just wait and see where this goes from here.

CONSIDER APPROVAL OF THE 2018 FISHERY MANAGEMENT PLAN REVIEW AND STATE COMPLIANCE REPORTS

CHAIRMAN O'REILLY: We're definitely on schedule; and we're now going to consider approval of the 2018 Fishery Management Plan Review and State Compliance Reports, and Mike Schmidtke is going to present that.

DR. SCHMIDTKE: The Weakfish Plan Review Team got together on a conference call and put together the 2018 FMP Review. The first item that we wanted to address is in July of this year; MRIP recalibrated recreational harvest estimates from the Coastal Household Telephone Survey to the new mail-based Fishing Effort Survey.

Time series of harvest by numbers of fish using each effort calibration are shown here with the Telephone Survey in gray and the new Mail Survey in black. The FES calibration on average increased estimates by about double. As this species is not managed based on an annual recreational quota, the recreational estimates presented today will use the FES survey numbers.

However, it should be noted that the last assessment used Telephone Survey estimates; thus reference points from that assessment should not be compared to the Mail Survey estimates, and a new assessment is scheduled to be conducted in 2019 to update those reference points and be reflective of the new MRIP estimates.

Weakfish harvest for both the commercial and recreational sectors have shown similar trends of decrease from the 1980s through the present; 2017 total harvest of weakfish was about 600,000 pounds, with 28 percent of that coming from the commercial fishery. This was a 50 percent increase in total landings from 2016.

Coastwide weakfish commercial harvest in 2017 was 167,000 pounds, which is a 5 percent decrease from 2016, and the third lowest commercial harvest on record. About half of the commercial harvest came from North Carolina; with New York and Virginia each harvesting about 15 percent.

Coastwide weakfish recreational harvest in 2017 was 436,000 pounds; a 90 percent increase from 2016. About half of the recreational harvest by pounds came from New Jersey; with North Carolina, South Carolina, and Georgia each harvesting about 10 percent. Here we see recreational harvest by numbers in blue, and releases in red.

Since the mid-1990s when Amendment's 1 through 3 were implemented, releases have typically been about three times the number of fish harvested; although with declining harvest in some years, releases have outnumbered recreational landings up to 20 times. Recreational landings in 2017 were 276,000 fish; representing a 65 percent increase in numbers from 2016. By numbers New Jersey harvested

the largest percentage of recreational landings at about 30 percent; with North Carolina, South Carolina and Georgia each harvesting about 20 percent. About 1.5 million weakfish or 84 percent of the recreational catch were released by the recreational fishery. This was a 55 percent decrease in the number of releases, and also a decrease in the percentage of catch release from 2016. Addendum I to Amendment 4 requires the collection of otoliths and lengths to characterize the fishery.

The number of samples required is based on the magnitude of each state's fisheries; such that six fish lengths are collected for each metric ton of weakfish landed commercially, and three ages are collected for each ton of total weakfish landed. It should be noted that the age requirements that are shown on this table, they would also be reflected in Table 9 of the report.

These are based on recreational landings estimates using the coastal household telephone survey not the mail-based survey. The Plan Review Team recommends maintaining sampling requirements based on the Telephone Survey until after completion of the next assessment; also given the difficulty that several states have had in collecting even these numbers of samples.

They were predictably increased for the age samples required with the mail-based-survey estimates. All states met the biological sampling requirements in 2017; except for New York. New York collected an adequate number of ages, but 36 lengths less than their required 84. This was the second consecutive year that New York has not collected an adequate number of lengths.

There have been issues in sample collection for several states recently; due at least in some part to the declining landings. The Plan Review Team doesn't have any reason to believe that a good faith effort to fulfill the requirements was not put forth by New York, especially given the substantial number of samples that were collected. Considering this is the second consecutive year without adequate sampling, the Plan Review Team does recommend that New York consider as much as practical additional efforts towards sample collection in future years.

There was a conversation that the Board had earlier this year when it comes to age versus length sampling; that age samples could potentially be supplemented with fishery independent information, but lengths should not be. They should be fishery dependent. It was noted that the samples for Rhode Island and New Jersey came primarily from fishery independent sources.

Given the timing of the Board's discussion and the timing that this data was collected; this would have been collected before that Board discussion; so the PRT would also recommend for Rhode Island and New Jersey to also consider as much as practical, additional efforts towards fishery dependent length collection in future years.

In 2010 the recreational and commercial management measures from Addendum IV replaced those of Addendum II. However, the Plan Review Team continues to evaluate the management triggers as they provide some perspective on the magnitude of the landings. I won't touch on this further in the recommendations portion of the presentation; but in the FMP Review the PRT does maintain its recommendation that the Board update these triggers to be reflective of the most recent stock assessment.

For the first trigger, commercial management measures are to be reevaluated if coastwide commercial landings exceed 80 percent of the mean landings from 2000 through 2004; or about three million pounds. This trigger was not met. The second trigger is for commercial and recreational management measures; and they're to be reevaluated if any single state's

landings exceed its five-year mean by more than 25 percent in a single year. This occurred in 2017 for Massachusetts, New Jersey, Georgia, and Florida; for Massachusetts and Florida, both of those states are de minimis states and the PRT doesn't find the magnitude of those landings to be incredibly concerning, even though they tripped the trigger.

For New Jersey and Georgia, both of these states have shown similar sporadic increases in the past; particularly with respect to their recreational fisheries. The PRT does not recommend immediate management action for these states; but does recommend monitoring landings in these states for 2018, to see whether the observed increases are sustained.

Just as a note to provide some perspective on what 2018 landings look like. Through Wave 4, 2018 landings for New Jersey are 32,000 pounds and 11,000 pounds for Georgia. They seem to be back more towards normal levels for those states. Weakfish is currently operating under Amendment 4 with associated addenda; the most recent of which Addendum IV established the coastwide 1 fish recreational bag limit, and the 100 pound commercial trip limit.

The 2016 benchmark stock assessment determined that the stock is depleted; and experiencing a high level of natural mortality, but no experiencing overfishing. The next assessment is an update that is scheduled for 2019. The Plan Review Team found that all states were in compliance with Amendment 4, as well as the associated addenda.

De minimis can be requested in the weakfish fishery by states who have a combined average commercial and recreational landings that constitute less than 1 percent of the coastwide landings for a two year period. De minimis was requested by Massachusetts, Connecticut, and Florida.

Massachusetts and Florida meet the de minimis criteria, however Connecticut exceeded the total landings, but that was by less than a tenth of a percent, so the PRT does not find this concerning, and would recommend that all three of these states be granted de minimis status for 2019. To finalize the recommendations, the PRT recommends that the Board approve the 2018 Weakfish FMP Review, State Compliance Reports and de minimis status for Massachusetts, Connecticut and Florida.

The PRT also recommends that the Board task the Stock Assessment Subcommittee with conducting an assessment in 2019 that would update reference points to reflect the most recent information; as well as the MRIP transition to the mail-based survey. Finally, the PRT recommends that the Board would maintain the sampling requirements derived by the Coastal Household Telephone Survey recreational estimates; until a new assessment is completed. With that I can take questions.

CHAIRMAN O'REILLY: Did the Technical Committee in looking at the triggers, going over the triggers, was one of the reasons to have sort of a wait was the MRIP change? Why not wait until that is after the next assessment update?

DR. SCHMIDTKE: I think the triggers. That could be something either for after the assessment; or if it's a relative figure then it may be something that could be looked at a little bit sooner. We have the recreational estimates. If it's simply a relative to a certain time period then it may be able to be looked at sooner; but the assessment could also provide some information on that.

CHAIRMAN O'REILLY: Questions for Mike. Adam Nowalsky.

MR. ADAM NOWALSKY: When is the expected presentation of peer reviewed update in 2019 to this Board?

DR. DREW: It won't be peer reviewed. This is just going to be essentially a turn-of-the-crank update to go through with the new most recent set of data. I think the TC still has to kind of decide on that; based on what's the terminal year going to be, and what are the data, how long it's going to take to pull together all the data.

The other thing to consider is that this would also benefit the ERP Workgroup's efforts to have new information on weakfish for some of those models to consider. We would like to get it done sooner rather than later; but we don't have a firm deadline for the Board yet.

CHAIRMAN O'REILLY: Adam.

MR. NOWALSKY: Would the lack of peer review still be accurate should this Board task the SAS with updating the reference points using the new FES data? I know at the federal level all those assessments are going through peer review at that point. What would happen should we do that tasking here?

DR. DREW: I think some of the federal ones are merely doing an operational update; which doesn't have the same extent of peer review. But I think for our, and we can do whatever we want regardless of whatever the Feds are doing. I think it's something for the Board to consider, for sure, which is that there is nothing really new to bring to the table for the weakfish to do a benchmark.

Is it worth doing a benchmark for weakfish just to incorporate this new information, or is the Board going to benefit from having the information on trends and status with the new MRIP information regardless, even if it's just an update? We're not changing the definition of the reference points in any way; so the reference points that we're using right now are basically the SPR reference points for F.

Then we project the population forward under those reference points; and figure out where it's stabilizes. With the new MRIP data, we would expect that the population numbers are going to sort of scale up; but the trend is not really going to change. Similarly the reference points will use the same definition; and they'll use that new updated data.

But it's unlikely that the trend or the status will change because of that. I think it would be up to the comfort level of the Board; in terms of do they consider this simply an update, the way we usually do an update, where we recalculate our reference points with new data, or would they be more comfortable with a benchmark before they move forward with the reference points? I think in our opinion, like I said, we're not redefining them, we're just updating them with new data, and I think that falls within our traditional update framework. But it certainly is to the comfort level of the Board.

CHAIRMAN O'REILLY: Adam.

MR. NOWALSKY: Mr. Chairman, are you looking to have this discussion and decision today; or would that be subject for a future Board meeting? Specifically the decision topics being are we looking for a benchmark or just a turn-of-the-crank update, and are we looking to go ahead and update the reference points with the new FES data. I believe those would be the decision points I've heard that we could potentially take on.

CHAIRMAN O'REILLY: My understanding is the update is suitable for now. I think one thing I was curious about and haven't asked for a couple of years; is Dr. Joe had a very complex model that Dr. Drew and others were trying to streamline, in order to be able to replicate that process. I assume that's been done. But Adam, I think that what Katie has said is probably correct that the update is just going to be fine for right now. Jay McNamee.

MR. McNAMEE: I agree with that sentiment. I'm thinking about the MRIP data; and I was actually interested to see, so it's a little different than I think the MRIP calibration is showing up in some other species. It's trending kind of opposite; where it starts off a little wider and seems to. It's probably due to the scale of the data rather than the proportional change. But in any case, I guess I'm a little concerned that there might be a couple of more dials to twist under the hood there.

I think you said this, Dr. Drew, but an update; maybe we need this to be a little bit more flexible than a normal update, just to be able to deal with, I don't know locking down a selectivity parameter or something to that effect. I don't know that's my only concern. But I do agree there is no new information other than a recalibrated version of old information; so an update should be adequate, as long as they can tinker a little bit beyond just that data.

CHAIRMAN O'REILLY: I think you're describing the operational approach. I guess that is something that Katie can comment on.

DR. DREW: I would say, and relevant to Adam's question as well is that I think we can go through the data collection and run the model, and see what happens when we do this update. As I said, I think it would benefit the ERP Workgroup to do this work now. Even if we come to you guys and say the data has changed the model performance significantly; we're not as comfortable with this as an update, and we recommend a benchmark going forward.

I think that process would still benefit the ERP Workgroup; as well as the weakfish process. We can come to you and say here's how the update process went; and we would recommend a benchmark, or we can come back to you and say everything went fine. This is what the new update numbers look like, and you guys can make that decision then. I don't think you need to necessarily make a decision right now. We can continue forward with this work; and then report back to you on how things are going, and you guys can make a decision at that point.

CHAIRMAN O'REILLY: Toni Kerns.

MS. TONI KERNS: Just to follow up, Adam, on the reference point side of things. If the update needs us to redefine a portion of the reference point, we can do that through an addendum if needed. Otherwise, it would just continue. I would probably be doubtful if it's just a true update that much would need to be changed in terms of the reference points outside of the value itself of where we're at. But the actual method that we use to evaluate the reference point wouldn't change.

CHAIRAMN O'REILLY: Any other questions? We are still on Item 5, and I'm searching for someone to provide a motion for the approval of the Plan Review, as well as for the three states that have requested de minimis, and these were also provided just a little while ago, so Massachusetts, Connecticut and Florida. Emerson Hasbrouck.

MR. EMERSON C. HASBROUCK: So moved. Okay, move to accept the 2018 FMP Review and State Compliance Reports for weakfish and approve de minimis requests for Massachusetts, Connecticut, and Florida.

CHAIRMAN O'REILLY: Tom Fote as second. I'm going to read it into the record. Move to accept the 2018 FMP Review and Sate Compliance Reports for weakfish and approve de minimis requests for Massachusetts, Connecticut, and Florida. **We can do a show of hands or I can just ask you does anyone not approve this motion? Raise your hand if that's the case. The motion is approved; thank you very much.**

REVIEW AND POPULATE ADVISORY PANEL MEMBERSHIP

CHAIRMAN O'REILLY: We have a couple of items left. One is the Advisory Panel. There is an

Advisory Panel recommendation and Tina Berger is somewhere close by.

DR. SCHMIDTKE: In your briefing materials a request, a nomination for Jeff Buckel to be appointed to the Weakfish Advisory Panel was given to you. Jeff is a researcher at N.C. State University; as well as a recreational fisherman. That is up for your approval.

CHAIRMAN O'REILLY: Chris Batsavage made the recommendation; any comments? Chris, thank you.

MR. BATSAVAGE: No comments other than I think he would be a very strong Advisory Panel member, and provide a lot of information; **but with that I would like to make a motion to approve the nomination for Jeffrey Buckel to the Weakfish Advisory Panel**.

CHAIRMAN O'REILLY: A second is coming from Steve Bowman, it looks like, no, next to Steve Bowman, thank you, Toni that's twice. Third time and I'm going to fall through the floor, I know it**. Is there any objection to the motion? There seems to be no objection; welcome, Jeff Buckel and thank you, Chris**.

ELECTION OF VICE-CHAIR

CHAIRMAN O'REILLY: We have to elect a Vice-Chair at this time. Is there someone who might propose a candidate for Vice-Chair to the Weakfish Management Board? Lynn Fegley.

MS. LYNNE FEGLEY: I would nominate Mr. John Clark to be our Vice-Chair; thank you.

CHAIRMAN O'REILLY: Is there a second to that? Robert Boyles. Are there any other nominations; Robert, would you do your part about acclamation and closing the nominations for us?

MR. ROBERT H. BOYLES, JR.: Certainly, Mr. Chairman. Good morning and thank you**. Mr. Chairman I would move that we close the nominations and by acclamation appoint Mr. John Clark of the first state as the Vice-Chair of the Weakfish Management Board.**

CHAIRMAN O'REILLY: Tom Fote.

MR. FOTE: I guess I'm going to do this for some of the new Commissioners sitting around the table. Some of you should understand how important weakfish is to the Atlantic States Marine Fisheries Commission. Then Congressman Carper who then became Governor of Delaware then Senator from Delaware, back in '92 put in a bill to do the same thing we had done with striped bass on weakfish. They were going to do the Weakfish Emergency Action Bill.

Instead, Jack Dunnigan and a lot of the State Directors talked to them; and instead of that came out the Atlantic Coast Conservation Act. The Bill was driven that put the Atlantic Coast Conservation Act that basically gave the Commission the power to do this; was really because of weakfish back then in ninety for the driving force.

It is one of my happiest days and one of my biggest disappointments over the years; because we did everything right with weakfish, I thought, as far as management wise. We changed the fisheries. I mean back then they were using weakfish for cat food. We were killing weakfish at 6 inches. Now every fish is sexually mature before we harvest it.

We saw it start coming back; and for some reason it did not. It's one of my big disappointments; because I don't understand why we sit here and we speculate on the answers to it, but it should be a fishery that should be expanded. We've done everything right in the last 20 years; and it still hasn't come back.

I know a lot of fish like to eat weakfish; and maybe that's one of the reasons why. It becomes prey to a lot of the other species; but it

should be some other reason. Again, I just figured I would just put that on for all the new Commissioners out there.

CHAIRMAN O'REILLY: Thank you Tom, I share everything you said, and 1990 I joined the ASMFC process, having weakfish as the first species involved with the Technical Committee. It's a special fish there is no doubt about it. We do hope for some resurgence of some type, get some sign somewhere. From what I know from the last approach we had from the Technical Committee, recruitment really isn't the biggest problem, so there are other problems. Thank you again. Roy Miller.

MR. MILLER: I would just like to quickly add to what Tom said and you said, Rob. We were talking before the meeting started. It's hard to believe how abundant weakfish were in the Mid-Atlantic area back in the seventies and eighties, up until around 1990. It's hard to describe. We used to have to hire boat ramp attendants to keep order at our boat ramps; because it was chaos at the boat ramps without the attendants. There was wanton waste going on; there were so many weakfish being captured. It's just hard to describe to anyone who didn't live through that particular experience. Oh, and our sportfishing tournament, we started off at a 2 pound minimum entry weight for weakfish. During the peak of the weakfish abundance that went up to 11 pounds; and now it is way back down again, so just to add a little historical perspective.

ADJOURNMENT

CHAIRMAN O'REILLY: Are there any other comments before we adjourn? If everyone is all right, we're going to adjourn. Thank you very much.

(Whereupon the meeting adjourned at 11:00 o'clock a.m. on October 24, 2018)

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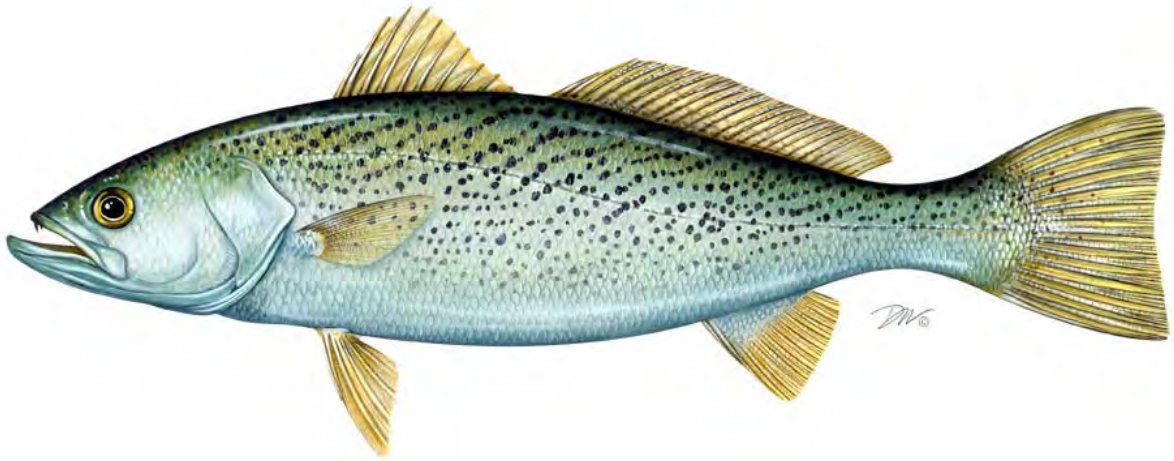
Atlantic States Marine Fisheries Commission

Weakfish Stock Assessment Update Report



October 2019

Sustainably Managing Atlantic Coastal Fisheries

Executive Summary

The Bayesian statistical catch-at-age assessment model for weakfish was updated with data through 2017. This included the new, calibrated MRIP estimates of recreational catch for the entire time series.

Calibrated estimates of weakfish recreational landings were 72% higher overall, and calibrated estimates of recreational live releases were 96% higher overall. The percent difference between calibrated and uncalibrated estimates increased over the time series, so that in recent years, calibrated harvest estimates were 152% - 267% higher, and calibrated live release estimates were 130% - 314% higher than uncalibrated estimates. Despite the increase in percent difference, the overall trend in landings and live releases was the same between the calibrated and uncalibrated time series, with both sets of estimates peaking early in the time series and declining to low levels in recent years.

Commercial landings remained low and stable in the most recent three years; estimates of commercial discards were somewhat higher in the most recent three years and made up a slightly larger proportion of total removals than in the past.

Seven fishery independent age-1+ indices, seven fishery independent young-of-year indices, and one fishery dependent index of age-1+ abundance were used in the model. Indices were generally flat over the three years of new data.

For the assessment update, all four candidate Bayesian models considered during the last benchmark assessment were run with the new MRIP estimates to compare the model performance. The preferred model from the last benchmark, model M4 which included time-varying M and spatial heterogeneity, again performed the best.

Overall, the new MRIP numbers did not cause a significant change between the results of the 2016 benchmark assessment and this assessment update.

Estimates of recruitment, spawning stock biomass, and total abundance remained low in recent years. Estimates of fishing mortality were moderately high in recent years, although not near the time-series highs of the mid- to late-2000s, or the earliest years. Natural mortality remained high, averaging 0.92 in the most recent 10 years, compared to 0.16 over the first 10 years of the time series.

Spawning stock biomass in 2017 was estimated at 1,922 mt, below the SSB threshold of 6,170 mt, indicating the stock is depleted. SSB has shown a slight increasing trend in recent years, but is still well below the SSB threshold.

Total mortality in 2017 was estimated at 1.45, above both the Z target = 1.03 and the Z threshold = 1.43, indicating total mortality on the stock is too high.

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1.0 Life History

Stock Definitions

Weakfish (*Cynoscion regalis*) can be found along the Atlantic coast from Florida through Massachusetts, but the core of their distribution is from North Carolina to New York. Genetic data suggest weakfish are a single stock (Graves et al. 1992; Cordes and Graves 2003), but tagging data and meristic/life history information suggest there may be spatial structure or sub-stock structure in the population (Crawford et al. 1988). However, since stock boundaries could not be determined with confidence from the available literature, weakfish continued to be assessed and managed as a single species within this range (ASMFC 2016). Tringali et al. (2011) found that there was an active zone of introgressive hybridization between weakfish and sand seatrout (*C. arenarius*) in Florida, centered in the Nassau and St. Johns Rivers, with the genome proportions of "pure" weakfish estimated at 48% in Nassau County and 17% in Duval County, and that "pure" weakfish were rare southward.

Migration Patterns

Weakfish exhibit a north-inshore/south-offshore migration pattern, although in the southern part of their range they are considered resident. Shepherd and Grimes (1983) observed that migrations occur in conjunction with movements of the 16-24^{o} C isotherms. Warming of coastal waters during springtime triggers a northward and inshore migration of adults from their wintering grounds on the continental shelf from Chesapeake Bay to Cape Lookout, North Carolina (Mercer 1985). The spring migration brings fish to nearshore coastal waters, coastal bays, and estuaries where spawning occurs. Weakfish move southward and offshore in waves as temperatures decline in the fall (Manderson et al. 2014, Turnure et al. 2015).

Age and Growth

The historical maximum age recorded using otoliths is 17 years for a fish collected from Delaware Bay in 1985 (ASMFC 2016). Weakfish growth is rapid during the first year, and age-1 fish typically cover a wide range of sizes, a result of the protracted spawning season. Lowerre-Barbierri et al. (1995) found length at age to be similar between sexes, with females attaining slightly greater length at age than males. Estimates of L_{∞} ranged from 89.3 cm – 91.7 cm depending on study area (Hawkins 1988; Villoso 1990; Lowerre-Barbierri et al. 1995).

Maturity and Fecundity

Weakfish mature early, with 90-97% of age-1 fish estimated to be mature (Lowerre-Barbieri et al. 1996; Nye et al. 2008). Although the majority of age-1 fish were mature, age-1 weakfish spawned less frequently, arrived later to the estuary, and had lower batch fecundity than did older fish (Nye et al. 2008). Batch fecundity ranged from 75,289 to 517,845 eggs/female and significantly increased with both total length and somatic weight (Lowerre-Barbieri et al. 1996). Weakfish have a protracted spawning season and individual fish spawn multiple times in a season; spawning occurs from March to September in North Carolina (peaking from April to June) (Merriner 1976), but the season is shorter (May to mid-July/August) in Chesapeake Bay and Delaware Bay (Shepherd and Grimes 1984; Lowerre-Barbieri et al. 1996).

Natural Mortality

Recent assessments of weakfish indicated natural mortality has increased over time (NEFSC 2009; ASMFC 2016). Catch has declined significantly since the mid-1990s and remained at low levels in recent years under restrictive management, while recruitment indices have been stable over the time series; however, the population has not recovered. ASMFC (2016) used a Bayesian model to estimate time-varying natural mortality, and found that M was low (M=0.14-17) during the 1980s and early 1990s, but began to increase sharply in the late 1990s; it was estimated at 0.92-0.95 from 2003 – 2013. There are several hypotheses about what caused the increase in M, including increasing predation and/or competition from increasing striped bass and spiny dogfish populations and large scale environmental drivers like Atlantic Multidecadal Oscillation, but no definitive conclusions can be made (NEFSC 2009). Krause (2019) also estimated an increasing trend in M from tagging work and suggested that increasing predation was driving that trend. Krause (2019) identified bottlenose dolphin as an important predator on weakfish.

Habitat

Weakfish are found in shallow marine and estuarine waters along the Atlantic coast. They can be found in salinities as low as 6 ppt (Dahlberg 1972) and temperatures ranging from 17^{o} to 26.5^{o} C (Merriner 1976). Weakfish spawn in estuarine and nearshore habitats throughout their range, and larval and juvenile weakfish generally inhabit estuarine rivers, bays, and sounds, commonly associated with sand or sand/grass bottoms (Mercer 1983). Adult weakfish overwinter offshore on the continental shelf from Chesapeake Bay to North Carolina.

2.0 Data

2.1 Recreational Removals

2.1.1. MRIP Calibration

Data on recreational catch for weakfish were collected by the Marine Recreational Information Program (MRIP, formerly the Marine Recreational Fisheries Statistics Survey or MRFSS). MRIP uses a combination of effort surveys, which are designed to estimate the number of fishing trips taken in various regions of the US, and dockside angler intercept surveys, which are designed to estimate catch-per-trip and size frequencies of recreationally caught species. Data from these surveys are used to calculate total catch (broken down by harvest and live releases) and the size frequency of landed fish.

Prior to 2018, the estimates of effort (i.e., angler trips) used to calculate annual recreational catch of weakfish were derived from the Coastal Household Telephone Survey (CHTS), a random-digit-dial telephone survey. The CHTS was replaced in 2018 by the mail-based Fishing Effort Survey (FES), due to concerns about the inefficient design, coverage bias, and declining response rates of the CHTS. The CHTS and FES were conducted simultaneously for three years (2015-2017), and the FES produced much higher estimates of fishing effort, and therefore much higher estimates of recreational catch. The results of these years of “side-by-side” surveys were used to develop a calibration model to convert historic CHTS estimates to the scale of the new

FES. Starting in 2013, design improvements were also made to the access-point angler intercept survey (APAIS) that is used to estimate catch-per-trip. A separate calibration model was used to account for these changes back in time. The final estimates of recreational landings and live releases used in this assessment update included both the APAIS and FES calibrations for the entire time series.

Over the entire time series, the new, calibrated estimates of weakfish landings and live releases were higher than the old, uncalibrated estimates (Figure 1). The APAIS calibration had a minimal effect on the estimates; the majority of the change was driven by the FES effort calibration. Calibrated estimates of weakfish landings were 72% higher overall, and calibrated estimates of live releases were 96% higher overall (Figure 2). The percent difference between calibrated and uncalibrated estimates increased over the time series, so that in recent years, calibrated harvest estimates were 152% - 267% higher, and calibrated live release estimates were 130% - 314% higher than uncalibrated estimates (Figure 2). Despite the increase in percent difference, the overall trend in landings and live releases was the same between the calibrated and uncalibrated time series, with both sets of estimates peaking early in the time series and declining to low levels in recent years (Figure 1).

The MRIP length frequencies were also revised as part of the MRIP calibration process; although there were some changes to annual mean length as a result of the calibration process, mean length did not show the same strong directional change as effort and catch did.

2.1.2. Recreational Landings

MRIP estimates of landings and live releases for Florida were adjusted to account for hybridization of weakfish with sand seatrout. Only data from Nassau and Duval counties were used, and the estimates were adjusted by the county-specific proportion of “pure” weakfish from Tringali et al. (2011).

Weakfish recreational landings peaked in 1987 at 13.1 million fish (9,232 mt) before declining through the early 1990s (Table 1, Figure 1). There was a small increase in landings in the mid to late 1990s, but landings have declined steadily since 2000, to a time-series low of 0.07 million fish (46.4 mt) in 2011. Landings increased slightly after that, with 0.28 million fish (198 mt) landed in 2017.

2.1.3 Recreational Live Releases

The number of weakfish released alive increased from the beginning of the time series to a high of 10.2 million fish (4,004 mt) in 1996 before declining to 0.96 million fish (18.2 mt) in 2013. The number of fish released alive increased somewhat after that, averaging 2.6 million fish (446 mt) from 2015-2017, with 2017 live releases at 1.45 million fish (286 mt). Over the entire time series, about 53% of recreationally caught weakfish were released alive. That proportion has increased over time; in the last 10 years, 88% of weakfish were released alive.

A ten percent release mortality rate was assumed for fish that were released alive, so that total recreational removals equal recreational landings plus ten percent of live releases (Table 1). Total recreational removals in 2017 were 421,433 fish (226 mt).

2.2 Commercial Removals

2.2.1 Commercial Landings

Weakfish commercial landings data came from state-specific harvest records collected through a mandatory reporting system where available, or from the NMFS commercial landings database. As with the recreational data, landings data from Florida were corrected to account for hybrization.

Commercial weakfish landings peaked in the late 1970s and early 1980s, and have declined steadily since then (Figure 3). Landings declined from 8,835 mt (28.1 million fish) in 1982 to a time-series low of 65 mt (0.13 million fish) in 2015; commercial landings in 2017 were 82 mt (0.16 million fish) (Table 1, Figure 3).

2.2.2 Commercial Discards

Commercial discards were estimated using data from the Northeast Fishery Observer Program (NEFOP). The discard estimation method used in the 2016 benchmark assessment and this assessment update was a hybrid of the Standardized Bycatch Reporting Methodology (SBRM; Wigley et al 2014) and de Silva's (2004) guild approach. Like de Silva (2004), the analysis included only species that are likely to co-occur with weakfish. But to minimize the potential for double counting associated with the de Silva method, ratios were developed using a combined ratio method similar to the SBRM. The suite of indicator species associated with weakfish discards was identified using the Jaccard index of similarity (Jaccard 1912).

Discard ratios were calculated over management time blocks (pre-1995, 1995-1996, 1997-2002, 2003-2009, 2010-2017). The one exception was the northern region otter trawl fishery which showed seasonal differences and had sufficient samples to develop separate seasonal ratios by time block. Sample sizes for observed hauls and observed hauls that had weakfish discards are shown in Table 2 and Table 3, respectively. Species guilds utilized in the current assessment were the same as those developed using the Jaccard method for each region-gear combination in the 2016 benchmark assessment (Table 4). The Jaccard method applied to the most recent harvest data (2015-2017) yielded some differences in species compositions, but the WTC supported the use of the species guilds from the 2016 assessment for the sake of continuity between the benchmark and update assessments, especially as management has remained unchanged since 2010. The species guild differences may have arisen due to increased observer sampling after 2014, especially of the southern otter trawl fishery.

Discard ratios were estimated for each stratum (Table 5) as the sum of weakfish discards divided by combined harvest of all guild species in observed hauls (d_{target} / k_{guild}). Prior to 1994 (the first year in the NEFOP database), there were few commercial regulations for weakfish, so it was assumed that all discards were for non-regulatory reasons. A ratio of non-regulatory discards was developed for each stratum for the years 1994-2000 and applied to landings for

1982-1993 to estimate discards in the years prior to the observer program. Variance of the ratios was estimated using equation 6.13 of Cochran (1977)

$$(\hat{R}) = (1\text{-}f/n\bar{x}^2)\,[(s_y)^2 + \hat{R}^2(s_x)^2 - 2\hat{R}s_{yx}]$$

with the assumption that the sampling fraction *f* (*i.e.* n/N) approached zero. Ratios were expanded to estimates of total discards using combined harvest of the appropriate guild species pulled from the ACCSP commercial landings database. Minor revisions to the ACCSP harvest data completed since 2015 were incorporated in this update as the revised landings were considered to be more accurate. Ratio values remained the same as those used for the benchmark assessment for the years through 2014. Discard ratios for the years 2015-2017 were calculated using the data from 2010 through 2017 since there were no changes in management during this time period. The WTC approved this method of discard ratio calculation since estimates from only the 2015-2017 data yielded an abnormally high value for the southern region's otter trawl fishery. The high discard ratio estimate was consistent with anecdotal reports of increased discarding in this region, but the estimate had such large uncertainty bounds that the WTC did not consider it reliable. A 100% mortality rate was assumed for commercial discards.

Commercial discards peaked in 1990 at 592 mt (5.9 million fish) and have generally declined since then (Table 1, Figure 3). Commercial discards were lowest from 2004-2014, averaging 43.3 mt (0.21 million fish), and have increased somewhat in recent years. Commercial discards in 2017 were estimated at 77.2 mt (0.40 million fish).

Total commercial removals were calculated as landings plus discards. Total commercial removals have declined over the time series, with total commercial removals in 2017 being 158 mt (0.56 million fish). The percent of commercial removals that are discards has increased over the time series, from 3-5% of the commercial removals in weight at the beginning of the time series to nearly 50% from 2015-2017.

2.3 Total Removals

Total removals include recreational landings, recreational release mortalities, commercial landings, and commercial discards (Table 1, Figure 4). Weakfish landings have declined significantly over the time series; total landings in 2017 were 391 mt, just 2% of their peak value of 19,515 mt, which occurred in 1985. The proportion of removals coming from the recreational sector has increased over time, increasing from about 10% of total removals at the beginning of the time series to approximately 50% of total removals in recent years.

2.4 Biosampling and Age-Length Keys

MRIP length frequencies were used to describe the size structure of the recreational landings. Data on the size structure of released alive fish were more limited. From 2004-2017, Type 9 data from MRIP's at-sea headboat sampling program was used to describe the size structure of released alive weakfish; however, this program did not exist before 2004, so direct observations

of released alive fish were not available for those years. The pooled Type 9 from 2004-2008 was used for 2000-2003. From 1982-1999, the size structure of the released alive fish was assumed to be the same as the size structure of the landed fish, due to the limited regulations on the coast for most of this time period. Florida length frequency data were excluded due to concerns about hybridization. Recreational catch-at-length was constructed by year, region (North = MA through VA; South = NC through FL), season (Early = January – June; Late = July – December), and disposition (landed or released alive). In 2015-2017, no samples of released alive fish were available from the southern region, so the northern region released alive length frequencies were used for the southern region.

North Carolina and Florida were the only states in the southern region to report commercial landings in 2015-2017; North Carolina commercial length frequencies were used to describe Florida commercial landings, as Florida had no commercial samples. Due to limited sample sizes at the state level in the northern region, lengths from commercial sampling were pooled into sub-regions with similar minimum sizes for weakfish (MA-NY, NJ-MD, and VA). Length frequencies of commercial discards came from lengths collected by observers through NEFOP, and were stratified by year, region, and season.

Traditional age length keys (ALKs) were developed for this update by pooling data from fishery dependent (FD) and fishery-independent (FI) data sources from 2015 - 2017 to develop keys by year, region, and season for a total of twelve keys. Number of samples by year, season, region and source are given in Table 6.

Ages used were derived from otolith samples and the length used was fork length (cm). Gaps in ALKs were filled in between minimum and maximum observed fork lengths by year, region and season (Table 7, Table 8). Gaps were filled by adding values from length bins at age from the bin above and below wherever possible. When filling at either the lower range or higher range of length bins the nearest bin value was used to fill in gaps to the minimum or maximum observed length. When there were large expanses of gaps in ALKs values and these first two options were not available the following methods were employed (in order of priority):

1. Values were borrowed from the same bin in the opposite region within the same year and season,
2. Values in the same region and season in the year before and after were used,
3. Values were taken from the other season in the same year,
4. Pooled ALKs from the last assessment were used as a last resort.

The maximum age observed was 6 years old and only encountered in the early sampling season in the northern region; maximum observed age in the south was no more than 5 years old in either early or late samples during 2015 – 2017 (Table 8). In 2016 in the late sampling season in the south the oldest fish observed was only 3 years old. Both regions encountered young of year weakfish only in the late sampling season.

2.5 Indices of Abundance

2.5.1 North Carolina Independent Gill Net Survey (NC PSIGNS)

The Independent Gill Net Survey is designed to characterize the size and age distribution for key estuarine species in Pamlico Sound and its major river tributaries. Sampling began in Pamlico Sound in 2001 and occurs monthly from February to December. Each array of nets consists of floating gill nets in 30-yard segments of 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, and 6.5-inch stretched mesh, for a total of 240 yards of nets. Catches from an array of gill nets comprise a single sample; two samples (one shallow, one deep) totaling 480 yards of gill net are completed each trip. Gill nets are typically deployed within an hour of sunset and fished the following morning. Efforts are made to keep all soak times within 12 hours. Gill net sets are determined using a random stratified survey design, based on area and water depth. All fish are sorted by species. A count and a total weight to the nearest 0.01 kg are recorded. Length, sex, age samples are taken from selected target species, including weakfish.

The index of relative abundance was based on all core samples collected during the calendar year that occurred within the Pamlico Sound portion of the survey only. Available variables for standardization included year, depth, area, surface temperature, surface salinity, dissolved oxygen, pH, wind direction, and wind speed. The best-fitting generalized linear model (GLM) for NC PSIGNS used a negative binomial distribution and included year, depth, and area as significant covariates.

The NC PSIGNS index is comprised mainly of age 2-4 fish (Figure 6). The index has generally declined since the beginning of the time series (Table 9, Figure 6). In 2015, weakfish abundance declined to a time-series low, and remained low for the subsequent two years.

2.5.2 North Carolina Pamlico Sound Survey (NC P195)

The North Carolina Pamlico Sound Survey (Program 195) was instituted in 1987. Sampling is conducted during the middle two weeks of June and September in Pamlico Sound and the Pamlico, Pungo, and Neuse rivers and bays. One hundred and four stations are randomly selected each year from strata based upon depth and geographic location. Tow duration is 20 minutes at 2.5 knots, pulling double rigged demersal mongoose trawls. Environmental and habitat data are recorded during the haul back of each trawl. The entire catch is sorted by species; each species is enumerated and a total weight of each species is taken. Individuals of each target species are measured. If present in large numbers, a subsample of 30–60 individuals of each target species is measured and a total weight of the measured individuals for each species is taken. Weakfish are measured to the nearest millimeter fork length.

An index of relative abundance of age-0 (young-of-year or YOY) weakfish was calculated using the GLM approach. Data were limited to those collected during September, when age-0 weakfish are most prevalent in the survey, and all weakfish 200 mm fork length or less were considered age-0. Available covariates for standardization of the age-0 index were year, depth, surface temperature, surface salinity, dissolved oxygen, and wind speed. The best-fitting GLM for the P195 index of age-0 weakfish abundance included year, depth, surface temperature, and surface salinity as significant covariates and had a negative binomial distribution.

Overall, the index varied without trend over the time series, although there was a period of generally higher values from the mid-1990s until 2000 (Table 10, Figure 7). Weakfish YOY abundance declined in 2015 to a time-series low and then increased in 2016 to the highest abundance observed since 2000.

2.5.3 SEAMAP

Sampling cruises were conducted seasonally: spring (mid-April – May), summer (July-August) and fall (October-November), in established strata between Cape Canaveral, Florida (28^{o} 30.0'N) and Cape Hatteras, North Carolina (35 ^{o} 13.2'N). Stations were allocated to strata according to results of an Optimal Allocation Analysis. Sampling was conducted during daylight hours. Operations at each site used paired 22.9 m mongoose-type Falcon trawls (designed and constructed by Beaufort Marine Supply) with tickler chains. These were towed for 20 minutes bottom time from the R/V Lady Lisa, a 22.9 m St. Augustine shrimp trawler. Nets did not contain TEDs or BRDs so that density estimates for all sizes of each species could be calculated, and to maintain comparability with previous survey data. Contents of each net were processed independently. Weakfish were measured to the nearest centimeter. Large or complex samples were subsampled by weight with a randomly selected subsample from each net processed. Large numbers of individuals of a species were subsampled and only 30 to 60 individuals measured, when appropriate.

Following trawl collections, hydrographic and meteorological data (air and water temperature, salinity, wind speed and direction, wave height, and barometric pressure) were recorded. Water temperature and salinity was measured and recorded with a SEABIRD Conductivity, Temperature, and Depth (CTD). Abundance, biomass, and length-frequency data was recorded on a computer utilizing electronic measuring boards.

The SEAMAP catch data was spatially (North Carolina to Georgia) and temporally (only fall collections) restricted to provide a comparable index to the other coastwide indices. Florida catches were omitted due to issues of hybridization and overall catches accounting for a small portion of the total survey catch. Dates used for this assessment update were 1990-2017. The SEAMAP weakfish index (catch per tow) was standardized using a zero-inflated negative binomial generalized linear model and the final model selected was the same that was run for the Benchmark Assessment in 2016:

Number of Fish Caught ~ Year + Bottom Temperature (°C) + Surface Salinity (ppt) + Average Depth + Air Temperature (°C) + offset (LogEffort) | Bottom Temperature (°C) + Surface Salinity

The SEAMAP index is dominated by age-0 and age-1 fish, although it has captured fish up to age-6+ (Figure 8). Overall catch per tow was highest by far in 2015 (110.7 weakfish/tow) followed by 2016 (51.3 weakfish/tow) (Figure 9). These indices reflect fall catches greater than 1000 weakfish/tow. Out of 17 catches that contained 1000 or more weakfish/tow in the fall survey since 1990, 9 of those came from 2015 (ranging from 1,371 – 4,132 weakfish). The 2015 value was driven by an unusually high proportion of age-0 weakfish in the catch (97% age-0 fish,

compared to the time series mean of 70% age-0 fish). When the index is adjusted to reflect only age-1+ weakfish, 2015 is actually one of the lowest index values on record, but 2016 and 2017 show an increasing trend as that strong recruitment event moves through the population (Table 9, Figure 9).

2.5.4 Virginia Institute of Marine Science Chesapeake Bay Juvenile Fish Trawl Survey

The Virginia Institute of Marine Science (VIMS) has conducted a trawl survey in lower Chesapeake Bay since 1955. A trawl net with a 5.8-m head line, 40 mm stretch-mesh body, and a 6.4-mm liner is towed along the bottom for 5 minutes. Sampling in the Bay occurs monthly except January, February, and March, when few target species are available. Sampling in the tributaries occurs monthly, except during January and February, at both the random stratified and historical fixed (mid-channel) stations. Between two and four trawling sites are randomly selected for each Bay stratum each month, and the number varies seasonally. The weakfish index is calculated using data from all stations sampled from August (0 - 150 mm TL), September (0 – 180 mm TL), and October (0 – 200 mm TL). Using catch data from area-time combinations, an annual juvenile index is calculated as the weighted geometric mean catch per tow. Because stratum areas are not uniform, a weighted mean provides an index that more closely approximates actual population abundance.

In 2015, the VIMS Juvenile Fish Trawl Survey transitioned to a new vessel and trawl gear. As a result, calibration factors comparing the new survey vessel and gear to historical catches were developed. In 2014 and 2015, VIMS conducted a comparison survey between the old research vessel (R/V *Fish Hawk*) and net and the new R/V *Tidewater* and net to calculate calibration factors based on 221 paired tows for young-of-the-year weakfish. The calibration factor is the model-based ratio of R/V *Fish Hawk* catches to R/V *Tidewater* catches and represents the relative catch efficiency of the *Fish Hawk* to the *Tidewater*. The calibration factor was applied at the individual tow-level and provided catches of fish from the R/V *Tidewater* in R/V *Fish Hawk* units; thus, the indices reported for 2015 and thereafter are comparable to the historic indices reported previously.

The VIMS Juvenile Fish Trawl index has varied without trend over the time series; 2015 – 2017 were below average (Table 10, Figure 10).

2.5.5 Maryland Coastal Bays Juvenile Trawl Survey

The Maryland Department of Natural Resources has conducted the Coastal Bays Fisheries Trawl Survey with consistent methodology since 1989. Trawl sampling was conducted at 20 fixed sites throughout Maryland's Coastal Bays on a monthly basis from April through October. A standard 4.9 m (16 ft) semi-balloon trawl net was used in areas with a depth of greater than 1.1 m (3.5 ft). The trawl was towed for six minutes (0.1 hr) at a speed of approximately 2.8 knots. Fishes and invertebrates were identified, counted, and measured for total length in millimeters. At each site, a sub-sample of the first 20 fish (when applicable) of each species were measured and the remainder counted.

A standardized index of juvenile abundance per tow was developed for 1989 - 2017 using a negative binomial distribution including year, start depth, surface salinity, and water temperature as covariates.

Index values generally increased through the late 1990s, declined to moderate levels through most of the 2000s, then declined again, remaining very low from 2011 through 2017 (Table 10, Figure 11).

2.5.6 Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP)

The ChesMMAP Trawl Survey has been sampling the mainstem of the Chesapeake Bay, from Poole's Island, MD to the Virginian Capes at the mouth of the Bay since 2002. ChesMMAP conducts 5 cruises annually, during the months of March, May, July, September, and November; only the fall data were used to develop the weakfish index. The ChesMMAP survey area is stratified into five latitudinal regions, and each region is comprised of three depth strata. Depth strata bounds are consistent across regions, and correspond to shallow (3.0m to 9.1m), middle (9.1m to 15.2m), and deep (>15.2m) waters in the bay. Sampling sites are selected for each cruise using a stratified random design; site allocation for a given stratum is proportional to the surface area of that stratum. A total of 80 sites are sampled per cruise, and a four-seam, two-bridle, semi-balloon bottom trawl is towed for 20 minutes at each sampling site with a target speed-over-ground of 3.5kts. A number of hydrographic variables (profiles of water temperature, salinity, dissolved oxygen, and photosynthetically active radiation), atmospheric data, and station identification information are recorded at each sampling site.

The index was standardized with a delta-GAM model that used latitude, longitude, water temperature and year as explanatory variables.

The ChesMMAP age-1+ index has declined nearly continuously over the entire time-series, reaching a time-series low in 2014 (Table 9, Figure 12). The age-structure of the index is dominated by age-0 and age-1 fish, and the proportion of age-4, 5, and 6+ fish in the index has been near zero since the mid-2000s (Figure 12).

2.5.7 Delaware Fish and Wildlife Delaware Bay 30' Trawl Survey

The Delaware Division of Fish and Wildlife (DEDFW) has conducted a trawl survey within the Delaware Bay since 1966 (1966-1971, 1979-1984, and 1990 – present), with consistent gear and design used since 1990. The survey collects monthly samples from March through December at nine fixed stations throughout the Delaware portion of the Bay. The net used has a 30.5 foot headrope and 2" stretch mesh codend. Surface and bottom temperature (°C), dissolved oxygen (ppm) and salinity (ppt) are measured at the conclusion of each tow. Aggregate weights are taken for each species. Species represented by less than 50 individuals were measured for fork length to the nearest half-centimeter. Species with more than fifty individuals were randomly sub-sampled (50 measurements) for length with the remainder being enumerated.

The Delaware Weakfish index (catch per tow) was standardized using a zero-inflated negative binomial generalized linear model:

Number of Fish Caught ~ Year + Depth + Month + offset(LogEffort) | Depth + Month

with data from May-September, as this temporal period largely encapsulated when weakfish were present in Delaware Bay.

Since 1991, length frequencies have been aged using survey specific age-length keys.

Relative abundance increased sharply in the early 1990s to a time series high in 1996 (Table 9, Figure 13). The index decreased by more than half in 1997, and has exhibited a generally declining trend since that time. Relative abundance in 2016 and 2017 was near the time-series mean.

Age structure advanced from primarily age 1 and 2 fish in the early 1990s to include ages 7 and 8 in 1998-2000 (Figure 13). Abundance of age 4+ fish accounted for 30 to 35% of the total index in 1997 and 1998 as the large 1993 year class moved through. Abundance of older ages has since declined to levels observed in the early 1990s, with 3+ fish accounting for less than 3% of the total number caught.

2.5.8 Delaware Fish and Wildlife Delaware Bay Juvenile Trawl Survey

In addition to the 30-foot trawl survey, the DEDFW has conducted a fixed station trawl survey in Delaware Bay targeting juvenile finfish from 1980-present. The Delaware young of year survey occurs within the core area of weakfish abundance and encompasses a major spawning/nursery area for the species during months when weakfish are present. Sampling is conducted monthly from April through October using a semi-balloon otter trawl. The net has a 5.2 m headrope and a 12.7 mm stretch mesh codend liner. Weakfish are a significant component of the catch, with the greatest majority of these weakfish (more than 99% in some years) being young of the year.

The DE Juvenile Weakfish index (catch per tow) was standardized using a zero-inflated negative binomial generalized linear model:

Number of Fish Caught ~ Year + Month + offset(LogEffort) | Depth + Month

with data from May-September, as this temporal period largely encapsulated when weakfish were present in Delaware Bay.

The index showed a period of strong recruitment from 1992 – 2000, followed by a period of below average recruitment (Table 10, Figure 14). The index was slightly above average in 2016, but below average in 2015 and 2017.

2.5.9 New Jersey Ocean Trawl Program

New Jersey has conducted a stratified random trawl survey in nearshore ocean waters since August 1988. The survey originated as bi-monthly cruises, but since 1990, the survey has been conducted five times per year (January, April, June, August and October) in the coastal waters

from the entrance of New York Harbor south, to the entrance of the Delaware Bay. The survey area is stratified into 5 areas north to south that are further divided into 3 depth zones (<5, 5-10, 10-20 fathoms) for a total of 15 strata. The sampling gear is a two-seam trawl with a 25m head rope, 30.5m footrope, forward netting of 4.7 inch stretch mesh, rear netting of 3.0 inch stretch mesh, cod end of 3.0 inch stretch mesh, and a cod end liner of 0.25-inch bar mesh. Water quality and temperature readings are generally taken before each tow. All fish and most macro-invertebrates taken during these surveys are counted and weighed to obtain abundance and biomass totals per species by tow, with individual lengths measured to the nearest centimeter. This program has consistently contributed weakfish specimens for growth and age analysis since 2007.

A GLM-based index was derived using a negative binomial distribution of the August and October sample data with mean depth and bottom salinity as the covariates. This index fluctuated without a general trend with a surge in numbers for 1994 and 1995 (time series high), followed by smaller peaks in 2002, 2004 and 2011 through 2012 (Table 9, Figure 15). The index values since 2014 show a moderate stabilization at levels near the time-series average. Consistent with many of the other surveys, there has been a truncation of the age structure of the weakfish catch in recent years with no age-6+ fish seen since 2005 (Figure 15).

2.5.10 New York Peconic Bay Juvenile Trawl Survey

The New York Division of Fish, Wildlife and Marine Resources has conducted a juvenile trawl survey in the Peconic Bay estuary of Long Island since 1985. Weakfish was the primary target species when the survey was initiated, and Peconic Bay was selected for the survey area because of its importance as a weakfish spawning ground. Random sampling occurs weekly between May and October using a semi-balloon shrimp trawl with a 4.9 m headrope and 12.7 mm stretch mesh codend liner. The survey samples mainly young of year weakfish, and a YOY index has historically been calculated using all sampling months. In 2005 and 2006, technical difficulties constrained sampling to May – July (2005) and July – October (2006), so a revised index using only July and August has been calculated. The two indices (all months and July-August) show a similar increasing trend and are well correlated (r = 0.96).

The index showed a high degree of interannual variability, although the period of 2000 – 2007 was generally above average (Table 10, Figure 16). Strong year classes occurred in 1991, 1996, and 2005 (time series high). The index has shown an increasing trend since 2012, and was above average in 2017.

2.5.11 Connecticut Long Island Sound Trawl Survey (CT LISTS)

Since 1984, the Connecticut Department of Energy and Environmental Protection has conducted spring and fall trawl surveys in the Connecticut portion of Long Island Sound between the New York/Connecticut border in the west and New London, CT in the east. Survey effort consists of three spring cruises conducted during April, May and June, and three fall cruises during September/October. Stratified random sampling is employed based on four depth zones and three bottom types. Survey gear consists of a 14 x 9.1 m high-rise otter trawl with 5 mm codend mesh. The survey catches mostly YOY and age 1 weakfish as defined by

examination of length frequencies. For the fall survey, a 30 cm length cutoff is used to separate YOY and age 1 fish. Only the YOY component of the index was used.

Because environmental covariates were not consistently collected until 1992, the geometric mean index was used instead of the GLM-standardized index, to preserve the longer time series.

The YOY index showed a period of lower recruitment at the beginning of the time series and a period of higher but more variable recruitment from 2000 – 2014 (Table 10, Figure 17).

2.5.12 Rhode Island Seasonal Trawl Survey

The Rhode Island Department of Environmental Management's (RIDEM) seasonal trawl survey was initiated in 1979 to monitor recreationally important finfish stocks in Narragansett Bay, Rhode Island Sound, and Block Island Sound.

The survey employs a stratified random and fixed design defined by 12 fixed stations in Narragansett Bay, 14 random stations in Narragansett Bay, 6 fixed stations in Rhode Island Sound, and 12 fixed stations in Block Island Sound.

In 2005, RIDEM replaced the research vessel and survey gear that has been utilized by the survey since its inception. The R/V *Thomas J. Wright* was replaced with a 50' research vessel, the R/V *John H. Chafee*. In 2012, new doors were installed on the R/V *John H. Chafee.* Calibration experiments were conducted in both cases to ensure the index time series are comparable before and after the gear and vessel changes.

The fall component of the Rhode Island seasonal trawl survey is predominantly comprised of YOY weakfish which are present in at least 10% of all tows in any given year of the survey. The RI YOY weakfish index was standardized using a negative binomial GLM with year and bottom temperature as covariates in the final model.

The index varied without trend over the time-series, with extreme highs in 1996 and 2003; 2017 was above the time-series mean (Table 10, Figure 18).

2.5.13 Northeast Fisheries Science Center Bottom Trawl Survey

The National Marine Fisheries Service (NMFS) Northeast Fishery Science Center (NEFSC) conducts seasonal trawl surveys between Nova Scotia and Cape Hatteras. Stratified random sampling is conducted using a #36 Yankee otter trawl equipped with roller gear and a 1.25 cm mesh codend liner. The survey covers a large portion of the geographic range of weakfish, including their "core" distribution area (NEFSC 2000) of New Jersey to North Carolina. In 2009, the NEFSC changed survey vessels. The new R/V Bigelow is larger and cannot sample the inner-most inshore strata that the previous vessel did. Instead, those strata are now sampled by the Northeast Area Monitoring and Assessment Program (NEAMAP), described in Section 2.5.14. As few weakfish were ever observed in the offshore strata, 2008 is the terminal year of the NEFSC index for weakfish.

The NEFSC index is generally stable at low numbers (< 20 fish per tow) during the 1980s and 1990s (Table 9, Figure 19). Two notable exceptions are 1984 and 1994, with peaks of 116 and 60 fish per tow, respectively. Evaluation of the index at age data does not indicate that these peaks were the result of strong year classes (Figure 19), and may instead represent increased availability of weakfish based on the timing of migration and the survey. Between 1998 and 2003, the index rose sharply, from less than 5 fish to more than 170 fish per tow, before declining rapidly back to previous levels by 2007.

2.5.14 Northeast Area Monitoring and Assessment Program (NEAMAP)

The Northeast Area Monitoring and Assessment Program, Mid-Atlantic/Southern New England Nearshore Trawl Survey (NEAMAP) has been sampling the coastal ocean from Martha's Vineyard, MA to Cape Hatteras, NC since the fall of 2007. NEAMAP conducts two cruises per year, one in the spring and one in the fall, mirroring the efforts of the Northeast Fisheries Science Center (NEFSC) Bottom Trawl Surveys offshore. The survey area is stratified by both latitudinal/longitudinal region and depth. Sampling sites are selected for each cruise using a stratified random design; site allocation for a given stratum is proportional to the surface area of that stratum. A four-seam, three-bridle, 400x12cm bottom trawl is towed for 20 minutes at each sampling site with a target speed-over-ground of 3.0kts. Hydrographic variables (profiles of water temperature, salinity, dissolved oxygen, and photosynthetically active radiation), atmospheric data, and station identification information are recorded at each sampling site.

A delta-GAM with 6 variables (depth, water temperature, percentage of oxygen saturation, dissolved oxygen, latitude, and year) was used to standardize the index.

The age-1+ index varied without trend over the time-series (Table 9, Figure 20). The age-structure of the index is dominated by age-0 and age-1, with almost no age-4 -6+ fish present in the catch (Figure 20). The time-series is short for this index, but its utility will increase with future updates as the time-series gets longer and it provides important information in areas formerly covered by the NEFSC survey.

2.5.15 Composite Young-of-Year Index

States from Rhode Island through North Carolina conduct trawl surveys for juvenile finfish that capture YOY weakfish, as described above. These surveys are noisy and cover small geographical areas compared to the population range of weakfish. Bayesian hierarchical modeling was used to combine these indices into a single composite index, using the method developed by Conn (2010), that represents the coastwise recruitment dynamics of weakfish. Although the composite YOY was not included in the base run of the assessment model, it was updated for this assessment.

The composite YOY generally varied without a strong trend, being below average in the 1980s and most recent years, and above average from 1992-2006 (Table 10, Figure 21).

2.5.16 MRIP Harvest per Unit Effort

A guild-based approach was used to identify potential weakfish trips from the MRIP intercept data. The Jaccard (1912) coefficient of similarity was used to identify which species most commonly co-occurred with weakfish in the recreational catch. Species guilds were composed of the target species and the five species with the highest similarity coefficients. Any trip that caught any one of the guild species was considered a potential weakfish trip. Species guilds, and therefore effort estimates, were developed for each state individually. Massachusetts, Rhode Island, and Connecticut had no strong species associations and were outside of the core range of the species, so those states were not included in the HPUE index; Florida was excluded because of hybridization concerns.

Because limited information was available to describe the length frequency (and therefore age distribution) of discarded fish prior to 2004, the WTC decided to use an index of harvested fish only (HPUE) coupled with a selectivity curve as input for the population model.

Trip specific HPUE was then modeled using a negative binomial GLM. Full models for the positive and binomial components are as follows.

$$\text{lnCPUE} \sim \text{YEAR} + \text{AREA} + \text{WAVE} + \text{STATE}$$
$$\text{success} \sim \text{YEAR} + \text{STATE} + \text{MODE}$$

The MRIP index peaked in 1985 and declined steadily until the early 1990s, when it began to increase. It never reached the levels early in the time series, and from the late 1990s, it declined steadily (Table 9, Figure 22). It remained at low levels through 2017.

3.0 Model Description

During the last benchmark assessment, a Bayesian statistical catch-at-age model was developed to assess weakfish. Several different configurations of the model were explored, but the best model was one that allowed natural mortality (M) as well as fishing mortality (F) to be estimated, and that included spatial heterogeneity in the model (that is, allowed the proportion of the population available to each index to vary over time).

Two fleets, commercial and recreational catch were modeled; the selectivities of the two fleets were assumed to be age specific, and recreational fishery selectivity was assumed to change in 1996 because of the implementation of a coastwide minimum size. Time-varying M was estimated as a random-walk process. A Bayesian approach was used to estimate parameters, while performance of the models was compared by goodness-of-fit and the retrospective patterns of the models.

For the assessment update, all four candidate Bayesian models considered during the last benchmark assessment (Table 11) were run with the new MRIP estimates to verify that the preferred model was still the best performing model.

4.0 Results

4.1 Model Selection and Goodness of Fit

The preferred model from the last benchmark, model M4 which included time-varying M and spatial heterogeneity, again performed better in both DIC and retrospective errors (Table 12). It also had the lowest DIC across a range of data sensitivity runs with new MRIP or old MRIP data (Table 13). The DIC value of M4 is much lower than the other 3 models, and the retrospective error, both one year retro and Mohn's retrospective error are much smaller than the other 3 models. This suggested that M4 is still the most appropriate model and the weakfish population is nonstationary as reflected in M variation over time, and spatial asynchrony (Figure 28, Figure 31, and Figure 32).

See Appendix 1 for diagnostic plots and tables for the Bayesian model.

4.2 Selectivity and Catchability

In the fully stationary model (M1), commercial fishery selectivity increases rapidly, with over 50% selectivity by age 2, and remains high across ages 3+ (Figure 24). When time-varying M is estimated (models 2 and 4), selectivity estimates of ages 2 and 3 are lower than in M1 (Figure 24).

Similarly, selectivity in the first block of the recreational fishery, i.e., 1982-1995, reaches a high at age 2 in model M1 and remains high, but peaks at older ages for models M2 and M4; all models show a pattern of a decrease in selectivity from age 4 to age 5, followed by an increase or flattening for age 6+ in the second selectivity block, i.e., 1996-2017 (Figure 25).

4.3 Mortality Rates

The estimated fishing mortality rates in the 2010s were low in all four models. The relative magnitude of F estimates over time among the four models were not the same although similar patterns were observed (Table 14; Figure 26 and Figure 27). This was related to differences in the selectivity patterns estimated by the different models.

The natural mortality rates estimated by the preferred model (M4) are shown in Table 15. The estimated M over time from M2 and M4 showed a similar trend (Figure 28). M was low in 1980s, averaging 0.16, but began to increase in the mid-1990s and remained high after mid-2000s. M has averaged 0.92 since 2007. M in 2016 and 2017 decreased slightly but this may be because of new cohorts joining the population rather than a true decrease in M, because a fast decline of those cohorts would not be shown in the data yet.

4.4 Population Size

The estimated total abundance and spawning stock biomass of Atlantic weakfish has been low in recent years (Table 16 and Table 17). The four models all showed a recent decrease in population size but differed in the early part of the time series differently (Figure 29). M1 and M2, which both assumed no spatial heterogeneity in the population, showed a large decrease in 1985-1990 but recovered in mid-1990s. M3 and M4, which both assumed spatial

heterogeneity, also showed a decrease in 1985-1990 but the recovery in mid-1990s was not as significant as in models 1 and 2.

Recruitment in recent years was lower in all model scenarios, but the models with spatial heterogeneity (M3 and M4) showed a more pronounced declining trend over the entire time series (Table 16; Figure 30).

4.5 Sensitivity Analyses

All the models showed robustness with data scenarios and the results can be seen in Figure 33 - Figure 39. Model M4 always yielded the lowest DIC values among the 2 data scenarios (with the new, calibrated MRIP estimates of recreational catch and with the old, uncalibrated estimates).

The use of the new, calibrated MRIP estimates did cause differences in the data sensitivity runs. By using the new MRIP numbers, the estimated selectivity for recreational fishery changed quite significantly (Figure 33). The change of the estimated selectivity for recreational fishery is largely because of the non-proportional changes of the estimated new MRIP across ages and years (Figure 34). The change of selectivity patterns also caused the estimated fishing mortality changes; the estimates of recreational fishing mortality were higher and the commercial fishing mortality estimates were lower in recent years with the new MRIP numbers, but the overall estimates of Z were similar (Figure 35). The new MRIP numbers did not have a significant effect on the estimates of M (Figure 37).

When new MRIP estimates were used, the estimates of total abundance and recruitment were higher (Figure 38 and Figure 39).

4.6 Retrospective Analyses

Retrospective analyses results are shown in Figure 40 - Figure 45 and Table 12. Models M2 and M4 were more robust to retrospective analysis. All the models tended to overestimate total abundance (Figure 44) and recruitment (Figure 45) and underestimate F (Figure 41 - Figure 42). The estimated key parameters of selectivity (Figure 40), and M (Figure 43) were more robust, although the M in the terminal year was consistently underestimated. The retrospective pattern can further be explored through the age specific mortality especially in recent years.

4.7 Historical Retrospective

Overall, the new MRIP numbers did not cause a significant change between the results of the 2016 benchmark assessment and this assessment update.

Estimates of abundance were generally very similar between the benchmark and the update, with slightly higher estimates from the mid-1990s to the mid-2000s (Figure 46). Estimates of recruitment were slightly higher in the assessment update for the early part of the time series, from the mid-1980s to the late 1990s, but were very similar after that. Estimates of total abundance and recruitment were higher in the last few years of the benchmark compared to the same years in the assessment update; however, this is driven by the retrospective pattern

in the model rather than the new MRIP data, since the results with the old, uncalibrated MRIP data updated through 2019 were lower than the assessment update results with the new MRIP data.

Estimates of F for the commercial fleet were generally lower across the time series for both the assessment update with the new MRIP data and the update with the old MRIP data, while estimates of F for the recreational fleet were generally similar between the benchmark and the assessment update (Figure 48). Both commercial and recreational F were higher at the end of the time series in the assessment update.

Estimates of natural mortality were also very similar between the benchmark assessment and the assessment update, except for the last year of the benchmark assessment, when M was estimated higher during the assessment update (Figure 49). This is consistent with the direction of the retrospective bias for this model. The overall time-series average M was higher for the assessment update (M=0.46) than for the benchmark assessment (0.43), although this is due to more years at the end of the time series with a higher M value, rather than a difference across the entire time series.

5.0 Stock Status

5.1. Biological Reference Points

Under conditions of time-varying natural mortality, there is no long-term stable equilibrium population size, so an SSB target is not informative for management. The SSB threshold is defined as $SSB_{30\%}$, equivalent to 30% of the projected SSB under the time-series average natural mortality and no fishing. When SSB is below that threshold, the stock is considered depleted.

Currently, total mortality (Z) benchmarks are used to prevent an increase in fishing pressure when F is low but M is high. When Z is below the Z target, F reference points can be used to assess overfishing status. The Z and F targets and thresholds were calculated based on the time-series average natural morality estimate. The Z target is $Z_{30\%SPR}$ and the Z threshold is $Z_{20\%SPR}$. $F_{30\%SPR}$ and $F_{20\%SPR}$ are the F target and threshold, respectively.

The biological reference point estimates were updated for this assessment based on the results of the preferred model using the new MRIP estimates (Table 18). The SSB threshold was estimated at 6,170 mt. The Z target was estimated at 1.03, and the Z threshold was 1.43. The equivalent F target was 0.57 and the F threshold was 0.97.

The updated SSB threshold was slightly lower than the estimate from the 2016 benchmark assessment (Table 18), due to the higher average M value estimated for the assessment update. The F and Z reference points were slightly higher than estimated during the 2016 benchmark assessment (Table 18).

5.2 Stock Status

Spawning stock biomass in 2017 was estimated at 1,922 mt, below the SSB threshold, indicating the stock is depleted (Figure 50). SSB has shown a slight increasing trend in recent years, but is still well below the SSB threshold.

Total mortality in 2017 was estimated at 1.45, above both the Z target and the Z threshold, indicating total mortality on the stock is too high.

Fishing mortality in 2017 was estimated at 0.62, above the F target but below the F threshold.

6.0 Research Recommendations

The TC continued to support the research recommendations from the benchmark assessment; the highest priority recommendations are listed here.

- Increase observer coverage to identify the magnitude of discards for all commercial gear types from both directed and non-directed fisheries.
- Evaluate predation of weakfish with a more advanced multispecies model (e.g., the ASMFC MSVPA or Ecopath with Ecosim).
- Develop a bioenergetics model that encompasses a broader range of ages than Hartman and Brandt (1995) and use it to evaluate diet and growth data.
- Analyze the spawner-recruit relationship and examine the effects of the relationship between adult stock size and environmental factors on year class strength.
- Develop a coastwide tagging program to identify stocks and determine migration, stock mixing, and characteristics of stocks in over wintering grounds. Determine the relationship between migratory aspects and the observed trend in weight at age.
- Monitor weakfish diets over a broad regional and spatial scale.
- Continue to investigate the geographical extent of weakfish hybridization.

In addition, the TC also recommended exploring age- as well as time-varying natural mortality in the Bayesian model for the next benchmark assessment.

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8.0 Tables

Table 1. Total removals by sector for weakfish.

	Commercial (mt)		Recreational (mt)	
Year	Landings	Discards	Landings	Release Mortalities
1982	8,835.3	310.4	7,163.9	20.5
1983	7,926.6	385.6	7,694.7	12.3
1984	8,969.3	340.3	3,391.6	9.5
1985	7,690.0	395.9	4,234.2	13.0
1986	9,610.7	316.9	8,365.8	73.9
1987	7,744.0	301.0	9,232.2	32.7
1988	9,310.7	259.6	3,278.1	29.7
1989	6,424.0	211.6	1,807.1	12.4
1990	4,281.0	592.5	965.0	20.8
1991	3,943.1	495.8	1,958.2	76.6
1992	3,381.0	464.2	1,653.1	63.1
1993	3,108.8	512.2	938.0	54.0
1994	2,808.0	356.1	1,198.4	176.7
1995	3,219.9	404.8	1,711.2	205.1
1996	3,147.8	498.5	2,455.7	400.4
1997	3,310.1	270.0	3,201.2	286.7
1998	3,820.9	280.4	3,238.2	293.3
1999	3,132.1	231.7	3,208.6	396.4
2000	2,449.6	156.2	3,806.2	143.1
2001	2,267.7	128.6	2,125.4	187.2
2002	2,165.0	126.1	1,957.1	117.1
2003	907.7	105.4	882.8	85.1
2004	691.2	37.9	1,008.2	77.8
2005	520.4	48.1	1,170.0	94.6
2006	481.6	38.6	822.4	147.8
2007	413.1	42.1	541.7	97.0
2008	212.7	44.1	486.8	135.5
2009	173.8	55.9	194.0	27.9
2010	93.4	40.2	78.4	44.2
2011	66.0	51.9	46.4	29.5
2012	139.4	44.1	304.3	62.3
2013	161.8	28.4	211.4	18.2
2014	92.9	44.7	98.8	34.9
2015	65.4	80.4	204.6	46.5
2016	82.5	66.2	103.5	58.7
2017	81.9	77.2	197.5	28.6

Table 2. Number of NEFOP observed hauls by gear, region, and season.

Year	Gillnet				Otter Trawl			
	North		South		North		South	
	Early	Late	Early	Late	Early	Late	Early	Late
1989	3	223			909	924		
1990	208	195			806	696		
1991	448	1555			942	1539		16
1992	1260	940	21		1156	770		
1993	827	750	25		671	583		27
1994	396	1121	281	19	885	363	117	85
1995	1169	1001	374	119	1177	994	166	
1996	803	845	384	168	894	767	52	
1997	764	688	384	13	710	665	8	
1998	916	505	465	252	422	252	19	21
1999	381	438	190	52	410	616	102	
2000	364	425	126	95	946	776	95	
2001	368	314	93	26	1003	1150		
2002	273	390	31	5	752	2867	92	
2003	619	1202	53	15	2799	2649	55	14
2004	1248	2801		15	3444	5358	194	93
2005	945	2423	4	20	11975	10149	149	59
2006	508	342	2		6457	4552	110	13
2007	341	862	28	6	5249	6567	216	114
2008	471	584	31		6417	7792	218	79
2009	773	612	9	4	6972	7146	239	114
2010	580	870	24		5772	3798	373	152
2011	805	979	9	33	4942	5028	301	84
2012	780	789	5		3924	2845	72	22
2013	300	617	8	47	2984	3978		41
2014	641	905	9	28	4925	4187	192	33
2015	802	1372	160	288	3843	4376	133	30
2016	1185	1622	424	408	3383	4024	101	374
2017	1400	2119	942	277	4924	6729	247	196

Table 3. Number of NEFOP observed hauls with weakfish discards by gear, region, and season.

Year	Gillnet				Otter Trawl			
	North		South		North		South	
	Early	Late	Early	Late	Early	Late	Early	Late
1989					1	59		
1990					2	33		
1991					10	61		1
1992	1					11		
1993		46			1	10		6
1994	5	90	48	2	15	2	2	2
1995	56	67	28	7	14	124	2	
1996	17	51	30	1	24	113		
1997	18	38	17		11	22		
1998	19	4	29	16	4			1
1999	6	7	13		3	22	4	
2000		8	8	6	5	5	1	
2001	4	8	16	2	7	55		
2002	3	15	1			41	2	
2003		2	1	1	4	44	5	
2004		9			31	88	6	1
2005		5			9	24	2	
2006		3			8	28	5	3
2007	2	5			3	81	7	7
2008		1			8	35	6	12
2009		1			6	70	20	26
2010		8	3		39	64	6	15
2011				2	34	142	8	2
2012					19	80	10	
2013		3		2	61	66		9
2014	1	1			35	75	14	1
2015	3	14	10	37	70	96	2	3
2016	1	30	25	36	65	197	8	279
2017		44	125	26	213	278	16	138

Table 4. Jaccard species guilds used for the 2016 benchmark assessment and with the addition of 2015 – 2017 data. GN=Gillnet OTB=Otter trawl, bottom

Region	Gear	Species Guild for 2016 Benchmark Assessment	Region	Gear	Species Guild with additional 2015-2017
North	GN	BUTTERFISH	North	GN	BLUEFISH
North	GN	CROAKER, ATLANTIC	North	GN	BUTTERFISH
North	GN	DOGFISH, SMOOTH	North	GN	CROAKER, ATLANTIC
North	GN	MENHADEN, ATLANTIC	North	GN	MENHADEN, ATLANTIC
North	GN	SPOT	North	GN	SPOT
North	GN	WEAKFISH (SQUETEAGUE SEA TROUT)	North	GN	WEAKFISH (SQUETEAGUE SEA TROUT)
North	OTB	BLUEFISH	North	OTB	BLUEFISH
North	OTB	CRAB, HORSESHOE	North	OTB	CRAB, HORSESHOE
North	OTB	CROAKER, ATLANTIC	North	OTB	CROAKER, ATLANTIC
North	OTB	SCUP	North	OTB	SCUP
North	OTB	SPOT	North	OTB	SPOT
North	OTB	WEAKFISH (SQUETEAGUE SEA TROUT)	North	OTB	WEAKFISH (SQUETEAGUE SEA TROUT)
South	GN	BLUEFISH	South	GN	BLUEFISH
South	GN	BUTTERFISH	South	GN	BUTTERFISH
South	GN	CROAKER, ATLANTIC	South	GN	CROAKER, ATLANTIC
South	GN	DOGFISH, SPINY	South	GN	MENHADEN, ATLANTIC
South	GN	MENHADEN, ATLANTIC	South	GN	WEAKFISH (SQUETEAGUE SEA TROUT)
South	GN	WEAKFISH (SQUETEAGUE SEA TROUT)			
South	OTB	BUTTERFISH	South	OTB	CROAKER, ATLANTIC
South	OTB	CROAKER, ATLANTIC	South	OTB	FISH, NK
South	OTB	DOGFISH, SMOOTH	South	OTB	SHRIMP, PENAEID (SOUTHERN)
South	OTB	MENHADEN, ATLANTIC	South	OTB	SPOT
South	OTB	SPOT			

Table 5. Weakfish discard ratios by stratum.NR=ratio of non-regulatory discards from the period 1994-2000. T5+=ratio of discards for the additional years (2015-2017) covered in the assessment update. GN=Gillnet, OTB=Otter trawl, bottom.

Block	Years	Region	Gear	Season	Ratio	Variance	Lower CI	Upper CI
NR	1982-1993	North	GN	All	0.0068	1.29E-06	0.0046	0.0090
T1	1994	North	GN	All	0.0099	1.50E-05	0.0023	0.0174
T2	1995-1996	North	GN	All	0.0034	3.37E-07	0.0023	0.0046
T3	1997-2002	North	GN	All	0.0078	2.90E-06	0.0045	0.0111
T4	2003-2009	North	GN	All	0.0005	2.28E-08	0.0002	0.0008
T5	2010-2014	North	GN	All	0.0002	3.97E-09	0.0000	0.0003
T5+	2015-2017	North	GN	All	0.0019	3.68E-07	0.0007	0.0030
NR	1982-1993	North	OTB	All	0.0603	1.26E-04	0.0384	0.0822
T1	1994	North	OTB	Early	0.0018	2.00E-06	0.0000	0.0046
T1	1994	North	OTB	Late	0.0297	7.69E-05	0.0126	0.0468
T2	1995-1996	North	OTB	Early	0.0155	4.01E-05	0.0031	0.0278
T2	1995-1996	North	OTB	Late	0.0765	3.04E-04	0.0425	0.1105
T3	1997-2002	North	OTB	Early	0.0023	6.31E-07	0.0008	0.0038
T3	1997-2002	North	OTB	Late	0.0208	4.21E-05	0.0082	0.0335
T4	2003-2009	North	OTB	Early	0.0004	6.35E-09	0.0002	0.0005
T4	2003-2009	North	OTB	Late	0.0275	4.26E-05	0.0148	0.0402
T5	2010-2014	North	OTB	Early	0.0025	5.58E-07	0.0011	0.0040
T5	2010-2014	North	OTB	Late	0.0109	7.87E-06	0.0055	0.0164
T5+	2015-2017	North	OTB	Early	0.0064	2.48E-06	0.0088	0.0094
T5+	2015-2017	North	OTB	Late	0.0118	2.29E-06	0.0088	0.0147
NR	1982-1993	South	GN	All	0.0007	8.96E-09	0.0005	0.0009
T1	1994	South	GN	All	0.0008	4.71E-08	0.0004	0.0012
T2	1995-1996	South	GN	All	0.0005	1.69E-08	0.0003	0.0008
T3	1997-2002	South	GN	All	0.0009	2.57E-08	0.0006	0.0012
T4	2003-2009	South	GN	All	0.0002	1.77E-08	0.0000	0.0004
T5	2010-2014	South	GN	All	0.0003	4.83E-08	0.0000	0.0008
T5+	2015-2017	South	GN	All	0.0037	5.26E-07	0.0023	0.0052
NR	1982-1993	South	OTB	All	0.0089	4.21E-05	0.0000	0.0215
T1	1994	South	OTB	All	0.0277	4.54E-04	0.0000	0.0692
T2	1995-1996	South	OTB	All	0.0001	2.68E-08	0.0000	0.0005
T3	1997-2002	South	OTB	All	0.0022	2.31E-06	0.0000	0.0051
T4	2003-2009	South	OTB	All	0.0066	3.89E-06	0.0028	0.0105
T5	2010-2014	South	OTB	All	0.0124	1.65E-05	0.0045	0.0203
T5+	2015-2017	South	OTB	All	0.0991	4.02E-04	0.0600	0.1382

Table 6. Number of samples used to develop age-length keys by Year, Season, Region and Source. FD=Fishery dependent; FI=Fishery independent

Year	Season	Region	Source	# of Samples
2015	Early	North	FD	215
2015	Early	North	FI	426
2015	Early	South	FD	159
2015	Early	South	FI	248
2015	Late	North	FD	179
2015	Late	North	FI	1153
2015	Late	South	FD	257
2015	Late	South	FI	505
2016	Early	North	FD	199
2016	Early	North	FI	445
2016	Early	South	FD	221
2016	Early	South	FI	284
2016	Late	North	FD	261
2016	Late	North	FI	824
2016	Late	South	FD	340
2016	Late	South	FI	524
2017	Early	North	FD	150
2017	Early	North	FI	246
2017	Early	South	FD	166
2017	Early	South	FI	131
2017	Late	North	FD	194
2017	Late	North	FI	1308
2017	Late	South	FD	187
2017	Late	South	FI	165

Table 7. Size range of weakfish observed in the catch by region and season for 2015-2017.

	South		North	
	Early	Late	Early	Late
2015	22 - 70 cm	20 - 58 cm	19 - 73cm	15 - 69cm
2016	23 - 52 cm	23 - 60 cm	21 - 74cm	19 - 69cm
2017	22 - 70 cm	22 - 54 cm	18 - 76cm	19 - 64cm

Table 8. Minimum and maximum observed ages and lengths in the age-length key samples by year, season and region.

Year	Season	Region	# Samples	Min-Max Age	Min-Max Length
2015	Early	North	641	1 - 6	17 - 73 cm
2015	Late	North	1332	0 - 5	10 - 71 cm
2015	Early	South	407	1 - 4	12 - 50 cm
2015	Late	South	762	0 - 4	10 - 51 cm
2016	Early	North	644	1 - 6	18 - 77 cm
2016	Late	North	1085	0 - 4	19 - 69 cm
2016	Early	South	505	1 - 5	11 - 54 cm
2016	Late	South	864	0 - 3	9 - 54 cm
2017	Early	North	396	1 - 6	17 - 76 cm
2017	Late	North	1502	0 - 5	6 - 60 cm
2017	Early	South	297	1 - 4	13 - 60 cm
2017	Late	South	352	0 - 5	10 - 55 cm

Table 9. Age-1+ indices of abundance for weakfish.

	SEAMAP	NC P915	ChesMMAP	DE 30'	NJ OT	NEFSC Trawl	NEAMAP	MRIP
1982						7.29		0.08
1983						15.37		0.23
1984						116.00		0.18
1985						2.40		0.13
1986						20.51		0.56
1987						0.42		0.21
1988					1.08	9.14		0.34
1989					24.61	3.32		0.12
1990	3.42				23.19	2.58		0.10
1991	8.15			91.36	18.34	7.54		0.13
1992	2.15			93.67	25.85	3.12		0.07
1993	18.03			305.86	16.28	12.35		0.10
1994	2.55			448.29	197.56	60.64		0.13
1995	0.69			458.47	289.84	14.59		0.24
1996	0.93			1147.41	8.01	23.76		0.24
1997	2.40			324.08	8.72	8.04		0.24
1998	4.99			362.14	1.59	4.87		0.25
1999	5.57			304.06	16.25	19.19		0.15
2000	2.04			825.47	46.63	39.96		0.16
2001	1.13	1.92		450.19	29.40	84.54		0.09
2002	9.23	1.53	5.32	343.55	105.93	111.83		0.10
2003	6.04	1.30	3.54	290.43	56.58	170.27		0.04
2004	2.84	1.31	8.83	257.57	148.80	57.35		0.07
2005	17.32	1.27	8.50	75.30	10.80	48.39		0.08
2006	15.85	1.07	4.48	365.81	5.09	89.84		0.05
2007	12.15	0.47	2.83	107.19	30.20	22.47	83.33	0.02
2008	11.44	0.56	2.21	124.94	37.38	29.21	112.39	0.03
2009	17.68	0.35	0.79	108.78	30.68		91.82	0.01
2010	14.07	0.46	2.13	171.62	38.44		64.26	0.03
2011	3.41	0.39	2.80	347.79	130.02		253.36	0.01
2012	28.17	0.94	3.47	150.90	171.19		314.12	0.03
2013	7.55	0.73	1.23	95.32	16.48		29.91	0.02
2014	9.80	0.53	0.11	55.15	83.64		51.85	0.01
2015	2.83	0.33	1.30	108.71	37.83		65.90	0.02
2016	6.46	0.30	1.80	288.61	63.91		267.38	0.02
2017	10.36	0.33	0.65	215.13	34.80		49.48	0.01

Table 10. Recruitment indices for weakfish.

	Composite YOY	RI Fall Trawl	CT LISTS	NY Peconic Bay	DE Bay 16' Trawl	MD Coastal Bay Trawl	VIMS Juv Trawl	NC P195
1982	0.94	19.26			55.35			
1983	0.37	1.28			20.35			
1984	1.50	4.74	1.00		158.54			
1985	0.71	28.35	6.19		37.10			
1986	0.94	3.50	13.16		59.57			
1987	0.47	0.58	0.63	0.51	43.24			20.19
1988	0.94	1.29	3.49	0.11	26.02		28.98	79.74
1989	0.80	0.86	8.69	1.38	35.85	1.66	24.00	24.78
1990	0.80	12.51	5.56	0.55	50.89	1.95	6.94	51.00
1991	0.95	12.80	11.95	20.44	63.43	5.91	5.09	33.19
1992	1.34	10.75	3.05	3.01	102.41	9.01	17.20	42.35
1993	0.90	9.12	4.08	0.96	110.85	10.78	9.56	10.03
1994	1.20	32.38	11.19	8.24	125.71	4.62	5.91	34.51
1995	1.04	0.22	5.22	1.60	138.00	18.90	8.41	21.97
1996	2.02	336.69	15.23	25.13	119.57	6.41	12.02	108.97
1997	1.71	66.65	12.38	15.28	180.20	10.18	10.25	39.22
1998	1.39	5.97	5.02	0.98	79.68	8.11	11.91	123.74
1999	1.54	3.44	30.93	7.90	78.03	24.27	12.39	77.03
2000	1.90	28.59	63.31	15.87	115.98	11.17	12.24	81.94
2001	1.00	5.98	40.09	16.11	50.93	8.54	12.12	19.87
2002	0.73	3.69	41.35	12.17	35.24	2.04	10.54	15.36
2003	1.28	128.17	49.41	6.08	49.17	7.41	20.55	35.65
2004	0.90	1.26	58.98	5.68	49.69	4.16	9.03	29.21
2005	1.13	24.56	25.86	30.76	68.03	5.81	6.80	36.32
2006	0.66	0.44	1.05	8.63	29.75	4.69	8.26	37.72
2007	1.04	8.40	63.93	12.22	45.55	11.14	8.16	38.98
2008	0.76	0.08	9.03	7.93	33.22	0.40	12.64	49.72
2009	0.71	1.16	6.48	1.73	46.66	1.49	9.93	25.10
2010	0.94	7.94		2.51	45.31	5.88	15.65	30.27
2011	0.62	19.53	11.64	3.47	29.43	1.79	7.14	21.58
2012	0.58	9.70	21.96	2.15	31.71	0.34	6.86	24.10
2013	1.06	2.13	7.01	8.41	65.89	1.13	12.59	52.30
2014	1.07	6.42	41.53	7.67	86.22	1.90	7.12	36.56
2015	0.52	5.19		7.54	41.72	1.13	6.22	7.42
2016	0.98	12.65		10.93	70.42	0.71	5.60	71.06
2017	0.58	33.82		14.38	29.59	0.13	6.53	23.57

Table 11. Descriptions of data (S1-S2) and model (M1-M4) sensitivity runs in the Bayesian age- structured model.

Scenario		Description
Data Sensitivity	S1	Base model run: multinomial ALK, 2 fleets, reconstructed historical catch-at- age with scale ages converted to otolith ages, new MRIP estimates of recreational catch
	S2	same as S1 but with old MRIP estimates
Model Configuration	M1	Constant M, no spatial heterogeneity
	M2	Time-varying M, no spatial heterogeneity
	M3	Constant M, spatial heterogeneity in population available to surveys
	M4	Time-varying M and spatial heterogeneity

Table 12. Estimates of DICs, and retrospective errors. Based on data S1, i.e., with new MRIP estimates. E1_t=(N_t|data to year t -N_t|data to year t+1) /(N_t|data to year t+1); E2_t=(N_t|data to year t - N_t|data to year 2017) /(Nt|data to year t) .

Models	DIC	E1	E2
M1	233.74	1.75	1.45
M2	-72.39	0.86	1.00
M3	-2656.67	4.04	2.37
M4	-2760.66	1.18	1.39

Table 13. DIC values for sensitivity runs S1-S2 for models M1-M4. See Table 11 for a description of the sensitivity runs.

Data scenarios	M1	M2	M3	M4
S1	233.74	-72.39	-2656.67	-2760.66
S2	-18.89	-351.28	-2977.26	-3129.84

Table 14. Full fishing mortality rates estimated by the base run of the Bayesian age-structured model.

Year	Commercial	Recreational	Maximum total F-at-Age
1982	1.08	0.35	1.36
1983	1.22	0.60	1.66
1984	1.59	0.47	1.92
1985	1.21	0.60	1.66
1986	1.55	0.74	2.06
1987	0.77	0.48	1.15
1988	1.58	0.55	1.97
1989	1.50	0.29	1.70
1990	1.35	0.29	1.57
1991	1.25	0.57	1.67
1992	1.41	0.55	1.81
1993	1.23	0.34	1.49
1994	0.61	0.22	0.79
1995	0.39	0.20	0.55
1996	0.38	0.20	0.58
1997	0.37	0.22	0.60
1998	0.48	0.25	0.74
1999	0.49	0.25	0.75
2000	0.51	0.47	0.99
2001	0.45	0.42	0.87
2002	0.85	0.63	1.47
2003	0.86	0.64	1.49
2004	0.53	0.77	1.28
2005	0.47	0.59	1.06
2006	0.69	0.84	1.49
2007	1.32	0.84	2.10
2008	1.08	0.67	1.73
2009	1.38	0.89	2.20
2010	1.53	0.26	1.76
2011	0.39	0.11	0.51
2012	0.34	0.62	0.96
2013	0.75	0.13	0.90
2014	0.56	0.84	1.38
2015	0.42	0.71	1.11
2016	0.46	0.75	1.19
2017	0.19	0.40	0.62

Table 15. Natural mortality (M) and total mortality (Z) rates estimated by the base run of the Bayesian age-structured model.

Year	M	Z
1982	0.17	1.53
1983	0.17	1.83
1984	0.17	2.09
1985	0.17	1.83
1986	0.17	2.24
1987	0.17	1.31
1988	0.16	2.13
1989	0.16	1.86
1990	0.15	1.72
1991	0.15	1.82
1992	0.14	1.95
1993	0.14	1.63
1994	0.14	0.92
1995	0.14	0.69
1996	0.15	0.73
1997	0.17	0.77
1998	0.20	0.93
1999	0.24	0.98
2000	0.29	1.28
2001	0.36	1.23
2002	0.42	1.89
2003	0.48	1.97
2004	0.55	1.83
2005	0.66	1.72
2006	0.80	2.29
2007	0.91	3.01
2008	0.94	2.68
2009	0.94	3.14
2010	0.94	2.70
2011	0.94	1.45
2012	0.95	1.91
2013	0.95	1.84
2014	0.93	2.31
2015	0.90	2.01
2016	0.88	2.07
2017	0.83	1.45

Table 16. Total abundance estimated by the base run of the Bayesian age-structured model in millions of fish.

Year	Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Total
1982	25.44	16.62	6.83	3.02	1.43	1.52	54.86
1983	27.09	17.05	7.66	2.13	0.70	0.78	55.41
1984	27.06	17.37	6.94	1.96	0.37	0.29	53.99
1985	36.16	16.49	6.23	1.43	0.26	0.11	60.69
1986	47.56	23.19	6.72	1.60	0.25	0.07	79.39
1987	39.54	28.55	7.90	1.28	0.19	0.04	77.51
1988	23.34	27.86	14.79	2.99	0.37	0.07	69.42
1989	21.53	14.29	9.90	2.99	0.39	0.06	49.15
1990	18.21	13.78	5.70	2.40	0.50	0.08	40.68
1991	19.05	12.00	5.88	1.54	0.46	0.12	39.04
1992	26.52	12.49	4.99	1.53	0.28	0.11	45.91
1993	30.04	17.06	4.89	1.17	0.24	0.06	53.45
1994	31.57	20.41	7.69	1.43	0.25	0.07	61.41
1995	17.27	24.17	12.59	3.79	0.59	0.13	58.55
1996	18.75	13.68	16.00	6.60	1.80	0.38	57.21
1997	16.88	14.79	9.10	8.56	3.21	1.15	53.69
1998	12.86	13.04	9.59	4.69	4.01	2.25	46.44
1999	11.01	9.44	7.72	4.30	1.86	2.85	37.18
2000	15.73	7.74	5.34	3.30	1.63	2.15	35.88
2001	5.94	10.22	3.75	1.74	0.93	1.37	23.95
2002	8.83	3.67	4.89	1.26	0.51	0.86	20.02
2003	10.61	4.67	1.26	0.94	0.19	0.31	17.98
2004	15.88	5.31	1.51	0.22	0.13	0.11	23.16
2005	7.08	7.72	1.76	0.29	0.04	0.05	16.94
2006	7.64	3.17	2.52	0.37	0.05	0.02	13.77
2007	4.20	2.80	0.74	0.32	0.04	0.01	8.12
2008	5.64	1.24	0.44	0.05	0.02	0.00	7.40
2009	5.67	1.70	0.23	0.04	0.00	0.00	7.65
2010	8.50	1.61	0.25	0.01	0.00	0.00	10.38
2011	6.93	2.50	0.29	0.02	0.00	0.00	9.75
2012	6.30	2.50	0.78	0.07	0.01	0.00	9.66
2013	4.04	2.16	0.64	0.13	0.01	0.00	6.98
2014	7.44	1.35	0.56	0.12	0.02	0.00	9.50
2015	5.47	2.45	0.29	0.07	0.01	0.00	8.29
2016	6.60	1.92	0.62	0.05	0.01	0.00	9.19
2017	7.05	2.36	0.48	0.09	0.01	0.00	9.99

Table 17. Spawning stock biomass (mt) estimated by the base run of the Bayesian age-structured model.

Year	SSB (mt)
1982	15,405
1983	12,858
1984	10,815
1985	12,817
1986	20,768
1987	15,740
1988	15,714
1989	11,397
1990	10,681
1991	12,339
1992	10,586
1993	7,971
1994	12,465
1995	12,448
1996	14,250
1997	19,197
1998	15,114
1999	14,107
2000	11,540
2001	12,821
2002	8,259
2003	5,621
2004	4,746
2005	3,782
2006	4,103
2007	3,457
2008	2,060
2009	1,866
2010	1,764
2011	1,556
2012	2,064
2013	1,133
2014	1,263
2015	1,522
2016	1,621
2017	1,922

Table 18. Estimates of biological reference points from the 2016 benchmark assessment and the 2019 assessment updated.

Threshold		
	2016	2019
SSB	6,880 mt	6,170 mt
Z	1.36	1.43
F	0.93	0.97

Target		
	2016	2019
SSB	n.a.	n.a.
Z	0.93	1.03
F	0.55	0.57

Table 19. Updated reference points, terminal year values, and stock status from the base run of the Bayesian age-structured model. The F target and threshold are only applicable when Z is at or below the Z target.

	Threshold	Target	2017 Value	Status
SSB	6,170 mt	n.a.	1,922 mt	Depleted
Z	1.43	1.03	1.45	Exceeding the Z threshold
F	0.97	0.57	0.62	n.a.

9.0 Figures

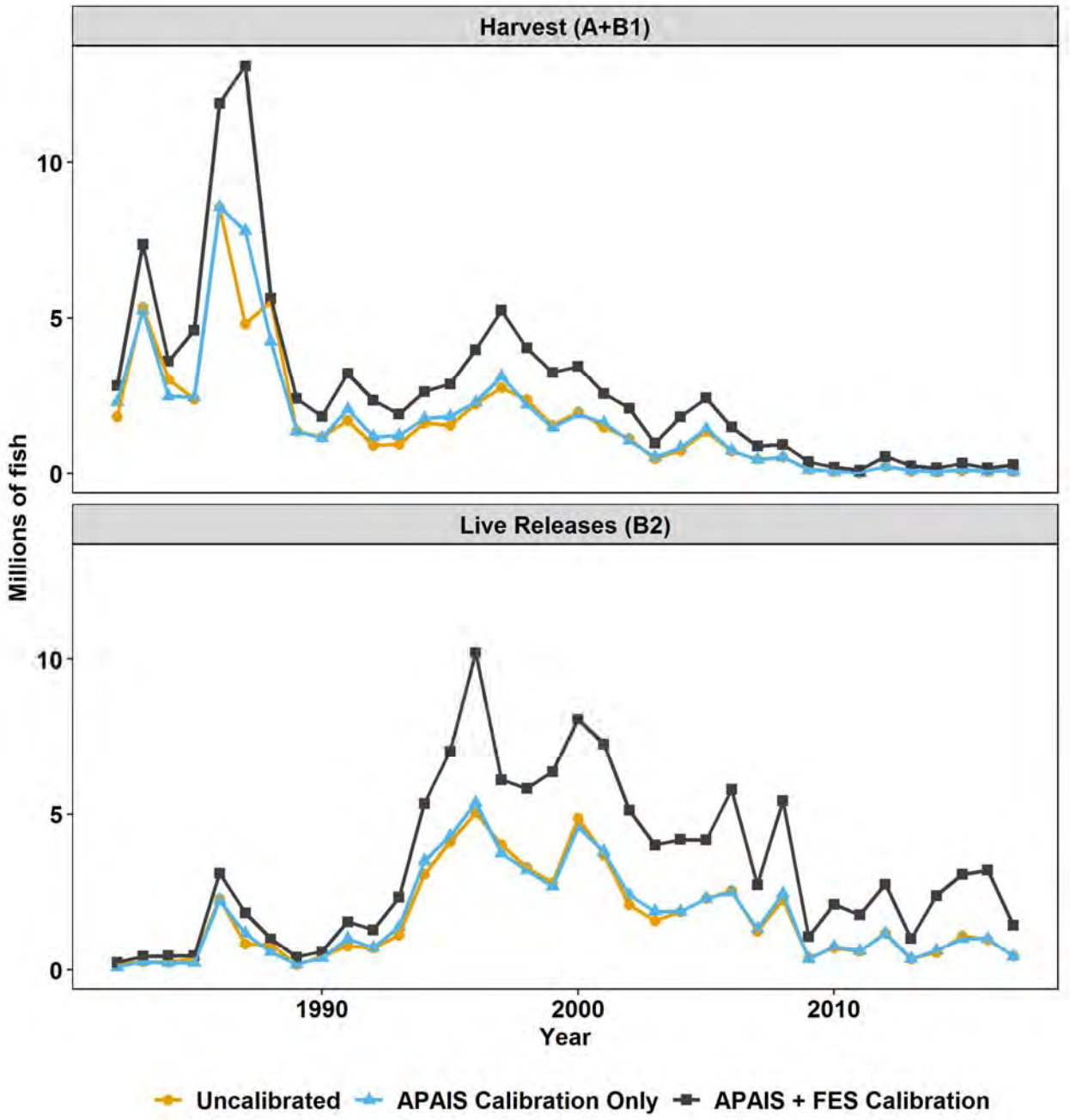

Figure 1. Comparison of calibrated and uncalibrated MRIP estimates of recreational weakfish harvest (top) and live releases (bottom). The APAIS + FES calibration was used to develop the estimates of recreational catch for the assessment update.

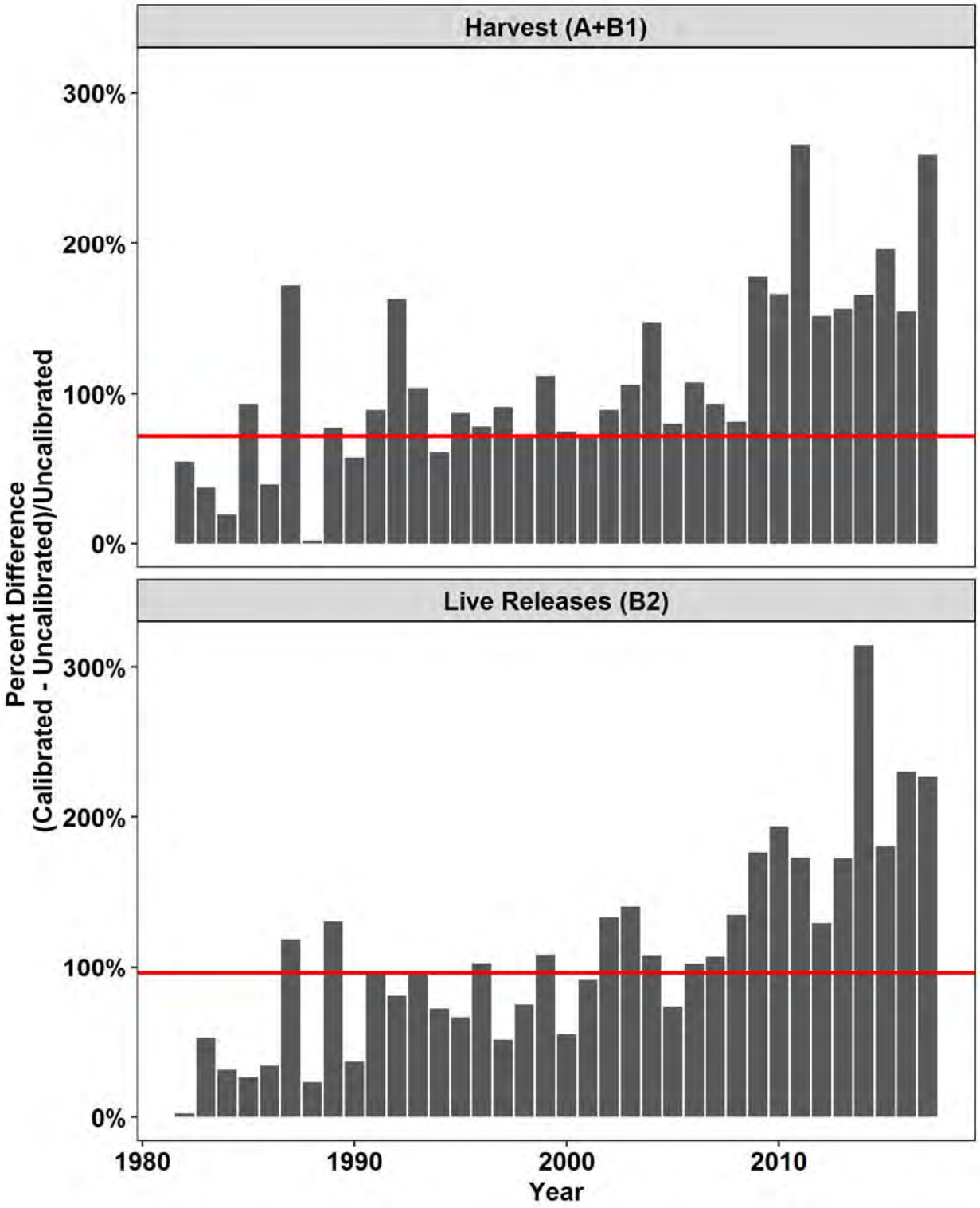

Figure 2. Percent difference between calibrated and uncalibrated MRIP estimates of recreational weakfish harvest (top) and live releases (bottom). Red line indicates the time series mean percent difference.

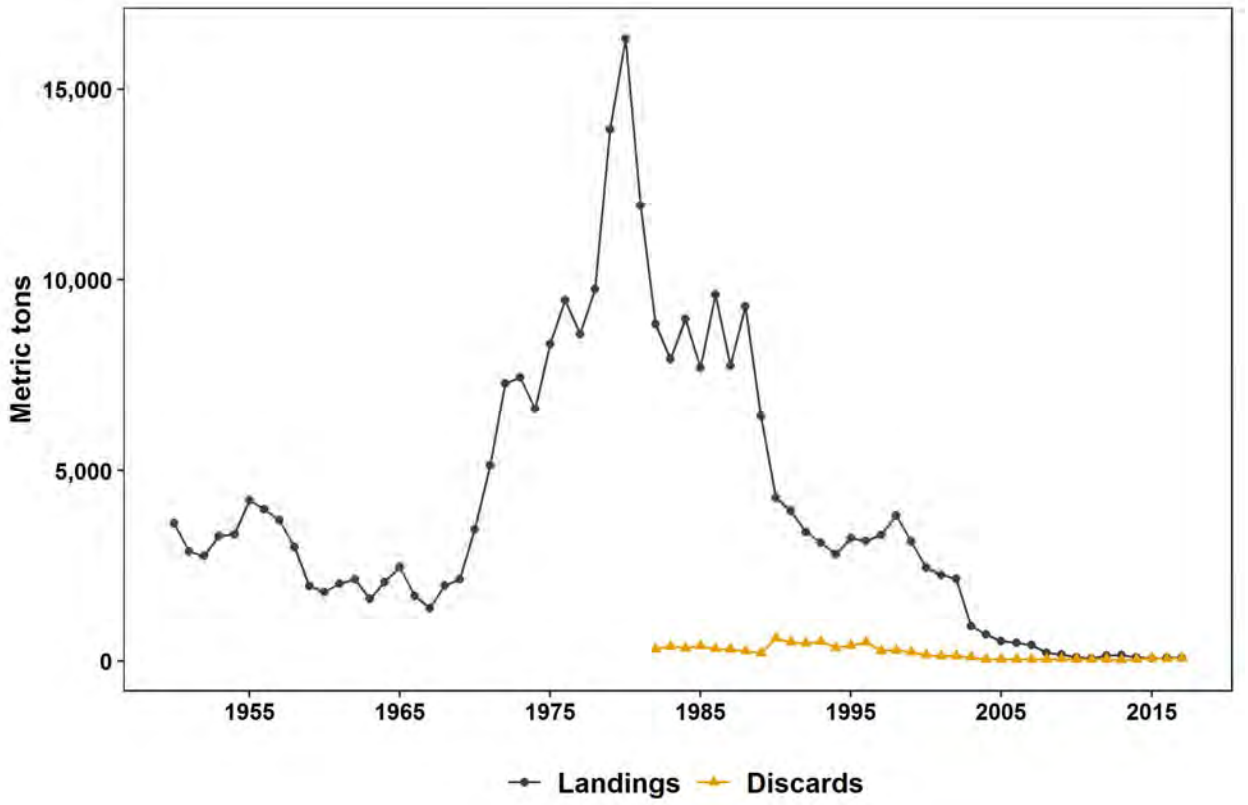

Figure 3. Commercial landings and discards of weakfish in weight, 1950-2017. Estimates of commercial discards are not available prior to 1982.

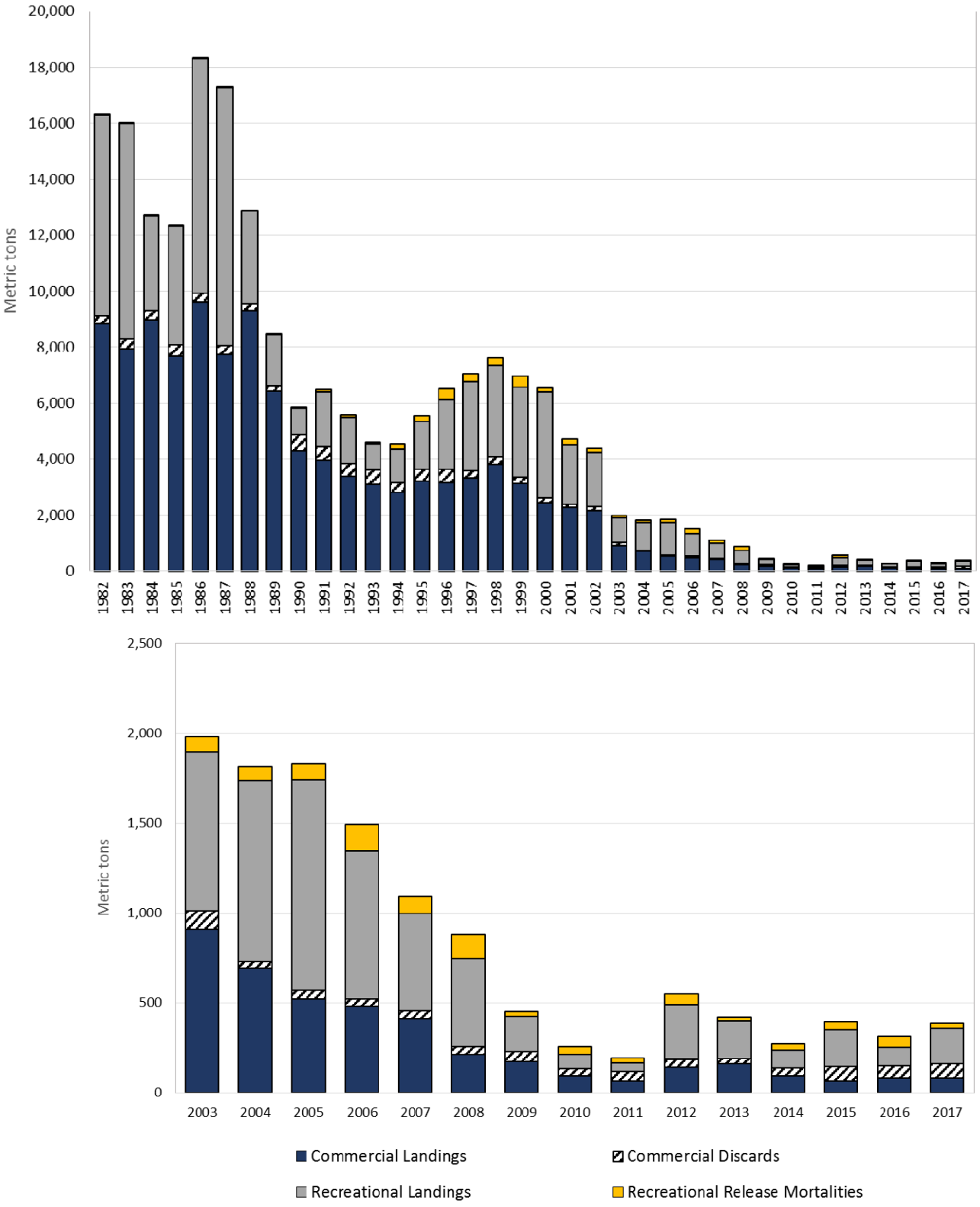

Figure 4. Total annual weakfish removals by sector used in the assessment. Top figure is 1982-2017, bottom figure is 2003 – 2017 to show detail in recent years.

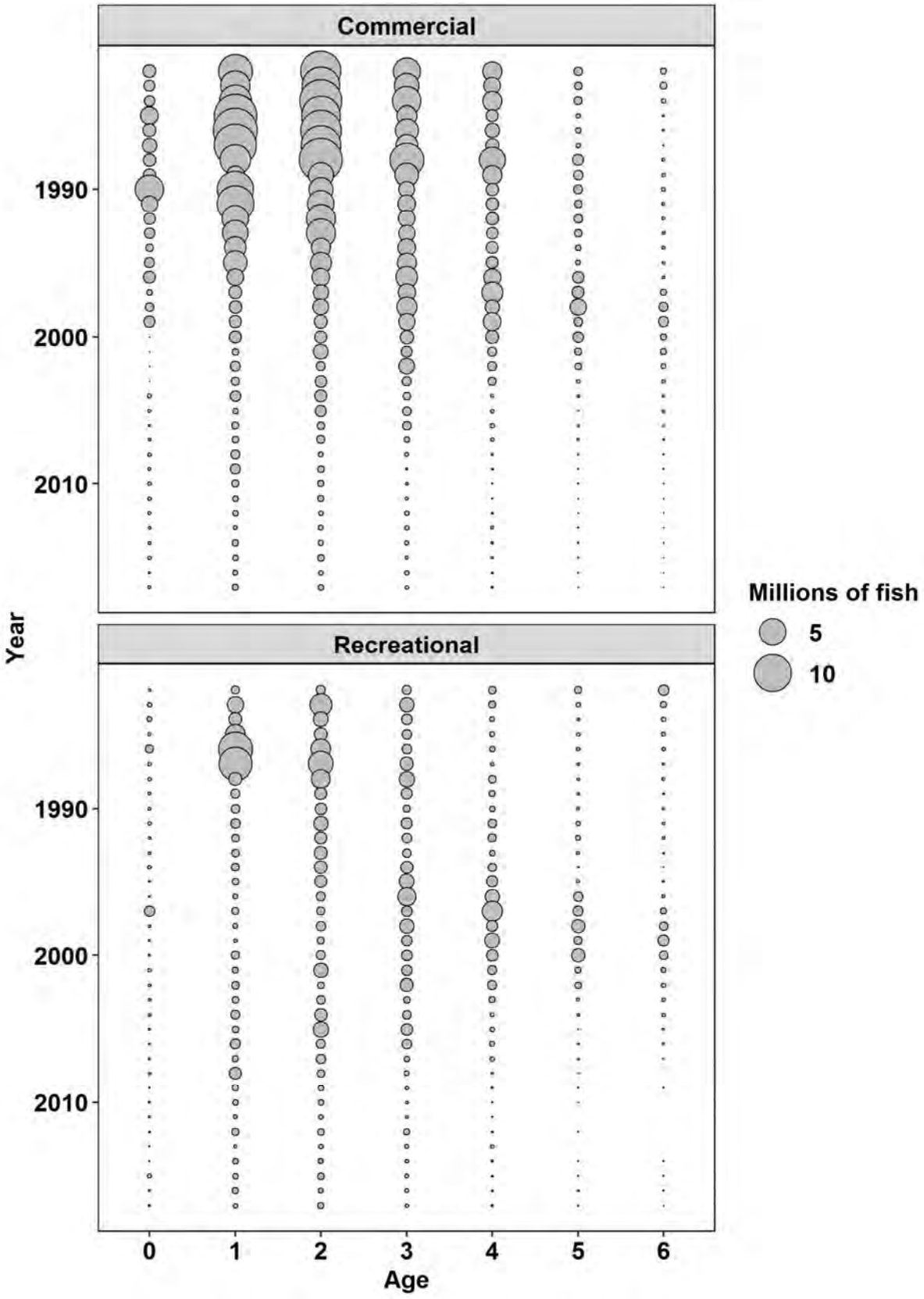

Figure 5. Weakfish catch-at-age by sector in millions of fish.

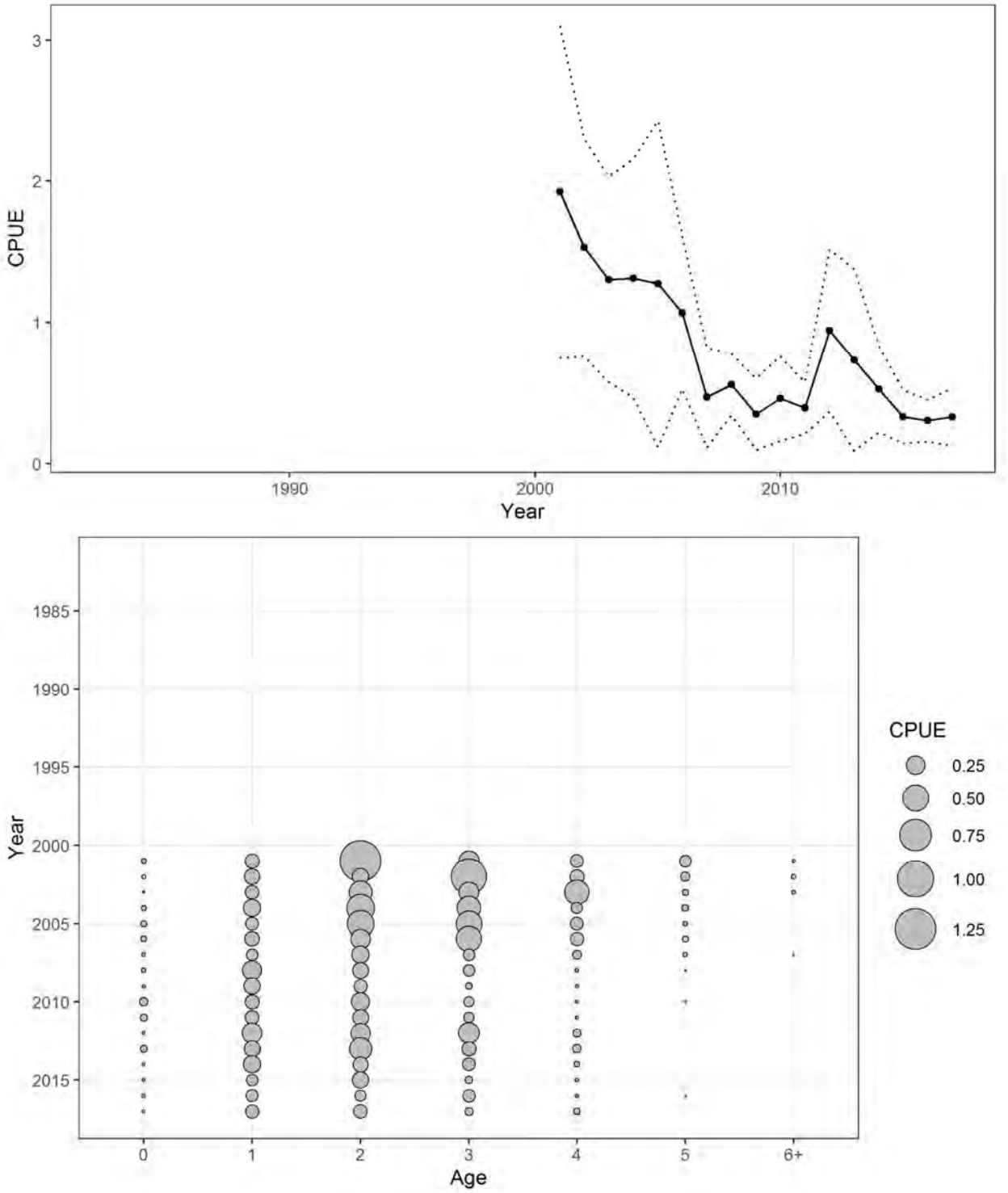

Figure 6. NC Independent Gillnet Survey age-1+ index plotted with 95% confidence intervals (top) and index-at-age (bottom).

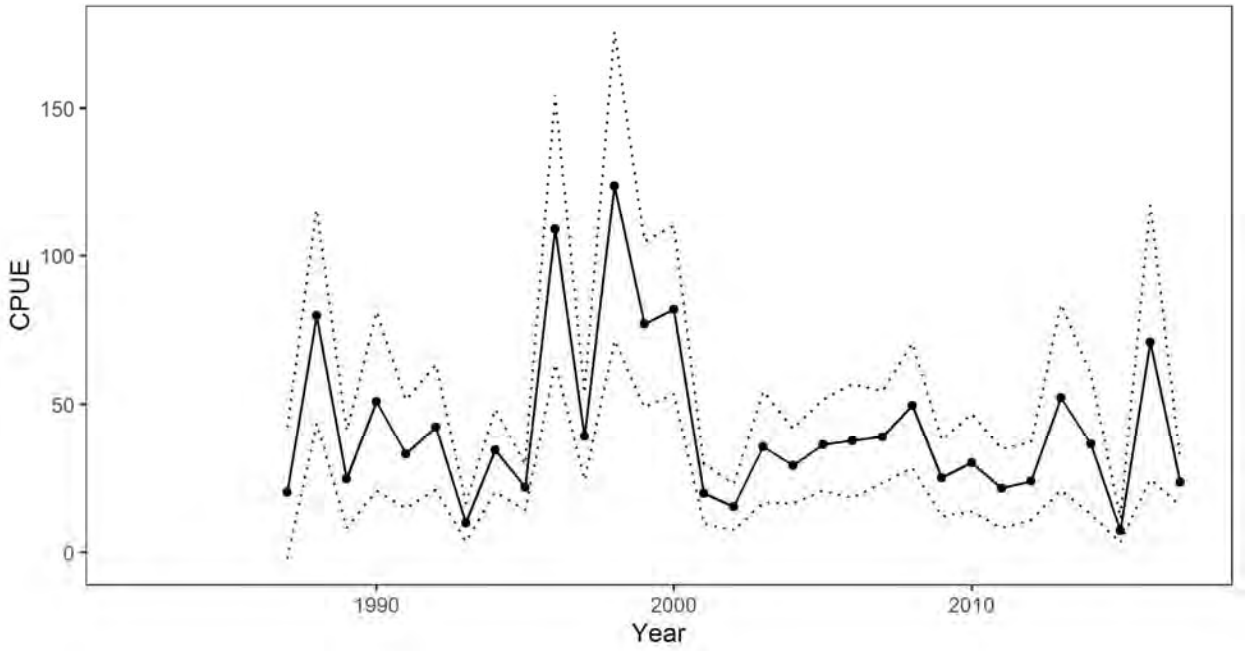

Figure 7. NC Pamlico Sound Survey (P195) recruitment index plotted with 95% confidence intervals.

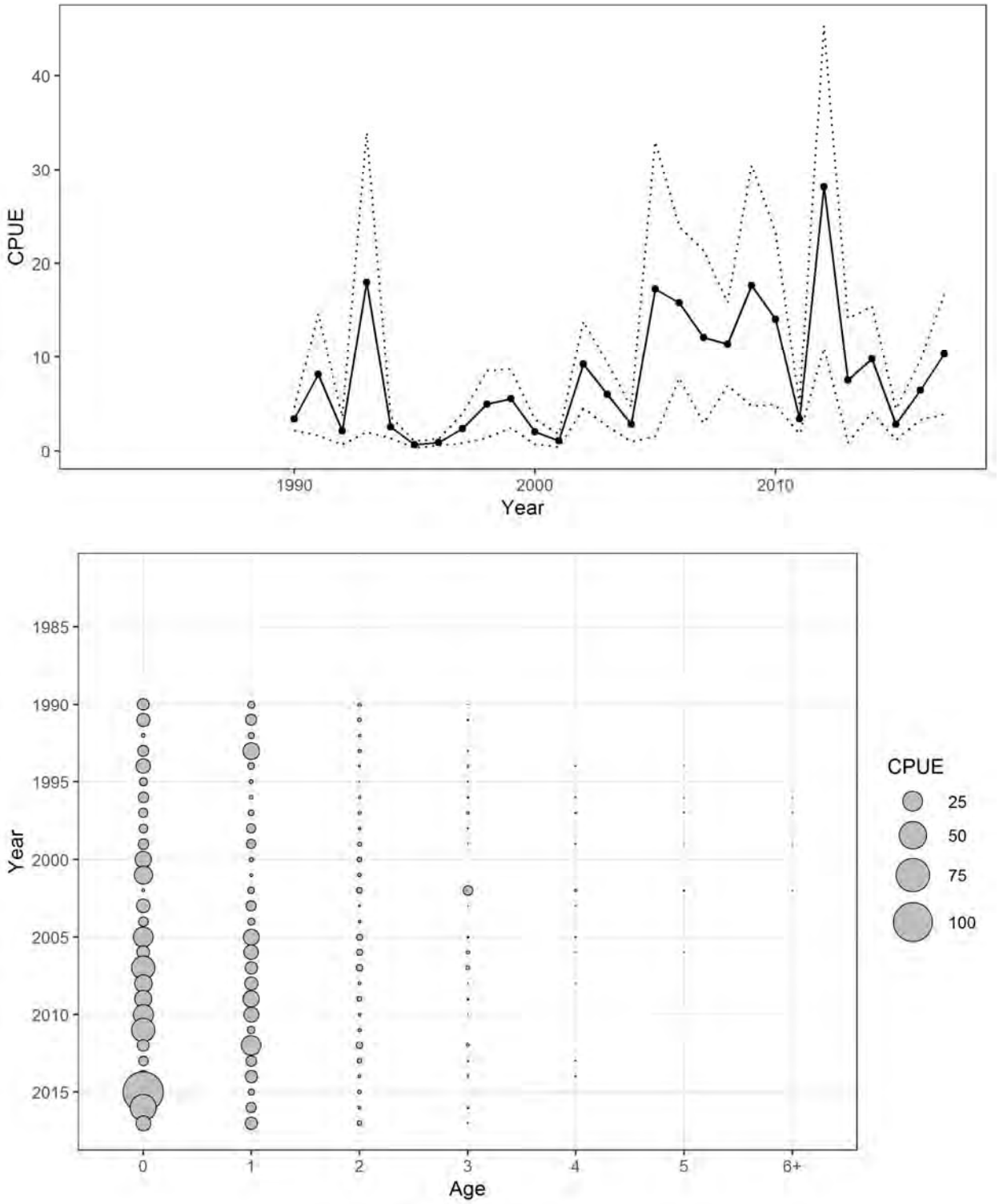

Figure 8. SEAMAP age-1+ index with 95% confidence intervals (top) and SEAMAP index-at-age (bottom).

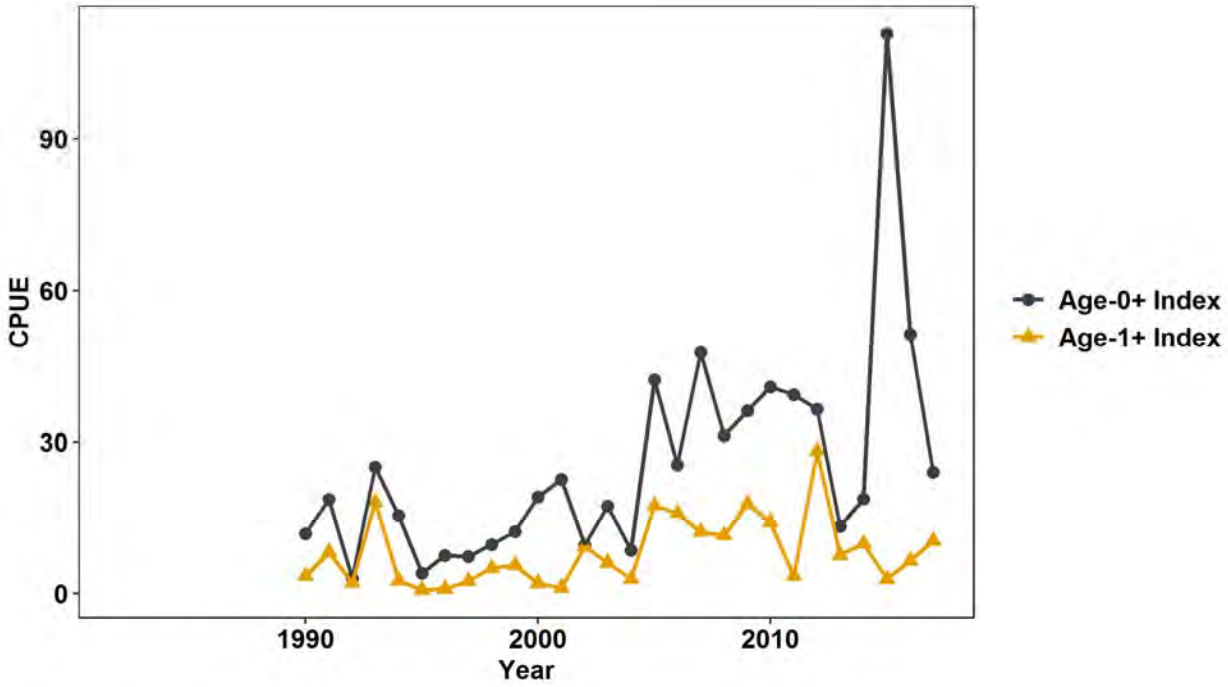

Figure 9. Comparison of age-0+ and age-1+ index from SEAMAP survey.

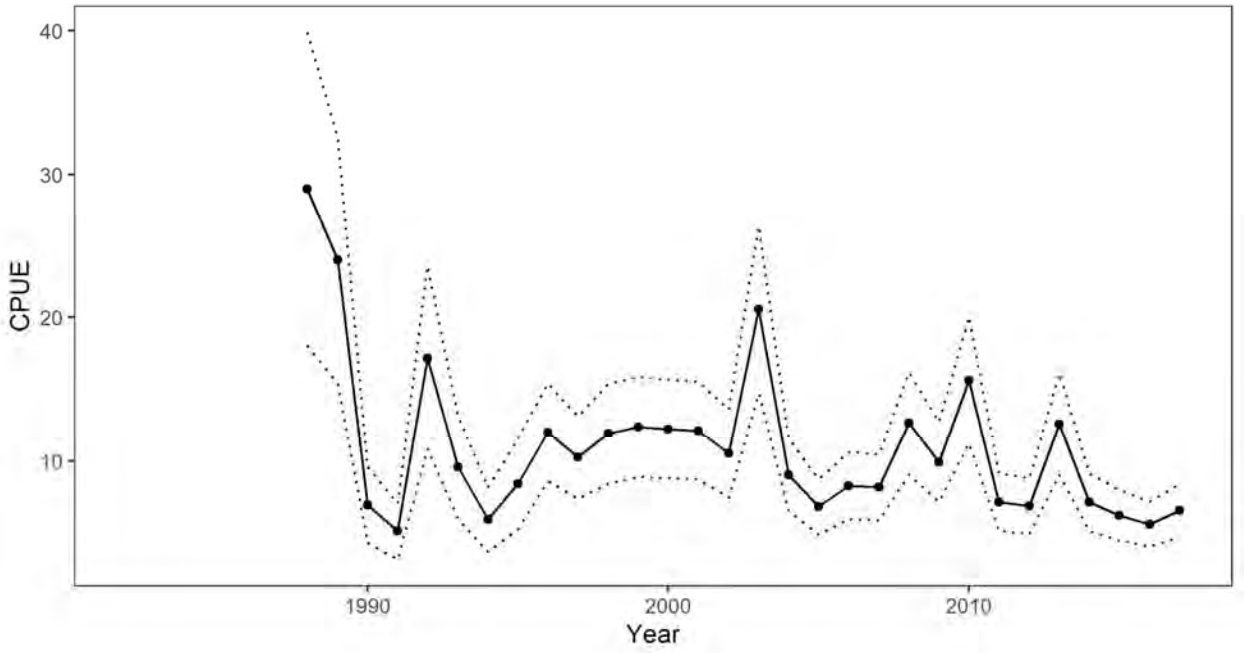

Figure 10. VIMS Juvenile Trawl Survey recruitment index plotted with 95% confidence intervals.

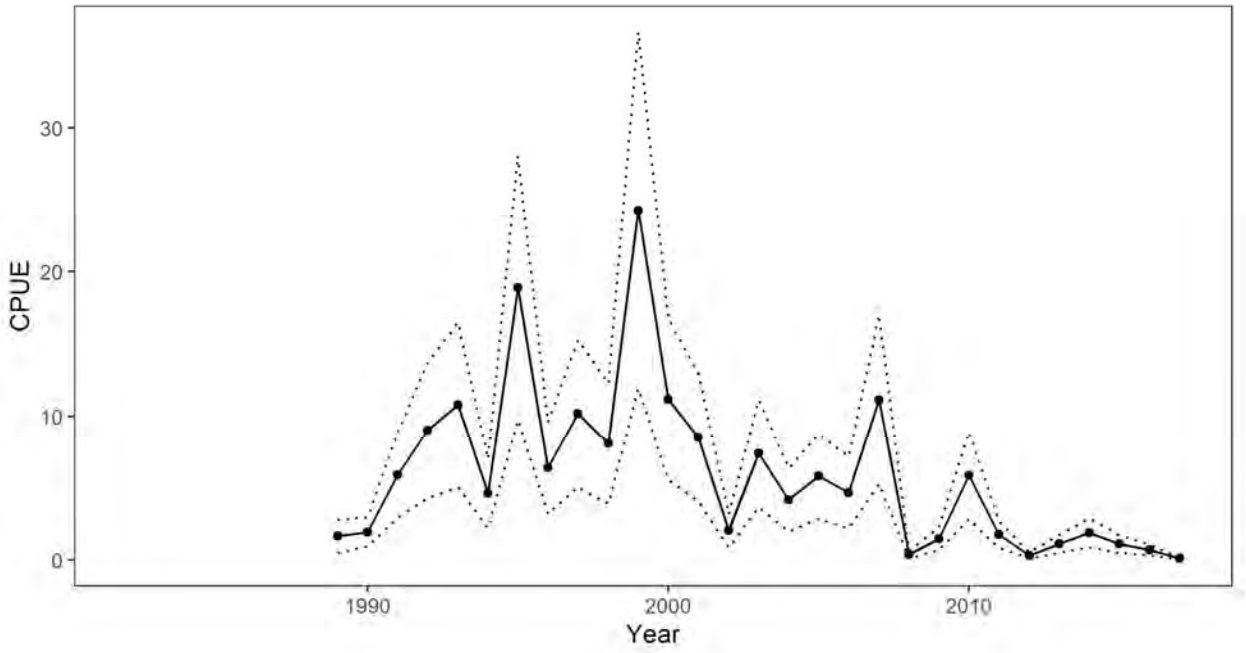

Figure 11. MD Coastal Bays Trawl Survey recruitment index plotted with 95% confidence intervals.

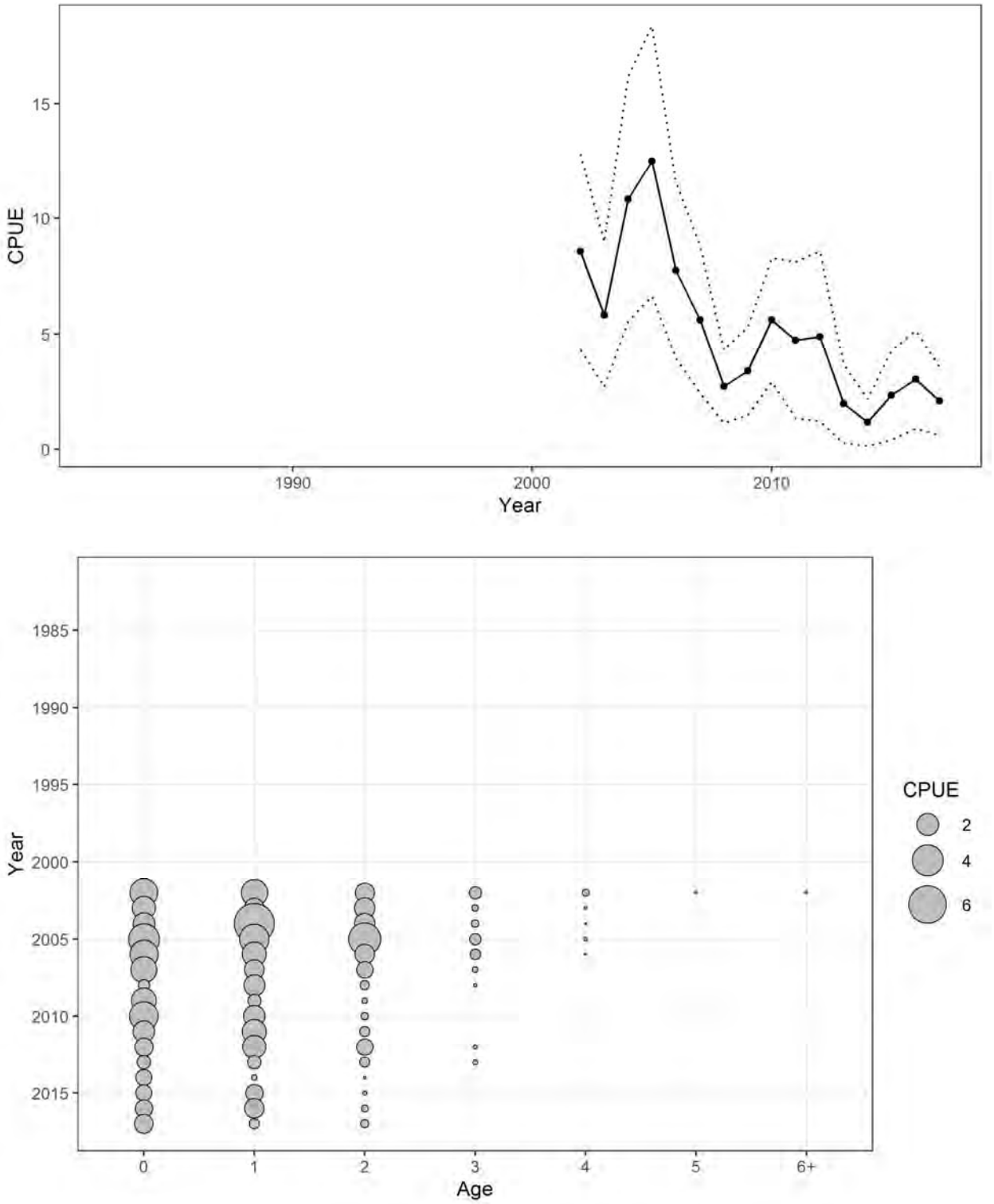

Figure 12. ChesMMAP age-1+ index with 95% confidence intervals (top) and ChesMMAP index-at-age (bottom).

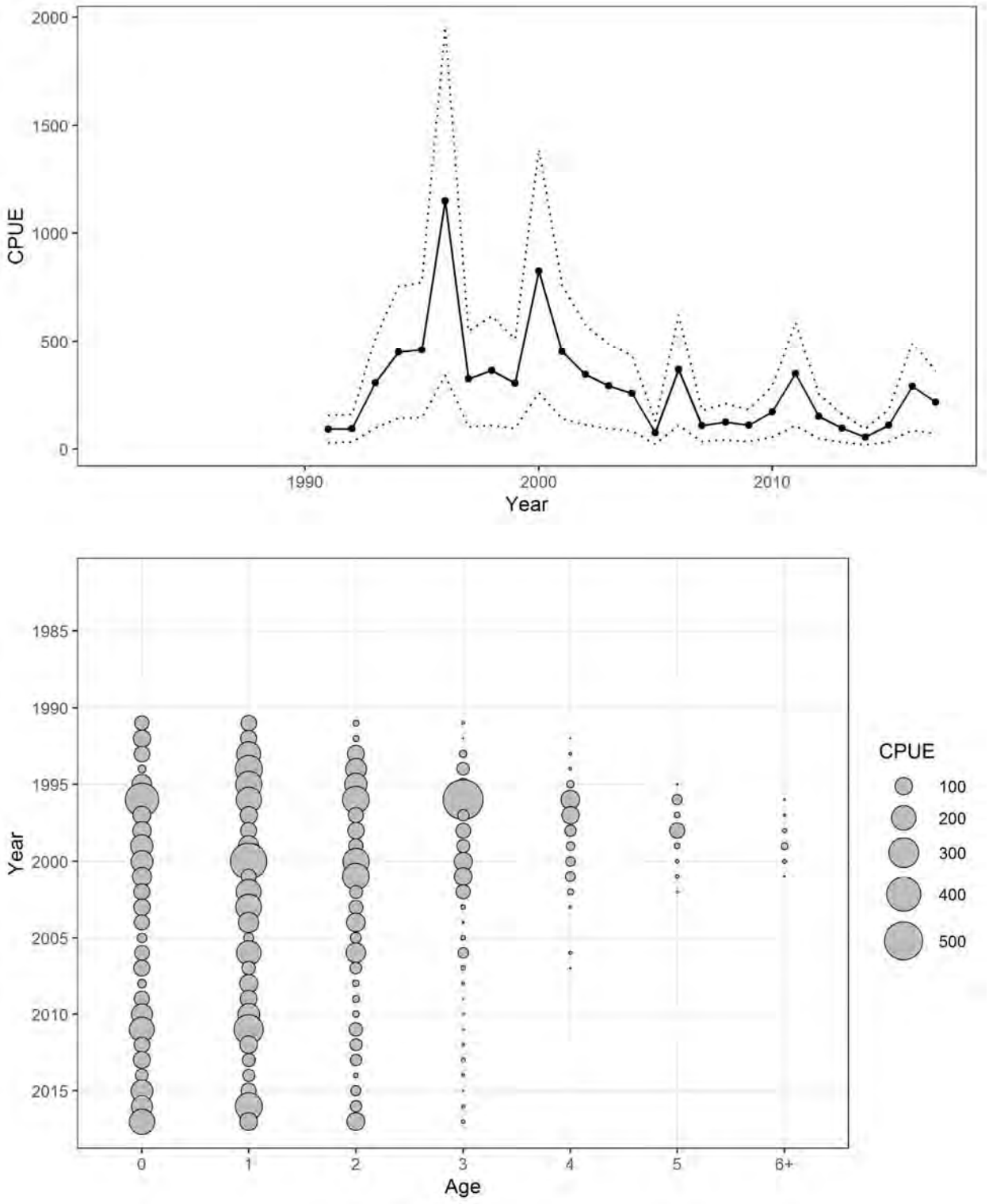

Figure 13. DE Bay 30' Trawl Survey age-1+ index with 95% confidence intervals (top) and DE Bay 30' Trawl Survey index-at-age (bottom)

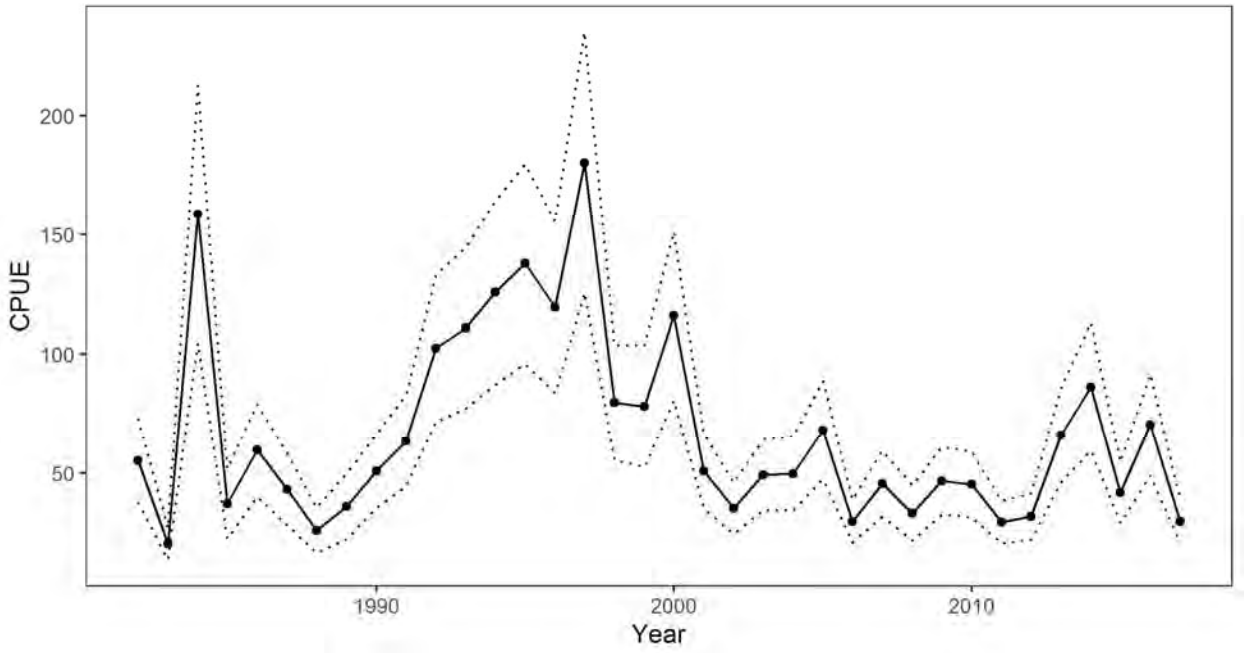

Figure 14. DE Bay Juvenile Trawl Survey recruitment index plotted with 95% confidence intervals.

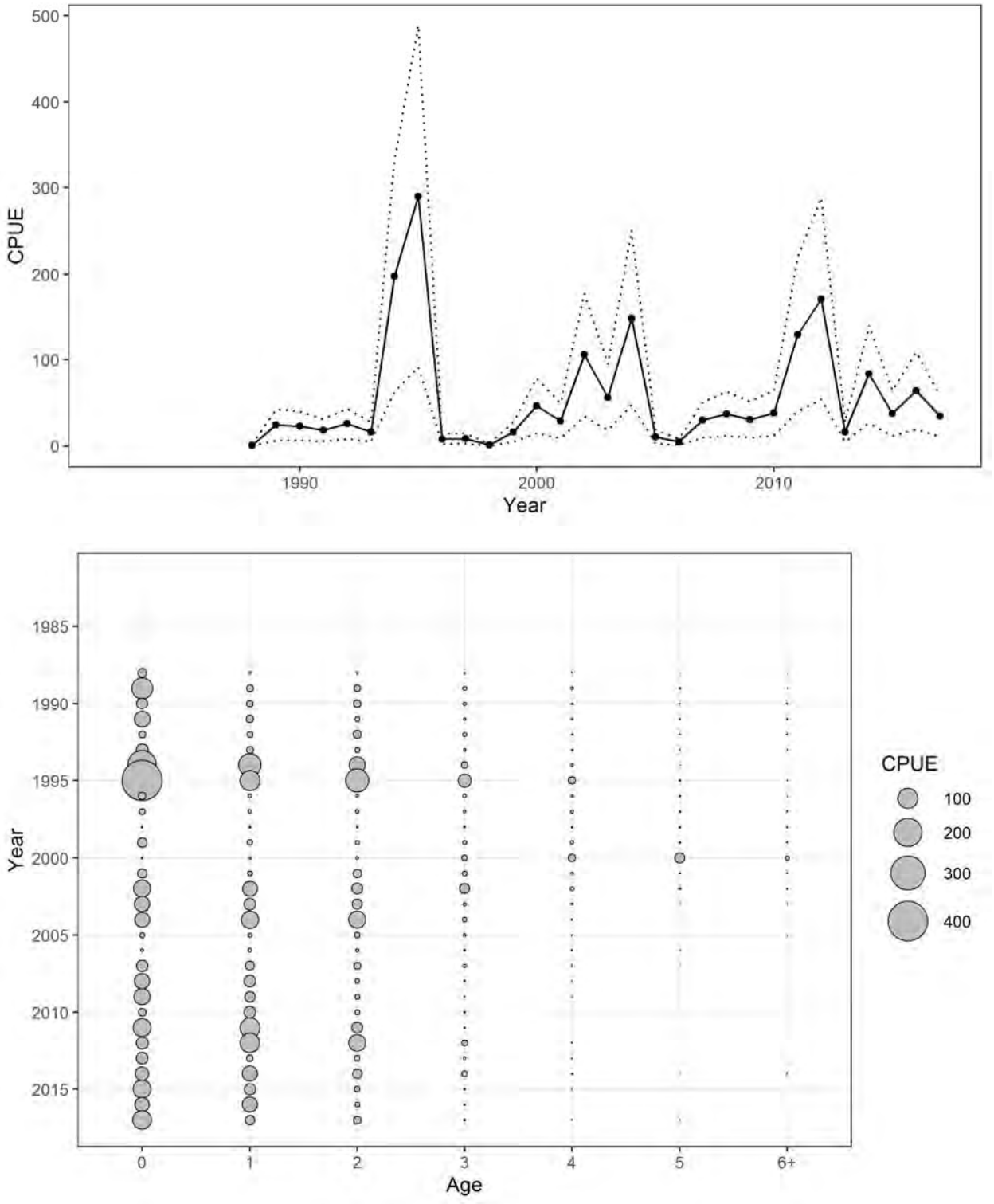

Figure 15. NJ Ocean Trawl Survey age-1+ index with 95% confidence intervals (top) and NJ Ocean Trawl Survey index-at-age (bottom).

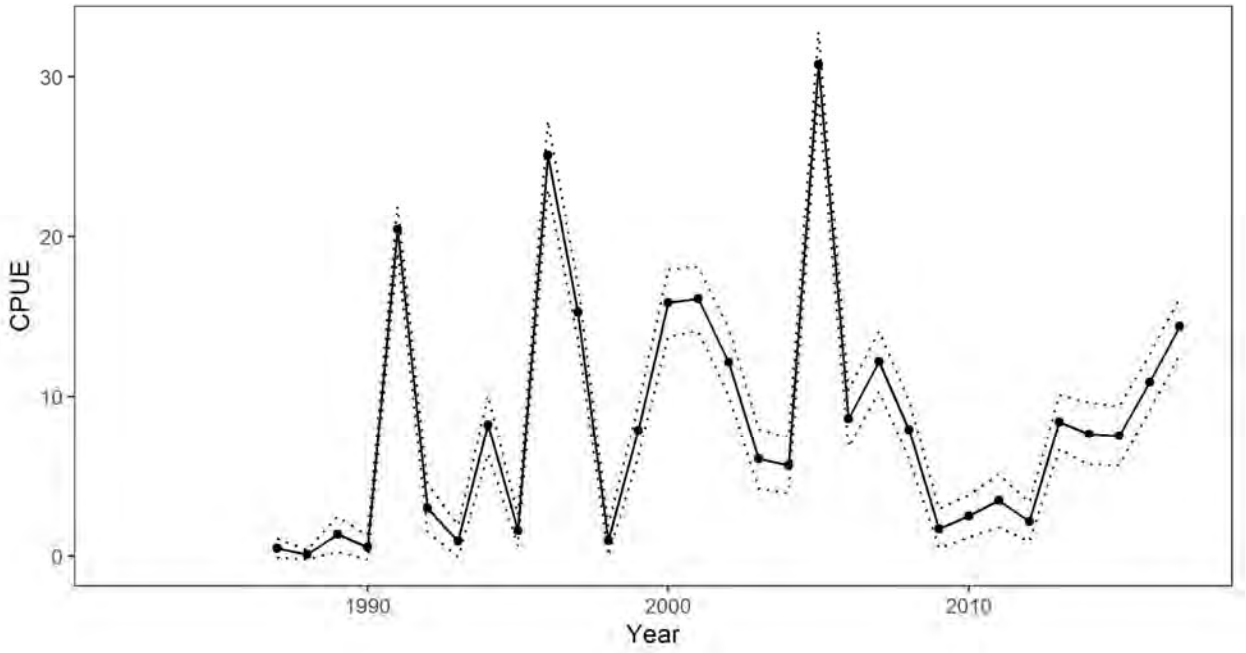

Figure 16. NY Peconic Bay recruitment index plotted with 95% confidence intervals.

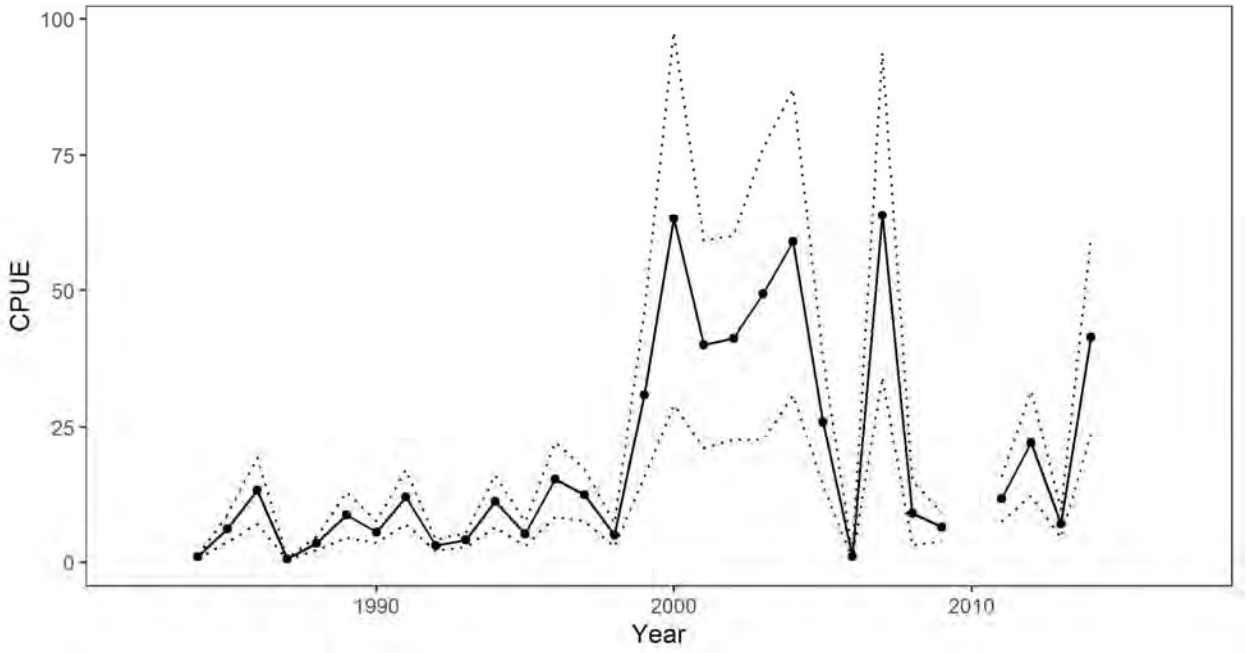

Figure 17. CT LISTS recruitment index plotted with 95% confidence intervals.

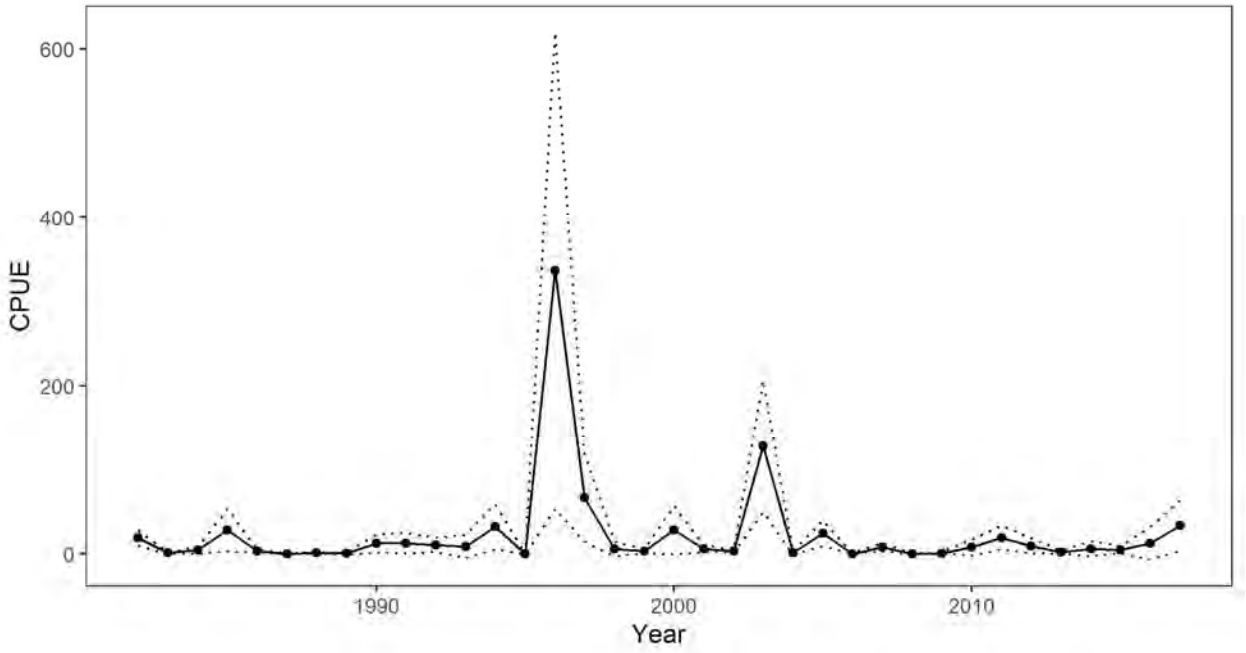

Figure 18. RI Seasonal Trawl recruitment index plotted with 95% confidence intervals.

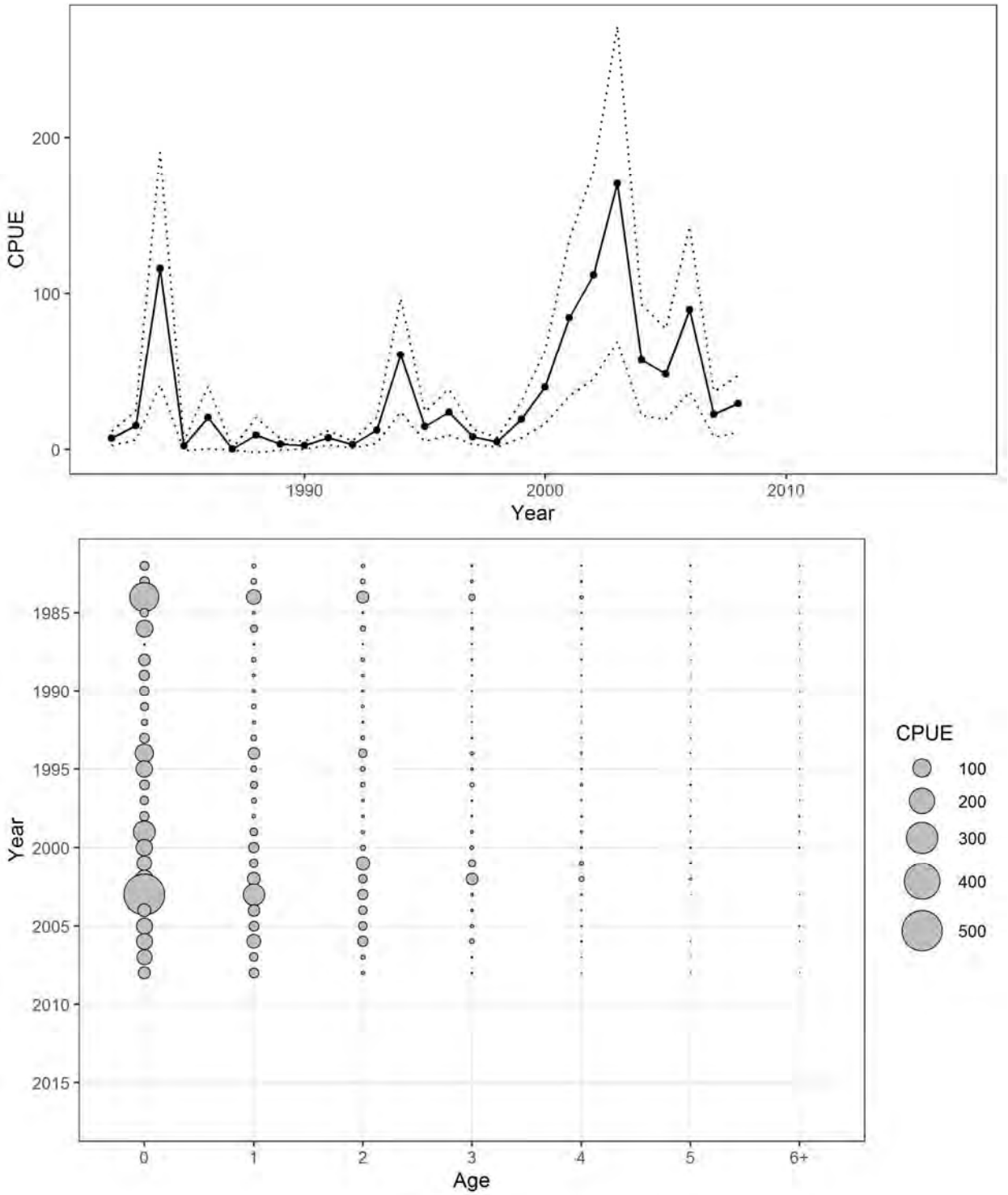

Figure 19. NEFSC Fall Trawl Survey age-1+ index plotted with 95% confidence intervals (top) and the NEFSC survey index-at-age (bottom).

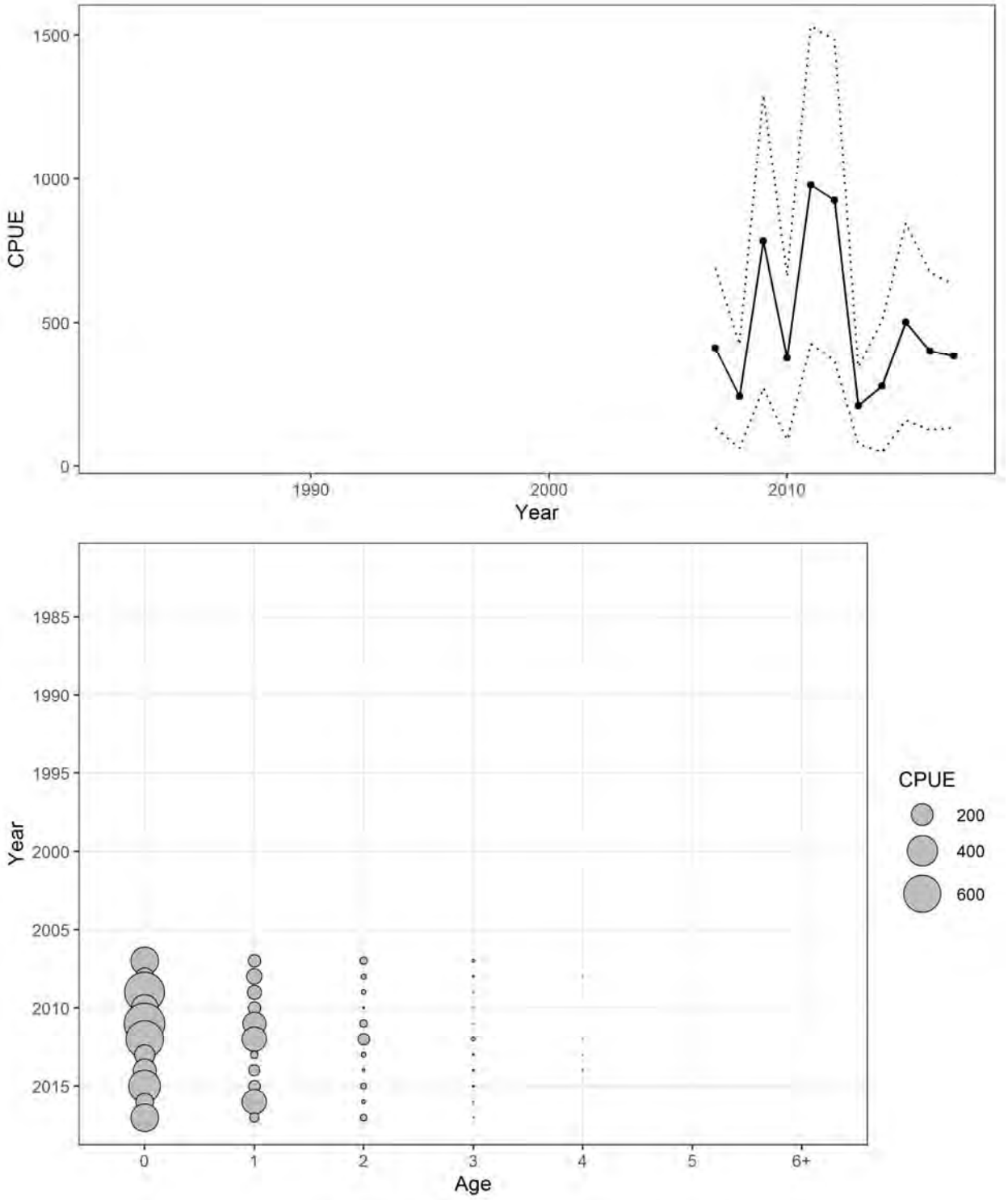

Figure 20. NEAMAP age-1+ index plotted with 95% confidence intervals (top) and the NEAMAP index-at-age (bottom).

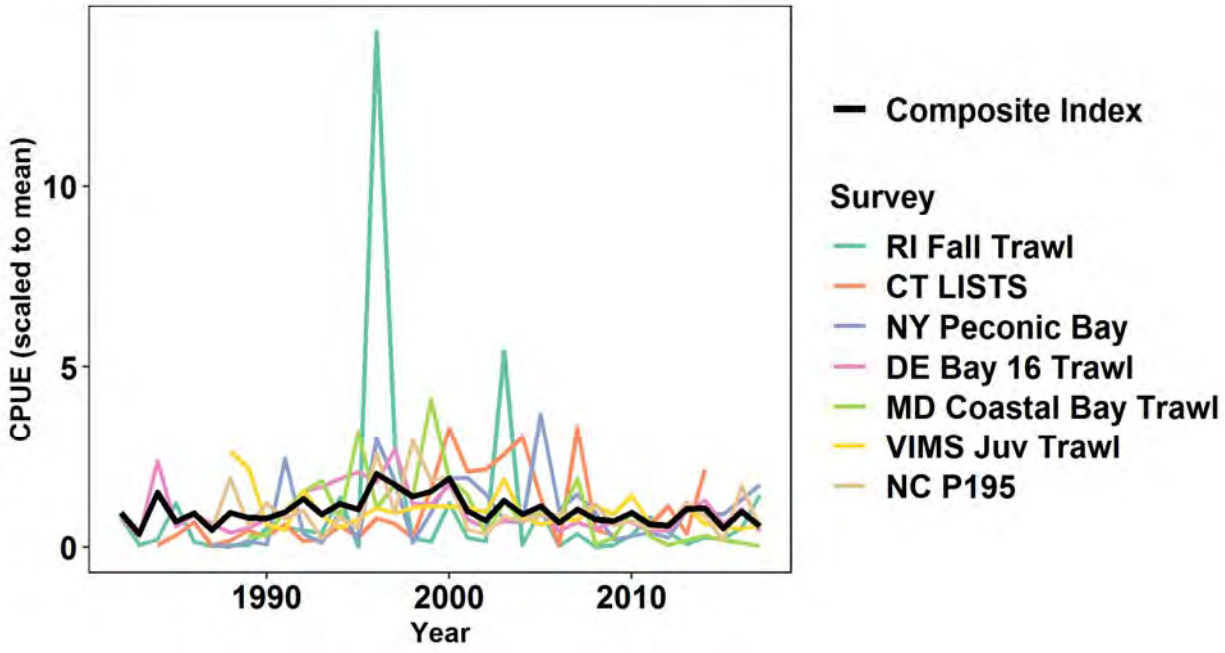

Figure 21. Composite YOY plotted with individual survey indices used to develop it.

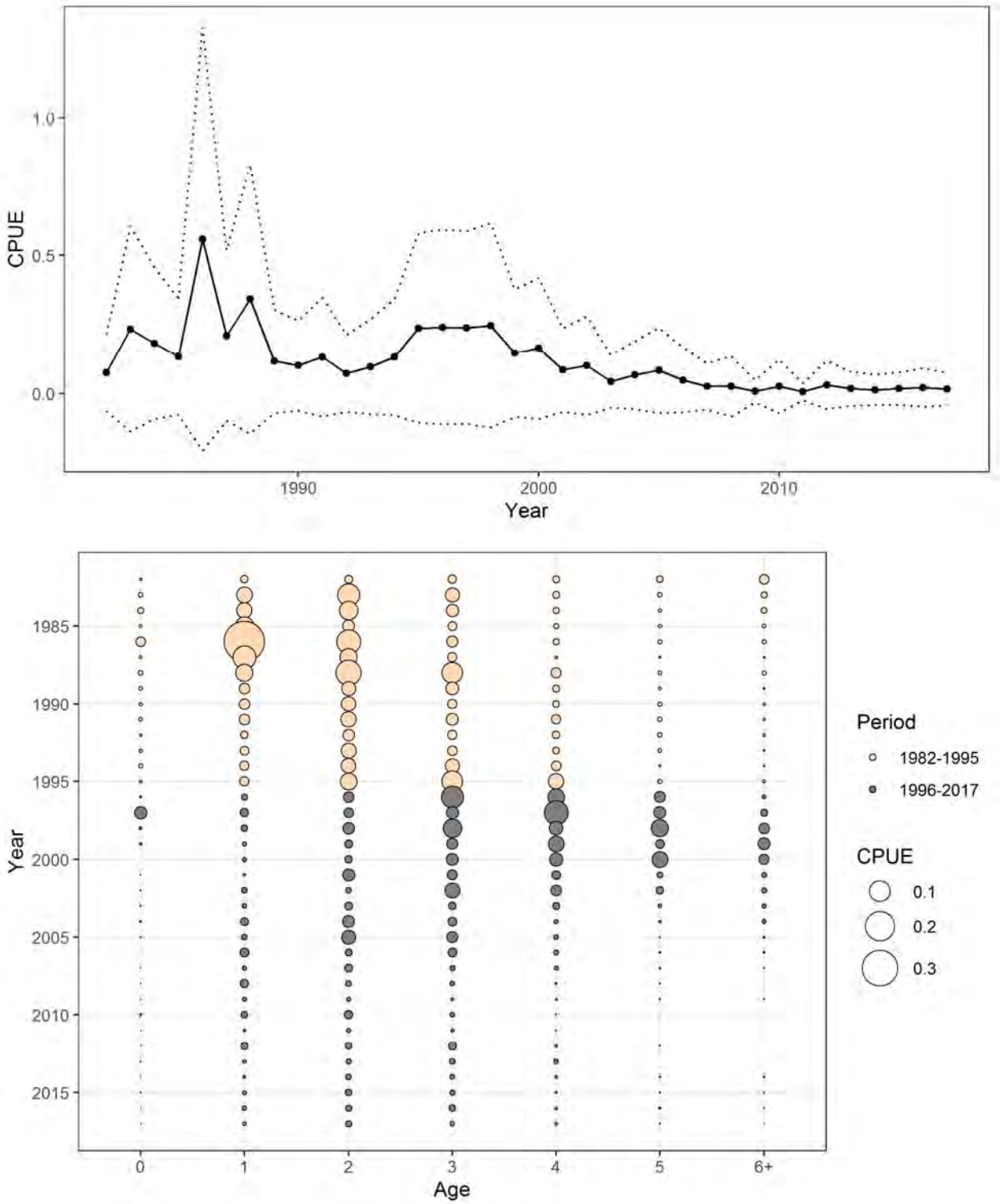

Figure 22. MRIP HPUE age-1+ index plotted with 95% confidence intervals (top) and MRIP HPUE index-at-age (bottom).

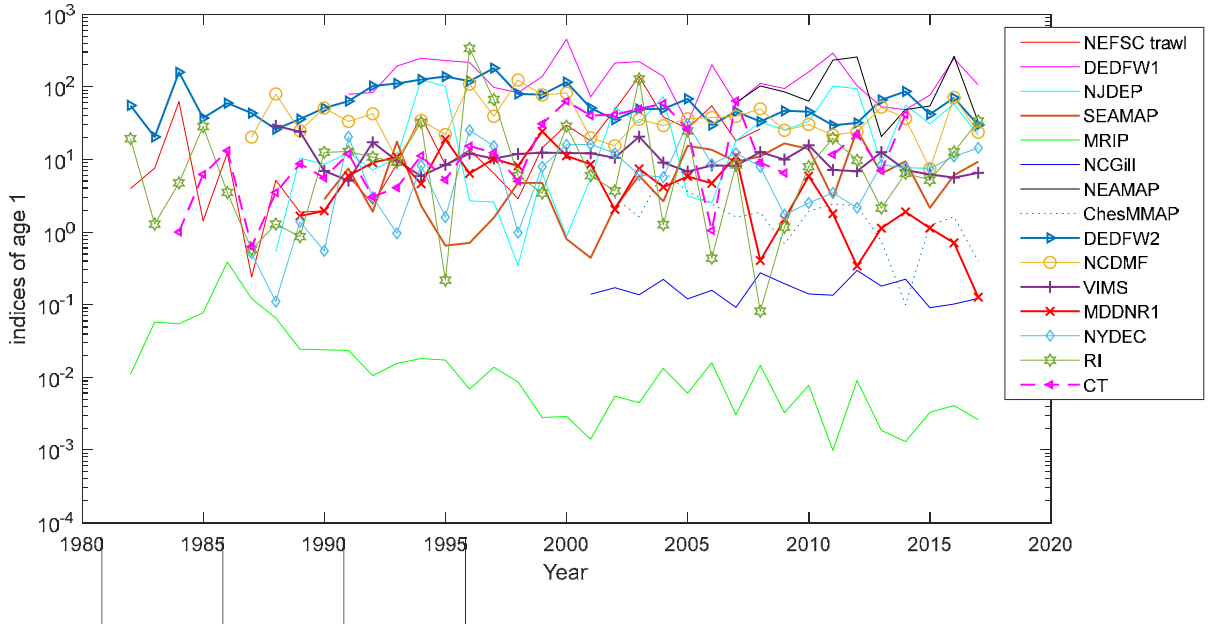

Figure 23. Relative abundance indices of young-of-year and age-1 weakfish used to calibrate the Bayesian model, plotted on the log scale.

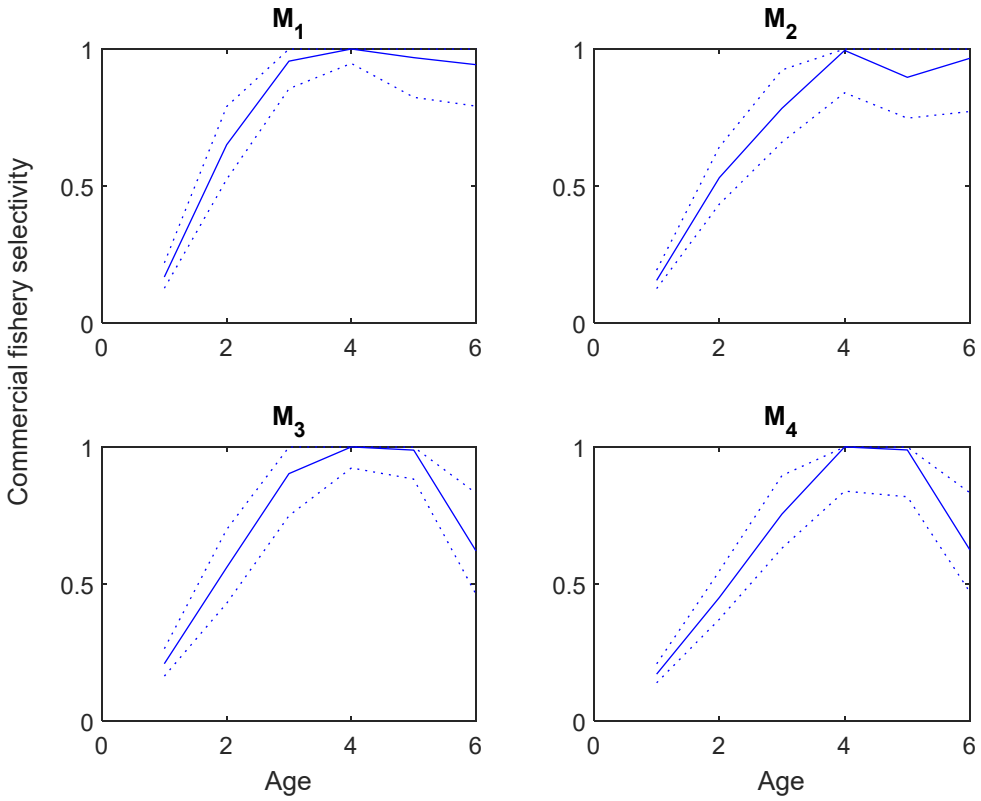

Figure 24. Commercial selectivity-at-age estimated by the Bayesian age-structured models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

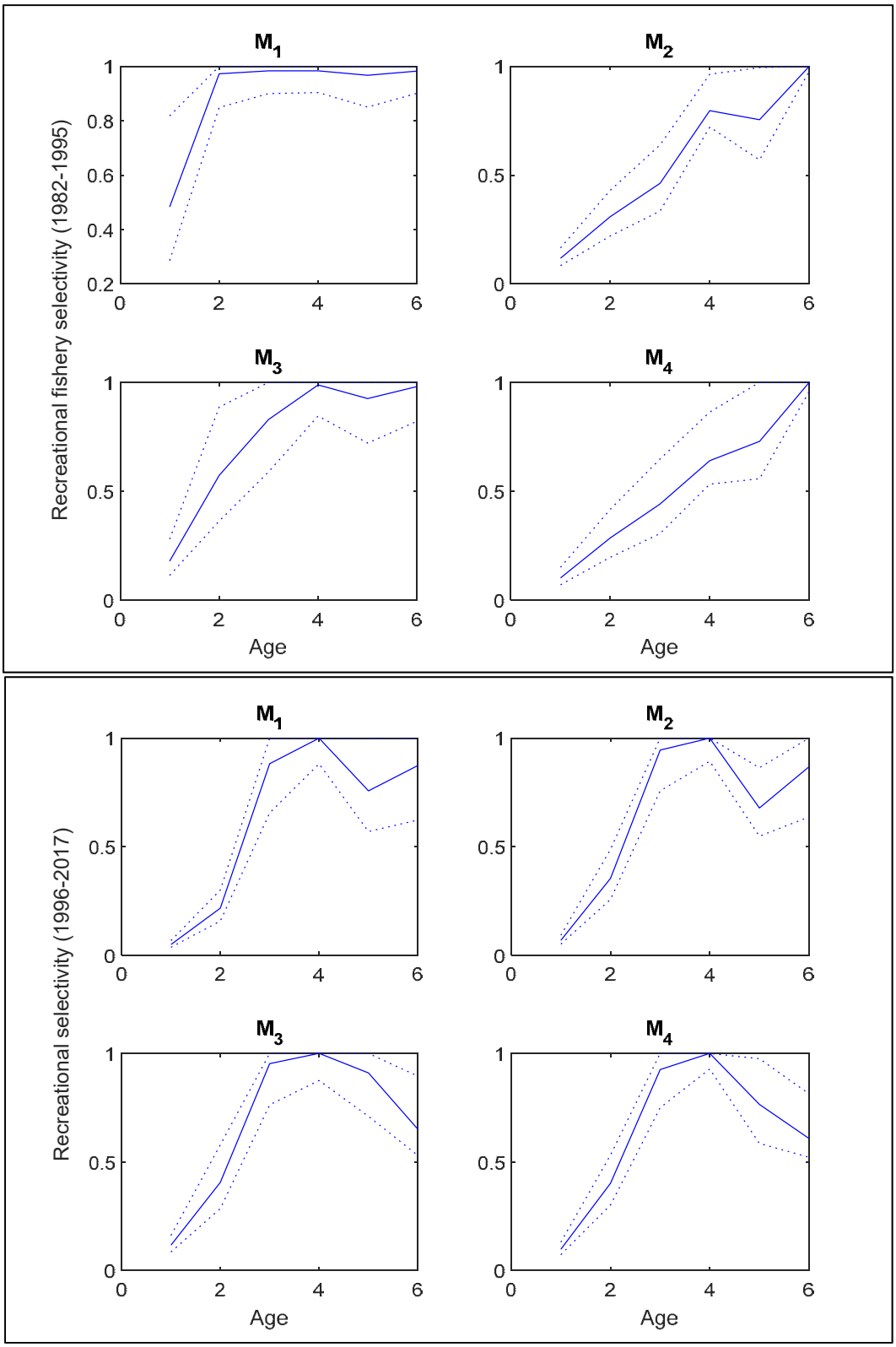

Figure 25. Recreational selectivity-at-age by period estimated by the Bayesian age-structured model. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

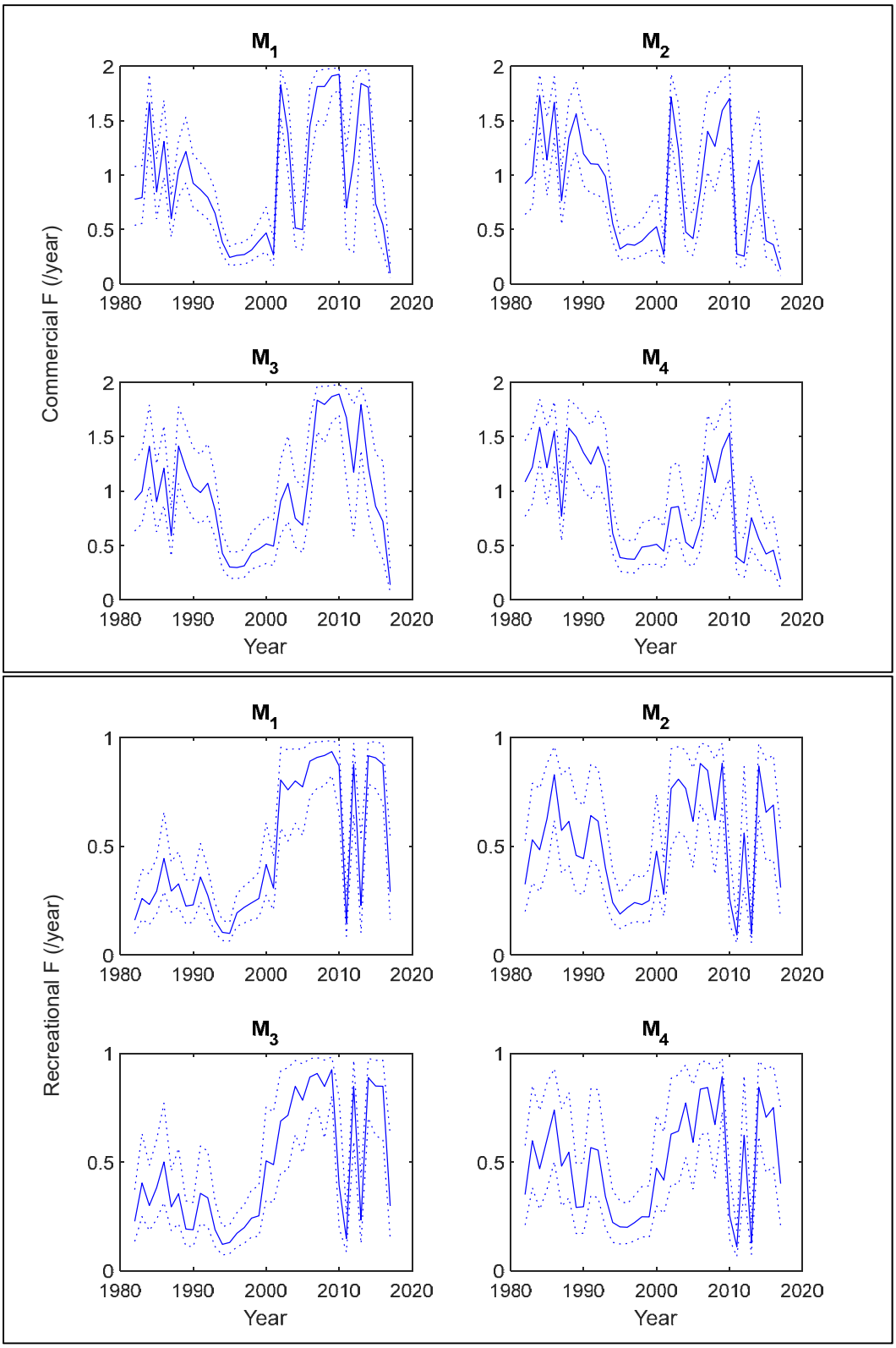

Figure 26. Posterior fishing mortality for the commercial (top) and recreational (bottom) fleets estimated by the Bayesian age-structured models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

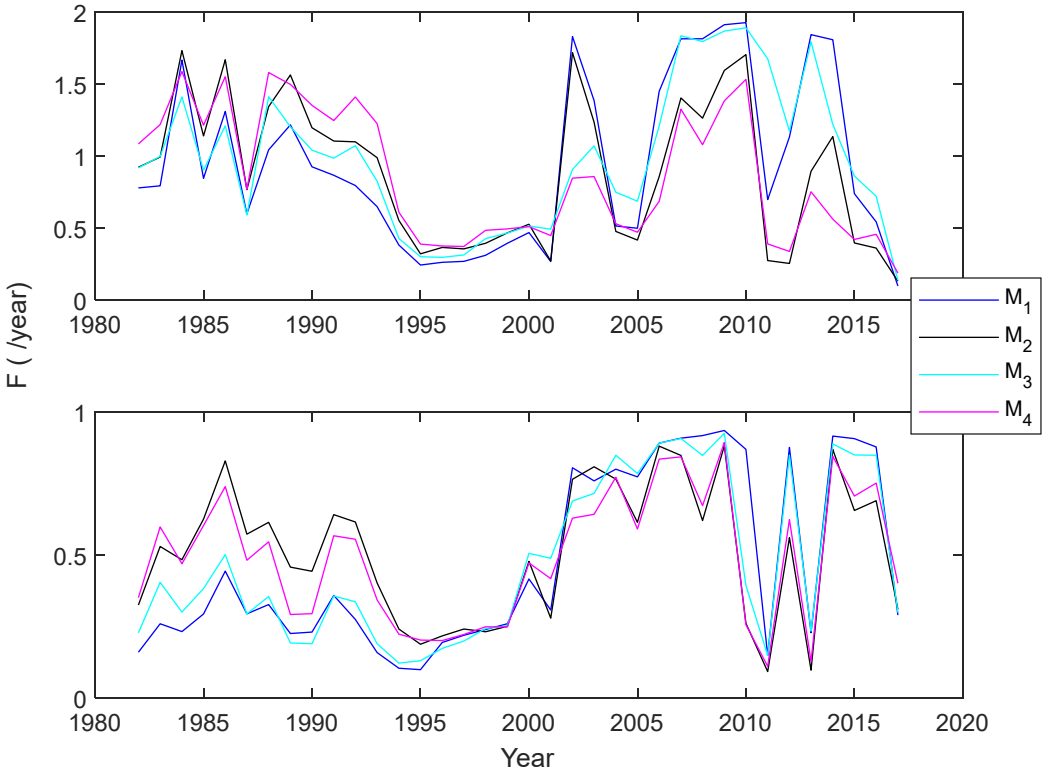

Figure 27. Posterior fishing mortality, for the commercial (top) and recreational (bottom) fleets estimated by the Bayesian age-structured model with all models plotted together.

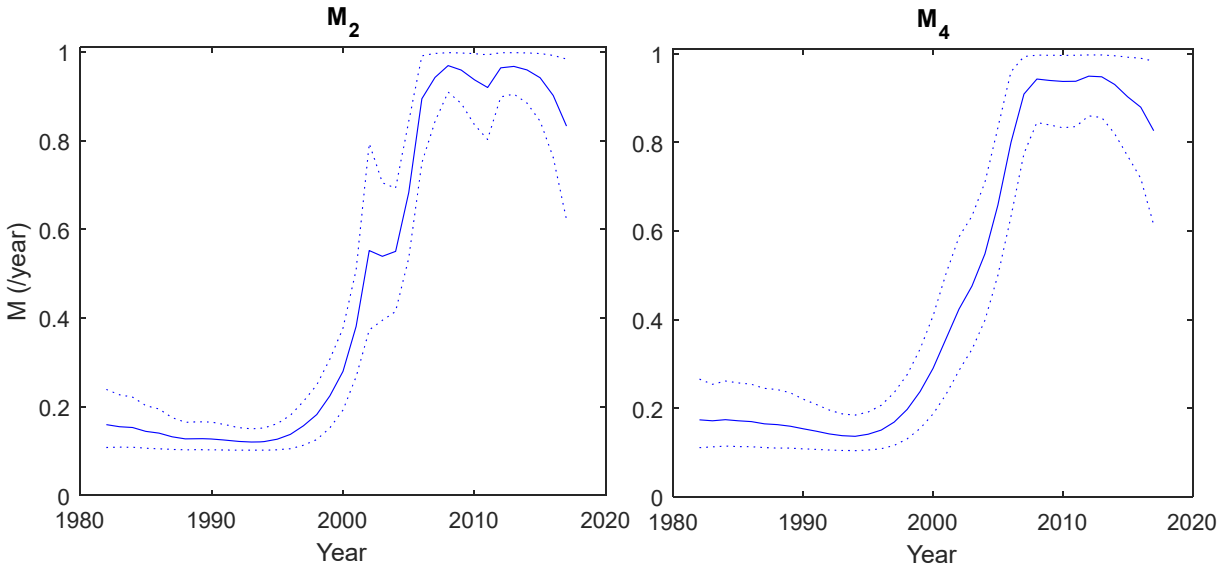

Figure 28. M estimates from the nonstationary Bayesian statistical age structured models M2 and M4. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

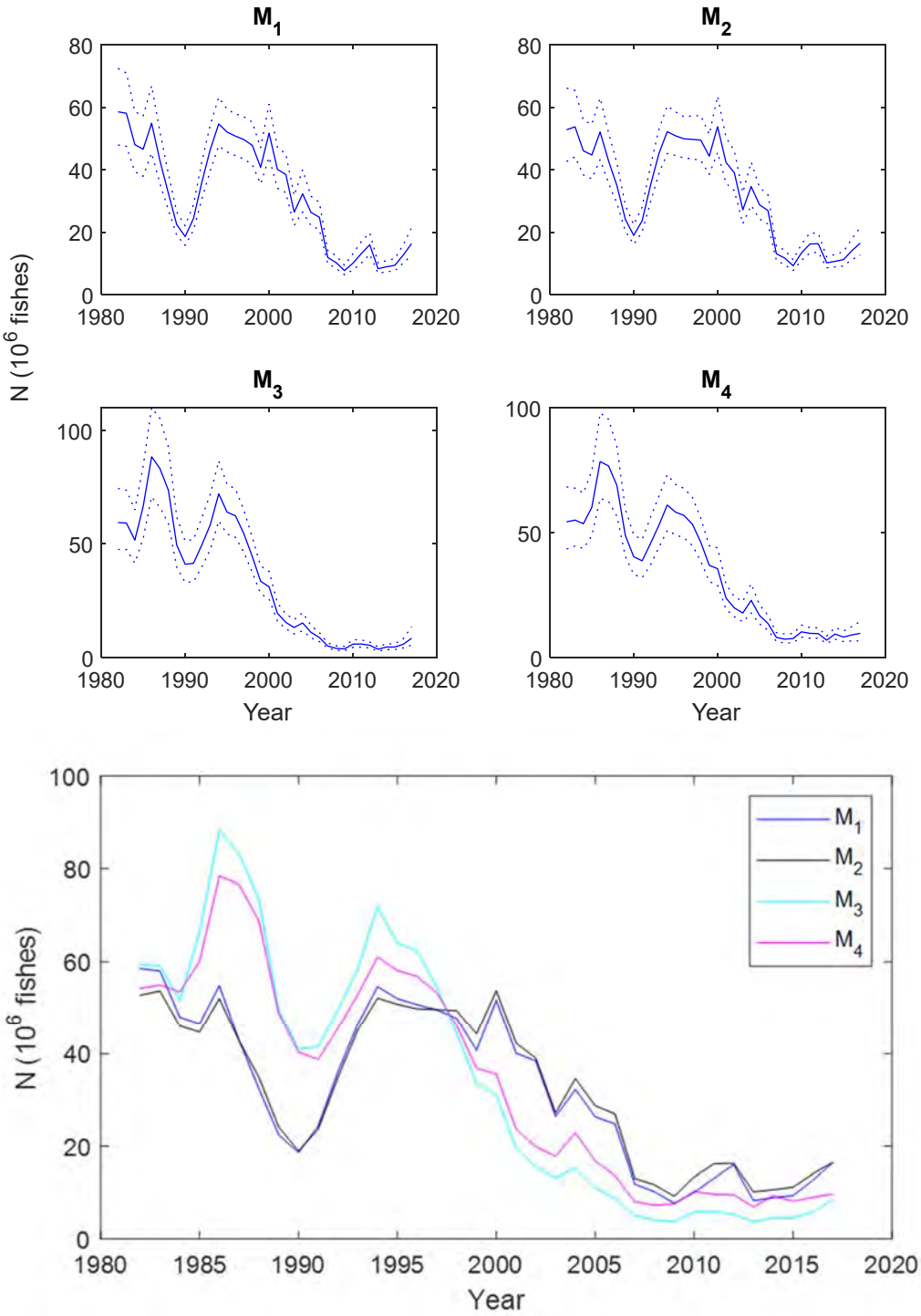

Figure 29. Posterior population total abundance in millions of fish estimated by the Bayesian age-structured models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

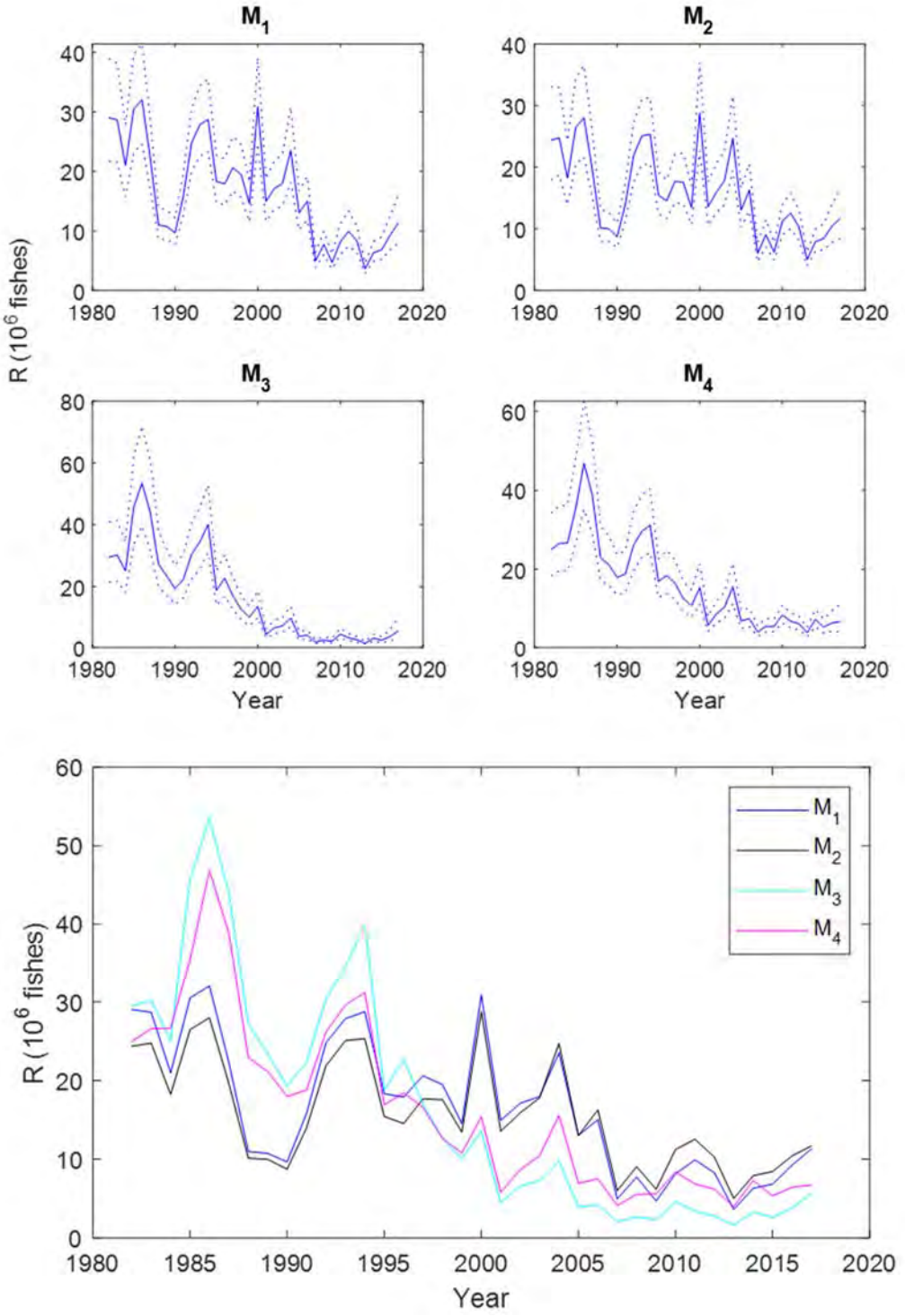

Figure 30. Posterior recruitment in millions of age-1 fish estimated by the Bayesian age-structured models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

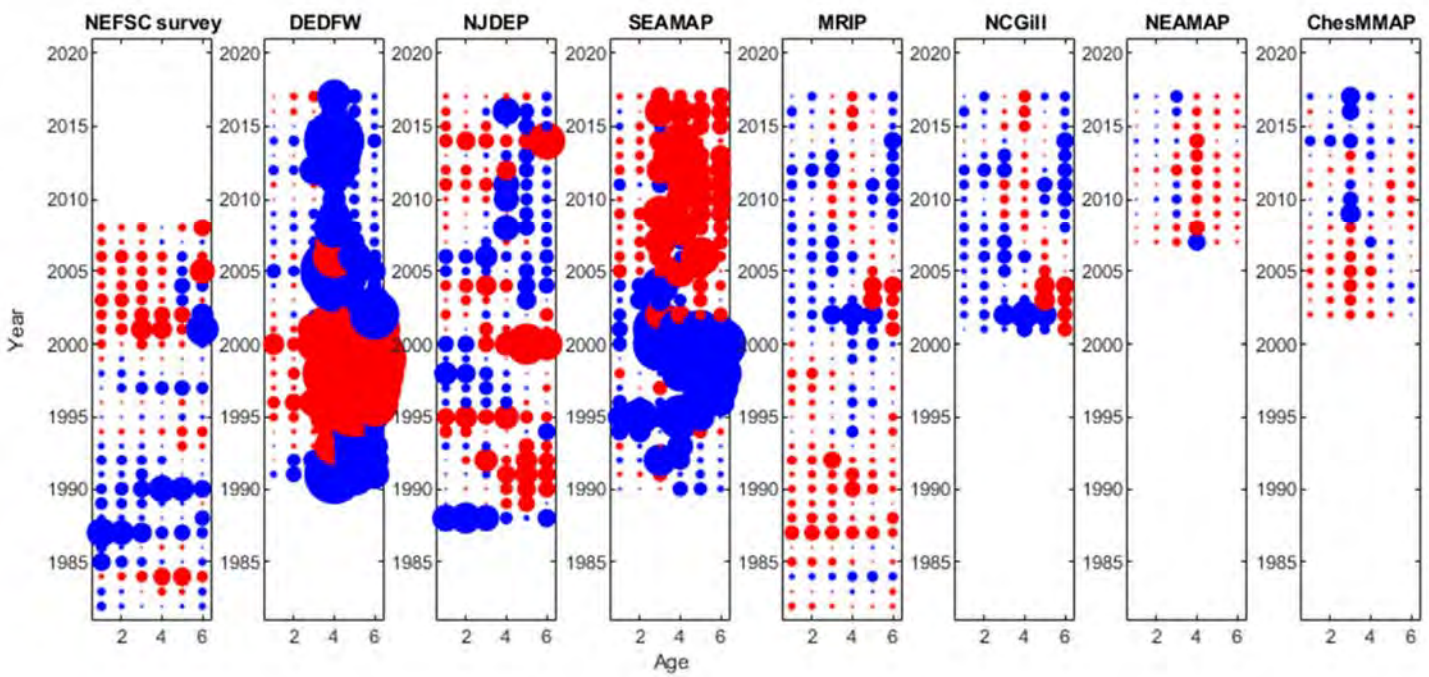

Figure 31. Spatial heterogeneity reflected from age-1+ surveys shown as differences from the mean population size. Positive values were plotted in red, while negative values were plotted in blue.

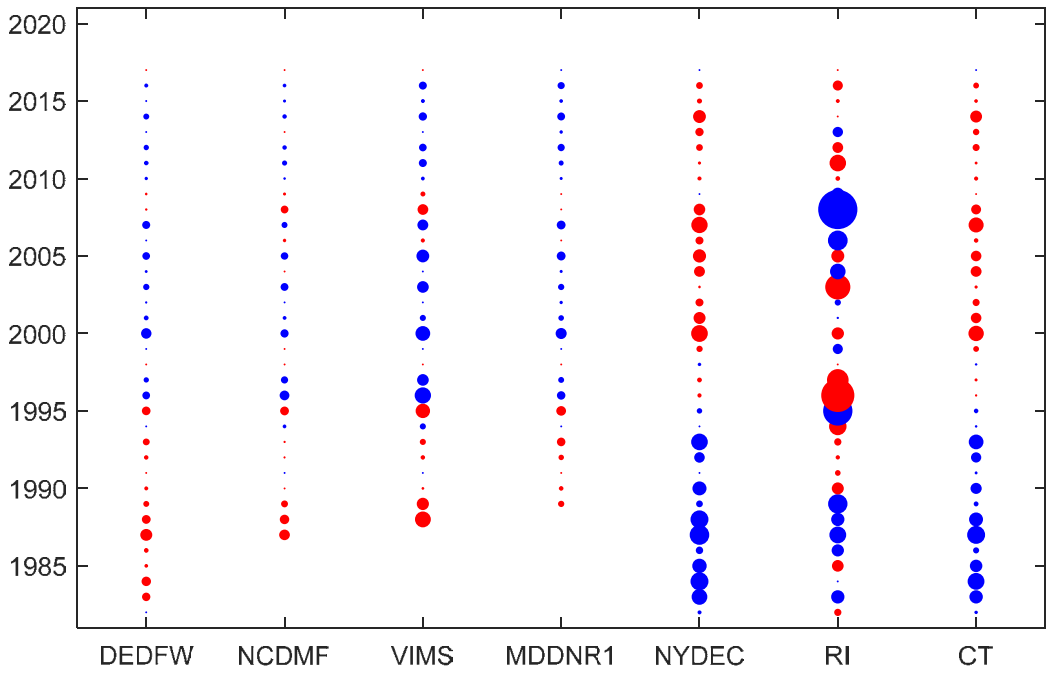

Figure 32. Spatial heterogeneity reflected from young-of-year surveys shown as differences from the mean population size. Positive values were plotted in red, while negative values were plotted in blue.

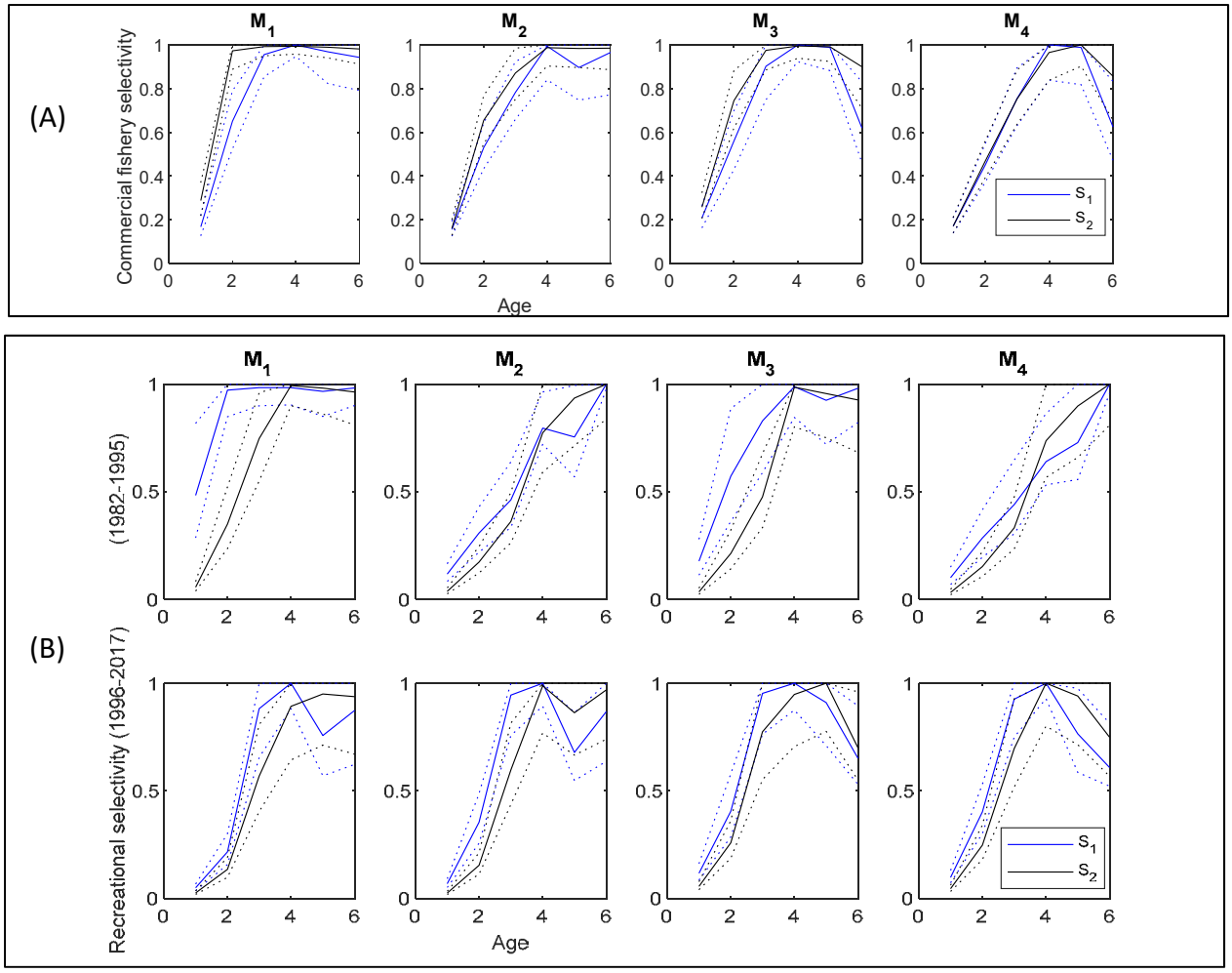

Figure 33. Sensitivity results for the commercial (A) and recreational (B) selectivity patterns estimated by Bayesian age-structured models when new (S1) and old (S2) MRIP estimates are used.

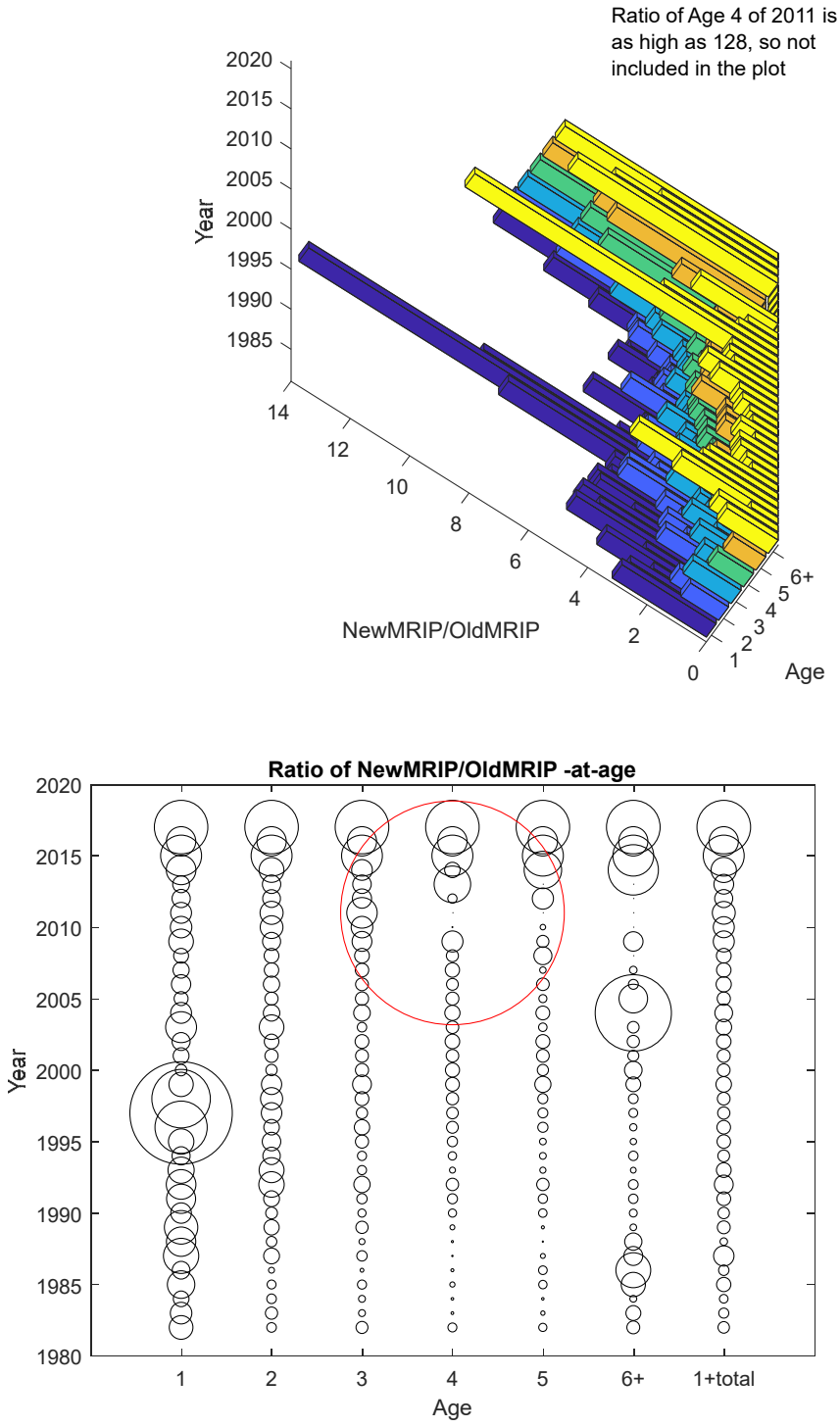

Figure 34. Differences in the changes of the newly estimated MRIP (New MRIP/Old MRIP) among ages and year shown as 3D bar plot (top) and bubble plot (bottom). The red circle in the bottom plot is the ratio of age 4 of 2011 recreational catch.

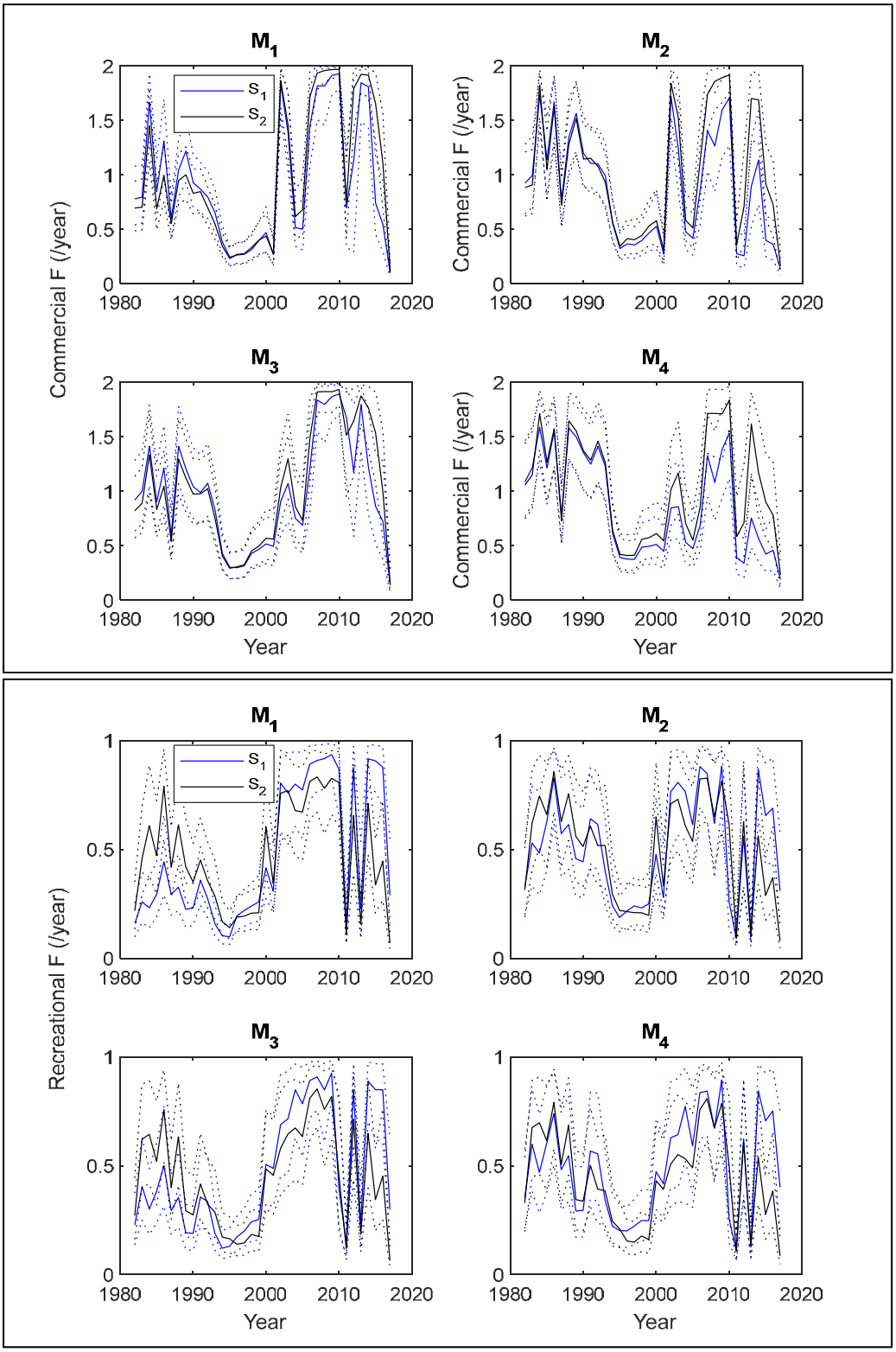

Figure 35. Estimates of F for the commercial (top) and recreational (bottom) fleets using the new (S1) and old (S2) MRIP estimates from the Bayesian age structured models. M4 is the preferred model. Solid line= posterior mean; dashed lines= 95% credible interval.

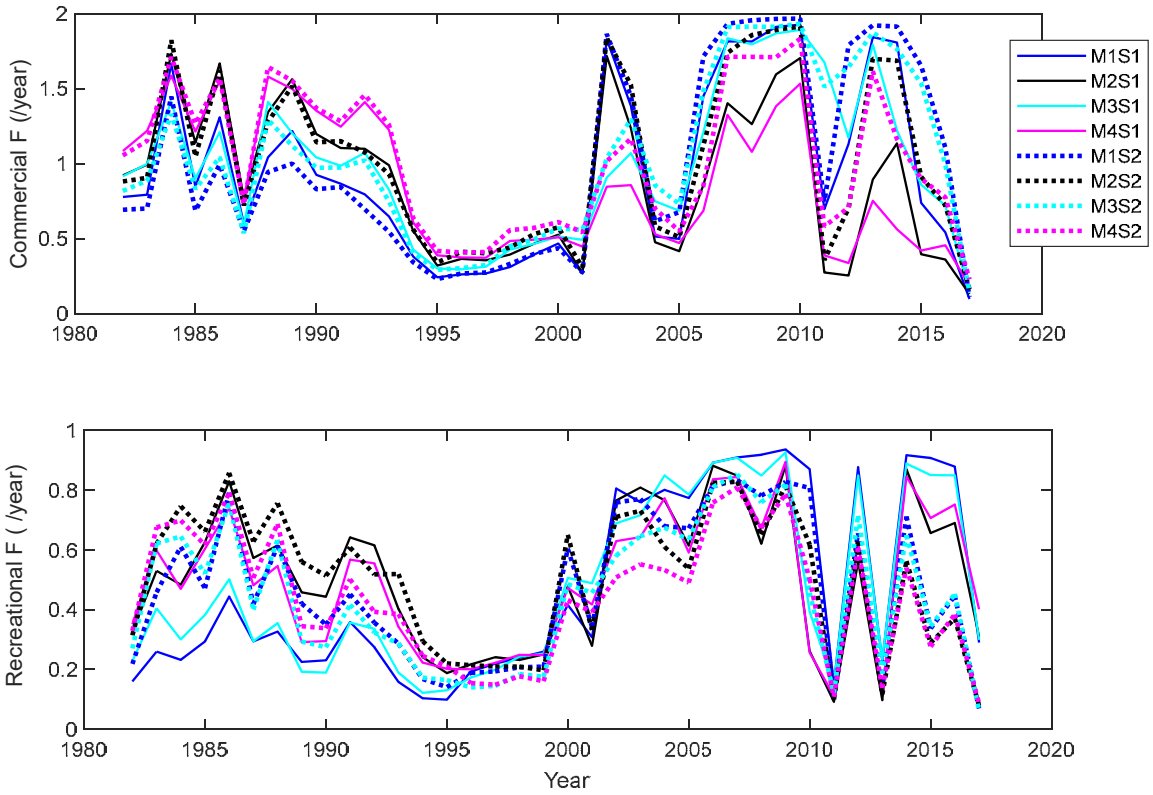

Figure 36. Sensitivity results for commercial (top) and recreational (bottom) fishing mortality estimated by Bayesian age- structured models using the new (S1, solid lines) and old (S2, dashed lines) MRIP estimates, plotted together. M4 is the preferred model.

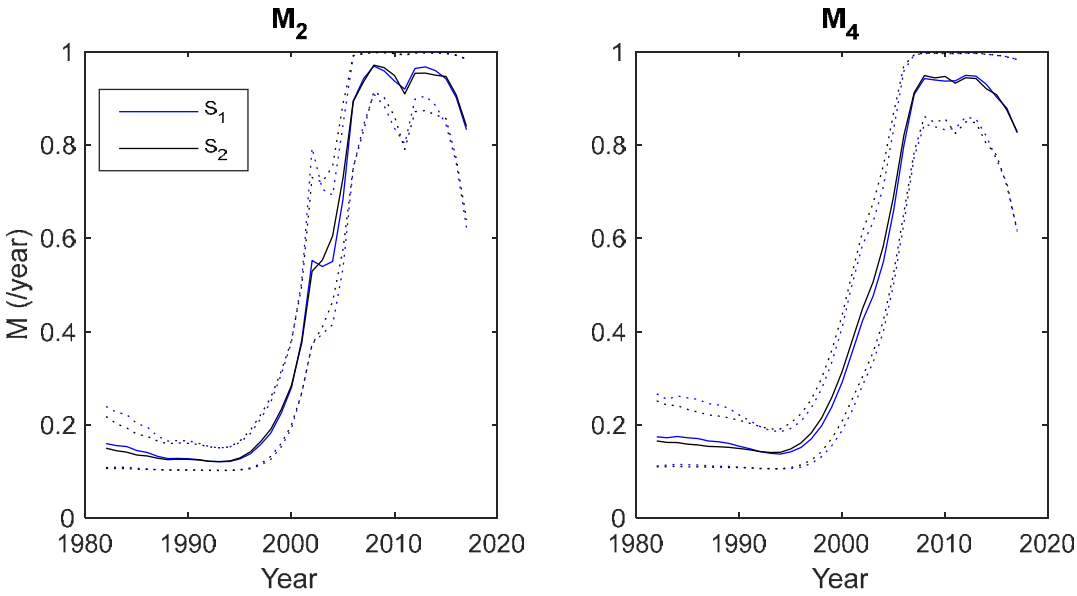

Figure 37. Sensitivity results of M estimates from the nonstationary Bayesian statistical catch-at-age models M2 and M4 using the new (S1) and old (S2) MRIP estimates. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

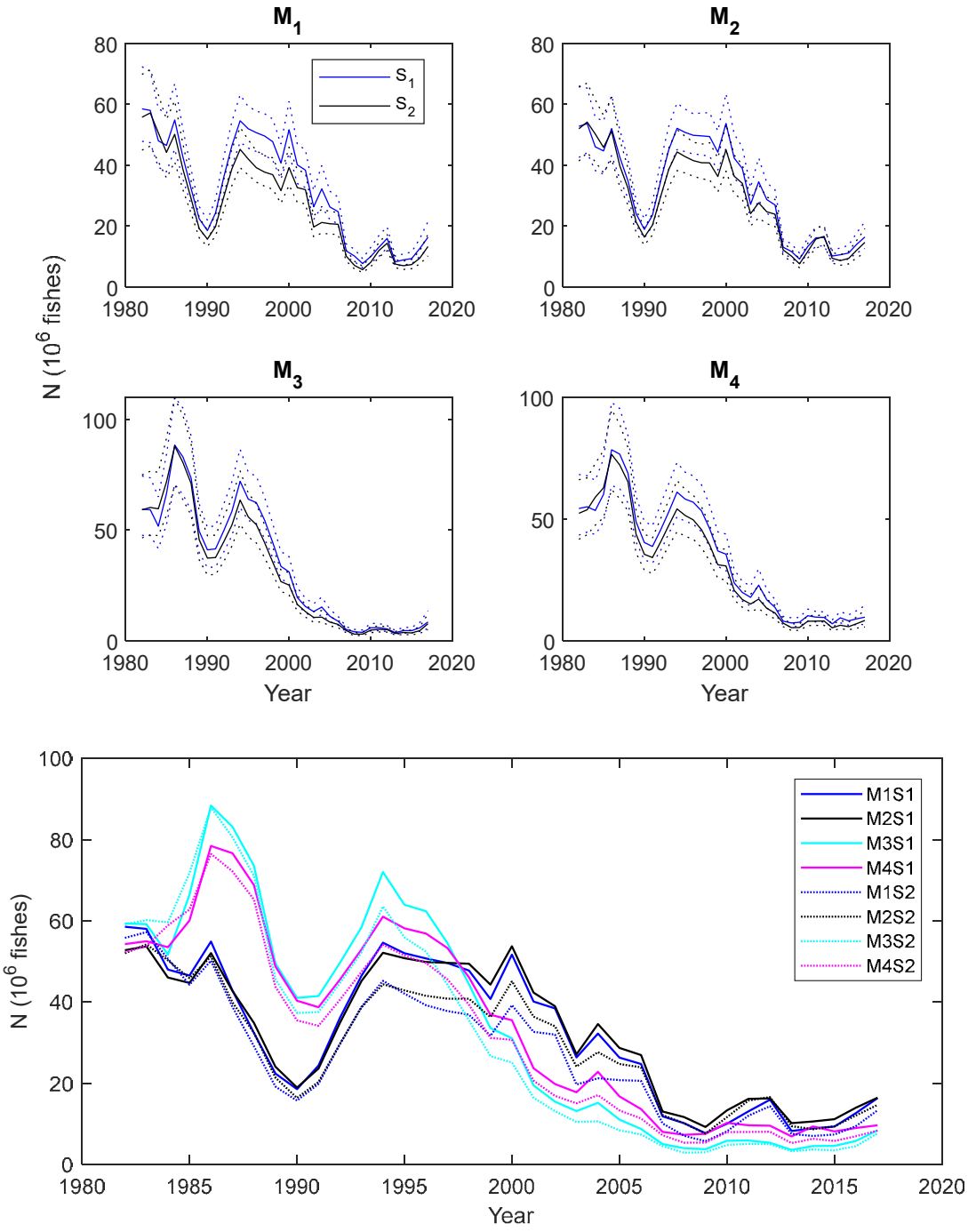

Figure 38. Sensitivity results for weakfish total abundance estimated by Bayesian age- structured models using the new (S1) and old (S2) MRIP estimates. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

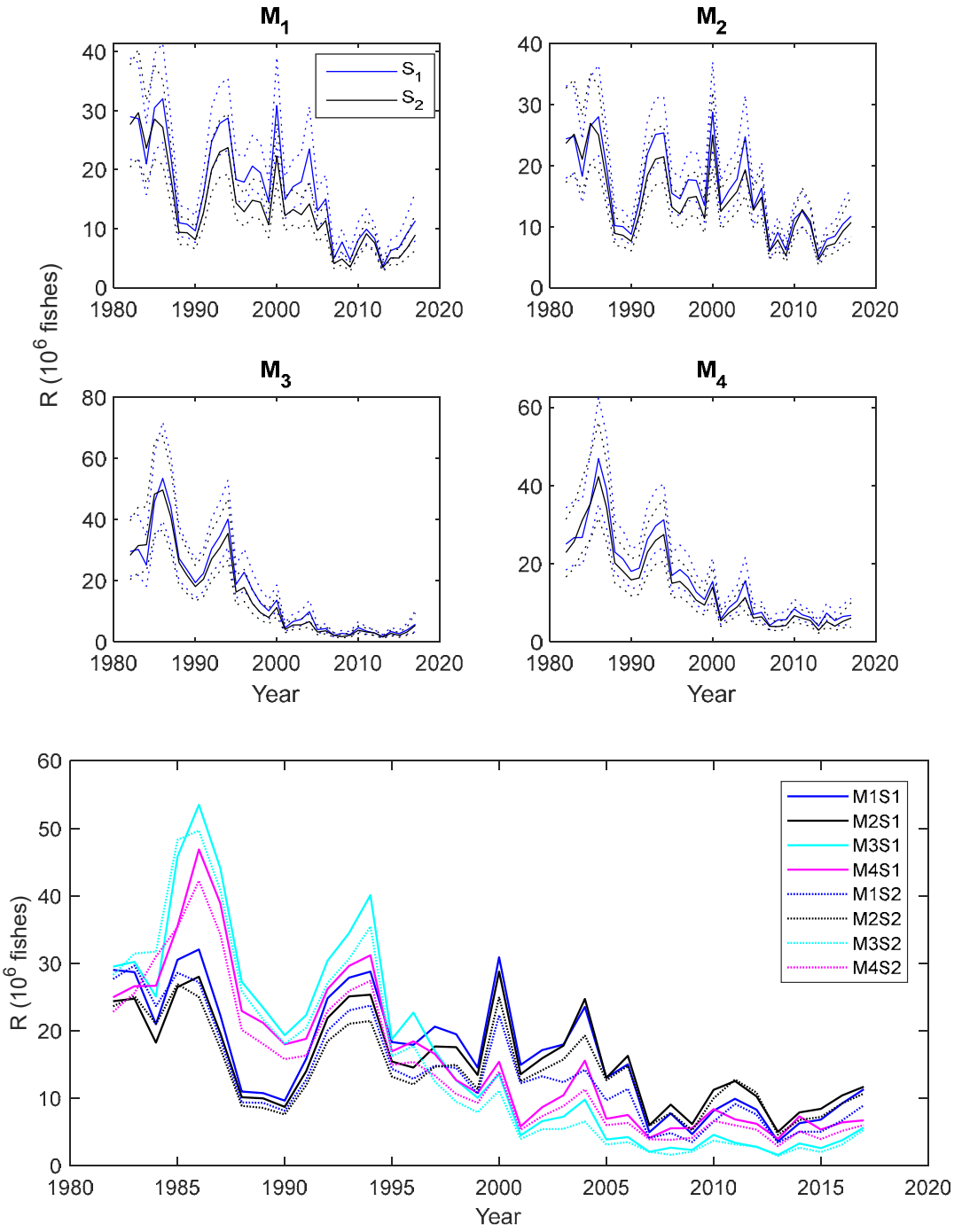

Figure 39. Sensitivity results for recruitment estimated by the age-structured Bayesian models using the new (S1) and old (S2) MRIP estimates. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

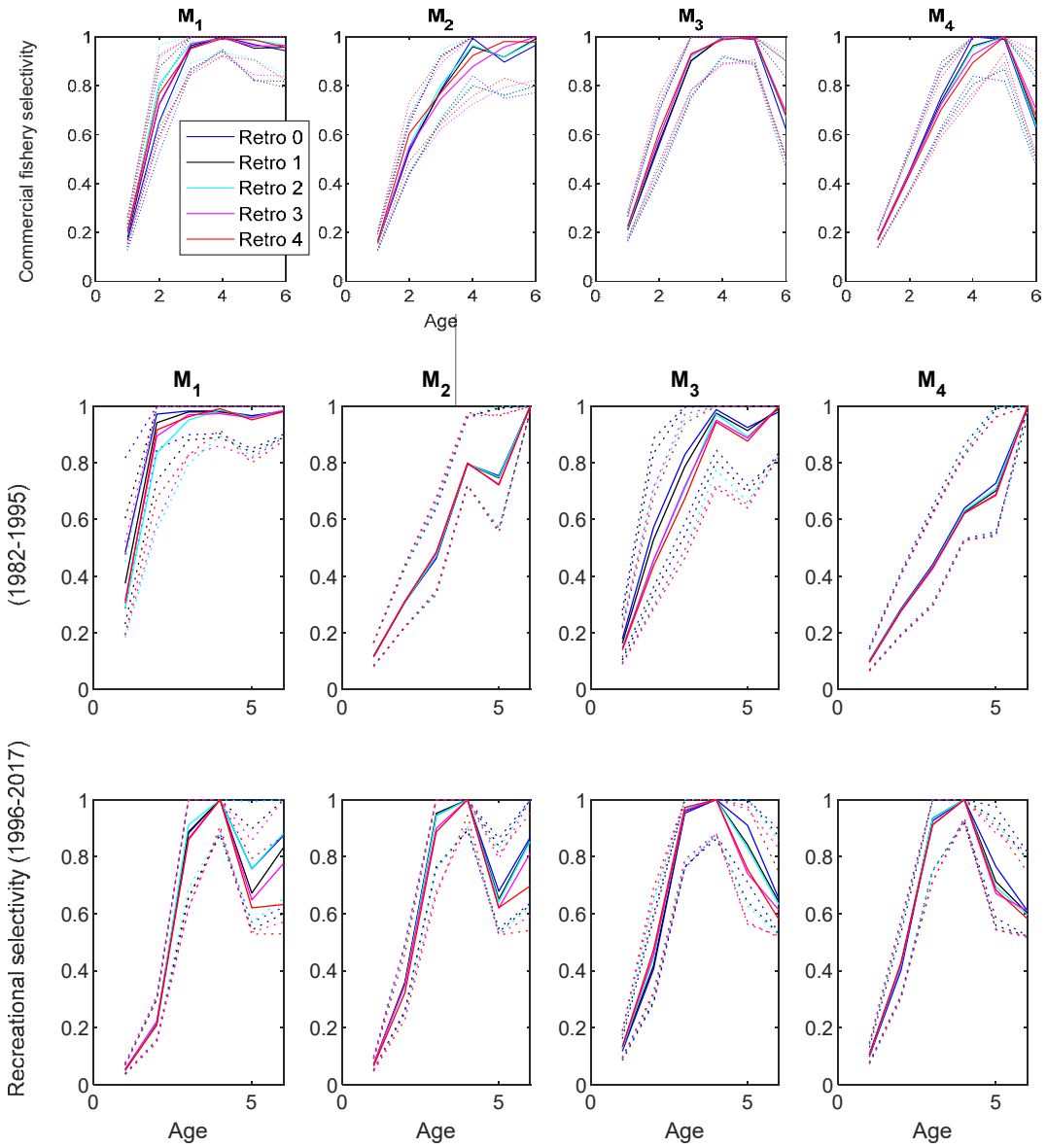

Figure 40. Retrospective analysis results for commercial (top row) and recreational (middle and bottom rows) selectivity patterns estimated by the Bayesian age-structured models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

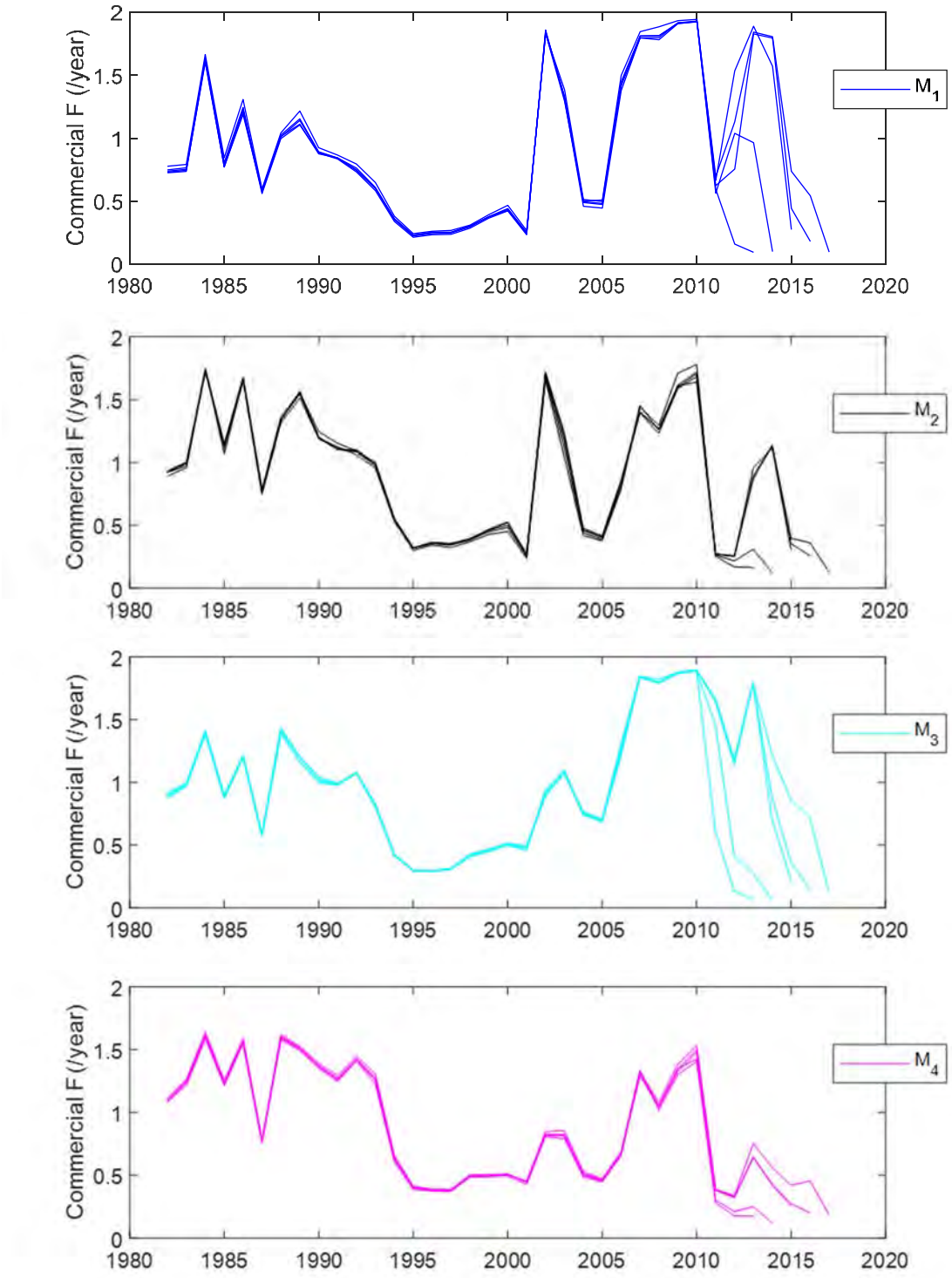

Figure 41. Retrospective analysis results for commercial fishing mortality estimated by each of the Bayesian age-structured models. M4 is the preferred model.

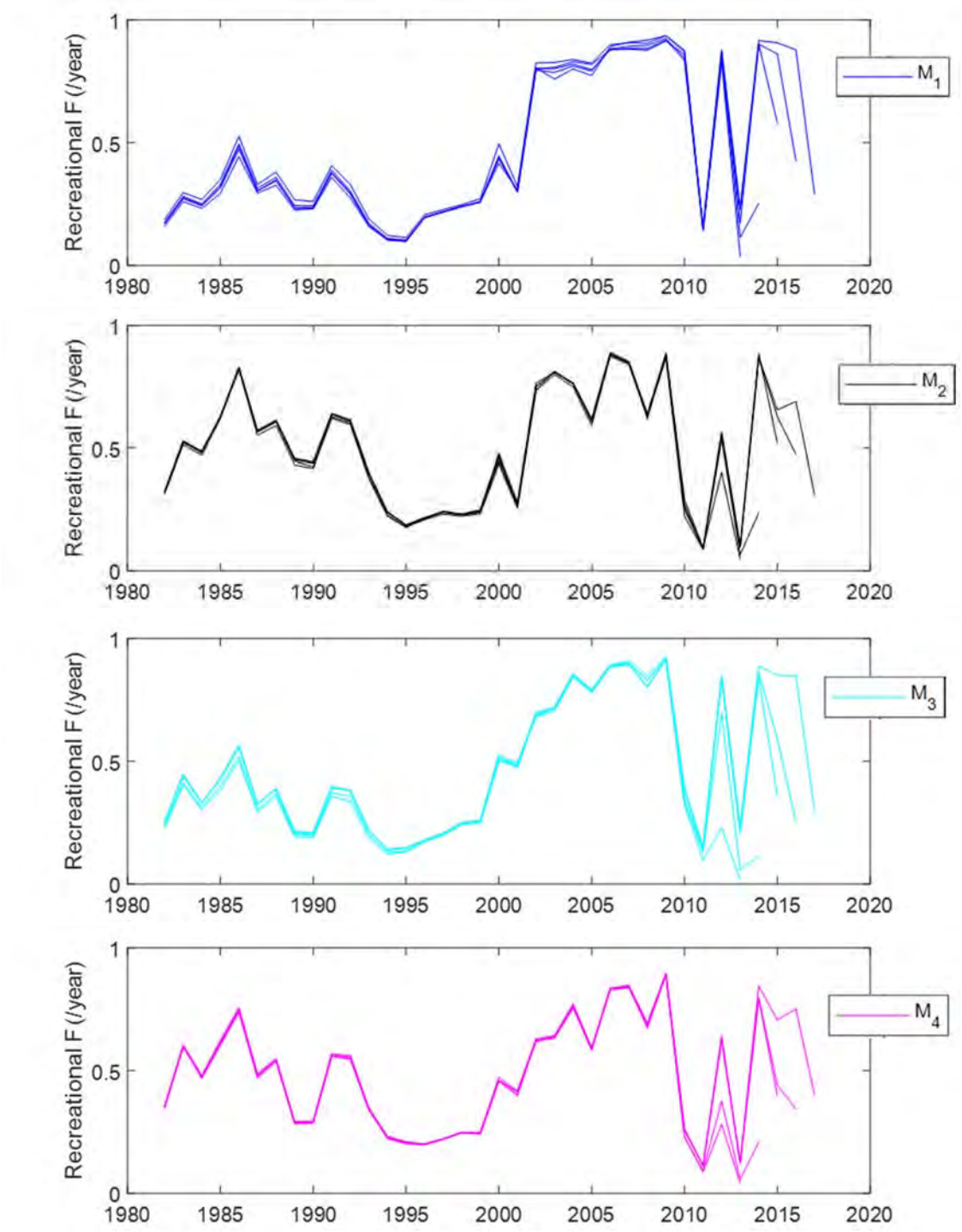

Figure 42. Retrospective analysis results for recreational fishing mortality estimated by each of the Bayesian age-structured models. M4 is the preferred model.

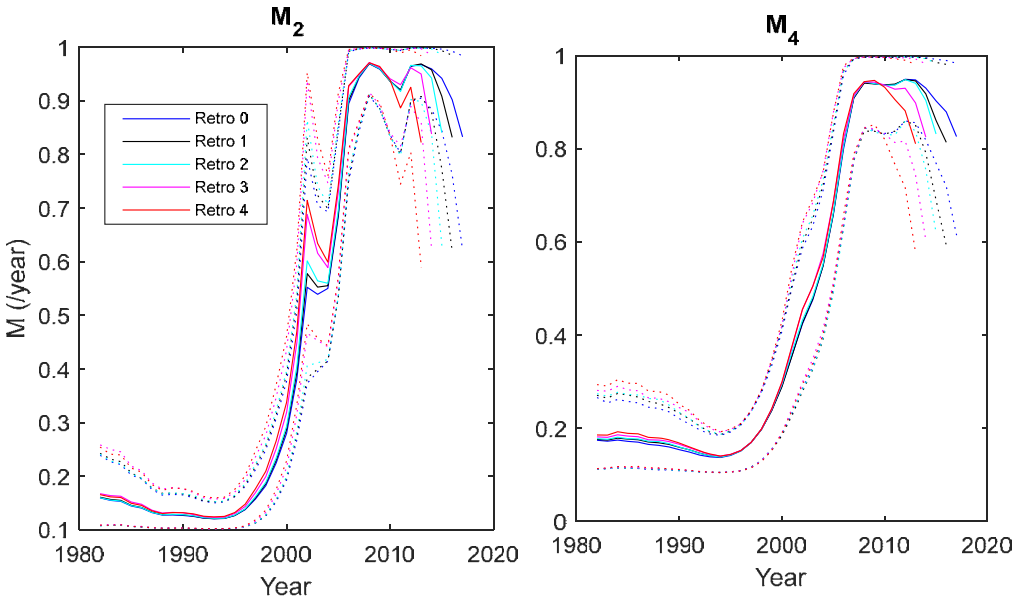

Figure 43. Retrospective analysis results of M estimates from the nonstationary Bayesian statistical catch- at-age models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

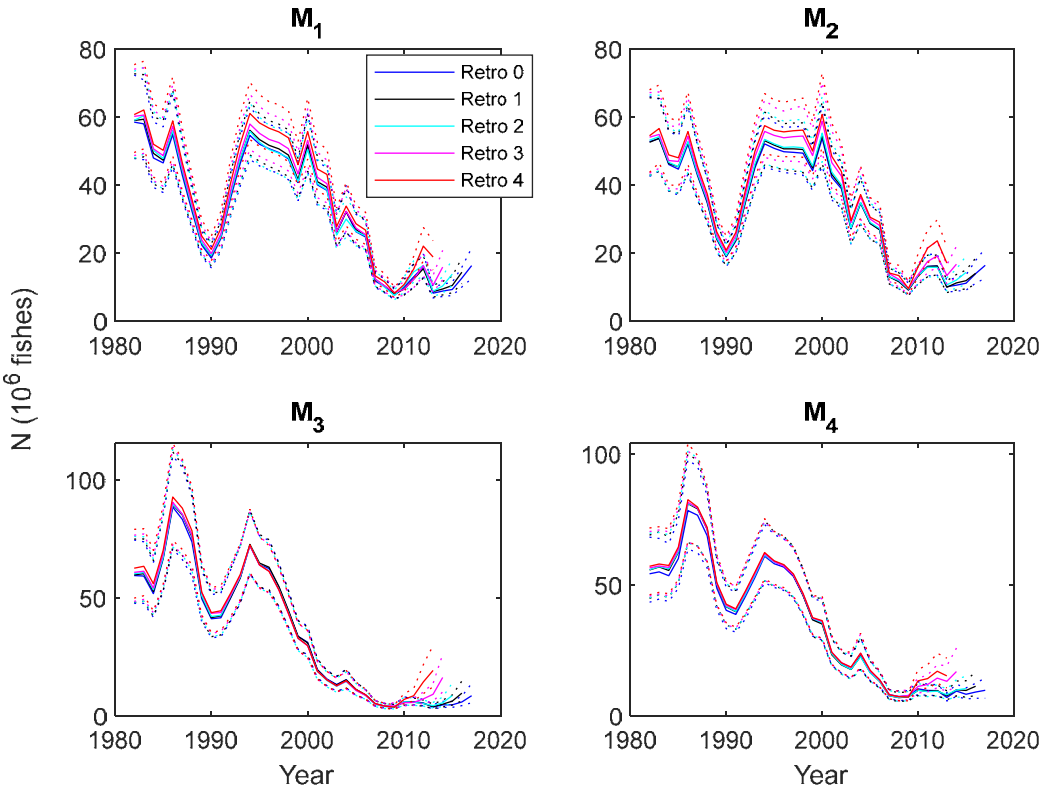

Figure 44. Retrospective analysis results for population abundance estimated by the Bayesian age-structured models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

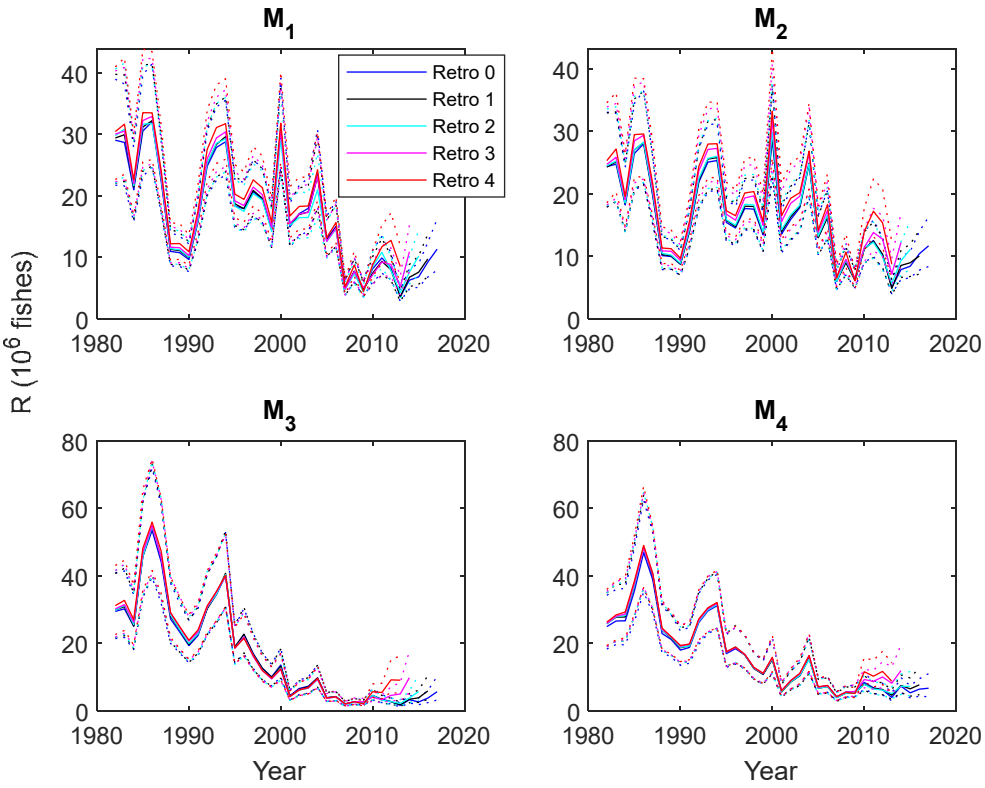

Figure 45. Retrospective analysis results of recruitment estimated by the Bayesian age-structured models. M4 is the preferred model. Solid line = posterior mean; dashed lines = 95% credible interval.

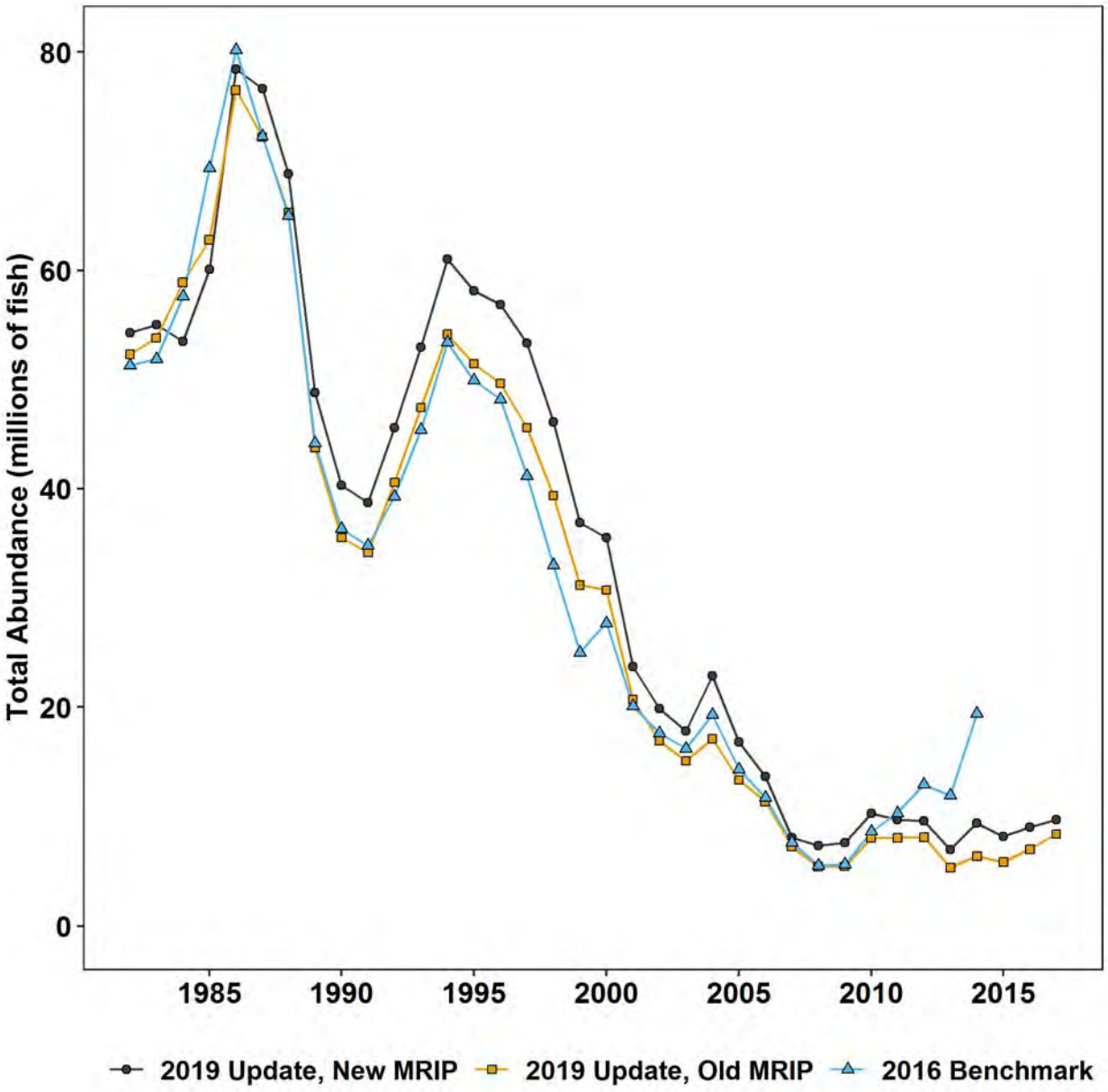

Figure 46. Comparison of total abundance estimates from the 2016 benchmark assessment, the 2019 assessment update with the old, uncalibrated MRIP estimates, and the 2019 assessment update with the new, calibrated MRIP estimates.

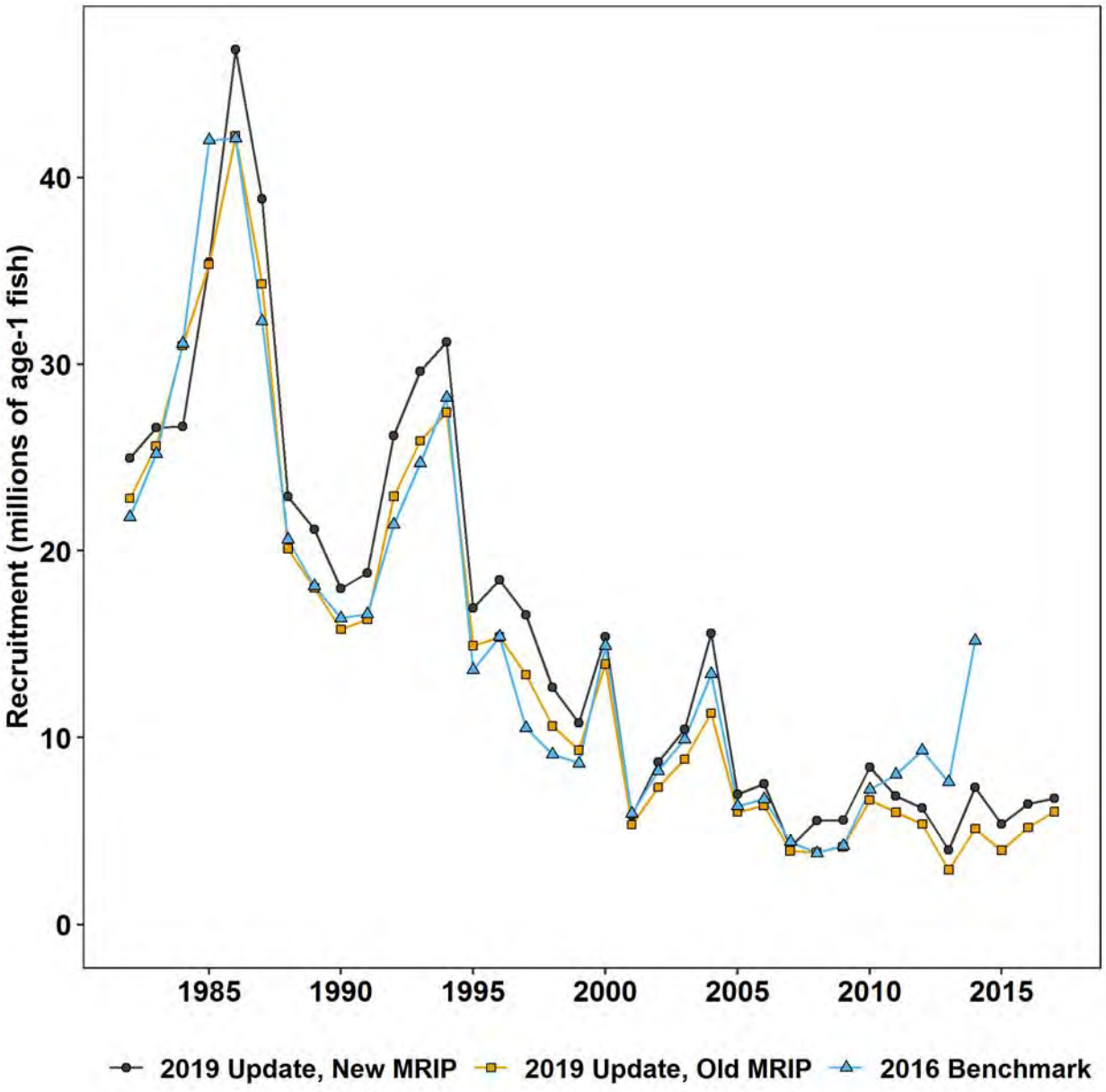

Figure 47. Comparison of recruitment estimates from the 2016 benchmark assessment, the 2019 assessment update with the old, uncalibrated MRIP estimates, and the 2019 assessment update with the new, calibrated MRIP estimates.

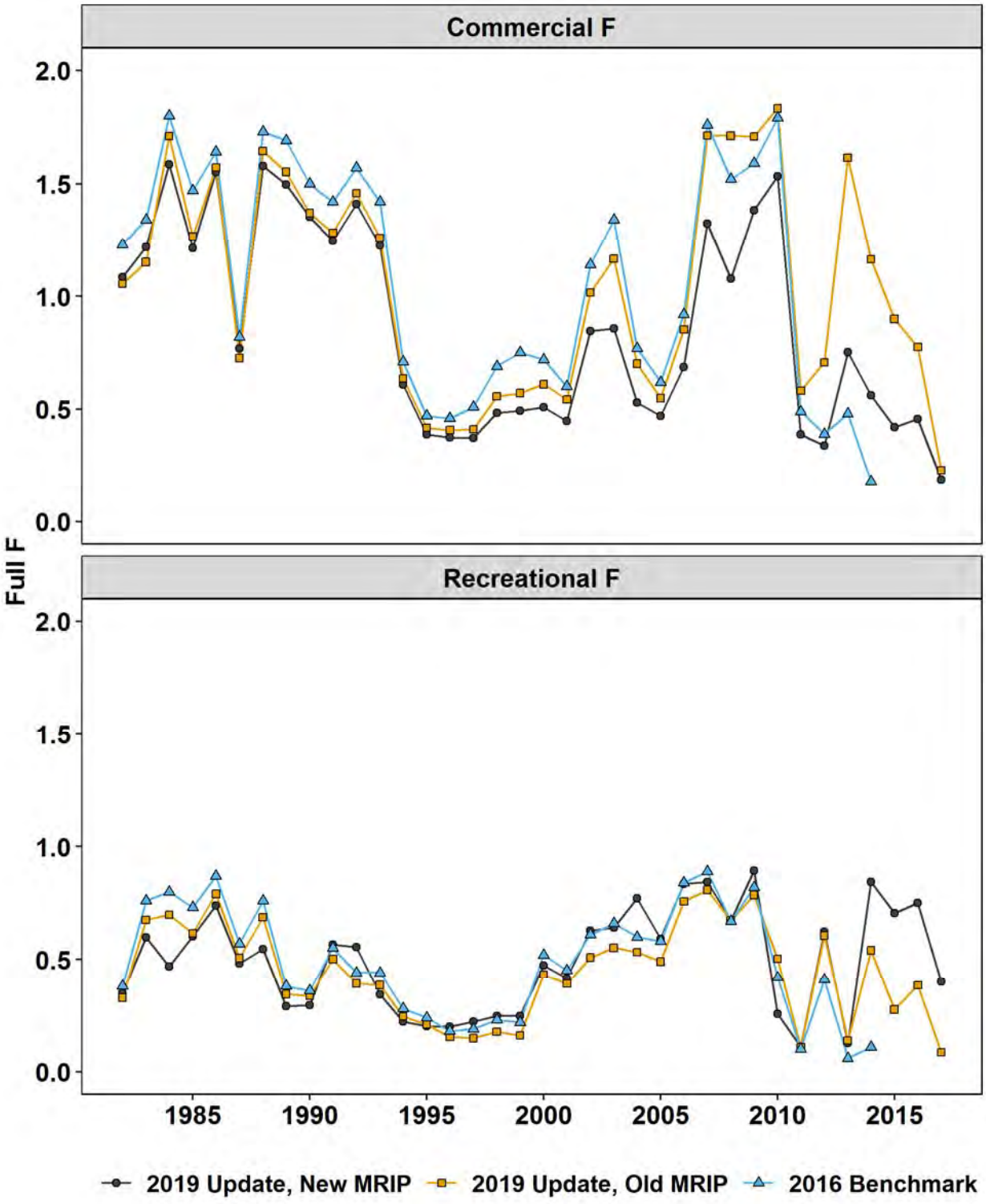

Figure 48. Comparison of commercial (top) and recreational (bottom) fishing mortality estimates from the 2016 benchmark assessment, the 2019 assessment update with the old, uncalibrated MRIP estimates, and the 2019 assessment update with the new, calibrated MRIP estimates.

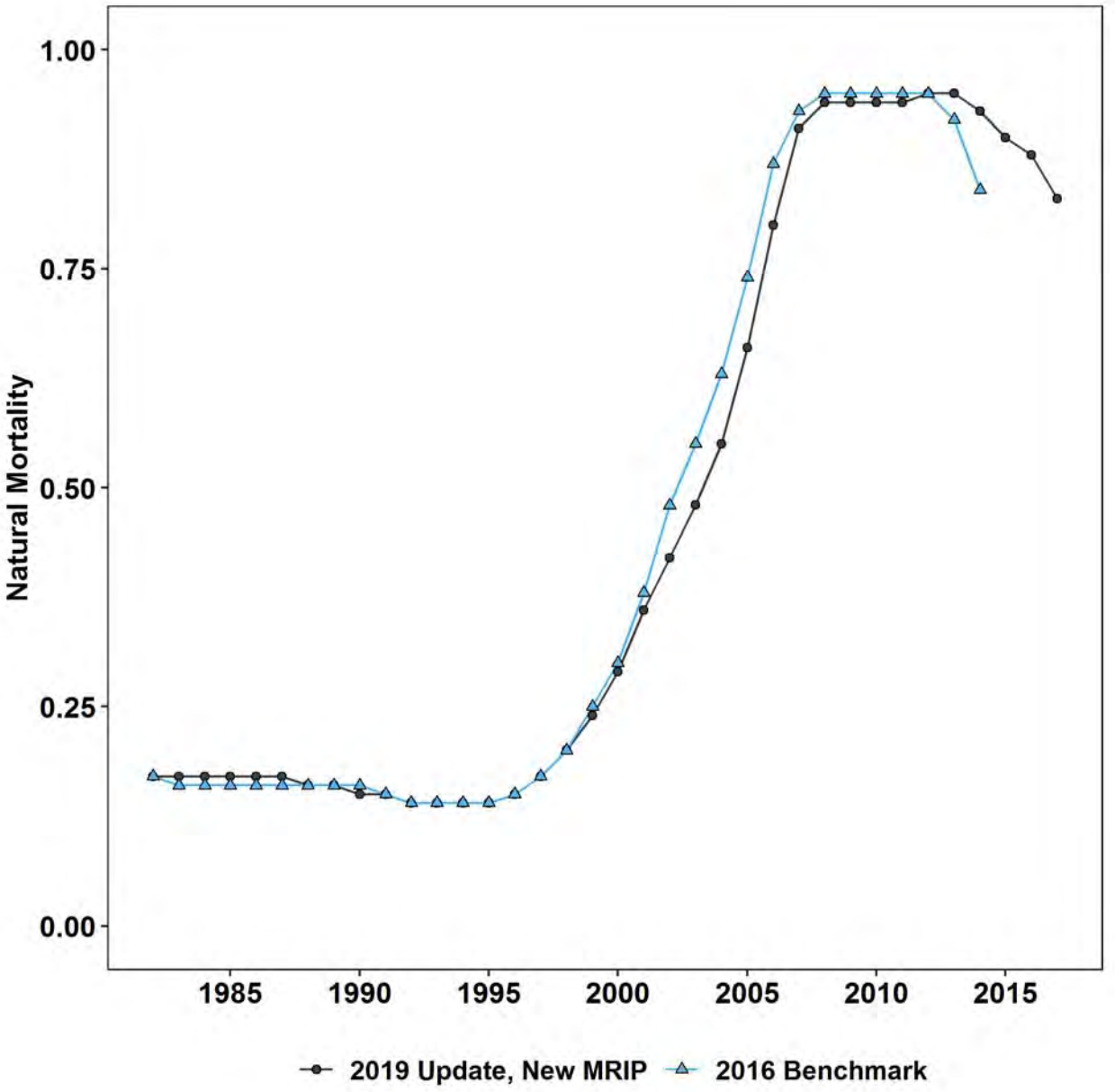

Figure 49. Comparison of natural mortality estimates from the 2016 benchmark assessment and the 2019 assessment updated.

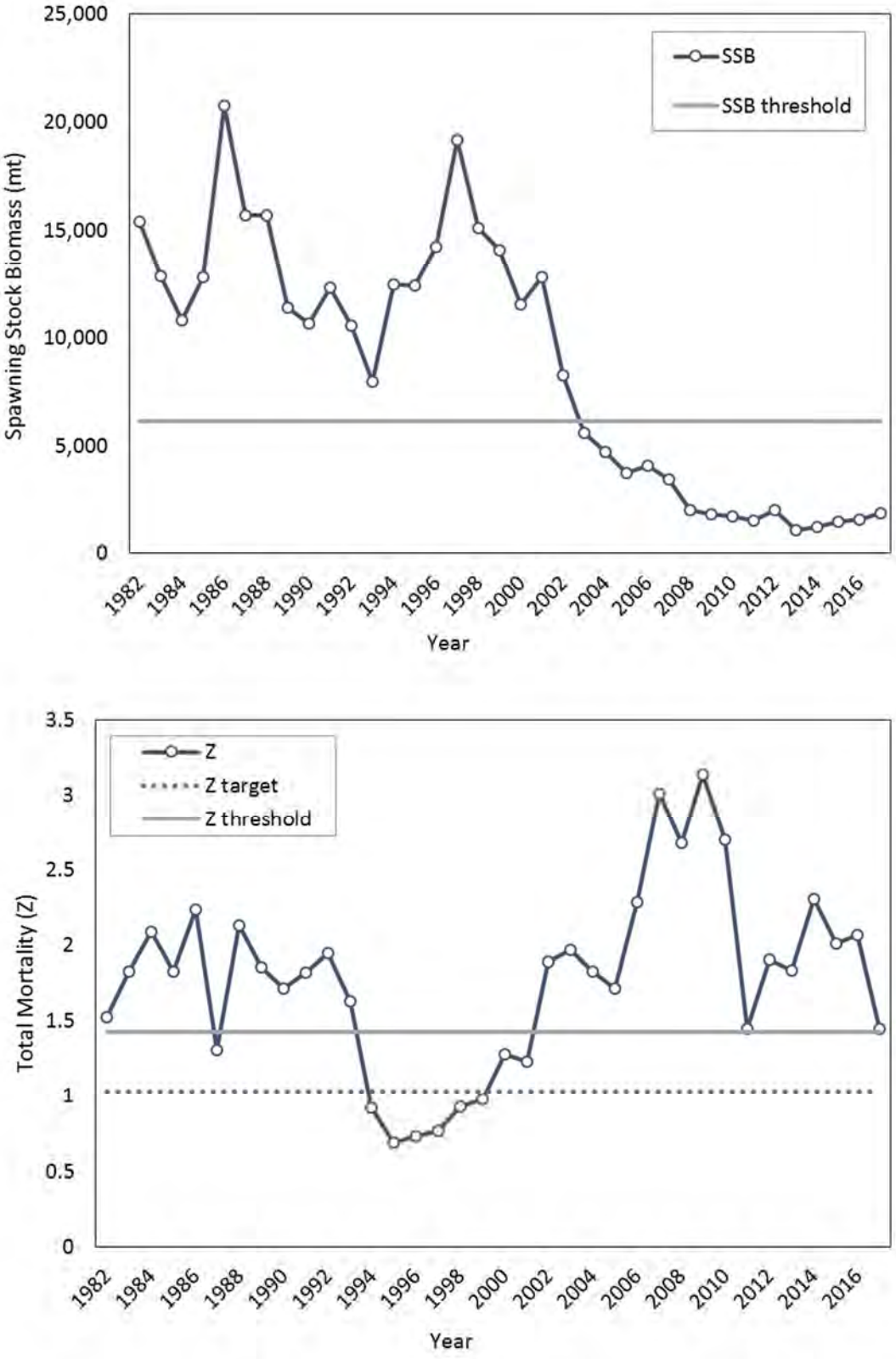

Figure 50. Spawning stock biomass (top) and total mortality (bottom) plotted with their respective targets and thresholds, where defined.

Atlantic States Marine Fisheries Commission

Business Session

Tuesday, October 29, 2019; 4:15 – 5:15 p.m.
Thursday, October 31, 2019; 10:00 – 10:15 a.m.

New Castle, New Hampshire

Draft Agenda

The order in which these items will be taken is subject to change;
other items may be added as necessary.

October 29

1.	Welcome/Introductions (*J. Gilmore*)	4:15 p.m.
2.	Committee Consent o Approval of Agenda o Approval of Proceedings from August 2019	4:20 p.m.
3.	Public Comment	4:25 p.m.
4.	Review and Consider Approval of 2020 Action Plan (*R. Beal*) **Action**	4:30 p.m.
5.	Elect Chair and Vice-Chair (*R. Beal*) **Action**	5:00 p.m.
6.	Recess	5:15 p.m.

October 31

1.	Reconvene	10:00 a.m.
2.	Consider Changes to the Rules and Regulations to Adopt a Policy to Address Non-Payment of State Appropriations (*R. Beal*) **Final Action**	10:00 a.m.
3.	Consider Noncompliance Findings (If necessary) **Final Action**	10:05 a.m.
4.	Other Business/Adjourn	10:15 a.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, New Hampshire

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

BUSINESS SESSION

The Westin Crystal City
Arlington, Virginia
August 7, 2019

These minutes are draft and subject to approval.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Business Session
August 2019

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ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Sen. David Miramant, ME (LA)
Doug Grout, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Dan McKiernan, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Jim Gilmore, NY (AA)
Maureen Davidson, NY, Administrative proxy
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak
Andy Shiels, PA, proxy for T. Schaeffer (AA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Luisi, MD, Administrative proxy
Robert Brown, MD, proxy for R. Dize (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Rob O'Reilly, VA, proxy for S. Bowman (AA)
Steve Murphey, NC (AA)
Robert Boyles, SC (AA)
Mel Bell, SC, Administrative proxy
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Sen. Thad Altman, FL (LA)
Marty Gary, PRFC
Alesia Read, NMFS
Sherry White, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Caitlin Starks
Jessica Kuesel
Tina Berger

Guests

The Business Session of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Wednesday, August 7, 2019, and was called to order at 10:30 o'clock a.m. by Chairman James J. Gilmore.

CALL TO ORDER

CHAIRMAN JAMES J. GILMORE: All right let's jump right in, it should be pretty quick. We just really have one action item. Very quickly, welcome back to the Business Session.

APPROVAL OF AGENDA

CHAIRMAN GILMORE: There is an agenda in your briefing document, approval of the agenda. Are there any changes to the agenda? Seeing none.

APPROVAL OF PROCEEDINGS

CHAIRMAN GILMORE: We have proceedings from the May, 2019 meeting. Are there any changes to the proceedings? Seeing none we will adopt those by unanimous consent.

PUBLIC COMMENT

CHAIRMAN GILMORE: Is there any public comment? This is like that commercial when the firemen like run the country or whatever and say, we want no new taxes, everybody okay good, all right let's go have lunch. No public comment.

CONSIDER APPROVAL OF ATLANTIC COBIA AMENDMENT 1

CHAIRMAN GILMORE: We're going to consider approval of the Atlantic Cobia Amendment 1, which is a final action, so this will require a roll call vote, unless we have unanimous support for it. Toni, are we going to do anything on this or just go into it? Toni is just going to give us a brief background on it and then we'll go for a motion. Toni.

MS. TONI KERNS: The Atlantic Cobia Board discussed Amendment 1 to the, the South Atlantic Board. I'm already moving it to its own Board. The South Atlantic Board discussed Amendment 1 to the Cobia FMP. This FMP is the first FMP in which the Commission has sole authority over the Atlantic migratory group of Atlantic cobia.

It transitioned from the South Atlantic Council to the Commission. It includes regulations for the commercial and recreational fishery, *de minimis* categories, as well as how to set specifications over time. The Board Chair is not here today, so Spud, oh he is here, look at that. The Board Chair can come to the table and read a motion for us perhaps. Pat Geer is in the back of the room. I didn't realize you were here, Pat. Mike can put a motion on the table, but we are looking for approval of the Amendment.

MR. PATRICK GEER: I'm sorry; I didn't know I had to be up here for this. Are we ready to read the motion**? On behalf of the South Atlantic State/Federal Fisheries Management Board, move to approve Amendment 1 to the Cobia Interstate Fishery Management Plan, with an implementation date of July 1, 2020.**

CHAIRMAN GILMORE: Thanks, Pat, that is a motion by the Board so we do not need a second for this. Is there any discussion on the motion? Dennis Abbott.

MR. ABBOTT: Why is the implementation a year from now, knowing nothing about cobia?

MS. KERNS: It was to allow for the states that have to go through legislative process to make sure that they had sufficient time to have all of the measures completed.

CHAIRMAN GILMORE: Other discussion on the motion. Mel Bell.

MR. BELL: Being one of those states, I mean that is the absolute soonest that we would even have a shot at putting something in place that

we would need to put in place. That's why we're in July, 2020, '21 would give us two years to take a shot at it, but 2020 we are willing to try that.

CHAIRMAN GILMORE: Thanks Mel, I wasn't going to single South Carolina out, so thanks for falling on your sword. **Are there any other comments on this? Okay is there any objection to the motion? Seeing none, we will adopt it by unanimous consent.** Thanks, Pat.

ADJOURNMENT

CHAIRMAN GILMORE: The only other item we had was a noncompliance. There is no noncompliance, so without further infection we are adjourned.

(Whereupon the meetings adjourned at 10:22 o'clock a.m. on August 7, 2019)

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ATLANTIC STATES MARINE FISHERIES COMMISSION

Draft 2020 Action Plan

For Review by the Executive Committee and Business Session

78th Annual Meeting

Goal 1 – Rebuild, maintain and fairly allocate Atlantic coastal fisheries

Goal 1 focuses on the responsibility of the states to conserve and manage Atlantic coastal fishery resources for sustainable use. Commission members will advocate decisions to achieve the long-term benefits of conservation, while balancing the socio-economic interests of coastal communities. Inherent in this is the recognition that healthy and vibrant resources mean more jobs and more opportunity for those that live along the coast. The states are committed to proactive management, with a focus on integrating ecosystem services, socioeconomic impacts, habitat issues, bycatch and discard reduction measures, and protected species interactions into well-defined fishery management plans (FMPs). FMPs will also address fair (equitable) allocation of fishery resources among the states. Understanding global climate change and its impact on fishery productivity and distribution is an elevated priority. Improving cooperation and coordination with federal partners and stakeholders can streamline efficiency, transparency, and, ultimately, success. In the next five years, the Commission is committed to making significant progress on rebuilding overfished or depleted Atlantic fish stocks.

Fisheries management and stock assessment activities anticipated for 2020 and into 2021 are outlined below. Activities are divided into high priority species (those with significant management action, stock assessment activity, or are of critical importance to the states and their stakeholders) and medium-low priority species. For most species, there are several activities that occur on an annual or ongoing basis, including specification setting; FMP review and state compliance reports; and ensuring cooperation and consistent management programs among the states, regional councils, and NOAA Fisheries for shared resources. While ongoing activities are not listed below, they continue to be conducted. The focus of the Action Plan is to highlight new and high profile activities where the Commission will focus its resources and energies for the next two years.

HIGH PRIORITY SPECIES FOR 2020

American Lobster

- Develop a management strategy for the Gulf of Maine/Georges Bank (GOM/GBK) stock that acknowledges the effects of climate change and addresses the resilience of the stock (Addendum XXVII)
    - Monitor and respond if necessary to GOM research on impacts of changing ocean conditions
- Implement Addendum XXVI data elements to improve data collection and characterization of the fishery. Continue to work with ACCSP to ensure all required data elements are incorporated into SAFIS.
- Continue to monitor and respond as necessary to NOAA rulemaking on Atlantic Large Whale Take Reduction Plan Modifications
- Continue to work with the Law Enforcement Subcommittee, the states and NOAA Fisheries to improve enforcement of management measures in both state and offshore waters
- Continue the development of the Benchmark Stock Assessment for peer review in 2020
    - August 2020: Board review of Benchmark Assessment and Peer Review Report. Consider management response if necessary.

- Work with NOAA Fisheries to ensure consistency in state and federal regulations (e.g., trap cap in Area 3, trap banking, data collection)

Atlantic Herring (possibly move to medium/low priority)

- **In conjunction with the New England Fishery Management Council (NEFMC), consider utilization of funding to support data collection on timing and extent of spawning in Area 3**
- **Work with the Northeast Fisheries Science Center (NEFSC) to complete a Management Track Stock Assessment for Peer Review**
    - **August: Board review of management track stock assessment**
    - **Review and adjust 2021 specifications if necessary**
- Continue to improve coordination and collaboration with NEFMC
- Conduct meetings as necessary to establish state effort control (days-out) programs for Area 1A

Atlantic Menhaden

- **Resolve implementation of Chesapeake Bay cap**
- **Technical Committee and Board review of recommendations from Aerial Survey Design Project; Board to determine next steps**
- February: Board review of Atlantic Menhaden and Ecological Reference Points (ERP) Benchmarks Assessments and Peer Review Reports. Consider management response if necessary.

Atlantic Striped Bass

- **Implement Addendum VI, including conservation equivalency proposals**
- **Consider management response to rebuild biomass and address long-term fishery issues (potential initiation of amendment)**
- Work cooperatively with NOAA Fisheries to consider changes to Atlantic striped bass fishing in the EEZ, including Block Island Transit Zone
- Develop long-term strategy to continue winter striped bass tagging efforts offshore of NC and VA, including funding, administration, and at-sea support

Black Sea Bass

- **Develop, in coordination with the Mid-Atlantic Fishery Management Council (MAFMC), addendum/amendment on reforming recreational management and commercial/ recreational allocation taking into account calibrated recreational estimates; this activity may extend beyond 2020**
- Consider management action to adjust commercial allocation

Bluefish

- **Consider the development of an amendment in collaboration with MAFMC to address issues including: commercial/recreational allocation taking into account calibrated recreational estimates, commercial allocation, goals and objectives, quota transfers, and a rebuilding program**

Cobia

- Implement Amendment 1 to the Cobia FMP and work with the South Atlantic Fishery Management Council (SAFMC) and NOAA Fisheries to ensure complementary regulations in federal waters
- February: Consider management response to the SouthEast Data Assessment Review (SEDAR) Benchmark Stock Assessment, if necessary

Horseshoe Crab

- **Begin a revision to the Adaptive Resource Management (ARM) Framework to use modelling approaches from the benchmark stock assessment**
- Secure long-term funding for the Horseshoe Crab Benthic Trawl Survey for use in the ARM Framework
- Seek alternatives with the biomedical community in order to more transparently communicate annual mortality and assessment results

Scup

- **Develop, in coordination with MAFMC, amendment addressing commercial/recreational allocations taking into account recalibrated recreational estimates**

Summer Flounder

- **Develop, in coordination with MAFMC, amendment addressing sector allocations taking into account recalibrated recreational estimates**
- **Participate in a workshop with MAFMC's Research Steering Committee to examine the possibility of reestablishing the Research Set Aside program**

Tautog

- **Initiate development of stock assessment update for completion in 2021**
- Implement commercial harvest tagging program as required by Amendment 1

MEDIUM-LOW PRIORITY SPECIES

American Eel

- **Work with Technical Committee and Stock Assessment Subcommittee to develop new method for next benchmark stock assessment, including coordination with U.S. Geological Survey and Fisheries and Oceans Canada**
- Monitor international action on the Convention of International Trade of Endangered Species through communications with US Fish and Wildlife Service (USFWS)

Atlantic Croaker

- Finalize and implement the Addendum utilizing the updated Traffic Light Approach (TLA) and respond if necessary

Atlantic Sturgeon

- Monitor state and federal activities in response to an Endangered Species Act listing of Atlantic sturgeon, including 5-year status review and recovery plan

Black Drum

No new tasks

Coastal Sharks

- **Monitor international response to 2019 Shortfin Mako Stock Assessment Update at the International Commission for the Conservation of Atlantic Tunas**
- **Work through SEDAR to complete Blacktip Shark Stock Assessment for Peer Review in November**
    - **February 2021: Board review of Stock Assessment and Peer Review. Consider management response if necessary.**
- Monitor activities of NOAA Fisheries Highly Migratory Species Division with regards to coastal shark management actions and consider development of complementary management actions as needed for consistency

Jonah Crab

No new tasks

Northern Shrimp

- **Conduct stock assessment update**

Red Drum

- **Continue to work with the Assessment Science Committee (ASC) to develop a roadmap for the next benchmark stock assessment, including consideration of calibrated recreational estimates for Board review**

Shad and River Herring

- Complete American Shad Benchmark Stock Assessment for External Peer Review
    - August: Board review of Benchmark Assessment and Peer Review Report. Consider management response if necessary.
- Monitor management activities of NEFMC and MAFMC including, but not limited to, shad and river herring catch caps and bycatch avoidance programs
- Consider Technical Committee recommendations on improvements to Amendments 2 and 3 and sustainable fishery management plans

Spanish Mackerel

- **In coordination with SAFMC, initiate management action to ensure complementary regulations**
- **Work through SEDAR to prepare Benchmark Stock Assessment for Peer Review in 2021**

Spiny Dogfish

- **Implement Addendum VI (Quota Transfer between Regions-States)**
- Review and respond to data update, if necessary

Spot

- Finalize and implement the Addendum utilizing the updated Traffic Light Approach (TLA) and respond if necessary

Spotted Seatrout

No new tasks

Weakfish

- Consider management response to assessment update, if necessary

Winter Flounder

- **Work through NEFSC to prepare Management Track Assessment for Peer Review**
    - **October: Board review Management Track Assessment and Peer Review Report. Consider management response in conjunction with NEFMC.**

CROSS-CUTTING ISSUES

- **Raise awareness of regulatory changes affecting data collection (e.g. American lobster, American eel, tautog)**
- **Work with the states and NOAA Fisheries on changes to the Take Reduction Plan for North Atlantic Right Whale**
- Monitor developments related to changing ocean conditions, ocean acidification, stock distributions, ecosystem services, ocean planning and potential fisheries reallocations
- Work with NOAA leadership to better understand the impacts to state management programs given the movement toward increased recreational flexibility. Seek ways to address the concerns of the recreational community with regard to Commission-managed and jointly-managed species.
- Respond to calibrated recreational estimates as needed across Commission species management plans
- Examine allocation strategies and provide recommendations to management boards as necessary

Goal 2 – Provide the scientific foundation for stock assessments to support informed management actions

Sustainable management of fisheries relies on accurate and timely scientific advice. The Commission strives to produce sound, actionable science through a technically rigorous, independently peer-reviewed stock assessment process. Assessments are developed using a broad suite of fishery-independent surveys and fishery-dependent monitoring, as well as research products developed by a coastwide network of fisheries scientists at state, federal, and academic institutions. The goal

encompasses the development of new, innovative scientific research and methodology, and the enhancement of the states' stock assessment capabilities. It provides for the administration, coordination, and expansion of collaborative research and data collection programs. Achieving the goal will ensure sound science is available to serve as the foundation for the Commission's evaluation of stock status and adaptive management actions.

Several fisheries science activities occur on an annual or ongoing basis, including development of stock assessments and conducting peer reviews; stock assessment scheduling and evaluation of scientists' workloads; updating Commission research priorities and distributing to funding agencies; external research proposal reviews; development of ecological reference points models; supporting multispecies/diet data collection; fish ageing and tagging programs; gear technology research; and participation in Marine Recreational Information Program (MRIP) catch estimation calibrations and Atlantic Coastal Cooperative Statistics Program (ACCSP) committees. While ongoing activities are not listed below, they continue to be conducted.

SCIENCE COMMITTEE ACTIVITIES

- **Develop proposals and pursue support for outstanding fisheries research priorities; define and assess Commission success in rebuilding and sustaining stocks through the Management and Science Committee (MSC)**
- Seek guidance and review procedures from other stock assessment centers (NWFSC, ICES) to consider for streamlining Commission assessment operations through the ASC
- Develop socioeconomic indicators to include in FMPs through the Committee on Economics and Social Sciences
- Finalize a Commission policy regarding risk and uncertainty for consideration and approval by the ISFMP Policy Board

DATA COLLECTION

- Coordinate the Southeast Area Monitoring and Assessment Program (SEAMAP) South Atlantic component; **Develop a new SEAMAP 5-Year Plan (2021-2025)**
    - **Explore new system for coordinated survey data management**
- Coordinate the Northeast Area Monitoring and Assessment Program (NEAMAP); implement action items stemming from the 2019 NEAMAP Summit
    - **Conduct Trawl Survey Calibration Workshop**
- Collect new data to address data deficiencies
    - Collect new fishery-dependent data using black sea bass research fleet
    - Collect new data elements from lobster fisheries (effort and spatial details) to improve stock assessments;
    - Assess fixed gear and right whale interactions in the Gulf of Maine
    - Increase bycatch monitoring of sturgeon, shad and river herring, and sciaenids in state waters, as resources allow
    - **Increase diet data collection to support ecosystem-based assessments and management, through new or existing programs (e.g., SEAMAP), as resources allow**

- Promote the collection of acoustic tagging information and work with the Atlantic Coastal Telemetry network to integrate tagging studies along the coast; secure telemetry tagging data for use in stock assessments

FISHERIES RESEARCH

- **Conduct an Atlantic menhaden ageing workshop**
- Conduct a Fish Ageing Quality Assurance Workshop among Atlantic coast state and university laboratories to ensure consistency between new and historical age data
- Collaborate with university researchers to develop new growth model Bayesian index-based methods for shad stock assessment
- Collaborate with university researchers to develop next iteration of lobster length-structured assessment model
- Seek opportunities to collaborate with academic institutions to advance population dynamic models for use in stock assessments
- Partner with USGS to identify shared research priorities and opportunities for enhanced scientific support to the Commission

ECOSYSTEM-BASED MANAGEMENT & CHANGING OCEAN CONDITIONS

- **Standardize timeline of Commission assessments to support timely updates to ERP assessments for Atlantic menhaden**
- **Evaluate the effects of changing ocean conditions on stock productivity and distribution**
- Collaborate with NOAA Fisheries Northeast and Southeast Fisheries Science Centers to include Commission interests in Ecosystem Status Reports
- Track the development of state and federal activities related to changing ocean conditions and impacts to fisheries through MSC

COMPETING OCEAN USES

- **Participate in Responsible Offshore Science Alliance and provide forum for the states to discuss interactions between fisheries resources and offshore energy development**
- Determine the Commission's role in aquaculture activities, including policy development and interstate shellfish seed tracking through the Aquaculture Committee

Goal 3 - Produce dependable and timely marine fishery statistics for Atlantic coast fisheries

Effective management depends on quality fishery-dependent data and fishery-independent data to inform stock assessments and fisheries management decisions. While Goal 2 of this Action Plan focuses on providing sound, actionable science and fishery-independent data to support fisheries management, Goal 3 focuses on providing timely, accurate catch and effort data on Atlantic coast recreational, for-hire, and commercial fisheries.

Goal 3 seeks to accomplish this through the activities of the Atlantic Coastal Cooperative Statistics Program (ACCSP), a cooperative state-federal program that designs, implements, and conducts marine fisheries statistics data collection programs and integrates those data into data management systems that will meet the needs of fishery managers, scientists, and fishermen. ACCSP partners include the 15 Atlantic coast state fishery agencies, the three Atlantic Fishery Management Councils, the Potomac River Fisheries Commission, NOAA Fisheries, and the U.S. Fish and Wildlife Service (USFWS).

On a continuing basis, ACCSP will:

- Review and maintain coastwide standards for data collection and processing in cooperation with all program partners
- Provide funding to its Program Partners supporting data collection management and innovation through a competitive process
- Maintain commercial dealer reporting and commercial and for-hire fishermen catch reporting through the Standard Atlantic Fisheries Information System (SAFIS) electronic applications
- Coordinate state conduct of the Marine Recreational Information Program (MRIP) Access Point Angler Intercept Survey (APAIS) and the For-hire survey (FHS)
- Consolidate and integrate partner data and provides user-friendly, online public and confidential access to those data via the Data Warehouse

ACCSP staff is also responsible for ensuring that all hardware and software related to ASMFC and ACCSP systems and the network components (e.g., routers, firewalls) are maintained in accordance with established processes and procedures.

PROGRAM MANAGEMENT

- **Monitor 2020 ACCSP funded projects, and select 2021 projects through a competitive proposal process; these years represent the first targeted reductions in funding for ongoing or maintenance projects**
- **Strengthen and modernize the committee process and bolster partner and advisor engagement**
- **Determine an alternative method for distribution and revision of Atlantic coast data standards to improve accessibility and be more responsive to partner needs**
- **Integrate communication strategies with ASMFC Strategic Communications Plan**

FISHERIES-DEPENDENT DATA COLLECTION

SAFIS

- **Extend SAFIS application capabilities to capture trip declaration reports (hailing) and vessel location data**
- Continue major redesign of the SAFIS database and applications for dealer landing and harvester catch reporting (SAFIS eDR and eTrips) that includes an integrated reporting solution to streamline reporting, and reduce duplication. This will be accomplished by:
    - **Develop data collection applications that allow a single submission to meet the reporting requirements of multiple partner agencies**
    - **Implement updated participant and permit database design**

    - **Coordinate implementation of trip management system with universal trip ID**
    - **Implement one methodology to process data entered via online, mobile, or file upload**
- Support the efforts of federal and state agencies to implement mandatory electronic trip reporting, including expansion of commercial and for-hire logbooks by the regional fishery management councils, and NOAA Fisheries' regional offices and science centers

Recreational Surveys

- **Implement state conduct of the MRIP FHTS from Maine to Georgia**
- **Expand implementation of electronic data collection for MRIP APAIS and FHTS**
- **Develop methodology to more fully incorporate for-hire logbooks into recreational catch statistics**
- **Update Atlantic Recreational Implementation Plan**

DATA DISTRIBUTION AND USE

- **Update Data Warehouse structures and queries to incorporate new data elements collected by partner systems**
- **Continue to expand Data Warehouse content including the addition of biological data module**
- **Implement additional processes and partner communication designed to improve data integrity**

DATA INFRASTRUCTURE AND SECURITY

- **Extend infrastructure to support increasing data volumes associated with partner implementation of SAFIS reporting applications**
- **Address security protocols as needed to comply with Federal Information Security Management Act**

Goal 4 – Promote compliance with fishery management plans to ensure sustainable use of Atlantic coast fisheries

Fisheries managers, law enforcement personnel, and stakeholders have a shared responsibility to promote compliance with fisheries management measures. Activities under the goal seek to increase and improve compliance with FMPs. This requires the successful coordination of both management and enforcement activities among state and federal agencies. Commission members recognize that adequate and consistent enforcement of fisheries rules is required to keep pace with increasingly complex management activity and emerging technologies. Achieving the goal will improve the effectiveness of the Commission's FMPs.

The Commission's Law Enforcement Committee (LEC) carries out much of Goal 4. Most of these activities occur on an annual basis or as part of the FMP development process. Proposed changes in management are evaluated to determine enforceability and effectiveness. The LEC provides managers with feedback on the practicality of regulations to foster stakeholder buy-in and compliance.

COMPLIANCE

- Incorporate and reference the revised "Guidelines for Resource Managers" in reviews and evaluations of proposed changes to management programs
- Annually review and comment on (as needed) NOAA Fisheries enforcement priorities to ensure they support the enforceability and effectiveness of Commission management programs
- Aquaculture: Review and provide input on enforcement issues associated with American eel or other aquaculture proposals, including offshore aquaculture proposals
- Evaluate interagency measures to enhance traceability of fishery products across jurisdictional boundaries

PARTNERSHIPS

- Engage and support NOAA Fisheries and USFWS Offices of Law Enforcement, U.S. Department of Justice, and U.S. Coast Guard to facilitate the enforceability of Commission FMPs
- Work to sustain financial support for Joint Enforcement Agreements (JEAs)

STAKEHOLDER AWARENESS

- Use emerging communication platforms and tools to deliver real time information regarding regulations and the outcomes of law enforcement investigations
    - Explore the use of electronic tools to communicate real-time commercial and recreational regulations

Goal 5 – Protect and enhance fish habitat and ecosystem health through partnerships and education

Goal 5 aims to conserve and improve coastal, marine, and riverine habitat to enhance the benefits of sustainable Atlantic coastal fisheries and resilient coastal communities in the face of changing ecosystems. Habitat loss and degradation have been identified as significant factors affecting the long-term sustainability and productivity of our nation's fisheries. The Commission's Habitat Program develops objectives, sets priorities, and produces tools to guide fisheries habitat conservation efforts directed towards ecosystem-based management.

The challenge for the Commission and its state members is maintaining fish habitat in the absence of specific regulatory authority for habitat protection or enhancement. Therefore, the Commission will work cooperatively with state, federal, and stakeholder partnerships to achieve this goal. Much of the work to address habitat is conducted through the Commission's Habitat and Artificial Reef Committees. In order to identify critical habitat for Commission managed species, each year the committee reviews existing reference documents for Commission-managed species to identify gaps or updates needed to describe important habitat types and review and revise species habitat factsheets. The Habitat Committee also publishes an annual issue of the *Habitat Hotline Atlantic*, highlighting topical issues that affect all the states.

The Commission and its Habitat Program endorses the National Fish Habitat Partnership, and will continue to work cooperatively with the program to improve aquatic habitat along the Atlantic coast. Since 2008, the Commission has invested considerable resources, as both a partner and administrative home, to the Atlantic Coastal Fish Habitat Partnership (ACFHP), a coastwide collaborative effort to accelerate the conservation and restoration of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes. As part of this goal, the Commission will continue to provide support for ACFHP, under the direction of the National Fish Habitat Partnership Board.

EDUCATE

- **Showcase state artificial reef programs through a comprehensive update to state profiles in the *Profile of Atlantic Artificial Reef Development* source document**
- Educate Commissioners, stakeholders, and the general public about the importance of habitat to healthy fisheries and ecosystems
- Publish a Habitat Management Series document on acoustics affecting fish habitat for ISFMP Policy Board review and acceptance
- Identify mechanisms to evaluate ecosystem health for consideration by Technical Committees and Boards

INTERGRATE

- Complete Fish Habitats of Concern descriptions to be considered for integration into Commission FMPs
- Increase communication on ecosystem-based management with Commission committees to find overlap with fish habitat related issues
- Explore opportunities to integrate habitat data into stock assessments where possible

LEVERAGE PARTNERSHIP

- Engage local, state, and regional governments in mutually beneficial habitat protection and enhancement programs through partnerships
- Foster partnerships with management agencies, researchers, and habitat stakeholders to leverage regulatory, political, and financial support
- Engage in state and federal agency efforts to ensure response strategies to changing ocean conditions are included in habitat conservation efforts
- Work with ACFHP to foster partnerships with like-minded organizations at local levels to further common habitat goals
- Coordinate the activities of the Fish Passage Working Group to carry out priority tasks as defined by the ISFMP Policy Board
- Promote development of effective fish passage approaches and projects through state and federal collaboration

ATLANTIC COASTAL FISH HABITAT PARTNERSHIP (ACFHP)

- **Promote the Southeast Fish Habitat and Northeast Fish Habitat Mapping projects**
- **Develop a fundraising strategy to solicit donations from the private sector (foundations, corporations) for targeted on-the-ground projects**
- Redesign outreach materials for consistency with the redesigned website to optimize our messaging and facilitate partner and stakeholder engagement
- Work with partners to protect, restore, or maintain resilient Regional Priority Habitats to optimize ecosystem functions and services to benefit fish and wildlife
- Restore habitats by funding fish passage and non-fish passage projects (SAV, oyster reefs, salt marshes)

Goal 6 – Strengthen stakeholder and public support for the Commission

Stakeholder and public acceptance of Commission decisions are critical to our ultimate success. For the Commission to be effective, these groups must have a clear understanding of our mission, vision, and decision-making process, as well as the opportunities that stakeholders have to participate in our process through advisory panels and public comment. The goal seeks to do so through expanded outreach and education efforts about Commission programs, decision-making processes, and its management successes and challenges. It aims to engage stakeholders in the process of fisheries management, and promote the activities and accomplishments of the Commission. Achieving the goal will increase stakeholder participation, understanding, and acceptance of Commission activities.
On a continuing basis, the Commission conducts outreach and stakeholder engagement though a number of products and activities. These include publications (e.g., bi-monthly Fisheries Focus, Annual Report to Congress), press releases, meeting summaries, stock assessment overviews, website and social media platforms, industry tradeshows and state festivals, and stakeholder engagement through the advisory panel process. Building strong relationships with local, regional and national media contacts, and networking/collaborating with our management partners from the Councils, states and federal agencies are also critical components of our outreach program, which occur on an ongoing basis.

INCREASE PUBLIC UNDERSTANDING AND SUPPORT OF ASMFC

- Increase public understanding and support of activities through expanded outreach at the local, state, and federal levels
- **Identify 3-4 high profile issues and seek to proactively address stakeholder criticisms and concerns through various outreach tools**
- Promote high profile species and stock assessment results through various outreach tools and platforms
    - **2020: American lobster, Atlantic cobia, Atlantic herring, Atlantic menhaden & ERPs, shad, Spanish mackerel, and winter flounder**

MAXIMIZE USE OF CURRENT AND NEW TECHNOLOGIES

- Use new technologies and communication platforms to more fully engage the broader public in the Commission's activities and actions
- Use story mapping and photo journaling to better communicate science and management activities
- Explore the use of topical webinars to engage and inform public about current activities (management, science, habitat, and data collection and management)
- Use website capabilities (e.g., video clips) to promote Fisheries Science 101 webinars, videos of fisheries surveys and state on-the-ground projects
- Monitor the success of website and social media platforms in reaching broader constituency and effectively communicating ASMFC mission, programs and activities

FACILITATE STAKEHOLDER PARTICIPATION

- **Evaluate effectiveness of current advisory panel process and consider possible changes to enhance engagement and provide management boards with useful stakeholder input**
- **Explore additional tools to gather public comment on proposed management actions (e.g., online surveys)**
- Clearly define Commission processes to facilitate stakeholder participation, as well as transparency and accountability.
    - Develop outreach materials that highlight opportunities for public engagement in the Commission's fisheries management and stock assessment processes

MEDIA RELATIONS AND NETWORKING

- **Increase interdepartmental coordination on outreach activities through the development of a Strategic Communications Plan**
- Strengthen national, regional, and local media relations to increase coverage of Commission actions.
- Track media communications and coverage through ASMFC-related news clippings and media tracking sheet.
- **Work with other Northeast Regional Coordinating Council members to implement Stock Assessments Communications Framework**
- Work with Atlantic Coast Fisheries Communication Group, comprised of Public Information Officers from the Councils, states and federal agencies, to share successful tools, identify key media contacts and work cooperatively on joint projects.
    - Explore mechanisms to better inform fishing blogs and other external communication platforms about Commission assessment results and management actions.

Goal 7 – Advance Commission and member states' priorities through a proactive legislative policy agenda

State input is critical for a coherent national fisheries policy. The Commission recognizes the need to work with Congress, the Administration and partner organizations in policy formulation, and will be

vigilant in advocating state interests to Congress. The Commission will pursue federal resources for states to implement and comply with the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act) and to improve or maintain fisheries data collection. The importance of habitat restoration, research on the impacts of changing ocean conditions, and the need for effective marine enforcement will also be communicated to Congress and our management partners.

DEVELOP AND STRENGTHEN RELATIONSHIPS WITH MEMBERS OF CONGRESS AND STAFF

- Encourage Commissioners to meet with Members of Congress and staff during Winter and Spring Meetings
- Provide state-specific 'ASMFC Meeting Previews' to congressional staff ahead of quarterly Meetings and invite congressional staff to attend significant Board Meetings during Winter, Spring and Summer Meetings
- Provide opportunities for the Executive Director to meet with congressional staff on a regular basis

ENGAGE CONGRESS AND THE ADMINISTRATION ON FISHERY-RELATED LEGISLATION AND ISSUES

- Monitor federal legislation affecting the Commission, including policy and annual appropriations bills and develop Commission positions on pending federal legislation
    - Existing laws: Atlantic Coastal Act, Interjurisdictional Fisheries Act, Anadromous Fish Conservation Act, Magnuson-Stevens Act, Federal Aid in Fish Restoration Act, and Endangered Species Act
    - **Pending Legislation/Emerging Issues: forage fish management, user group and state-by-state allocations, marine national monuments, energy initiatives (offshore wind, hydropower, oil and gas exploration), shark fin trade, right whales, and living shorelines**

PURSUE FEDERAL RESOURCES TO SUPPORT MANAGEMENT ACTIVITIES

- Communicate the Commission's federal funding needs to Congress and advocate for sufficient appropriations
    - Priority line items include Regional Councils and Fishery Commissions, Interjurisdictional Fisheries Act, Fisheries Data Collections, Surveys and Assessments, SEAMAP, and Fisheries Information Networks
        - **Continue to increase funding for the Atlantic Coastal Act, with a goal of restoring its proportion of the "Regional Councils and Fishery Commissions" appropriation to its historic share**
    - Priority projects, programs, and activities include: Atlantic Coastal/National Fish Habitat Partnership, Cooperative Enforcement Joint Enforcement Agreements, NEAMAP, GOM lobster research, Mid-Atlantic Horseshoe Crab Trawl Survey, National Sea Grant College Program, Saltonstall-Kennedy Grant Program, and National Estuarine Research Reserves
    - **Increase Wallop-Breaux funding for the Atlantic, Gulf, and Pacific States Marine Fisheries Commissions via Wallop-Breaux Reauthorization legislation**

    - Seek federal funding support for long-term monitoring surveys and species-specific initiatives
- Engage the Administration (Commerce and Interior Departments) on funding and policy issues, including Secretarial implementation of the Atlantic Coastal Act
- Communicate state and Commission funding needs to NOAA Fisheries and U. S. Fish and Wildlife Service

PARTNERSHIPS

- Coordinate with the Gulf, Pacific, and Great Lakes Commissions on policy items of mutual interest including federal funding for fisheries programs. Executive Directors should continue to provide unified positions on funding and legislative priorities to lawmakers and federal agencies, where appropriate.
- Continue participation on Marine Fisheries Advisory Committee, the Marine Fisheries Initiative and Association of Fish and Wildlife Agencies

Goal 8 – Ensure the fiscal stability and efficient administration of the Commission

Goal 8 will ensure that the business affairs of the Commission are managed effectively and efficiently, including workload balancing through the development of annual action plans to support the Commission's management process. It also highlights the need for the Commission to efficiently manage its resources. The goal promotes the efficient use of legal advice to proactively review policies and react to litigation as necessary. It also promotes human resource policies that attract talented and committed individuals to conduct the work of the Commission. The goal highlights the need for the Commission as an organization to continually expand its skill set through training and educational opportunities. It calls for Commissioners and Commission staff to maintain and increase the institutional knowledge of the Commission through periods of transition. Achieving this goal will build core strengths, enabling the Commission to respond to increasingly difficult and complex fisheries management issues.

On a continuing basis, the Commission staff conservatively manages fiscal resources to achieve the proper balance between allocating funds to coastwide priorities and ensuring fiscal stability. Tasks performed to accomplish this balance include monitoring expenditures on a monthly basis; managing the reserve fund; fine-tuning meeting and travel policies; and preparing and participating in the annual audit and indirect cost proposal.

Human resources management is an ongoing process of recruitment and selection of employees; thoroughly orienting and introducing new employees to the culture of the Commission; maintaining good working conditions for all employees; managing employee relations; and training to enhance and increase their current skills. Ongoing tasks to accomplish this are annual review and revision of position descriptions; facilitating staff participation at national and regional conferences; and providing professional training opportunities. Additionally, human resource support is provided to cooperative

programs such as APAIS and ACFHP. All human resources documents are reviewed at least annually to ensure compliance with federal regulations and consistency with current practices.

Further, Commission staff keeps abreast of changes in technology and evaluates the need for updating the Commission's hardware and software. Ensuring consistency of resources and training across the Commission as well as documenting processes and verifying database information are ongoing tasks conducted by the staff.

The Commission process can be overwhelming to new Commissioners. The staff is committed to providing a thorough introduction and orientation to new Commissioners. Tasks conducted throughout the year include documenting institutional knowledge and updating on a regular basis the Commissioner Manual. Staff also provides this service to new members of Commission committees.

MANAGE OPERATIONS AND BUDGETS

- **Develop revised statement of work for Interjurisdictional Fisheries Act Cooperative Agreement to respond to the new federal grant reporting requirements**
- Utilize and update as necessary Commission compensation plan, including job classifications and salaries based on location
- Manage the Recreational Data Collection and the Fisheries Management, Science, Administration and Logistical Support Cooperative Agreements

UTILIZE CURRENT INFORMATION TECHNOLOGY

- Document standards for electronic record retention and develop site map of Commission electronic filing system for internal use, including protocols for document archiving
- Explore the use of available software packages to digitize review and approval of bills received by the Commission
- Implement contracts database to track details of multiple Commission contracts

MANAGE HUMAN RESOURCES

- **Research options for staff performance review and feedback**
- Promote Commission's mission and programs, and recruit new talent through outreach meetings with various marine policy and marine science graduate programs
- Provide training opportunities for ASMFC staff on commonly used software
- Conduct annual meeting with financial advisor to review retirement program performance with staff and provide opportunities for staff to meet individually with financial advisor to match financial goals with investment choices for retirement

ENGAGE AND SUPPORT COMMISSIONERS

- **Conduct a workshop on parliamentary procedures and meeting management**
- Continue process to welcome and orient new Commissioners to allow for full engagement in the Commission process
- Facilitate the retention and transfer of institutional knowledge among Commissioners

ENSURE THE LEGAL COMPLIANCE OF COMMISSION ACTIONS

- Utilize legal advice on new management strategies and policies, and respond to litigation as necessary, whether it be regarding challenges to Commission FMPs, a human resource issue, or access to confidential data

Atlantic States Marine Fisheries Commission

Draft Policy on Non-Payment of State Appropriations

October 1, 2019

Background

On a few occasions Commission member states have fallen into arrears with their annual appropriations. According to the Commission's Compact, Pub. Law 77-539, Art. XI (1942), each member state is assessed an annual appropriation to support the Commission. States have expressed concern over the fairness of a state being allowed to participate in the Commission process while being in arrears on annual appropriations. If a member state is significantly in arrears, the shortfall can adversely affect not only the Commission's financial status, but also can jeopardize the mutual obligation and trust among states upon which the successful carrying out of the Commission's cooperative mission depends.

The Commission's Compact, Rules & Regulations, and the ISFMP Charter do not speak directly to what remedies are available if a member state does not pay its annual appropriation to the Commission. The following discussion and draft policy provide the basis for modifying the Commission's guiding documents to address non-payment of state appropriations.

Discussion

A policy to address non-payment would need to be approved by the Commission; and the Rules and Regulations modified to reflect the policy. A change to the Rules and Regulations can be made during a regularly-scheduled Commission Business Session provided there is adequate public notice that a change to the Rule and Regulations is being considered.

The policy will need to consider:

- What notifications should be provided to a state (Commissioners, Governor, timing)?
- What are the consequences of non-payment (no votes, no participation, technical representatives)?
- Can a state appeal to the Commission for relief or are consequences compulsory?

Proposed Billing and Reminder Timeline

April 1st – Commission staff will send appropriation invoices to member states (payments due June 30 of year 2)

October 1st – Commission staff will send first reminder of payment due date to the states that have not submitted payment.

January 1st – Commission staff sends second reminder of payment due date to the states that have not submitted payment.

June 30th – State appropriations are due to the Commission.

Draft Policy

If a state is in arrears with its annual appropriation, the following steps will be taken:

July 1st of Year 2 – Executive Director notifies, in writing, the Governor and three Commissioners of the state's overdue status.

August (Summer Meeting) – A state that is in arrears will have the opportunity to appeal to the Executive Committee. During this appeal, the state can present information on why payments have not been made, provide a timeline for payment, and seek relief from the loss of voting privileges. The Executive Committee can then make a recommendation to the full Commission regarding leniency.

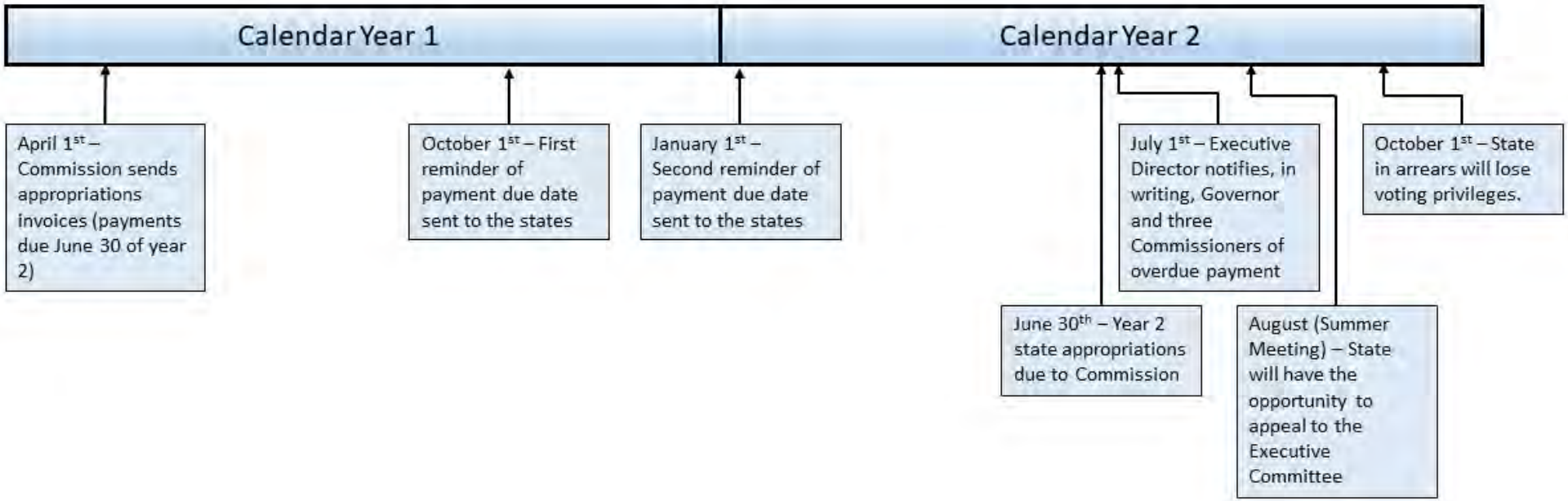
August (Summer Meeting) – The Commission will decide if any leniency is warranted and detail those provisions during the Business Session meeting.

October 1st – If a state is still in arrears and no leniency is granted, the state in question will no longer be able to vote on management boards/sections, the ISFMP Policy Board, or during the Commission's Business Session. The state's three commissioners will be able to attend Commission meetings and participate in deliberations, but will not be able to cast votes. The state's representatives will be able to participate on technical groups (e.g. species technical committee, Habitat Committee, plan review teams, etc.)

Reinstatement of Voting Privileges

A state will immediately have voting privileges reinstated upon payment of the full balance that is in arrears.

Policy on Non-Payment of State Appropriations



Atlantic States Marine Fisheries Commission

Executive Committee

October 30, 2019
8:00 – 10:00 a.m.
New Castle, New Hampshire

Draft Agenda

The order in which these items will be taken is subject to change; other items may be added as necessary.
A portion of this meeting may be a closed session for Committee members and Commissioners only.

1. Welcome/Call to Order *(J. Gilmore)*

2. Committee Consent
   - Approval of Agenda
   - Approval of Meeting Summary from August 2019

3. Public Comment

4. Report of the Administrative Oversight Committee (*P. Keliher*)
   - Consider Approval of Fiscal Year 2019 Audit/Financial Statement **Action**
   - Review Draft 2020 Action Plan

5. Consider Allocation of Remaining Plus-Up Funds *(R. Beal)*
   - Striped Bass Tagging Survey
   - Other Uses?

6. Discuss Public Input Processes *(R. Beal)*
   - Advisory Panel Involvement
   - Public Hearing Process

7. Review Policy Addressing Non-payment of State Assessments *(R. Beal)*

8. Review Revised Investment Policy for Commission Reserves *(L. Leach)*

9. Future Annual Meetings Update *(L. Leach)*

10. Other Business/Adjourn

Please Note: Breakfast will be served as members arrive; members may arrive as early as 7:30 a.m.

The meeting will be held at Wentworth by the Sea; 588 Wentworth Road, New Castle, NH 03854; 603.422.7322

MEETING SUMMARY OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

EXECUTIVE COMMITTEE

The Westin Crystal City
Arlington, VA
August 6, 2019

INDEX OF MOTIONS

ATTENDANCE

Committee Members

Pat Keliher, ME
Doug Grout, NH
Dennis Abbott, NH (LA Chair)
David Pierce, MA
Craig Miner, CT
Jason McNamee, RI
Jim Gilmore, NY
Joe Cimino, NJ
Stew Michels, proxy for John Clark, DE
Roy Miller, DE (GA Chair)
Andy Shiels, PA
Lynn Fegley, proxy for Bill Anderson, MD
Ellen Bolen, proxy for Steve Bowman, VA
Steve Murphey, NC
Mel Bell, proxy for Robert Boyles, SC
Doug Haymans, GA
Erika Burgess, proxy for Jim Estes, FL

Other Commissioners

Justin Davis, CT (AA)
Raymond Kane, MA (GA)
Spud Woodward, GA (GA)

Staff

Bob Beal
Laura Leach
Tina Berger
Toni Kerns
Deke Tompkins

Others

Derek Orner, NOAA Fisheries
Cheri Patterson, NHF&GD
Chris Wright, NMFS

CALL TO ORDER
The Executive Committee of the Atlantic States Marine Fisheries Commission convened in the Crystal V/VI Room of The Westin Crystal City in Arlington, Virginia August 6, 2019. The meeting was called to order at 8:00 a.m. by Chair Jim Gilmore.

APPROVAL OF AGENDA
The agenda was approved with the following addition: an update on future annual meetings.

APPROVAL OF PROCEEDINGS
The summary minutes from the May 1, 2019 meeting were approved as presented.

PUBLIC COMMENT
There was no public comment.

STATE ASSESSMENTS
The Pennsylvania Fish & Boat Commission has been working on getting caught up on their arrears, and it should be noted that ASMFC has already received their 2020 assessment in full. Mr. Shiels reported he expects ASMFC should receive the arrears within the next 60 days.

Staff presented a discussion paper on non-payment of state appropriations. The paper notes that the Commission guiding documents do not provide any remedies to address late payments by member states. The paper also presents an example policy on addressing non-payment of state appropriations. The Executive Committee provided feedback on the example policy. Staff will further develop the policy for the Committee's review at the Annual Meeting.

PROPOSED REVISION TO ANNUAL REPORT
The Executive Committee approved a shortened version of the Commission's Annual Report. The updated version will focus on the highlights of the Commission's activities while still meeting the obligation to annually report to Congress. The updated version will direct readers to the Commission website for additional details.

FOR-HIRE TELEPHONE SURVEY
The Executive Committee agreed to transition the conduct of the FHTS to state conduct beginning on January 1, 2020. NOAA Fisheries will provide resources to support state conduct. The State of Delaware has asked ACCSP staff to conduct its relatively small number of FHTS calls.

BIOSECURITY & BAIT SOURCES
The Executive Committee reviewed a draft resolution that details biosecurity risks and impacts associated with non-native bait sources. The resolution will be updated based on the Executive Committee feedback and presented to the ISFMP Policy Board for consideration at the October meeting. The Committee agreed the Commission should not expend significant staff or fiscal resources on biosecurity since each of the states will need to make the final decisions on acceptable bait sources.

OTHER BUSINESS
Staff provided an update on future annual meetings, noting that this year, October 28-31 we will be meeting in Portsmouth, New Hampshire; in 2020 we'll be in New Jersey; 2021 North Carolina and in 2022 we'll be in Maryland.

ADJOURN
CHAIR JIM GILMORE adjourned the Executive Committee meeting at 9:45 a.m.

ATLANTIC STATES MARINE FISHERIES COMMISSION

Draft 2020 Action Plan

For Review by the Executive Committee and Business Session

78th Annual Meeting

Goal 1 – Rebuild, maintain and fairly allocate Atlantic coastal fisheries

Goal 1 focuses on the responsibility of the states to conserve and manage Atlantic coastal fishery resources for sustainable use. Commission members will advocate decisions to achieve the long-term benefits of conservation, while balancing the socio-economic interests of coastal communities. Inherent in this is the recognition that healthy and vibrant resources mean more jobs and more opportunity for those that live along the coast. The states are committed to proactive management, with a focus on integrating ecosystem services, socioeconomic impacts, habitat issues, bycatch and discard reduction measures, and protected species interactions into well-defined fishery management plans (FMPs). FMPs will also address fair (equitable) allocation of fishery resources among the states. Understanding global climate change and its impact on fishery productivity and distribution is an elevated priority. Improving cooperation and coordination with federal partners and stakeholders can streamline efficiency, transparency, and, ultimately, success. In the next five years, the Commission is committed to making significant progress on rebuilding overfished or depleted Atlantic fish stocks.

Fisheries management and stock assessment activities anticipated for 2020 and into 2021 are outlined below. Activities are divided into high priority species (those with significant management action, stock assessment activity, or are of critical importance to the states and their stakeholders) and medium-low priority species. For most species, there are several activities that occur on an annual or ongoing basis, including specification setting; FMP review and state compliance reports; and ensuring cooperation and consistent management programs among the states, regional councils, and NOAA Fisheries for shared resources. While ongoing activities are not listed below, they continue to be conducted. The focus of the Action Plan is to highlight new and high profile activities where the Commission will focus its resources and energies for the next two years.

HIGH PRIORITY SPECIES FOR 2020

American Lobster

- Develop a management strategy for the Gulf of Maine/Georges Bank (GOM/GBK) stock that acknowledges the effects of climate change and addresses the resilience of the stock (Addendum XXVII)
    - Monitor and respond if necessary to GOM research on impacts of changing ocean conditions
- Implement Addendum XXVI data elements to improve data collection and characterization of the fishery. Continue to work with ACCSP to ensure all required data elements are incorporated into SAFIS.
- Continue to monitor and respond as necessary to NOAA rulemaking on Atlantic Large Whale Take Reduction Plan Modifications
- Continue to work with the Law Enforcement Subcommittee, the states and NOAA Fisheries to improve enforcement of management measures in both state and offshore waters
- Continue the development of the Benchmark Stock Assessment for peer review in 2020
    - August 2020: Board review of Benchmark Assessment and Peer Review Report. Consider management response if necessary.

- Work with NOAA Fisheries to ensure consistency in state and federal regulations (e.g., trap cap in Area 3, trap banking, data collection)

Atlantic Herring (possibly move to medium/low priority)

- **In conjunction with the New England Fishery Management Council (NEFMC), consider utilization of funding to support data collection on timing and extent of spawning in Area 3**
- **Work with the Northeast Fisheries Science Center (NEFSC) to complete a Management Track Stock Assessment for Peer Review**
    - **August: Board review of management track stock assessment**
    - **Review and adjust 2021 specifications if necessary**
- Continue to improve coordination and collaboration with NEFMC
- Conduct meetings as necessary to establish state effort control (days-out) programs for Area 1A

Atlantic Menhaden

- **Resolve implementation of Chesapeake Bay cap**
- **Technical Committee and Board review of recommendations from Aerial Survey Design Project; Board to determine next steps**
- February: Board review of Atlantic Menhaden and Ecological Reference Points (ERP) Benchmarks Assessments and Peer Review Reports. Consider management response if necessary.

Atlantic Striped Bass

- **Implement Addendum VI, including conservation equivalency proposals**
- **Consider management response to rebuild biomass and address long-term fishery issues (potential initiation of amendment)**
- Work cooperatively with NOAA Fisheries to consider changes to Atlantic striped bass fishing in the EEZ, including Block Island Transit Zone
- Develop long-term strategy to continue winter striped bass tagging efforts offshore of NC and VA, including funding, administration, and at-sea support

Black Sea Bass

- **Develop, in coordination with the Mid-Atlantic Fishery Management Council (MAFMC), addendum/amendment on reforming recreational management and commercial/ recreational allocation taking into account calibrated recreational estimates; this activity may extend beyond 2020**
- Consider management action to adjust commercial allocation

Bluefish

- **Consider the development of an amendment in collaboration with MAFMC to address issues including: commercial/recreational allocation taking into account calibrated recreational estimates, commercial allocation, goals and objectives, quota transfers, and a rebuilding program**

Cobia

- Implement Amendment 1 to the Cobia FMP and work with the South Atlantic Fishery Management Council (SAFMC) and NOAA Fisheries to ensure complementary regulations in federal waters
- February: Consider management response to the SouthEast Data Assessment Review (SEDAR) Benchmark Stock Assessment, if necessary

Horseshoe Crab

- **Begin a revision to the Adaptive Resource Management (ARM) Framework to use modelling approaches from the benchmark stock assessment**
- Secure long-term funding for the Horseshoe Crab Benthic Trawl Survey for use in the ARM Framework
- Seek alternatives with the biomedical community in order to more transparently communicate annual mortality and assessment results

Scup

- **Develop, in coordination with MAFMC, amendment addressing commercial/recreational allocations taking into account recalibrated recreational estimates**

Summer Flounder

- **Develop, in coordination with MAFMC, amendment addressing sector allocations taking into account recalibrated recreational estimates**
- **Participate in a workshop with MAFMC's Research Steering Committee to examine the possibility of reestablishing the Research Set Aside program**

Tautog

- **Initiate development of stock assessment update for completion in 2021**
- Implement commercial harvest tagging program as required by Amendment 1

MEDIUM-LOW PRIORITY SPECIES

American Eel

- **Work with Technical Committee and Stock Assessment Subcommittee to develop new method for next benchmark stock assessment, including coordination with U.S. Geological Survey and Fisheries and Oceans Canada**
- Monitor international action on the Convention of International Trade of Endangered Species through communications with US Fish and Wildlife Service (USFWS)

Atlantic Croaker

- Finalize and implement the Addendum utilizing the updated Traffic Light Approach (TLA) and respond if necessary

Atlantic Sturgeon

- Monitor state and federal activities in response to an Endangered Species Act listing of Atlantic sturgeon, including 5-year status review and recovery plan

Black Drum

No new tasks

Coastal Sharks

- **Monitor international response to 2019 Shortfin Mako Stock Assessment Update at the International Commission for the Conservation of Atlantic Tunas**
- **Work through SEDAR to complete Blacktip Shark Stock Assessment for Peer Review in November**
    - **February 2021: Board review of Stock Assessment and Peer Review. Consider management response if necessary.**
- Monitor activities of NOAA Fisheries Highly Migratory Species Division with regards to coastal shark management actions and consider development of complementary management actions as needed for consistency

Jonah Crab

No new tasks

Northern Shrimp

- **Conduct stock assessment update**

Red Drum

- **Continue to work with the Assessment Science Committee (ASC) to develop a roadmap for the next benchmark stock assessment, including consideration of calibrated recreational estimates for Board review**

Shad and River Herring

- Complete American Shad Benchmark Stock Assessment for External Peer Review
    - August: Board review of Benchmark Assessment and Peer Review Report. Consider management response if necessary.
- Monitor management activities of NEFMC and MAFMC including, but not limited to, shad and river herring catch caps and bycatch avoidance programs
- Consider Technical Committee recommendations on improvements to Amendments 2 and 3 and sustainable fishery management plans

Spanish Mackerel

- **In coordination with SAFMC, initiate management action to ensure complementary regulations**
- **Work through SEDAR to prepare Benchmark Stock Assessment for Peer Review in 2021**

Spiny Dogfish

- **Implement Addendum VI (Quota Transfer between Regions-States)**
- Review and respond to data update, if necessary

Spot

- Finalize and implement the Addendum utilizing the updated Traffic Light Approach (TLA) and respond if necessary

Spotted Seatrout

No new tasks

Weakfish

- Consider management response to assessment update, if necessary

Winter Flounder

- **Work through NEFSC to prepare Management Track Assessment for Peer Review**
    - **October: Board review Management Track Assessment and Peer Review Report. Consider management response in conjunction with NEFMC.**

CROSS-CUTTING ISSUES

- **Raise awareness of regulatory changes affecting data collection (e.g. American lobster, American eel, tautog)**
- **Work with the states and NOAA Fisheries on changes to the Take Reduction Plan for North Atlantic Right Whale**
- Monitor developments related to changing ocean conditions, ocean acidification, stock distributions, ecosystem services, ocean planning and potential fisheries reallocations
- Work with NOAA leadership to better understand the impacts to state management programs given the movement toward increased recreational flexibility. Seek ways to address the concerns of the recreational community with regard to Commission-managed and jointly-managed species.
- Respond to calibrated recreational estimates as needed across Commission species management plans
- Examine allocation strategies and provide recommendations to management boards as necessary

Goal 2 – Provide the scientific foundation for stock assessments to support informed management actions

Sustainable management of fisheries relies on accurate and timely scientific advice. The Commission strives to produce sound, actionable science through a technically rigorous, independently peer-reviewed stock assessment process. Assessments are developed using a broad suite of fishery-independent surveys and fishery-dependent monitoring, as well as research products developed by a coastwide network of fisheries scientists at state, federal, and academic institutions. The goal

encompasses the development of new, innovative scientific research and methodology, and the enhancement of the states' stock assessment capabilities. It provides for the administration, coordination, and expansion of collaborative research and data collection programs. Achieving the goal will ensure sound science is available to serve as the foundation for the Commission's evaluation of stock status and adaptive management actions.

Several fisheries science activities occur on an annual or ongoing basis, including development of stock assessments and conducting peer reviews; stock assessment scheduling and evaluation of scientists' workloads; updating Commission research priorities and distributing to funding agencies; external research proposal reviews; development of ecological reference points models; supporting multispecies/diet data collection; fish ageing and tagging programs; gear technology research; and participation in Marine Recreational Information Program (MRIP) catch estimation calibrations and Atlantic Coastal Cooperative Statistics Program (ACCSP) committees. While ongoing activities are not listed below, they continue to be conducted.

SCIENCE COMMITTEE ACTIVITIES

- **Develop proposals and pursue support for outstanding fisheries research priorities; define and assess Commission success in rebuilding and sustaining stocks through the Management and Science Committee (MSC)**
- Seek guidance and review procedures from other stock assessment centers (NWFSC, ICES) to consider for streamlining Commission assessment operations through the ASC
- Develop socioeconomic indicators to include in FMPs through the Committee on Economics and Social Sciences
- Finalize a Commission policy regarding risk and uncertainty for consideration and approval by the ISFMP Policy Board

DATA COLLECTION

- Coordinate the Southeast Area Monitoring and Assessment Program (SEAMAP) South Atlantic component; **Develop a new SEAMAP 5-Year Plan (2021-2025)**
    - **Explore new system for coordinated survey data management**
- Coordinate the Northeast Area Monitoring and Assessment Program (NEAMAP); implement action items stemming from the 2019 NEAMAP Summit
    - **Conduct Trawl Survey Calibration Workshop**
- Collect new data to address data deficiencies
    - Collect new fishery-dependent data using black sea bass research fleet
    - Collect new data elements from lobster fisheries (effort and spatial details) to improve stock assessments;
    - Assess fixed gear and right whale interactions in the Gulf of Maine
    - Increase bycatch monitoring of sturgeon, shad and river herring, and sciaenids in state waters, as resources allow
    - **Increase diet data collection to support ecosystem-based assessments and management, through new or existing programs (e.g., SEAMAP), as resources allow**

- Promote the collection of acoustic tagging information and work with the Atlantic Coastal Telemetry network to integrate tagging studies along the coast; secure telemetry tagging data for use in stock assessments

FISHERIES RESEARCH

- **Conduct an Atlantic menhaden ageing workshop**
- Conduct a Fish Ageing Quality Assurance Workshop among Atlantic coast state and university laboratories to ensure consistency between new and historical age data
- Collaborate with university researchers to develop new growth model Bayesian index-based methods for shad stock assessment
- Collaborate with university researchers to develop next iteration of lobster length-structured assessment model
- Seek opportunities to collaborate with academic institutions to advance population dynamic models for use in stock assessments
- Partner with USGS to identify shared research priorities and opportunities for enhanced scientific support to the Commission

ECOSYSTEM-BASED MANAGEMENT & CHANGING OCEAN CONDITIONS

- **Standardize timeline of Commission assessments to support timely updates to ERP assessments for Atlantic menhaden**
- **Evaluate the effects of changing ocean conditions on stock productivity and distribution**
- Collaborate with NOAA Fisheries Northeast and Southeast Fisheries Science Centers to include Commission interests in Ecosystem Status Reports
- Track the development of state and federal activities related to changing ocean conditions and impacts to fisheries through MSC

COMPETING OCEAN USES

- **Participate in Responsible Offshore Science Alliance and provide forum for the states to discuss interactions between fisheries resources and offshore energy development**
- Determine the Commission's role in aquaculture activities, including policy development and interstate shellfish seed tracking through the Aquaculture Committee

Goal 3 - Produce dependable and timely marine fishery statistics for Atlantic coast fisheries

Effective management depends on quality fishery-dependent data and fishery-independent data to inform stock assessments and fisheries management decisions. While Goal 2 of this Action Plan focuses on providing sound, actionable science and fishery-independent data to support fisheries management, Goal 3 focuses on providing timely, accurate catch and effort data on Atlantic coast recreational, for-hire, and commercial fisheries.

Goal 3 seeks to accomplish this through the activities of the Atlantic Coastal Cooperative Statistics Program (ACCSP), a cooperative state-federal program that designs, implements, and conducts marine fisheries statistics data collection programs and integrates those data into data management systems that will meet the needs of fishery managers, scientists, and fishermen. ACCSP partners include the 15 Atlantic coast state fishery agencies, the three Atlantic Fishery Management Councils, the Potomac River Fisheries Commission, NOAA Fisheries, and the U.S. Fish and Wildlife Service (USFWS).

On a continuing basis, ACCSP will:

- Review and maintain coastwide standards for data collection and processing in cooperation with all program partners
- Provide funding to its Program Partners supporting data collection management and innovation through a competitive process
- Maintain commercial dealer reporting and commercial and for-hire fishermen catch reporting through the Standard Atlantic Fisheries Information System (SAFIS) electronic applications
- Coordinate state conduct of the Marine Recreational Information Program (MRIP) Access Point Angler Intercept Survey (APAIS) and the For-hire survey (FHS)
- Consolidate and integrate partner data and provides user-friendly, online public and confidential access to those data via the Data Warehouse

ACCSP staff is also responsible for ensuring that all hardware and software related to ASMFC and ACCSP systems and the network components (e.g., routers, firewalls) are maintained in accordance with established processes and procedures.

PROGRAM MANAGEMENT

- **Monitor 2020 ACCSP funded projects, and select 2021 projects through a competitive proposal process; these years represent the first targeted reductions in funding for ongoing or maintenance projects**
- **Strengthen and modernize the committee process and bolster partner and advisor engagement**
- **Determine an alternative method for distribution and revision of Atlantic coast data standards to improve accessibility and be more responsive to partner needs**
- **Integrate communication strategies with ASMFC Strategic Communications Plan**

FISHERIES-DEPENDENT DATA COLLECTION

SAFIS

- **Extend SAFIS application capabilities to capture trip declaration reports (hailing) and vessel location data**
- Continue major redesign of the SAFIS database and applications for dealer landing and harvester catch reporting (SAFIS eDR and eTrips) that includes an integrated reporting solution to streamline reporting, and reduce duplication. This will be accomplished by:
    - **Develop data collection applications that allow a single submission to meet the reporting requirements of multiple partner agencies**
    - **Implement updated participant and permit database design**

    - **Coordinate implementation of trip management system with universal trip ID**
    - **Implement one methodology to process data entered via online, mobile, or file upload**
- Support the efforts of federal and state agencies to implement mandatory electronic trip reporting, including expansion of commercial and for-hire logbooks by the regional fishery management councils, and NOAA Fisheries' regional offices and science centers

Recreational Surveys

- **Implement state conduct of the MRIP FHTS from Maine to Georgia**
- **Expand implementation of electronic data collection for MRIP APAIS and FHTS**
- **Develop methodology to more fully incorporate for-hire logbooks into recreational catch statistics**
- **Update Atlantic Recreational Implementation Plan**

DATA DISTRIBUTION AND USE

- **Update Data Warehouse structures and queries to incorporate new data elements collected by partner systems**
- **Continue to expand Data Warehouse content including the addition of biological data module**
- **Implement additional processes and partner communication designed to improve data integrity**

DATA INFRASTRUCTURE AND SECURITY

- **Extend infrastructure to support increasing data volumes associated with partner implementation of SAFIS reporting applications**
- **Address security protocols as needed to comply with Federal Information Security Management Act**

Goal 4 – Promote compliance with fishery management plans to ensure sustainable use of Atlantic coast fisheries

Fisheries managers, law enforcement personnel, and stakeholders have a shared responsibility to promote compliance with fisheries management measures. Activities under the goal seek to increase and improve compliance with FMPs. This requires the successful coordination of both management and enforcement activities among state and federal agencies. Commission members recognize that adequate and consistent enforcement of fisheries rules is required to keep pace with increasingly complex management activity and emerging technologies. Achieving the goal will improve the effectiveness of the Commission's FMPs.

The Commission's Law Enforcement Committee (LEC) carries out much of Goal 4. Most of these activities occur on an annual basis or as part of the FMP development process. Proposed changes in management are evaluated to determine enforceability and effectiveness. The LEC provides managers with feedback on the practicality of regulations to foster stakeholder buy-in and compliance.

COMPLIANCE

- Incorporate and reference the revised "Guidelines for Resource Managers" in reviews and evaluations of proposed changes to management programs
- Annually review and comment on (as needed) NOAA Fisheries enforcement priorities to ensure they support the enforceability and effectiveness of Commission management programs
- Aquaculture: Review and provide input on enforcement issues associated with American eel or other aquaculture proposals, including offshore aquaculture proposals
- Evaluate interagency measures to enhance traceability of fishery products across jurisdictional boundaries

PARTNERSHIPS

- Engage and support NOAA Fisheries and USFWS Offices of Law Enforcement, U.S. Department of Justice, and U.S. Coast Guard to facilitate the enforceability of Commission FMPs
- Work to sustain financial support for Joint Enforcement Agreements (JEAs)

STAKEHOLDER AWARENESS

- Use emerging communication platforms and tools to deliver real time information regarding regulations and the outcomes of law enforcement investigations
    - Explore the use of electronic tools to communicate real-time commercial and recreational regulations

Goal 5 – Protect and enhance fish habitat and ecosystem health through partnerships and education

Goal 5 aims to conserve and improve coastal, marine, and riverine habitat to enhance the benefits of sustainable Atlantic coastal fisheries and resilient coastal communities in the face of changing ecosystems. Habitat loss and degradation have been identified as significant factors affecting the long-term sustainability and productivity of our nation's fisheries. The Commission's Habitat Program develops objectives, sets priorities, and produces tools to guide fisheries habitat conservation efforts directed towards ecosystem-based management.

The challenge for the Commission and its state members is maintaining fish habitat in the absence of specific regulatory authority for habitat protection or enhancement. Therefore, the Commission will work cooperatively with state, federal, and stakeholder partnerships to achieve this goal. Much of the work to address habitat is conducted through the Commission's Habitat and Artificial Reef Committees. In order to identify critical habitat for Commission managed species, each year the committee reviews existing reference documents for Commission-managed species to identify gaps or updates needed to describe important habitat types and review and revise species habitat factsheets. The Habitat Committee also publishes an annual issue of the *Habitat Hotline Atlantic*, highlighting topical issues that affect all the states.

The Commission and its Habitat Program endorses the National Fish Habitat Partnership, and will continue to work cooperatively with the program to improve aquatic habitat along the Atlantic coast. Since 2008, the Commission has invested considerable resources, as both a partner and administrative home, to the Atlantic Coastal Fish Habitat Partnership (ACFHP), a coastwide collaborative effort to accelerate the conservation and restoration of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes. As part of this goal, the Commission will continue to provide support for ACFHP, under the direction of the National Fish Habitat Partnership Board.

EDUCATE

- **Showcase state artificial reef programs through a comprehensive update to state profiles in the *Profile of Atlantic Artificial Reef Development* source document**
- Educate Commissioners, stakeholders, and the general public about the importance of habitat to healthy fisheries and ecosystems
- Publish a Habitat Management Series document on acoustics affecting fish habitat for ISFMP Policy Board review and acceptance
- Identify mechanisms to evaluate ecosystem health for consideration by Technical Committees and Boards

INTERGRATE

- Complete Fish Habitats of Concern descriptions to be considered for integration into Commission FMPs
- Increase communication on ecosystem-based management with Commission committees to find overlap with fish habitat related issues
- Explore opportunities to integrate habitat data into stock assessments where possible

LEVERAGE PARTNERSHIP

- Engage local, state, and regional governments in mutually beneficial habitat protection and enhancement programs through partnerships
- Foster partnerships with management agencies, researchers, and habitat stakeholders to leverage regulatory, political, and financial support
- Engage in state and federal agency efforts to ensure response strategies to changing ocean conditions are included in habitat conservation efforts
- Work with ACFHP to foster partnerships with like-minded organizations at local levels to further common habitat goals
- Coordinate the activities of the Fish Passage Working Group to carry out priority tasks as defined by the ISFMP Policy Board
- Promote development of effective fish passage approaches and projects through state and federal collaboration

ATLANTIC COASTAL FISH HABITAT PARTNERSHIP (ACFHP)

- **Promote the Southeast Fish Habitat and Northeast Fish Habitat Mapping projects**
- **Develop a fundraising strategy to solicit donations from the private sector (foundations, corporations) for targeted on-the-ground projects**
- Redesign outreach materials for consistency with the redesigned website to optimize our messaging and facilitate partner and stakeholder engagement
- Work with partners to protect, restore, or maintain resilient Regional Priority Habitats to optimize ecosystem functions and services to benefit fish and wildlife
- Restore habitats by funding fish passage and non-fish passage projects (SAV, oyster reefs, salt marshes)

Goal 6 – Strengthen stakeholder and public support for the Commission

Stakeholder and public acceptance of Commission decisions are critical to our ultimate success. For the Commission to be effective, these groups must have a clear understanding of our mission, vision, and decision-making process, as well as the opportunities that stakeholders have to participate in our process through advisory panels and public comment. The goal seeks to do so through expanded outreach and education efforts about Commission programs, decision-making processes, and its management successes and challenges. It aims to engage stakeholders in the process of fisheries management, and promote the activities and accomplishments of the Commission. Achieving the goal will increase stakeholder participation, understanding, and acceptance of Commission activities.
On a continuing basis, the Commission conducts outreach and stakeholder engagement though a number of products and activities. These include publications (e.g., bi-monthly Fisheries Focus, Annual Report to Congress), press releases, meeting summaries, stock assessment overviews, website and social media platforms, industry tradeshows and state festivals, and stakeholder engagement through the advisory panel process. Building strong relationships with local, regional and national media contacts, and networking/collaborating with our management partners from the Councils, states and federal agencies are also critical components of our outreach program, which occur on an ongoing basis.

INCREASE PUBLIC UNDERSTANDING AND SUPPORT OF ASMFC

- Increase public understanding and support of activities through expanded outreach at the local, state, and federal levels
- **Identify 3-4 high profile issues and seek to proactively address stakeholder criticisms and concerns through various outreach tools**
- Promote high profile species and stock assessment results through various outreach tools and platforms
    - **2020: American lobster, Atlantic cobia, Atlantic herring, Atlantic menhaden & ERPs, shad, Spanish mackerel, and winter flounder**

MAXIMIZE USE OF CURRENT AND NEW TECHNOLOGIES

- Use new technologies and communication platforms to more fully engage the broader public in the Commission's activities and actions
- Use story mapping and photo journaling to better communicate science and management activities
- Explore the use of topical webinars to engage and inform public about current activities (management, science, habitat, and data collection and management)
- Use website capabilities (e.g., video clips) to promote Fisheries Science 101 webinars, videos of fisheries surveys and state on-the-ground projects
- Monitor the success of website and social media platforms in reaching broader constituency and effectively communicating ASMFC mission, programs and activities

FACILITATE STAKEHOLDER PARTICIPATION

- **Evaluate effectiveness of current advisory panel process and consider possible changes to enhance engagement and provide management boards with useful stakeholder input**
- **Explore additional tools to gather public comment on proposed management actions (e.g., online surveys)**
- Clearly define Commission processes to facilitate stakeholder participation, as well as transparency and accountability.
    - Develop outreach materials that highlight opportunities for public engagement in the Commission's fisheries management and stock assessment processes

MEDIA RELATIONS AND NETWORKING

- **Increase interdepartmental coordination on outreach activities through the development of a Strategic Communications Plan**
- Strengthen national, regional, and local media relations to increase coverage of Commission actions.
- Track media communications and coverage through ASMFC-related news clippings and media tracking sheet.
- **Work with other Northeast Regional Coordinating Council members to implement Stock Assessments Communications Framework**
- Work with Atlantic Coast Fisheries Communication Group, comprised of Public Information Officers from the Councils, states and federal agencies, to share successful tools, identify key media contacts and work cooperatively on joint projects.
    - Explore mechanisms to better inform fishing blogs and other external communication platforms about Commission assessment results and management actions.

Goal 7 – Advance Commission and member states' priorities through a proactive legislative policy agenda

State input is critical for a coherent national fisheries policy. The Commission recognizes the need to work with Congress, the Administration and partner organizations in policy formulation, and will be

vigilant in advocating state interests to Congress. The Commission will pursue federal resources for states to implement and comply with the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act) and to improve or maintain fisheries data collection. The importance of habitat restoration, research on the impacts of changing ocean conditions, and the need for effective marine enforcement will also be communicated to Congress and our management partners.

DEVELOP AND STRENGTHEN RELATIONSHIPS WITH MEMBERS OF CONGRESS AND STAFF

- Encourage Commissioners to meet with Members of Congress and staff during Winter and Spring Meetings
- Provide state-specific 'ASMFC Meeting Previews' to congressional staff ahead of quarterly Meetings and invite congressional staff to attend significant Board Meetings during Winter, Spring and Summer Meetings
- Provide opportunities for the Executive Director to meet with congressional staff on a regular basis

ENGAGE CONGRESS AND THE ADMINISTRATION ON FISHERY-RELATED LEGISLATION AND ISSUES

- Monitor federal legislation affecting the Commission, including policy and annual appropriations bills and develop Commission positions on pending federal legislation
    - Existing laws: Atlantic Coastal Act, Interjurisdictional Fisheries Act, Anadromous Fish Conservation Act, Magnuson-Stevens Act, Federal Aid in Fish Restoration Act, and Endangered Species Act
    - **Pending Legislation/Emerging Issues: forage fish management, user group and state-by-state allocations, marine national monuments, energy initiatives (offshore wind, hydropower, oil and gas exploration), shark fin trade, right whales, and living shorelines**

PURSUE FEDERAL RESOURCES TO SUPPORT MANAGEMENT ACTIVITIES

- Communicate the Commission's federal funding needs to Congress and advocate for sufficient appropriations
    - Priority line items include Regional Councils and Fishery Commissions, Interjurisdictional Fisheries Act, Fisheries Data Collections, Surveys and Assessments, SEAMAP, and Fisheries Information Networks
        - **Continue to increase funding for the Atlantic Coastal Act, with a goal of restoring its proportion of the "Regional Councils and Fishery Commissions" appropriation to its historic share**
    - Priority projects, programs, and activities include: Atlantic Coastal/National Fish Habitat Partnership, Cooperative Enforcement Joint Enforcement Agreements, NEAMAP, GOM lobster research, Mid-Atlantic Horseshoe Crab Trawl Survey, National Sea Grant College Program, Saltonstall-Kennedy Grant Program, and National Estuarine Research Reserves
    - **Increase Wallop-Breaux funding for the Atlantic, Gulf, and Pacific States Marine Fisheries Commissions via Wallop-Breaux Reauthorization legislation**

    - Seek federal funding support for long-term monitoring surveys and species-specific initiatives
- Engage the Administration (Commerce and Interior Departments) on funding and policy issues, including Secretarial implementation of the Atlantic Coastal Act
- Communicate state and Commission funding needs to NOAA Fisheries and U. S. Fish and Wildlife Service

PARTNERSHIPS

- Coordinate with the Gulf, Pacific, and Great Lakes Commissions on policy items of mutual interest including federal funding for fisheries programs. Executive Directors should continue to provide unified positions on funding and legislative priorities to lawmakers and federal agencies, where appropriate.
- Continue participation on Marine Fisheries Advisory Committee, the Marine Fisheries Initiative and Association of Fish and Wildlife Agencies

Goal 8 – Ensure the fiscal stability and efficient administration of the Commission

Goal 8 will ensure that the business affairs of the Commission are managed effectively and efficiently, including workload balancing through the development of annual action plans to support the Commission's management process. It also highlights the need for the Commission to efficiently manage its resources. The goal promotes the efficient use of legal advice to proactively review policies and react to litigation as necessary. It also promotes human resource policies that attract talented and committed individuals to conduct the work of the Commission. The goal highlights the need for the Commission as an organization to continually expand its skill set through training and educational opportunities. It calls for Commissioners and Commission staff to maintain and increase the institutional knowledge of the Commission through periods of transition. Achieving this goal will build core strengths, enabling the Commission to respond to increasingly difficult and complex fisheries management issues.

On a continuing basis, the Commission staff conservatively manages fiscal resources to achieve the proper balance between allocating funds to coastwide priorities and ensuring fiscal stability. Tasks performed to accomplish this balance include monitoring expenditures on a monthly basis; managing the reserve fund; fine-tuning meeting and travel policies; and preparing and participating in the annual audit and indirect cost proposal.

Human resources management is an ongoing process of recruitment and selection of employees; thoroughly orienting and introducing new employees to the culture of the Commission; maintaining good working conditions for all employees; managing employee relations; and training to enhance and increase their current skills. Ongoing tasks to accomplish this are annual review and revision of position descriptions; facilitating staff participation at national and regional conferences; and providing professional training opportunities. Additionally, human resource support is provided to cooperative

programs such as APAIS and ACFHP. All human resources documents are reviewed at least annually to ensure compliance with federal regulations and consistency with current practices.

Further, Commission staff keeps abreast of changes in technology and evaluates the need for updating the Commission's hardware and software. Ensuring consistency of resources and training across the Commission as well as documenting processes and verifying database information are ongoing tasks conducted by the staff.

The Commission process can be overwhelming to new Commissioners. The staff is committed to providing a thorough introduction and orientation to new Commissioners. Tasks conducted throughout the year include documenting institutional knowledge and updating on a regular basis the Commissioner Manual. Staff also provides this service to new members of Commission committees.

MANAGE OPERATIONS AND BUDGETS

- **Develop revised statement of work for Interjurisdictional Fisheries Act Cooperative Agreement to respond to the new federal grant reporting requirements**
- Utilize and update as necessary Commission compensation plan, including job classifications and salaries based on location
- Manage the Recreational Data Collection and the Fisheries Management, Science, Administration and Logistical Support Cooperative Agreements

UTILIZE CURRENT INFORMATION TECHNOLOGY

- Document standards for electronic record retention and develop site map of Commission electronic filing system for internal use, including protocols for document archiving
- Explore the use of available software packages to digitize review and approval of bills received by the Commission
- Implement contracts database to track details of multiple Commission contracts

MANAGE HUMAN RESOURCES

- **Research options for staff performance review and feedback**
- Promote Commission's mission and programs, and recruit new talent through outreach meetings with various marine policy and marine science graduate programs
- Provide training opportunities for ASMFC staff on commonly used software
- Conduct annual meeting with financial advisor to review retirement program performance with staff and provide opportunities for staff to meet individually with financial advisor to match financial goals with investment choices for retirement

ENGAGE AND SUPPORT COMMISSIONERS

- **Conduct a workshop on parliamentary procedures and meeting management**
- Continue process to welcome and orient new Commissioners to allow for full engagement in the Commission process
- Facilitate the retention and transfer of institutional knowledge among Commissioners

ENSURE THE LEGAL COMPLIANCE OF COMMISSION ACTIONS

- Utilize legal advice on new management strategies and policies, and respond to litigation as necessary, whether it be regarding challenges to Commission FMPs, a human resource issue, or access to confidential data

Atlantic States Marine Fisheries Commission

Draft Policy on Non-Payment of State Appropriations

October 1, 2019

Background

On a few occasions Commission member states have fallen into arrears with their annual appropriations. According to the Commission's Compact, Pub. Law 77-539, Art. XI (1942), each member state is assessed an annual appropriation to support the Commission. States have expressed concern over the fairness of a state being allowed to participate in the Commission process while being in arrears on annual appropriations. If a member state is significantly in arrears, the shortfall can adversely affect not only the Commission's financial status, but also can jeopardize the mutual obligation and trust among states upon which the successful carrying out of the Commission's cooperative mission depends.

The Commission's Compact, Rules & Regulations, and the ISFMP Charter do not speak directly to what remedies are available if a member state does not pay its annual appropriation to the Commission. The following discussion and draft policy provide the basis for modifying the Commission's guiding documents to address non-payment of state appropriations.

Discussion

A policy to address non-payment would need to be approved by the Commission; and the Rules and Regulations modified to reflect the policy. A change to the Rules and Regulations can be made during a regularly-scheduled Commission Business Session provided there is adequate public notice that a change to the Rule and Regulations is being considered.

The policy will need to consider:

- What notifications should be provided to a state (Commissioners, Governor, timing)?
- What are the consequences of non-payment (no votes, no participation, technical representatives)?
- Can a state appeal to the Commission for relief or are consequences compulsory?

Proposed Billing and Reminder Timeline

April 1st – Commission staff will send appropriation invoices to member states (payments due June 30 of year 2)

October 1st – Commission staff will send first reminder of payment due date to the states that have not submitted payment.

January 1st – Commission staff sends second reminder of payment due date to the states that have not submitted payment.

June 30th – State appropriations are due to the Commission.

Draft Policy

If a state is in arrears with its annual appropriation, the following steps will be taken:

July 1st of Year 2 – Executive Director notifies, in writing, the Governor and three Commissioners of the state's overdue status.

August (Summer Meeting) – A state that is in arrears will have the opportunity to appeal to the Executive Committee. During this appeal, the state can present information on why payments have not been made, provide a timeline for payment, and seek relief from the loss of voting privileges. The Executive Committee can then make a recommendation to the full Commission regarding leniency.

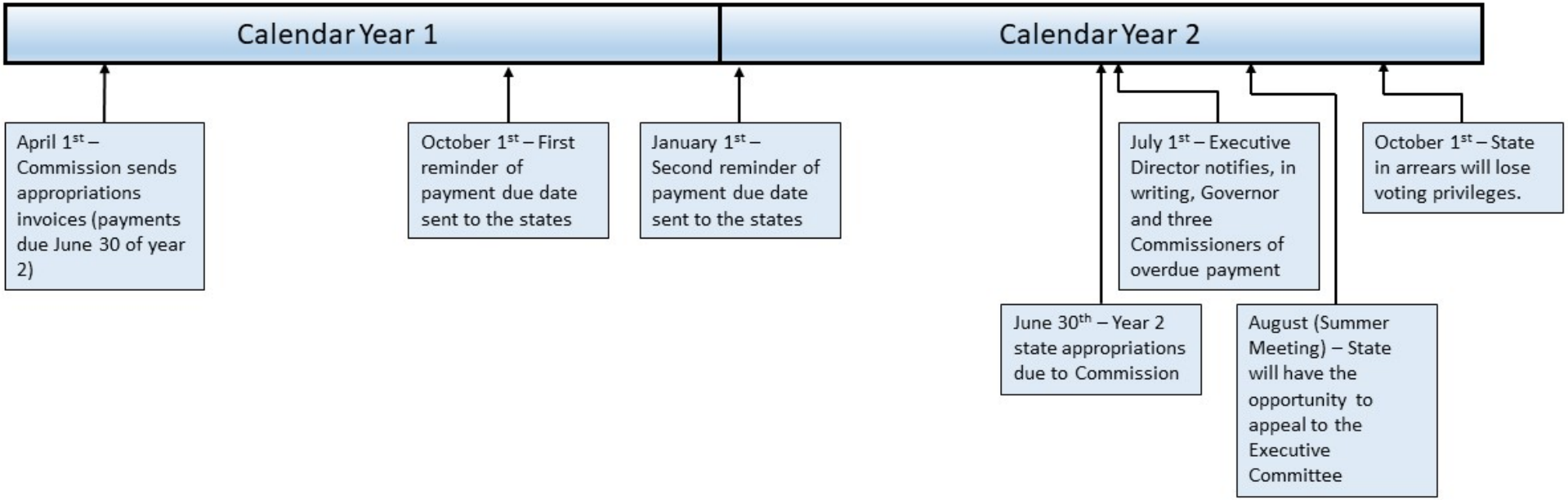
August (Summer Meeting) – The Commission will decide if any leniency is warranted and detail those provisions during the Business Session meeting.

October 1st – If a state is still in arrears and no leniency is granted, the state in question will no longer be able to vote on management boards/sections, the ISFMP Policy Board, or during the Commission's Business Session. The state's three commissioners will be able to attend Commission meetings and participate in deliberations, but will not be able to cast votes. The state's representatives will be able to participate on technical groups (e.g. species technical committee, Habitat Committee, plan review teams, etc.)

Reinstatement of Voting Privileges

A state will immediately have voting privileges reinstated upon payment of the full balance that is in arrears.

Policy on Non-Payment of State Appropriations



Atlantic States Marine Fisheries Commission

Shad and River Herring Management Board

October 30, 2019
10:15 - 11:45 a.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order *(M. Armstrong)*	10:15 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from February 2019	10:15 a.m.
3.	Public Comment	10:15 a.m.
4.	Review Technical Committee Recommendations on Management and Monitoring Inconsistencies with Amendments 2 and 3 *(K. Sprankle)* **Possible Action**	10:25 a.m.
5.	Consider Approval of Revisions to the Maine River Herring Sustainable Fishery Management Plan *(K. Sprankle)* **Action**	10:50 a.m.
6.	Discuss Updates to Shad Habitat Plans *(C. Starks)*	11:10 a.m.
7.	Progress Update on Shad Benchmark Stock Assessment *(J. Kipp)*	11:25 a.m.
8.	Review and Consider Approval of 2019 Fishery Management Plan Review and State Compliance *(C. Starks)* **Action**	11:30 a.m.
9.	Review and Populate Advisory Panel Membership (*T. Berger*) **Action**	11:40 a.m.
10.	Other Business/Adjourn	11:45 a.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

Shad and River Herring Management Board Meeting
October 30, 2019
10:15 – 11:45 a.m.
New Castle, New Hampshire

Chair: Mike Armstrong (MA) Assumed Chairmanship: 10/19	Technical Committee Chair: Ken Sprankle (FWS)	Law Enforcement Committee Representative: Furlong (PA)
Vice Chair: VACANT	Advisory Panel Chair: Pam Lyons Gromen	Previous Board Meeting: February 6, 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Review Technical Committee Recommendations on Management and Monitoring Inconsistencies with Amendments 2 and 3 (10:25-10:50 a.m.) Possible Action

Background

- In October 2017 the TC identified several inconsistencies between state SFMPs and the requirements of Amendments 2 and 3. Subsequently, the Board tasked the TC to develop proposed improvements to the Amendments with regard to several items: 1) Management and monitoring of rivers with low abundance and harvest of shad and river herring; 2) Standardization of Sustainable Fishery Management Plan (SFMP) requirements; 3) Incorporation of stock assessment information into SFMPs and discussion on the timeline for renewing plans; 4) Clarification of *de minimis* requirements as they pertain to SFMPs; and 5) Review of the number of years of data are required before developing a SFMP.
- The TC formed a Task Group, and met several times to develop this task. The Task Group and TC developed a report on inconsistencies with Amendments 2 and 3, which describes in detail the inconsistency and provides case-by-case recommendations to resolve the issue. Three general inconsistency types were identified: 1) tributaries of river systems with SFMPs and monitoring that are not explicitly addressed in the SFMP; 2) rivers with harvest addressed by a SFMP, but with no or insufficient monitoring to support sustainability metrics; and 3) rivers legally open to harvest without a SFMP and/or monitoring. (**Briefing Materials**)

Presentations

- Technical Committee Recommendations on Management and Monitoring Inconsistencies with Amendments 2 and 3 by K. Sprankle

Board actions for consideration at this meeting

- Provide direction to the states for consistency with the FMP

5. Consider Approval of Revisions to the Maine River Herring Sustainable Fishery Management Plan (11:50-11:10 a.m.) Action

Background

- Maine submitted a proposal to modify the state's SFMP for river herring by allowing limited harvest in several municipalities with exclusive river herring harvest rights with limited data time series. (**Briefing Materials**)
- The TC evaluated the proposal and recommended several changes including removing three municipalities with short data time series from the proposal, imposing more conservative harvest rates, and modifying the mortality rate criterion to be more consistent with the stock assessment results. The TC recommended Board approval of Maine's revised proposal. (**Briefing Materials**)

Presentations

- Proposed Revisions to Modify Maine River Herring Sustainable Fishery Management Plan by K. Sprankle

Board actions for consideration at this meeting

- Approval of proposed revisions to the Maine Sustainable Fishery Management Plan

6. Discuss Updates to Shad Habitat Plans (11:10-11:25 a.m.)

Background

- Amendment 3 to the Shad and River Herring FMP requires all states and jurisdictions to submit a habitat plan for American shad. The habitat plans outline current and historical spawning and nursery habitat, threats to those habitats, and habitat restoration programs in each of the river systems at the river system level.
- A majority of the habitat plans were approved by the Board in February 2014, and it was anticipated that they would be updated every five years.

Presentations

- Updates to Shad Habitat Plans by C. Starks

Board actions for consideration at this meeting

- Direct states to review and update shad habitat plans as needed

7. Progress Update on Shad Benchmark Stock Assessment (11:25-11:30 a.m.)

Background

- The American shad benchmark stock assessment was initiated in October 2017. Due to delays in the proposed timeline, the scheduled completion date was moved to August 2020.
- In March 2018 the Stock Assessment Subcommittee (SAS) and TC met for the Data Workshop, and in November 2018 the SAS met for the Methods Workshop.
- The Assessment Workshop is scheduled for November 18-22 in Charleston, SC.

Presentations

- Update on Shad Stock Assessment Progress by J. Kipp

8. Review and Consider Approval of 2019 Fishery Management Plan Review and State Compliance (11:30-11:40 a.m.) Action

Background

- State Compliance Reports were due on July 1, 2019
- The Plan Review Team reviewed each state report and compiled the annual FMP Review **(Briefing Materials)**

Presentations

- Overview of the FMP Review Report by C. Starks

Board actions for consideration at this meeting

- Approve 2019 FMP Review, 2018 state compliance reports, and *de minimis* requests

9. Review and Populate Advisory Panel Membership (11:40-11:45 a.m.) Action

Background

- The following three individuals have been nominated to the Shad & River Herring Advisory Panel: Mike Thalhauser with the Maine Center for Coastal Fisheries and Alewives Harvesters of Maine; Mark Amorello, a recreational fisherman from Massachusetts; and Chuckie Green, a recreational angler and Tribal Nation representative from Massachusetts. **(Briefing Materials)**

Presentation

- Nominations by T. Berger

Board actions for consideration at this meeting

- Approve Shad and River Herring Advisory Panel nominations

10. Other Business/Adjourn

Shad and River Herring 2019-2020 TC Tasks

Activity level: High

Committee Overlap Score: Medium (Multi-species committees for this Board)

Committee Task List

• October 2019 - October 2020: TC Task to recommend improvements to Amendments 2 and 3 related to the following items:
  • Management and monitoring of rivers with low abundance and harvest of shad and river herring
  • Standardization of Sustainable Fishery Management Plan (SFMP) requirements: content, metrics, and management responses to triggers
  • Incorporation of stock assessment information into SFMPs and discussion on the timeline for renewing plans
  • Clarification of *de minimis* requirements as they pertain to SFMPs
  • Review of the number of years of data are required before developing a SFMP
• Updates to state Shad Habitat Plans
• 2020 Shad Benchmark Stock Assessment
  • November 2019: Assessment Workshop
  • SAS assessment work ongoing throughout 2019 until August 2020

TC Members: Ken Sprankle (Chair, USFWS), Mike Brown (ME), Mike Dionne (NH), Brad Chase (MA), Patrick McGee (RI), Jacque Benway Roberts (CT), Robert Adams (NY), Brian Neilan (NJ), Josh Tryninewski (PA), Johnny Moore (DE), Rob Bourdon (MD), Ellen Cosby (PRFC), Joseph Swann (DC), Eric Hilton (VA), Holly White (NC), Jeremy McCargo (NC), Bill Post (SC), Jim Page (GA), Reid Hyle (FL), Ruth Hass-Castro (NOAA)
Shad SAS: Michael Bailey (Chair, USFWS), Ken Sprankle (TC Chair, USFWS-CT), Joey Ballenger (SC), Mike Bednarski (VA), Wes Eakin (NY), Kevin Sullivan (NH), Joe Zydlewski (USGS), Jacque Benway-Roberts (CT), Kiersten Curti (NOAA-Fisheries), Angela Giuliano (MD), Jason Boucher (DE)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

SHAD AND RIVER HERRING MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
February 6, 2019

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ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Steve Train, ME (GA)
Cheri Patterson, NH, proxy for D. Grout (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Ritchie White, NH (GA)
Mike Armstrong, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
David Borden, RI (GA)
Phil Edwards, RI, proxy for J. McNamee (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Sen. Craig Miner, CT (LA)
Bill Hyatt, CT (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
Heather Corbett, NJ, proxy for L. Herrighty (AA)
Russ Allen, NJ, proxy for T. Fote (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Tim Schaeffer, PA (AA)
Andy Shiels, PA, Administrative proxy
Loren Lustig, PA (GA)
John Clark, DE, proxy for D. Saveikis (AA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Roy Miller, DE (GA)
Lynn Fegley, MD, proxy for D. Blazer (AA)
Russell Dize, MD (GA)
Allison Colden, MD, proxy for Del. Stein (LA)
Pat Geer, VA, proxy for Steve Bowman (AA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Mike Blanton, NC, proxy for Sen. Steinburg (LA)
Malcolm Rhodes, SC (GA)
Robert Boyles, SC (AA)
Doug Haymans, GA (GA)
Spud Woodward, GA (AA)
Jim Estes, FL, proxy for J. McCawley (AA)
Martin Gary, PRFC
Bryan King, DC
Derek Orner, NMFS
Mike Millard, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Ken Sprankle, Technical Committee Chair

Staff

Bob Beal
Toni Kerns
Jeff Kipp
Caitlin Starks
Jessica Kuesel

Guests

Arnold Leo, E. Hampton, NY
Mike Thalhauser, MCCH

The Shad and River Herring Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Wednesday, February 6, 2019, and was called to order at 1:15 o'clock p.m. by Chairman John Clark.

CALL TO ORDER

CHAIRMAN JOHN CLARK: We will get started right now. This is the Shad and River Herring Management Board; John Clark, I will be Chairing the meeting today, and let's get right into the agenda.

APPROVAL OF AGENDA

CHAIRMAN CLARK: On the approval of the agenda, some of you may have seen the original agenda had an update on the ESA status of shad and river herring; that has been removed from the final agenda. But other than that, are there any additions to the agenda?

APPROVAL OF PROCEEDINGS

CHAIRMAN CLARK: And are there any questions about the proceedings from the October, 2017 meeting? Pat.

MR. PATRICK C. KELIHER: Just I've got one item of new business regarding a White Paper Maine is developing. I would like to give the Board a heads up.

PUBLIC COMMENT

CHAIRMAN CLARK: Is there anything else? Seeing none; we will move on to Agenda Item 3, which is Public Comments for items not on the agenda. We have one person that has signed up; Mike Thalhauser from the Marine Center for Coastal Fisheries.

MR. MIKE THALHAUSER: Thank you, Mr. Chair, members of the Board. My name is Mike Thalhauser; I'm a fisheries biologist with the Maine Center for Coastal Fisheries in Stonington, Maine. I'm guessing this is probably the first time Stonington, Maine has been brought up somewhere other than an argument about lobster.

I have the pleasure of working with communities in Eastern Maine from Penobscot Bay to the Canadian Border. Several of these communities are active in restoration and monitoring efforts of river herring runs; leading to lakes and ponds within their municipalities. These communities are participating for a variety of reasons.

In some cases people are motivated by childhood memories of streams running black with alewives. For others it's the conviction that local ecosystems benefit greatly from river herrings role in the food web. Marine fishermen see alewives as one of two things; either one, a supplemental lobster bait that could reduce impact of reduced Atlantic herring quotas, or two, bringing back collapsed groundfish fisheries by restoring an important forage fishery.

In all cases, towns are incentivized to be able to prosecute fisheries that support their communities; with food, with bait, and with money. Maine is unique in that river herring are one of two species in our state that are co-managed by municipalities and the Maine Department of Marine Resources. This means if a town can show that they have a fishery that can sustainably be harvested; through years of monitoring, escapement, and collecting biological samples analyzed by the state that they can work with the state to create a fisheries management plan to prosecute that fishery. It sounds pretty good.

The only problem is that current policies put these goals so far into the future that stakeholders are becoming disenfranchised, burned out, and are considering giving up. I think it's important to point out that unlike many other scientists working with

communities and citizen scientists, I didn't come to them with a research agenda and a need for more data, they came to me with a management agenda, and capacity to collect data and provide local knowledge of their own.

They also came frustrated by the fact that they are putting in countless hours; and spending large amounts of money, but what they aren't seeing are the potential benefits of investing this time and money. Here is just one example of the resources that these stakeholders represent. One of the towns that I work with is the town of Penobscot.

Penobscot is monitoring two alewife runs within their municipality; collecting the escapement biological data I referred to earlier. Both of these runs have had habitat issues with century old dams effecting fish passage. They activated local land trusts; and through their own town funds, donations and grant money, raised half a million dollars to remove these dams to provide adequate fish passage for river herring, eels, Atlantic salmon, and other diadromous species.

This small town is working with universities and researchers from the University of Maine, New Hampshire, and California Santa Cruz; to begin to answer questions, and fill data gaps that the River Herring Technical Committee has pointed out as being needed for this Council, to responsibly manage river herring.

Just this last year the town received funding from Maine Sea Grant; to purchase a small purse seine to estimate juvenile abundance, and pair those data with the adult escapement numbers to look at production variability between ponds and lakes. This crucial data is data that state and federal researchers need, and don't have the capacity to collect.

The only other thing I would point out is this town isn't alone. Maine is lucky that river herring that leave our ponds and lakes have favorable migratory patterns; and ocean conditions that are supporting returns of over a million fish in some cases, to lakes and ponds where they were stocked at a rate of just one to six fish per acre for just several years.

Certainly this has context within the discussion that this Council has had and will continue to have; with regards to declines in Atlantic herring fisheries. Stakeholders are seeing these remarkable returns; and the potential that river herring bring, and they're doing the work and collecting the data that we need.

They will continue to do so if the return on their investment happens within a reasonable time. Currently Maine river-herring harvest proposed to the ASMFC, are evaluated by the TC based on one model, with an assumption of very high harvest levels. To show that a fishery is sustainable at these kinds of levels, there is a high bar of ten years of data where escapement thresholds must be met, as well as other metrics. This ten year commitment of work before any benefit is seen is unrealistic, and leaves towns frustrated, as I mentioned before, and the fact that critical river herring spawning and nursery habitat is located in inland ponds and lakes, and unfortunately the fact that the only century old dams in Maine and throughout New England aren't just located in Penobscot.

This requires boots on the ground; local and coastwide stakeholder input and support. I'm proud to say river herring in Maine have this stakeholder input and support in spades. I and others are working with Commissioner Keliher and his department staff to try to find a way to incentivize the support. We believe that this incentive should be in the form of incremental harvest that starts far earlier than ten years; starting out very conservative and building to a full harvest, as fisheries meet data needs to responsibly do so.

If we can find this sweet spot, we can keep these stakeholders involved, add the datasets,

fill data gaps, provide fishing opportunity for our constituents, restore river herring at a coastwide scale, and reap the benefits that restoration would provide. I ask this Council recognize this huge resource that Maine and other states stakeholders represent; and to support innovative ideas that provides benefits to them and capitalizes on their efforts. Thank you.

PROGRESS UPDATE ON SHAD BENCHMARK STOCK ASSESSMENT

MR. JEFF KIPP: The Shad and River Herring Stock Assessment Subcommittee met in Providence, Rhode Island back in November for our methods workshop. A little different approach there for this assessment; given that it's been so long since the species has been assessed.

We had this Methods Workshop and the objectives of that were to review some of the data inputs that were being worked on to support the assessment approaches we were considering, make final decisions on our stock structure that we were assessing, and then discuss the actual assessment approaches that we wanted to apply to each of those stock units.

During review of some of the data inputs, it became clear that there were still some data delay issues and data cleaning issues with the data that we had. But we did sit down and define our stock structure into 31 different stock units during that workshop. We did discuss some of the different assessment approaches for each of those stock units; given the input data we had to work with.

But during that workshop it became clear to the Stock Assessment Subcommittee that the timeframe that we were working under wasn't going to work with some of the issues that we encountered. They are suggesting that we modify that timeline from the original intention to present the stock assessment results at the 2019 annual meeting in October; to the 2020 August meeting. With that in mind, we just wanted to run that past this Board; and if there are any questions on the stock assessment or that modified timeline, I can take those now.

CHAIRMAN CLARK: Thanks, Jeff. That's quite a change in the timeline; any questions for Jeff? Toni.

MS. TONI KERNS: This isn't a question for Jeff; but just to give everybody a heads up that that change in that timeline will impact other assessments, which will come up again tomorrow at the Policy Board. This is your first hit at this; but we'll get one more discussion on it.

CHAIRMAN CLARK: Cheri.

MS. CHERI PATTERSON: I'm sure I know the answer to this question; but any NOAA shutdown, will that affect this timeline also?

MR. KIPP: We do have one NOAA member on the Stock Assessment Subcommittee that is quite involved in the stock assessment itself; so yes, any anticipated shutdowns could potentially affect that timeline as well.

CONSIDER APPROVAL OF THE MASSACHUSETTS SHAD SUSTAINABLE FISHERY MANAGEMENT PLAN

CHAIRMAN CLARK: Any other questions? Seeing none; we'll move on to the next agenda item, which is to Consider Approval of the Massachusetts Shad Sustainable Fishery Management Plan. Ken Sprankle is here to review the SFMP and the Technical Committee Memo.

REVIEW SFMP AND TECHNICAL COMMITTEE MEMO

MR. KENNETH I. SPRANKLE: I'm going to run through a presentation of the American Shad

Sustainable Fishery Management Plan that was presented to the Technical Committee by Brad Chase in November of 2018. When Brad presented that there were some minor comments for possible consideration that Brad did incorporate into a revision of that plan that got back out to us in November.

The TC had a consensus recommendation for approval of this plan with the revisions. The proposed plan maintains the same fishery regulations for harvest. I just want to start with that; and also maintains those same regulations in the same rivers, so there aren't any changes there. There are some changes that I'll go through with this presentation; relative to benchmarks that were modified, improvements essentially that we can discuss.

Going back pre 2012 and the requirement for SFMPs, in 1987 the Commonwealth of Mass instituted a commercial harvest net ban. It's recreational harvest only by hook and line; again this is back pre 2012, and a recreational limit of 6 shad per day. Following the development of the first sustainable fish management plan, the state was closed to the recreational harvest of shad; with the exception of the Merrimack and Connecticut Rivers.

That's inclusive of those two system's tributaries. They also reduced the bag limit from 6 to 3 fish. They have several small rivers that are managed for catch and release only; and I'm going to describe those in a moment. That initial plan also included the use of a 25th percentile for using fish lift data. The 25th percentile for various metrics has been commonly used in a lot of the river herring and shad SFMPs.

We'll talk some more about that. That 25th percentile becomes important when the threshold falls under that for a period of three consecutive years. If anyone has any questions please raise your hand and I'll address it. This slide shows the shad-runs in the Commonwealth of Massachusetts. You can see the Connecticut River of course is the largest river basin in New England. That is a mean annual discharge in the far column; the Merrimack River is also quite large, it is the fifth largest basin in New England. Then we have the smaller coastal river systems in the Commonwealth, Neponset, Charles just gives you a sense for the relative size of these systems. The Connecticut River, as I said it's the largest river in New England as folks know.

We've been working cooperatively to restore anadromous fish in the Connecticut River since 1967. That was with the state and federal agencies, the four basin states, U.S. Fish and Wildlife Service and National Marine Fisheries Service. Beginning in 1983 that was more formally recognized by Congress; with the creation of the Connecticut River Atlantic Salmon Commission, and so that's the group that works cooperatively on restoration and management activities in a coordinated way.

This figure shows four main stem dams. You see Holyoke Dam is located at river kilometer 138; followed by a series of dams. We've got a lot of dams in this river. We've been working of course on upstream and downstream fish passage. We have FERC relicensing going on at the time. Holyoke Dam actually had the first fish lift in operation.

That started in 1955. A second lift was added to that facility in 1976. The CRASC that I had mentioned, we just recently developed and updated American shad management plan that was approved by the CRASC Commissioners in 2017, it's a habitat-based plan. In the Connecticut River we have several sources of fishery independent data; the fish lifts of course, Holyoke Fish Lift is an important source of information. I'm going to show you some data on that.

The state of Connecticut, the Connecticut DEEP, the Department of Environmental Energy and

Environmental Protection since 1978 has conducted a juvenile abundance index using seven index sites, all located downstream of Holyoke. In addition to that Connecticut has a longstanding data time series for biological data that is included both sub-sampling from the commercial fisheries, as well as weekly samples that have been collected at Holyoke Fish Lift to represent the temporal span of the population in the course of a single run year.

This figure shows the annual count passage totals at Holyoke Fish Lift. This is one of the changes I had mentioned with this proposed plan. The Commonwealth of Massachusetts shifted the benchmark; which had been going back for the entire data time series to restrict it to the period 1976 to the current, because that's when a second fish lift was added.

It's really a dramatic change at that facility; and so the 25th percentile we see here shown in the figures the blue line, and that is representing 194,000 fish. You can see we've had some nice increases in the number of fish that have been passed there in the past couple years. It doesn't show 2018.

In 2018, we had about a 50 percent reduction of what we observed in 2017; 2017 was the second highest run-count in a data time series. We had, again looking at the figure you can see for the period 2012 through 2017; all those values are above the 75th percentile. I'm going to switch over to the Merrimack River portion of the plan if there are no questions on the Connecticut.

CHAIRMAN CLARK: Any questions on the Connecticut? Seeing none; please continue, Ken.

MR. SPRANKLE: In the Merrimack River shad are also cooperatively managed by state and federal agencies. As you can see in the figure it includes obviously Massachusetts and New Hampshire, as well as the federal agencies, the U.S. Fish and Wildlife Service and NOAA. That basin going back in time to 1987 was angling only. It is a 3 fish bag limit under the current plan.

The first barrier on the Merrimack River is known as Essex Dam; it is at river kilometer 48, which is shown on the figure. It would be the second upstream red dot. Yes, Haverhill for some reason is identified on there. Lawrence is where the Essex Dam is located, and that has a fish lift facility to pass fish.

Here we have annual count data for the Essex Dam; that's the first barrier in Lawrence. This is another figure that shows a change from the previous plan; in terms of the benchmarks. The change made here is the use of a shad per lift day metric. In the original plan it was simply based upon the number of fish passed over the data time series.

They've incorporated the number of lifts that occurred relative to the fish that are passed. As many of you I think are aware, fish passage facilities are greatly influenced by whether or not there is spill, other environmental conditions, temperature, and of course the facility operations themselves.

Oftentimes all these things are very dynamic, they change within year of course and they are different from year to year. The value we see here in terms of a benchmark, the blue line. That is again a 25th percentile, and that blue line is 210 fish shad per lift day. That value again, I had mentioned how at Holyoke we've seen that nice increase in the number of shad passed.

You see that somewhat similarly reflected here for the period 2013 to 2017. With this inclusion of the additional years that metric has actually been shifted upwards. I'll also point out to you that this figure again goes to 2017. For 2018, like Holyoke there is about a 50 percent reduction in the number of shad that were

counted passing. In 2018 that value was down around 28,000.

There is also fishery independent data that's gathered for the Merrimack River out of the Essex Fish Lift; fish that are sampled there. There is biological data that are obtained; shad size, age, these are all similar things that are collected at Holyoke as well. By using scales Mass DMF is able to determine the repeat spawning history component of the fish; that information has been available since 2004.

They've also in this plan provide information on those data as well as mortality rate estimates, and those are based on using the repeat spawner data in conjunction with the age data. Age data for Mass DMF is obtained by the use of otoliths.

There are different datasets on that; the repeat spawner data, again if you refer back to the plan, the scale data that goes back to 1991. Mortality rates are reported in the plan. They are proposed to be used only as a warning threshold metric by Mass DMF, so it's not going to be an official benchmark.

I was remiss in mentioning that for the Connecticut River that is part of this plan update as well, we had suggested better incorporating the state of Connecticut's plan, and so the state of Connecticut benchmark metrics are all adopted in this plan and are being proposed to be used as a warning threshold. The state of Connecticut, we're not discussing the state of Connecticut's plan; but it's mentioned in here to trigger warning thresholds, include thresholds based upon recruitment through their Juvenile Abundance Index that's been conducted over the past many decades, as well as spawner escapement.

The spawner escapement metric is based upon the number of fish that are removed, based upon their monitoring of commercial fisheries and estimated recreational harvest, relative to the number of fish that are passed at Holyoke. If it falls below 90 percent, it's a very high bar that would trigger consultation.

Lastly, the state of Connecticut has set a 25th percentile, actually it's not 25th percentile it is simply a benchmark of 140,000 fish being passed at Holyoke. The Massachusetts Plan proposes to include those Connecticut measures as a warning threshold. This slide shows some of the comparisons between the timeframes 1983 to 2011 versus the full time series since the previous sustainable plan through 2017.

You can see just based upon total counts the median values on the Merrimack River at Essex Dam. You see that's increased from 16,000 to 20,000. Then you see the complimentary increase there in the 25th percentile value. Using lift days again that is the new proposed metric at Merrimack for the period only up through 2011, that value would be 174.

We've seen those increased passage rates in the most recent years; and so that value has been increased to 2010. I'll also point out that these benchmarks are being proposed to be maintained for the duration of the SFMP plan; so they won't be adjusted from year to year, they're proposed to be set.

On the Connecticut River, as we talked about, we've seen increases as well, so you can look at the median values there and how they've increased. To summarize, the SFMP the primary targets for both open harvest rivers is the fish lift count data distribution. On the Merrimack River we have that shift to shad per lift day value.

We also have on the Connecticut River simply the annual count metric. We also have warning thresholds as I discussed for the Merrimack River; based upon repeat spawners. When I say warning metrics, if you look in the Plan, the

concern there is the sample sizes. You know they're sampling between 100-200 fish, say.

What you can actually determine from scales viable data, those sample sizes go down. In order to run the analytical programs using a Chapman-Robson, the sample size would become very small. There is a lot of uncertainty. There was less confidence in using that information, other than for a warning.

As I mentioned on the Connecticut River, the Connecticut DEP benchmarks will all be used as warning thresholds. In conclusion, the SFMP just states that we've seen increasing passage counts in the most recent time period since the last 2012 to 2017. They're well above the benchmarks, and the 25th percentile benchmarks have been increased as well for both river systems. This illustrates some more of the actual detail values; comparisons between the two rivers. You see the benchmarks, warning there is a lot of text on there, but it's just illustrating the fact that there are both the benchmark count metrics as well as the warning metrics. That's my final slide. I would be happy to take any questions.

CHAIRMAN CLARK: Thank you Ken that was a very thorough presentation of the Massachusetts SFMP for shad. Are there any questions for Ken? Justin.

MR. JUSTIN DAVIS: Thanks for that presentation, Ken. You know I noticed that essentially what is missing is estimates of recreational harvest from the two river systems in Massachusetts that are currently open for harvest. I know in the Connecticut portion of the Connecticut River our agency used to do creel surveys.

Then it got to the point where essentially the fishery dwindled to a level where it was difficult to even find people fishing for shad, and that was why we discontinued the surveys. Is it your understanding that for the Massachusetts portion of the Connecticut River and the Merrimack it's sort of the same situation; the fisheries have become so low level that surveying them isn't really efficient or possible anymore?

MR. SPRANKLE: I work closely with the Mass Division of Fisheries and Wildlife, the inland counterpart to our Division of Marine Fisheries folks from the Commonwealth. They are unable to propose doing any monitoring on that. It's difficult to say. Because I work on the river I know that there are areas that receive attention; below the dams obviously are popular. It's something that we've recognized in the CRASC shad management plan; and we know it's a challenge, as we've talked about the costs for monitoring. They have no plans. It's hard for me to say what's going on, because I don't have a basis just anecdotal.

CHAIRMAN CLARK: We have a question from Eric.

MR. ERIC REID: It's just a curiosity to me. What if anything competes with the shad for lift space?

MR. SPRANKLE: That's a good question, because in other river systems there are issues. In the Susquehanna River there is a real issue with gizzard shad. On the Connecticut River, interestingly the gizzard shad showed up in the '80s, and those numbers never climbed to a crowding issue.

To answer your question, we've seen a terrible decline in blueback herring. People are familiar with that where there was a time where we were passing over half a million blueback herring at that facility. We just broke a thousand this year. Over 15 years it's been under a thousand fish. Shad are the most abundant fish utilizing that facility.

Then we see, again under a thousand blueback herring. There are usually a couple hundred

small striped bass that will utilize the facility. I'm going to get a little off tangent here; but there were significant modifications made that I'm quite proud of with a lot of other people, to pass shortnosed sturgeon. In the past three years we've been averaging about 85 shortnosed sturgeons being passed upstream to access spawning habitat. That facility is the only facility we're aware of that is designed to pass shortnose sturgeon.

CHAIRMAN CLARK: Any further questions for Ken? Mike.

MR. MICHAEL ARMSTRONG: Mr. Chairman, I would like to make a motion if I could.

CHAIRMAN CLARK: Please do.

MR. ARMSTRONG: I move to approve the Massachusetts Shad Sustainable Fisheries Management Plan Update.

CHAIRMAN CLARK: Second by Justin Davis. Is there any discussion of this motion? Seeing none; I'll read it into the record. Move to approve the Massachusetts Shad SFMP Update; motion by Mr. Armstrong, second by Mr. Davis. **Do we have any objection to the motion? Seeing none; the motion is passed by unanimous consent.**

UPDATE ON THE TECHNICAL COMMITTEE REVIEW OF INCONSISTENCIES WITH HARVEST AND MONITORING REQUIREMENTS OF AMENDMENTS 2 AND 3

CHAIRMAN CLARK: Thanks, and Ken you're up for the next agenda item; the Update on the Technical Committee Review of Inconsistencies with Harvest and Monitoring Requirements of Amendments 2 and 3**.**

MR. SPRANKLE: Okay so we have an update we've developed; again on inconsistencies with harvest and monitoring requirements. The Board's last meeting was in October, 2017. It tasked the Technical Committee with developing proposed improvements to both Amendment 2 and 3; with regard to five items that I'll read through here.

The first is management and monitoring of rivers with low abundance in harvest of shad and river herring. Second, standardization of sustainable fishery management plan requirements: the contents, metrics, management responses to triggers. Third is incorporation of stock assessment information into SFMPs and discussion on timelines for renewing plans.

Four, clarification of de minimis requirements as they pertain to SFMPs; and lastly Number 5, review the number of years of data that are required before developing an SFMP. We just heard the gentleman from Maine speak on his concern with that; as well as the types of data. These are all; I think they're good questions.

The Technical Committee is aware that these are our charges. We are at the current time focused on Number 1; that's why it's highlighted in green. There are a number of these other items; specifically Number 2, 3, and 5, we believe will be best handled once the shad benchmark stock assessment is completed. That information will really be of value and importance to properly address those items.

Now Item Number 4, the clarification of de minimis; we believe that is something that we might be able to tackle. We'll have to see how we proceed on that. In terms of background again, in October of 2017, the TC had been working on reviewing a lot of SFMP plans, and we identified inconsistencies between the SFMPs and the requirements of Amendments 2 and 3. Amendments 2 and 3, to remind you, require all states and jurisdictions to submit sustainable fish management plans for all systems that remain open to river herring or shad harvest, and that the SFMPs must

demonstrate fisheries are sustainable, with quantifiable sustainability targets and annual monitoring. This fall, beginning in September we've had conference calls, the Technical Committee, and we began work on trying to address the Number 1 item. We started developing a database. Caitlin has been tremendously helpful in this effort.

The inconsistencies with the amendments include; and we'll get into some permutations on this, but that there are tributaries of river systems that do have SFMPs and monitoring, but the tributaries are not explicitly addressed in the SFMP. We have rivers that are legally open to harvest without an SFMP or monitoring; but where no harvest of shad or herring is suspected. We have rivers with harvest addressed by an SFMP; but without monitoring to support sustainability, so those are some examples there of some of the inconsistencies.

That work to begin to gather that information again; that began in September. We had a second TC call in November; where people volunteered to form a task group, so we've got six people. Caitlin as I said has really been instrumental and helpful on this. We began work on developing a harvest and monitoring database; to begin to assemble the information that is available in a single place, where we can begin to look at it.

As we began to do that we came to realize that there should be additional information as well included; not just what is based out of the SMFP, but more nuance questions, questions that will help us better frame and address, provide some context to what we're trying to do here. This is an example taken from the database that is in development.

The first column is missing. That would be the state or jurisdiction. We didn't want to include that just for this presentation. You see the next data field is System. Systems are obviously that can be very inclusive of a number of river systems. The next data field over, you see rivers or tributaries. We begin to get a little more specific.

Whether or not the regulations allow any shad harvest, yes or no, it just goes right across the field here. Any shad harvest confirmed, suspected, or no; to describe any suspected shad harvest. You can see we're trying to get some context for this. Then the last data field on this slide, I'll have another one after this, what are harvest regulations for shad? You can see that information now.

You can see the first red cell there; it's the Delaware System in Green Creek, so that would be a small tributary in the Delaware System. We'll just go across. You can see that in fact the regulations do allow shad harvesting to occur. Then when we dug in a little further with TC members, is there any shad harvest confirmed or suspected, no, and so on. Again this is continuing right across a row here. You see the system, river tributary, so next thing whether or not monitoring is occurring, yes or no. We wanted again context.

What type of monitoring is occurring? Is there a shad SFMP in place? Again, if we would go down to the Green Creek, you can see that monitoring is not occurring; it's not specifically noted in the shad SFMP. Whether or not there has been confirmed shad spawning in this case, no. This is where we get into the TC members specific knowledge; and whether or not there is a known commercial fishery past or present, the same for recreational fishery. These are just a few examples here. Utilizing that database as it stands at this time; this table helps to provide some summary information that we thought we would share with you, based upon inconsistency type. You can see again, these get into some of the permutations. The first row you see no SFMP, no monitoring, no SFMP in the second row, no monitoring, or not a spawning river and so on.

We developed that again for both river herring and shad. As currently shown for river herring; the highest frequency occurrence is harvest allowed with no SFMP and no monitoring. You can see that is 12 out of 30. For American shad the highest frequency occurrence is harvest allowed without and SFMP, no monitoring, but noted as possibly could be included in an existing SMFP.

This gets down to what you folks had brought up at your last Board meeting; it's the definition of systems. That's an obvious recognition here. That is 31 out of 46. One thing we wanted to make an important point on this that these numbers are for counting rows; it's just the way the database is set up.

Each row is at that river tributary level, so that's why we've got many, many rows, and that's why these numbers seem to be quite large. These counts may be considered part of a larger river or a system; so that's just something to bear in mind when you look at those values. Are there any questions to this point?

CHAIRMAN CLARK: Thank you, Ken. That was a lot of inconsistencies. Lynn.

MS. LYNN FEGLEY: Yes, wow. Could you go back to that final summary table slide? Just because out of curiosity, what is the total N on these areas? This is a subset of areas with inconsistencies; but how many areas are in the total universe of possibility for SFMPs?

MR. SPRANKLE: That's a good question. Actually, I can't off the top of my head give you, Caitlin can you?

MS. CAITLIN STARKS: It's between 70 and 90; depending on shad or river herring. This is looking at pretty small scale. That is one of the issues we've been encountering is that it's such a huge breadth for the species; so it's been very hard to track down this information for these smaller tributaries that might not be mentioned anywhere in the SFMPs.

CHAIRMAN CLARK: We actually hadn't gotten to the end of the presentation; so let me let Ken finish the presentation, and then we'll take more questions. Thank you.

MR. SPRANKLE: Sorry, we were covering a lot of information, so I thought I would give an opportunity to have a question. I'll go on to the final slide. I apologize for that. We will continue to work on the database again. We're working with the full Technical Committee, again the smaller task group, to fill in additional data fields to get better context for many of the identified fields and rows.

That is in process. We've also started initial consideration; some discussions to develop potential options for resolving conflicts. That is in a very early stage. We want obviously; we'll be working through the full TC. We're going to present all the conflicts and potential solutions to the full TC; and we'll have discussions certainly on that in the coming months, and possibly look towards this coming summer to be able to provide a report again to the Board.

CHAIRMAN CLARK: The TC has a lot going on there. Thanks. Do we have any further questions for Ken on this topic? Okay seeing none.

OTHER BUSINESS

CHAIRMAN CLARK: We move on to our next agenda item; which is Other Business, and Pat Keliher, you had something from Maine?

MR. KELIHER: Yes I'll be brief; thank you, Mr. Chairman. Mike's comments at the beginning of the meeting really are the key to what we're looking at within Maine. We have had tremendous success with our river herring restorations within the state; but we are reaching a point when we have very passionate groups of both NGOs and just groups of folks

from the municipalities, trying to engage in restoration.

They are running up against this ten-year-time-limit wall; and start to lose interest very fast. This is a request for a conversation at the next meeting to discuss a White Paper that Maine is developing; and the possibility of the creation of some sort of a pilot project, where we could take some very select runs and work with communities and NGOs to see if we can use social engagement as a potential metric to actually speed up some of the recovery work that's being done in particular watersheds.

CHAIRMAN CLARK: Are there any questions for Pat on this effort up in Maine? Seeing none; oh sorry there's Toni.

MS. KERNS: Pat is it a White Paper, or is the state going to ask for a change in their sustainable fishery management plan to do something a little different for some of these rivers?

MR. KELIHER: My thinking is what we should do is to use it as a pilot project. Instead of moving forward with an addendum to change the sustainable fisheries management plan process, really focus it down into a pilot project to see if this type of system might work.

MS. KERNS: We'll have to read through the plan to see if we can do a pilot project; because I believe the Plan says you cannot have any harvest unless there is a sustainable fishery management plan. Therefore, we'll have to double check to see if that's something that's even viable in the Plan.

CHAIRMAN CLARK: Yes, Pat.

MR. KELIHER: Yes that is fine. We can work with staff between now and the next meeting; and figure out what the right approach is.

ADJOURNMENT

CHAIRMAN CLARK: Thanks, any further questions? Is there any other business to come before the Board? Seeing none; we are adjourned.

(Whereupon the meeting adjourned at 2:00 o'clock p.m. on February 6, 2019)

Shad and River Herring Technical Committee Task:
Technical Committee Report on Inconsistencies with Amendments 2 and 3

October 11, 2019

Introduction

In the fall of 2017, the Shad and River Herring Technical Committee (TC) identified several inconsistencies between state SFMPs and the requirements of Amendments 2 and 3. The Amendments require all states and jurisdictions to submit Sustainable Fishery Management Plans (SFMPs) for all systems that remain open to river herring and shad harvest. SFMPs must quantitatively demonstrate that fisheries will not have a negative impact on the stock. Additionally, the Amendments specify required fisheries dependent and independent monitoring for a number of rivers. However, in several states there are cases where rivers are legally open to recreational harvest of shad or river herring, but the management and/or monitoring of these rivers is not consistent with the requirements of the FMP.

The Board tasked the TC with developing proposed improvements to Amendments 2 and 3 with regard to this issue. The TC has taken the first step in this process by identifying and documenting each case of regulatory inconsistency. Section 1 of this document provides a description of each case identified by the TC, including information on the regulations and monitoring in place for a particular area that conflict with the Amendments' requirements. The TC's recommendations for resolving these inconsistencies are also provided on a case by case basis, and summarized in Table 1. Proposed changes to state SFMPs and Alternative Management Plans would be evaluated by the TC. Section 2 of the document includes some potential changes to Amendments 2 and 3 discussed by the TC that could address some areas of inconsistency and/or provide clearer guidance to the states on SFMP and monitoring requirements, as well as *de minimis* criteria and exemptions.

Section 1. Case Descriptions

River Herring Cases

Maine

- **Statewide: SFMP; 25 fish recreational creel limit.**
  Current state law allows recreational anglers to take 25 fish per day for personal use statewide, though few locations in Maine permit recreational anglers to regularly catch 25 fish per day. Gear restrictions limit anglers to hook and line and dip net only. These gear types are permitted only in areas outside of a municipally-managed watershed and downstream of the municipal harvest location where exclusive rights are granted by the State. The recreational fisheries do not affect escapement of spawning fish passed at commercial fishing operations.
  - → **TC recommends that Maine address cases where recreational harvest occurs in rivers not currently monitored under the river herring SFMP with a relevant monitoring threshold from other watersheds that relates to a defined management response. For the Salmon Falls River (shared waterbody with NH), ME currently prohibits recreational harvest.**

New Hampshire

- **Salmon Falls River: Irregular monitoring.**
  This river is included in the approved NH SFMP. Harvest is allowed, as there are currently no regulations establishing a length limit or daily bag limit for recreational anglers on either alewives or blueback herring within any water body of the state. Additionally, there are no closed seasons to the taking of river herring by recreational anglers, except that they are prohibited from harvesting river herring on Wednesdays. However, monitoring for this river is irregular, with fishery independent monitoring only occurring every 3-5 years. Fishery dependent reporting captures only about 20 herring per year. Salmon Falls River does not flow directly into another monitored waterbody, so downstream monitoring would not directly capture river herring in this river. The Maine side of the river has a park at the head of tide dam and a fishing wharf. Harvest of river herring is much more likely there.
  - → **TC recommends no changes to monitoring, and making the NH SFMP clear as to how monitoring in the Great Bay system is sufficient to inform sustainability and management of Salmon Falls.**
  - → Rationale: The Atlantic States Marine Fisheries Commission Shad and River Herring FMP states that "Definitions of sustainable fisheries and restoration goals can be index-based or model-based" and that "Member states or jurisdictions could potentially develop different sustainability target(s) for river herring based on the unique ecosystem interactions and…Targets can be applied state-wide or can be river and species specific." (Amendment 2, pg. 92). Therefore New Hampshire will use the stocks of river herring returning to the Great Bay Estuary system as an indicator of statewide river herring abundance and refer to them as the 'Great Bay Indicator Stock'. Using an estuary-wide versus river-specific approach is the best suitable method due to the physical/geographical characteristics of the Great Bay Estuary.

    Great Bay Estuary's unique geographical characteristics lend itself to monitoring the systems resource as a whole rather than on a river-specific basis. The estuary includes seven small to moderate size rivers with most flowing into a large embayment (Great Bay and Little Bay) before draining into a narrow, 15 km long opening to the sea via the Piscataqua River.

    If the fishery-dependent and independent targets for river herring are not met, the New Hampshire Fish and Game Department will implement a prohibition on harvest of river herring to all fisheries operating within state waters.

South Carolina

- **Little River: No SFMP; No monitoring.**
  This river is not included in the SC SFMP. In SC, statewide regulations allow recreational harvest of river herring: 1 bushel (22.7 kg) fish aggregate daily creel limit for blueback herring in all rivers. Reporting is required for recreational harvest using gill nets, but not for cast nets or hook and line gears. Fishery independent (FI) monitoring does not occur for this river. SC has a regulations package written up to address some of the inconsistencies in managing diadromous species, although it has not passed through legislature. As part of this package, the river herring

recreational fishery (cast nets) will have the same restrictions in locations, timing, and reporting as the respective commercial fisheries.

- → **TC recommends that Little River management relate to Great Pee Dee River sustainability metrics and management response, as it falls within the Great Pee Dee system.**
- → Rationale: the Little River does not have enough monitoring to support an individual sustainability metric, however, this intercoastal waterway ultimately connects with the Great Pee Dee River System through the Waccamaw River and is not known to have a separate spawning stock.

- **Winyah Bay system (Waccamaw, Little Pee Dee, Lynches, Black, Sampit, Bull Creek): tributaries not in SFMP; some monitoring.**
  Only the Great Pee Dee River is included in the SFMP. A commercial fishery occurs in the Great Pee Dee River with required monthly catch reports for legal commercial and recreational fishers using nets. SCDNR conducts biological sampling of river herring in the Great Pee Dee River. Under the statewide regulations, recreational harvest is allowed in all of the additional rivers that feed into Winyah Bay, however monitoring does not occur on those rivers. River herring may be reported as bycatch in mandatory landings reports for commercial shad fishery, but reports of river herring bycatch are infrequent.
  - → **TC recommends SC revise their river herring SFMP to apply sustainability metrics and management response for the Winyah Bay system to all tributaries in the system (Waccamaw, Little Pee Dee, Lynches, Black, Sampit, Bull Creek).**
  - → Rationale: The Great Pee Dee River is the only portion of the Winyah Bay system with a known spawning run, and has adequate monitoring and data to apply to the whole system.
- **Santee-Cooper system (Wateree, Congaree, Broad): tributaries not in SFMP.**
  The Wateree, Congaree, Broad are tributaries of the Santee and Cooper Rivers. They are not explicitly included in the SC SFMP. There is not monitoring occurring specifically within these tributaries, however, downstream monitoring in the Santee and Cooper Rivers would be representative of the tributaries. The Santee-Cooper is included in the SC SFMP.
  - → **TC recommends SC revise the SFMP to include these tributaries in the Santee-Cooper system and apply sustainability metrics and management response for the Santee-Cooper to all unmonitored portions of the system.**
  - → Rationale: Monitoring in Santee-Cooper system is representative of all tributaries.
- **Wando and Ashely Rivers: No SFMP; no monitoring.**
  These rivers are not included in the SC SFMP. Under the statewide regulations, recreational harvest is allowed. Harvest is not suspected to occur in these rivers. However, monitoring does not occur on these rivers. These are not tributaries of another river, and are treated as separate stocks.
  - → **TC recommends implementing one of the following:**
    - o **Catch and release only regulations**
    - o **An Alternative Management Regime (described under Section 5 of Amendment 2) with appropriate mechanisms for monitoring and responding to changes in fishery impacts to the river herring stock**

    - **Relate management of unmonitored rivers statewide to the sustainability targets and management response for the Santee-Cooper river system.**
  - → Rationale: These smaller rivers in the southern part of the state do not have data to support individual sustainability metrics, nor another "surrogate" system from which it would be appropriate to apply sustainability metrics.
- **ACE Basin system (Ashepoo, Combahee, Edisto, Salkehatchie): No SFMP; no monitoring.**
  These four tributaries are considered to be part of the ACE Basin system. The Salkehatchie is a tributary of the Combahee. There is no SFMP for the system nor for any of the tributaries, though recreational harvest is allowed in all of them under the statewide regulations. Harvest is not suspected to occur in these tributaries, however monitoring does not occur in any of them.
  - → **TC recommends implementing one of the following:**
    - **Catch and release only regulations**
    - **An Alternative Management Regime (under Section 5 of Amendment 2) with appropriate mechanisms for monitoring and responding to changes in fishery impacts to the river herring stock**
    - **Relate management of unmonitored rivers statewide to the sustainability targets and management response for the Santee-Cooper river system.**
  - → Rationale: The ACE Basin and smaller rivers in the southern part of the state do not have data to support individual sustainability metrics, nor another "surrogate" system from which it would be appropriate to apply sustainability metrics.
- **Coosawhatchie River: No SFMP; no monitoring.**
  Similar to the Wando and Ashely, this is not a tributary of another river, and is treated as a separate stock. It is not included in the SC SFMP. Under the statewide regulations, recreational harvest is allowed. Harvest is not suspected to occur in this river. However, monitoring does not occur here.
  - → **TC recommends implementing one of the following:**
    - **Catch and release only regulations**
    - **An Alternative Management Regime (under Section 5 of Amendment 2) with appropriate mechanisms for monitoring and responding to changes in fishery impacts to the river herring stock**
    - **Relate management of unmonitored rivers statewide to the sustainability targets and management response for the Santee-Cooper river system.**
  - → Rationale: This river is not part of a larger system and does not have data to support individual sustainability metrics, nor a "surrogate" system from which it would be appropriate to apply sustainability metrics.
- **Savannah: No SFMP; no monitoring.**
  There is no SFMP for this river (SC or GA). SCDNR used to conduct creel surveys for the hook and line fishery at NSBLD before it was deemed an unsafe fishing area, and collected biological samples. SC also samples YOY shad with an electrofishing boat, which could potentially capture some river herring (likely not enough to produce reliable indices for river herring). GA conducts monthly shad electrofishing below NSBLD from February to June, which has not caught any herring in recent years. There are a few sporadic intercepts of blueback herring in the striped bass electrofishing survey. These surveys likely occur further upstream where river herring are less likely to be encountered. Both SC and GA allow recreational harvest in the Savannah. GA has

no regulations to prohibit it, and SC has a 1 bushel fish aggregate daily creel for blueback herring in all rivers.

→ **TC recommends implementing one of the following:**
  - **Catch and release only regulations**
  - **An Alternative Management Plan (under Section 5 of Amendment 2) with appropriate mechanisms for monitoring and responding to changes in fishery impacts to the river herring stock**
  - **Relate management of unmonitored rivers statewide to the sustainability targets and management response for the Santee-Cooper river system.**

→ Rationale: SC and GA do not have data to support a sustainability metric for river herring, nor a "surrogate" system from which it would be appropriate to apply sustainability metrics. Existing data sources contain very low capture rates for river herring, so benchmarks developed from them would be close to zero. However, there is some seasonal monitoring that should capture changes in the fishery, so SC and GA may be able to use an alternative management plan to justify maintaining their current regulations.

Georgia

- **Savannah: see SC above.**
- **Altamaha system (Altamaha, Oconee, Ocmulgee): No SFMP.**
  Georgia does not have an SFMP for river herring. The state does not have any regulations in place to prohibit the recreational harvest of river herring. No harvest is suspected in the Altamaha and its two main tributaries, which are all considered one system. Creel surveys occur on the mainstem of the Altamaha annually, on a monthly basis from April to November. This may capture river herring in the upstream tributaries if present, however the survey dates may be later than river herring remain in-river. River herring harvest has not been recorded in the creel surveys.

  → **TC recommends either 1) implement catch and release only regulations for river herring statewide, or 2) develop an Alternative Management Regime justifying the absence of statewide harvest regulations by showing no significant river herring harvest is occurring under these regulations, and describing the metrics/monitoring the state would use to observe any increases in the fishery, and the management response that would be implemented if river herring abundance and/or harvest were to increase.**

  → Rationale: GA does not have sufficient data to support a sustainability metric for river herring. Existing data sources contain very low capture rates for river herring, so benchmarks developed from them would be close to zero. However, there is some seasonal monitoring that should capture changes in the fishery, so GA may be able to use an alternative management plan to justify maintaining their unregulated (harvest may occur) regulations.
- **Ogeechee River: No SFMP; irregular monitoring.**
  Georgia does not have an SFMP for river herring. The state does not have any regulations in place to prohibit the recreational harvest of river herring. No harvest is suspected in the

Ogeechee. Creel surveys are conducted at access points every 5 years, and have not recorded river herring harvest.

→ **TC recommends either 1) implement catch and release only regulations for river herring statewide, or 2) develop an Alternative Management Regime justifying the absence of statewide harvest regulations. See Altamaha system for additional details.**

- **Satilla River: No SFMP; no monitoring.**
  Georgia does not have an SFMP for river herring. The state does not have any regulations in place to prohibit the recreational harvest of river herring. No harvest is suspected in the Satilla. There was a creel survey until 2014 but no RH were captured. Monitoring no longer occurs.
  → **TC recommends either 1) implement catch and release only regulations for river herring statewide, or 2) develop an Alternative Management Regime justifying the absence of statewide harvest regulations. See Altamaha system for additional details.**
- **St. Marys River: No SFMP; no monitoring.**
  Neither Georgia nor Florida has an SFMP for river herring. Georgia does not have any regulations in place to prohibit the recreational harvest of river herring. In Florida, recreational river herring harvest is regulated under the statewide 10 fish possession limit for aggregated shad species. Neither state performs monitoring for this river.
  → **TC recommends either 1) implement catch and release only regulations for river herring statewide, or 2) develop an Alternative Management Regime justifying the absence of statewide harvest regulations. See Altamaha system for additional details.**

Florida

- **St. Marys River: see GA above.**
  → **TC recommends either 1) implement catch and release only regulations for river herring statewide, or 2) develop an Alternative Management Regime justifying harvest regulations. Florida should take management consistency with Georgia into account.**
  → Rationale: FL does not have sufficient data to support a sustainability metric for river herring. Existing data sources contain very low capture rates for river herring, so benchmarks developed from them would be close to zero.
- **St. Johns system (St. Johns, Econlockhatchee, Wevika, Oklawaha): No SFMP; some monitoring.**
  Florida does not have an SFMP for river herring. Statewide regulations allow harvest of river herring, which fall under the 10 fish possession limit for aggregated shad species. The St. Johns River system includes the three tributaries listed above. On the St. Johns and Econlockhatchee, there are American shad creel surveys that would also capture river herring catch/harvest. These creel surveys, as well as the FI spawning stock monitoring would not be representative of the Wevika and Oklawaha because they occur upstream of the tributaries. JAI sampling occurs downstream of all significant tributaries, and does encounter herring.
  → **TC recommends either 1) implement catch and release only regulations for river herring statewide, or 2) develop an alternative management plan justifying the statewide harvest regulations by showing no significant river herring harvest is occurring under these regulations, and describing the metrics/monitoring the state would use to observe any increases in the fishery, and the management response that would be implemented if river herring abundance and/or harvest were to increase.**

→ Rationale: There are some available data that could be used to monitor changes in river herring abundance or harvest, though existing data sources contain very low capture rates for river herring. FL may be able to use an alternative management plan to justify maintaining their harvest regulations by monitoring changes in the available data and implementing a statewide management response if there are changes in harvest or abundance.

- **Pellicer, Tomoka, and Nassau Rivers: No SFMP; no monitoring; no record of river herring presence**
  Florida does not have an SFMP for river herring. Statewide regulations allow harvest of river herring, which fall under the 10 fish possession limit for aggregated shad species. No monitoring occurs on any of these rivers, which are separate systems. There is no record of river herring presence in these three rivers, but there is a small amount of suitable habitat located in the Pellicer and Tomoka, south of the southern-most confirmed runs. The Nassau River is a small watershed with a big tidal range, so it is unlikely to contain any suitable spawning habitat.
  → **TC recommends either 1) implement catch and release only regulations, or 2) describe in SFMP/or Alternative Management Plan that these systems are not part of the alosa range.**
  → Rationale: If second option is chosen, the state will provide evidence to demonstrate that these areas are not part of the species range.

Shad Cases

Maine

- **All rivers: No SFMP; some monitoring.**
  Maine does not have a shad SFMP. Shad recreational harvest is allowed in all rivers in the state with a recreational possession limit of 2 fish per day; the only legal gear is hook and line. The commercial fishery is closed. Recreational harvest monitoring occurs through the Marine Recreational Information Program (MRIP), but only on the Saco River. There are also fishway counts on the Androscoggin, Saco, Kennebec, and Sebasticook Rivers, and some bycatch records from non-directed commercial fisheries. A juvenile alosine survey is carried out annually in the Kennebec/Androscoggin estuary.
  → **TC recommends Maine attempt to develop potential sustainability metrics using the JAIs and fishway counts from monitored systems to create a SFMP or Alternative Management Plan with a management response to a trigger (possibly a percentile approach) applied to unmonitored rivers. The TC would then evaluate the SFMP and make a recommendation to the Board.**
  → Rationale: Dependent on the data provided by MEDMR and the extent to which the proposed metrics, triggers, and responses are supportive of a statewide approach and a two fish limit. This case and some of the other examples may be best handled through an Alternative Management Approach, as TC may find the proposed management regime strays too far away from SFMP format/approach as described in Amendment 3.

New Jersey

- **Tributaries of the Delaware River: tidal stretches of tributaries not in SFMP.**

New Jersey portions of the Delaware River are managed under the Delaware River Basin Coop SFMP for American shad. There are 11 tributaries of the Delaware River that are not explicitly included in the SFMP, but on which harvest is allowed in the tidal stretches under New Jersey regulations. New Jersey allows recreational shad harvest with a 6 fish possession limit for shad species, and no more than 3 American shad. Harvest is only allowed in the mainstem of the Delaware River, the Delaware Bay, and the tidal portions of the lower tributaries. Though monitoring is not occurring in these smaller tributaries, monitoring occurs in the mainstem of the Delaware downstream from these smaller tributaries and would be representative of shad upstream.

→ **TC recommends including tidal stretches of all tributaries in the DE COOP SFMP**

→ Rationale**:** Monitoring programs in place for the Delaware River system are considered adequate, should metric benchmarks be triggered, management responses will be applied to these tributaries as well.

Delaware

- **Delaware River Basin System (Brandywine and Broadkill): tributaries not in SFMP.**
  The Brandywine and Broadkill Rivers are explicitly included in the Delaware Basin Coop SFMP, but monitoring does not occur directly in these tributaries. The Brandywine River enters the Delaware River near Wilmington, so fishery independent monitoring in the upper bay should be representative of this tributary. The Broadkill River enters the lower Delaware Bay near Lewes, thus monitoring upstream may not be representative of this tributary; commercial harvest monitoring in the lower bay should capture shad entering the Broadkill. Delaware imposes a recreational 10 fish aggregate limit combined American Shad and Hickory Shad possession per angler, with no closed season or minimum size within their jurisdictional waters. Harvest is suspected for both rivers but the quantity is unknown. Adult shad would be recorded in commercial harvest reports.
  → **TC recommends including all tributaries in the DE COOP SFMP**
  → Rationale: Monitoring programs in place for the Delaware River system are considered adequate, should metric benchmarks be triggered, management responses will be applied to these tributaries as well.
- **Back Creek (C&D Canal): no SFMP; no monitoring.**
  Back Creek is a waterway connecting the upper Elk River in Maryland to the Delaware River in Delaware. It is not included in an SFMP. Delaware allows harvest in their jurisdictional waters, Maryland does not. Delaware Bay commercial fishery sampling should be representative of this area, but independent sampling would not.
  → **TC recommends addressing in the DE COOP SFMP as a Delaware River tributary**
  → Rationale: Monitoring programs in place for the Delaware River system are considered adequate, should metric benchmarks be triggered, management responses will be applied to these tributaries as well.
- **Chester River: no SFMP; no monitoring.**
  The Chester River is a tributary of the upper Chesapeake Bay. There is no shad SFMP for this river, nor monitoring. Delaware's regulations allow harvest of up to 10 fish daily for combined shad species per angler, with no closed season or minimum size. Harvest is suspected but unquantified. It is unclear if any monitoring programs would be representative of this river.

→ **TC recommends implementing catch and release only regulations**

→ Rationale: The portion of this watershed in MD is managed under catch and release only regulations. DE has no monitoring of the population or fishery, and DE currently allows recreational harvest in areas upstream of MD's jurisdiction. Therefore, consistent regulations with MD are recommended for Delaware.

- **Choptank River: no SFMP; some monitoring.**
  The upper reaches of the Choptank River barely stretch into Delaware. Delaware's regulations allow harvest of up to 10 fish daily for combined shad species per angler. Maryland performs a YOY seine survey in the Choptank, and a restoration group stocks larval shad, and monitors survival, hatchery vs. wild production, and spawning stock. No shad have been reported in the portion of the river that flows into Delaware or collected at the base of Mudmill Pond spill pool.
  → **TC task group recommends implementing catch and release only regulations**
  → Rationale: The portion of this watershed in MD is managed under catch and release only regulations. DE has no monitoring of the population or fishery, and DE currently allows recreational harvest in areas upstream of MD's jurisdiction. Therefore, consistent regulations with MD are recommended for Delaware.

North Carolina

- **Albemarle Sound system (Meherrin, Cashie): tributaries not in SFMP.**
  The Meherrin River is a tributary of the Chowan River, which feeds into Albemarle Sound. The Cashie River feeds directly into the Albemarle Sound at its upper end. The NC SFMP for shad includes the Chowan River, Roanoke River and the Albemarle Sound itself. The recreational bag limit for American and Hickory Shad in the Albemarle Sound, the Roanoke River basin and the Neuse River basin is a 10-fish aggregate (Hickory and American combined) per person, per day, of which only one American Shad can be taken. Monitoring is primarily carried out in the Sound; a juvenile seine survey is used to develop juvenile abundance indices and the FI gill net survey gathers size, age, and sex data. These surveys are downstream and representative of the two tributaries listed above.
  → **TC recommends include all tributaries of the Albemarle Sound system in the SFMP**
  → Rationale: Monitoring in the Albemarle Sound are representative of both the Meherrin and Cashie Rivers.
- **Currituck Sound (Northwest River, North Landing River): SFMP*; some monitoring.**
  The NC SFMP considers Currituck Sound and its tributaries to be part of the greater Albemarle Sound system. NC allows harvest of no more than 10 fish per day aggregate bag limit (only 1 American shad) in the Albemarle Sound (there is a 10 American and/or Hickory Shad aggregate possession limit per person, per day in the Tar-Pamlico River, Pungo River, Pamlico Sound, and all other inland, coastal and joint waters). Currituck Sound connects to the Albemarle Sound near the coast. Monitoring is performed throughout the Albermarle Sound, including Currituck Sound (e.g. trawls and seine surveys, juvenile surveys) but the stations used to inform management in the SFMP are not those in Currituck Sound. The SFMP uses information from other areas further upstream in the Albemarle Sound. Department of Game and Inland fisheries does not have any shad data for the Northwest and North Landing Rivers. There is no targeted effort for shad in these two rivers.

→ **TC recommends including Currituck Sound as part of the Albemarle Sound system in the SFMP, and adding language to specify how monitoring and sustainability metrics inform management of all tributaries.**

→ Rationale: North Carolina expects that surveys performed in the Albemarle Sound are representative of Currituck Sound.

- **Cape Fear system (Black River): tributary not included in SFMP.**
  The Black River is a tributary of the Cape Fear River, which is included in the NC SFMP for shad. Monitoring is performed in the Cape Fear River, including annual electrofishing for adults, an annual independent gill net survey, commercial harvest monitoring, and a recreational creel survey. Shad are not suspected to be present in the Black River. Cape Fear monitoring does not cover fish entering the Black River because it occurs upstream from where the tributary connects.
  → **TC recommends including all tributaries of the Cape Fear River in the SFMP, and adding an explanation of shad abundance in the Black River.**
  → Rationale: Shad in the Black River are assumed to be from the same spawning stock as those in the Cape Fear mainstem.
- **Little River: no SFMP; no monitoring.**
  The Little River is a small coastal river that connects to the Intracoastal Waterway in both NC and SC. Shad may travel to the Waccamaw River in SC through this system. Both NC and SC allow recreational harvest in this river with a 10 fish aggregate daily creel limit for both states. There is no monitoring that captures shad data for this river.
  → **TC recommends addressing Little River in SFMP by applying management response to sustainability metrics from the Winyah Bay System**. **Management response should be consistent between North Carolina and South Carolina.**
  → Rationale: The TC determined that the available data for the Winyah Bay system are more robust than those for the Cape Fear system.

South Carolina

- **Little River: See NC above.**
  → **TC recommends addressing Little River in SFMP by applying management response to sustainability metrics from the Winyah Bay System. Management response should be consistent between North Carolina and South Carolina.**
  → Rationale: The TC determined that the available data for the Winyah Bay system are more robust than those for the Cape Fear system.
- **Winyah Bay system (Little Pee Dee, Lynches, Black, Sampit, Bull Creek): tributaries not included in SFMP.**
  South Carolina's SFMP for shad allows for harvest the Winyah Bay system. Specifically, commercial and recreational fisheries exist in the Waccamaw River, Great Pee Dee River, and the Bay itself, while all other waters of the state are open for shad recreational harvest under an aggregate creel limit of 10 combined American and hickory shad per person. Where commercial fisheries occur, there is required monthly catch reporting for legal commercial and recreational fishers using nets. SC also collects FD biological samples in the Great Pee Dee River. Sampling in the Pee Dee system would be representative of the five tributaries listed above.

→ **TC recommends including all Winyah Bay tributaries in SFMP**

→ Rationale: Monitoring programs in place for the Bay are considered adequate, should metric benchmarks be triggered, management responses will be applied to these tributaries as well.

- **Santee-Cooper system (Wateree, Congaree, Broad): tributaries not included in SFMP.**
  The Wateree, Congaree, Broad are tributaries of the Santee and Cooper Rivers. They are not explicitly included in the SC SFMP. There is not monitoring occurring specifically within these tributaries, however, downstream monitoring in the Santee and Cooper Rivers would be representative of the tributaries. The Santee-Cooper is included in the SC SFMP.
  → **TC recommends including all tributaries in the Santee-Cooper SFMP**
  → Rationale: Monitoring programs in place for the Santee and Cooper rivers are considered adequate, should metric benchmarks be triggered, management responses will be applied to these tributaries as well.
- **Wando, Ashely and Coosawhatchie Rivers: No SFMP; no monitoring.**
  These rivers are not included in the SC SFMP for shad. Under the statewide regulations, recreational harvest is allowed. Harvest is not suspected to occur in these rivers. However, monitoring does not occur on these rivers. These are not tributaries of another river, and are treated as separate stocks. Similar to the Wando and Ashely, the Coosawhatchie is not a tributary of another river, and is treated as a separate stock. It is not included in the SC SFMP. Under the statewide regulations, recreational harvest is allowed. Harvest is not suspected to occur in this river. However, monitoring does not occur here.
  → **TC recommends modifying SFMP to include these systems, and apply metrics from the Santee-Cooper system to the Wando and Ashely, and apply metrics from the Savannah River to the Coosawhatchie. If necessary, add additional detail about the management responses tied to triggers.**
  → Rationale: The Santee-Cooper system and the Savannah River could serve as "surrogate" systems for these smaller rivers. Changes to the SFMP would be evaluated by the TC.
- **ACE Basin system (Ashepoo, Salkehatchie): tributaries not included in SFMP.**
  These two tributaries are considered to be part of the ACE Basin system. The Salkehatchie is a tributary of the Combahee. The SC shad SFMP addresses commercial and recreational harvest in the Combahee and Edisto Rivers, but recreational harvest is also allowed in the other tributaries under the statewide regulations. Harvest is not suspected to occur in these tributaries, however there is no monitoring occurring for either of them. For the Combahee and Edisto Rivers, monthly catch reports for legal commercial and recreational fishers using nets are required. This would be representative of the Salkehatchie but not the Ashepoo.
  → **TC recommends including Ashepoo and Salkehatchie with the Combahee in the SFMP.**
  → Rationale: The sustainability metric, triggers and management response from the Edisto River can be applied to the entire ACE basin system.

Georgia

- **Altamaha system (Oconee, Ocmulgee): tributaries not included in SFMP.**
  Georgia has an SFMP for shad, which includes the Altamaha River but is not clear whether it extends to these two tributaries. Commercial and recreational shad fisheries occur on the mainstem of the Altamaha. No harvest is suspected in these two main tributaries, but state

regulations allow recreational harvest of shad, with an 8 fish per day possession limit for aggregate shad species. Creel surveys occur in the mainstem of the Altamaha and would capture shad in the tributaries which are upstream.

- → **TC recommends including tributaries of the Altamaha system in the SFMP**
- → Rationale: Monitoring programs in place for the Altamaha River are considered adequate, should metric benchmarks be triggered, management responses will be applied to these tributaries as well.

- **Satilla River: No SFMP; some monitoring**
  Georgia's SFMP for shad does not include the Satilla River. The state regulations allow recreational harvest of shad with an 8 fish per day possession limit for aggregate shad species. No harvest is suspected. Creel surveys have been conducted in the past (last one in 2014), and no evidence in recent years suggests any shad harvest is occurring in the Satilla. Electrofishing for standardized surveys occurs in the Satilla every year from March-April at 11 stations but has only picked up 1 or 2 shad in recent years.
  - → **TC recommends including the Satilla in the GA shad SFMP for recreational harvest, and applying the same metrics and management response in place for the Altamaha River to this river**
  - → Rationale: The Altamaha is the nearest river with a known spawning run, adequate monitoring and a sustainability metric.
- **St. Marys River: no SFMP; no monitoring.**
  Neither Georgia nor Florida's SFMP for shad include the St. Marys River. Georgia and Florida both allow recreational harvest of shad in this river, with 8 and 10 fish daily possession limits for aggregate shad species, respectively. Neither state suspects harvest occurs here, but neither performs shad monitoring for this river. Electrofishing for standardized surveys occurs in the St. Marys.
  - → **TC recommends including the St. Marys in the GA shad SFMP for recreational harvest, and applying the same metrics and management response in place for the Altamaha River to this river**
  - → Rationale: The Altamaha is the nearest river with a known spawning run, adequate monitoring and a sustainability metric.

Florida

- **St. Johns system (Econlockhatchee, Wevika, Oklawaha); tributaries not included in SFMP; some monitoring.**
  Florida has a shad SFMP for the St. Johns River. The St. Johns River system includes the three tributaries listed above, but they are not addressed in the SFMP. Statewide regulations allow harvest of shad under the 10 fish possession limit for aggregated shad species. The Wevika is a minor tributary with little suitable shad habitat, but some American shad have been recorded there. The Oklawaha appears to have some suitable American Shad habitat, though there is no record of a spawning run or fishery there prior to the Rodman dam. JAI sampling of the St. Johns occurs downstream of all significant tributaries. On the St. Johns and Econlockhatchee, there are American shad creel surveys. However, these creel surveys, as well as FI spawning stock

monitoring would not be representative of the Wevika and Oklawaha because they occur upstream of the tributaries.

→ **TC recommends that FL revise the shad SFMP to include all tributaries, and add language for how metrics from monitored sections will apply across the system tributaries**

→ Rationale: Monitoring programs in place for the St. Johns main stem are considered adequate, should metric benchmarks be triggered, management responses will be applied to these tributaries as well.

- **Pellicer, Tomoka, and Nassau Rivers: No SFMP; no monitoring; no record of shad presence** These rivers are not included in Florida's shad SFMP. Statewide regulations allow shad harvest with a 10 fish possession limit for aggregated shad species. No monitoring occurs on any of these rivers, which are separate systems. There is no record of shad presence in these three rivers, but there is a small amount of suitable habitat located in the Pellicer and Tomoka, south of the southern-most confirmed runs. The Nassau River is a small watershed with a big tidal range, so it is unlikely to contain any suitable spawning habitat.

  → **TC recommends either 1) implement catch and release only regulations, or 2) describe in SFMP/or Alternative Management Plan that these systems are not part of the alosa range.**

  → Rationale: If second option is chosen, the state will provide evidence to demonstrate that these areas are not part of the species range.

Section 2. Recommendations for Improvements to Shad and River Herring FMP

The TC Task Group and full TC discussed some possible changes to the FMP that could potentially improve clarity on what is required of the states with regard to SFMPs and monitoring, and/or reduce or resolve state conflicts with the current FMP requirements. The TC's discussions are described below. However, the TC has not made any consensus recommendations on modifications to the FMP.

The TC task group discussed the clarification of the *de minimis* language in Amendments 2 and 3. Based on the language in the FMP and a review of the Board's February 2010 discussion related to *de minimis* criteria and status, it is clear that *de minimis* status may only be granted on the basis of commercial harvest landings. Additionally, *de minimis* status does not exempt a state from the requirement to implement an approved SFMP for any system in which recreational or commercial harvest is allowed. The TC did not propose any changes to the current *de minimis* language.

The suggestion was made to modify the tables in Amendments 2 and 3 that specify required monitoring for river herring and shad. In particular the group noted that the tables could be improved by using more consistent and definitive language (e.g. define language such as "where appropriate").

Several ideas were discussed regarding adding more detail and guidance to the FMPs on SFMPs. Specifically, the TC Task Group thought it would be helpful to provide a standard format for reporting management metrics, thresholds and responses in the SFMPs. In addition, it was suggested that SMFPs should be more definitive with regard to the management responses (changes in regulations) that would be implemented if a management threshold or trigger were met. The group recognized there is still a need to maintain flexibility for the states/jurisdictions to tailor management responses to their systems

and fisheries. Lastly, the group noted the need for additional guidance on inter-jurisdictional management of shared waterbodies.

During the development of recommendations for resolving the inconsistencies described in the previous section, the TC discussed the use of Alternative Management Regimes, described in Section 5 of Amendment 2. The TC generally commented that there is a lack of clarity on when it is appropriate for a state/jurisdiction to use an Alternative Management Regime versus and SFMP, as well as what information is to be provided in such a proposal. More detailed guidance should be added to the FMP, especially given several states may consider implementing Alternative Management Regimes for data limited systems.

Lastly, the TC Task Group discussed the concept of modifying the FMP to allow states to maintain a low bag limit in unmonitored systems as an alternative to requiring catch and release only for unmonitored systems, provided a management response related to sustainability metrics from another or other monitored systems were in place. Several concerns with this concept were discussed. First, there were concerns that there could be negative impacts to the stock, but it would be difficult to assess considering the lack of monitoring. Second, the policy could be viewed as favoring the recreational fishery over commercial fisheries given that commercial fisheries are required to close completely unless an SFMP and appropriate monitoring are in place. The TC acknowledged that additional information and analysis would be necessary to evaluate the impacts of this concept. The TC intends to continue discussions on this and the ideas above at future meetings.

Table 1. Summary of TC Recommendations by State and Species

State	Species	Areas of Inconsistency	Recommendations
ME	River Herring	Statewide 25 fish bag limit, limited monitoring.	Address cases where recreational harvest occurs in rivers not currently monitored under the river herring SFMP with a relevant monitoring threshold from other watersheds that relates to a defined management response.
	Shad	All rivers: No SFMP, some monitoring	Develop potential sustainability metrics using the JAIs and fishway counts from monitored systems to create a SFMP or Alternative Management Plan with a management response to a trigger for all unmonitored rivers.
NH	River Herring	Salmon Falls River: Irregular monitoring	No changes to monitoring; make NH SFMP clear as to how monitoring in the Great Bay system is sufficient to inform sustainability and management of Salmon Falls.
NJ	Shad	Tributaries of the Delaware River not in SFMP	Include all tributaries in the DE COOP SFMP.
DE	Shad	Brandywine and Broadkill: tributaries not in Delaware River SFMP	Include all tributaries in the DE COOP SFMP.
	Shad	Back Creek, Chester River, Choptank River: No SFMP, no monitoring	Incorporate Back Creek into the DE COOP SFMP and implement catch and release only regulations on the Chester and Choptank
NC	Shad	Meherrin, Cashie, Northwest River, North Landing River: tributaries not in Albemarle Sound SFMP	Include all tributaries of the Albemarle Sound system in the SFMP, including Currituck Sound tributaries, and add language to specify how monitoring and sustainability metrics inform management of all tributaries.
	Shad	Black River: tributary not in SFMP	Include all tributaries of the Cape Fear River in the SFMP and add explanation of shad abundance in the Black River.
	Shad	Little River: no SFMP, no monitoring	Address Little River in SFMP by applying management response to sustainability metrics from the Winyah Bay system in SC; NC should include an equal management response in their SFMP to SC.
SC	River Herring	Little River: No SFMP, no monitoring	The Little River should respond to Great Pee Dee River (Winyah Bay) sustainability metrics, as it connects with the Great Pee Dee system.
	Shad & River Herring	Winyah Bay System tributaries (Waccamaw, Little Pee Dee, Lynches, Black, Sampit, Bull Creek): not in SFMPs	Revise shad and river herring SFMPs to apply sustainability metrics and management response for the Winyah Bay system to all tributaries in the system
	Shad & River herring	Tributaries of the Santee-Cooper System (Wateree, Congaree, Broad): not in the SFMPs	Revise shad and river herring SFMPs to apply sustainability metrics and management response for the Santee-Cooper system to all tributaries in the system

	River Herring	Wando and Ashely Rivers, ACE Basin system, Coosawhatchie River, Savannah River: No SFMP, no monitoring	1) Implement catch and release regulations for all unmonitored systems, 2) Implement Alternative Management Regime; or 3) apply statewide metrics to unmonitored rivers with defined management response
	Shad	Wando and Ashely Rivers, Coosawhatchie River: No SFMP, no monitoring	Apply metrics from the Santee-Cooper system to the Wando and Ashely, and apply metrics from the Savannah River to the Coosawhatchie. If necessary, add additional detail about management responses.
	Shad	Little River: No SFMP, no monitoring	Address Little River in SFMP by applying management response to sustainability metrics from the Winyah Bay system
	Shad	ACE Basin (Ashepoo**,** Salkehatchie): tributaries not in SFMP.	Include Ashepoo and Salkehatchie with Combahee in the SFMP; Sustainability metric, triggers and management response from the Edisto river can be applied to the entire ACE basin system.
GA	River Herring	All rivers: No SFMP; only monitoring in Savannah and Altamaha regularly, in Ogeechee every 5 years	1) Implement catch and release only regulations for river herring statewide, or 2) develop an Alternative Management Regime justifying the absence of statewide harvest regulations.
	Shad	Altamaha tributaries not in SFMP	Including all Altamaha tributaries in SFMP.
	Shad	Satilla, St. Marys: No SFMP, some monitoring in Satilla only.	Include Satilla and St. Marys in shad SFMP for recreational harvest, and apply the Altamaha sustainability metric, triggers and management response to those systems.
FL	River Herring	St. Marys: No SFMP, no monitoring	1) Implement catch and release only regulations for river herring statewide, or 2) develop an Alternative Management Regime justifying harvest regulations. Take management consistency with Georgia into account.
	River Herring	St. Johns system: no SFMP, some monitoring	1) Implement catch and release only regulations for river herring statewide, or 2) develop an alternative management plan justifying the statewide harvest regulations.
	Shad	St. Johns system: monitoring not representative of all tributaries	Revise the shad SFMP to include all tributaries, and add language for how metrics from monitored sections will apply across the system tributaries.
	Shad & River Herring	Pellicer, Tomoka, and Nassau Rivers: No SFMP; no monitoring; no shad or river herring	1) Implement catch and release only regulations, or 2) describe in SFMP/or Alternative Management Plan that these systems are not part of the alosa range.

Atlantic States Marine Fisheries Commission

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Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Shad and River Herring Technical Committee Webinar and Conference Call Call Summary

Thursday, September 12, 2019
9:00 am – 12:00 pm

TC Attendance: Ken Sprankle (Chair, USFWS), Mike Brown (ME), Mike Dionne (NH), Brad Chase (MA), Patrick McGee (RI), Robert Adams (Vice Chair, NY), Brian Neilan (NJ), Josh Tryninewski (PA), Ellen Cosby (PRFC), Eric Hilton (VA), Holly White (NC), Jeremy McCargo (NC), Bill Post (SC), Jim Page (GA), Ruth Haas-Castro (NOAA)

ASMFC Staff: Jeff Kipp, Caitlin Starks

Additional Attendees: Sean Ledwin (ME DMR), Megan Ware (Maine DMR)

The Shad and River Herring Technical Committee (TC) met via conference call and webinar to address two items:

1) Review and provide a recommendation on Maine's proposal to modify their river herring Sustainable Fishery Management Plan (SFMP); and
2) Concerning the October 2017 Board task regarding improvements to Amendments 2 and 3, review the TC task group's recommendations for resolving identified harvest and monitoring inconsistencies with the Fishery Management Plan (FMP), and discuss next steps for completing the task.

Summaries and recommendations for each discussion topic are included below.

Review of Maine Proposal for Modifications to River Herring SFMP

Mike Brown of Maine DMR presented a proposed addendum to the state's SFMP for river herring. Maine proposes to allow limited harvest in six municipalities with exclusive river herring harvest rights with limited data time series (3-12 years), in addition to those currently allowed in their SFMP. In each municipality, a single harvester would be allowed modest harvest during a preliminary five year period while the data time series is expanded. In all open fisheries, three consecutive closed harvest days per week would be maintained to allow for escapement, and harvest would not occur until after May 18 to allow escapement of older spawning adults. Harvest would also be capped at 25% of the time series mean (TSM) run size, recreational fisheries above the point of commercial harvest would be closed.

To ensure sustainability, the plan would establish an annual escapement threshold of a minimum of 235 fish per surface area acre. The proposal also specifies sustainability criteria of a 20-percent repeat spawning ratio, mortality (Z) estimates of < 1.0, and an age structure that demonstrates the presence of older aged fish.

Maine's proposal to open these additional limited fisheries is based on improvements in returns given recent restoration efforts and based on Maine's unique potential for sustaining these efforts statewide. The state also believes it will provide incentive to local communities to implement and to continue restoration actions for river herring.

The TC discussed the proposal and highlighted a few concerns. First, the TC highlighted that one of the proposed

runs, Meddybemps Lake, did not achieve the sustainable production target of 235 fish/acre in any of the four years of available data. Maine explained this run was included in the proposal because there are plans underway to remove a significant passage obstruction, after which the state believes the run size will increase to reach the target. The TC came to consensus that the Meddybemps Lake run should not be opened for harvest until after it has met the sustainability target for more than one year, and it should be removed from the proposal at this time.

Multiple TC members expressed concern about the length of the time series of available data for several of the proposed fisheries. In past evaluations of SFMPs, the TC had generally accepted 10 years as the minimum time series needed to demonstrate stock sustainability. Several members agreed a single generation of fish (less than seven years of data) is not enough to provide a good understanding of stock health, and were uncomfortable with the proposal to open harvest on the runs with shorter time series. The TC agreed that the three runs with time series under seven years should be removed from the proposal until more data is available. In addition, the group agreed to have an in depth discussion on the appropriate number of years of data that should be available before opening harvest in a system, but did not agree on a number at this time.

A number of TC members shared the concern that the proposed harvest limit of 25% of the TSM was too liberal for some of the smaller runs, especially with limited data. One TC member suggested that rather than base the harvest level off run size over the entire time series, it could be based on run size after passage improvement or restoration projects have been implemented. The TC agreed it would be appropriate to use a starting harvest rate of 15% of the run size (following restoration events in systems where they have been implemented) and a higher harvest rate could be considered once a run meets its established production goal for three consecutive years.

Based on mortality estimates for existing fisheries that are doing well, the TC agreed the proposed sustainability criterion of Z-estimates < 1.0 may be unachievable. In the river herring stock assessment, Z-estimates between 2 and 3 were indicative of stock decline, so the TC recommended Maine use a Z-value more consistent with the stock assessment results.

Taking into consideration the concerns addressed above, as well as the strict measures Maine proposed for managing and monitoring these fisheries, the TC recommended Maine revise their proposal to remove Meddybemps Lake, Chemo Pond, and Pushaw Pond, and incorporate the recommended changes for the remaining three runs. They also asked for the proposal to include more detail on the criteria for meeting sustainability targets (on average or for several consecutive years) and the types of management responses that would be taken if sustainability targets are not met. Maine agreed to send the revised proposal back to the TC with these changes. **The TC recommends Board approval of Maine's proposal with the specified revisions.**

Review of Task Group Recommendations regarding October 2017 TC Task

Background:
In October 2017, after the TC and the PRT identified several cases of state management and monitoring programs inconsistencies with the requirements of Amendments 2 and 3 to the FMP, the Board tasked the TC to develop proposed improvements to Amendments 2 and 3 with regard to the following items:

1. Management and monitoring of rivers with low abundance and harvest of shad and river herring
2. Standardization of Sustainable Fishery Management Plan (SFMP) requirements: content, metrics, and management responses to triggers
3. Incorporation of stock assessment information into SFMPs and discussion on the timeline for renewing plans
4. Clarification of *de minimis* requirements as they pertain to SFMPs
5. Review of the number of years of data required before developing a SFMP

In November 2018, a TC Task Group was established to compile information from the states on management and monitoring, develop draft recommendations for resolving each case of inconsistency with Amendments 2 and 3, and discuss potential improvements to the FMP related to the issues identified. The Task Group developed a database of management and monitoring programs by river system, and a document detailing each area of concern as well as potential options for resolving each inconsistency. Generally, the Task Group identified three types of inconsistency and provided consistent recommendations for those categories as follows:

1. Tributaries of river systems that do have SFMPs and monitoring, but the tributaries are not explicitly addressed in the SFMP
   Recommendation: Include tributaries of larger systems under the SFMP for the mainstem, and apply management metrics and responses to those tributaries
2. Rivers with harvest addressed by a SFMP, but with no or insufficient monitoring to support sustainability metrics
   Recommendations: Apply management metrics and response from other appropriate monitored system(s), or implement catch and release only regulations
3. Rivers legally open to harvest without a SFMP and/or monitoring, but where no harvest of shad or river herring is suspected
   Recommendations: Consider development of an alternative management regime, or implement catch and release only regulations

The TC Task Group also noted in Florida there are several rivers (Pellicer, Tomoka and Nassau) that the state does not consider to be part of the shad or river herring ranges. The state does not have any data available on alosine presence in these rivers. The TC recommended the FMP be modified to redefine the shad and river herring ranges, such that rivers excluded from the alosine range would be exempt from the FMP requirements.

The TC reviewed the work of the Task Group and agreed with all of the draft recommendations put forward to the states to resolve regulatory inconsistencies. Detailed descriptions of each case and the associated TC recommendations can be found in the *Technical Committee Report on Inconsistencies with Amendments 2 and 3.* The TC acknowledged that the states would need to submit any changes to their SFMPs, new SFMPs, or new Alternative Management Regime proposals to the TC for evaluation. The TC requested each state inform the TC Chair and ASMFC staff of their expected changes and timeframe for submitting their proposals.

The TC also considered the Task Group's suggestions for improvements to Amendments 2 and 3. First, the Task Group discussed the idea of allowing states to maintain a low recreational bag limit in areas with limited monitoring as an alternative to requiring catch and release only regulations. The group also proposed modifying the required monitoring tables in each of the amendments to provide more clarity and consistency in the requirements. Another suggestion was to require more definitive management responses to sustainability metrics in SFMPs. Lastly, the group proposed adding language to the Alternative Management Regime section of the FMP to provide more detailed guidance for when and how this option can be applied. Due to time limitations the TC was unable to come to any consensus recommendations on these ideas, and plans to have a dedicated discussion on potential FMP changes at a future meeting.

Addendum to the State of Maine Sustainable River Herring Fisheries Management Plan

SUMMARY

Maine Department of Marine Resources recommends that ASMFC consider a limited fishery at three locations based on improvements in returns given recent restoration efforts and based on Maine's unique potential for sustaining these efforts statewide. This document describes criteria that can be utilized to demonstrate limited harvest opportunities for some runs currently under restoration. The goal of this addendum is to provide incentive to local communities to implement and to continue restoration actions for river herring. Costly and lengthy monitoring requirements are an impediment to future restoration and data collection efforts where the decision to invest in fishways or their monitoring makes the best of the economic and cultural opportunities that a timely harvest provides. The benefits of a small harvest are continued community support for restoration efforts statewide, data collection, educational programs and stewardship of river herring populations that the DMR is unable to accomplish on a regular basis. Benefits of continued community involvement will ultimately determine the amount of data available to the DMR and ASMFC to track and monitor river herring populations coastwide and the eventual success of these restoration programs.

INTRODUCTION

River herring (*Alosa pseudoharengus* and *Alosa aestivalis*) are native to all coastal waters of Maine. Anadromous fisheries resources are a historic part of Maine fishing communities and coastal towns. The unique management and harvest of alewives and blueback herring in Maine, and the northeast in general, promotes a close connection between these species and the coastal communities where they are harvested. Restoration and stewardship of this important fishery resource continues to be one of the top priorities for Maine's coastal towns. Providing the most suitable upstream and downstream passage is critically important to towns that maintain their historical harvest rights to this resource and for those towns that hope to harvest fish in the future under Amendment 2.

Stewardship of Maine's river herring resources has occurred for the past two centuries. Citizens relying on anadromous fish for food, income and industrial products demanded fish passage over an ever-increasing number of dams that were being constructed on the migratory pathways. Whether these dams facilitated log drives, powered mills or produced power to run factory machinery, they all blocked fish passage and required fishways. Unfortunately, there were times when fishway laws were not enforced and the fishways that were built were ineffective or environmental conditions had become so degraded that the fish could not survive to use any fishways that were provided.

During the 1970's there was a revival of restoration interest and effort that continues today in Maine. In addition to the ongoing management of municipal runs that the towns harvested, Maine's larger rivers also benefitted from upstream and downstream passage for species of anadromous fish impacted by hydropower development and modernization. Today upstream and downstream passage exists on Maine's ten largest rivers and many of their tributaries. Providing for or improving passage has increased river herring returns statewide. The spawning population of river herring that returned to Maine in 2018 was estimated to be 25 million fish, most of which was the result of recent work by the

State of Maine, federal agencies, municipalities, NGO's, and local partners. Maine's history, economy, communities and natural environment now provide this state with unique opportunities to further sustain even more successful restoration efforts if more communities can be incentivized to participate.

CURRENT MANAGEMENT

River herring resources are managed on a watershed or sub watershed basis depending on location and size of the run. All river herring harvested are distinct and separate populations native to the watershed where harvest occurs. There are 36 municipalities in Maine that hold exclusive harvest rights. Twenty-two of these municipalities are eligible to harvest under our current sustainable fisheries management plan. The State of Maine permits each municipality, based on its possessing exclusive harvest rights, to harvest fish at a specific location utilizing one harvester per system. For each of these existing eighteen fisheries there is one licensed fisherman and associated crew that has sole access to the harvest. Commercial harvest is limited to one location and no additional harvest is permitted upstream of the harvest site for either commercial or recreational use. Most often harvest sites are located at the head of tide or at an existing fish passage facility. By limiting the number of harvesters, harvest locations and fish populations targeted for harvest, the population responses to management actions are easier to quantify.

River herring populations respond positively to restoration and management actions where habitat, passage and harvest practices support population growth. Stocking small numbers of pre-spawn fish often produce large returns of fish back to the system within four to six years. Several restoration projects started after 2000 now produce one million to five million fish annually. Several harvested runs average more than one million fish each year and provide income to coastal communities and fishermen. The DMR is confident that current restoration efforts will continue to grow if properly managed and supported by the communities.

SIGNIFICANT COMMUNITY RESTORATON EFFORTS

Maine is fortunate to have an active and successful statewide anadromous fish passage and habitat restoration program. The DMR estimates that 25 million river herring returned to Maine's inland waters to spawn in 2018. The population is expected to continue to grow as additional habitat projects are completed and new fishways are installed across the state. There are presently six active fish passage projects scheduled for 2019, plus a FERC order to reopen an existing fishway that has been blocked to fish passage until this year. These fish passage and restoration projects will add 53.7 square miles of river herring spawning habitat in Maine.

There are more than 50 additional waters that are under consideration for assessment and restoration programs. These historical habitats are spread along Maine's 3,476 miles of coastline and inland by as many as 150 miles. The geographic distance and limited number of sea-run fisheries staff requires that the department work closely with local communities to conduct many of the biological data collection and restoration activities associated with realizing river herring population growth in Maine. These communities also assume the roles associated with fund raising, grant writing and construction oversight through local non-profit organizations or through there own town administration and public works

crews. This model has worked very well and will be the model that Maine will continue to use for its restoration efforts. Community support and partnership are the key to achieving the resiliency needed to achieve Amendment 2 goals in the state of Maine.

Restoration projects vary based on size and complexity. Construction costs range from $100,000 to several million dollars per project. Data collection, run monitoring, debris removal requires additional funding and staff time after the initial fishway construction. The five existing DMR staff are unable to conduct monitoring at these locations without local assistance. The data collection associated with development of a sustainable harvest plan for each site, along with annual sampling poses another layer of complexity to achieving restoration in all existing historical river herring habitat with in Maine. Without community involvement to support these efforts Maine will not be able to continue to expand its existing river herring populations.

State and federal resource agencies and national and local nonprofit organizations provide most of the funding to restore fish passage. Local town governments and volunteers cover the expenses of sampling and operating fish passage after construction. Several small towns and coastal communities continue to support and lead on the ground restoration efforts along the coast with the goal of harvesting river herring. Volunteer efforts are critical for fishway construction, collecting biological samples, clearing beaver dams to provide passage and conducting annual fishway counts. Volunteer efforts have continued to dramatically increase the impact of the overall restoration of Maine's river herring populations within small coastal watersheds.

The coastal towns of Arrowsic, Penobscot and Phippsburg and many others have active river herring restoration and monitoring programs. In addition to providing funds for fishway construction, these communities continue to make annual financial commitments through town government and/or volunteer efforts. Many of the monitoring efforts have been ongoing for several decades. Examples of such collaborative work of the aforementioned towns are as follows:

The coastal town of Arrowsic has a population of 446 residents. More than 50 of the residents are currently active or have been active in the restoration and monitoring of the Sewall Pond river herring population. In 2014 the Maine Department of Transportation removed the last obstacle to fish passage by replacing an old culvert with a suitable fishway. The Conservation Committee has collected biological data from Sewall Pond for the DMR for 12-years.

The town of Penobscot, population 1,263 residents, in conjunction with state, federal, NGO's and local partners removed the dam at Wight's Pond and replaced it with a rock ramp, that is more natural. The total project cost to provide this unobstructed passage was $346,250. The town continues to budget funds for the alewife committee to use for the benefit of its river herring resource and to provide count and biological samples to DMR. Funds are allocated at the annual town meeting and are subject to the approval of the town voters. The allocation of these funds from the budget passes with unanimous approval each year. This demonstrates the continued commitment to support the river herring populations within this town. The town has actively managed this population and facilitated passage because of its importance to the town and those that utilized the resource. Many towns, including the town of Penobscot, have extensive local knowledge of these resources and how they were managed to utilize and conserve these populations.

Several volunteers remain committed to assist with monitoring the annual run at Wight's Pond and Pierce Pond, both in the town of Penobscot. In addition to mandatory monitoring of alewife runs associated with management requirements, Penobscot received funding for purse and beach seine sampling gear that is being used to study juvenile and sub-adult alewife life stages in the ponds and the Bagaduce Estuary. Working with local NGOs and multiple university professors, the waters within the town of Penobscot are part of a scientific study to determine the relative productivity between ponds and how that information can be best used to determine future harvest levels. This work has implications at the local level to direct future harvests and at a species wide level to answer questions that scientists and managers have identified as important data gaps. This effort demonstrates the capacity of local resources that, because of socio-economic ties that this addendum leverages, are committed to restoring this species for sustainable harvest and other natural resource benefits.

Center Pond in the town of Phippsburg is typical of a small coastal pond with a growing river herring resource. With a population of 2,216 residents, it has maintained an active alewife committee since the late 1970s'. Located near the mouth of the Kennebec River, a major challenge facing this small coastal pond is that river herring access is subject to the tidal stage of the Kennebec River which makes it accessible for only 48% of the tide. The town has provided or pledged more than $124,521 in town and private funds toward a new $300,000 fishway to improve passage into and out of Center Pond. Additionally, the town budgets annual funds to the alewife committee for the counting and tagging of fish. The volunteer alewife committee continues to collect data to better manage the river herring population and to meet the sustainability goals of the Maine SFMP. With an alewife run dating back to the 1800's and hard return data since 2012, Center Pond continues to be a critical study site because of its unique location very near the mouth of the Kennebec River and its three consecutive years of fish tagging data.

Within the past decade dozens of restoration projects targeting river herring, American shad and Atlantic salmon have started to witness a dramatic return of spawning river herring. Restoration projects like those described above vary in size and impact, from removing head tide dams that produces millions of fish, to small stream improvements of coastal lakes and ponds that produce thousands of fish. All of these restoration projects are significant, both in terms of the fish produced and in the significant amount of community support they provide for future restoration projects. Numerous other restoration efforts are currently underway, either in planning stages or actively under construction, with runs anticipated to grow by several million fish within the next five years.

DATA NEEDS

During the 2012 River Herring Assessment, river herring were determined to be data deficient, complicating the ability to fully assess these species coastwide. There is a need to continue to collect fisheries independent data for river herring populations that are not currently commercially harvested. Many unharvested river herring populations are under restoration and benefit from monitoring during the spring spawning run and fall migration of juveniles downstream. The towns and volunteers that monitor these populations deploy and operate counting stations, collect biological data (scales, species, sex, length, weight) and bycatch information that can be used to meet ASMFC data needs.

Biological samples and harvest data are collected annually from all commercially harvested river herring populations. Data collection and landing reports are mandatory requirements for any municipality that

commercially harvests under its exclusive harvest rights. For populations that do not have a dedicated harvest, data collection becomes the responsibility of the State of Maine DMR. Because of state budget constraints, Maine's expansive 3,478-mile coastline and demands for current data collection, the responsibility of biological and run count data collection rests with those towns focused on obtaining/utilizing their exclusive harvest rights. It is the volunteers, NGO's and others that are willing to partner to collect biological data that are doing the work. Without the continued assistance from local towns and volunteers most of Maine's river herring populations would not be monitored at current levels.

The data collected by volunteers and NGO's provide basic information to assess and track river herring populations. The DMR analyzes scales and additional data collected to calculate and track population metrics including species, age structure, sex ratio, repeat spawning, length at age and mortality estimates. Without assistance from those outside of state government most noncommercial runs would not be monitored on an annual basis.

FUNDING CONTINUED RESTORATION EFFORTS

The Atlantic States Marine Fisheries Commission manages river herring coastwide. Under Amendment 2 individual states may develop alternative state management strategies to restore river herring populations. Alternative state management approaches are beneficial because they allow flexibility for state fisheries managers to achieve monitoring, research and population recovery goals outlined in Amendment 2. The State of Maine proposes an addendum to the existing SFMP to furthers encourage continued local municipal restoration and sustainable management of river herring resources as a goal for increasing restoration success in Maine.

Maine will benefit from a state management program that builds upon restoration success experienced by the towns and the investment that municipalities continue to put into restoring river herring runs. A limited commercial river herring fishery at these locations will: incentivize volunteers and engage fishermen in restoration and sustainable harvest practices; provide educational programs for children and adults; allow a limited harvest which will provide resources to the state or town through the DMR Migratory Fish Fund; demonstrate to taxpayers the tangible rewards of such restoration projects; provide a limited additional source of lobster bait for that industry which is facing severe bait shortages because of recently curtailed herring catch limits.

Many towns that monitor river herring resources within their municipality have an established alewife committee or town conservation commission that oversees and coordinates the town's interaction with the local river herring resource. Participants are typically volunteers or current town employees. Funding programs as complicated as run counts and biological data collection can be problematic. Many towns lack the equipment necessary for expanding data collection, recording environmental conditions and counting river herring runs. The Migratory Fish Fund could be used to continue restoration efforts statewide by providing equipment, staff and standardized training necessary for data collection.

In cases where harvest rights are being established or restored, a municipality can exercise its commercial harvesting rights only after approval by the ASMFC Management Board. The provisional addendum of these three waters to the existing Maine Sustainable Fisheries Management Plan will

provide a modest incentive for community members to continue restoration efforts without risking significant impact to the resource.

MUNICIPAL GOALS

The collective goal of the municipalities is to continue building public support for river herring restoration, education, management and monitoring. With the mandatory closures required by Amendment 2, several municipalities have lost the volunteer support and ability to monitor and harvest these resources. Collectively, these three municipalities strongly support the opportunity to harvest a small number of fish to be sold with revenue going to fund educational programs, collect additional data and maintain the existing migratory corridors and fishways. A limited harvest will support fisheries dependent data collection, supply a limited source of bait and income for commercial fishermen, food for a small number of town residents and a very modest revenue return for some of the communities' tremendous time and money invested in the restoration, which can add up to thousands volunteer hours and dollars respectively. Furthermore, it will promote and sustain a network of restoration proponents, advocates and volunteers and could become a model for other states.

The Maine DMR supports this approach and is prepared to oversee funding, data collection efforts, educational training programs and provide any other assistance that it may be able to offer. The collective benefits to the municipalities are support toward meeting their goals of funding educational programs, collecting additional data, increasing the existing river herring populations and providing a limited amount of bait for commercial fishermen. DMR and ASMFC will benefit from data provided by the municipalities to enable tracking of recovery progress through standardized fisheries dependent and fisheries independent data collection. Some municipalities have been collecting data for several years and these data will provide valuable population trend information for the next full ASMFC river herring assessment in 2022.

IMPLEMENTATION OF AMENDMENT 2

Implementation of Amendment 2 requires a significant amount of data to demonstrate that individual populations of river herring are sustainable. Historical data collected for most river herring populations prior to Amendment 2 consisted of harvest weights and numbers along with limited amounts of scientific work conducted over the past 40 years. In many cases the limited fisheries dependent data available were insufficient for developing comprehensive management plans or for use in a coastwide assessment.

In 2008 the nonprofit association Alewife Harvesters of Maine began collecting biological samples and count data, at their own expense, in cooperation with the Maine Department of Marine Resources, to meet the anticipated requirements of Amendment 2. These data were used to develop the framework for the first sustainable fisheries management plan for river herring. Municipalities that are currently harvesting river herring are required to collect data to improve the management of this fishery. Municipalities that currently possess exclusive harvest rights and cannot harvest, or those towns that hope to gain access to newly restored runs, are also collecting data to develop sustainable management plans as their restoration programs continue. Biological data and count information obtained from these populations will originate from these towns and volunteer groups willing to collect data. Within some communities the data collection requirements necessary to meet the exiting data standards applied by

ASMFC are considered overly burdensome in years required and counterproductive to restoration progress and community support.

ASMFC MANAGEMENT PROGRAM IMPLEMENTATION

In Amendment 2 the ASMFC Management Board approved the following commercial and recreational fisheries management measures defining sustainability and providing guidelines for data collection.

"Systems with a sustainable fishery are defined as those that demonstrate their alewife or blueback herring stock could support a commercial and/or recreational fishery that will not diminish potential future stock reproduction and recruitment."

This addendum to the current SFMP proposes to assess the merits of a provisional process to allow limited harvest of river herring while continuing restoration efforts on rivers and streams that do not meet the current SFMP criteria or do not meet minimum time series data requirements for meaningful assessment. Within a five-year period, the three municipal waters selected for inclusion in this program must meet the following sustainable criteria for their runs to be added to the existing SFMP. These criteria are: 1) escapement of at least 235 fish per acre, 2) 20-percent repeat spawning ratio, 3) Z-estimates of < 2.0 for repeat spawning fish, 4) an age structure that demonstrates the presence of older aged fish (ages 3-7).

All the river herring populations in this proposed addendum to the SFMP have experienced varying levels of restoration success. While none of the proposed fisheries achieve all the sustainable fisheries standards currently established in the Maine River Herring SFMP or those developed after the Technical Committee review in 2017, the proposed harvest rates in this addendum are capped at 15% of the time series mean and should not permanently affect the overall restoration of these runs. The ASMFC Technical Committee will review the progress of these three runs toward meeting Maine SMFP standards. The Technical Committee may propose additional management measures or propose to close these fisheries during the 2022 SFMP review period.

Proposed Harvest @ 15% of Time Series Mean				
		Sewall Pond	**Center Pond**	**Wight's Pond**
Years of Data		12	7	8
Lake/Pond Surface Area		43	75	135
Average Run Size		19,013	27,702	45,503
@.15 TSM	Number	2,852	4,155	6,825
	Bushel	24	35	57

Restoration projects will continue at all three locations where fish are harvested from the existing population under this proposed addendum. The small commercial harvests proposed are not anticipated to minimize effects of restoration progress where population growth, age structure and fishing mortality are limiting factors of meeting restoration goals. While the limited commercial harvests will likely not prevent the subsequent success of these restoration programs it will delay restoration progress. Stricter biological controls and monitoring will track each population and DMR or the ASMFC Technical

Committee may reduce harvests below 15% prior to the end of the five-year period. Fisheries targeting river herring stocks that do not meet each of the sustainability targets needed for inclusion in the Maine SFMP at the end of the five-year period will close.

The benefits of the proposed small harvests are: continued community support for restoration efforts statewide, data collection, educational programs and stewardship of river herring populations that the DMR is unable to accomplish by itself or monitor on a regular basis. These continued benefits of community involvement will ultimately determine the amount of data available for DMR's and ASMFC's tracking and monitoring of river herring populations coastwide and the eventual success of these restoration programs. Furthermore, the positive effects of this proposed addendum are the continued volunteerism and local support of these fish populations.

1. Sustainability Threshold

Sustainability Definition – For the fisheries within this addendum sustainability will be defined as follows: annual release of at least 235 fish spawning fish per surface acre to provide an alewife population capable of increasing annual river herring run size; the run must demonstrate a repeat spawning ratio of 20 percent; Z-estimates of < 2.0 calculated for repeat spawning fish; an age structure that demonstrates the presence of older age fish (ages 3-7).

Monitoring to be Conducted to Support Target(s)
DMR fisheries staff will use annual escapement counts conducted by the municipality, volunteers or NGO and scale sample data (sex, age, mortality, repeat spawning, and species) to track relative health of these three river specific stocks. Additional data may come from the Bagaduce JAI survey conducted in the Bagaduce Estuary and DMR data collection and counts at these locations as time permits. Monitoring efforts will continue for all current commercial fisheries and for all directed commercial fisheries that propose to open in the future.

2. Proposed Rule-Making to Support Target(s)
Fisheries within the addendum that choose to participate in this limited fishery and do not achieve sustainability levels for spawning escapement, mortality estimates, repeat spawning ratio, age structure and run counts within 5 years will be closed. All recreational river herring fisheries will close to prevent additional harvest of spawning fish within the watershed. An assessment of each of the three fisheries in the addendum will occur prior to commencing the limited fishery the following year and once again after the conclusion of the harvest. The ASMFC Technical Committee will review restoration progress in 2022 as part of Maine's SMFP review.

3. Adaptive Management

a. Evaluation schedule

The Maine Department of Marine Resources conducts an annual review of all municipal fisheries plans. Many plans carry over year to year because they provide adequate protection for the river herring resource. However, this proposal requests an exemption from Amendment 2 sustainability requirements necessitating the need for more frequent review. Plan reviews will incorporate count data, escapement counts, spawning escapement, effort controls and results from analysis of biological data collected by the

municipality and analyzed by DMR. Plans will be reviewed at least twice each year for those municipalities in this addendum that choose this limited harvest. The first review will occur during the early summer to review data collected from the current harvest year. A second review will occur to assess downstream migration and develop harvest plans for the proceeding harvest season.

Once these fisheries meet the existing criteria in the current SFMP Addendum they will be forwarded to the Shad and River Herring Technical Committee for approval and addition to the formal SFMP. Additional runs will be proposed for a limited harvest if there is an active restoration program and the existing population can demonstrate continued growth and progress toward meeting sustainability metrics. The decision to add more waters for the Technical Committees review will be determined only after this program demonstrates that a limited harvest can occur during the restoration progress by providing three consecutive run counts greater than 235 spawning fish per acre.

b. Consequences or control rules

While the management objective within this addendum continues to recognize these populations are in recovery and any removal of spawning fish will impact production and future returns, it also at the same time recognizes tangible incentives for municipalities to continue their voluntary river herring recovery efforts. Under this addendum no harvest shall exceed 15% of the TSM measured in bushels. The TSM will be recalculated annually to incorporate changes in populations size during the five-year period. The assessment criteria used to evaluate population growth will be the same criteria used to evaluate existing commercially harvested populations. The Maine Department of Marine Resources will close those runs that do not meet the sustainability thresholds in this addendum during the five-year review period. The Maine Department of Marine Resources will reduce harvest from the allowed 15% TSM based on the following criteria used to measure progress toward achieving sustainability targets. The management responses to be taken if these sustainability standards are not met are outlined below:

1) Harvest will occur after May 18 to allow a proportion of the river herring run escape the fishery. All harvested fish must be accompanied by a receipt from the town indicating names of the seller/buyer, date, quantity and time of sale which is to be attached to the Annual Harvest Report at the end of the fishing season.

2) Towns that allow a recreational fishery must enumerate and subtract the recreational river herring harvest from their commercial catch allowance for the season. If there is a significant documented loss that occurs from poaching the commercial fishery will be closed.

3) Management changes will occur based on the following;

    A) Decreasing trends in running three-year averages of annual run counts.
    If the run demonstrates a declining trend in the running three-year average of annual run counts the fishery will close for the following year.

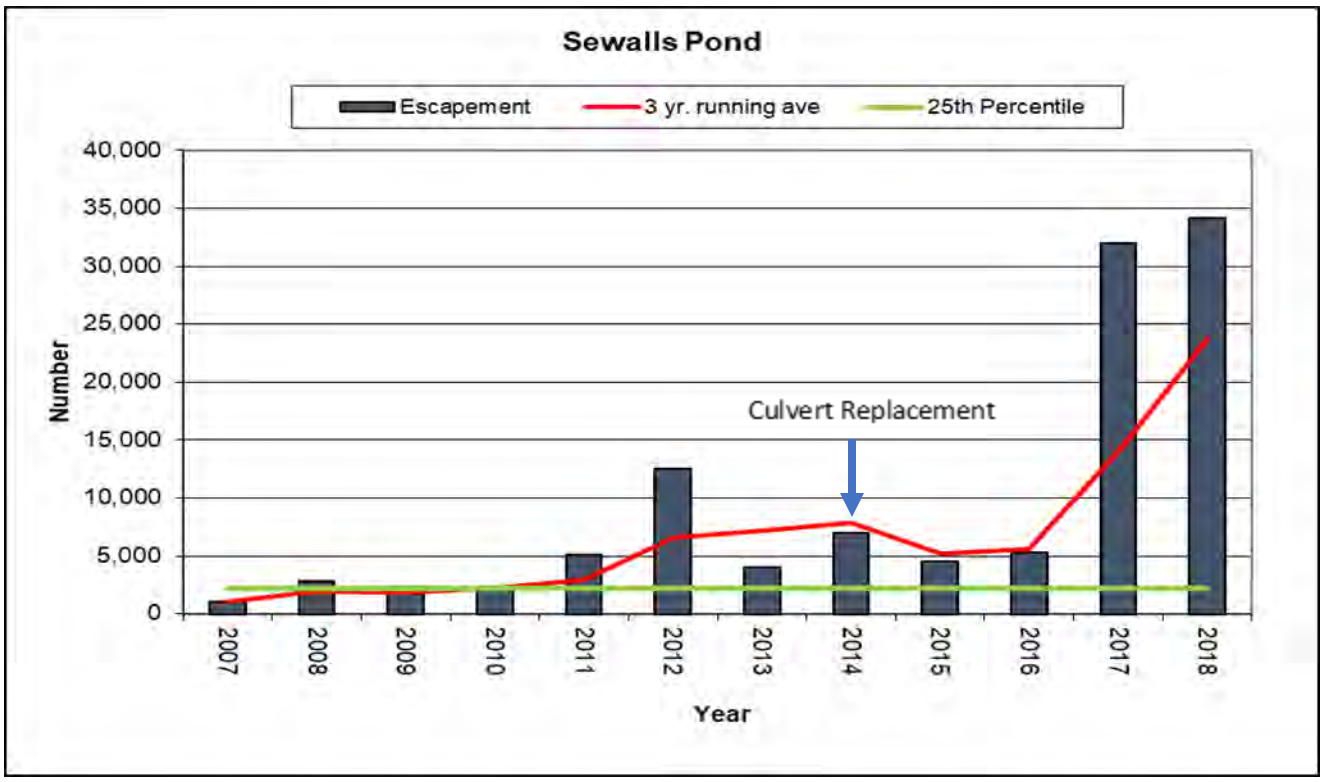
B) Increasing time series trends in total instantaneous mortality (Z) for repeat spawning fish. If the fishery does not achieve a Z-estimate of 2.0 or less for repeat spawners for the current year the fishery will be reduced by five percent of the TSM for the remainder of the five-year harvest period or until the Z-estimate falls below 2.0.

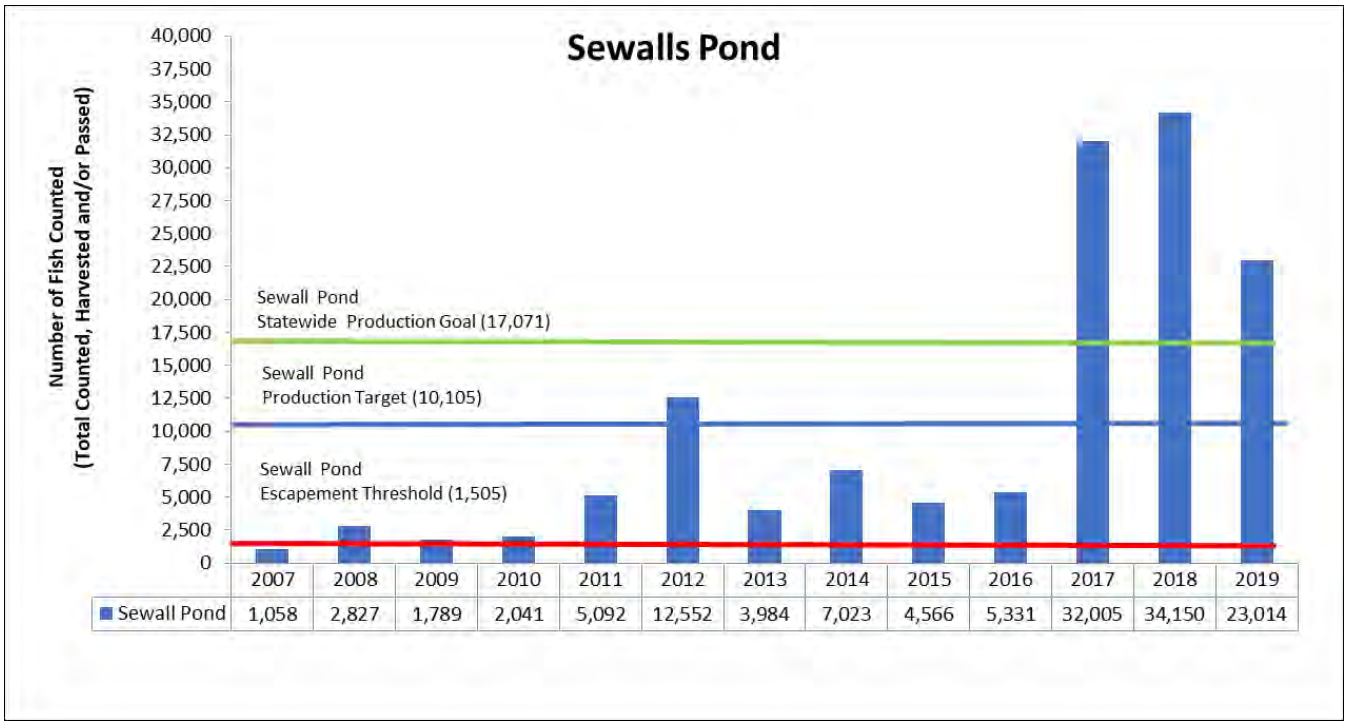
C) Decreasing time series trends in repeat spawning rates.
If the average number of repeat spawning fish for the TSM and sample year do not achieve 20 percent the fishery will be reduced by five percent for the remainder of the five-year harvest period or until either the annual repeat spawning rate or the mean for the time series exceeds 20 percent.

D) Decreasing time series trends in age structure.
River herring populations that that do not demonstrate the presence of fish ranging in age from three to seven years will be reduced by ten-percent at the end of the 2022 addendum review period.

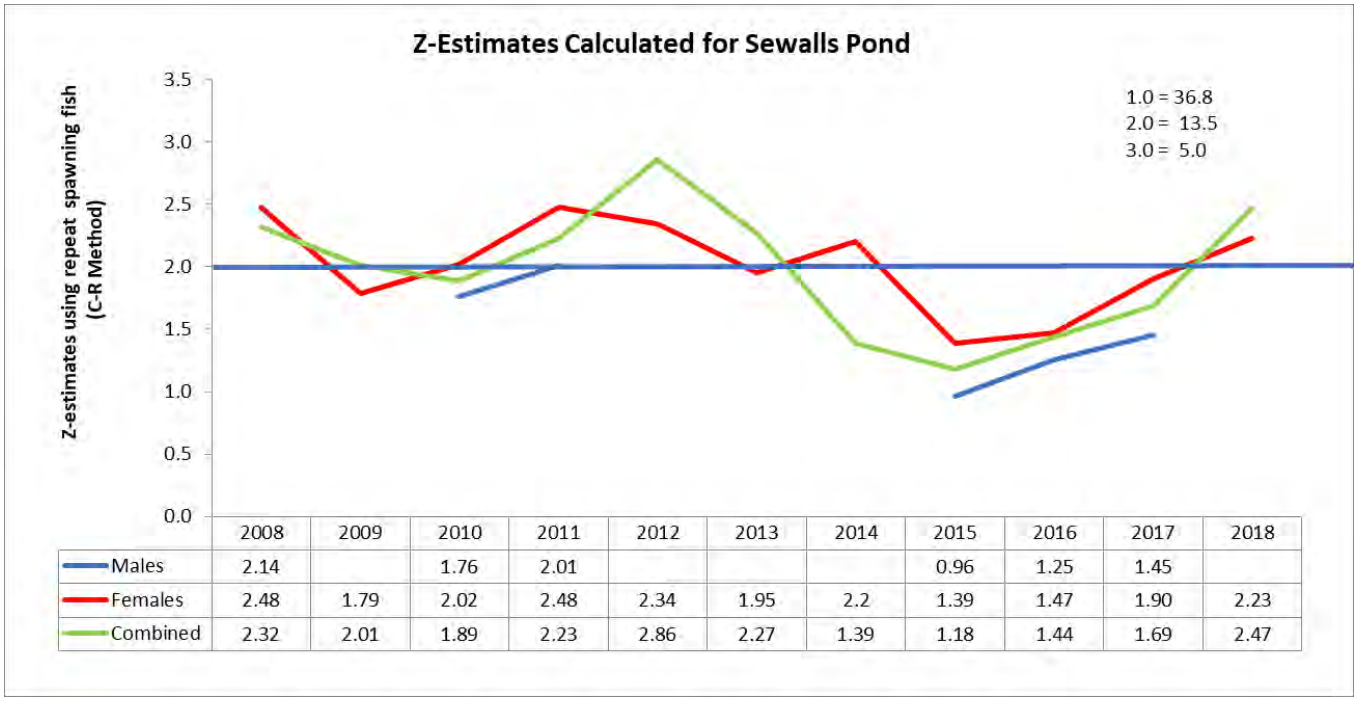
4) The release of a minimum spawning stock threshold of 235 fish/acre must be achieved annually. A commercial fishery that does not meet the minimum spawning stock escapement established for that system will be required to close the following season until fishery achieves the escapement goal for that year.

5) DMR and ASMFC Technical Committee fisheries staff will review age data, mortality rates, and repeat spawning rates and annual escapement derived from annual data collection to assess the need to suspend any fishery short of the five-year period.

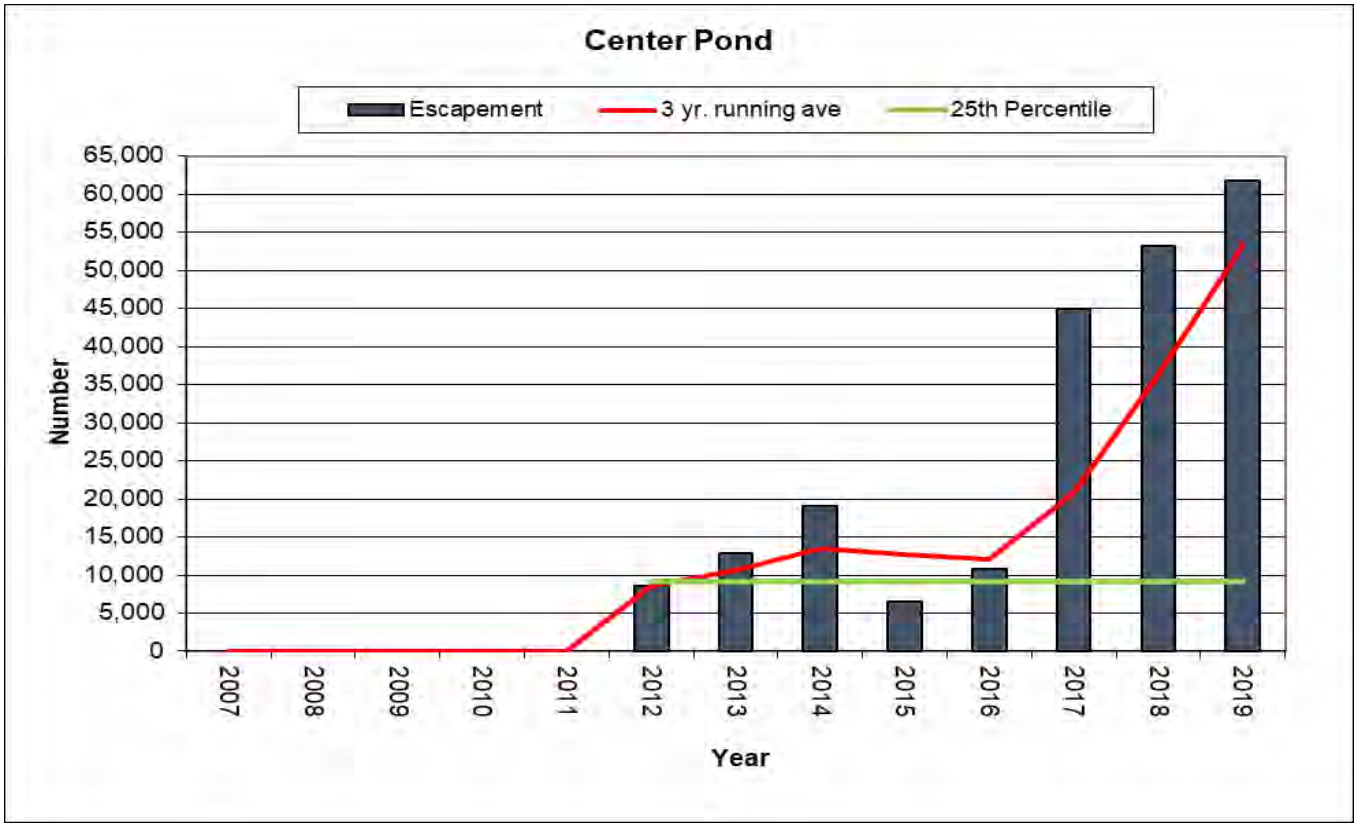


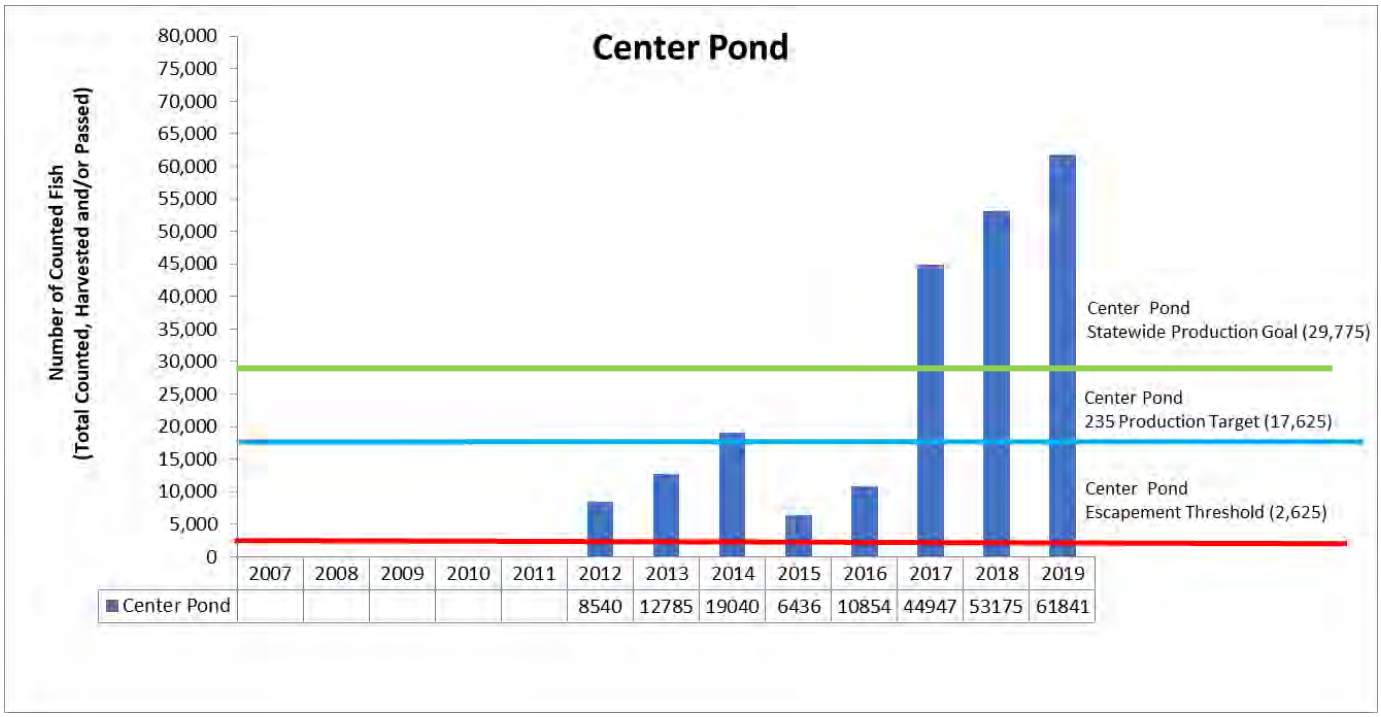


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sewall Pond	1,058	2,827	1,789	2,041	5,092	12,552	3,984	7,023	4,566	5,331	32,005	34,150	23,014

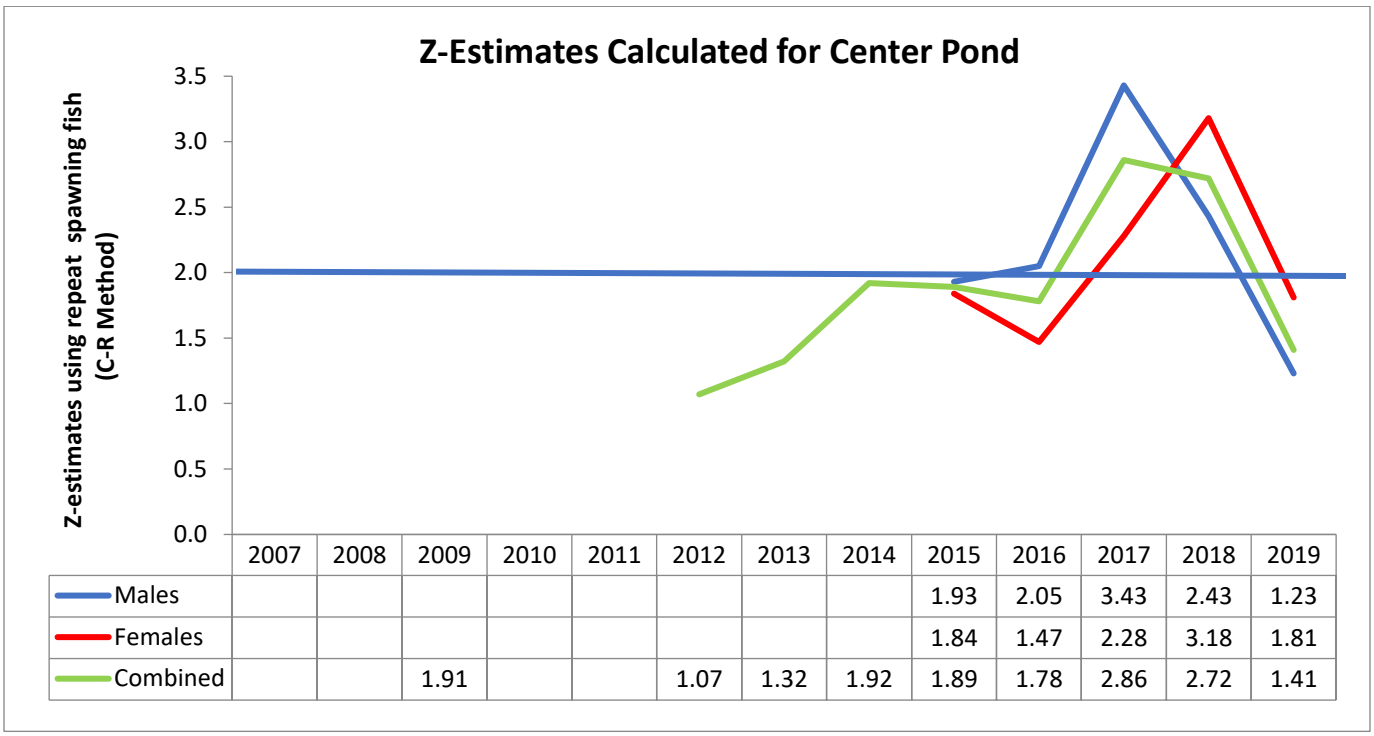


	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Males	2.14		1.76	2.01				0.96	1.25	1.45	
Females	2.48	1.79	2.02	2.48	2.34	1.95	2.2	1.39	1.47	1.90	2.23
Combined	2.32	2.01	1.89	2.23	2.86	2.27	1.39	1.18	1.44	1.69	2.47

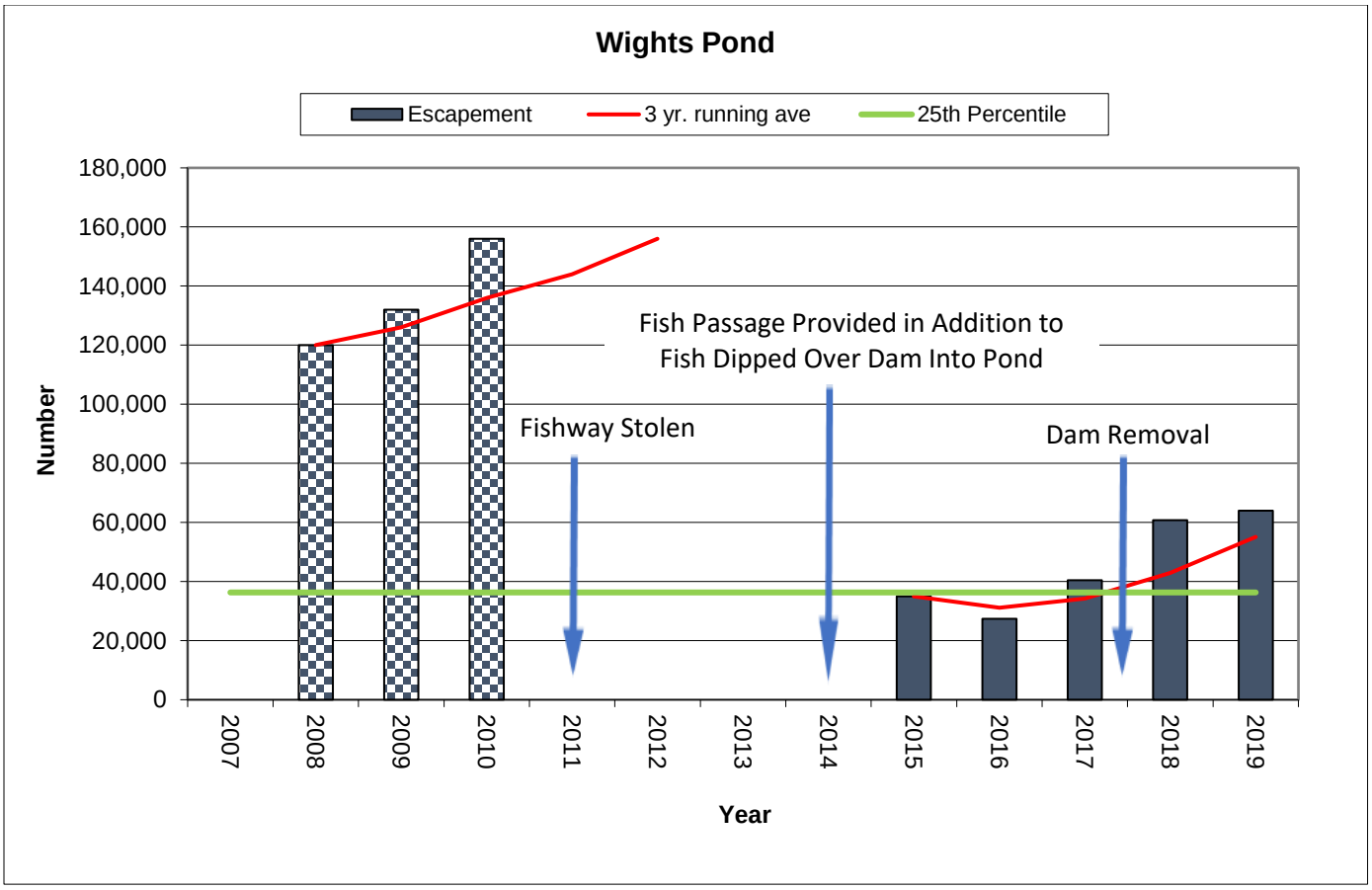


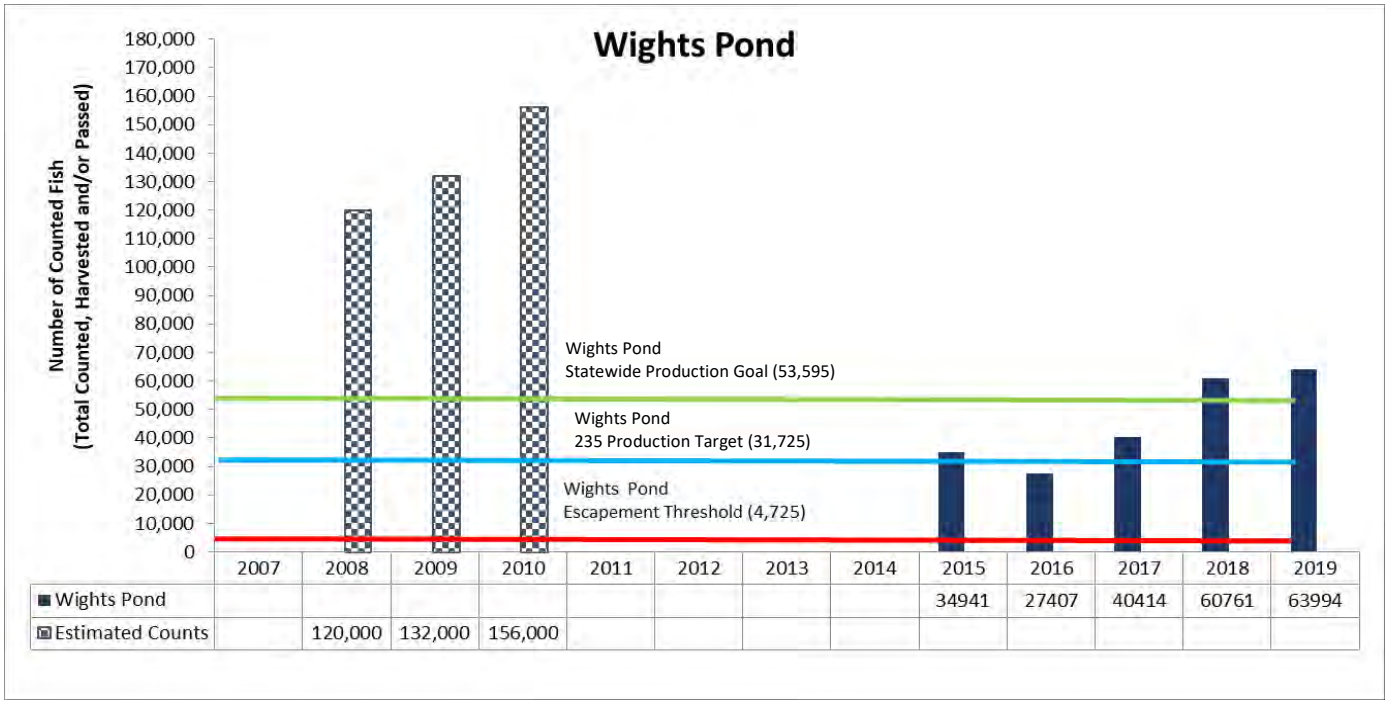


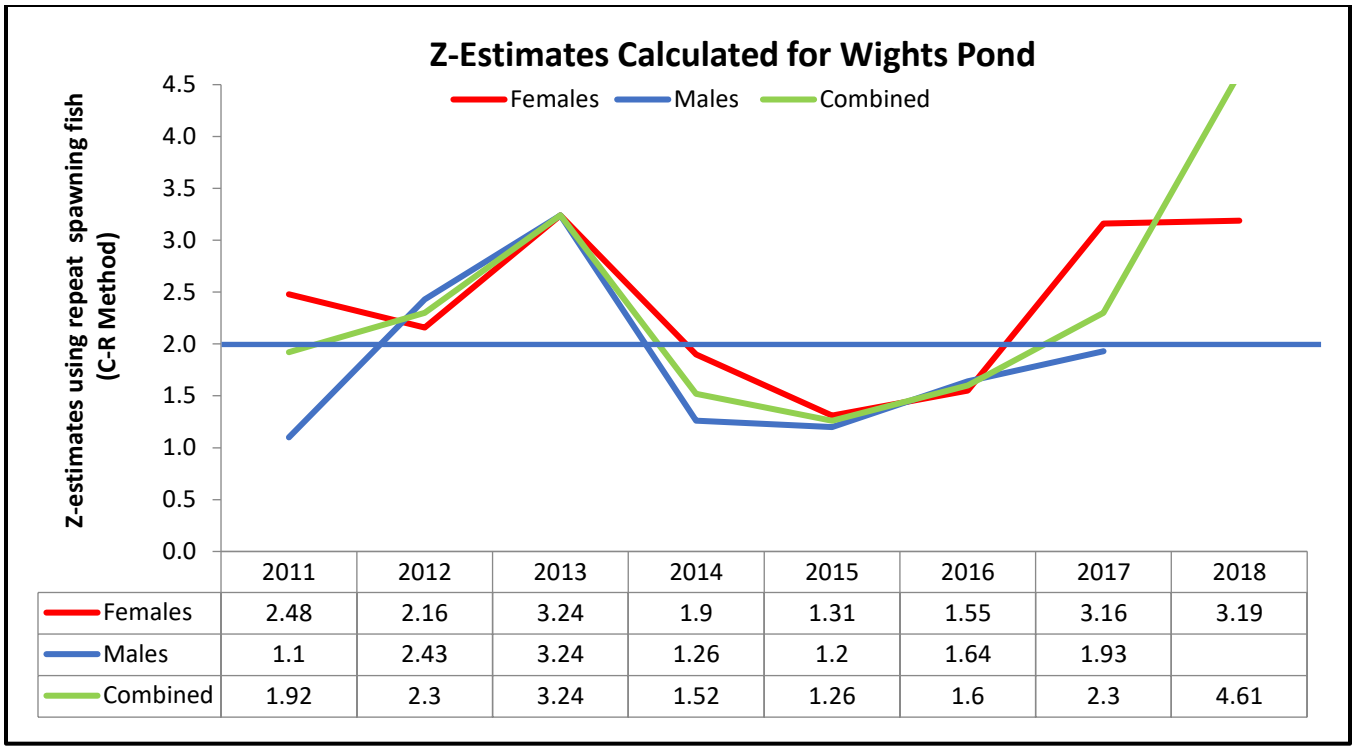
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Center Pond						8540	12785	19040	6436	10854	44947	53175	61841



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Males									1.93	2.05	3.43	2.43	1.23
Females									1.84	1.47	2.28	3.18	1.81
Combined			1.91			1.07	1.32	1.92	1.89	1.78	2.86	2.72	1.41


Wights Pond
Escapement
3 yr. running ave
25th Percentile
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
Number
Fish Passage Provided in Addition to
Fish Dipped Over Dam Into Pond
Fishway Stolen
Dam Removal
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
Year


Wights Pond
Number of Counted Fish
(Total Counted, Harvested and/or Passed)
180,000
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Wights Pond
Statewide Production Goal (53,595)
Wights Pond
235 Production Target (31,725)
Wights Pond
Escapement Threshold (4,725)
2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019
Wights Pond 34941 27407 40414 60761 63994
Estimated Counts 120,000 132,000 156,000



	2011	2012	2013	2014	2015	2016	2017	2018
Females	2.48	2.16	3.24	1.9	1.31	1.55	3.16	3.19
Males	1.1	2.43	3.24	1.26	1.2	1.64	1.93	
Combined	1.92	2.3	3.24	1.52	1.26	1.6	2.3	4.61

Draft for Board Review

REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN FOR SHAD AND RIVER HERRING *(Alosa spp.)* FOR THE 2018 FISHING YEAR

Shad & River Herring Plan Review Team
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October 2019

REVIEW OF THE ASMFC FISHERY MANAGEMENT PLAN FOR SHAD AND RIVER HERRING *(Alosa spp.)*

I. Status of the Fishery Management Plan

Date of FMP Approval:	October 1985
Amendments:	Amendment 1 (April 1999) Amendment 2 (August 2009) Amendment 3 (February 2010)
Addenda:	Technical Addendum #1 (February 2000) Addendum I (August 2002)
Management Unit:	Migratory stocks of American shad, hickory shad, alewife, and blueback herring from Maine through Florida
States With Declared Interest:	Maine through Florida, including the Potomac River Fisheries Commission (PRFC) and the District of Columbia
Active Boards/Committees:	Shad & River Herring Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Plan Review Team, Plan Development Team

The 1985 Fishery Management Plan (FMP) for Shad and River Herring was one of the first FMPs developed by the ASMFC. Amendment 1 was initiated in 1994 to require and recommend specific monitoring programs to inform future stock assessments—it was implemented in October 1998. A Technical Addendum to Amendment 1 was approved in 1999 to correct technical errors.

The Shad and River Herring Management Board (Board) initiated Addendum I in February 2002 to change the conditions for marking hatchery-reared alosines; clarify the definition and intent of *de minimis* status for the American shad fishery; and modify and clarify the fishery-independent and dependent monitoring requirements. These measures went into effect on January 1, 2003.

In May 2009, the Board approved Amendment 2 to restrict the harvest of river herring (blueback herring and alewife) due to observed declines in abundance. The Amendment prohibited commercial and recreational river herring harvest in state waters beginning January 1, 2012, unless a state or jurisdiction has a sustainable fishery management plan (SFMP) reviewed by the Technical Committee and approved by the Board. The Amendment defines a sustainable fishery as "a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment." Catch and release only fisheries may be maintained in any river system without an SFMP. SFMPs have been approved by the Management Board for Maine, New Hampshire, Massachusetts, New York, and South Carolina (Table 1). Amendment 2 also required states to implement fishery-dependent and independent

monitoring programs.

In February 2010, the Board approved Amendment 3 in response to the 2007 American shad stock assessment, which found most American shad stocks at all-time lows. The Amendment requires similar management and monitoring for shad as developed in Amendment 2 (for river herring). Specifically, Amendment 3 prohibits shad commercial and recreational harvest in state waters beginning January 1, 2013, unless a state or jurisdiction has a SFMP reviewed by the Technical Committee and approved by the Board. The Amendment defines a sustainable fishery as "a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment." Catch and release only fisheries may be maintained in any river system without an SFMP. SFMPs have been approved by the Board for Massachusetts, Connecticut, the Delaware River Basin Fish Cooperative (on behalf of New York, Delaware, New Jersey, and Pennsylvania), PRFC, North Carolina, South Carolina, Georgia, and Florida (Table 1). All states and jurisdictions are also required to identify local significant threats to American shad critical habitat and develop a plan for mitigation and restoration. All states and jurisdictions habitat plans have been accepted and approved.

Table 1. States with approved sustainable fishery management plans (SFMPs) for river herring or shad. Includes year of Board approval and year the Board approved the updated[1] SFMP.

State	River Herring SFMP	Shad SFMP
Maine	Approved (2010, 2017)	
New Hampshire	Approved (2011, 2015)	
Massachusetts	Approved (2016)	Approved (2012, 2019)
Connecticut		Approved (2012, 2017)
Rhode Island		
Pennsylvania		Approved* (2012, 2017)
New York	Approved (2011, 2017)	Approved* (2012, 2017)
New Jersey		Approved* (2012, 2017)
Delaware		Approved* (2012, 2017)
PRFC		Approved (2012, 2017)
Maryland		
Virginia		
North Carolina		Approved (2012, 2017)
South Carolina	Approved (2010, 2017)	Approved (2011, 2017)
Georgia		Approved (2012, 2017)
Florida		Approved (2011, 2017)

*Delaware River Basin Fish and Wildlife Management Co-op has a Shad SFMP, though Delaware and New Jersey are only states that have commercial fisheries. All states have recreational measures, with limited to no catch in the upper Delaware River (New York & Pennsylvania).

[1] SFMPs must be updated and re-approved by the Board every five years.

II. Status of the Stocks

While the FMP addresses four species: two river herrings (blueback herring and alewife) and two shads (American shad and hickory shad)—these are collectively referred to as shad and river herring, or SRH.

The most recent *American Shad Stock Assessment Report* (ASMFC 2007) identified that American shad stocks are highly depressed from historical levels. Of the 24 river-specific stocks of American shad for which sufficient information was available, 11 were depleted relative to historic levels, 2 were increasing, and 11 were stable (but still below historic levels). The status of 8 additional stocks could not be determined because the time-series of data was too short or analyses indicated conflicting trends.

Taken in total, American shad stocks do not appear to be recovering. The assessment concluded that current restoration actions need to be reviewed and new efforts need to be identified and applied. These include controlling fishing rates, improving dam passage, stocking, and habitat restoration. There are no coastwide reference points for American shad. There is no stock assessment available for hickory shad. A benchmark stock assessment was initiated in 2017 to analyze American shad stock status, with expected completion in 2020.

The most recent *River Herring Benchmark Assessment Report* (ASMFC 2012) indicated of the 24 river herring stocks for which sufficient data were available to make a conclusion, 23 were depleted relative to historic levels and one was increasing. The status of 28 additional stocks could not be determined because the time-series of available data was too short.

Estimates of coastwide abundance and fishing mortality could not be developed because of the lack of adequate data. The “depleted” determination was used instead of “overfished” because of the many factors that have contributed to the declining abundance of river herring, which include not just directed and incidental fishing, but likely also habitat issues (including dam passage, water quality, and water quantity), predation, and climate change. There are no coastwide reference points.

The river herring stock assessment was updated in 2017 (ASMFC 2017) with additional data from 2011-2015, and concluded that river herring remain depleted at near historic lows on a coastwide basis. Total mortality estimates over the final three years of the data time series (2013-2015) were generally high and exceed region-specific reference points for some rivers. However, some river systems showed positive signs of improvement. Total mortality estimates for 2 rivers fell below region-specific reference points during the final three years of the data time series. No total mortality estimates were below reference points at the end of the 2012 stock assessment data time series. Of the 54 stocks with available data, 16 experienced increasing abundance trends, 2 experienced decreasing abundance trends, 8 experienced stable abundance and 10 experienced no discernable trend in abundance over the final 10 years of the time series (2006-2015).

III. Status of the Fisheries

Shad and river herring formerly supported the largest and most important commercial and recreational fisheries throughout their range. Historically fishing took place in rivers (both freshwater and saltwater), estuaries, tributaries, and the ocean. Although recreational harvest data are scarce, today most harvest is believed to come from the commercial industry. Commercial landings for these species have declined dramatically from historic highs. Details on each fishery are provided below:

AMERICAN SHAD:

Total combined river and ocean commercial landings decreased from a high of 2.36 million pounds in 1985 to a low of 1.4 million pounds in 1999, but increased in 2000 to 1.8 million pounds. The 2005 closure of the ocean-intercept fishery (phase out began in 2000) has substantially lowered the total coastwide landings of American shad. The total commercial landings reported in compliance reports from individual states and jurisdictions in 2018 were 304,043 pounds, a 24% decrease from landings in 2017 (398,278 pounds) (Table 2). Bycatch landings accounted for approximately 22% of the total commercial landings of American shad in 2018.

In 2018, landings from North Carolina and South Carolina accounted for 18% and 35% of the coastwide commercial fishery removals, respectively. The remainder of the directed landings came from Connecticut, New Jersey, Delaware, and Georgia. Maryland commercial fishermen are permitted a bycatch allowance of two fish per day of dead American shad for personal use, provided that shad are captured by gear legally deployed for the capture of other fish species; no sale is permitted. Landings from Virginia and PRFC are attributed to limited bycatch allowances for American Shad.

Substantial recreational shad fisheries occur on the Connecticut (CT and MA), Delaware (NY, PA NJ, and DE), Susquehanna (MD), Santee and Cooper (SC), and St. Johns (FL) Rivers. Shad recreational fisheries are also pursued on several other rivers in Massachusetts, District of Columbia, Virginia, North Carolina, South Carolina, and Georgia. Though shad are recreationally targeted in these locations, many fisheries are catch and release only. Hook and line shad catch may be thousands of fish per year, but actual harvest and/or effort is only estimated by a few states through annual creel surveys (e.g. Maryland, North Carolina, Georgia, and Florida). Harvest may only amount to a small portion of total catch (landings and discards), but hooking mortality could increase total recreational fishery removals substantially.

Since 2009, recreational harvest data from the Marine Recreational Information Program (MRIP) are generally not provided for American shad due to high proportional standard errors (PSEs). This is a result of the MRIP survey design, which focuses on active fishing sites along coastal and estuarine areas and is unsuitable for capturing inland harvest. However, Maine, North Carolina, South Carolina and Florida reported American shad recreational harvest estimates for 2018 (Table 3).

HICKORY SHAD:

In 2018, North Carolina, South Carolina, and Georgia reported directed commercial hickory shad landings; Rhode Island, Connecticut, New York, New Jersey and Virginia reported bycatch landings. North Carolina accounts for a vast majority of directed landings, contributing 91% of the total. Coastwide commercial and bycatch landings in 2018 totaled 96,968 pounds, representing a 27% increase from 2017 landings (76,643 pounds) (Table 2). Only North Carolina reported recreational harvest: 18,207 fish totaling 23,925 pounds.

RIVER HERRING (BLUEBACK HERRING/ALEWIFE COMBINED):

Commercial landings of river herring declined 95% from over 13 million pounds in 1985 to about 733 thousand pounds in 2005. Recent commercial landings continue to increase, despite the closure of the ocean-intercept fishery in 2005 and North Carolina implementing a no-harvest provision for commercial and recreational fisheries of river herring in coastal waters of the state in 2007. In 2018, directed commercial river herring landings were reported from Maine, New York, and South Carolina. Landings including bycatch in 2018 totaled 2.45 million pounds, only 1.8% more than the 2017 landings of 2.40 million pounds (Table 2). New Hampshire reported 4,113 pounds of river herring recreationally harvested for personal use by permitted coastal harvesters in 2018.

Table 2. Shad and river herring total commercial fishery removals (directed landings and bycatch[1], in pounds) provided by states, jurisdictions and NOAA Fisheries for 2018.

	River Herring	American Shad	Hickory Shad
Maine	*	*	*
New Hampshire	*	0	0
Massachusetts	173,971	*	0
Rhode Island	0	0	11,529
Connecticut	0	20,530	*
New York	*	*	*
New Jersey	0	16,960	*
Pennsylvania	0	0	0
Delaware	0	9,638	0
Maryland	0	0	0
D.C.	0	0	0
PRFC	3,372	37,820	0
Virginia	0	4,310	2,700
North Carolina	0	53,878	75,481
South Carolina	289,978	107,829	*
Georgia	0	27,484	6,010
Florida	0	0	0
Total Directed	2,257,693	236,319	82,485
Total Bycatch	187,845	49,204	14,799
Total	**2,445,538**	**285,523**	**97,284**

*Values not shown due to confidential data

[1] Available information on shad and river herring bycatch varies widely by state. Estimates may not capture all bycatch removals occurring in state waters.

Table 3. Recreational harvest estimates for American shad in 2018 (in numbers of fish) provided by states and MRIP.

State	American Shad Harvest	Source of Estimates
Maine	4,108	MRIP*
North Carolina	6,163	Recreational creel surveys on the Roanoke, Tar, Neuse, and Cape Fear rivers
South Carolina	870	Creel surveys and mandatory reporting for recreational gill netters
Florida	47	Access point creel survey on St. Johns River
Total	**11,188**	

*MRIP estimate considered highly uncertain, with a PSE of 90.8. Spatial coverage of MRIP sampling may not align with recreational harvest areas for shad. In Maine, only 3 shad were sampled in 2018 and fewer than 56 shad have been sampled since 1996.

IV. Status of Research and Monitoring

Amendment 2 (2009) and Amendment 3 (2010), required fishery-independent and fishery-dependent monitoring programs for select rivers. Juvenile abundance index (JAI) surveys, annual spawning stock surveys (Table 4), and hatchery evaluations are required for specified states and jurisdictions. States are required to calculate mortality and/or survival estimates, and monitor and report data relative to landings, catch, effort, and bycatch. States must submit annual reports including all monitoring and management program requirements on or before July 1 of each year.

In addition to the mandatory monitoring requirements stipulated under Amendments 2 and 3, some states and jurisdictions continue important voluntary research initiatives for these species. For example, Massachusetts, Pennsylvania, Delaware, Maryland, District of Columbia, North Carolina, South Carolina, and the United States Fish and Wildlife Service (USFWS) are actively involved in shad restoration using hatchery-cultured fry and fingerlings. All hatchery fish are marked with oxytetracycline marks on otoliths to allow future distinction from wild fish. During 2018, several jurisdictions reared American shad, stocking a total of 22,754,925 American shad, a decrease of 15% from the 26,647,458 shad stocked in 2017 (Table 5).

V. Status of Management Measures

All state programs must implement commercial and recreational management measures or an alternative program approved by the Management Board (Table 1). The current status of each state's compliance with these measures is provided in the Shad and River Herring Plan Review Team Report (enclosed).

Amendment 2 (2009) prohibits river herring commercial and recreational harvest in state waters beginning January 1, 2012, unless a state or jurisdiction submits a sustainable fishery management plan and receives approval from the Board. Amendment 3 (2010) also requires the development of a SFMP for any jurisdiction maintaining a shad commercial or recreational fishery after January 1, 2013 (with the exception of catch and release recreational fisheries).

States are required to update SFMPs every five years. In 2017, states reviewed their SFMPs and made changes based on fishery performance or observations (e.g., revised sustainability targets) where necessary. At a minimum, states updated data for their commercial and/or recreational fisheries and recommended the current sustainability measures be carried forward in the next plan. To date the Board has reviewed and approved updated SFMPs for all states, with the updated Massachusetts SFMP for shad being approved in February 2019.

Table 4. American shad and river herring passage counts at select rivers along the Atlantic coast in 2018. This table includes only fish passage counts required by Amendments 2 and 3.

State/River	Shad	River Herring
Maine		
Androscoggin	32	170,040
Saco	4,107	92,836
Kennebec	437	307,035
Sebasticook	26	5,579,903*
Penobscot	3,958	2,174,745
St. Croix		270,659
New Hampshire		
Cocheco	0	24,743
Exeter	0	32
Oyster	0	5,716
Lamprey	0	50,884
Taylor		**
Winnicut		0
Massachusetts		
Merrimack	29,069	449,356
Rhode Island		
Gilbert Stuart		88,080
Nonquit		32,653
Buckeye Brook		16,048
Connecticut River		
Holyoke Dam	275,232	1,061
Pennsylvania		
Schuylkill (Fairmont Dam)	624	
Pennsylvania/Maryland/Delaware		
Susquehanna (Conowingo)	6,992	60
Susquehanna (Holtwood)	1,458	0
Susquehanna (Safe Harbor)	661	0
Susquehanna (York Haven)	**	0
South Carolina		
St. Stephen Dam	320,092	140,169
Total 2018	642,688	9,404,020
Total 2017	761,386	5,876,375
Total 2016	540,917	5,514,890
Total 2015	611,368	3,825,435
Total 2014	426,073	3,031,753

*Passage after harvest removals.

**Fishway operated but not monitored. Monitoring for the Taylor River has not been required since 2015 and will not be reported in future reports.

Note: Passage numbers on Susquehanna River are cumulative and listed in ascending order of passage mile with Conowingo being nearest the river's mouth.

Table 5. Stocking of Hatchery-Cultured Alosines in State Waters, 2018.

State	American Shad	Alewife*
New Hampshire		
Lamprey River	2,442,094	
Massachusetts		
Merrimack River	288,000	
Charles River	300,000	
Rhode Island		
Pawcatuck River	2,979,802	
Pawtuxet River	1,184,673	
Pennsylvania		
Susquehanna River	2,740,679	
Lehigh River	304,362	
Schuykill River	74,174	
Delaware		
Nanticoke River	346,000	
Maryland		
Choptank River	2,010,000	
District of Columbia/PRFC		
Potomac River**	369,683	
Virginia		
James River***	0	
North Carolina		
Neuse River	669,902	
Roanoke River	2,304,279	
South Carolina		
Edisto River	38,660	
Wateree River	1,362,961	
Broad River	3,864,496	
Georgia		
Altamaha River		
Oconee River	473,775	
Ocmulgee River	388,646	
Ogeechee	612,739	
Total	**22,754,925**	**0**

*In Maine only river herring of wild origin are stocked as adult pre-spawning individuals on the Androscoggin, Kennebec and Union Rivers

**Numbers of fry stocked from combined efforts of PRFC, DC, and MD.

***In 2018, stocking efforts on the James River ceased operation.

VI. Prioritized Research Needs

Fishery-Dependent Priorities

High

- Expand observer and port sampling coverage to quantify additional sources of mortality for alosine species, including bait fisheries, as well as rates of bycatch in other fisheries to reduce uncertainty.[2]

Moderate

- Identify directed harvest and bycatch losses of American shad in ocean and bay waters of Atlantic Maritime Canada.

Low

- Identify additional sources of historical catch data of the US small pelagic fisheries to better represent earlier harvest of river herring and improve model formulation.

Fishery-Independent Priorities

Moderate

- Develop demersal and pelagic trawl CPUE indices of offshore river herring biomass.

Modeling / Quantitative Priorities

High

- Conduct population assessments on river herring, particularly in the south.[3]
- Analyze the consequences of interactions between the offshore bycatch fisheries and population trends in the rivers.
- Quantify fishing mortality for major river stocks after ocean closure of directed fisheries (river, ocean bycatch, bait fisheries).
- Improve methods to develop biological benchmarks used in assessment modeling (fecundity-at-age, sex specific mean weight-at-age, partial recruitment vector/maturity schedules) for river herring and American shad of both semelparous and iteroparous stocks.
- Improve methods for calculating M.

Moderate

- Consider standardization of indices with a GLM to improve trend estimates and uncertainty characterization.
- Explore peer-reviewed stock assessment models for use in additional river systems as more data become available.

Low

- Develop models to predict the potential impacts of climate change on river herring distribution and stock persistence.

Life History, Biological, and Habitat Priorities

[2] A prior statistical study of observer allocation and coverage should be conducted (see Hanke et al. 2012).

[3] A peer reviewed river herring stock assessment was completed in 2012 by the ASMFC.

High

- Conduct studies to quantify and improve fish passage efficiency and support the implementation of standard practices.
- Assess the efficiency of using hydroacoustics to repel alosines or pheromones to attract alosines to fish passage structures. Test commercially available acoustic equipment at existing fish passage facilities. Develop methods to isolate/manufacture pheromones or other alosine attractants.
- Investigate the relationship between juvenile river herring/American shad and subsequent year class strength, with emphasis on the validity of juvenile abundance indices, rates and sources of immature mortality, migratory behavior of juveniles, and life history requirements.
- Develop an integrated coastal remote telemetry system or network that would allow tagged fish to be tracked throughout their coastal migration and into the estuarine and riverine environments. UPDATE: currently available for American shad but not in use due to tagging mortality
- Continue studies to determine river herring population stock structure along the coast and enable determination of river origin of catch in mixed stock fisheries and incidental catch in non-targeted ocean fisheries. Spatially delineate mixed stock and Delaware stock areas within the Delaware system. Methods to be considered could include otolith microchemistry, oxytetracycline otolith marking, genetic analysis, and/or tagging.[4]
- Validate the different values of M for river herring and American shad stocks through shad ageing techniques and repeat spawning information.
- Continue to assess current ageing techniques for river herring and American shad, using known-age fish, scales, otoliths, and spawning marks. Conduct biannual ageing workshops to maintain consistency and accuracy of ageing fish sampled in state programs.[5]
- Summarize existing information on predation by striped bass and other species. Quantify consumption through modeling (e.g., MSVPA), diet, and bioenergetics studies.
- Refine techniques for tank spawning of American shad. Secure adequate eggs for culture programs using native broodstock.

Moderate

- Determine the effects of passage barriers on all life history stages of American shad and river herring. Conduct studies on turbine mortality, migration delay, downstream passage, and sub-lethal effects. UPDATE: Recent studies have been conducted by T. Castro-Santos of UMass.
- Evaluate and ultimately validate large-scale hydroacoustic methods to quantify river herring and American shad escapement in major river systems.
- Conduct studies of egg and larval survival and development.
- Conduct studies on energetics of feeding and spawning migrations of American shad on the Atlantic coast.
- Resource management agencies in each state shall evaluate their respective state water quality standards and criteria and identify hard limits to ensure that those standards,

[4] Genetic research currently underway in combination with otolith chemistry.

[5] River herring ageing workshop occurred in 2013.

criteria, and limits account for the special needs of alosines. Primary emphasis should be on locations where sensitive egg and larval stages are found.
- Encourage university research on hickory shad.
- Develop better fish culture techniques, marking techniques, and supplemental stocking strategies for river herring.

Low
- Characterize tributary habitat quality and quantity for Alosine reintroductions and fish passage development.
- States should identify and quantify potential shad and river herring spawning and nursery habitat not presently utilized, including a list of areas that would support such habitat if water quality and access were improved or created, and analyze the cost of recovery within those areas. States may wish to identify areas targeted for restoration as essential habitat.[11]
- Investigate contribution of landlocked versus anadromous produced river herring.

VII. Status of Implementation of FMP Requirements

In accordance with the Shad and River Herring Fishery Management Plan, the states are required to submit an annual compliance report by July 1st of each year. The Plan Review Team (PRT) reviewed all state reports for compliance with the mandatory measures in Amendments 2 (River Herring) and 3 (American shad). Table 6 provides important information on each state's fisheries, monitoring programs, and compliance issues pertaining to the 2018 fishing year. Table 7 summarizes state reports of protected species interactions.

De Minimis Status
A state can request *de minimis* status if commercial landings of river herring or shad are less than 1% of the coastwide commercial total. *De minimis* status exempts the state from the sub-sampling requirements for commercial and recreational catch for biological data. The following states have met the requirements and requested continued *de minimis* status in 2018:
- Maine (American shad)
- New Hampshire (American shad and river herring)
- Massachusetts (American shad)
- Florida (American shad and river herring)

State Compliance
All states with a declared interest in shad and river herring management have submitted annual compliance reports. Virginia has also submitted a separate bycatch report in accordance with the provisions of their limited bycatch program.

Most states have regulations in place that meet the intent of the requirements of the Interstate Fisheries Management Plan for Shad and River Herring. The PRT notes the following compliance issues encountered in their review of the state reports:

1. Several states continue to allow recreational harvest for shad and/or river herring in absence of an approved SFMP, though Amendments 2 and 3 require all states and

jurisdictions to submit SFMPs for systems that remain open to commercial and recreational harvest. Those states are:

- Maine: no SFMP for shad, statewide recreational creel limit of 2 fish per day
- Georgia: no SFMP for river herring, no regulations to prohibit recreational harvest of river herring
- Florida: no SFMP for river herring, statewide recreational creel limit of 10 fish for aggregated alosine species

The PRT acknowledges that the Board is aware of additional inconsistencies between state management programs and the FMP requirements. In October 2017 the Technical Committee (TC) was tasked with developing recommendations and proposed improvements to the FMP to resolve these issues.

2. Several states did not report on all monitoring requirements listed under Amendments 2 and 3 (see Table 6). A few states have consistently omitted the same information from compliance reports for the past few years (CT, NY, NC, GA). These states should take note of the required monitoring programs that were not reported and make a concerted effort to report all monitoring programs in future compliance reports. The most common omissions were: characterization of other losses, variance, characterization of recreational harvest, length and age frequency, and degree of repeat spawning.

3. Most states did not submit their monitoring data in a separate Excel file along with the compliance report, as is required by Amendment 3. If data from required monitoring is provided in a separate file, the compliance report should also indicate what data were provided.

4. In each of their compliance reports, states and jurisdictions that share monitoring should indicate which jurisdiction is responsible for the required monitoring, rather than omitting the information. In addition, separate reports could be sent for each state or jurisdiction.

5. All sections of the compliance report should be addressed, even if no changes occurred from the previous year. The PRT found it difficult to evaluate compliance when sections only included a statement of “no changes from the previous report.”

Table 6. Summary of PRT Review of 2017 State Compliance Reports.

STATE	2018 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
ME	In 2018, river herring passage counts were above average on the Androscoggin, Sebasticook, Kennebec, Saco, and St. Croix rivers. The JAI for alewives showed 4 of 7 river segments had above average CPUEs. MRIP estimated 45,146 American shad were caught in 2018 recreationally in Maine, with 4,108 harvested. Spawning stock analysis showed shad mortalities (1.3%) in 2018 were similar to recent years.	Maintained recreational shad fishery with bag limit of 2 fish per day, but does not have an approved SFMP for shad. There were 2 law enforcement violations in 2018.
NH	No commercial landings of river herring in 2018. Recreational creel data indicated 11,150 alewives and 0 RH were harvested in 2018. For fishery-independent river herring data, the JAI was higher in 2018 than 2017, and spawning stock assessment found an increase in the number of returning fish in 2018 as compared to 2017. For fishery-independent shad data, no JAI could be done due to 0 shad caught in seines in 2018, and spawning stock assessment found there were 0 American shad returns to NH coastal rivers in 2018. Multiple fish passage projects occurred in 2018, including the removal of the Lower Sawyer Mill Dam.	NA
MA	A record 449,356 river herring passed upstream of the Essex Dam lift. Census counting stations were established at 3 new stations. A new volunteer visual count for river herring was established at Horn Pond. Recreational creel data indicated 226 American shad trips were taken. American shad counts on the Merrimack and Connecticut rivers were below 2017 levels.	MA did not implement juvenile abundance survey in Merrimack or Connecticut rivers. In 2018, three civil violations were reported by the Massachusetts Environmental Police with two violations involving illegal possession of river herring and one violation involving illegal possession of river herring for the purpose of sale.
RI	Results of river herring counts showed increased numbers in 2018 from 2017 in the Gilbert Stuart, Nonquit, and Buckeye Brook locations. Pawtucket River JAI results for river herring indicated similar catches in 2018 (0.51) as compared to 2017 (0.6). The JAI for shad in 2018 (0.45) is similar to 2017 (0.49). Spawning stock assessments for shad in 2018 (103) were below 2017 levels (331).	Did not include harvest and losses table; no indication of other losses related to research, passage, etc. Did not report on progress in implementing habitat recommendations.

Table 6. Summary of PRT Review of 2017 State Compliance Reports.

STATE	2018 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
CT	Adult blueback herring collection efforts were not conducted by CT DEEP in 2018 due to funding and staffing shortages; only JAI was completed in 2018. The USFWS Connecticut River Fish and Wildlife Conservation Office (CTRFWCO) conducted a river herring electrofishing survey in 2018 to collect biological information on river herring, but data is not yet available. The river herring JAI increased this year to highest level since 2015. CT is looking to improve upstream and downstream passage at 3 main stem dams and some tributary dams of CT river. The American shad JAI was the highest among years reported (2014-2018).	For fishery-dependent monitoring, no commercial effort, size, or age composition was provided. Sex composition was provided but there was no description of how it was attained. No recreational landings, catch, or effort reported. Did not include copy of commercial and recreational regulations that were in effect.
NY	1) Hudson commercial age structure estimated using length age-key derived from 2018 fishery independent sampling. CPUE from adult FI survey is calculated, but due to variability in number of sites and river reaches sampled, staff do not feel that it is suitable as an index of relative abundance. Absolute abundance is determined via electronic count on Black creek, a tributary of Hudson. 2) There is a high percentage of males in adult FI haul seine samples. Some comparable studies demonstrate more even sex ratios for the Hudson. Staff hypothesize that females may congregate further from shore and are not as accessible to their gear; they will be looking into this further. 3) Hudson River adult spawning stock for shad is sampled by both haul seine and electrofishing boat. Data is combined for all bio-characteristic analyses, but gear bias has been investigated and will continue to be monitored. 4) From 1990-present, mortality estimates of the Hudson stock have been above the Z30 reference point. 5) The 2018 YOY index for American shad was 4.88, making this the fourth consecutive year below the recruitment failure limit.	A river herring recreational creel survey was not conducted in 2018 due to funding constraints. Did not report on progress in implementing habitat recommendations.
NJ	Both the Blueback and Alewife index obtained through the Ocean Trawl Survey were below the 30-year time series mean. For shad, the geometric CPUE index (0.66) for the Ocean Trawl Survey was below the time series average (0.78) and ranked 17th for the 30-year time series, but up from 2017 CPUE values of 0.18.	Did not include summary of regulatory or monitoring changes for the following year. Did not report on progress in implementing habitat recommendations.

Table 6. Summary of PRT Review of 2017 State Compliance Reports.

STATE	2018 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
PA	*River Herring*: 1) Only two blueback herring and 58 alewife herring passed Conowingo dam east fish lift. 2) 21 blueback herring and 6 alewife herring were capture in the Conowingo west fish lift. These were sacrificed for biological sampling. Sample size was too small for mortality estimates 3) Fish passage at Conowingo focused on American shad. Passage operations start too late for early stages of alewife migration. Overall passage conditions are likely not conducive to capture of river herring. 4) As us the case with almost all previous years, no river herring were captured in juvenile abundance index survey. Too few river herring pass Conowingo for successful spawning. 5) Juvenile index sampling at only one site in 2018 due to budget constraints. *Shad*: 1) 6,992 American shad passed Conowingo dam in 2018. This is less than half of the number passed in 2017. 2) Only 21% of fish passing Conowingo passed the next Susquehanna barrier, Holtwood dam. 3) 2018 shad scales from Conowingo sampling had not been read at time of reporting. 4) 38.9% of fish analyzed from Conowingo collections were hatchery origin. 5) Juvenile index effort lower this year due to funding constraints and high flow events. No juveniles were captured by this survey, continuing a trend since the early 2000s. 6) Conowingo FERC relicensing process is ongoing. Once passed, it should include inmproved standards for fish passage. 7) Final design of the York Haven nature-like fishway is still being modified.	Did not include copy of commercial and recreational regulations that were in effect.
DELAWARE BASIN COOP	Delaware River and upper bay YOY Alewife index from the Trawl Survey increased compared to 2017 index values. 2018 commercial landings of American shad attributed to NJ were up 80% over 2017 landings but still well below the 50,000 pound average captured since 2000 when the limited entry fishery went into effect. Delaware commercial shad harvest increased by 4,049 pounds but was still lower than the average 5-year and 10-year period.	Did not include summary of monitoring changes for the following year. Did not report on progress in implementing habitat recommendations.
DE	For the Nanticoke river, both the Alewife and Blueback Herring Haul Seine Survey indices were down in 2018; they were the third and tenth lowest values respectively of the 20-year time series. Juvenile shad Seine Haul (JAI) was down compared to 2017 and the adult shad electrofishing survey was the sixth lowest in the 17 year time series.	Did not include copy of commercial and recreational regulations that were in effect. Did not report on progress in implementing habitat recommendations.
MD	The alewife and blueback herring juvenile abundance index values for 2018 showed an increase over the 2017 values for all areas sampled (Upper Bay, Potomac River, Nanticoke River). The geometric mean CPUE of adult alewife and blueback herring rom Nanticoke fyke nets continues to show decline in catches. The American shad juvenile abundance index values for 2018 showed an increase over the 2017 values for all areas sampled (Upper Bay, Potomac River, Nanticoke River). Mortality rates were not calculated for Amirian shad in the Nanticoke River as a result of small sample size (n=5) and the Nanticoke River GM CPUE could not be calculated in 2018 because the Mill Creek pound net was not deployed by commercial fishermen in 2018.	NA

Table 6. Summary of PRT Review of 2017 State Compliance Reports.

STATE	2018 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
DC	No juvenile shad were stocked in 2018. Progress was made restoring habitat in Rock Creek through dam removal and installation of a fish ladder at the Pierce Mill Dam on Rock Creek. The geometric mean of the Seining Survey Push-Net Survey for Alosines and the Alewife CPUE for the Spawning Stock Survey both increased.	No ages calculated to conduct mortality or survival estimates.
PRFC	The 2018 young of year index values for alewife and blueback increased in comparison to the 2017 values. The Potomac River American Shad Restoration Target (31.1) was exceeded in 2018 (47.2) for the eighth year in a row. The 2018 YOY index value (7.36) saw a significant increase over 2017 (3.79). There has been a marked increase in American shad bycatch landings from the Potomac River pound net fishery in 2017 and 2018 with these two years having an average bycatch landing of 14,396 pounds. The previous 19 years (1998-2016) had an average bycatch landing of 4,306 pounds.	NA
VA	In 2018, 4,310 pounds of shad were landed as part of the small bycatch fishery. The American shad juvenile abundance index values for 2018 showed an increase over the 2017 values for all rivers sampled, excluding the Chickahominy which yielded no juvenile shad for the third year in a row.	Did not include summary of regulatory or monitoring changes for the following year. Did not report on progress in implementing habitat recommendations.
NC	North Carolina fishermen landed 53,878 pounds of shad in the 2018 directed fishery, representing a near 40,000 decrease from 2017 (92,769).	Due to budgetary constraints, Recreational Commercial Gear License harvest data for shad has not been collected since 2008. Did not include summary of regulatory changes for the following year.
SC	No management actions were triggered due to any benchmark exceedances during the 2018 fishing year. The sustainability benchmark of 0.050 for blueback herring in the Santee Cooper was not exceeded in 2018 (u=0.037). The 3 year running average harvest blueback herring on the Pee Dee River (382 kg) did not exceed the benchmark (1,000 kg). Observed sex ratios for American shad for the Santee River was 2.3 females per male and 4.9 females per male for the Waccamaw. The female-skewed sample ratios are most likely due to the marketability of females vs. males.	Did not include summary of regulatory or monitoring changes for the following year. Did not report on progress in implementing habitat recommendations. For shad and river herring, state regulations allow recreational harvest statewide, though not all systems are included in the SFMP.

Table 6. Summary of PRT Review of 2017 State Compliance Reports.

STATE	2018 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
GA	The 2018 population estimate of American shad in the Altamaha River in 2018 was 300,576, a 27% increase from 2017. The male:female sex ratio of American shad harvested was 1:16 from the Altamaha River; 1:334 for the Savannah River. The 5 year running average CPUE for the Savannah River in 2018 (35.51) was above the sustainability benchmark (25.5). The Savannah River American shad electrofishing catch rate increased 54% from 2017 rate.	Age data were not provided to meet the fishery-dependent monitoring requirements for the Savannah River. For river herring, state regulations allow recreational harvest though there is no approved SFMP.
FL	No commercial fishery exists for shad or river herring. Total estimated American recreational shad catch in Mullet Creel area and Puzzle Lake Creel area increased from 1,468 fish in 2017 to 5,543 fish in 2018. The total shad harvest at both sites combined was 47 fish. 350 American shad and 552 blueback herring were caught during 80 electrofishing transects on the St. Johns River. These numbers represent an increase from 2017. The season average geometric mean CPUE of blueback herring ranked 1st and 3rd in the time series for the 2 reaches of St. Johns River sampled.	For river herring, state regulations allow recreational harvest though there is no approved SFMP. For shad, state regulations allow recreational harvest statewide, though not all systems are included in the SFMP.

Table 7. Reported protected species interactions (sturgeon species) in shad or river herring fisheries. Only states listed below reported interactions.

Jurisdiction	Atlantic sturgeon		Shortnose sturgeon		Unclassified		Total by State	
	Catch	Mortalities	Catch	Mortalities	Catch	Mortalities	Catch	Mortalities
RI	*	*	*	*	*	*	*	*
CT					32	0	32	0
NJ	39	7					39	7
PRFC	1	0					1	0
VA	11	0					11	0
NC	52	4					52	4
SC	138	0	9	0			147	0
GA	19	0	42	0			61	0
Total by Species	260	11	51	0	32	0	**343**	**11**

*Rhode Island reported 2 sturgeon mortalities for 2017. Reporting lags behind by one year due to data availability from the Northeast Fisheries Observer Program.

Atlantic States Marine Fisheries Commission

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MEMORANDUM

September 16, 2019

To: **Shad & River Herring Management Board**

From: **Tina Berger, Director of Communications**

RE: **Advisory Panel Nominations**

Please find attached three nominations to the Shad & River Herring Advisory Panel – Mike Thalhauser with the Maine Center for Coastal Fisheries and Alewives Harvesters of Maine; Mark Amorello, a recreational fisherman from Massachusetts; and Chuckie Green, a recreational angler and Tribal Nation representative from Massachusetts. Please review these nominations for action at the next Board meeting.

If you have any questions, please feel free to contact me at 703.842.0749 or tberger@asmfc.org.

Enc.

cc: Caitlin Starks

Maine
River Herring:
Dennis L. Smith (rec. with background in alewife restoration)
P.O. Box 802
Northeast Harbor, ME 04662
Phone: (207) 288-5457
Email: rexphisn@adelphia.net
Appt. Confirmed 5/5/08
No response to March 2019 inquiry regarding continuing interest in serving on AP

Mike Thalhauser (NGO/comm)
Alewife Harvesters of Maine
13 Atlantic Avenue
Stonington, ME 04681
207.367.2708
mthalhauser@coastalfisheries.org

Shad:
Vacancy - shad rec

New Hampshire
Shad & River Herring:
Vacancy

Massachusetts
Shad & River Herring:
Mark Amorello (rec)
P.O. Box 235
Pembroke, MA 02359
Phone: 781.831.2123
markamorello@yahoo.com
Appointment pending

River Herring:
George "Chuckie" Green (rec/Mashpee Wampanoag Tribe)
483 Great Neck Road South
Mashpee, MA 02649
Phone (day): 508.477.0208, ext 138
Phone (eve): 774. 392.4979
Chuckie.Green@mtribe-nsn.gov
Appointment pending

Connecticut
Shad & River Herring:
2 vacancies

New York
Shad & River Herring:
Byron Young
53 Highview Lane
Ridge, NY 11961
Phone: (631) 821-9623
Cell: (631) 294-9612
Fax: (631) 821-9623
Email: youngb53@optimum.net
Appt. Confirmed 5/5/08
Chair from 1/09- 1/11
Confirmed interest in March 2019

New Jersey
Shad:
Vacancy – recreational

Shad & River Herring:
Jeff Kaelin (comm. trawl and purse seine)
Lund's Fisheries, Inc.
P.O. Box 440
Winterport, ME 04496-0440
Phone: (207) 266-0440
jkaelin@lundsfish.com
Appt Confirmed 8/20/09
Confirmed interest in March 2019

Pennsylvania
Vacancy

Delaware
Shad & River Herring:
2 vacancies

Maryland
Shad & River Herring:
Vacancy - recreational

Virginia
Shad & River Herring:
Vacancy
Shad:
Vacancy

North Carolina
River Herring:
Louis Ray Brown, Jr. (rec)
212 Walnut Creek Drive

Goldsboro, NC 27534
Phone (day): (919) 778-9404
Phone (eve): (919) 778-9792
FAX: (919) 778-1197
Email: lrbrown@nc.rr.com
Appt. Confirmed 5/5/08; 8/18
Confirmed interest in March 2019

Vacancy – commercial

South Carolina
Shad:
Thomas M. Rowe, Jr. (rec)
4625 Flounder Lake Drive
Meggett, SC 29449
Phone: 843-908-0247
FAX: 843-549-7575
Email: thomasmrowe@hotmail.com
Appt Confirmed 8/3/10
Confirmed interest in Sept 2017

Vacancy – commercial net

Georgia
River Herring:
Fulton Love (dealer)
6817 Basin Road
Savannah, GA 31419
Phone: (912)925-3616
FAX: (912)925-1900
Appt. Confirmed 10/30/95
Appt. Reconfirmed 9/8/99
Appt. Reconfirmed 3/19/08
No response to Sept 2017 or March 2019 inquiry regarding continuing interest in serving on AP

Florida
Shad & River Herring:
2 vacancies

Potomac River Fisheries Commission
River Herring:
Kevin L. Gladhill (rec)
21370 Mount Lena Road
Boonsboro, MD 21713
Phone (day): (301)988-6697
Phone (eve): (301)714-1074
Email: KLGladhill@myactv.net
Appt. Confirmed 5/5/08
No response to Sept 2017 or March 2019 inquiry regarding continuing interest in serving on AP

Vacancy – commercial pound net

District of Columbia
Shad:
Joe Fletcher (rec)
1445 Pathfinder Lane
McLean, VA 22101
Phone (day): (202)244-0461
Appt. Confirmed 10/30/95
Appt. Reconfirmed 9/15/99
Appt. Reconfirmed 4/21/08
No response to Sept 2017 inquiry regarding continuing interest in serving on AP

Nontraditional Stakeholders
Chair, Pam Lyons Gromen (fisheries conservation) (1/11)
Executive Director
Wild Oceans
1793 Sandy Court
Springboro, Ohio 45066
Phone: 240.405.6931
Email: plgromen@wildoceans.org
Appt. Confirmed 5/5/08
Confirmed interest in March 2019

Alison A. Bowden
Freshwater Program Director
The Nature Conservancy
205 Portland St, Suite 400
Boston, MA 02114
Phone (day): (617) 227-7017 x351
Phone (eve): (617)678-6135
FAX: (617) 227-7688
Email: abowden@tnc.org
Appt. Confirmed 5/5/08
Confirmed interest in March 2019

ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: Patrick Keliher (your name) State: Maine

Name of Nominee: Mike Thalhauser

Address: 13 Atlantic Ave

City, State, Zip: Stonington, ME 04681

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): (207) 367-2708 Phone (evening): _____

FAX: _____ Email: mthalhauser@coastalfisheries.org

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.
   1. Shad and River Herring
   2. _____
   3. _____
   4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

   yes _____ no X

3. Is the nominee a member of any fishermen's organizations or clubs?

   yes X no _____

   If "yes," please list them below by name.

Alewives Harvesters of Ma

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

Rec Shellfish

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

Rec fishing license

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? _____ years
2. Is the nominee employed only in commercial fishing? yes_____ no X
3. What is the predominant gear type used by the nominee?_____
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)?_____

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____ years
2. Is the nominee employed only in the charter/headboat industry? yes _____ no X

   If "no," please list other type(s)of business(es) and/occupation(s):_____

3. How many years has the nominee lived in the home port community? _____ years

   If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years

2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no X

   If "yes," please explain.

_____

_____

_____

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____years

2. Is the nominee employed only in the business of seafood processing/dealing?

   yes _____ no X If "no," please list other type(s) of business(es) and/or occupation(s):

_____

_____

_____

3. How many years has the nominee lived in the home port community? _____ years

   If less than five years, please indicate the nominee's previous home port community.

_____

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? 13 years

2. Is the nominee employed in the fishing business or the field of fisheries management?
   yes ✓ no _____

   If "no," please list other type(s) of business(es) and/or occupation(s):

_____

_____

_____

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

I have worked in fisheries management at the stakeholder level (NGO's) and at the state management level for 13 years in Alaska and Maine.

Over the past three years, I have been working at the Maine Center for Coastal Fisheries working with three communities in their monitoring/management efforts in local river herring fisheries. I facilitate their cooperative work in these efforts and on answering research questions that they have specific to their fisheries, but that also have coast wide management/research implications. Based on this work in with communities, stakeholders, and fishermen, I have supported a dialogue around policy and management issues between this broad group and with research and management entities. My work in this role will also build on those relationships that I have made, and my understanding of river herring issues at these levels.

Nominee Signature: _____ Date: 6/12/2019

Name: Mike Thalhauser
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

_____
State Director

_____
State Legislator

_____
Governor's Appointee

ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by David Pierce (your name) State: MA

Name of Nominee: Mark Amorello

Address: P.O. Box 235

City, State, Zip: PEMBROKE MA 02359

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 781-831-2123 Phone (evening): 781-831-2123

FAX: 781-293-4798 Email: markamorello@yahoo.com

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

   1. shad & river herring
   2. _____
   3. _____
   4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

□yes ☑no

3. Is the nominee a member of any fishermen's organizations or clubs?

☒yes □no

If "yes," please list them below by name.

Fort Pierce Fishing Club, Florida

IGFA

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

Red Fish, Trout

Striped Bass

Tuna

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

Same As Above

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business?

2. Is the nominee employed only in commercial fishing? □yes □no

3. What is the predominant gear type used by the nominee? _____

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____

2. Is the nominee employed only in the charter/headboat industry? □yes □no

If "no," please list other type(s) of business(es) and/occupation(s):

_____

3. How many years has the nominee lived in the home port community? _____ years

If less than five years, please indicate the nominee's previous home port community.

_____

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? 50+ years

2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? ☒yes □no

If "yes," please explain.

CURRENTLY PEMBROKE HERRING COMMISSION, SUPERINTENDENT ICCAT, MA. MARINE FISHERY COMMISSION,

_____

FOR SEAFOOD PROCESSORS & DEALERS:

- How long has the nominee been employed in the business of seafood processing/ dealing? _____ years

2. Is the nominee employed only in the business of seafood processing/dealing?

□yes □no

If "no," please list other type(s) of business(es) and/or occupation(s):

_____

3. How many years has the nominee lived in the home port community? _____ years

If less than five years, please indicate the nominee's previous home port community.

_____

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years

- Is the nominee employed in the fishing business or the field of fisheries management? □yes □no

If "no," please list other type(s) of business(es) and/or occupation(s):

_____

_____

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Nominee Signature: _____ Date: 7/27/2018

Name: MARK AMORELLO
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

_____ _____

State Director

State Legislator

Governor's Appointee

ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by David Pierce State: MA
(your name)

Name of Nominee: George "Chuckie" Green

Address: 483 Great Neck Road South

City, State, Zip: Mashpee Ma. 02649

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): (508) 477-0208 EXT138 Phone (evening): (774)392-4979

FAX: (508) 477-1218 Email: Chuckie.Green@mwtribe-nsn.gov

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.
   1. river herring & shad
   2. _____
   3. _____
   4. _____
2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

   ☐yes ☒no
3. Is the nominee a member of any fishermen's organizations or clubs?

   ☐yes ☒no

If "yes," please list them below by name.

_____ _____

_____ _____

_____ _____

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

_Herring (blue backs and alewives) ____ _Striped Bass, Blue fish, Scup and trout

_Large and Small-Mouth Bass_____ Oysters, Scallops, Mussels _____

Summer and winter Flounder,White Perch__ _Quahog, soft shell clams__

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

____see above_____ _____

_____ _____

_____ _____

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business?
2. Is the nominee employed only in commercial fishing? ☐Yes ☐no
3. What is the predominant gear type used by the nominee? _Shellfish Aquiculture gear _

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____
2. Is the nominee employed only in the charter/headboat industry? ☐yes ☐no

   If "no," please list other type(s) of business(es) and/occupation(s): _____
3. How many years has the nominee lived in the home port community? _____ years

   If less than five years, please indicate the nominee's previous home port community.

   _____

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _60_ years

2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? ☒yes ☐no

   If "yes," please explain.
   __See page 4_____

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____ years

2. Is the nominee employed only in the business of seafood processing/dealing?

   ☐yes ☐no
   If "no," please list other type(s) of business(es) and/or occupation(s):

   _____

3. How many years has the nominee lived in the home port community? _63____ years

   If less than five years, please indicate the nominee's previous home port community.

   _____

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _60_ years

2. Is the nominee employed in the fishing business or the field of fisheries management?
   ☒yes ☐no

   If "no," please list other type(s) of business(es) and/or occupation(s):

   _____

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

My name is George "Chuckie" Green I am the Director of Natural Resources for the Mashpee Wampanoag Tribe a hunting, fishing gathering culture. I am also a Conservation District Supervisor for the Cape Cod Conservation District. I am the Massachusetts Representative to Regional Tribal Conservation Advisory Committee to NRCS. I have just completed 8 Years on the Regional Planning Body for the Oceans under the National Ocean Council
River Herring are a staple of the Wampanoag people's diet and culture so it is my duty to support the development of plan to maintain populations and restore habitat.

Nominee Signature: _____ Date: 8/10/18

Name: George F Green Jr
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

_____
State Director

_____
State Legislator

_____
Governor's Appointee

Atlantic States Marine Fisheries Commission

Coastal Sharks Management Board

October 30, 2019
1:15 – 2:30 p.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*C. Batsavage)* 1:15 p.m.

2. Board Consent 1:15 p.m.
   - Approval of Agenda
   - Approval of Proceedings from April 2019

3. Public Comment 1:20 p.m.

4. Consider Postponed Motion from April 2019 (*C. Batsavage*) **Final Action** 1:30 p.m.
   Move to require, for state waters, the use of circle hooks on lines intended to catch sharks.
   - Law Enforcement Committee Report *(M. Robson)*
   - Advisory Panel Report *(K. Rootes-Murdy)*

5. Set 2020 Specifications (*K. Rootes-Murdy*) **Final Action** 2:00 p.m.

6. Consider Approval of 2019 FMP Review and State Compliance (*K. Rootes-Murdy*) **Action** 2:10 p.m.
   - Status Update on State Implementation of North Atlantic Shortfin Mako Recreational Measures

7. Elect Vice-Chair **Action** 2:25 p.m.

8. Other Business/Adjourn 2:30 p.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

Coastal Sharks Management Board Meeting
October 30, 2019
1:15 – 2:30 p.m.
New Castle, New Hampshire

Chair: Chris Batsavage (DE) Assumed Chairmanship: 5/2019	Vice Chair: VACANT	Law Enforcement Committee Representative: Greg Garner
Coastal Shark Technical Committee Chair: Bryan Frazier (SC)	Coastal Shark Advisory Panel Chair: Vacant	Previous Board Meeting: April 2019
Voting Members: MA, RI, CT, NY, NJ, DE, MD, VA, NC, SC, GA, FL, NMFS, USFWS (14 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from April 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the Agenda. Individuals that wish to speak at this time must sign in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Postponed Motion from April 2019 (1:30-2:00 p.m.) Final Action

Background

- The Board postposed the following motion at its April 2019 meeting:
  Move to require, for state waters, the use of circle hooks on lines intended to catch sharks.
- The Board requested feedback from the Advisory Panel (**Briefing Materials**) and Law Enforcement Committee (**Briefing Materials**) on the use of circle hooks
- Both groups met in September and October to provide feedback and develop recommendations on the proposed gear requirement for the recreational fishery.

Presentations

- Advisory Panel Report by K. Rootes-Murdy
- Law Enforcement Committee Report by M. Robson

Board Actions for Consideration at this Meeting

- Consider action on the postposed motion

5. Set 2020 Specification (2:00-2:10 p.m.) Final Action

Background

- Similar to the 2017-2019 fishing seasons, NOAA Fisheries is proposing a January 1 open date for all shark management groups. Also proposed is an initial 25 shark possession limit for large coastal and hammerhead management groups with the possibility of in season adjustments (**Briefing Materials**)

Presentations

- NOAA Fisheries Proposed Rule for 2019 Specifications by K. Rootes-Murdy

Board Actions for Consideration at this Meeting

- Set the 2020 coastal shark specifications including commercial opening dates and commercial possession limit by management group.

6. Consider Approval of 2019 FMP Review and State Compliance (2:10-2:25 p.m.) Action

Background

- State compliance reports are due August 1.
- The Plan Review Team reviewed each state report and drafted the 2019 FMP Review. (**Supplemental Materials**)

Presentations

- Overview of the 2019 Fishery Management Plan Review and status update on state implementation of North Atlantic Shortfin Mako Recreational Measures by K. Rootes-Murdy

Board Actions for Consideration at this Meeting

- Accept the 2019 Fishery Management Plan Review and approve *de minimis* requests

8. **Elect Vice-Chair**
9. **Other Business/Adjourn**

Coastal Sharks

Activity level: Low

Committee Overlap Score: low (some overlap with South Atlantic Board species)

Committee Task List
• TC – August 1st: Annual compliance reports due

TC Members: Bryan Frazier (SC, TC Chair), Carolyn Belcher (GA), Brent Winner (FL), Greg Skomal (MA), Chris Scott (NY), Lisa Hollensead (NC), Conor McManus (RI), Greg Hinks (NJ), Jack Musick (VIMS), Angel Willey (MD, Vice Chair), Matt Gates (CT), Karyl Brewster-Geisz (NOAA), Michael Frisk (NY), Enric Cortes (NOAA), Scott Newlin (DE), Julie Neer (SAFMC), Kirby Rootes-Murdy (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

COASTAL SHARKS MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
April 30, 2019

These minutes are draft and subject to approval by the Coastal Sharks Management Board.
The Board will review the minutes during its next meeting.

TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

David Pierce, MA (AA)
Ray Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Heather Corbett, NJ, proxy for J. Cimino (AA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Luisi, MD, proxy for D. Blazer (AA)
Russell Dize, MD (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Lewis Gillingham, VA, proxy for S. Bowman (AA)
Sen. Monty Mason, VA (LA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Jerry Mannen, NC (GA)
Robert Boyles, Jr., SC (AA)
Mel Bell, SC, proxy for M. Rhodes (GA)
Doug Haymans, GA (AA)
Spud Woodward, GA (AA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Karyl Brewster-Geisz, NMFS HMS
John Sweka, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Kirby Rootes-Murdy
Jessica Kuesel
Kristen Anstead

Guests

Kathryn Frens, NOAA
Kathy Knowlton, GA DNR
Nicole Lengyel, RI DEM
Adam Rettig, NOAA
Scott Ward, NOAA

The Coastal Sharks Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, April 30, 2019, and was called to order at 3:30 o'clock p.m. by Chairman Roy W. Miller.

CALL TO ORDER

CHAIRMAN ROY W. MILLER: Welcome to the Coastal Sharks Management Board meeting. My name is Roy Miller; I'm from Delaware serving as Chair.

APPROVAL OF AGENDA

CHAIRMAN MILLER: In our meeting materials you have an agenda for this meeting. Are there any proposed changes or additions to this agenda? Seeing none, I assume it is okay as is.

APPROVAL OF PROCEEDINGS

CHAIRMAN MILLER: Also, you have the proceedings from the October, 2018 Shark Board meeting. Are there any changes or additions to those proceedings? Seeing none, I'll assume they're unanimously approved as written.

PUBLIC COMMENT

CHAIRMAN MILLER: I see no names that have signed up for public comment. Is there anyone in the audience that wants to comment on anything not before the Shark Board this afternoon on our agenda?

Are there any shark related comments? Seeing none, we're a bit time constrained, so we'll do the best we can here.

REVIEW FINAL RULE FOR HIGHLY MIGRATORY SPECIES AMENDMENT 11 AND NOAA FISHERIES REQUEST FOR COMPLEMENTARY MEASURES

CHAIRMAN MILLER: I'm going to first of all call on Karyl Brewster-Geisz, who is in the back there, to tell us about the Final Rule for Highly Migratory Species Amendment 11 for Shortfin Mako, Karyl.

MS. KARYL BREWSTER-GEISZ: Final Amendment 11, this is an amendment we put in place for shortfin mako sharks. If you remember the shark species was assessed back in 2017 by ICCAT, the International Commission for the Conservation of Atlantic Tunas. It is found to be overfished with overfishing occurring.

They implemented a recommendation in November. As a result of that recommendation, we implemented an Emergency Final Rule over a year ago March, March 2018, following the ICCAT recommendation. We brought that forward to this Board, and at that time this Board did not want to follow the emergency regulations, because they were only going to be in effect for at most a year.

Instead, you all implemented I believe it was Addendum 5 that would allow you to implement measures on an in-season basis, for things like the size limits. This emergency rule that NOAA Fisheries implemented did last until March 3, when we finalized Amendment 11. This is just going through some of the timelines that we had.

As I said, the Final Rule was effective March 3 of this year. The final measures in Amendment 11 are very similar to the measures that we proposed, and the measures that we had in the Emergency Rule, but there were some changes. Commercially, no commercial fisherman can land a shortfin mako that was caught live. All the shortfin makos need to have been caught dead, and the pelagic longline fishermen need to have electronic monitoring onboard, to verify that those shortfin mako sharks were dead.

Electronic monitoring is another word for videos. Bottom longline and gillnet fishermen are allowed to keep any that were retained

dead. They very rarely catch them, but if they do, they are usually dead, and they would be allowed to retain them. Recreationally, we have changed the minimum size for shortfin mako sharks.

If you remember the minimum size for all sharks, well generally all sharks, is 54 inches. In the Emergency Rule we changed it to 83 inches straight line fork length. In this final rule, it is now split by gender, so 71 inches straight line fork length for male shortfin mako sharks, and 83 inches straight line fork length for females.

That is based on size maturity for shortfin makos. The other change we made, if you remember way back in Amendment 5B, we implemented circle hooks for dusky sharks, as a measure to reduce the mortality. That circle hook requirement for dusky sharks only went up through Chatham, Massachusetts.

In Amendment 11, we finalized circle hooks throughout our shark fishery. It's now Maine through Texas, including the Caribbean. Anyone fishing for sharks must use circle hooks, the only exception is for flies or lures. Alternative C1 was monitoring. This was the same as what we proposed. We did not make any changes to increase our authority to require additional monitoring.

But we did starting January 1, require that all HMS tournaments report landings discards, and other information on all HMS, so that includes sharks. Even though we didn't make any change in Amendment 11, we have increased the amount of information we're getting. Then Alternative D3 was just to establish a foundation to develop an international rebuilding plan for shortfin mako sharks.

If you remember, there is a large number of shortfin mako sharks caught throughout the Atlantic. The United States only counts for about 9 percent of those, so the United States would advocate at ICCAT for an international rebuilding plan. The next slide just has all the links, so if you wanted more information it should be online. Other than that that is it, so thank you.

CHAIRMAN MILLER: Thank you, Karyl. I'll take questions first. Are there any questions from the Board with regard to Mako Shark Amendment 11? Justin Davis.

DR. JUSTIN DAVIS: The last bullet on the previous slide mentioned the International Rebuilding Plan. I take it from what you said that this is not yet in place that other countries have not instituted similar measures to start rebuilding shortfin mako.

MS. BREWSTER-GEISZ: In the ICCAT recommendation there were measures that all countries needed to implement. I believe a number of those countries have. I do not know if all of them have. But there are also questions about projections, and the actual amount of mortality needed to be reduced, and how long that needed to be reduced to rebuild the stock. They are actually meeting this month to start going over some of the science, and coming up with the projections on how long it will take shortfin mako to rebuild. That is part of what Alternative D3 is about.

CHAIRMAN MILLER: Any additional questions, Doug Haymans.

MR. DOUG HAYMANS: I found it interesting that A7 allows a commercial fisherman to report whether or not an animal was dead at haul back or not, so we're trusting him to report the truth, but we're not trusting recreational fishermen to tell us whether the fish was caught in state or federal waters.

You know, one guy has got a vested commercial interest and the other guy is recreational fishing with no commercial. Those two didn't commute to me as for the reason why the state should have complementary regulations in state waters. While they can't tell us where it came

from, so perhaps there was a discussion that occurred on that topic that you could fill us in on?

MS. BREWSTER-GEISZ: Commercially, most of the shortfin makos are caught on pelagic longline, and they are required to have videos onboard, so we can actually verify that they are landing dead versus live makos. Recreationally, part of the reason we want complementary measures is because a lot of recreational fishermen when they are checking to see what the regulations are, the first place they go is actually to the states.

If the states say the minimum size is 54 inches, when the majority of shortfin mako sharks are caught federally that is a problem. We did notice that last year under the emergency regulation, there is a lot of confusion among the recreational fishermen, on what the size limit was. A lot of fishermen did get caught fishing in federal waters with an undersized mako; because they were unaware they had checked the state apps or website.

MR. HAYMANS: Do you actually verify it with the video against commercial haul back?

MS. BREWSTER-GEISZ: Yes, we have verified and we've actually had a number of people issued warnings or summary settlements as a result.

CHAIRMAN MILLER: Any additional questions, does anyone wish to make any comment on this at this time? Seeing none, I'm going to call on Kirby for Technical Committee report.

TECHNICAL COMMITTEE REPORT

MR. KIRBY ROOTES-MURDY: I'm going to go through the Technical Committee call summary. Our TC Chair was not able to make it up today, so bear with me if you have any technical questions. I will try to answer them to the best of my ability. I'll go through an overview, just recapping some of what Karyl said, the TC call summary, and then take any questions you have.

Following that, it will be for the Board to consider whether to have a management response to these changes in federal waters. The TC was tasked the following by the Board Chair, which is review the recent management measures implemented for Atlantic shortfin mako sharks through Amendment 11, and provide the Board a report on the potential conservation benefits of adopting complementary management measures in state waters for state permit holders. The TC met via conference call on April 8, to discuss and respond to the task.

As Karyl outlined, there are some changes to commercial measures for HMS permit holders. Retention of sharks if dead at haul back, the new is for longline and gillnets with vessels that have electronic monitoring onboard. Recreationally, the change is having different size limits by sex, so for males 71 inch straight line fork length, for females 83 inches straight line fork length, and a requirement that circle hooks be used when targeting sharks for all HMS permit holders.

The TC in preparation for the call, made an effort to summarize what the state data is that currently demonstrates whether sharks are present or absent in state waters. Not surprising, based on the feedback we heard around this time last year, there is not a lot of recreational or commercial data on shortfin makos in state waters.

We went state by state on that to try to get more information. Some states had commercial data on shortfin makos, but trying to parse out where those shortfin makos were caught is a little bit more challenging, unless you get into then stat area data. There is some recreational information, but it's very limited.

Generally, we were not able to determine if much if any harvest is happening in state waters. There is not enough data in state waters to demonstrate that implementing the proposed measures would have a significant change in harvest or catch. The TC could not quantify the conservation benefits of complementary recreational measures in state waters.

There was though general agreement that in adopting complementary size limit regulations, it would be best for the resource, in terms of trying to maintain consistency between what the federal regulations are and what state regulations are, to some of the points that were just raised by Karyl in response to Doug Haymans.

Another thing that was discussed by the group was the circle hook requirement. There have been some efforts to try to quantify how that can reduce discard mortality. There was recently a study that was conducted on blacktip sharks using circle hooks, and the results showed that fish that are hooked anywhere besides the jaw, have about a 50 percent mortality rate.

If they were hooked in the jaw using this type of gear, the mortality rate was less than 4 percent. The TC noted that it is likely the J hooks would produce a higher mortality rate. With that being considered, there was definitely some interest expressed by TC members in moving to adopt circle hooks.

One of the challenges that came up is that at least based on the feedback TC members offered, there are a number of states that are at varying stages of implementing circles hooks. Some states have already moved to adopt that for state waters. Other states are in the process of adjusting or evaluating the regulations to potentially change to that. Then there are other states that have at this point indicated that they are not interested in adjusting their gear requirements to encompass circle hooks, because of concerns of intention and trying to prove that either in a court of law, or from a law enforcement standpoint. In terms of the commercial measures, in considering complementary management measures there, the TC did not have any specific comments on that. Much of the call was focused on these recreational measures, where there was sense that complementary measures would be more consistent and very similar, and beneficial.

But, on commercial data we don't have as much information that would demonstrate that adopting the electronic monitoring for state permit holders, and the requirement of the sharks being dead at haul back that we would be able to demonstrate there would be a significant change in harvest or catch. With that being said, overall the TC recommended that the states adopt complementary size limit regulations by sex, to the Amendment 11 measures for state waters. With that I'll take any questions regarding the TC call and summary, thank you.

CONSIDER COMPLEMENTARY MANAGEMENT MEASURES

CHAIRMAN MILLER: Are there any questions at all concerning the TC report or summary? Seeing none, the next part of this agenda item says Consider Complementary Management Measures. Is there anyone who might have a motion to put before the Board that we can get this conversation started? Stew Michels.

MR. STEWART MICHELS: **I would like to make a motion. I'll move to adopt for state waters, minimum recreational size limits for shortfin mako, to complement the federal recreational fishing measures (the male minimum size limit of 71 inches fork length, and female minimum size limit of 83 inches fork length).**

CHAIRMAN MILLER: Thank you, Stew. Is there a second to this motion? Ray Kane. Ray, did you have a comment as well?

MR. RAYMOND W. KANE: Question, was that 71 or 73 for the males?

CHAIRMAN MILLER: It was 71, right Stew, and another hand over here, no, and discussion on the motion, Doug Haymans?

MR. HAYMANS: The TC sure didn't make a very convincing argument to me that the states should go that way. It looked like when I read through the limited information we had from the other states, there wasn't a whole lot of support for the states to do this, at least from the TC members from the other states. Everything I've heard from our Law Enforcement is this just is creating a much larger nightmare for them. I would love to hear their committee's input on it, before we move something like this forward.

MR. ROOTES-MURDY: Yes, unfortunately we don't have our Law Enforcement Rep here at the table today. He may be in another Law Enforcement meeting currently, unfortunately. But I will also point out that the Law Enforcement Committee has not met to consider this. It was not something that was specifically tasked to them to consider.

CHAIRMAN MILLER: Jay McNamee.

MR. JASON McNAMEE: I'll offer an alternate interpretation of the Technical Committee report. I think what they said was there is just not a lot of data available to make a strong analysis as to whether there would be an impact, not whether it is good or not to do, but to give us some quantification of potential impacts.

However, I think back to the assessments, which are really rigorous, it was multiple assessments all giving the same information that the shortfin mako is not in good shape. I see these measures as valuable measures to align us with the federal plan. Not to speak for enforcement, but I would think the alignment of the state plan with the federal plan, would actually help with enforceability, just a couple of comments as to why I'm supporting this motion.

CHAIRMAN MILLER: Maureen, Dr. Pierce next.

MS. MAUREEN DAVIDSON: We did consult with our Marine Enforcement to ask them how they felt about the two minimum sizes for mako shark. They were concerned about having two different size limits for the shark, and they proposed that we use a single 83 inch limit for both sexes, to avoid having people who might not be familiar with sharks, to try to handle a shark to determine what its gender is.

CHAIRMAN MILLER: David Pierce.

DR. DAVID PIERCE: As far as I know there are very few if any shortfin mako sharks caught in Massachusetts state waters, so I would look at this similar to Jason, just a way to try to enhance enforcement of this rule. I'll support this, but again it's just to assist with enforcement, and not to constrain in any way a nonexistent catch of shortfin makos in state waters.

CHAIRMAN MILLER: Did I see a couple other hands, Robert Boyles and then Chris Batsavage?

MR. ROBERT H. BOYLES, JR.: I think this group knows that the state of South Carolina adopts by reference any regulations that are promulgated for sharks under federal authority. This is a done deal for us in South Carolina. I would say though, the way I look at this, you know our role here is to promote a conservation ethic among our anglers.

I share New York's concerns with the two different sizes. We are seeing some indications of increased novice anglers angling for sharks. We have no evidence of these animals in state waters as well, so I'm just concerned about our credibility. I don't oppose the motion, but I just

want to ask ourselves a question. I mean is this something that is absolutely critical for us to do, to promote stewardship conservation of these animals? Thank you.

CHAIRMAN MILLER: Chris Batsavage.

MR. CHRIS BATSAVAGE: Yes, we were a little concerned about just the differential size limits for males and females. I don't think we have any other finfish regulations like that. However, I believe NOAA Fisheries has educational information available, as far as for the public to identify male and female sharks, and if that's the case that is something that in our proclamation and any news releases, we would link the public to that information, just to avoid any confusion. Just in terms of even though we don't see, very rarely see a mako shark in state waters; we do support consistent regulations between federal and state waters. That really just cuts down on any confusion, as far as the anglers, and also makes it easier for enforcement to write tickets and have them stick.

CHAIRMAN MILLER: Karyl Brewster-Geisz.

MS. BREWSTER-GEISZ: As you all know, with our Emergency Rule we went with the one size limit. We felt the same way, especially for that large of a shark. How safe is it? How many people would be aware? We heard throughout the public comment period from a lot of anglers, a lot of charterboat captains that anyone going out for makos, and that large of a mako, is going to be an experienced angler, and is very aware of how to identify a male and female shark, because it is very obvious once the males reach sexual maturity that they are male.

It's hard to hide that. After a lot of discussion, we did decide to go for the different size limits, trusting that the fishermen were correct that they could identify them correctly, and that this would provide additional opportunities for them, because a lot of them are going for those male makos, and not the females, which are very rarely caught, even in the recreational fishery.

There were only a few caught last year. Going with the 83 inches, just the recreational component, we had a much larger reduction than we were expecting, which is another reason why we went forward with the two size limits. But it is important we keep that 83 inches for females, one it's what ICCAT recommended, and two, that is the size at which females start to become sexually mature.

That is not the 50 percent level for females. I'm trying to answer some of the questions around the table about the difference in sexes, and we do have a lot of materials to help anglers tell the difference. If you remember, we implemented a requirement that everybody fishing federally for sharks has to watch a video, and answer questions.

We revised that video and included a question about this for Amendment 11. Anybody who got it at the beginning of the year may not have seen the video, but anyone who has gotten their permits since March 3, has seen that video. I can make it available to everybody, if you would like.

CHAIRMAN MILLER: I'll call on Doug Haymans again.

MR. HAYMANS: A question not necessarily to the motion, but for federally permitted shark dealers, can they buy short sharks? In other words state sharks that were caught in state waters, or are they restricted to the federal size limit?

MS. BREWSTER-GEISZ: If you remember, federally permitted dealers in east coast states are required to have that federal permit. They can buy from state fishermen, as long as it follows state regulations. But there are no

commercial size limits for sharks. All sharks that have size limits are recreational only, and there is no sale of them.

CHAIRMAN MILLER: David Pierce.

DR. PIERCE: I apologize if this question has already been answered. I've been looking at the Federal Register announcement, then of course it's February 21, 2019, and there are references to what ICCAT will do. Has ICCAT already met and taken actions regarding the measures to restrict the shortfin makos?

CHAIRMAN MILLER: My impression is yes, but I'll go back to Karyl.

MS. BREWSTER-GEISZ: Yes, so in 2017, ICCAT recommended the measures that we implemented in Amendment 11. We followed those. They are meeting again this month to discuss the projections.

DR. PIERCE: The reason why I asked the question is on Page 53-61, it says at the top in the left column that this action establishes the foundation for an international ICCAT recommended rebuilding plan, understanding that ICCAT intends to adopt such a plan in the future, and that the United States will advocate for its development of that forum.

I'm just trying to get a better understanding what we are doing, what the federal government is doing. That is to provide the motivation for ICCAT to take measures similar to what we have, for what the federal government has taken, and what we will now be taking now? It talks about future measures, so it sounds like ICCAT hasn't really done this yet. But again, I'm just seeking the clarification.

CHAIRMAN MILLER: Again, I'm going to defer to Karyl.

MS. BREWSTER-GEISZ: Yes, in the future ICCAT will be looking at the projections that its scientists are looking at right now, to determine how much additional reductions are needed, if there are additional reductions needed, and how long that needs to be in order to rebuild the stock. There could be additional measures coming that we would need to implement, but at the moment, until those measures are recommended by ICCAT, this is what we have, and this is what other countries are implementing as well.

DR. PIERCE: Okay that answers my question. Other countries are implementing these minimum size rules. More measures may be adopted at a future ICCAT meeting, but for now we are not out on our own with the Service, relative to minimum sizes that other nations have done this too. Again, it's important because our take of short makos in the United States is a small percentage relative to what actually caught internationally, so it has happened, the minimum sizes have been adopted internationally.

CHAIRMAN MILLER: Any further comment on that Karyl?

MS. BREWSTER-GEISZ: Yes, minimum sizes are one of the choices that countries have. The recommendation from ICCAT overall wanted all shortfin mako to be released. Then under that there were a number of options for countries to choose from, minimum sizes were one of those options, which we decided to implement for our recreational fishery. For the commercial fishery, we are requiring that they release any live makos, but that they can keep the dead ones. Then there were a whole other suite. But yes, your general thought is correct. Other countries are implementing similar measures.

CHAIRMAN MILLER: All right, Justin Davis did you have one more point?

DR. DAVIS: Do we know the timeframe on which ICCAT is going to conduct another stock assessment for shortfin mako?

CHAIRMAN MILLER: Again, Karyl.

MS. BREWSTER-GEISZ: I do not believe they're conducting another stock assessment right now. What they are doing is they are taking the information from all the countries last year, and the measures implemented, seeing what the reductions were, and seeing how that affects the stock overall throughout the next couple generations time lengths. That is what they're doing right now. They are not redoing the entire assessment.

CHAIRMAN MILLER: Okay, we've had a fair amount of discussion, some of it directly related to the motion. Are we ready to vote on the motion? All right, all those in favor of the motion raise your right hand.

MS. TONI KERNS: Just to note that this is final action, so if it's everybody that's easy, but if it's not then.

CHAIRMAN MILLER: Were there any objections to the motion? There is one. We have to do a roll call?

MS. KERNS: We note who the objection is coming from.

MR. ROOTES-MURDY: **On the record it was noted that Georgia opposes the motion. Is there anybody who abstains from this motion, seeing none**?

CHAIRMAN MILLER: **All right, seeing none the motion passes 13 to 1, and 0, 0.** Thank you for that. Our next agenda item, I wanted to remind the Board that there was a recommendation regarding circle hooks. Do you want to have a discussion regarding circle hooks in state waters at this particular Shark Board meeting, or is this something we should defer to a subsequent meeting? Are there any thoughts in that regard? Dr. Pierce.

DR. PIERCE: Well, it's easy for me. I would say defer it, because we don't catch sharks in our waters, so circle hooks are not really required. It's not going to do any good since there are none to be caught, or at least none recorded as having been caught.

CHAIRMAN MILLER: At least two states have mandatory circle hooks now, and others are listed as being in the process. Stew Michels, do you have a comment?

MR. MICHELS: I think just in the interest of consistency with our federal partners, as well as in the spirit of conservation. I think I would like to offer a motion to require for state waters the use of circle hooks on lines intended to catch sharks.

CHAIRMAN MILLER: Is there a second to the motion? Maureen Davidson, or are you making a comment, Maureen, so you're second, thank you. All right, discussion on the motion, I'll start from left and work my way around, Jay McNamee first, then Dr. Pierce.

MR. McNAMEE: I agree with folks on the difficulty with enforceability and things like that. I should have maybe said this earlier. Rhode Island has also already adopted the measures from the Amendment in our state waters, including the circle hook requirement.

For us it was a matter of an opportunity for public education about the circle hooks, and their conservation. That for us adds value, not very enforceable I know. Some people don't like the idea of putting in measures that we know isn't easily enforced, but in this case we saw value in adopting it in state waters for that public education aspect.

CHAIRMAN MILLER: David Pierce.

DR. PIERCE: Yes, just a clarification. It says sharks. Does that mean every shark, every species of shark including dogfish?

CHAIRMAN MILLER: Let the record reflect that Stew Michels is shaking his head yes. Additional hands on this issue, Maureen Davidson.

MS. DAVIDSON: New York State is the other state that requires circle hooks for our shark fisheries. I believe we exclude dogfish for that. We do that because we do have a recreational fishery for sharks in our state, and we have also landed a small number of mako sharks in the past eight years. We think it's important for us to have circle hooks in our state waters to protect our sharks.

CHAIRMAN MILLER: Chris Batsavage, then Eric.

MR. BATSAVAGE: I know we've expressed concerns over enforceability of using circle hooks for sharks, when I guess it came up for dusky sharks. We still have those concerns. What we do in our shark proclamation is encourage anglers targeting sharks to use non-offset corrodible circle hooks. I can't support this motion at this time.

I would really like to hear from the Law Enforcement Committee on ways to make this as feasible as possible, in terms of enforceability, and also like to hear from the Advisory Panel on just the common practices of using circle hooks in recreational fisheries targeting sharks. I think that would at least give us a better sense of how to move forward with this requirement.

CHAIRMAN MILLER: Since I'm over that side, I'll call on Lewis Gillingham, and I'll get back to you, Eric.

MR. LEWIS GILLINGHAM: While I definitely supported the same measures in state waters for the minimum size, because that's enforceable. It can be enforced at the dock, and I think we will see added conservation, where an undersized mako is brought into state waters without the same size limit, he'll escape. The individual who did it will escape. The way our law enforcement works, if it's only in federal waters they would have to get a federal agent there to make a case.

They could call them, but they can't do anything. Our laws are possession laws, so with the change of possession I support that. Circle hook, by the same token, I don't want to charge Law Enforcement with something that is not enforceable. How in the world you can enforce a circle hook requirement on the dock is beyond me. You're taking the anglers testimony, yes I use the circle hook, or no I didn't.

I don't want to do that to law enforcement, unless I hear a real good reason why we should do it. I question NOAAs ability to enforcement anywhere except on the water. We do support the use of circle hooks for sharks, for all shark fish, and soon we'll include striped bass. But in terms of making it mandatory, I wouldn't want to be the one that made the vote that now we're going to implement in state waters.

CHAIRMAN MILLER: I have Eric Reid, and then I saw Robert Boyles, and then Ray Kane.

MR. ERIC REID: At this point in every meeting we talk about sharks, I usually bring up the fact that dealers have to go to a class to get their permit renewed, as opposed to doing it online. I'm not going to do that today, just so you're aware of that. But I like to take that opportunity. As far as Dr. Pierce mentioned dogfish would be included in this.

Actually, dogfish is outside of a southeast region shark permit, and could be excluded from that requirement, if anybody would like to go rod and reel fishing for dogfish, because it's not under that permit, it's a different permit if that helps any.

CHAIRMAN MILLER: I had Robert, you're next.

MR. BOYLES: I would like to echo my support for the comments of my colleagues from the old

North State, the Old Dominion. I think it's important that we certainly encourage anglers to adopt practices that will minimize post release mortality. I understand the intention of the motion, but I think an attorney will look at that motion, how do you prove intent? I think there is going to be a morass of difficulty with that. For that reason I cannot support the motion.

CHAIRMAN MILLER: Ray Kane, you had your hand up?

MR. KANE: Thank you, Mr. Chairman, but Eric Reid answered the question. We were concerned about the use of circle hooks in the commercial dogfish fishery. But being how they are permitted under another permit, we're good. Thank you.

CHAIRMAN MILLER: All right, where are we with regard to the motion? Are we ready to vote on the motion? Does anyone have a substitute motion? Do we need more time to discuss this, like a motion to postpone, or are we ready to vote? Chris Batsavage.

MR. BATSAVAGE: I'll offer a motion to postpone, I guess until we receive feedback from the Law Enforcement Committee and the Coastal Sharks Advisory Panel. I'm not sure if that's time certain enough or not.

CHAIRMAN MILLER: Are you thinking August?

MR. BATSAVAGE: If we can by August that would be fine, if the Coastal Sharks Board is scheduled to meet then, but whatever staff thinks, as far as a feasible time table.

MR. ROOTES-MURDY: I'll just offer, we have been having approximately two board meetings per year. Last year was a little unique, because there was the initiation of an addendum, and an approval of it, Addendum V that allows this Board to make these motions today, adjusting size limits, gear specifications annually ad hoc. It's at the pleasure of this Board if you wish to have this provided back to you in August, or it could wait until when we will for sure be meeting at the annual meeting. Just as a reminder, at the annual meeting that is when we take up our annual specifications for the following year.

CHAIRMAN MILLER: Bob Beal, did you have an additional comment?

EXECUTIVE DIRECTOR ROBERT E. BEAL: Not a whole lot just was going to say the Law Enforcement Committee will meet at the annual meeting as well. We can set the meetings up so that we have the Law Enforcement Committee meet prior to the shark board meeting. If there is not an urgency to do this in August, we can make most of these meetings happen at our annual meeting in New Hampshire, if that works for folks on the Board.

CHAIRMAN MILLER: Is that agreeable to you, Chris?

MR. BATSAVAGE: Yes, I think that would be the most efficient way to do it.

CHAIRMAN MILLER: **Let me read the motion now. Move to postpone until the Board has received feedback from the Law Enforcement Committee and the Advisory Panel with the intention of taking it up at the Annual Meeting**.

MR. BATSAVAGE: Yes.

CHAIRMAN MILLER: If that's a reasonable addition. Ray Kane, you'll second that. **Is there any discussion on the motion? Is there any objection to the motion? Seeing none, the motion to postpone carries unanimously**. I'm going to call on Kirby for one final agenda item, and that is Consideration of the 2018 FMP Review and State Compliance Reports, but first I'll acknowledge Lewis Gillingham. Lewis.

MR. GILLINGHAM: I had a question regarding compliance date for the minimum sizes. That wasn't expressly indicated by the motion.

MR. ROOTES-MURDY: From staff's standpoint, because the Board can take these motions up as final action on an ad hoc basis, unless specified otherwise, these are effective immediate, so that's the moving forward if you think that there needs to be more specificity, in terms of when the implementation date would be, we would need the Board to make that more clear.

MR. GILLINGHAM: I would like that clarity.

CHAIRMAN MILLER: Lewis, can I call on you as to when you want it, or I can call on Stew Michels that had his hand up as well.

MR. GILLINGHAM: Well, this was the problem that was raised before when we started bringing this up during the course of the year. Some states can only do this when their legislature meets. Some states, we like to have a 90 day period. That gives us time to get the information out to the public.

It gives us time to go through our Advisory Board meetings, advertise for public hearings through our Commission, and then the following month hold the Commission meeting. I would say whatever the date is, it should be such a date that all states are able to comply with that implementation date.

CHAIRMAN MILLER: It's sounding like August 1st would be agreeable to you, Lewis?

MR. GILLINGHAM: That would work for us, but again if that works for other states.

CHAIRMAN MILLER: I see one or two heads shaking no, I'll call on Stew Michels.

MR. MICHELS: Yes that's a pretty quick turnaround for us. It takes us every bit of six months to get a regulation in place, and usually it would be longer than that. But I had the same initial question as Lewis had on what the appropriate compliance deadline would be.

CHAIRMAN MILLER: Robert Boyles.

MR. BOYLES: I think with this Board's forbearance, I think for a lot of species you all end up waiting on South Carolina, because we do require a legislative process. But as I mentioned earlier, we already have a code section on the books that we adopt by reference, so I'm happy to say you won't be necessarily waiting on South Carolina, the Palmetto state on this particular issue. Just for the Board's information.

CHAIRMAN MILLER: David Pierce, and then I've got some direction for the Board.

DR. PIERCE: I was going to make a motion relative to the date for compliance with the shortfin mako on minimum sizes.

CHAIRMAN MILLER: That would be appropriate.

DR. PIERCE: **I'll make that motion. I would move that we require compliance with the shortfin mako minimum sizes by the annual ASMFC meeting.**

CHAIRMAN MILLER: Is there a second to that motion? The motion reads; Move to require compliance with the shortfin mako minimum sizes by the annual meeting. The motion is made by Dr. Pierce, a second by anyone? Justin Davis. Is there any discussion on the motion? Did you have your hand up, Mike Luisi?

MR. MICHAEL LUISI: Thank you, Mr. Chairman. I'm not going to oppose the motion. I look around to the Board and ask for some leniency in getting these regulations implemented. I believe right now, without having anything here to ask my staff. I think we have actions happening in our shark package right now,

which means it has to close before we can start considering new regulations.

I do not have a timeline in my mind when we would get this done. Our intention would be to start as soon as possible and move forward to implementing the regulations that are asked, as long as the Board can be a little forgiving and lenient in its application of a noncompliance finding on this, it would be helpful, thanks.

CHAIRMAN MILLER: Can we be forgiving, Board? Are there any further comments on the motion, Karyl?

MS. BREWSTER-GEISZ: Just a note that most of the shortfin makos are going to be caught in tournaments that are happening now. If the Board votes to delay implementation of the minimum sizes, even until August or October, it's effectively not going to be in place until this time next year. That is of consideration. We had a lot of confusion last summer, and if we are delaying it again then there will be continued confusion among the anglers.
CHAIRMAN MILLER: Erika.

MS. ERIKA BURGESS: The Florida Fish and Wildlife Conservation Commission could consider this at the earliest in July, and depending on the procedures that are followed, and whether public objects to the proposed rule. It may be delayed until August or later. But in the meantime we have in our state implemented a requirement for circle hooks in state waters.

On our website we have a large banner indicating that HMS permit holders must follow the federal regulations in state waters, and we also have a large banner indicating that anyone who fishes for sharks in federal waters must follow the regulations, and we direct them to your website. That should satisfy some concern about whether a recreational angler can know what the rules are.

CHAIRMAN MILLER: Well we have a motion before us. Did you have a comment, Maureen? Go ahead.

MS. DAVIDSON: I realize that there is a range of timeframes that it takes for a state to enact regulations controlling mako minimum lengths. We could probably get it into effect very quickly in New York; if we could stress that it's an emergency. But some other states require legislative action. I would ask that the Board not make it so tight so that it's by the annual meeting, to give each state time to be able to get this provision in effect. I hate to say it, but maybe the deadline should be spring of 2020.

CHAIRMAN MILLER: I'll look to the maker of the motion. Do you consider that a friendly amendment, David Pierce?

DR. PIERCE: I think that's too long. I think the motion makes sense, somebody can be forgiven.
MR. ADAM NOWALSKY: With regards to needing a specific date. Ultimately, in terms of our forgiveness that's going to come back to our next compliance report, I would think. Is it a time at which we determine if we're going to forgive a state. Would that be correct? We wouldn't have a discussion about whether a state was in compliance or not, until we did the next compliance report. Is that correct?

CHAIRMAN MILLER: That's my understanding, Kirby?

MR. ROOTES-MURDY: Yes, the compliance report is due July 1, so that would be on the previous fishing year, so you would be reporting out in terms of your compliance reports for say the 2019 fishing season not until next year. If it's not being implemented until 2020, then it would have to be noted in next year's compliance report, basically.

MR. NOWALSKY: Where I'm going with that is that if we don't put any date on this at all, no

state would be required to report compliance until July 1st of next year, is what I think I'm hearing. As long as they were able to report July 1st by compliance of next year, then we wouldn't have to take up any issue of needing to be lenient or not. I think that is what I'm hearing.

CHAIRMAN MILLER: I think that's what I'm hearing too, Kirby.

MR. ROOTES-MURDY: Yes, again it gets back to what this Board's preference is. If you guys want to set a hard date that the states have to have these regulations in place by say January 1, 2020, you know that's your prerogative, but if you prefer to allow for it to follow the cycle of the annual compliance report, then that is your prerogative as well. You can choose to set that as your date.

CHAIRMAN MILLER: Adam.

MR. NOWALSKY: I think given the concerns I've heard around the table, I would just let it go until we get to the next compliance meeting. Let every state go home, do their due diligence and I think we would be in good shape as a Board at that point. That would be my preference moving forward, so I would be in opposition to this motion, and just let it go.

MR. ROOTES-MURDY: One follow-up question, Adam. I think one of the things that may need to be considered, so we will get compliance reports next July, right, and that would be for the 2019 fishing season. If we're meeting let's say May of next year, what would be our mechanism to verify whether states are on their way to implementing those measures or not? What I'm hearing is that if we follow a by July 1st deadline, then there would be no checking on whether the states have met this motion until likely the fall of next year.

MR. NOWALSKY: That would be my intent I think at that point. That would encompass everybody's need around the table to meet whatever their individual timelines are. I think everyone would get there by that point.

CHAIRMAN MILLER: Maureen and then Ray Kane.

MS. DAVIDSON: NOAA has already expressed concern that we are going to miss the tournament season for 2019, based on our meeting now and whatever deadline we're going to propose for 2019. If we wait until July of 2020, then next summer also will likely be missed, in terms of trying to control minimum size for shortfin mako.

CHAIRMAN MILLER: Ray Kane.

MR. KANE: Yes, my sentiments exactly, Mr. Chairman. I mean we're already missing this season, according to National Marine Fisheries, the tournament season. To delay out to July 1, maybe we can make a hard date for the winter meeting. I've heard around the table it's going to take states six months, so six months out, February is what eight, nine, ten months out. My concern would be next year's tournament season.

CHAIRMAN MILLER**: I'm going to look to the maker of the motion. Do you want to consider changing the date in your motion, or do you want us to vote on it like it is?**

DR. PIERCE: I'm not sure what date I should choose, January 1, 2020, to provide states with a little bit more time. That is obviously one option. Clearly, I don't want to put states that can't do this by the annual meeting in a difficult position. I don't know how many states could get it done by January of 2020, more perhaps. In the interest of perhaps getting more support for the motion. If there is no objection from the Chair or from the Board, I would say by January 1 of 2020 or by the January meeting if there is one. I'm not sure, by the February meeting, 2020.

CHAIRMAN MILLER: How about January 1, since then it would be for the fishing season.

DR. PIERCE: That's fine by me. Whatever makes the most sense, so January 1, 2020, yes.

CHAIRMAN MILLER: I'll call on the seconder of the motion; Justin Davis is that okay with you? Justin is indicating yes. **Are we ready to vote on this particular motion? Is there any objection to the motion, 1 objection? Are there any abstentions, any null votes? The motion carries that would be 13-1-0-0.**

2018 FMP REVIEW AND STATE COMPLIANCE REPORTS

CHAIRMAN MILLER: We have run out of time to consider the 2018 FMP Review and State Compliance Reports. We'll have to do that by phone or by e-mail.

ADJOURNMENT

CHAIRMAN MILLER: Is there any very pressing business to come before this Board? Seeing none, are we in agreement to adjourn? We're unanimous on that. Thank you.

(Whereupon the meeting adjourned at 4:30 o'clock p.m. on April 30, 2019)

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Atlantic States Marine Fisheries Commission

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MEMORANDUM

September 24, 2019

To: **Coastal Sharks Management Board**

From: **Law Enforcement Committee**

RE: **Consideration of Circle Hook Requirement**

The Law Enforcement Committee (LEC) of the Atlantic States Marine Fisheries Commission (ASMFC) convened a teleconference on September 20, 2019 to review and provide comments on the potential requirement of circle hooks to catch sharks in state waters.

The following were in attendance:
LEC: LTC Kathy Cyr (USCG); Sgt. Greg Garner (SC); Capt. Doug Messeck (DE); Katie Moore (USCG); Maj. Patrick Moran (MA); Capt. Scott Pearce (FL); Capt. Jason Snellbaker (NJ); Maj. Jason Walker (NC)
OTHER PARTICIPANTS: Tobey Curtis (NOAA HMS)
STAFF: Max Appelman; Kirby Rootes-Murdy; Mark Robson

Kirby Rootes-Murdy provided background to the LEC participants on the request by the Coastal Sharks Management Board for input on a potential action to "require, for state waters, the use of circle hooks on lines intended to catch sharks".

The LEC had previously provided written comment on the requirement in Federal Amendment 5b for use of circle hooks in federal waters south of Chatham, MA. In a memo dated July 11, 2017 the LEC pointed to the difficulties of enforcing a regulation that might require evidence that an angler is "targeting" a particular species of fish with a prohibited hook type or size. This continues to be a concern for the LEC in the current proposal. The LEC therefore reiterates the position that, despite the recognized potential value of a circle hook requirement to reduce release mortality in the recreational fishery, strict enforcement of a rule that depends on proving targeting or intent to catch sharks with prohibited gear would be very difficult. Therefore, if the Board were to implement such a requirement, the LEC emphasized the importance of using intensive education and outreach to garner support for a circle hook regulation.

The LEC reviewed the existing shark-fishing regulations in Florida, and concurs that the standards used there would be very helpful in defining intent or targeting by means of the techniques or gear employed or by possession of a shark permit. Based on reports of successful

implementation of the regulation in Florida, the LEC recommends adopting similar language for all states, including a standard definition of a circle hook. For example, a definition as follows:

> *Non-stainless-steel circle hooks. A person targeting or harvesting sharks from Florida Waters must use non-stainless-steel circle hooks when fishing with live or dead natural bait. "Circle hook" means a fishing hook designed and manufactured so that the point is not offset and is turned perpendicularly back to the shank to form a general circular or oval shape.*

The LEC stresses the importance of all jurisdictions agreeing on standardized regulatory language, especially where states share common borders and fishing areas.

The LEC appreciates the opportunity to review the proposals of the Coastal Sharks Management Board and to provide enforcement advice as regulations are considered and developed.

Atlantic States Marine Fisheries Commission

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MEMORANDUM

October 3, 2019

To: **Coastal Sharks Management Board**

From: **Coastal Sharks Advisory Panel**

RE: **AP Review of Circle Hook Requirements**

Participants: Charles Witek (NY), Mark Sampson (MD), Pete Grimbilas (NJ), Katie Westfall (EDF)

Staff: Kirby Rootes-Murdy (ASMFC)

Other: Chris Batsavage (Board Chair), Tobey Curtis (NOAA)

An Advisory Panel conference call was held on October 1, 2019 to review the Board's postponed motion which considers requiring circle hooks for the coastal sharks recreational fishery in state waters. Four AP member were in attendance and their comments and recommendations are summarized below.

Comments

Mark Sampson- Indicated he didn't see how requiring all the states to adopt the circle hook requirement would present a challenge for law enforcement. By requiring anglers in all states fishing in both state and federal waters to have the same gear requirement, it might make things easier for checking compliance, for example when a vessel returns to dock there would be no need to verify whether that those onboard had been fishing with the correct gear for the corresponding area.

Additionally, Mark noted that Florida now requires a quiz for shore-based shark fishing that covers species identification, best handling techniques, and gear requirements.

Charles Witek- Noted while New York has a state statute that requires the use of circle hooks, even if this wasn't in the state regulation, he doesn't see any downside to using them. Similar to Mark, he noted the benefit in having the same gear requirements for shore, nearshore, and offshore fishing.

In New York, there has been a decrease in anglers targeting striped bass and bluefish in light of the declining populations for both species and anglers fishing from shore have switched to target coastal sharks. Most of the sharks they encounter from shore are from the prohibited species list, so there's added benefit if they catch any those species that circle hook may improve chances of post-release survival. To help with determining whether an angler is targeting sharks and compliant with the regulation of the hook.

Katie Westfall- Given the evidence there is conservation benefit in using circle hooks to reduce post-release mortality, she indicated it would be best to require them. While helpful, circle

hooks should be viewed as part of multi-approach effort as they are not a panacea and that education on best handling, release techniques, as well as species identification given some anglers who catch sharks are not always able to correctly identify the species.

Peter Grimbilas – Has run a shark tournament in New Jersey for about 30 years. Supports the conservation of the shark species, and requiring the use of circle hooks in state waters, noting that it becomes an enforcement issue when some vessels come in to the dock and they claim to have caught a shark in state waters, when the species they've caught likely occurred in federal waters. In running the shark tournament for over the 30 years, specifically targeting shortfin makos, there is an approximate 10% success rate- 10 boats go out fishing, only one lands a mako. With the increase in the size limit recently on shortfin makos, there has been a decrease in participation in the tournament.

Recommendations

The AP members recommended that the Board move forward with the circle hook requirement for the coastal sharks recreational fishery in state waters with the understanding that the current postponed motion should be adjusted to 1) mirror the federal regulatory language on circle hook requirements for recreational HMS permit holders and 2) that similar to the federal language, the motion should allow for an exemption to this requirement when fishing using files or artificial lures. Language from NOAA HMS Amendment 11 and compliance guide on what the specifications of the circle hook gear requirement is included below. Additionally, the AP recommended that the Board should work to encourage the education and outreach on this change in recreational gear requirements as well as safe handling of sharks, similar to what is now required for HMS permit holders.

The regulatory text from Amendment 11 final rule:

Sec 635.21 (k)

"(1) A person on board a vessel that has been issued or is required to be issued a permit with a shark endorsement under this part and who is participating in an HMS registered tournament that bestows points, prizes, or awards for Atlantic sharks must deploy only non-offset, corrodible circle hooks when fishing for, retaining, possessing, or landing sharks, except when fishing with flies or artificial lures."

The more plain language version of this regulation from the NOAA compliance guide:

"All HMS permit holders are required to use non-offset, non-stainless steel circle hooks when fishing for sharks recreationally, except when fishing with flies or artificial lures, in federal waters."

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 635

[Docket No. 190913–0027]

RIN 0648–XT004

Atlantic Highly Migratory Species; 2020 Atlantic Shark Commercial Fishing Year

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: This proposed rule would adjust quotas and retention limits, and establish opening dates for the 2020 fishing year for the Atlantic commercial shark fisheries. Quotas would be adjusted as required or allowable based on any overharvests and/or underharvests experienced during the 2019 fishing year. In addition, NMFS proposes opening dates and commercial retention limits based on adaptive management measures to provide, to the extent practicable, fishing opportunities for commercial shark fishermen in all regions and areas. The proposed measures could affect fishing opportunities for commercial shark fishermen in the northwestern Atlantic Ocean, the Gulf of Mexico, and the Caribbean Sea.

DATES: Written comments must be received by October 10, 2019.

ADDRESSES: You may submit comments on this document, identified by NOAA–NMFS–2019–0091, by any of the following methods:

- *Electronic Submission:* Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2019-0091,* click the ''Comment Now!'' icon, complete the required fields, and enter or attach your comments.
- *Mail:* Submit written comments to Guy DuBeck, NMFS/SF1, 1315 East-West Highway, National Marine Fisheries Service, SSMC3, Silver Spring, MD 20910.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.,* name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous).

Copies of this proposed rule and supporting documents are available from the HMS Management Division website at *https://www.fisheries.noaa.gov/topic/atlantic-highly-migratory-species* or by contacting Guy DuBeck by phone at 301–427–8503.

FOR FURTHER INFORMATION CONTACT: Guy DuBeck or Karyl Brewster-Geisz at 301–427–8503.

SUPPLEMENTARY INFORMATION:

Background

The Atlantic commercial shark fisheries are managed under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP) and its amendments are implemented by regulations at 50 CFR part 635. For the Atlantic commercial shark fisheries, the 2006 Consolidated HMS FMP and its amendments established commercial shark retention limits, commercial quotas for species and management groups, and accounting measures for underharvests and overharvests for the shark fisheries. The FMP also includes adaptive management measures, such as flexible opening dates for the fishing year and inseason adjustments to shark trip limits, which provide management flexibility in furtherance of equitable fishing opportunities, to the extent practicable, for commercial shark fishermen in all regions and areas.

2020 Proposed Commercial Shark Quotas

This proposed rule would adjust the quota levels for the different shark stocks and management groups for the 2019 Atlantic commercial shark fishing year based on overharvests and underharvests that occurred during the 2019 fishing year, consistent with existing regulations at 50 CFR 635.27(b). Overharvests and underharvests are accounted for in the same region, sub-region, and/or fishery in which they occurred the following year, except that large overharvests may be spread over a number of subsequent fishing years up to a maximum of five years. Shark stocks that are overfished, have overfishing occurring, or have an unknown status, as well as management groups that contain one or more stocks that are overfished, have overfishing occurring, or have an unknown stock status, will not have underharvest carried over in the following year. Stocks or management groups that are not overfished and have no overfishing occurring may have any underharvest carried over in the following year, up to 50 percent of the base annual quota.

Based on 2019 harvests to date, and after considering catch rates and landings from previous years, NMFS proposes to adjust the 2020 quotas for certain management groups as shown in Table 1. In the final rule, any adjustments to the quotas will be based on how the quotas are affected by new data from dealer reports received by late October to mid-November 2019. Thus, all of the 2020 proposed quotas for the respective stocks and management groups will be subject to further adjustment after NMFS considers the dealer reports through late October to mid-November. NMFS anticipates that all dealer reports that are received after the late October to mid-November date will be used to adjust 2021 quotas, as appropriate.

Because the Gulf of Mexico blacktip shark management group and smoothhound shark management groups in the Gulf of Mexico and Atlantic regions are not overfished, and overfishing is not occurring, available underharvest (up to 50 percent of the base annual quota) from the 2019 fishing year for these management groups may be applied to the respective 2020 quotas. NMFS proposes to account for any underharvest of Gulf of Mexico blacktip sharks by dividing underharvest between the eastern and western Gulf of Mexico sub-regional quotas based on the sub-regional quota split percentage implemented in Amendment 6 to the 2006 Consolidated Atlantic HMS FMP (80 FR 50073; August 18, 2015).

For the sandbar shark, aggregated large coastal shark (LCS), hammerhead shark, non-blacknose small coastal shark (SCS), blacknose shark, blue shark, porbeagle shark, and pelagic shark (other than porbeagle or blue sharks) management groups, the 2019 underharvests cannot be carried over to the 2020 fishing year because those stocks or management groups are overfished, are experiencing overfishing, or have an unknown status. There also were no overharvests in these management groups. Thus, NMFS proposes that quotas for these management groups be equal to the annual base quota without adjustment, although the final quotas will be based

on current data at the time the final rule is prepared.

The proposed 2020 quotas by species and management group are summarized in Table 1; the description of the calculations for each stock and management group can be found below.

TABLE 1—2020 PROPOSED QUOTAS AND OPENING DATES FOR THE ATLANTIC SHARK MANAGEMENT GROUPS

[All quotas and landings are dressed weight (dw), in metric tons (mt), unless specified otherwise. Table includes landings data as of September 13, 2019; final quotas are subject to change based on landings as of late October to mid-November 2019. 1 mt = 2,204.6 lb]

Region or sub-region	Management group	2019 annual quota (A)	Preliminary 2019 landings [1] (B)	Adjustments [2] (C)	2020 base annual quota (D)	2020 proposed annual quota (D + C)	Season opening dates
Western Gulf of Mexico	Blacktip Sharks [3]	250.8 mt dw (552,919 lb dw) [5].	62.2 mt dw (137,118 lb dw).	127.9 mt dw (281,899.8 lb dw).	231 mt dw (510,261 lb dw).	358.9 mt dw (792,161 lb dw).	January 1, 2020.
	Aggregated [4] Large Coastal Sharks.	22.0 mt dw (48,501 lb dw) [5].	11.7 mt dw (25,805 lb dw).		72.0 mt dw (158,724 lb dw).	72.0 mt dw (158,724 lb dw).	
	Hammerhead Sharks	3.9 mt dw (8,598 lb dw) [5].	<0.5 mt dw (<1,300 lb dw).		11.9 mt dw (26,301 lb dw).	11.9 mt dw (26,301 lb dw).	
Eastern Gulf of Mexico	Blacktip Sharks [3]	32.7 mt dw (72,091 lb dw) [5].	7.2 mt dw (15,778 lb dw).	13.9 mt dw (30,627.7 lb dw).	25.1 mt dw (55,439 lb dw).	39.0 mt dw (86,066.7 lb dw).	January 1, 2020.
	Aggregated Large Coastal Sharks.	135.5 mt dw (298,726 lb dw) [5].	61.3 mt dw (135,227 lb dw).		85.5 mt dw (188,593 lb dw).	85.5 mt dw (188,593 lb dw).	
	Hammerhead Sharks	21.4 mt dw (47,178 lb dw) [5].	9.2 mt dw (20,353 lb dw).		13.4 mt dw (29,421 lb dw).	13.4 mt dw (29,421 lb dw).	
Gulf of Mexico	Non-Blacknose Small Coastal Sharks.	112.6 mt dw (248,215 lb dw).	34.5 mt dw (76,027 lb dw).		112.6 mt dw (248,215 lb dw).	112.6 mt dw (248,215 lb dw).	
	Smoothhound Sharks	504.6 mt dw (1,112,441 lb dw).	<5.0 mt dw (<11,000 lb dw).	168.2 mt dw (370,814 lb dw).	336.4 mt dw (741,627 lb dw).	504.6 mt dw (1,112,441 lb dw).	
Atlantic	Aggregated Large Coastal Sharks.	168.9 mt dw (372,552 lb dw).	34.5 mt dw (76,011 lb dw).		168.9 mt dw (372,552 lb dw).	168.9 mt dw (372,552 lb dw).	January 1, 2020.
	Hammerhead Sharks	27.1 mt dw (59,736 lb dw).	9.3 mt dw (20,479 lb dw).		27.1 mt dw (59,736 lb dw).	27.1 mt dw (59,736 lb dw).	
	Non-Blacknose Small Coastal Sharks.	264.1 mt dw (582,333 lb dw).	83.8 mt dw (184,735 lb dw).		264.1 mt dw (582,333 lb dw).	264.1 mt dw (582,333 lb dw).	
	Blacknose Sharks (South of 34° N lat. only).	17.2 mt dw (37,921 lb dw).	7.9 mt dw 17,431 lb dw.		17.2 mt dw (37,921 lb dw).	17.2 mt dw (37,921 lb dw).	
	Smoothhound Sharks	1,802.6 mt dw (3,973,902 lb dw).	279.6 mt dw (616,326 lb dw).	600.9 mt dw (1,324,634 lb dw).	1,201.7 mt dw (2,649,268 lb dw).	1,802.6 mt dw (3,971,587 lb dw).	
No regional quotas	Non-Sandbar LCS Research.	50.0 mt dw (110,230 lb dw).	10.1 mt dw (22,195 lb dw).		50.0 mt dw (110,230 lb dw).	50.0 mt dw (110,230 lb dw).	January 1, 2020.
	Sandbar Shark Research.	90.7 mt dw (199,943 lb dw).	50.6 mt dw (111,542 lb dw).		90.7 mt dw (199,943 lb dw).	90.7 mt dw (199,943 lb dw).	
	Blue Sharks	273.0 mt dw (601,856 lb dw).	0 mt dw (0 lb dw)		273.0 mt dw (601,856 lb dw).	273.0 mt dw (601,856 lb dw).	
	Porbeagle Sharks	1.7 mt dw (3,748 lb dw).	<0.5 mt dw (<1,000 lb dw).		1.7 mt dw (3,748 lb dw).	1.7 mt dw (3,748 lb dw).	
	Pelagic Sharks Other Than Porbeagle or Blue.	488.0 mt dw (1,075,856 lb dw).	28.6 mt dw (63,006 lb dw).		488.0 mt dw (1,075,856 lb dw).	488.0 mt dw (1,075,856 lb dw).	

[1] Landings are from January 1, 2019, through September 13, 2019, and are subject to change.

[2] Underharvest adjustments can only be applied to stocks or management groups that are not overfished and have no overfishing occurring. Also, the underharvest adjustments cannot exceed 50 percent of the base annual quota.

[3] This adjustment accounts for underharvest in 2019. This proposed rule would increase the overall Gulf of Mexico blacktip shark quota by 141.8 mt dw (281,899.8 lb dw). Since any underharvest would be divided based on the sub-regional quota percentage split, the western Gulf of Mexico blacktip shark quota would be increased by 127 mt dw, or 90.2 percent of the underharvest, while the eastern Gulf of Mexico blacktip shark quota would be increased by 13.9 mt dw, or 9.8 percent of the underharvest.

[4] While the western Gulf of Mexico Aggregated LCS quota was still under the limit when the 2019 final rule was released, the quota was exceeded by the end of the year. However, current landings are at 11 percent of the available 2019 quota and current catch rates do not indicate the quota will be fully landed. This underharvest (62.3 mt dw) is much greater than the 2018 overharvest (8.0 mt dw; 17,548 lb dw lb dw). Therefore, NMFS is proposing that the 2019 quota be adjusted to account for the 2018 overharvest, and the 2020 quota be equal to the annual base quota without adjustment.

[5] NMFS transferred 5 mt dw of the blacktip shark quota, 50 mt dw of the aggregated LCS quota, and 8 mt dw of the hammerhead shark quota from the western Gulf of Mexico sub-region to the eastern Gulf of Mexico sub-region on September 12, 2019.

1. Proposed 2020 Quotas for the Gulf of Mexico Region Shark Management Groups

In a recent action, NMFS transferred 5 mt dw of the blacktip shark quota, 50 mt dw of the aggregated LCS quota, and 8 mt dw of the hammerhead shark quota from the western Gulf of Mexico sub-region to the eastern Gulf of Mexico sub-region on September 12, 2019. This quota transfer would not impact the proposed actions in this rulemaking. The 2020 proposed commercial quota for blacktip sharks in the western Gulf of Mexico sub-region is 358.9 mt dw (792,161lb dw) and the eastern Gulf of Mexico sub-region is 39.0 mt dw (86,066.7 lb dw; Table 1). As of September 13, 2019, preliminary reported landings for blacktip sharks in the western Gulf of Mexico sub-region were at 25 percent (62.2 mt dw) of their 2019 quota levels (250.8 mt dw), and blacktip sharks in the eastern Gulf of Mexico sub-region were at 22 percent (7.2 mt dw) of their 2019 quota levels (32.7 mt dw). Reported landings in both sub-regions have not exceeded the 2019 quota to date, and blacktip shark landings in both sub-regions are lower than usual. Gulf of Mexico blacktip sharks have not been declared to be overfished, to have overfishing occurring, or to have an unknown status. Pursuant to § 635.27(b)(2)(ii), underharvests for blacktip sharks within the Gulf of Mexico region therefore may be applied to the 2019 quotas, up to 50 percent of the base annual quota. Additionally, any underharvest would be divided between the two sub-regions, based on the percentages that are allocated to each sub-region, which are set forth in § 635.27(b)(1)(ii)(C). To date, the overall Gulf of Mexico blacktip shark management group is underharvested by 214.1 mt dw (472,114 lb dw). Accordingly, NMFS proposed to increase the western Gulf of Mexico blacktip shark quota by 127.9 mt dw or 90.2 percent of the underharvest, while the eastern Gulf of Mexico blacktip shark sub-regional quota would increase by 13.9 mt dw, or 9.8 percent of the underharvest (Table 1). Thus, the proposed western sub-regional Gulf of Mexico blacktip shark commercial quota is 358.9 mt dw (792,161 lb dw), and the proposed eastern sub-regional Gulf of Mexico blacktip shark commercial quota is 39.0 mt dw (86,066.7 lb dw).

The 2020 proposed commercial quota for aggregated LCS in the western Gulf of Mexico sub-region is 72.0 mt dw (141,176 lb dw), and the eastern Gulf of

Mexico sub-region is 85.5 mt dw (188,593 lb dw; Table 1). As of September 13, 2019, preliminary reported landings for aggregated LCS in the western Gulf of Mexico sub-region were at 53 percent (11.7 mt dw) of the 2019 quota (22.0 mt dw), while the aggregated LCS in the eastern Gulf of Mexico sub-region were at 45 percent (61.3 mt dw) of their 2019 quota levels (135.5 mt dw). NMFS is proposing to adjust the 2019 aggregated LCS quota in the western Gulf of Mexico sub-region to account for an 8 mt dw overharvest that occurred in 2018. While the quota was still under the limit when the 2019 Atlantic Shark Commercial Fishing Year final rule was released (83 FR 60777; November 27, 2018), the quota was exceeded by the end of the 2019 calendar year, as later revealed by updated data received in 2019. Although NMFS generally accounts for later-reported overages in the subsequent year (here, 2020), NMFS has, under certain circumstances, re-adjusted the subject year quota if appropriate. Given that 2019 landings are low, current catch rates indicate that the 2019 quota will not be fully landed, and that there is time to further adjust this approach, if needed, in the final rule in response to any updated landings information. NMFS is proposing that the 2019 sub-regional quota be adjusted to account for the 2018 overharvest, and is proposing that the 2020 quota for the aggregated LCS in the western Gulf of Mexico be equal to the annual base quota without adjustment. NMFS proposes to re-adjust the western Gulf of Mexico sub-regional quota by 8 mt dw (17,548 lb dw) from the 2019 quota. If catch rates do increase, and the revised 2019 sub-regional quota is exceeded, then NMFS would, in the final rule, reduce the 2020 quota by that overharvest. Based on preliminary estimates and catch rates from previous years, and consistent with the current regulations at § 635.27(b)(2), NMFS proposes that the 2020 quota for aggregated LCS in the eastern Gulf of Mexico sub-region be equal to the annual base quota without adjustment, because the overall regional quota has not been overharvested and because underharvests cannot be carried over due to stock status.

The 2020 proposed commercial quotas for hammerhead sharks in the eastern Gulf of Mexico sub-region and western Gulf of Mexico sub-region are 11.9 mt dw (26,301 lb dw) and 13.4 mt dw (29,421 lb dw), respectively (Table 1). As of September 13, 2019, preliminary reported landings for hammerhead sharks in the western Gulf of Mexico sub-region were less than 12 percent (<0.5 mt dw) of their 2019 quota levels (3.9 mt dw), while landings of hammerhead sharks in the eastern Gulf of Mexico sub-region were at 43 percent (9.2 mt dw) of their 2019 quota levels (21.4 mt dw). Reported landings from both Gulf of Mexico and Atlantic regions have not exceeded the 2019 overall hammerhead quota to date. Given the overfished status of the scalloped hammerhead shark, the hammerhead shark quota cannot be adjusted for any underharvests. Therefore, based on both preliminary estimates and catch rates from previous years and the fact that the 2019 overall hammerhead shark quota has not been overharvested to date, and consistent with the current regulations at § 635.27(b)(2)(ii), NMFS proposes that the 2020 quotas for hammerhead sharks in the western Gulf of Mexico and eastern Gulf of Mexico sub-regions be equal to their annual base quotas without adjustment.

The 2020 proposed commercial quota for non-blacknose SCS in the Gulf of Mexico region is 112.6 mt dw (248,215 lb dw). As of September 13, 2019, preliminary reported landings of non-blacknose SCS were at 31 percent (34.5 mt dw) of their 2019 quota level (112.6 mt dw) in the Gulf of Mexico region. Reported landings have not exceeded the 2019 quota to date. Given the unknown status of bonnethead sharks within the Gulf of Mexico non-blacknose SCS management group, underharvests cannot be carried forward, pursuant to § 635.27(b)(2)(ii). Under current regulations at § 635.27(b)(2), underharvests cannot be carried over due to stock status. Based on both preliminary estimates and catch rates from previous years, and because there have not been any overharvests, NMFS proposes that the 2020 quota for non-blacknose SCS in the Gulf of Mexico region be equal to the annual base quota without adjustment. There is no allowable harvest of blacknose sharks in the Gulf of Mexico region.

The 2020 proposed commercial quota for smoothhound sharks in the Gulf of Mexico region is 504.6 mt dw (1,112,441 lb dw). As of September 13, 2019, preliminary reported landings of smoothhound sharks were less than 5 percent (<4.9 mt dw) in the Gulf of Mexico region. Gulf of Mexico smoothhound sharks have not been declared to be overfished, to have overfishing occurring, or to have an unknown status. Pursuant to § 635.27(b)(2)(ii), underharvests for smoothhound sharks within the Gulf of Mexico region therefore could be applied to the 2020 quotas up to 50 percent of the base annual quota. Accordingly, NMFS proposes to increase the 2020 Gulf of Mexico smoothhound shark quota to adjust for anticipated underharvests in 2019 as allowed. The proposed 2020 adjusted base annual quota for Gulf of Mexico smoothhound sharks is 504.6 mt dw (336.4 mt dw) annual base quota + 168.2 mt dw 2019 underharvest = 504.6 mt dw 2020 adjusted annual quota).

2. Proposed 2020 Quotas for the Atlantic Region Shark Management Groups

The 2020 proposed commercial quota for aggregated LCS in the Atlantic region is 168.9 mt dw (372,552 lb dw). As of September 13, 2019, the aggregated LCS fishery in the Atlantic region is still open, and preliminary landings indicate that only 20 percent of the quota, or 34.5 mt dw, has been harvested. Given the unknown status of some of the shark species within the Atlantic aggregated LCS management group, underharvests cannot be carried over pursuant to § 635.27(b)(2)(ii). Therefore, based on both preliminary estimates and catch rates from previous years, and consistent with current regulations at § 635.27(b)(2), NMFS proposes that the 2020 quota for aggregated LCS in the Atlantic region be equal to the annual base quota without adjustment, because there have not been any overharvests, and underharvests cannot be carried over due to stock status.ey End:?≤

The 2020 proposed commercial quota for hammerhead sharks in the Atlantic region is 27.1 mt dw (59,736 lb dw). Currently, the hammerhead shark fishery in the Atlantic region is still open and preliminary landings as of September 13, 2019, indicate that 34 percent of the Atlantic regional quota, or 9.3 mt dw, has been harvested. Reported landings from both Gulf of Mexico and Atlantic regions have not exceeded the 2019 overall hammerhead quota to date. Given the overfished status of hammerhead sharks, underharvests cannot be carried forward pursuant to § 635.27(b)(2)(ii). Therefore, based on both preliminary estimates and catch rates from previous years, and consistent with the current regulations at § 635.27(b)(2), NMFS proposes that the 2020 quota for hammerhead sharks in the Atlantic region be equal to the annual base quota without adjustment, because the overall hammerhead shark quota has not been overharvested, and because underharvests cannot be carried over due to stock status.

The 2020 proposed commercial quota for non-blacknose SCS in the Atlantic region is 264.1 mt dw (582,333 lb dw). As of September 13, 2019, preliminary reported landings of non-blacknose SCS

were at 32 percent (83.8 mt dw) of their 2019 quota level in the Atlantic region. Reported landings have not exceeded the 2019 quota to date. Given the unknown status of bonnethead sharks within the Atlantic non-blacknose SCS management group, underharvests cannot be carried forward pursuant to § 635.27(b)(2)(ii). Therefore, based on preliminary estimates of catch rates from previous years, and consistent with the current regulations at § 635.27(b)(2), NMFS proposes that the 2020 quota for non-blacknose SCS in the Atlantic region be equal to the annual base quota without adjustment, because there have not been any overharvests, and because underharvests cannot be carried over due to stock status.

The 2019 proposed commercial quota for blacknose sharks in the Atlantic region is 17.2 mt dw (37,921 lb dw). This quota is available in the Atlantic region only for those vessels operating south of 34° N latitude. North of 34° N latitude, retention, landing, or sale of blacknose sharks is prohibited. As of September 13, 2019, preliminary reported landings of blacknose sharks were at 46 percent (7.9 mt dw) of their 2019 quota levels in the Atlantic region. Reported landings have not exceeded the 2019 quota to date. Pursuant to § 635.27(b)(2), because blacknose sharks have been declared to be overfished with overfishing occurring in the Atlantic region, NMFS could not carry forward the remaining underharvest. Therefore, NMFS proposes that the 2020 Atlantic blacknose shark quota be equal to the annual base quota without adjustment.

The 2020 proposed commercial quota for smoothhound sharks in the Atlantic region is 1,802.6 mt dw (3,973,902 lb dw). As of September 13, 2019, preliminary reported landings of smoothhound sharks were at 16 percent (279.6 mt dw) of their 2019 quota levels in the Atlantic region. Atlantic smoothhound sharks have not been declared to be overfished, to have overfishing occurring, or to have an unknown status. Pursuant to § 635.27(b)(2)(ii), underharvests for smoothhound sharks within the Atlantic region therefore could be applied to the 2020 quotas up to 50 percent of the base annual quota. Accordingly, NMFS proposes to increase the 2020 Atlantic smoothhound shark quota to adjust for anticipated underharvests in 2019 as allowed. The proposed 2020 adjusted base annual quota for Atlantic smoothhound sharks is 1,802.6 mt dw (1,201.7 mt dw annual base quota + 600.9 mt dw 2019 underharvest = 1,802.6 mt dw 2020 adjusted annual quota).

3. Proposed 2020 Quotas for Shark Management Groups With No Regional Quotas

The 2020 proposed commercial quotas within the shark research fishery are 50 mt dw (110,230 lb dw) for research LCS and 90.7 mt dw (199,943 lb dw) for sandbar sharks. Within the shark research fishery, as of September 13, 2019, preliminary reported landings of research LCS were at 20 percent (10.1 mt dw) of their 2019 quota levels, and sandbar shark reported landings were at 56 percent (50.6 mt dw) of their 2019 quota levels. Reported landings have not exceeded the 2019 quotas to date. Under § 635.27(b)(2)(ii), because sandbar sharks and scalloped hammerhead sharks within the research LCS management group are either not overfished or overfishing is not occurring, underharvests for these management groups cannot be carried forward to the 2020 quotas. Therefore, based on preliminary estimates, and consistent with the current regulations at § 635.27(b)(2), NMFS proposes that the 2020 quota in the shark research fishery be equal to the annual base quota without adjustment because there have not been any overharvests, and because underharvests cannot be carried over due to stock status.

The 2020 proposed commercial quotas for blue sharks, porbeagle sharks, and pelagic sharks (other than porbeagle or blue sharks) are 273.0 mt dw (601,856 lb dw), 1.7 mt dw (3,748 lb dw), and 488.0 mt dw (1,075,856 lb dw), respectively. As of September 13, 2019, there were no preliminary reported landings of blue sharks, porbeagle shark reported landings were at <33 percent (<0.5 mt dw) of their 2019 quota levels, and landings of pelagic sharks (other than porbeagle and blue sharks) were at 6 percent (28.6 mt dw) of their 2019 quota level (488.0 mt dw). Given that these pelagic species are overfished, have overfishing occurring, or have an unknown status, underharvests cannot be carried forward pursuant to § 635.27(b)(2)(ii). Therefore, based on preliminary estimates and consistent with the current regulations at § 635.27(b)(2), NMFS proposes that the 2020 quotas for blue sharks, porbeagle sharks, and pelagic sharks (other than porbeagle and blue sharks) be equal to their annual base quotas without adjustment, because there have not been any overharvests and because underharvests cannot be carried over due to stock status.

4. Proposed Opening Dates and Retention Limits for the 2020 Atlantic Commercial Shark Fishing Year

For each fishery, NMFS considered the seven ''Opening Commercial Fishing Season Criteria'' listed at § 635.27(b)(3). The criteria includes factors such as the available annual quotas for the current fishing season, estimated season length and average weekly catch rates from previous years, length of the season and fishery participation in past years, impacts to accomplishing objectives of the 2006 Consolidated Atlantic HMS FMP and its amendments, temporal variation in behavior or biology of target species (*e.g.,* seasonal distribution or abundance), impact of catch rates in one region on another, and effects of delayed openings.

NMFS applied the Opening Commercial Fishing Season Criteria by examining the overharvests and underharvests of the different management groups in the 2019 fishing year to determine the likely effects of the proposed commercial quotas for 2020 on shark stocks and fishermen across regional and sub-regional fishing areas. NMFS also examined the potential season length and previous catch rates to ensure, to the extent practicable, that equitable fishing opportunities be provided to fishermen in all areas. Lastly, NMFS examined the seasonal variation of the different species/management groups and the effects on fishing opportunities.

NMFS also considered the six ''inseason trip limit adjustment criteria'' listed at § 635.24(a)(8) for directed shark limited access permit holders intending to land LCS other than sandbar sharks. Those criteria are: The amount of remaining shark quota in the relevant area or region, to date, based on dealer reports; the catch rates of the relevant shark species/complexes, to date, based on dealer reports; the estimated date of fishery closure based on when the landings are projected to reach 80-percent of the available overall, regional, and/or sub-regional quota, if the fishery's landings are not projected to reach 100 percent of the applicable quota before the end of the season, or when the season of a quota-linked management group is closed; effects of the adjustment on accomplishing the objectives of the 2006 Consolidated Atlantic HMS FMP and its amendments; variations in seasonal distribution, abundance, or migratory patterns of the relevant shark species based on scientific and fishery-based knowledge; and/or effects of catch rates in one part of a region precluding vessels in another part of that region from having a

reasonable opportunity to harvest a portion of the relevant quota.

After considering all these criteria, NMFS is proposing to open the 2020 Atlantic commercial shark fishing season for all shark management groups in the northwestern Atlantic Ocean, including the Gulf of Mexico and the Caribbean Sea, on or about January 1, 2020, after the publication of the final rule for this action (Table 2). NMFS is also proposing to start the 2020 commercial shark fishing season with the commercial retention limit of 45 LCS other than sandbar sharks per vessel per trip in both the eastern and western Gulf of Mexico sub-regions, and a commercial retention limit of 25 LCS other than sandbar sharks per vessel per trip in the Atlantic region (Table 2). NMFS will consider public comments received during the current year and catch rates from this year. Any retention limits that are proposed could change as a result of public comments as well as catch rates and landings information based on updated data available when drafting the final rule.

TABLE 2—QUOTA LINKAGES, SEASON OPENING DATES, AND COMMERCIAL RETENTION LIMIT BY REGIONAL OR SUB-REGIONAL SHARK MANAGEMENT GROUP

Region or sub-region	Management group	Quota linkages	Season opening dates	Commercial retention limits for directed shark limited access permit holders (inseason adjustments are possible)
Western Gulf of Mexico.	Blacktip Sharks	Not Linked	January 1, 2020	45 LCS other than sandbar sharks per vessel per trip.
	Aggregated Large Coastal Sharks. Hammerhead Sharks.	Linked.		
Eastern Gulf of Mexico.	Blacktip Sharks	Not Linked	January 1, 2020	45 LCS other than sandbar sharks per vessel per trip. [1]
	Aggregated Large Coastal Sharks. Hammerhead Sharks.	Linked.		
Gulf of Mexico	Non-Blacknose Small Coastal Sharks.	Not Linked	January 1, 2020	N/A.
	Smoothhound Sharks	Not Linked	January 1, 2020	N/A.
Atlantic	Aggregated Large Coastal Sharks.	Linked	January 1, 2020	25 LCS other than sandbar sharks per vessel per trip.
	Hammerhead Sharks			If quota is landed quickly (*e.g.,* if approximately 20 percent of quota is caught at the beginning of the year), NMFS anticipates an inseason reduction (*e.g.,* to 3 or fewer LCS other than sandbar sharks per vessel per trip), then an inseason increase to 36 LCS other than sandbar sharks per vessel per trip around July 15, 2020. [2]
	Non-Blacknose Small Coastal Sharks.	Linked (South of 34° N lat. only).	January 1, 2020	N/A.
	Blacknose Sharks (South of 34° N lat. only).			8 Blacknose sharks per vessel per trip (applies to directed and incidental permit holders).
	Smoothhound Sharks	Not Linked	January 1, 2020	N/A.
No regional quotas	Non-Sandbar LCS Research. Sandbar Shark Research.	Linked	January 1, 2020	N/A.
	Blue Sharks Porbeagle Sharks. Pelagic Sharks Other Than Porbeagle or Blue.	Not Linked	January 1, 2020	N/A.

[1] NMFS may consider a higher starting retention limit for the entire region of 55 sharks per trip to increase the harvest level and ensure the management group can maximize its quota. NMFS is asking for comments specifically on this potential increase in retention limits.

[2] NMFS is proposing changing the percent of quota harvested at which it considers adjusting the retention limit. Rather than 20 percent, NMFS would consider adjustment at a higher percentage to allow fishermen in the Atlantic region to more fully utilize the quota. NMFS is asking for comment specifically on this potential change in the benchmark (percent of quota harvested) at which NMFS considers an inseason adjustment. Additionally, NMFS is also considering an increase from the initial 25 sharks per trip in the beginning of the fishing year to a higher number of landings per trip, within the 55 sharks per trip limit. NMFS is specifically asking for comments on these potential changes.

In the Gulf of Mexico region, NMFS proposes opening the fishing season on or about January 1, 2020, for the aggregated LCS, blacktip sharks, and hammerhead shark management groups with the commercial retention limits of 45 LCS other than sandbar sharks per vessel per trip for directed shark permit holders in the eastern and western sub-region. This opening date and retention limit combination would provide, to the extent practicable, equitable opportunities across the fisheries management sub-regions. This opening date takes into account all the season opening criteria listed in § 635.27(b)(3), and particularly the criteria that requires NMFS to consider the length of the season for the different species and/or management group in the previous years (§ 635.27(b)(3)(ii) and (iii)) and whether fishermen were able to participate in the fishery in those years (§ 635.27(b)(3)(v)). The proposed

commercial retention limits take into account the criteria listed in § 635.24(a)(8), and particularly the criterion that requires NMFS to consider the catch rates of the relevant shark species/complexes based on dealer reports to date (§ 635.24(a)(8)(ii)). NMFS may also adjust the retention limit in the Gulf of Mexico region throughout the season to ensure fishermen in all parts of the region have an opportunity to harvest aggregated LCS, blacktip sharks, and hammerhead sharks (see the criteria listed at § 635.27(b)(3)(v) and § 635.24(a)(8)(ii), (v), and (vi)). For both the eastern and western Gulf of Mexico sub-regions combined, dealer reports received through September 13, 2019, indicate that 24 percent (69.4 mt dw), 46 percent (73.0 mt dw), and less than 40 percent (<10.0 mt dw) of the available blacktip, aggregated LCS, and hammerhead shark quotas, respectively, has been harvested. Therefore, for 2020, NMFS is considering opening the both the western and eastern Gulf of Mexico sub-regions at 45 sharks per trip, but may also consider a higher starting retention limit for the entire region of 55 sharks per trip to increase the harvest level and ensure the management group can maximize its quota. NMFS is asking for comments specifically on this potential increase in retention limits.

In the Atlantic region, NMFS proposes opening the aggregated LCS and hammerhead shark management groups on or about January 1, 2020. This opening date is the same date that these management groups opened in 2019. As described below, this opening date also takes into account all the criteria listed in § 635.27(b)(3), and particularly the criterion that NMFS consider the effects of catch rates in one part of a region precluding vessels in another part of that region from having a reasonable opportunity to harvest a portion of the different species and/or management quotas (§ 635.27(b)(3)(v)). The 2019 data indicates that an opening date of January 1, coupled with inseason adjustments to the retention limit, provided a reasonable opportunity for fishermen in every part of each region to harvest a portion of the available quotas (§ 635.27(b)(3)(i)) while accounting for variations in seasonal distribution of the different species in the management groups (§ 635.27(b)(3)(iv)). In 2019, when the aggregated LCS quota was harvested too quickly, NMFS reduced the retention limit to three sharks per trip (April 2, 2019; 84 FR 12524) to allow fishermen in the North Atlantic an opportunity to fish later in the year when sharks are available in the North Atlantic area (see the criteria at § 635.24(a)(3)(i), (ii), (v), and (vi)). NMFS then increased the retention limit to 36 sharks per trip on June 25, 2019 (84 FR 29808), to increase fishing opportunities for all fishermen across the Atlantic region. Because the quotas we propose for 2020 are the same as the quotas in 2019, NMFS proposes that the season lengths and therefore the participation of various fishermen throughout the region, would be similar in 2020 (§ 635.27(b)(3)(ii) and (iii)). Based on the recent performance of the fishery, the January 1 opening date appears to meet the objectives of the 2006 Consolidated Atlantic HMS FMP and its amendments (§ 635.27(b)(3)(vi)). However, after reviewing landings data from 2016 to the present, NMFS has seen a decrease in landings over time in the aggregated LCS management group. Because of the decrease in landings, NMFS is also proposing changing the percent of quotas harvested at which it considers adjusting the retention limit. Rather than 20 percent, NMFS would consider adjustments at a higher percentage to allow fishermen in the Atlantic region to more fully utilize the quota. While this is not a regulatory provision, it is a management benchmark NMFS has used (and announced as part of the rulemaking process) in previous seasons to help determine at which point it will consider an inseason action to adjust the retention limits. NMFS is asking for comment specifically on this potential change in the benchmark (percent of quota harvested) at which NMFS considers an inseason adjustment.

In addition, for the aggregated LCS and hammerhead shark management groups in the Atlantic region, NMFS proposes opening the fishing year with the commercial retention limit for directed shark limited access permit holders of 25 LCS other than sandbar sharks per vessel per trip. This retention limit should allow fishermen to harvest some of the 2020 quota at the beginning of the year when sharks are more prevalent in the South Atlantic area (see the criteria at § 635.24(a)(3)(i), (ii), (v), and (vi)). As was done in 2019, if it appears that the quota is being harvested too quickly to allow directed fishermen throughout the entire region an opportunity to fish and ensure enough quota remains until later in the year, NMFS would reduce the commercial retention limits to incidental levels (3 LCS other than sandbar sharks per vessel per trip) or another level calculated to reduce the harvest of LCS taking into account § 635.27(b)(3) and the inseason trip limit adjustment criteria listed in § 635.24(a)(8). If the quota continues to be harvested quickly, NMFS could reduce the retention limit to 0 LCS other than sandbar sharks per vessel per trip to ensure enough quota remains until later in the year. If either situation occurs, NMFS would publish in the **Federal Register** notification of any inseason adjustments of the retention limit to an appropriate limit of sharks per trip. NMFS will consider increasing the commercial retention limits per trip at a later date, if necessary, to provide fishermen in the northern portion of the Atlantic region an opportunity to retain aggregated LCS and hammerhead sharks after considering the appropriate inseason adjustment criteria. Similarly, at some point later in the year, NMFS may consider increasing the retention limit to 36 LCS other than sandbar sharks per vessel per trip or another amount, as deemed appropriate, after considering the inseason trip limit adjustment criteria. If the quota is being harvested too quickly or too slowly, NMFS could adjust the retention limit appropriately to ensure the fishery remains open most of the rest of the year. However, as stated above, NMFS has noticed a decrease in annual landings from 2016 to present. As such, in addition to the proposed change to the percent of quota harvested, NMFS is also considering an increase from the initial 25 sharks per trip in the beginning of the fishing year to a higher number of landings per trip, within the 55 sharks per trip limit. Changes to either the percent of quota harvested or the initial retention limit (or both) could allow fishermen in the Atlantic region to more fully utilize the quota. NMFS is specifically asking for comments on these potential changes.

All of the shark management groups would remain open until December 31, 2020, or until NMFS determines that the landings for any shark management group have reached, or are projected to reach, 80-percent of the available overall, regional, and/or sub-regional quota, if the fishery's landings are not projected to reach 100 percent of the applicable quota before the end of the season, or when the quota-linked management group is closed. If NMFS determines that a non-linked shark species or management group must be closed, then, consistent with § 635.28(b)(2) for non-linked quotas (*e.g.,* eastern Gulf of Mexico blacktip, western Gulf of Mexico blacktip, Gulf of Mexico non-blacknose SCS, pelagic sharks, or the Atlantic or Gulf of Mexico smoothhound sharks), NMFS will publish in the **Federal Register** a notice of closure for that shark species, shark

management group, region, and/or sub-region that will be effective no fewer than four days from the date of filing (83 FR 31677; July 9, 2018). For the blacktip shark management group, regulations at § 635.28(b)(5)(i) through (v) authorize NMFS to close the management group before landings reach, or are expected to reach, 80-percent of the available overall, regional, and/or sub-regional quota, after considering the following criteria and other relevant factors: Season length based on available sub-regional quota and average sub-regional catch rates; variability in regional and/or sub-regional seasonal distribution, abundance, and migratory patterns; effects on accomplishing the objectives of the 2006 Consolidated Atlantic HMS FMP and its amendments; amount of remaining shark quotas in the relevant sub-region; and regional and/or sub-regional catch rates of the relevant shark species or management groups. From the effective date and time of the closure until NMFS announces, via the publication of a notice in the **Federal Register**, that additional quota is available and the season is reopened, the fisheries for the shark species or management group are closed, even across fishing years.

If NMFS determines that a linked shark species or management group must be closed, then, consistent with § 635.28(b)(3) for linked quotas and the Final Rule to Revise Atlantic Highly Migratory Species Shark Fishery Closure Regulations (83 FR 31677; July 9, 2018), NMFS will publish in the **Federal Register** a notice of closure for all of the species and/or management groups in a linked group that will be effective no fewer than four days from date of filing. In that event, from the effective date and time of the closure until NMFS announces, via the publication of a notice in the **Federal Register**, that additional quota is available and the season is reopened, the fisheries for all linked species and/or management groups will be closed, even across fishing years. The linked quotas of the species and/or management groups are Atlantic hammerhead sharks and Atlantic aggregated LCS; eastern Gulf of Mexico hammerhead sharks and eastern Gulf of Mexico aggregated LCS; western Gulf of Mexico hammerhead sharks and western Gulf of Mexico aggregated LCS; and Atlantic blacknose and Atlantic non-blacknose SCS south of 34° N latitude.

Request for Comments

Comments on this proposed rule may be submitted via *www.regulations.gov* or by mail. NMFS solicits comments on this proposed rule by October 10, 2019 (see **DATES** and **ADDRESSES**). As noted above, NMFS is specifically asking for comments on three distinct issues—the initial LCS retention limit in the Gulf of Mexico region, the level of landings at which NMFS considers adjusting the retention limit for the Atlantic region, and the initial LCS retention limit in the Atlantic region.

Classification

The NMFS Assistant Administrator has determined that the proposed rule is consistent with the 2006 Consolidated Atlantic HMS FMP and its amendments, the Magnuson-Stevens Act, and other applicable law, subject to further consideration after public comment.

These proposed specifications are exempt from review under Executive Order 12866.

NMFS determined that the final rules to implement Amendment 2 to the 2006 Consolidated Atlantic HMS FMP (June 24, 2008, 73 FR 35778; corrected on July 15, 2008, 73 FR 40658), Amendment 5a to the 2006 Consolidated Atlantic HMS FMP (78 FR 40318; July 3, 2013), Amendment 6 to the 2006 Consolidated Atlantic HMS FMP (80 FR 50073; August 18, 2015), and Amendment 9 to the 2006 Consolidated Atlantic HMS FMP (80 FR 73128; November 24, 2015) are consistent to the maximum extent practicable with the enforceable policies of the approved coastal management program of coastal states on the Atlantic including the Gulf of Mexico and the Caribbean Sea as required under the Coastal Zone Management Act. Pursuant to 15 CFR 930.41(a), NMFS provided the Coastal Zone Management Program of each coastal state a 60-day period to review the consistency determination and to advise NMFS of their concurrence. NMFS received concurrence with the consistency determinations from several states and inferred consistency from those states that did not respond within the 60-day time period. This proposed action to establish opening dates and adjust quotas for the 2020 fishing year for the Atlantic commercial shark fisheries does not change the framework previously consulted upon. Therefore, no additional consultation is required.

An initial regulatory flexibility analysis (IRFA) was prepared, as required by section 603 of the Regulatory Flexibility Act (RFA). The IRFA describes the economic impact this proposed rule, if adopted, would have on small entities. The IRFA analysis follows.

Section 603(b)(1) of the RFA requires agencies to explain the purpose of the rule. This rule, consistent with the Magnuson-Stevens Act and the 2006 Consolidated Atlantic HMS FMP and its amendments, is being proposed to establish the 2020 commercial shark fishing quotas, retention limits, and fishing seasons. Without this rule, the commercial shark fisheries would close on December 31, 2019, and would not open until another action was taken. This proposed rule would be implemented according to the regulations implementing the 2006 Consolidated Atlantic HMS FMP and its amendments. Thus, NMFS proposes few, if any, economic impacts to fishermen other than those already analyzed in the 2006 Consolidated Atlantic HMS FMP and its amendments, based on the quota adjustments.

Section 603(b)(2) of the RFA requires agencies to explain the rule's objectives. The objectives of this rule are to: Adjust the base quotas for all shark management groups based on any overharvests and/or underharvests from the previous fishing year(s); establish the opening dates of the various management groups; and establish the retention limits for the blacktip shark, aggregated large coastal shark, and hammerhead shark management groups in order to provide, to the extent practicable, equitable opportunities across the fishing management regions and/or sub-regions while also considering the ecological needs of the different shark species.

Section 603(b)(3) of the RFA requires agencies to provide an estimate of the number of small entities to which the rule would apply. The Small Business Administration (SBA) has established size criteria for all major industry sectors in the United States, including fish harvesters. Provision is made under SBA's regulations for an agency to develop its own industry-specific size standards after consultation with Advocacy and an opportunity for public comment (see 13 CFR 121.903(c)). Under this provision, NMFS may establish size standards that differ from those established by the SBA Office of Size Standards, but only for use by NMFS and only for the purpose of conducting an analysis of economic effects in fulfillment of the agency's obligations under the RFA. To utilize this provision, NMFS must publish such size standards in the **Federal Register**, which NMFS did on December 29, 2015 (80 FR 81194; 50 CFR 200.2). In this final rule effective on July 1, 2016, NMFS established a small business size standard of $11 million in annual gross receipts for all businesses in the commercial fishing industry (NAICS 11411) for RFA compliance purposes. NMFS considers all HMS permit

holders to be small entities because they had average annual receipts of less than $11 million for commercial fishing.

As of September 2019, the proposed rule would apply to the approximately 219 directed commercial shark permit holders, 262 incidental commercial shark permit holders, 162 smoothhound shark permit holders, and 106 commercial shark dealers. Not all permit holders are active in the fishery in any given year. Active directed commercial shark permit holders are defined as those with valid permits that landed one shark based on HMS electronic dealer reports. Of the 481 directed and incidental commercial shark permit holders, only 12 permit holders landed sharks in the Gulf of Mexico region and only 69 landed sharks in the Atlantic region. Of the 154 smoothhound shark permit holders, only 61 permit holders landed smoothhound sharks in the Atlantic region and none landed smoothhound sharks in the Gulf of Mexico region. NMFS has determined that the proposed rule would not likely affect any small governmental jurisdictions.

This proposed rule does not contain any new reporting, recordkeeping, or other compliance requirements (5 U.S.C. 603(b)(4)). Similarly, this proposed rule would not conflict, duplicate, or overlap with other relevant Federal rules (5 U.S.C. 603(b)(5)). Fishermen, dealers, and managers in these fisheries must comply with a number of international agreements as domestically implemented, domestic laws, and FMPs. These include, but are not limited to, the Magnuson-Stevens Act, the Atlantic Tunas Convention Act, the High Seas Fishing Compliance Act, the Marine Mammal Protection Act, the Endangered Species Act, the National Environmental Policy Act, the Paperwork Reduction Act, and the Coastal Zone Management Act.

Section 603(c) of the RFA requires each IRFA to contain a description of any significant alternatives to the proposed rule, which would accomplish the stated objectives of applicable statutes and minimize any significant economic impact of the proposed rule on small entities. Additionally, the RFA (5 U.S.C. 603(c)(1)–(4)) lists four general categories of significant alternatives that would assist an agency in the development of significant alternatives. These categories of alternatives are: (1) Establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) use of performance rather than design standards; and (4) exemptions from coverage of the rule for small entities. In order to meet the objectives of this proposed rule, consistent with the Magnuson-Stevens Act, NMFS cannot exempt small entities or change the reporting requirements only for small entities, because all of the entities affected are considered small entities. In addition, there are no alternatives discussed that fall under the first, second, and fourth categories described above. NMFS does not know of any performance or design standards that would satisfy the aforementioned objectives of this rulemaking while, concurrently, complying with the Magnuson-Stevens Act; therefore, there are no alternatives considered under the third category.

This rulemaking does not establish management measures to be implemented, but rather implements previously adopted and analyzed measures with adjustments, as specified in the 2006 Consolidated Atlantic HMS FMP and its amendments and the Environmental Assessment (EA) that accompanied the 2011 shark quota specifications rule (75 FR 76302; December 8, 2010). Thus, NMFS proposes to adjust quotas established and analyzed in the 2006 Consolidated Atlantic HMS FMP and its amendments by subtracting the underharvest or adding the overharvest as allowable. Thus, NMFS has limited flexibility to modify the quotas in this rule, the impacts of which were analyzed in previous regulatory flexibility analyses.

Based on the 2018 ex-vessel price (Table 3), fully harvesting the unadjusted 2020 Atlantic shark commercial base quotas could result in total fleet revenues of $8,775,599. For the Gulf of Mexico blacktip shark management group, NMFS is proposing to increase the base sub-regional quotas due to the underharvests in 2019. The increase for the western Gulf of Mexico blacktip shark management group could result in a $232,674 gain in total revenues for fishermen in that sub-region, while the increase for the eastern Gulf of Mexico blacktip shark management group could result in a $41,513 gain in total revenues for fishermen in that sub-region. For the Gulf of Mexico and Atlantic smoothhound shark management groups, NMFS is proposing to increase the base quotas due to the underharvest in 2019. This would cause a potential gain in revenue of $262,788 for the fleet in the Gulf of Mexico region and a potential gain in revenue of $1,057,482 for the fleet in the Atlantic region.

All of these changes in gross revenues are similar to the changes in gross revenues analyzed in the 2006 Consolidated Atlantic HMS FMP and its amendments. The final regulatory flexibility analyses for those amendments concluded that the economic impacts on these small entities are expected to be minimal. In the 2006 Consolidated Atlantic HMS FMP and its amendments and the EA for the 2011 shark quota specifications rule, NMFS stated it would be conducting annual rulemakings and considering the potential economic impacts of adjusting the quotas for underharvests and overharvests at that time.

TABLE 3—AVERAGE EX-VESSEL PRICES PER LB DW FOR EACH SHARK MANAGEMENT GROUP, 2018

Region	Species	Average ex-vessel meat price	Average ex-vessel fin price
Western Gulf of Mexico	Blacktip Shark	$0.53	$10.94
	Aggregated LCS	0.67	11.61
	Hammerhead Shark	0.51	11.12
Eastern Gulf of Mexico	Blacktip Shark	1.06	9.54
	Aggregated LCS	0.59	11.93
	Hammerhead Shark	0.40	13.20
Gulf of Mexico	Non-Blacknose SCS	0.54	7.00
	Smoothhound Shark	0.65	.....
Atlantic	Aggregated LCS	0.98	11.06
	Hammerhead Shark	0.42	6.66
	Non-Blacknose SCS	0.99	7.67

TABLE 3—AVERAGE EX-VESSEL PRICES PER LB DW FOR EACH SHARK MANAGEMENT GROUP, 2018—Continued

Region	Species	Average ex-vessel meat price	Average ex-vessel fin price
No Region	Blacknose Shark	1.21	.....
	Smoothhound Shark	0.74	1.62
	Shark Research Fishery (Aggregated LCS)	0.81	11.61
	Shark Research Fishery (Sandbar only)	0.61	11.00
	Blue shark	0.45	3.01
	Porbeagle shark	1.18	3.01
	Other Pelagic sharks	1.46	3.01

For this rule, NMFS also reviewed the criteria at § 635.27(b)(3) to determine when opening each fishery would provide equitable opportunities for fishermen, to the extent practicable, while also considering the ecological needs of the different species. The opening dates of the fishing season(s) could vary depending upon the available annual quota, catch rates, and number of fishing participants during the year. For the 2020 fishing year, NMFS is proposing to open all of the shark management groups on the effective date of the final rule for this action (expected to be on or about January 1). The direct and indirect economic impacts would be neutral on a short- and long-term basis because NMFS is not proposing to change the opening dates of these fisheries from the status quo.

Authority: 16 U.S.C. 971 *et seq.;* 16 U.S.C. 1801 *et seq.*

Dated: September 16, 2019.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

[FR Doc. 2019–20249 Filed 9–18–19; 8:45 am]

BILLING CODE 3510–22–P

Atlantic States Marine Fisheries Commission

Atlantic Striped Bass Management Board

October 30, 2019
2:45 – 5:45 p.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*M. Armstrong*) 2:45 p.m.

2. Board Consent 2:45 p.m.
   - Approval of Agenda
   - Approval of Proceedings from August 2019

3. Public Comment 2:50 p.m.

4. Addendum VI for Final Approval **Final Action** 3:00 p.m.
   - Review Options and Public Comment Summary (*M. Appelman*)
   - Review Advisory Panel Report (*M. Appelman*)
   - Review Law Enforcement Committee Report (*K. Blanchard*)
   - Consider Final Approval of Addendum VI

5. Review Criteria for Development of Conservation Equivalency Proposals (*K. Drew*) 5:30 p.m.

6. Other Business/Adjourn 5:45 p.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW
Atlantic Striped Bass Management Board Meeting

October 30, 2019
2:45 – 5:45 p.m.
New Castle, New Hampshire

Chair: Mike Armstrong (MA) Assumed Chairmanship: 02/18	Technical Committee Chair: Nicole Lengyel (RI)	Law Enforcement Committee Rep: Kurt Blanchard (RI)
Vice Chair: David Borden (RI)	Advisory Panel Chair: Louis Bassano (NJ)	Previous Board Meeting: August 8, 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, NMFS, USFWS (16 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2019

3. Public Comment – At the beginning of the meeting, public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Addendum VI for Final Approval (3:00 – 5:30 p.m.) Final Action

Background

- The Board initiated Draft Addendum VI in April 2019 in response to the 2018 Benchmark Stock Assessment which found the Atlantic striped bass stock is overfished and experiencing overfishing.
- Draft Addendum VI proposes changes to commercial and recreational measures to reduce fishing mortality to the target level in 2020, and the mandatory use of circle hooks when fishing with bait to reduce release mortality in recreational fisheries
- The Board approved Draft Addendum VI for public comment in August. Public hearings were held in ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, DC, VA, and NC.
- The Public Comment Summary Report will be provided in **Supplemental Materials**
- The Law Enforcement Committee met September 20 and the Advisory Panel meets October 16 to provide recommendations on Draft Addendum VI. Both reports will be available in **Supplemental Materials**

Presentations

- Review of options and public comment summary by M. Appelman
- Review Advisory Panel report by M. Appelman
- Review Law Enforcement Report by K. Blanchard

Board Actions for Consideration

- Consider final approval of Addendum VI

5. Review Criteria for Development of Conservation Equivalency Proposals (5:30 – 5:45 p.m.)
Background • Draft Addendum VI proposes to maintain flexibility for states to purse alternative regulations through conservation equivalency. • The Technical Committee met October 10 to develop criteria for the development of conservation equivalency proposals **Supplemental Materials**.
Presentations • Review Technical Committee Report by K. Drew

6. Other Business/Adjourn

Atlantic Striped Bass

Activity level: High

Committee Overlap Score: Medium (TC/SAS/TSC/PDT overlaps with ERP, Atlantic menhaden, American eel, horseshoe crab, shad/river herring)

Committee Task List

- PDT – facilitates the adaptive management process by preparing and developing plan addendum or amendment
- SAS/TC – various taskings relating to management response to 2018 benchmark and to review submitted conservation equivalency proposals
- TC – June 15th: Annual compliance reports due

TC Members: Nicole Lengyel (RI, TC Chair), Kevin Sullivan (NH, Vice Chair), Alex Aspinwall (VA), Alexei Sharov (MD), Carol Hoffman (NY), Charlton Godwin (NC), Ellen Cosby (PRFC), Gail Wippelhauser (ME), Gary Nelson (MA), Brendan Harrison (NJ), Jason Boucher (DE), Jeremy McCargo (NC), Kurt Gottschall (CT), Luke Lyon (DC), Peter Schuhmann (UNCW), Gary Shepherd (NMFS), Steve Minkkinen (USFWS), Bryan Chikotas (PA), Katie Drew (ASMFC), Max Appelman (ASMFC)

SAS Members: Mike Celestino (NJ, SAS Chair), Nicole Lengyel (RI, TC Chair), Alexei Sharov (MD), Gary Nelson (MA), Gary Shepherd (NMFS), John Sweka (USFWS), Justin Davis (CT), Hank Liao (ODU), Katie Drew (ASMFC), Max Appelman (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC STRIPED BASS MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
August 8, 2019

These minutes are draft and subject to approval by the Atlantic Striped Bass Management Board.
The Board will review the minutes during its next meeting.

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ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)
Sen. David Miramant, ME (LA)
Doug Grout, NH (AA)
G. Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Mike Armstrong, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Sen. Craig Miner, CT (LA)
Jim Gilmore, NY (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Heather Corbett, NJ, proxy for J. Cimino (AA)
Tom Fote, NJ (GA)
Russ Allen, NJ, Governor Appointee proxy
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Andy Shiels, PA, proxy for T. Schaeffer (AA)
Loren Lustig, PA (GA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Luisi, MD, Administrative proxy (AA)
Russell Dize, MD (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Rob O'Reilly, VA, proxy for S. Bowman (AA)
Bryan Plumlee, VA (GA)
Sen. Monty Mason, VA (LA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Mike Blanton, NC, proxy for Rep. Steinberg (LA)
Martin Gary, PRFC
Derek Orner, NMFS
Bryan King, DC

AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Max Appelman
Lisa Havel
Kirby Rootes-Murdy
Katie Drew

Guests

Joe Cimino, NJ (AA)
Josey Cline, ASA
Genevieve Croker, Delmarva Fisheries
Tony DiLernia, MAFMC
Joan Dize, Tilghman, MD
Russell Dunn, NOAA
Pete Himchak, Omega Protein
Arnold Leo, E. Hampton, NY
Chip Lynch, NOAA
Julia Mason, Ofc. of Sen. Markey, DC
Meredith Mendelson, ME DMR
Mike Millard, US FWS
Chris Moore, CBF
R. Newberry, Delmarva Fisheries
Patrick Paquette, MSBA
Kelly Place, Williamsburg, VA
Claire Richer, Ofc. of Sen. Markey, DC
Tim Sartwell, NOAA
Dave Sikorsky, CCA MD
Mike Simpkin, NMFS
Tom Sminkey, NOAA
Jack Travelstead, CCA
Mike Waine, ASA
Charles Witek, W. Babylon, NY

These minutes are draft and subject to approval by the Atlantic Striped Bass Management Board.
The Board will review the minutes during its next meeting.

The Atlantic Striped Bass Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Thursday, August 8, 2019, and was called to order at 8:30 o'clock a.m. by Chairman Michael Armstrong.

CALL TO ORDER

CHAIRMAN MICHAEL ARMSTRONG: Good morning everyone. I would like to call to order the Striped Bass Board. I'm Mike Armstrong, from the Commonwealth of Massachusetts, your Chair. I think we'll have a busy meeting, so we'll try and stay on track. Remember at the end point what we hope to achieve is to sign off on sending the Addendum for public hearing. That is the goal of this meeting, so we'll try and move forward with that as best we can.

APPROVAL OF AGENDA

CHAIRMAN ARMSTRONG: You all have an agenda, are there any additions, replacements, substitutions needed for the agenda? Seeing none, the agenda is approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN ARMSTRONG: You have the proceedings from April of 2019, any amendments, additions to the proceedings? Seeing none, the proceedings are approved by consensus.

PUBLIC COMMENT

CHAIRMAN ARMSTRONG: At this point we'll accept public comment, again on issues that are not on the agenda today. Anything that has to do with the Addendum and the items within the Addendum will be out of order for public comments. I hope folks understand that when they come up. I have three people signed up. First is Charles Witek.

CHARLES A. WITEK III: Thank you, Mr. Chairman, as you know that my name is Charles Witek, recreational fisherman from West Babylon, New York. I've been a participant in the striped bass fishery since the mid-1960s. I've seen the good times and the bad times, and given that you'll be dealing with this topic for the next few months, and maybe the next few years if you move forward with the Amendment.

I thought I would just mention a few topics I would like you to think about in those times when you address the management issues. The most important one of those is that whatever you do, your management issues should match the actual use of the fishery. You know we have a striped bass fishery. We have a very well managed commercial fishery.

That's fine, but the commercial fishery only makes up a very small part of the harvest. Even if 2017 caught the recreational fishery at its extreme large size compared to the commercials, the fact remains this is primarily a recreational fishery, and more than that it is primarily a private boat and surf recreational fishery. From 2014 to 2019 there were about 87 million trips directed at striped bass, 86 million of those trips were from the two sectors I mentioned, and those sectors tend to release their fish. When you manage this fishery, you know we've heard a lot of conversations over the last few months that are we harvesting enough fish, should the regulations allow greater harvest if there was a new Amendment, a new Addendum? But harvest isn't how you manage a recreational release fishery. You manage that for abundance. You rebuild the stock to target.

You do it within the terms of the management plan, because recreational fishermen are seeking encounters, and harvest is only secondary. That is something you always need to remember that pounds on the dock matter far less than fish in the ocean, when you manage a recreational fishery.

The other thing that I would note, and I'm keeping these comments as short as I can, is that I have heard talk about initiating a new amendment that could, depending on what you decide, reduce the biomass target, which would lead to an attenuation of the size structure of the spawning stock. You would lose older fish, and it would increase the chance of a stock collapse, particularly at the low levels we're facing today. Now, I fished through a stock collapse. I don't think that is anything we want to see again.

We can avert it very easily where we are now. But I would just like to remind everyone here on the Board that while you may think of yourselves as representatives to the state, as you may think of yourselves as representatives of a sector. More than anything else, you're stewards of a public trust resource, and it's your duty as you sit here to manage that resource in a way that restores abundance to the population, and assure us that a stock collapse will not happen again.

CHAIRMAN ARMSTRONG: Robert T. Brown.

MR. ROBERT T. BROWN: Robert T. Brown, President of the Maryland Watermen's Association. Thank you for giving me the opportunity to talk. I want to talk a little bit about the history about what has happened with our rock fishery. But I'm not going to go into the past as much as I have done many times before, as you've already heard it.

You know we had an open fishery, no limits, you know wide open fishery. Since 1982, when we opened up this rock fish fishery, we've made some hard choices in here. It's been all good for the fish. When it's good for the fishermen, it's good for the fish also. One of the things we have is a few years ago we had a 25 percent reduction for the ocean, and trophy season in the Bay, and a 20.5 reduction on the Chesapeake Bay fishery itself.

This was hard for us, but however we made some assumptions, the Watermen did on this. Well you know, we'll have this for three years, and possibly our quota will come back. We'll get some of it back. Well, we made a wrong assumption. In fisheries management there are so many assumptions into it that sometimes things don't come out exactly like you want them to.

I just want to say that our stocks in our rivers are very good. I was glad to hear the discussion yesterday, when they talked about depletion, because the word depletion has been used a whole lot in this rockfish here lately of the spawning stock. It's not depleted. It's far, far from where it was in 1982. In 1982, I don't know how low it was but it was the lowest that was ever recorded. Our stocks are still in good shape. As to the reason why they have gone down a little bit, I don't think it's because of harvest. If you go back and look at your young-of-the-year class back from like 2008 up to about 2013/2014, we had some bad years of recruitment.

However, back in 2014, the young-of-the-year class was 11. In 2015, it was 24.2. In 2016, it was a bad year that year, it was 2.2. It wasn't because we didn't have spawning stock in there. Mother Nature plays a big control in everything that happens out there. Maybe the water was not fresh enough up far enough, maybe it was too much salt, and maybe it wasn't enough plankton in there for the fish to survive on.

In 2017, we were at 13.2, and in 2018, it was 14.8. These were all, makes our average above the average year class. As long as we have these young fish coming along, we're heading in the right direction. One of the reasons is because some of the hard decisions that you all have made here in the past. I want to thank you for that.

I didn't agree with all of them, because it hurt. But sometimes when you leave the room and nobody's happy that is when you're the closes to being right. As far as it goes, I heard the gentlemen ahead of me talking about our fishery collapsing. We are so far from that it's not even recognizable.

I just want to say that the Maryland Watermen's Association wants our fishery to remain the same as it is. We only catch a small portion of the fish, I think it's 8 percent of the fish we harvested, and we had a 2 percent death rate. We are well within our compliance, and we are opposed to anything that would change that at this time. Thank you very much.

CHAIRMAN ARMSTRONG: Ross Squire.

MR. ROSS SQUIRE: Good morning, my name is Ross Squire and I'm the President of the New York Coalition for Recreational Fishing. I'm also the founder of the 132 Pledge on Facebook, which has about 2,300 conservation minded anglers as members. I appreciate the opportunity to speak today.

My comments today are more about the frustrations and the disappointments and the loss of confidence that many in the recreational sector feel, in how you manage this very important resource. Amendment 4 failed to achieve its intended goal, and I believe that much of this failure was predictable, preventable, and largely self-inflicted.

My hope is that my comments will lead to changes in how you manage striped bass, and how you live up to the charter of ASMFC. Addendum IV had two primary goals, rebuild the fishery and protect the 2011 year class. Since 2015, the great majority of the ocean states have significantly under harvested striped bass, which makes us wonder whether the fishery was actually in worse shape than we originally thought.

As has been well chronicled, and no matter how some might attempt to sugar coat it, Maryland contributed nothing in the way of harvest reductions. Based on MRIP estimates, Maryland killed close to 2.5 million more striped bass than were indicated in Addendum IV. A significant number of these were part of the 2011 year class. Digging deeper finds the true problem. The conservation equivalency proposal presented by Maryland was analyzed and approved by the Technical Committee. The problem is that the impact of the CE proposal on a 2011 year class, the fourth largest since 1954, was not considered. It makes many of us question how scientists from states up and down the coast could not factor in the impact on the very year class that Amendment 4 was intended to protect. That was error number one.

The second critical error was a lack of any action when deficiencies in the Maryland analysis came to light. The stock assessment updates conducted clearly showed that Maryland was overharvesting, and that the 2011 year class was being hammered. This Board took no action. Right then and there Addendum IV was doomed.

We are where we are today in large part due to these two errors. These are not insurmountable, and I offer the following. The first, any conservation equivalency proposal and analysis much take into account its impact on every year class, especially around key spawning areas. Second, addendum goals and objectives should be managed actively, and continuously measured, and if interim actions are required to meet the goals, they must be taken.

This is Management 101. Third, the standard of 50 percent probability of success for addendum options just seems inadequate. This fishery is too important to the recreational and economic impacts of everyone up and down the coast.

Finally, states should not be rewarded for not meeting their harvest reductions.
For any state grossly not meeting their harvest reductions, subsequent harvest reductions should be based on the quota that they originally had, not on their overage. It just defies logic. The success story that's been told about modern fisheries management and the rebuilding of the striped bass fishery can no longer be told the same way.

It has to now include the fact that it was rebuilt, and then managed in a way that had the fishery become severely depleted. Under your management we're not overfished, and overfishing is occurring. I speak for many in the recreational sector when I say that we truly hope that lessons have been learned, and that we can once again tell a story of how the Commission effectively restored the striped bass fishery to the benefit of all the constituencies. I appreciate your time.

CHAIRMAN ARMSTRONG: Thank you that concludes our public comments.

CONSIDER DRAFT ADDENDUM VI FOR PUBLIC COMMENT

CHAIRMAN ARMSTRONG: Moving to Item 4; considering Draft Addendum VI to send for public comment. Max.

MR. MAX APPELMAN: I will run through Draft Addendum VI. I want to first acknowledge the Plan Development Team for their time and effort over the last few months, a pretty quick turnaround, and I think they put together a really good document for you all to consider today. The second thing I want to do is just make sure we all are on the same level, regarding what happened to Draft Addendum V. We're working on Number 6 here.

Where is Addendum V? Recall back in 2017 there was a series of events that essentially led to the Board initiating an addendum. That was Draft Addendum V. It was developed; it was brought back to the Board for review. It ended up not going out for public comment, but nonetheless it exists on the record. There is Draft Addendum V for public comment in meeting materials, and so the count continues and we are now on Draft Addendum VI. Here is a little quick review of the Addendum timeline. Again today, the Board will consider approving Addendum VI for public comment. If approved there will be a pretty quick turnaround to get this out to the public, when public hearings will be held August through September.

In October at annual meeting the Board will review public comment, and select final measures, and then the intended implementation schedule so far has been for January of 2020. Here is an outline of the Addendum, and I will walk through each of these sections. There is a lot of important background information that I'm going to get through, so please bear with me, and we'll start with statement of the problem.

Back in May the Board reviewed the results of the 2018 benchmark stock assessment, which indicated the stock is overfished and is experiencing overfishing. By accepting that benchmark for management use, the reference point triggers in Amendment 6 relating to fishing mortality and spawning stock biomass reference points are tripped.

Therefore, the Board initiated Draft Addendum VI to address overfishing status. However, there has been discussion already regarding rebuilding the biomass, a tabled motion that will be brought back to the table after this agenda item. Those discussions have already commenced. Also at the May meeting there was a lot of discussion around the high proportion of removals attributed to recreational releases, release mortality, and therefore the section also highlights that issue as well. You'll see that recurring throughout the presentation.

This section reviews the status of the stock; again the latest assessment is the 2018 benchmark. It shows that the stock is overfished and overfishing relative to the current reference points, which are based on the 1995 estimate of female spawning stock biomass. The 1995 value is used as the threshold, because many favorable stock conditions were reached by that year.

It was also the year that the stock was declared rebuilt. SSB target is set at 125 percent of that. I wanted to note the impact of the new MRIP removals estimates on spawning stock biomass. The new estimates are roughly two to three times higher than the estimates used in previous stock assessments, and resulted in higher estimates of female SSB, and therefore higher estimates for our reference points.

That makes it very difficult to compare the results of the 2018 benchmark to past assessments. The F reference points are designed to achieve the respected SSB reference points in the long term, and you can see the values on the right hand side of the table. This is Figure 1 from the draft Addendum, showing female SSB in recruitment time series. The bars are the recruitment estimates and that corresponds to the right hand access in millions of fish, and then on the left hand access you have the female spawning stock biomass in thousands of metric tons.

The solid line is the threshold, and the dash line is the target. The takeaway here is that SSB reached its peak around 2003, and has been declining since then. SSB has been below the threshold level since about 2013. Regarding recruitment, there have been periods of low and high recruitment throughout the time series. From the period of 2005 to about 2011, this was a period of lower recruitment, which certainly contributed to the decline in SSB that the stock has experienced in recent years. Of note are the high estimates in 2012, 2015, and 2016. Those corresponding, as they are estimates of Age 1 fish, they are corresponding to strong 2011, 2014, and 2015 year classes. I'll try to be clear about that as I go through this presentation; try not to interchange between recruitment values and years classes. It can be a little confusing, but I'll do my best. Also note though that those strong year classes were sort of sandwiched by less strong or low recruitment estimates.

This is Figure 2 from the draft Addendum showing your fishing mortality time series. The takeaway here is that F rate has been above the threshold for a number of years, 13 of the last 15 years, and in 2017 you can see above the threshold. This section highlights more recent history of the FMP, namely that the fisheries managed under Amendment 6, and its addenda, the most recent being Addendum IV, which currently sets the regulatory program for striped bass.

That addendum was initiated in response to the 2013 benchmark, which did not find the stock to be overfished or overfishing. However, fishing mortality was above target for a number of years, and spawning stock biomass was similarly below target, and that also tripped management action. As part of that addendum new F reference points were established, the ones that I just went over a few slides ago that link to the SSB reference points.

It also implemented a suite of measures aimed to reduce F to that new target. As a reminder, federal waters remain closed to striped bass fishing. NOAA Fisheries has been directed to review this federal moratorium in consultation with the Commission, although I don't have any updates there as of late.

This section is pretty straightforward reviewing the status of the fishery, the relative contributions of the different sectors to total removals and the magnitude of those estimates. Just to orient to the figure, this is in

millions of fish. At the bottom in the blue, it looks blue up there, it is commercial harvest.

The next color above that is commercial discards. The green is recreational harvest, and then the top color is recreational release mortality. As you can see, the current fishery is predominantly recreational. In 2017, total striped bass removal, so that being commercial and recreational harvest plus discards and release mortality for both sectors were estimated at 7.1 million fish, 90 percent of which was attributed to the recreational sector. In 2018, total removals came down to 5.8 million fish, but still 88 percent of that is attributed to the recreational sector.

Side barring now, looking at the commercial sector in particular. The fishery is managed via a quota system, which has resulted in relatively stable landings since 2004, which is the year when Amendment 6 was fully implemented. From 2004 to2014, landings harvest averaged 6.8 million pounds, roughly 1 million fish during that time.

That has come down to 4.8 million pounds, roughly 600,000 fish, following the implementation of Addendum IV and those harvest reductions. Majority of the harvest does come from Chesapeake Bay. Roughly 60 percent by weight or 80 percent in numbers of fish, indicating that more, smaller fish are coming from the Bay, as opposed to the ocean fishery where fewer, larger fish tend to be caught there. Commercial dead discards account for 2 percent of total removals that being commercial and recreational combined. But as a proportion of commercial removals only it's about 13 percent. A few extra notes regarding the commercial sector, unlike the Chesapeake Bay commercial fishery, the ocean commercial fishery regularly underutilizes its quota. This is mainly attributed to gamefish status in several states. Maine, New Hampshire, Connecticut and New Jersey don't have commercial fisheries, although they do hold about 10 percent of the ocean quota.

Additionally, striped bass have not been available off the coast of North Carolina. In recent years there has been no reported ocean harvest of striped bass off North Carolina, which also holds about 12 percent of the ocean quota. About 22 percent of the ocean quota is underutilized every year.

Shifting gears now, focusing on the recreational sector. Unlike the commercial sector, which is managed through a quota system, the recreational management program does not have a harvest limits. Instead it's managed through bag limits and size limits, which has allowed recreational effort and therefore removals to change or fluctuate from year to year, with resource availability and other social and economic factors.

From 2004 to 2014 under Amendment 6, harvest averaged 4.6 million fish, and that has dropped to 2.9 million fish on average under the provisions of Addendum IV and those harvest reductions. Similarly, a large proportion of harvest does come from Chesapeake Bay; roughly 33 percent annually under Amendment 6, and then that has since increased since 2015 to about 45 percent annually, reflecting some of those strong year classes pulsing through the fisheries.

It's been mentioned already, but recreational dead releases make up a large portion of total removals, because most of the catch is released. Roughly 90 percent of annual recreational catch is released alive, and that's what this figure is trying to show. The bars are total catch in millions of fish, and then the red line across the top that is the proportion of that catch that is released alive, and you can see it's relatively high across the entire time series.

In 2017, 38 million striped bass were released alive, resulting in an estimated 3.4 million dead

releases; and that's based on an assumption in the assessment where 9 percent of our releases are assumed to die as a result of being caught, so 3.4 million dead releases in 2017 that equated to roughly 48 percent of our total striped bass removals that year. In 2018, an estimated 49 percent of total removals were attributed to dead releases that estimate being 2.8 million fish.

This section is sort of lessons learned from Addendum IV; it's a performance review essentially of that Addendum, what happened after it was implemented. Just a quick refresher, the Addendum implemented harvest reductions again to bring fishing mortality down to that new target, and essentially states were required to achieve a 25 percent reduction from 2013 removals in the ocean fishery, and Chesapeake Bay fisheries implemented regulations to achieve a 20.5 percent reduction from 2012 levels.

The reductions came in the form of reduced quotas for the commercial sector, and changes in bag limits and minimum sizes for the recreational sector. Those new measures went into place prior to the 2015 fishing season. In 2016, following the first full year of measures under Addendum IV, the Plan Review Team compared the actual removals estimates in 2015 to those predicted during the development of Addendum IV to evaluate whether the reductions needed to bring that back down to the target had been achieved. Those results indicated that the observed reduction in 2015 was very close to what was predicted on a coastwide level.

Similarly, the commercial reduction was very close to what was predicted. However, the recreational reduction in the ocean and Chesapeake Bay fisheries diverged significantly from the predicted values. It was later determined that changes in effort, changes in the size and the age structure, and the distribution of the 2011 year class were the most significant variables contributing to that difference observed between the observed harvest and the predicted values during the development of Addendum IV.

At the time of this analysis the 2011 year class was the largest recruitment event since the early 2000s, and those fish first become available to the inland fisheries, including Chesapeake Bay. It made sense that the 2015, the harvest estimates went up in the Bay, and the harvest estimates sort of came down along the ocean, canceling out. Therefore you met that reduction on a coastwide level.

But as those fish continued to grow, they migrate out to the ocean, they become increasingly available to the ocean fisheries, and that led to significant increases in removals in both regions in 2016 and 2017 under the same management program. Roughly an 18 percent increase relative in 2016, and then in 2017 it was a 15 percent increase relative to 2015.

Also of note is that a decrease in effort in 2018 resulted in an 18 percent reduction relative to 2017, again under the same management measures. This is the challenge of predicting removals under different management scenarios, particularly for the recreational fishery when changes in effort, angler behavior, and the availability of strong year classes can have such a large effect on catch and on harvest.

Also, this was the time when the Board explored an addendum that would relax striped bass regulations across the coast, based on information coming from the 2016 assessment update which showed F was below target in 2015, indicating some room to increase removals. Again at that time preliminary estimates from 2016 came out, and with that information the Board did not move forward with the Addendum.

This section is highlighting the socio-economic impacts that should be considered when pursuing changes in management. The take-home is that commercial and recreational sectors will be impacted differently because of their different contributions to the local economy. Generally speaking, the harvest reductions are likely to have a short term negative impact on the economy, on angler welfare.

However, positive long term impacts stemming from stock recovery and increases in catch down the road, will likely outweigh those short term impacts. The next section in the draft Addendum highlights management program equivalency, which has been commonly referred to as conservation equivalency or CE. This allows states to develop alternative measures that address unique or very specific state or regional differences, while still achieving the same level of conservation for the resource. Several states do currently use conservation equivalency for striped bass; an example is to propose closed seasons, to have lower minimum sizes, or perhaps an increased bag limit. Under Amendment 6, a state may pursue conservation equivalency for any mandatory compliance measure. There are a few restrictions in Amendment 6, and this draft Addendum does maintain that flexibility.

If this document were to be approved for public comment, the TC will develop criteria for conservation equivalency during the public comment period, and would be a quick turnaround to get that information back out to the states so they can have that when considering the development of a CE proposal.

Keep in mind that the Commission also has a Conservation Equivalency Technical Guidance Document, and please consult that document if pursuing conservation equivalency down the road. I just went through all the background information there, and we can start moving into the proposed management options, which include the recreational and commercial fishery measures, as well as the circle hook provision, and then continuing to wrap up with compliance schedule.

The first things to review are the harvest projections. The Development Team used the same forward projecting methodology that was used in the 2018 benchmark, in order to estimate the level of removals; that being total removals, commercial and recreational, plus dead discards from both sectors. When I referred to removals that's what I'm referring to.

To estimate the removals needed to achieve F target in 2020 with a 50 percent probability that being guidance given by the Board, and to identify the percent reduction from 2017 levels, again that being guidance from the Board, the 2017 is our reference year in these calculations. The results indicate that an 18 percent reduction from 2017 is needed to achieve F target in 2020. Recall back in May seeing that number was a 17 percent reduction. That was based on preliminary removals estimates.

These calculations are based on final removals estimates. That number changed slightly. Additionally, the Development Team used an average removal from 2016 to 2018 as a proxy for removals in 2019, and sort of in an effort to account for that interannual variability that we've seen over the last few years.

Now, while this Addendum is strictly designed to address overfishing in the short term, the projections do indicate that additional reductions may be needed, in order to achieve the female spawning stock biomass target in ten years, which is prescribed under the Amendment 6 management triggers.

Okay, so the Development Team is putting forward three different scenarios per the guidance of the Board, three different options. Option 1 is status quo. Option 2 is a suite of

options where the desired reductions are applied equally or proportionally to the two sectors, based on 2017 levels.

The third option is a suite of measures where the commercial sector takes a smaller percent reduction than the recreational sector, and the PDT believes that this concept sort of reflects the Board's discussion in May, and the intent of the motion that was passed by the Board. These scenarios are mutually exclusive, meaning that under each scenario or option there are suboptions for each fishery and region, so commercial option for the Chesapeake Bay and ocean fisheries, as well as recreational options for the ocean and Chesapeake Bay.

Keep in mind throughout all of this that there are no proposed changes to North Carolina's FMP for the Albemarle Roanoke Fisheries. There are also no changes to the commercial size limits proposed or to the quota transfer provision, which transfers are currently not permitted in the FMP. Okay so working through this Decision Tree.

Under Option 1, status quo there essentially would be no change in management. Striped bass fisheries would continue to be operating under the provisions of Addendum IV, which keep in mind is not designed to achieve an 18 percent reduction relative to 2017 levels. By selecting Option 2, now the desired percent reduction is applied equally to both the commercial and recreational sectors, so both sectors would take an 18 percent reduction from 2017 levels.

The commercial quota under this option is reduced by 18 percent, and there are suboptions for the ocean recreational fishery, and suboptions for the Chesapeake Bay recreational fishery, which I'll move into in a few slides here. First with the commercial quota, this is for the ocean. We have the Addendum IV quota for reference in the first column.

We have 2017, the harvest also for reference in the second column there, and then the option is on the right hand side, and again it is an 18 percent reduction to the Addendum IV quotas. A couple notes here. One is that some states have reduced quotas through conservation equivalency under Addendum IV, and these calculations are based on that already reduced quota.

In the case of Rhode Island, New Jersey and Maryland, they would not have to resubmit conservation equivalency to maintain those programs. That has already been built into this. Again, it is assumed that the commercial size limits would remain the same as they were in 2017. The important assumption here, the caveat is that an 18 percent reduction in quota can achieve an 18 percent reduction in total removals, if active commercial fisheries perform the same as they did in 2017.

You can see even those states with commercial fisheries not fully utilizing their quota in 2017. However, if they were to fully utilize their quotas in 2020, if fish suddenly appeared off of North Carolina, and they report harvest in 2020, or if some of these states without commercial fisheries start having a commercial fishery that percent reduction would be lower. The expected reduction could be less than 18 percent. I also want to note that the PDT did explore applying the reductions based on the numbers of fish harvested.

But again, because the ocean fishery underutilizes its quota, and because the Bay fishery harvests more fish than the ocean, it actually would change the allocation of the quota within states and between regions, and for that reason the PDT chose to apply the reductions to the quota, as was done with Addendum IV, and in this way every state takes an equal cut. Moving to the Chesapeake Bay

commercial quota, again the same comments and caveats apply here. The commercial size limits would remain unchanged; an 18 percent reduction in quota can achieve an 18 percent reduction in total commercial removals, with the assumption that fisheries will perform the same as they did in 2017, which I will add it is a reasonable assumption. The PDT feels that it's a reasonable assumption. Looking back over the last few years the active fisheries have utilized the same relative amount of its quota, so it appears to be a reasonable assumption.

Of note here, so in Addendum IV, the Bay-wide quota is what is specified. However, I'm showing jurisdiction-specific quotas, which aren't specified in the Addendum. This is based on the allocation for the agreement that seems to be in place in Chesapeake Bay. Assuming that that remains the same, this is what the Bay quotas would look like under Option 2. Okay I'm going to move into the recreational fishery suboptions.

First a few points to make. One is that these calculations used MRIP data, taking that data at face value. To characterize the catch in 2020, the PDT used 2016 and 2017 data, pooled those two years together, and that was an attempt to account for year class strength. If we think about the strong 2014 and 2015 year classes, they'll be five and six years old in 2020.

Similarly, in 2016 and 2017, the 2011 year class was five and six years old. We felt that that was a reasonable proxy for characterizing the catch in 2020. Also of note, we made an assumption about compliance in 2020. In Addendum IV, the assumption was 100 percent compliance, but here we're assuming the same level of noncompliance that occurred in the reference years would occur in 2020.

More specifically that the proportion of harvest of undersized fish in those reference years would also occur in 2020 that being sublegal fish that were harvested illegally or sublegal fish that were harvested legally through existing conservation equivalency programs. That will come up again in my presentation.

Okay, so first with the ocean suboptions under Option 2. The idea here is that the slate would be wiped clean, and all states would implement the selected suboption in its ocean fishery, with a few exceptions that I'll cover in the next slide. All of these suboptions on the screen propose a 1-fish bag limit and maintain the same seasons, the same trophy fish seasons and regulations that were in place in 2017.

The first suboption is a 35-inch minimum size, which gets you an 18 percent reduction relative to 2017. The second suboption is a 28-inch to 34-inch slot limit. That is sort of tied to guidance given by the Board looking for a slot limit where the lower bound is 28 inches, and essentially what does that upper bound look like.

Here to achieve at least an 18 percent reduction, the slot is 28 to 34 inches, and then the last option in this table is a slot of 32 to 40 inches, again based on Board guidance, wanting to see what an upper bound of 40 inches got you. That is a lower bound of 32 inches, roughly a 21 percent reduction from 2017 levels.

Of note, under the third option here, trophy fisheries that are occurring in the ocean under this option would be capped at a 40-inch minimum size that being the upper bound of the slot limit. That would put an upper bound on the trophy fishery as well, so I believe Virginia has an ocean trophy fish season, and so that regulation would change to 36 to 40 inch slot under that third suboption.

As I mentioned on the last slide, there are a few exceptions to these suboptions. The first one being that Delaware could maintain the 2-fish bag limit at 20 to 25 inch slot during the summer Delaware Bay fishery. The reason for that is that the harvest, those fish are

accounted for in the calculations that have been done.

This is based on that noncompliance assumption, where undersized fish, so in the case of the ocean fishery, fish below 28 inches that were harvested in the reference years. That would continue to occur, and it's very difficult to tease out which ones were harvested illegally or legally through a conservation equivalency program like this.

For that reason Delaware could roll that those measures under into these suboptions, although that is the purview of the Board to decide if that would be permitted. Additionally, Connecticut and New Jersey, which I neglected to mention that they allocate their commercial quota, because they do not have commercial fisheries to the recreational sector, and they've implemented these bonus programs through conservation equivalency.

Those bonus program regulations are also lower minimum sizes than the current 28 inches. They would also be carried over into these suboptions, although depending on which commercial quota option is selected, the number of tickets or permits or vouches, or however those programs work. Those would have to be reduced to match whatever the new commercial quota was, or is.

Lastly, catch from Pennsylvania's waters, as well as the Hudson River, are not covered by MRIP. Since these calculations used MRIP data, New York would have to come forward with a proposal to achieve an 18 percent reduction for its Hudson River management program under all of these suboptions, and similarly Pennsylvania would have to come forward with a proposal to achieve those reductions in its state waters.

Moving to the Chesapeake Bay suboptions, again the same concept here, the idea is that the slate would be wiped clean, and all Bay jurisdictions would implement the selected suboption. Suboptions 1 and 2 in this table maintain the same seasons and the same trophy fish season and regulations that were in place in 2017.

The first suboption reduces the bag limit to 1 fish, and also reduces the minimum size to 18 inches, which is sort of reflecting that historic minimum size that was in place prior to Addendum IV. The second suboption maintains a 2-fish bag limit, but increases the minimum size to 22 inches.

You can see the respective projected reductions under those options on the right. Suboptions B-3 and B-4 in this table propose 2-fish bag limits, and also maintain the same fishing seasons as 2017, but the trophy fish seasons would be eliminated under the suboptions, and states would have to come forward with CE proposals to reinstate those trophy fish seasons if they chose to do so. B-3 is an 18 inch to 23-inch slot, which gets you a 19 percent reduction, again reflecting that sort of historic minimum size limit, and then the last option is a 20 inch to 24 inch slot, also getting you a 19 inch reduction and reflecting more or less the minimum size that's in place right now. Okay, moving to the third scenario which is Option 3. Again here the commercial sector takes a smaller percent reduction than the recreational sector. That is a 1.8 percent reduction, meaning that the recreational sector must take a 20 percent reduction in order to make up the difference.

Just so everyone understands where that 1.8 percent came from, we recall that in 2017, 10 percent of the total removals came from the commercial sector, so this 1.8 percent is 10 percent of the total percent reductions needed at being 18 percent, so it's the product of those two numbers.

Again, if the commercial sector is reduced by 1.8 percent then the commercial sector must be reduced by 20 percent, in order to achieve your

overall 18 percent reduction in removals. Option 3 and Option 2 are sort of set up in the same way, and I'll go through each of those sector and region options.

Beginning again with the ocean commercial quota under Option 3, the same approach was taken here. Commercial size limits will remain the same. You have your Addendum IV quota up there for reference, your 2017 harvest there for reference, and the option for the commercial quota is there on the right hand side, again a 1.8 percent reduction relative to the Addendum IV quotas.

I'm not going to reiterate all the caveats that I did the first go around, but just remember that this option can achieve a 1.8 percent reduction total removal if active commercial fisheries perform the same as they did in 2017. Moving to the Chesapeake Bay under Option 3, same comments and caveats again, you can see the respective quotas if the same allocation agreement is in place in 2020.

Moving through these a little quicker, having done it already under Option 2. Moving into the recreational fishery suboptions under Option 3, now the only major difference here again is that these are designed to achieve at least a 20 percent reduction, whereas under Option 2 they are designed to achieve at least an 18 percent reduction.

Again, the same concepts, the idea is that the slate would be wiped clean. All states would implement a selected suboption with the same exceptions for Delaware in Delaware Bay, Connecticut and New Jersey regarding its bonus fish programs, and New York for the Hudson, and Pennsylvania for its state waters.

Option 1 in this table, Suboption 1 is a 36-inch minimum. It's about a 1 inch increase relative to the 18 percent reduction option. Then you can see the two slot limit options, 28 inches to 33 inches. As the second suboption and third suboption is 32 inches to 40, 32 to 40 inch slot. Also of note that you can sort of slide the slot limit around, and achieve more or less the same projected reduction.

The PDT moved forward with these, again based on Board guidance, wanting to see what a 28 lower bound looks like, what does a 40 inch upper bound look like. There could be a number of different slot limit suboptions in this table; it's really how many you want. For the Chesapeake Bay under the suboptions for Chesapeake Bay, under Option 3 there are a few more here. I'm going to walk through them. The first two suboptions maintain the same seasons and trophy fish season, and regulations that were in place in 2017, and drop the bag limit to 1fish. The first suboption maintains the same size limits that were in place last year. Maryland would maintain its 19 inch minimum size; PRFC, D.C. and Virginia would maintain a 20 inch minimum size.

This is projected to achieve a 29 percent reduction in removals. You can see by just lowering the bag limit the savings that you get from that. Of note the PDT did do these calculations based on 2017 measures, when all jurisdictions had a 20-inch minimum size, and that actually achieves a slightly higher reduction.

For the sake of this Addendum, we're just putting forward more or less status quo size limits and reducing the bag limit. Suboption 2 in this table is repetitive to what was seen under Option 2, and it's a 1-fish bag limit at 18 inch minimum size that gets you a 20 percent reduction. Suboptions B-3 through B-5 of this table maintain a 2-fish bag limit, also maintain the same seasons and trophy regulations that were in place in 2017, except under these options the trophy season could not start prior to May 1.

There are some open days in April, I believe, and in order to meet the desired reduction

those days had to be cut from the analysis, in order to achieve the 20 percent reduction. Under these three options the trophy fish season would change to not be able to start before May 1, so 23 inch minimum is the third option. The fourth is an 18 to 22 inch slot, and the fifth is a 20 to 23 inch slot.

You can see the projected reductions on the right. Then the last suboption in this table maintains 2-fish bag limit and maintains the same seasons, the same trophy fish season as well, although it would put a cap on the trophy fish measures at 40 inch maximum size on those size limits. A couple notes before we move on to the next slide, the next options in the document.

It's important to keep in mind that these suboptions for the recreational fishery are designed to reduce harvest and overall removals. They are not necessarily designed to reduce or address effort and release mortality. Essentially the PDT had to make some assumptions regarding effort in 2020. These calculations assume that effort is constant, meaning that the same amount of trips encountering striped bass in the reference year, will occur in 2020.

By doing that the proposed measures actually are projected to increase releases. Essentially all the fish that were harvested between the current minimum size limit and the proposed minimum size limit, are now being thrown back and are adding to our pile of releases, and because of that releases go up.

Your release mortality goes up, and therefore larger reductions in harvest are required to offset that expected increase and releases, in order to achieve the overall reduction in total removals. In order to address both harvest and release mortality, additional effort controls should be considered to reduce the number of fishing trips that encounter striped bass. The closed seasons have been an effective tool to reduce effort in some areas and seasons. However, the PDT did not develop closed seasons for this Addendum, primarily because the impacts are expected to have very different results, depending on the state and fishery. While closed seasons could be very effective in regions when striped bass is the only viable fishing choice, closed seasons may have little or no impact in fisheries that operate as catch and release, or in areas where other species are available for harvest.

Lastly, the last bullet here is in regards to slot limits. The PDT notes the conservation benefits of implementing slot limits that being protecting larger, older fish, may not be realized if effort is concentrated on fish within the slot, thus reducing the number of fish that may survive to grow out of the slot, and potentially reducing the population of larger, older fish over time.

Now we're moving into the circle hook provisions, there are just a few slides left. It's been mentioned several times that recreational release mortality does account for a considerable amount of removals in the striped bass fishery, and the use of circle hooks has been identified as a method to reduce discard mortality, release mortality in recreational fisheries.

This is what spurred the Board to request this Addendum consider options regarding the mandatory use of circle hooks when fishing with bait, to reduce discard mortality. The Commission does have a special report on circle hooks; Special Report Number 77 was developed in 2003 with a number of different bodies contributing to the development of that document.

In there the Commission defines circle hooks as a non-offset hook, where the point is pointed perpendicularly back towards the shank, and the term non-offset means that the point and barb are in the same plane as the shank. I stole

this picture from Maryland, so thank you Maryland for the picture. I work better with visuals, and I hope it provides a good visual.

On the left you have a standard J hook, where the shank and the hook are parallel to each other. The circle hook is the second picture. You can see the barb is turned perpendicular to the shank, and then non-offset is the green checkmark where they are in the same plane, and then offset being not in the same plane, with the red X through it. It's my understanding that as I said, a number of different bodies weighed in on the development of this document, and the LEC was one of those.

Members from the LEC contributing believed that this definition would hold muster, would be enforceable if regulatory action was taken on circle hooks. A couple things to keep in mind, first is that factors other than hook type can certainly have an effect on release mortality rates. Water temperature, air temperature, those are big ones. Salinity, hook size, fish length, hooking location, and there are certainly others that are not listed here that could impact release mortality rate.

Additionally, it's unknown how many anglers are currently using circle hooks, so figuring out what that added benefit would be, or added savings would be if circle hooks were mandated would be difficult. Then of course enforceability and compliance are also concerns, and should be taken into account when developing strategies to improve release mortality, specifically depending on which anglers these regulations would apply to, whether they be to those strictly targeting striped bass, or to all anglers in that region or state. With all that in mind the PDT is putting forward three options here, the first option being status quo, where essentially it's already in Amendment 6. It is recommended that states promote the use of circle hooks through public education and outreach programs.

Option B would require states to implement regulations requiring the use of circle hooks, as defined by the Commission with the intent of reducing striped bass discard mortality in their recreational fisheries. This option again is a regulatory requirement, but it does give states the flexibility to develop regulations with its constituents that address the specific needs of their fisheries.

The PDT intentionally left out language regarding fishing with bait, sort of learning from what Maryland went through recently that it's clear that it can be difficult to define what bait is sometimes. Leaving that out here and leaving it up to the states to define what bait is, or what it means to their respective fisheries.

Additionally under this option, states are also encouraged to promote the use of circle hooks through public education and outreach. Option C would require states to promote the use of circle hooks through public education and outreach campaigns, and this option differs from status quo being that this would be a requirement to promote the use of circle hooks, and status quo is merely a recommendation to promote the use of circle hooks.

This is the last slide I have here, essentially reminding the Board that they will have to set an implementation schedule for this Addendum during final approval at Annual Meeting. The dates here are merely suggestions based on what the intended timeline has been thus far. Assuming this Addendum is approved at Annual Meeting, approval of state implementation plans could occur at the February, 2020 meeting.

Working backwards from that implementation plans would have to be submitted no later than November 31. Again as I noted, if this document is approved today for public comment, the TC will get together, develop criteria for conservation equivalency, and get that out to the states as soon as possible, so

they would have that information well before this deadline.

Then again the Board will have to specify a full implementation date; I've left it blank here. But again the intent thus far has been to implement these regulations prior to the 2020 season. That concludes my presentation. I'm sure there are questions out there, I'm happy to take those, thank you.

CHAIRMAN ARMSTRONG: I would also like to thank the PDT for the enormous amount of work that went into this. I think we have a good document here. I'm sure there is some discussion we need to have, with the ultimate goal to get a motion to approve this to bring it for public hearing. That being said, let's start with questions first for Max, any questions? Rob O'Reilly.

MR. ROB O'REILLY: Thank you, Max. I do have a question, but if I may I would like to make what I think is a correction. Max, I think you indicated that Virginia had a trophy season in the ocean. This past spring Virginia eliminated all trophy fisheries, including the ocean. I just wanted to clear that up. I think that's what I heard you say. If that's okay I would like to make that correction.

MR. APPELMAN: Just to clarify, these are all based on 2017 measures. In 2017, it is my understanding that Virginia did have an ocean trophy.

MR. O'REILLY: Yes, and they're gone now.

MR. APPELMAN: That is where that comment came from.

MR. O'REILLY: Thank you Max, and my question is it wasn't talked about specifically, but Virginia in discussions, as many of the states have been in discussions for several months. One thing that you said, Max was based on the lessons learned, talking about Addendum IV. What we're wondering is the 50 percent probability of reaching the target F.

Why wasn't there thoughts, and maybe there was, about having a higher probability of reaching the target F, and in fact to have options that would show the amount of reductions that might be required with say a 75 percent probability versus a 50 percent probability. We don't know in Virginia whether it's a mechanistic situation.

Is it a situation with the modeling itself, or is it sort of an historical approach that you know somewhere back about 1993 it was decided that you had to have a 50 percent probability on the federal side. We do remember that. I'm wondering with the comments that we heard, not a lot but we heard a few today.

We certainly are getting a lot of e-mails, everyone is getting e-mails. It seems that we don't want to replicate what we just have gone through with now our fifth year for Amendment 5. The question is, did the TC talk about having something higher probability than 50 percent? I'll leave it at that. We just don't know that's why I'm asking.

MR. APPELMAN: Thanks for that question. The short answer is that that 50 percent probability comes as guidance from the Board, and so the TC or PDT did not look at other probabilities in their projections for this Addendum. It has sort of been a default, I believe is that 50 percent.

I think the Commission is working on a Risk and Uncertainty Policy that would sort of get to that what is that probability that should be given to our Development Teams for guidance that is still in development? But I think that process would help with the concerns and questions that you have.

CHAIRMAN ARMSTRONG: John McMurray.

MR. JOHN G. McMURRAY: Max, you mentioned additional reductions may be needed to rebuild. You also mentioned that rebuilding was a requirement of Amendment 6 if the stock was overfished. There was a figure in the document, Figure 5. If you have access to that could you put it up? While you're working on that I could go ahead and make my point, and try to expedite this, or ask my question. Okay there it is. It looks like 2033 is when the stock would be rebuilt under this 18 percent reduction, and under a fishing mortality rate of 0.2. I know there was some discussion of this at the last meeting. I thought I had asked for some analysis of what sort of reduction we'd be looking at to get us to F rebuild, to get us to rebuild within ten years.

I don't see that in here, but was there any discussion of that? I'm asking this question; because I'm sure you guys got the same e-mails that I did. People are wondering why we're not abiding by the Amendment 6. Amendment 6 is very clear that we must rebuild, not it should rebuild. I'm wondering why that wasn't considered.

MR. APPELMAN: There was discussion at the May meeting; you know what does this mean for rebuilding the biomass. Considering that this Addendum aims to address overfishing in the near term, we did take that opportunity to explore, when would SSB reach our reference points while fishing at F target? That is what this figure is coming from.

Certainly the further you go out with these projections the more uncertain things get, if you look at the confidence intervals around that median value. It asymptotes near the end there around 2033. But again, it wasn't the intent of this Addendum to explore measures that would rebuild the biomass within a 10-year timeframe. It was to address overfishing in sort of the near term. That's why we didn't develop any options for that.

CHAIRMAN ARMSTRONG: Follow up, John?

MR. McMURRAY: Thank you for that. My intent is not to jam up the timeline on this, and that's the last thing I want to do. But I feel compelled to ask this question. If we were to have some consensus around the table, and ask you guys to go back and do that analysis, and figure out for us what percent reduction we would need to rebuild in ten years, and have a suite of options that would allow that to happen. What sort of effect would that have on the timeline?

MR. APPELMAN: A pretty big effect.

MR. McMURRAY: That's it.

CHAIRMAN ARMSTRONG: Mike Luisi.

MR. MICHAEL LUISI: Great job, Max on the presentation. Could you go to your slide, it was the last slide before you got into the circle hooks.

MR. APPELMAN: Kirby is on it.

MR. LUISI: Okay that's it, yes. You made a couple of really important points while you were summarizing this, and I was scribbling down as fast I could some of the things you said. I just want to make sure that I'm clear. On Page 1 of the document it's clear that the focus of this Addendum should be on total removals, and the options that the PDT developed for the recreational fisheries, including the commercial fisheries, were focused on total removals. You did a great job of making sure that the word harvest wasn't the only thing that accounted for those total removals. However, the suboptions for the recreational fishery in this case are designed to reduce total removals, but I believe what I heard you say is that the focus there was mostly on harvest, because you're going to have increased releases given most of the options that are there.

With increased releases you're going to have more release mortality. As you know, the state of Maryland has gone to great lengths over the last few years to try to reduce the amount of release mortality that's happening in the Chesapeake Bay and along the coast. We've put forth an effort to mandate the use of circle hooks, which was mentioned here earlier.

We've reduced our minimum size, in that same effort to try to reduce release mortality. Over this past year we have implemented a weather alert system, for days when it would be recommended that fishermen be mindful of the heat and the time period during the day for which they're fishing, in an effort to reduce release mortality.

We're putting together education videos and outreach, in order to reduce release mortality. I hope it's clear that there is an interest on the part of the state of Maryland to reduce release mortality, and we're putting a lot of effort into that now, because effort and release mortality are not part of the suboptions for what we can consider.

What would be the avenue that our state could take? Would it be conservation equivalency? Would we use conservation equivalency to prepare a recreational program that would maintain our focus on release mortality and trying to reduce that level, in an effort to maintain and comply with the goals of the Addendum?

MR. APPELMAN: I'll start with saying that the PDT worked within the bounds that it had, meaning that the recreational fishery is currently managed through bag limits and size limits, so those were the tools that the PDT had to work with. As you say, managing effort to get at your releases is something that the Board needs to really think about.

Also how to manage effort in this fishery, and get guidance to the PDT if they want to look at effort measures, measures towards effort. The other answer to your question I think is that states have used closed seasons, for example, to reduce effort and get different regulations in place through conservation equivalency, so two sorts of answers there.

CHAIRMAN ARMSTRONG: Go ahead, Mike.

MR. LUISI: We're not suggesting, I'm not suggesting that the PDT do any extra work here. I don't want to influence any timeline. I think it's really important that we maintain the timeline we're on. But it's clear then that if we wanted to put together a package for conservation equivalency for consideration by the Board, not only to address effort, but perhaps address the release mortality issue that that would be something under the provisions of 2.2.6, which is the management program equivalency section of the document.

CHAIRMAN ARMSTRONG: Katie.

DR. KATIE DREW: Yes, for sure you can submit a conservation equivalency program that would reduce the release mortality, and use that to achieve your 18 percent reduction. However, I would say I think the TC is going to be hesitant to endorse things that are difficult to quantify. Things like educational programs or using circle hooks, or things like that where it's harder for us to say what is the actual effect of these measures this educational approach on actually reducing release mortality.

Something like season limits or closed days, if you actually close the fishery during days when temperature is too high, as opposed to just saying, maybe don't go fishing. That I think the TC and the PDT would be much more open to. I think we're focused on things that will have a concrete, demonstrable quantitative benefit on reducing how many fish you're throwing back alive.

MR. LUISI: Thank you, understood.

CHAIRMAN ARMSTRONG: If I could editorialize just a bit while I have the bully pulpit. Keep in mind, I think an assessment ago before this the stock was okay, we hadn't hit the trigger. We were all shocked around this table to see the results of the addition of the new MRIP data, which gave a whole different complexion to what the stock trajectory has been. This Board did a good job. We reacted, and our reaction was to drop F as quickly as possible.

That is what this Addendum is about. Now looking at the B-2s, the discard, and looking at the SSB and the trajectory. This Board has got to look at that and over the next couple of meetings we'll look at that. But the goal of this one, to me we wanted to get F down as quickly as possible, before the next fishing season. I think this Addendum does a good job in that respect. Adam.

MR. ADAM NOWALSKY: Building on this topic of the concern of dead releases. All of the tables in the document about the recreational reductions, the last column that indicates percent reduction from removals that incorporates a reduction in harvest, and I'm assuming that reduction in harvest is actually higher than the percent reduction needed because there is a comparable shift in increase in discards as a result.

Is there a reason that would preclude us from including those two additional columns, where we see the percent reduction from removals? One column that shows the contribution from the reduction in harvest, and the second column would be the reduction as a contribution from dead releases.

MR. APPELMAN: We can add those in there. Since this was again aimed at reducing total removals that's why you had that one column relative to total removals.

CHAIRMAN ARMSTRONG: Tom Fote.

MR. THOMAS P. FOTE: I'll save most of my questions for later on, actually comments for later on. My concern here is everybody is talking about protecting bigger fish, and I know a few percent of the people that actually take fish home to eat that don't like taking 36 inch, because they think they're protecting the fish at 35 inches. They try to take the smaller 30-inch fish now. Now we're basically going to shift the focus on taking the bigger females. Of course this year I actually saw a 36 inch male that somebody had caught, which was to me unusual, because I never saw a 36 inch male before. That is one of the consequences. That doesn't get figured into the overall reduction that we're supposed to be doing.

Again, I don't see 2018 mentioned here at all. I see the numbers, but I don't see the fact that it was a 25 percent reduction, which was what we really needed, was more than actually what we needed for the 17 percent reduction. It should be basically stated that that will be part of the discussion; I guess when we start approving this plan at the Annual Meeting.

MR. APPELMAN: Just to respond to the 2018 levels. I think it was an 18 percent, but nonetheless there was a note in the presentation and in the draft Addendum that that largely had to do with a decrease in effort that was seen, not just at trips directed at striped bass, but across all recreational fisheries in 2018.

I think there is an assumption there that if this Board expects that effort will be at that lower reduced level moving forward, and then perhaps you know the current management program is okay and meets that reduction. However, if that's not the assumption, if effort is going to spring back up to what it has been over the last decade or so, then you would expect removals to go up again in 2019 and beyond.

CHAIRMAN ARMSTRONG: Follow up, Tom.

MR. FOTE: I mean 2019 is a bigger reduction than last year. People are not taking the same amount of trips. There are many factors that are involved in that but the trips are going down, and this is directed stripe bass trips, and you see it all over the coast. Every captain I talk to basically says the same thing, unless people are basically actively fishing in a whole bunch of areas.

That's a trend that's going on, which actually started in 2016. We started seeing a reduced number of trips for striped bass. We actually have the lowest number of trips of striped bass in the last couple of years. I don't know why you assumed that that is not going to be the downward trend. There is nothing to show that it might go up.

CHAIRMAN ARMSTRONG: Chris Batsavage then Jim Gilmore.

MR. CHRIS BATSAVAGE: Going back to the conservation equivalency issue, in the document it says the TC will develop criteria for conservation equivalency in the Addendum after it's approved. I was wondering if that means, I guess there are going to be certain bounds, as far as what could be considered for conservation equivalency.

Such as if there was a slot limit put forth with a maximum of 40 inches or 34 inches, and states couldn't come up with a conservation equivalency that allows for a larger fish, things of that nature. Just trying to get a sense of what you have in mind with that statement, just to make sure that everyone is kind of working under the same set of guidelines and that measures that are equivalent on paper are approved that actually work in practice.

DR. DREW: We wouldn't restrict anything in terms of the measures that you could look at. We wouldn't say you have to have a maximum of this or a minimum of this. The focus would be on making sure that everybody is using the same datasets, the same years so that everything is equivalent that you're using the best available data, and that if you have additional supporting data you explain why you're using that.

If the TC feels that's appropriate so that people aren't using well we're basing ours off of 2013 data and we're basing ours off of 2017 data. We're going to prescribe sort of the datasets, the year ranges, and the criteria that you should be looking at; in terms of making sure that everybody is using the same method for conservation equivalency. But we won't be prescribing the specific measures that you could look at for your state.

CHAIRMAN ARMSTRONG: Jim.

MR. JAMES J. GILMORE: Max, you may have said this, but I just want to make sure I've got it clear. If we implement the 18 percent reduction based upon one of the options, but then on top of that we were to add in some of those non-quantifiable measures such as circle hooks or education or whatever. Is it a valid assumption that that would improve the 50 percent probability? I know we can't quantify it, but I would assume that we would improve that if those measures were implemented.

DR. DREW: Yes, I think there would be an unquantifiable but beneficial approach of implementing circle hooks, or implementing education, implementing outreach programs to reduce total effort, to reduce release mortality. I think it may not necessarily show up in terms of how we calculate total removals.
But ideally it would show up, the population would experience that in the reduction of fishing mortality, and further on down the road we'd be able to see that response in the indices in the age structure of the population, and we would see the population response, rather than something specifically on paper. But the assumption is certainly that any kind of

additional conservation efforts on top of this reduction in total removals would be beneficial to the population.

CHAIRMAN ARMSTRONG: Andy Shiels and then Mike Luisi.

MR. ANDREW SHIELS: I am misunderstanding what we're doing today I think, based on some comments I've heard and I think what Max said. What I think I heard Max say was that this effort, this Addendum VI is designed to reduce the overfishing that's occurring in the year 2020. I think he said more than once that this is not designed or to address the spawning stock biomass issue.

That being the case, I heard John McMurray ask a question, and the projection is it would take 13 years, based on the numbers we have in front of us. While we're sitting here I dug into Amendment 6, and I would like to read what it says under 2.6.2 Stock Rebuilding Schedules. Then I have a question. If at any time the Atlantic striped bass population is declared overfished and rebuilding needs to occur, the management board will determine the rebuilding schedule at that time. The only limitation proposed under Amendment 6 is that the rebuilding schedule is not to exceed 10 years. There are two really important parts.

If at any time, and I think any time was when perhaps in February or April, when we received the data telling us that overfishing and the population is overfished. That is when we received that data. That could be any time. The Board will determine when the schedule for rebuilding will occur. My question is, as I'm starting to understand what we're proposed to do today, when is any time, and what are we going to do next regarding the spawning stock biomass?

Is there going to be a discussion today about that? Is there going to be action taken today? Is there going to be a timeframe or a milestone set today so that this is done within ten years, or are we going to wait a year or two and speed things up so we can get it done with the remaining seven years? That's my question. What's the timeframe for the spawning stock biomass part of this?

MR. APPELMAN: Thanks, Andy. I'm just thinking back to the May meeting when this information was presented to the Board. The decision was to do a quick, fast Addendum, address overfishing. Then also there was a motion made to address rebuilding the biomass. That motion is back on the table today for the Board to consider. But I think, I mean the clock is sort of ticking, and the ten year clock began in May when the information was presented to the Board.

CHAIRMAN ARMSTRONG: Mike Luisi.

MR. LUISI: Thank you, Mr. Chairman for another opportunity for a question. I raised my hand after Chris Batsavage brought up an issue under conservation equivalency, and I think you'll see the common thread in where I'm thinking right now, as far as making sure I'm clear and we are clear about what we can use conservation equivalency for.

My question is because it's not stated specifically under 2.2.6, would a state have the ability to allocate the necessary reduction of 18 percent to the sectors, and the sectors meaning that you know on your flow chart, which was really nicely done. It kind of gives you a sense of Option 1, 2, and 3.

There are two different ways that the Board could decide how those allocations of reductions could go, either equally or proportionally, smaller percentage to the commercial. The Board will decide on that ultimately, but if a state would like to modify that allocation of the reduction to those sectors, is that something currently under conservation equivalency that can be applied?

Meaning, if the state of Maryland decided it wanted to increase the reduction from 1.8 percent to 5 percent for the commercial fishery, or make it 0 percent for the commercial fishery. Would we be able to put that into a conservation equivalency plan? Meaning that you have to account for that change with the other sector, and I think it's very important for our state to understand if that's something that we can do, because we've been discussing this externally with a lot of our different user groups. We would like the document to actually state that so when we go to public hearing it is clearly defined that we could use that under conservation equivalency.

MR. APPELMAN: Thanks, Mike. I think that is the purview of the Board really. I mean by selecting an option as you said, let's take the equal reduction approach. The Board is saying that the reductions will be applied and that a portion or that allocation is set in that option. If states want the flexibility to alter that through conservation equivalency, I think we need consensus around the table on that and to put that language in there.

CHAIRMAN ARMSTRONG: All right, we'll come back to that. I would be of the opinion that this Addendum assigns the quota to the state, and what the state wants to then do with it is up to the state, but we'll come back to that to that; to that point, Tom.

MR. APPELMAN: I just want to make a correction real quick, a majority of this table, to put that language and that understanding into this document.

MR. FOTE: I'm not sure we can do that. We've been around this discussion a couple of times when they wanted to transfer other quotas of commercial fish with certain fisheries on that. It's not stated in any of the plans that that is the viable way of doing it. I can remember discussion going on that we're not, because one time we wanted to do commercial to this, because they wanted to utilize their quota and we could not do it.

We've been told that also in the trophy tag program and things like that when you use the commercial. It's a different category. I remember the long discussion we had, because I was trying to do something years ago. It really has not been allowed previously, and I'm sure if we look back to the history of that we'll basically find it.

CHAIRMAN ARMSTRONG: I've got Ritchie then Justin then Jay. Ritchie White.

MR. G. RITCHIE WHITE: I wanted to expand on the issue that Andy and John raised about the rebuilding and the ten year. Maryland, I don't remember if it was a motion or brought up the desire to begin an amendment process. I think we agreed to delay that until after this Addendum is complete.

I've been certainly getting a lot of e-mails about don't start an amendment; it will mean that you're going to be less conservative. An amendment doesn't mean less or more conservative, and I'm certainly going to support an amendment, and I'm going to support an amendment to be more conservative.

That is how we address what you raised, Andy. We'll look at more structural parts of striped bass management in an amendment, and hopefully it will be more conservative so we won't have to undergo the issues we're undergoing now. Put something in place so the stock stays in a good situation.

CHAIRMAN ARMSTRONG: We'll be talking about that at the next agenda item. Justin Davis.

DR. JUSTIN DAVIS: Katie, I'm wondering if you can comment on some of the challenges that might be inherent to assessing a conservation equivalency proposal that's based on either

reductions in release mortality through use of things like circle hooks, or angler education or reductions in effort.

Given that usually when we're looking at how changes in size limits might influence catch or harvest we're using the MRIP data, the amount of catch and the size structure of that catch. But I would imagine that if we're looking at a proposal that's thinking about reducing effort, we would have to use the effort side of the MRIP survey. I'm wondering if that lends itself as easily to assessing conservation equivalency.

DR. DREW: Sure that's a good question. I think in terms of things like angler education requiring the use of circle hooks, things like that. The problem is that we can't quantify right now how many people are actually using circle hooks to begin with. If 90 percent of your fishery is already using circle hooks, are you going to see that benefit on paper if you now require that 10 percent and maybe that 10 percent doesn't comply?

How do you translate that into an actual number that you could say, previously our release mortality rate was 9 percent, now it's 5 percent. I don't think the TC feels that our data on what is the current use of circle hooks, what is the current use of best angler practices, in terms of obviously how you handle the fish also makes a big difference in terms of survivability, regardless of what hook type you're using.

Things like how many experienced anglers are there versus how many people go out there, grab that fish by the gill and wave it around, take a picture and then throw it back. How do you change that? How do you quantify that on an educational standpoint? We don't have the data set up now to even know what our baseline is, let alone what you would actually expect to get out, in terms of improving handling behavior, improving circle hook usage.

I think that's something you know, we would love to have information on, and if the Board wanted to go forward and start developing programs to kind of quantify that we would support it. I think the TC would feel you can't just sort of wave a magic wand and be like, boom circle hooks, and our release mortality is 5 percent now instead of 9 percent.

I think we would be hesitant to endorse that as an actual quantifiable way of saying; well we're using circle hooks so now we can have a longer season or a higher size limit, or a bigger slot whatever. But we would definitely say yes that's going to reduce your fishing mortality in some way likely.

On the other side, in terms of how do you reduce effort, because that's what we really need to do to reduce this release mortality in a quantifiable way is reduce the number of trips that are encountering striped bass, and throwing them back alive. Things like seasons are a potential option.

We do have the MRIP data on the seasons, and what we're making with that assumption is that if you close the season those trips won't happen, or the harvest during that season won't happen, but also potentially trips during that season won't happen, which can give us a little bit of a better handle on effort and things like that. Seasons are definitely on the table, because we can quantify that data either through the MRIP as a whole, or through the effort side, with kind of the caveat of course that just because you close that season it depends on what else is happening. In your fishery what other fisheries are open?

Are you truly eliminating those trips or you're changing the targeting behavior and they may still encounter striped bass? I think those are the kinds of things that we would be looking at when people bring us conservation equivalency programs to reduce that release mortality. Really what we're looking for is how you can

reduce the number of trips that are catching and releasing striped bass.

CHAIRMAN ARMSTRONG: Okay, I've got Jay then John then Ray then Emerson. Jay McNamee.

MR. JASON McNAMEE: First just complements to the PDT for a really thoughtful document. I think most of my questions were in the document, and so I didn't have any. But I've got one. It was something I thought I understood, and now I think maybe I don't. In the tables there are comments about these trophy fisheries.

What I'm now confused about is the way I originally interpreted it was in the analysis that was done there was an assumption made on 2017, when those trophy fisheries wherever they existed were in place. What I'm not clear on is if they are assumed to then persist, and are incorporated into the calculations for the reduction. Just in case I wasn't clear there.

Do the in particular the slot limit options anticipate that there are going to be trophy fisheries in the future in the places that they existed. I'm not talking about, I feel differently about some of I guess they call them bonus fisheries, where they're taking a quantified quota, tagging those out and there is high accountability there. I feel differently about those, but trophy fish are used I feel another way about them. Hopefully that is understandable.

MR. APPELMAN: Yes the short answer is that the existing trophy fisheries are predominantly in Chesapeake Bay, are accounted for in these calculations. You can see in some of the options the trophy fishery is eliminated from those options. Some of them they are modified, either the season has been shortened to allow that fishery to continue, but still meet the required reduction. In some of them the slot limit example, if the slot upper bound is in the same range of where that trophy fish minimum size was it now puts a cap on the upper bound of that. It changes the regulation in some of the options, but the season will remain the same. It has been accounted for. The only ocean trophy fishery I'm aware of is Virginia.

CHAIRMAN ARMSTRONG: John McMurray.

MR. McMURRAY: To Ritchie's comment. We don't need an amendment to rebuild or to be more or less conservative with the reference points. The only thing we need an amendment for is to change the goals and objectives, and I think that's where things get sticky. But I had a question about the slot limits, and that was the intent of raising my hand. I understand a certain part of the recreational fishing community has been asking for them, and the intent is good to try to protect those older, larger more fecund females. But Max, you mentioned this in your presentation that over time if you focus effort on that handful of year classes those fish might not get there.

I'm also well aware, not only from my time on the water but from my time here that release mortality goes up with the size of fish. Particularly now, when you have Facebook and Instagram, and everybody wants a picture of that trophy. Was any of that taken into consideration with your corresponding percent reductions with the slot limits?

MR. APPELMAN: No, none of those little nuances are accounted for here. The assessment assumes a 9 percent release mortality rate across the board. That's based on a number of studies, sort of an averaging of those studies. That's what is used in assessment that's what the PDT used in their analyses. Apology to Virginia again, I know there is no ocean trophy fishery this year.

CHAIRMAN ARMSTRONG: Follow up, John?

MR. McMURRAY: Not necessarily a follow up, but a comment. I think it's important to point out here that those alternatives, those options are more risky. They are intuitively more risky. I want to say that on the record.

CHAIRMAN ARMSTRONG: Okay, Ray Kane. Emerson Hasbrouck.

MR. EMERSON C. HASBROUCK: Thank you Max for your presentation. Max, did I hear you say that even though the document includes two different options for slot sizes, two different suboptions under two different options for slot sizes that there could be variations in those slot sizes, and the results of different slot sizes would be similar to what's listed in the document?

MR. APPELMAN: Yes. I think that's a reasonable assumption that you could shift, you know say for example it's a 6-inch slot, you could shift that up and down on the ruler and get sort of the same predicted reduction, more or less. We kept it simple and to the sizes that the Board gave us guidance on.

Minimums of 28 and 32, upper bound of 40, and what that kind of equates to in the form of a slot limit. But if there is an option that is not represented in these tables that you feel should be, you know especially when you go out to public comment. We could probably add that relatively quickly, assuming that it still meets that desired reduction.

CHAIRMAN ARMSTSRONG: Alternatively, if the option is not explicitly in the Addendum now but it's equivalent by just sliding the slot, would we be able to do that after the public hearings, or does it have to be on the document? That's a Toni question.

MS.TONI KERNS: I think to be cleanest, anything that is not in the document and you want to put those regulations in place, you will need to apply for conservation equivalency to do so, unless it has a measure in there that is not allowed. If you want something that is not in the document now, you need to let us know today or within a week. Because we will not have a lot of extra time to add things to the document, because I assume that the entire coast will want hearings, and so it will take us a little while. Conservation equivalency will need to be applied for, for anything that is not in the document, to keep it clean.

CHAIRMAN ARMSTRONG: Okay, but I'm not referring to individual states, I'm talking about this Board. Say we go to public hearing and for some reason we don't want 28 to 33, we want 29 to 34. Can we make that decision without having it in the document now?

MS. KERNS: It has to be within the range of the issues that had gone out for public comment, options that had gone out for public comment.

CHAIRMAN ARMSTRONG: Well that clears it up.

MS. KERNS: That's why I think if you want something additional that is not in the document, you need to tell us now so that we can add it to the document today, or by Friday.

CHAIRMAN ARMSTRONG: Go ahead, Emerson.

MR. HASBROUCK: To follow up on that. When Toni just said tell us now. Do you want me to give you a suggestion right now, or do you want to wait until we discuss whether we're going to adopt or modify the Addendum?

CHAIRMAN ARMSTRONG: Let's wait a few minutes. We've got a few more people to go through, and these are more general questions. Then we'll come back to that. David Borden.

MR. DAVID V. BORDEN: I was just going to ask, Mr. Chairman to you. Are you ready for a motion, or would you like to take more

questions? I'm happy to make a motion when you feel the need for a motion.

CHAIRMAN ARMSTRONG: We are not done with questions, but I would entertain a motion to focus our discussion. Would you like to make that motion?

MR. BORDEN: I'll move adoption of Draft Addendum VI to Amendment 6 to the Interstate Fishery Management Plan for striped bass for public hearing purposes.

CHAIRMAN ARMSTRONG: Is there a second? Ritchie White, second discussion.

MR. BORDEN: The only comment I'll make, I'll echo Jason's comment. I think the staff and the PDT have done an excellent job of really fleshing out clear options that I think the public can weigh the differences fairly easily. To Emerson's point, if there are other options that need to be in here, I would hope people would make a motion to amend. Thank you.

CHAIRMAN ARMSTRONG: To this point, Dennis.

MR. DENNIS ABBOTT: Yes, I have a motion to amend this motion.

CHAIRMAN ARMSTRONG: Go ahead.

MR. ABBOTT: I've been waiting all morning for this. I'm kind of a new guy around the table; I've only been here 23 years. Twenty-two years ago I was drafted to sit on the Striped Bass Board, prior to us taking action to find a seat for everyone here. There is an old phrase, a fine kettle of fish, and I think that we find ourselves in that kettle right now.

After a lot of thought and being who I am, I've decided to step into these dangerous waters, but maybe not. Striped bass are experiencing overfishing and are overfished according to the latest assessment. We're here today to meet the obligations of Amendment 6. Many anglers through the years have expressed to me and others the strong displeasure with varying regulations.

Its disparity is principally due to the generous application of conservation equivalency. I may be wrong, but I don't know of any conservation equivalency application that isn't really intended to increase mortality of striped bass. In my many years in the State Legislature, I always held the belief that when one is advantaged someone else is going to be disadvantaged.

We're here today in part because some of us have been advantaged, and we're all here to pay the piper. I think the public should be given an opportunity to make their voices heard. It's time to take a meaningful action, so **I wish to add a section to Paragraph 2.2.6 to consider the non-application of any conservation equivalency while we're overfished and overfishing is occurring.** I've given the staff this motion. If I have a second I'll briefly speak to it.

CHAIRMAN ARMSTRONG: Is there a second? Second by John McMurray.

MR. ABBOTT: Thank you, John. I urge you to support my motion to allow the public the opportunity to speak on this subject, and I know that many of you operate under various political pressures and sometimes it's hard. Sometimes it is time to step up and do things that are right for the situation at hand. The situation I think is dire, and I think extreme action is required. I think the time is now.

In the future when we prepare a new amendment, we can then consider a conservation equivalency with rigid sideboards which achieve our objectives. There would be a burden on the TC to review whatever conservation equivalencies that already, prior to even approving this Addendum that are in the works.

We haven't even approved it, and I'm sure that states are figuring out how they're going to manipulate the Addendum to their own benefit, as we generally do. I was quite pleased with Katie Drew's recent comments a few moments ago about having more, stricter applications in the subject of conservation equivalency.

We really have to tighten up how we do that. I urge you just to allow this to go into the Addendum so that the general public that speaks to all of you through e-mails and whatever methods, to give them an opportunity to speak on this subject. I thank you, Mr. Chair.
CHAIRMAN ARMSTRONG: Further comment, John McMurray.

MR. McMURRAY: I wanted to qualify my support for this, and I'm just saying this now, so I haven't had a whole lot of time to think about it. We're just putting this out to the public right now for comment. I'm not opposed to conservation equivalency, and my support of this might paint the picture that I am. But I think with it has to come some sort of accountability. If it doesn't work then the state that implements it has to be accountable. We saw how that played out, and Ross mentioned it in his comments. That is where my support lies right now.

CHAIRMAN ARMSTRONG: Tom Fote.

MR. FOTE: Well Dennis, I've been sitting around the table about six more years or seven more years, since 1990. I've been dealing with Striped Bass Board meetings since about '87, so I've been around a few more than you have on this. Every state has different constituency and different fisheries.

What we try to do is accommodate the fisheries in those particular states. That's what conservation equivalency is about. We're not looking to skate the issue. We're not looking to basically get an edge, but we're looking to address the fishermen that we basically represent. You know everybody is talking about e-mails they get.

You know a form e-mail is very simple to get out. But go out and talk to the people on the street. Go out and talk to the people that fish on the docks and the piers, you know the ones that aren't basically sitting behind a computer, basically out fishing and basically looking to take a fish home to eat it and things like that.

I represent all those people, from the catch and release fishermen to basically guys that want to take something home to eat. When I took this job I knew I was going to wind up making one group mad sometimes and making another group upset. Well that's why I get paid the big bucks, zero. I'm looking at taking on the force that basically does that.

I grew up fishing on Canarsie Pier and Steeplechase Pier in Brooklyn. That's what people wanted to do. They don't have the same opportunity as people in boats that basically fish for striped bass. They always caught smaller fish. What we try to address is that we don't unequally hinder those people on the docks and piers.

That is why Connecticut put a certain easing of the fishery on summer flounder, so those people that don't see big fish could actually harvest fish. We did the same thing in Island Beach State Park in New Jersey, because they don't see the big fish. You're trying to accommodate all the fishermen in your state, not just the ones that have big boats and get out to fish, or not the ones that just want to catch and release.

I'll get into that topic a little later, but we try to represent all of them. You try to do that conservation, but you're not looking for an edge, you're not looking to catch any more fish than you are allowed to catch. Sometimes it's more restricted by what you have to do to do that. You make it, well it's not a 20, it is a 22

percent reduction. But this will make the things work. As I said, I'm looking to make the best source, and also working with the other states that I know they have similar problems and more problems. It's easy when you come from a state that just has striped bass, and they get in there and everybody fishes pretty much the same, and you have a small group of anglers. When you start representing 800,000 in-state anglers and 500,000 out-of-state anglers, you are trying to accommodate the tourists and everybody else that comes in to a state.

CHAIRMAN ARMSTRONG: Mike Luisi.

MR. LUISI: I will say that I do agree that the discussion around conservation equivalency should be had, but this isn't the time and place for it. We're in the middle of an addendum process, for which it's been on a fast track. We had a PDT develop options in a matter of a few weeks to put before the Board, over maybe two or three conference calls. There weren't any social and economic considerations on those measures that were put forth.

They were put forth simply because they achieved a number on paper. There needs to be a deeper consideration when states take on management change. The conservation equivalency program as defined under 2.2.6 states that it's an integral component to the Commission's fisheries management program, particularly for striped bass, and that it allows states flexibility to develop alternative regulations to address specific state or regional, and I'd say even social and economic differences in those fisheries.

It's critical that the states have the ability at this point in this Addendum process to craft rules that meet the needs of their fishermen, as long as those rules are achieving the goals and objectives of the FMP. It's not that the state draws something up and it disappears, it's not considered, it's not reviewed, and it's not evaluated. It goes through a thorough review process where the Technical Committee weighs in.

Then the Board has the ability to either approve or deny a state's conservation equivalency proposal, and get public input on it as well. Again, I think that this idea, bringing this to the public, getting feedback from the public. This should be something that we include in the Amendment that we'll be discussing later. I think this is a bigger thing that we need to think more thoroughly about, and the impacts that something like this will have on the states, if they're not able to use conservation equivalency in Addendum VI.

CHAIRMAN ARMSTRONG: All right, Jay McNamee.

MR. McNAMEE: Maybe I'll start by saying I would be really interested in seeing public feedback on an option like this in the Addendum. But here is the glitch for Rhode Island. The way that I interpret what's up on the board right now would apply not just to recreational, but also to commercial.

The state of Rhode Island has had a conservation equivalency in place for our commercial fishery – it's really small – based on a yield-per-recruit analysis with high accountability with a quota, but it's on the commercial fishery. It has been effective for us, it has worked well. It's been in place since 2014. Because of the way this is worded at least, I would have trouble supporting it. But again, I'm interested in hearing additional feedback. I got a lot of e-mails that were of a particular type of comment on this. I wouldn't mind expanding that to see if that kind of holds with additional public comment. However, this wording is problematic for Rhode Island. If it were an option to add into an amendment, I would be supportive of that to give us some more time to think of maybe a better way to word something like this.

CHAIRMAN ARMSTRONG: Megan Ware.

MS. MEGAN WARE: A question for the maker of the motion. It's currently Section 2.2.6 is outside of the management options in the document. Is the idea that this is a statement in the Addendum, or is it the idea that this would be two management alternatives as status quo, and then Option 2 being not permitting conservation equivalency. I likely have a follow up after that.

MR. ABBOTT: My original intent was to include an option of status quo, or what I have there. In talking with Max, he suggested that we just place that in the document to include that as a statement. Is that not correct?

MR. APPELMAN: That was my intent of the motion that it would be status quo, which would allow conservation equivalency, and then the alternative would be what the motion reads.

MR. ABBOTT: While I have the microphone. I just want to repeat that I want to give the public an opportunity to weigh in on this. If this goes into the Addendum at this point, it's still going to come back and allow you folks to vote on the final action, whether you want to go status quo, or listen if the public overwhelmingly or in some part gives you a different opinion. If nothing else it might lead you and help you in the preparation of a later amendment.

MS. WARE: Just to follow up on that. Thank you for the clarification on that. Obviously in Maine we have concerns about the status of the stock, both overfishing and overfished. But I'm a little nervous about not allowing states the flexibility to put forward quantifiable conservation equivalency proposals, similar to what Jay was mentioning. If we could work on the language maybe a bit to include that word quantifiable that might help a little bit. But right now I have some concerns.

CHAIRMAN ARMSTRONG: Ritchie White.

MR. WHITE: When Dennis brought this idea up to me, I said that at this point I would not be in favor if this was voting on a final action. I'm always in favor of bringing things to the public, and I voted consistently on things that I opposed, but put them out to the public to get public input. I certainly support this. I guess there would have to be overwhelming public support for me to support this in the final document.

CHAIRMAN ARMSTRONG: Rob O'Reilly.

MR. O'REILLY: Virginia would not support this motion. I think Andy Shiels made a good comment earlier, although I know that the reduction in fishing mortality rate is the tantamount to having success with this Addendum. I think if we just have Addendum VI it is certainly not going to satisfy Virginia. We already have grave concerns, not only about our fishery, but more than that the resource itself. If you look at the action we've already taken to eliminate trophy size fisheries. Granted it's not going to be a break-the-bank type of reduction. It's about a half a percent.

We had mandatory reporting for 25 years. We have no idea how many large fish were taken out. We're intent on conservation equivalency to be more progressive than the Addendum is, and the hallmark is the spawning stock, and our efforts will continue as we go forward to have those types of conservation measures.

CHAIRMAN ARMSTRONG: Phil Langley.

MR. PHIL LANGLEY: I'm new to the Board here, but I'm certainly not new to the fishery. I've had thousands of trips on the water, in the Chesapeake Bay area especially. But I try to stay up to date with what happens up and down the coast in all of our fisheries. I would have to speak against this motion to remove

conservation equivalency, just because of the fact that it's not a one-size-fits-all in our fishery. These are migratory fish.

Basically every state I feel knows your strengths and weaknesses better than anybody else. I think everybody sitting around this table; we're here because we're all conservation minded. If we see weaknesses within our state that we can make improvements on to better the fishery in the future, I think we need that flexibility to address those issues.

CHAIRMAN ARMSTRONG: Sorry, we've still got a long list here. Roy Miller.

MR. ROY W. MILLER: I'm going to oppose the motion, because we're not here today to address the new Amendment, which is where this question if it were to come up, should be located. It should be in the new amendment. In other words, should conservation equivalency be allowed or should it not be allowed? That belongs in the amendment. We're changing Amendment 6, which recognizes conservation equivalency, so I don't think that this particular motion is appropriate for our consideration today. Therefore, I'm going to oppose it.

CHAIRMAN ARMSTRONG: Emerson Hasbrouck.

MR. HASBROUCK: Thank you, Mr. Chairman, but I did not have my hand up on this issue.

CHAIRMAN ARMSTRONG: Oh I'm sorry, the other white beard, Craig Miller.

SENATOR CRAIG A. MINER: Sorry, Emerson. I was trying to remember Max's presentation and whether he indicated that previously existing or currently existing conservation equivalency efforts were part of the calculations or part of the considerations in arriving at the schedule of changes that would need to occur. Is conservation equivalency that already exists in the species baked into the TCs evaluation?

MR. APPELMAN: Yes and no. Conservation equivalency measures that had lower minimum sizes than the current minimum size, those because of our assumption of noncompliance and the assumption of fish illegally harvested below that size limit. If that would still continue to occur, those can be carried over. Those are accounted for. But modifications that are still above the current minimum size, those are not factored in. The selected measure would sort of replace those conservation equivalency programs.

SENATOR MINER: As a follow up, if this motion were to pass would there be work required to reevaluate changes recommended for those states that have conservation equivalency in this species? It doesn't seem perspective to me, it seems inclusive the way it's drafted.

MR. APPELMAN: I don't see any additional work here. I think this is more to the point of depending on this, would conservation equivalency be permitted under this Addendum while the stock is overfished and overfishing is occurring. It would alleviate any work for this if it does go through in the end.

SENATOR MINER: Okay, thank you.

CHAIRMAN ARMSTSRONG: Justin Davis. You did have your hand up though, right, yes, Russell Dize?

MR. RUSSELL DIZE: I would be against this amendment. Equivalency is equivalency, and I think the states need this tool in their toolbox to manage the fishery. But amongst this gloom and doom, I'm going to say I'm a commercial waterman, 60 years on the Chesapeake Bay. I've never seen in all my life as many small striped bass, we call them rockfish at home. At Taormina that's about the center of the Chesapeake Bay, and on the Maryland portion.

We use clams as bait for our trotline to catch crabs with, and every day about twelve or one o'clock, we have a feast for the small menhaden, I mean small I want to say rockfish and I'm trying not to say it, so I'll say menhaden, but small rockfish that are gathered to get the bait that we throw over. There are hundreds of them, and every boat has that.

There are so many small rockfish in our portion of the Bay that when you're going down the trotline to dip crabs, sometimes you'll dip a rockfish up. As a little ray of sunshine, we have them in the pipeline. Now, whether they mature and get out of the Bay and get on the coast is another thing, because these are small fish, anywhere from 8 inches to say 14 inches.

Maryland got this good numbers; even with so wet a year this year and last year. We got all the water coming down the Susquehanna River. The fresh water has killed all the oysters in the upper Bay; it stopped the crabs from going to the upper Bay this year. They're just starting to get into the upper Bay.

It's not all Maryland's fault. This is coming from Pennsylvania and New York, down to Susquehanna Valley, down the Susquehanna River. To get in 2018, a 14.8 was fantastic with that much fresh water. I hear a lot of gloom and doom, but I do see a ray of sunshine with all these small rockfish in our portion of the Bay.

CHAIRMAN ARMSTRONG: Mike Millard.

MR. MIKE MILLARD: I was inclined to support this Amendment under Ritchie White's theory that it's rarely if ever a bad idea to go out to the public with an option, and hear what they have to say. But then listening to Roy Miller, I wonder and I would ask staff, if this is a procedural issue? Can you adopt, could you ever adopt an option in an addendum that is at odds with the amendment?

EXECUTIVE DIRECTOR ROBERT E. BEAL: Mike, I'll try to answer that. I don't think it's necessarily at odds with the underlying amendment, Amendment 6. I think it would modify some of the provisions and flexibility provided in Amendment 6. The question is, I think is restricting conservation equivalency kind of in bounds for an addendum.

I would argue yes, but there are arguments around the table that have been made that folks feel this may be part of Step 2, which may be an amendment down the road. The Board can do this if they want, but that doesn't mean you have to do it. It is at the pleasure of the Board right now whether they can or can't do it, or want to, or don't want to.

CHAIRMAN ARMSTRONG: I think we're close to moving the question, last word, Eric Reid.

MR. ERIC REID: The last word, okay. My count is not looking too good for this motion. But even if it fails I am encouraged by the maker's statement about putting more teeth into conservation equivalency. I'm interested in that. Recent history maybe will support my opinion, but the other thing that I'm also encouraged.

Even if this fails is Ms. Drew's statement about tightening the requirement to apply and get approval for conservation equivalency. If this fails I think we have some way forward, even if this fails. I liked going out to the public, but I probably will oppose the motion knowing that the intent is to tighten the reins on conservation equivalency right away.

CHAIRMAN ARMSTRONG: I think we're going to move the question. I need two minutes to caucus. Are we ready? **Let me read it into the record. Motion to amend to include an option under Section 2.2.6 that conservation equivalency will not be permitted while the Atlantic Striped Bass stock is overfished or experiencing overfishing. Just to clarify, this**

will be an option in the Addendum with the other side of the option being status quo. All in favor raise your hand, opposed, null, abstentions. The motion fails 2 to 12, 2 abstentions. Jim.

MR. GILMORE: While we're on the conservation equivalency train. Max had brought up during the presentation about there are states that currently have conservation equivalency that would kind of get a bye in this Addendum. However, and I think we said we had to make a decision on that. I just wanted to bring that up, and I'm not sure how to resolve it. But at this point it is my preference. I will preface this by saying I have no problem with the states that are going for conservation equivalency that have done it before.

I understand the way it was done, but I think it would be cleaner if that anybody under the new rules would essentially have to recalculate their conservation equivalency, and maybe Max, you know this better than I do. But the last time we did it I don't think all of the numbers were done the same. For instance, when we did the effort on the Hudson River, we did 16 percent fish guard mortality. I think some of the other states had 9 percent, so it wasn't exactly the same. I believe it would be cleaner if everybody just, if they are going to do conservation equivalency that all the states submit those proposals, especially when it was considering that if we were using 16 percent and other states were using 9 percent, and we're talking about warmer weather and increasing mortality. Probably everybody should recalculate those numbers, just so we and the public understand it that we're not giving a bye to any state that we're going to look at the numbers again.

CHAIRMAN ARMSTRONG: We're back to the main motion, so try and keep your comments this way, so Emerson then Adam, then Marty and then Rob.

MR. HASBROUCK: I would like to move to add two options to the Addendum or two suboptions rather, a suboption 2-A4 and a suboption 3-A4 to look at a slot size of 30 to 36 inches.

CHAIRMAN ARMSTRONG: Let's get that on the board.

MR. APPELMAN: Just a point of clarification here. We might have done those calculations already, so I think the question is does it meet the required reduction? We would have to verify that it meets the desired reduction. Pending that they meet, is that something that we could add to the motion?

MR. HASBROUCK: Yes, go ahead

CHAIRMAN ARMSTRONG: Okay, so the discussion is this will need to be reanalyzed, because it doesn't quite fit with the others, but it can be done very quickly. Is there a second to the motion? Chris Batsavage seconds, discussion.

MR. HASBROUCK: There has been interest by recreational anglers in New York to evaluate this slot size, so I would just like to bring that out to public comment, and based on what Toni had said earlier this is the time to get that in there, if it meets the required reduction.

CHAIRMAN ARMSTRONG: I have a list of people who had their hand up, but I assume it's not towards this. To this motion to amend, I'll go through the list and if you want to address it then you can. Adam.

MR. NOWASLKY: I would like to speak towards the main motion.

CHAIRMAN ARMSTRONG: Thank you, Marty Gary to the main motion or this one? Rob O'Reilly.

MR. O'REILLY: I have a proposed addition relative to what the ISFMP Director invited us to do, as far as before we finalize this if we have any added components to bring them to the Board. That is my request, so it's more fitting with the main motion, I think.

CHAIRMAN ARMSTRONG: Mike Luisi.
MR. LUISI: I'll hold.

CHAIRMAN ARMSTRONG: Okay, Tom Fote.

MR. FOTE: This is really not necessary, because if you want to put a 30 and 36 inch slot limit in, basically conservation equivalency approves the same thing, so that is what you're already able to do without putting another option in there. I think it's redundant.

CHAIRMAN ARMSTRONG: Chris Batsavage.

MR. BATSAVAGE: Yes, assuming that this meets the required reductions, it fills the gaps and gives us a broader range of slot limits. What's intriguing about this is it still provides for a decent size range of fish that could be harvested, but it increases the minimum size a little bit, but then has a slot size.

It falls between the 34 and 40 inch, and what's intriguing about the 36 compared to the 40 is just thinking about red drum management. You kind of increase the chance for a fish to escape from recreational harvest, and be part of the adult spawning stock that it will have a lot less harvest on it. I think it's worth having in there, assuming it meets the required reductions.

CHAIRMAN ARMSTRONG: Further discussion, Justin Davis.

DR. DAVIS: I guess I have a question for the maker of the motion. I'm wondering if the primary interest here is in having a slot limit with a 30 inch minimum, because the options that we already have in the document basically operate off of a slot limit with a 40 inch maximum, which was part of the original direction to the Board, and then another option with a 28 inch minimum.

I can imagine a scenario here where the analysis is done and it says well a 30 to 36 won't work, but a 30 to 35 would. Then I can imagine that we wouldn't necessarily be able to include that in the Addendum, because it's not part of this motion. This motion specifies 30 to 36. I'm wondering if it might make more sense to change this motion to say a slot size limit with a 30 inch minimum, if that is the primary interest of the fisherman who wants this slot limit.

MR. HASBROUCK: It's not necessarily just a 30 inch minimum, it's another option. As Chris had said before, it's kind of between that 28 inch minimum and the 40 inch maximum, so it kind of fits in the middle there. I put it up there so that New York could have that option if it wanted, without having to go through conservation equivalency.

MR. APPELMAN: I just want to add to those comments. I think what Justin is getting at is that this option in the motion might not meet that reduction. Therefore, it would disappear and it wouldn't be in the document. I think if we're looking for another slot in the middle of those two, with a 30 inch lower bound.

The question is really what is the upper bound that meets that desired reduction? If you are okay with the idea that this could disappear if it doesn't meet that desired reduction, then it's fine. But if you really are intent on having another middle slot option, I suggest modifying it to meet that intention.

CHAIRMAN ARMSTRONG: Go ahead, Emerson.

MR. HASBROUCK: **Then I'll change the wording there. Chris, let me know if you're good with this. To include a slot limit with a 30 inch minimum size, and a maximum size to meet the required reduction of those two different**

sections. Then the maximum may be different between the 18 percent and the 20 percent.

CHAIRMAN ARMSTRONG: Chris, are you okay with the new wording?

MR. BATSAVAGE: Yes I am.

CHAIRMAN ARMSTRONG: I've noticed some hands in the audience, and I will call on a couple public comments. I'm going to wait until we're back to the main motion fully amended, and ready to vote. Is there further discussion on this motion to amend? When this is finally done I'll read into the record. Do we need to caucus? The motion is move to amend to add two suboptions under, oh still perfecting.

I'll read slowly. **Okay, move to amend to add two suboptions under Section 3.1 2-A4 and 3-A4 to include a slot size limit with a 30 inch minimum size limit and a maximum size limit that meets the required reduction for the two different sections. Are we ready for the vote? All in favor, okay opposed, null, abstention. The motion passes unanimously.** Back to the main motion, Rob O'Reilly, I believe you had.

MR. O'REILLY: Yes, I'm again following up on what Toni Kerns said earlier that if you wish to try and add anything it has to be done now. I looked through the document, and if I'm incorrect please let me know, but I don't see a table that specifically indicates by state the recreational harvest and dead discards and total removals.

I know there was a question earlier, a request earlier on the reductions to include which were harvest removals, but I'm speaking about on a state specific basis, and I bring this up because last meeting we lamented the dead discard issue quite a bit. This meeting we started it again. We have different modes of fishing geographically.

Virginia has had the information by state for many months, and I think it is something that I wouldn't use the word transparent, I would use the word obvious that the states should see, so they realize where the discard mortality is really more pronounced than in other areas. I do think this is necessary.

It does so happen that if you are in Virginia and you look from 1990 until the present, we mapped out all the states. Virginia ranks either first lowest, second lowest, third lowest, and in one year fifth lowest. But that tells you something about the fishery in Virginia. Even in the good times of 2003 to 2006, when the fishery could barely be constrained, the recreational fishery, including the bad times from 2007 to the present. I think that's a piece of information that is missing, and I think now the way the Addendum VI portrays that situation, it lumps everything together. It's an aggregate approach, so that's my request and I thank you very much.

CHAIRMAN ARMSTRONG: To be clear, we're just adding a table of state-by-state recreational landings and discard. Is there anyone opposed to adding that? Seeing no opposition we'll add that by consensus. Okay, Marty.

MR. MARTIN GARY: Just a clarifying question about conservation equivalency and how it applies to seasonal closures. Our jurisdiction at Potomac River Fisheries Commission, along with the district, although I'm asking for our jurisdiction, does not have MRIP specific estimates. The fish that are caught in PRFC jurisdictional waters are assumed to be landed in Maryland or Virginia. My question is does that preclude us from pursuing conservation equivalency that includes seasonal closures?

DR. DREW: No it would not. I think generally for the PRFC and for D.C. we tend to assume that because the landings do happen in areas that are encountered by MRIP, we use those regions as proxies for what you would expect.

You can use that information that is available as a representation of what you would expect to have. Alternatively, if you have your own additional non MRIP data sources that the TC feels are robust enough, you could also submit based on those data sources as well.

CHAIRMAN ARMSTRONG: Andy Shiels.

MR. SHIELS: For the benefit of the public, as we go out to the public this fall, and for the benefit of the document. I just would like to make a request that we put some effort into the verbiage to explain what that 50 percent probability means. We discussed it earlier. I brought it up at a previous meeting.

I can tell by the comments that I'm seeing out on the internet, letters that are coming my way, chatter that I see that the public, and maybe not everybody around the table, I'll raise my hand. We still don't understand exactly what that means, and I think we're making assumptions that we all know what it means but the public doesn't.

I think making it very clear how the 50 percent was arrived at, what the 50 percent means, both in this document and when you go out and you do public presentations, take some time to do a Power Point slide that explains exactly what that means. For better or for worse, the public will better understand it.

CHAIRMAN ARMSTRONG: Any objection to adding some elaboration of the 50 percent? Tom Fote.

MR. FOTE: It started the 50 percent at a court case that was on summer flounder that they started using, and we started making sure everything was at least 50 percent. At points we've used higher than 50 percent on certain species, but that's where it came out of, a judge, because we sometimes with summer flounder years ago were using 38 percent or something like that. They said it should have at least a 50 percent probability of accomplishing it. But that was in the summer flounder lawsuit that basically went on in 1992 or 3, something like that.

CHAIRMAN ARMSTRONG: Mike Luisi.

MR. LUISI: Before I vote, before we take this up as our final action to move this document along. I just want to go back and revisit the comments I made earlier regarding a state's ability to provide an equivalency based on the allocation of the reduction to the different sectors, as it applies to the document.

We can certainly take your advice, Mr. Chairman, since you are the all-knowing Chairman of this Board that you see no problem in a state handling its responsibility in the manner that it sees fit. I want to make sure it's clear. Max said we need a consensus or a majority opinion on that point. But before we move this I need to be clear on that before we finish.

MR. APPELMAN: My feedback is the same as it was before. If there is no objection to putting that explicit language in that management equivalency section, great. If there is some objection then I think we would have to go to a motion to add that language.

CHAIRMAN ARMSTRONG: Is there objection to that further clarification of the conservation equivalency? Doug.

MR. DOUGLAS E. GROUT: I would just like to have what he is asking clarified, or at least put up on the board somehow, so that I can determine whether I can object or not.

MR. LUISI: I can certainly do that. If you want to put up, let's just put up one of the commercial tables. Let me look and see which one it is, maybe the 1.8 percent reduction option for Chesapeake Bay commercial quota, if you could put that up from the presentation.

CHAIRMAN ARMSTRONG: Jim, did you have a comment on this?

MR. GILMORE: It's after this; it was just getting back to another clarification, so I'll wait.

MR. LUISI: Okay so here is the table in the document, and let's just say that in October the Board selects Option 3, and goes down the road of suggesting that the reduction to the recreational fishery I think was 20 percent, and the commercial fishery was 1.8 percent. If you look at the difference between Addendum IVs quota and that 1.8 percent reduction, you get 26,494 pounds, so that is the reduction amount that the commercial fishery in our state would be reduced by.

If there is an intention by a state to take the 26,000/27,000 pounds that they are responsible for reducing that fishery by. Converting that into an amount of fish for the recreational fishery, and you can make that clear in their proposal for conservation equivalency, it adds to the recreational reduction that's needed, but it's the decision of the state to make that call. That wouldn't just be for us, it would be for all the states as they want to apply those reductions. I think it gives a state an ability to manage that responsibility for reduction in its own way, based on the needs of its sectors and its fishermen. I would like that language if possible to be clear under the conservation equivalency section, so that when we go to public hearings on this it can be reported out as such.

CHAIRMAN ARMSTRONG: Ritchie.

MR. WHITE: Just to be clear to understand this then, so the Technical Committee then would review that proposal. If they did not find it was equal then it would not work. Is that your understanding, Mike of the process?

MR. LUISI: Absolutely.

CHAIRMAN ARMSTRONG: Mike, you're just talking about adding language in the conservation equivalency that clarifies this specific thing would be okay. I'm not sure when I was cut off, so you would like language put in that clarifies that the mechanism that you talked about for conservation equivalency. Does anyone have a problem with adding that in, seeing no objection that will be added by consensus. Doug, you're all set?

MR. GROUT: At some point I have a question to add, it's a modification to the conservation equivalency for clarity, but there may be some people ahead of me.

CHAIRMAN ARMSTRONG: Okay, I just have Adam Nowalsky.

MR. NOWALSKY: I think at this point it's clear that the motion on the board needs to be amended to reflect as modified today, given the changes that we've made so far beyond just the addition of the options. But as I referenced earlier, I would like to see a change to the document that would add two columns to the tables, where the removals are to identify both what portion is coming from, what that option offers as a reduction in harvest and as a change in discard mortality would be helpful.

I would also like to see some language change in 2.2.5 under socioeconomic impacts, specifically the first paragraph, and the second paragraph talks about that there is expected negative short term impacts, but the long term impacts will be positive. I think most of us around the table agree with that sense in theory, but the reality is what we've experienced is that when we continue to take these changes there is a loss of interest in the fishery, particularly on the recreational side.

There is a loss of infrastructure that often occurs on the commercial side, and there aren't many cases in the last ten year in particular,

where we're getting back what we hoped to. Again, I think in theory we agree with it, but I would like to see something added to these sections that reflects that there is an anticipated loss of interest and infrastructure that may not allow the long term expected benefit to be reaped as expected, and as outlined in this section.

MR. APPELMAN: Just trying to recap that a little bit. The idea that these reductions would be such that loss of interest in the fishery, we may not realize that long term benefit of this from angler welfare perspective.

MR. NOWALSKY: The last paragraph I think talks about angler welfare, the first paragraph specifically talked about economic jobs and value, so it would be reflected in both of those cases.

CHAIRMAN ARMSTRONG: Is everyone okay with that language? John McMurray.

MR. McMURRAY: I guess I'm okay with the language, but I would request that we also add language if there is a much greater loss of interest when there is no fish around to catch, because this fishery is really driven by opportunity to catch fish, not how small of a fish you could catch. I've been in it a long time, and that's really the truth about the striped bass fishery.

CHAIRMAN ARMSTRONG: Well, I'm not sure how to deal with that John. We're sort of rewriting things on the fly, and I don't think we can do that right now. But I understand your point. Jim Gilmore.

MR. GILMORE: Maybe I wasn't clear before, but my comments before were to the main motion that currently. Maybe I'll rephrase it differently. Currently the document says that conservation equivalency measures for the Delaware Bay or the Delaware River would not have to be resubmitted, and my comment was that I think that they should.

Anybody that's going to want to do a conservation equivalency should have to resubmit the calculations, because they were not done consistently. Either we can agree, talk about that or I can put a motion up just to amend that so that any conservation equivalencies that are being presented by a state would have to resubmit their calculations justifying the use of conservation equivalency. Up to you how you want to handle it, Mr. Chairman.

MR. APPELMAN: I just want to get some clarification on this too, so I have up on the screen basically those exceptions to the suboptions. These are the measures that exist now that would carry over more or less into all these suboptions, so the one you're referring to is Delaware. Again yes, it's been accounted for in our calculations.

It is a question to the Board if they want to allow that measure to be rolled over or resubmit, in which case as you said it might shake out to be about the same thing anyways, but going through that process to vet it that is up to the Board. But I'm asking about Connecticut and New Jersey's programs, which are a reallocation of the commercial quota, so those would be reduced in terms of number of tags that they could issue. But here we're assuming that the size limits stay the same, so are you just speaking to Delaware's situation or to all three of those?

MR. GILMORE: Well, primarily Delaware but I think all of them should be done. It's a little bit more work, but we're going out to the public, and I've already gotten questions from this about why are they getting a bye and we're not, you know that type of thing. Well why do we have to recalculate them?

It's just easier. Again, I preface this by I think these are all going to fly. I don't have any opposition to them getting conservation equivalency. It just makes the document cleaner that we all recalculated the numbers under a consistent set of rules, and that it would just be a cleaner way to put the document out.

CHAIRMAN ARMSTRONG: Any objection to what Jim is proposing? Stewart Michels.

MR. STEWART MICHELS: Well it's just a matter of backing those numbers out. Those numbers are reflective in this analysis that was put forward right by the PDT. How are we going to back those numbers out then to accommodate for them? If it provides any assurance that this is a summer slot, and to date it only affects resident males in the system, and it wouldn't affect the ultimate goal, which is reducing mortality on female spawning stock biomass. It just creates a lot of work for us, and I think as Max pointed out, I don't think it's really going to get us anywhere.

DR. DREW: Just from the technical side. It would basically be just a standard state conservation equivalency program. You have all of the data available to show that during this segment of time, if you still allowed that harvest you would still see the same reductions that you would see just from going to the whatever new set of reductions is put into place for the coast.

That having that slot fishery would still give you on, a statewide level, the same percent reduction that we're seeing from all of the other that we're expecting from the larger overall change. As you say it is a very small component of your fishery, and it's a very small component of the overall harvest. I think on paper you will be able to get that back in without a problem, but it would just mean that you would need to formally resubmit a conservation equivalency program, as would any other state that is sort of not rolled over now.

CHAIRMAN ARMSTRONG: Go ahead Jim.

MR. GILMORE: Just the two issues before again was that we were using different discard mortality percentages when we did the calculations previously. Secondly, you know we have to redo them on the Hudson because MRIP doesn't cover the entire Hudson. It doesn't cover the entire Delaware also, so there are just some additional factors in this that I think again it just would be cleaner if we did it. I don't think it's a lot of work Stew, if it was I wouldn't propose it. But I think it's just a cleaner way to do it.

CHAIRMAN ARMSTRONG: It doesn't look like we have consensus on this, so it would need to be a motion I guess, Jim.

MR. GILMORE: Are you ready? **Move that all states planning to use conservation equivalency submit justification for each proposal in the addendum, just for each proposal, leave it at that. Conservation equivalency should submit justification for each proposal. Okay, all states planning to use conservation equivalency should submit justifications for each proposal.**

MR. APPELMAN: Point of clarification. I don't think that really gets at what you're getting at, which is that under the suboptions Delaware is able to roll over this lower slot in Delaware Bay during the summer. I think the intent is to get rid of that ability to roll over that. In which case they would get in line with all the rest of the states and have to submit for CE if they want to change from whatever is selected. Is that?

MR. GILMORE: Do you just want a motion to remove that section? Isn't that easier?

MR. APPELMAN: I think so.

MR. GILMORE: **Okay, Kirby if you can just say a motion to remove, I don't know what to say, I don't have it in front of me. But remove it from the draft document.**

MR. APPELMAN: **Jim, would that also apply to the Connecticut and New Jersey bonus fish, which I'm realizing now that it didn't make it into the document, but it needs to be in there that those two bonus program slot limits would also carry over for Connecticut and New Jersey.**

MR. GILMORE: Yes, because again we all should be doing the same thing.

CHAIRMAN ARMSTRONG: Is that it, Jim?

MR. GILMORE: Close enough, a little longer but that's fine.

CHAIRMAN ARMSTRONG: Is there a second, second by Megan Ware, discussion? Jason.

MR. McNAMEE: I'm trying to catch up here, I'm not sure I completely understood what is going on here. Maybe I'll say how I'm understanding it and that is, we're now asking, there was a comment in the Draft Addendum that kind of gave a pass to a couple of states because they've had conservations equivalencies that were approved at some point that have kind of propagated through time.

If we're now asking them to redo those, I just make the point that that is work for probably the Technical Committee member, and if we expect them to potentially work on an amendment and whatever is going to be in that we're piling up a bunch of work that I don't know has a lot of technical value. The amendment part does, the other part I'm not sure does. I just wanted to make that comment.

CHAIRMAN ARMSTRONG: Further comment on the motion. I need one moment to caucus.

MR. APPELMAN: Mr. Gilmore could you just read the language up there to yourself and let us know that that's good.

MR. GILMORE: Yes that's fine if Megan's okay with it.

CHAIRMAN ARMSTRONG: Let me read it in. Move to amend to remove from the Draft Addendum VI language that exempts states with minimum size fish lower than the FMP standard from conservation equivalency so that all states are required to submit a conservation equivalency proposal. Roy Miller.

MR. MILLER: I am requesting clarification of the motion. We've discussed two specific measures for conservation equivalency, the Delaware Bay slot size and also the Connecticut and New Jersey trophy seasons. The way this motion reads to me, it's nonspecific for whose proposal we're talking about. Is that the way I'm reading this? In other words, does it also encompass Maryland's circle hook and educational program? In other words, do you have to re-justify any preexisting conservation equivalency program that you had in place under Amendment 6?

MR. APPELMAN: Yes. Based on whatever measure is selected in the end, all states have to come forward with CE, in order to put in alternative measures to that selected measure. The three examples in the document that sort of rolled over existing CE would now be wiped clean by this statement. It's an even playing field for everybody in all regions and fisheries now.

DR. DREW: To add to that. Things like the circle hook provisions and the education, so these regulations cover specifically the sizes. In this case Maryland's. Depending on the regulation that was chosen, the 19 for Maryland and the 20 for everybody else in the Bay, if that option is chosen that would stay, as would the

associated circle hook or educational provisions as well.

If we go to for the Bay everybody goes to 20 inches and we put in a slot, Maryland if they wanted to go back to the 19 inch would have to resubmit that conservation equivalency proposal as well. They are not grandfathered into the specific calculations, the same way that some of these other coastal or ocean fishery minimum sizes were.

CHAIRMAN ARMSTRONG: Mike Luisi.

MR. LUISI: I need to be absolutely clear. Whatever is selected in the Addendum, there will be an option selected at some point in October. If Maryland has a different plan that what is selected, we'll put together a full package of conservation equivalency, which may or may not include circle hooks. I don't know that yet. We're likely not going to change that rule, so it will stay in place. But everything will be packaged up together. We can't assume that we're fishing under some reduced level of mortality because of a previously submitted plan, correct? Okay.

CHAIRMAN ARMSTRONG: **All right let's vote, all in favor, okay opposed, null, abstention, the motion passes 11 to 4, 1 abstention.** That brings us back up to the next motion. Stand by; we need to amalgamate all these things now. All right this is it. This is now the main motion as amended several times, and I am required to read this into the record. **Let me read it in first.**

Move to add two-suboptions under section 3.1 2-A4 and 3-A4 to include a slot limit with a 30 inch minimum size limit and a maximum size limit that meets the required reduction for the two different sections; remove from Draft Addendum VI language that exempts states with minimum size fish lower than the FMP standard from conservation equivalency so that all states are required to submit a conservation equivalency proposal; and adopt Draft Addendum VI to Amendment 6 of the Striped Bass FMP for public comment as modified today. Doug.

MR. GROUT: Hopefully what I'm going to suggest here won't require a motion. I'm looking at in Section 3.2 we have a couple options where we're either going to mandate the use of circle hooks or promote the use of circle hooks. What I would like to have for clarification in there is the fact that we're talking about the use of circle hooks when fishing with bait for striped bass.

Because quite frankly, if you put a circle hook on a fly or a lure, you aren't going to get the reduction you're looking for. The whole thing behind circle hooks, the benefit of circle hooks is when you're fishing with bait, as opposed to J hooks. I think if we could just add that wording when fishing with bait for striped bass in both Option B and Option C, just as a clarification. I think there will be some benefits behind that going out to the public.

MR. APPELMAN: Just to clarify, so as it reads, Option B for example, implement regulations requiring the use of circle hooks when fishing with bait. That's the place where it would go in?

MR. GROUT: Yes that's fine, or you could say circle hooks as defined above when fishing with bait for striped bass.

MR. APPELMAN: Either way is fine.

MR. GROUT: Yes either way. The same thing under C, the use of circle hooks when fishing with bait for striped bass.

CHAIRMAN ARMSTRONG: David Miramant.

SENATOR DAVID MIRAMANT: If it needs a second we'll second that and if it doesn't, I support that.

CHAIRMAN ARMSTRONG: Any disagreement with adding that in? **Seeing none, we adopt it by consensus**. All right, are we ready to vote? Yes. Patrick Paquette.

MR. PATRICK PAQUETTE: Patrick Paquette, I am a member of the Striped Bass AP. I've been a past President and then the Government Affairs Officer for the Massachusetts Striped Bass Association since 2001. I've been attending this meeting for I don't know, almost as long as Tom Fote. I would like to make a couple of comments based on the motion you're about to make, just to make sure a few things that I did not hear as said.

I'm not going to repeat a bunch of stuff that you guys have debated; I value your time as much as my own. Nine percent release mortality is a good thing. It's one of the best release mortality numbers in all the fisheries management in the northeast. To realistically think we're going to get that release mortality down, although we should always be making strides for that. From a management point of view that may be unrealistic, especially when I don't hear you talking about a goal as to where you would like to get with that release mortality.

Any data in the document that is surrounding removals, and that shows removals should very clearly show the number of trips tied to those removals. My understanding is that discard mortality is not factored into commercial quota calculations. Pound nets, gill nets, hook and line release in my own state, they all have a discard mortality tied to them.

When you get into things like the proposal you discussed about Maryland, and what Maryland is talking about doing, discard mortality needs to be very clearly understood when you start swapping the fish back and forth between sectors. Based on Toni's comment answering to Dr. Armstrong's comments about what would and would not be able to be voted upon when this comes back from public, I see this as a very, very narrow scope to document. Social and economic impacts of this document are massive. I've heard an hour's discussion about the small summertime fishery in Maryland, and I've heard zero discussion that you are today when you vote this, and limit the options of what can, you are going to significantly impact, if not wipe out, a multi-million dollar tournament structure up and down the east coast.

Hundreds of thousands of hotel rooms, visitor trips, private vessels, the tournament fishing on the east coast for striped bass is about to be reduced by probably 90 percent. Multi-million dollars in local impact, and we had no discussion of it here today. There is not much in here for people to talk about.

The same thing when it comes to impact. It's about one of the primary reasons that people do fish, and people fish for large fish. The word trophy has definitely got to do with where you're at. But I saw no option. My understanding in my experience as a Master is somebody who fished in two different parts of Massachusetts as a charter captain, the hunt for very large fish, the elusive 50 pound fish.

I would love to see an option in this document that the public could at least comment on a true trophy fish; 50 inch fish barely ever survive release. There is data around those, what we refer to as super cows, 50 inch fish. I believe that if you analyzed a 50 inch option along with some of these slot limits that you would see almost no difference in impact, because of how low that number is.

However, as you all know the ability of fishermen, fishermen fish on hope. Sportfishing fishes on hope. I would really appreciate it if you could at least let the public comment on a true fish of a lifetime opportunity. That is a big part of for-hire fishing, and a big part of private fishing. Conservation equivalency plans that do

not work should face some sort of automatic accountability measure.

In Federal FMPs those kinds of automatic accountability measures that are known up ahead by those states, those are regular in Federal FMPs, they should be in this. I would also suggest that the people around the table, based on what these slot limits look like, do a little bit of research about a building phenomenon in U.S. fisheries, something called a dude trip.

I'm not a fan of dude trips, but make no mistake about it. When you take trophy fish, truly the hunt for big fish, yes there are about ten different TV programs under those names. When you take the hunt for big fish out of striped bass fishing, commercial anglers, and commercial fishers in Louisiana and in Alabama, are actually basically selling mate slots on their boat.

They let then the fishermen buy from dealers onshore. Please look into what a dude trip is, because dude trips are coming to the northeast very soon, because those people that can access when the size limit is different for the commercial fisher than it is for the private recreational fisher. Dude trips will become a viable thing for businesses in the northeast.

The last thing I want to tell you is the biggest one. The public expected to comment on the 50 percent likelihood of success of this document. The public commented many members of the public and organizations did prior to this document that they wanted to see options that meet the ten year rebuilding of Amendment 6. You've had at least two Commissioners around this. But because these things are not in the document, the public is not going to be able to comment on that and you're not going to be able to consider it when it comes back. You're already going to waste a lot of the public's time, because you've got dozens of documents that say, hey we've got a problem with the 50 percent.

Hey, we've got a problem with not meeting the ten year. But you're taking that off the table. The public wants to comment on these things, and you're not giving them that opportunity. I have a problem with this document. This document I do not believe would meet the federal standard of a wide range.

Last but not least, if we miss. I want you to really think about this, and you're going to hear this in a lot of comments after the public comments. If management misses, and I'll be honest, I wonder if the environmental factors affecting the species are going to allow us to get the reduction we want at all.

But if we miss, anglers in the northeast are going to lose May or September or both. If we don't achieve this and the decline continues, you're getting ready to flip a coin on 50 percent of losing September or May, and that's going to be devastating to sportfishing in the northeast. Thanks, and I hope you listened to some of this stuff, because this document is significantly incomplete.

CHAIRMAN ARMSTRONG: Yes sir, briefly please.

CAPTAIN ROBERT NEWBERRY: My name is Captain Robert Newberry, I'm Chairman of Delmarva Fisheries; located in Chestertown, Maryland. We represent commercial, recreational and packing and industries through the seafood industry on the Delmarva Peninsula. One thing that is a concern to me, we're looking at this conservation equivalence.

In the Chesapeake Bay, being the diverse ecosystem that we are. What's driving this conservation equivalence happens to be the fact of the fishing mortality, or basically the overfishing of the fish and the overfishing of the biomass. One thing, it's kind of a comment and

a question. Maybe Max might be able to help me on this.

One of the factors in the definition of overfishing is not just strictly harvest, it can be following severely on episodic events like the freshet that we've had in the Chesapeake Bay, a 300 year record of fresh water. It can be pollution, it can be temperature. There are several different variances.

I was very interested to see if the TC is going to consider, when we submit conservation equivalences, if it is based on some of these episodic events in the definition of overfishing, if the TC will consider the fact of the pollution problems that we have in the Chesapeake Bay, the freshet that we have that would apply to the conservation equivalence.

It's not just our overfishing, it is like maybe, I would say 70 percent, maybe 60 percent, but 40 percent is like you know we have an area in Baltimore that has dumped over 2.5 billion gallons of pollution into the Bay in the past year. If that is going to be figured, if the definition of overfishing that is a factor in the definition of why overfishing is occurring, or overfished is occurring. I was wondering if the TC would be considering that when we submit out conservation equivalences.

DR. DREW: No. The conservation equivalency is only to say these regulations will result in the same percent reduction in total fishery removals as the proposed measure, so we're not considering any additional mortality from pollution, from any other environmental sources. The conservation equivalency is strictly focused on the fishery removals.

CAPTAIN NEWBERRY: The one thing with the dead zones and the benthic zones that we have in the Bay that are increasing right now, because of the temperature and the weather and the fresh water. When I look at the definition of how we get to overfishing, and the definition is consider some of these environmental events. I think that should be, just my opinion that should be considered in when we do our conservation equivalence, so thank you very much.

CHAIRMAN ARMSTRONG: Are we ready to vote? Very ready, all in favor, do you want to caucus? Caucus, two minutes. All right, we're going to call the question**. All in favor, thank you, opposed, null, abstention. The motion passes unanimously**.

CONSIDER POSTPONED MOTION FROM THE APRIL 2019 MEETING

CHAIRMAN ARMSTRONG: All right, Item 5, it's up to the Board. What do we want to do with this? I would suggest we need to move this down the road quite a bit until we're done with the Addendum. Mike Luisi.

MR. LUISI: I think we were in the same spot last time. We were either over the time limit or we had five minutes left when I made this motion to consider the initiation of an amendment. I'm not going to speak to that again. I think it's very important that we consider the long term success, and the long term management of this fishery. However, again we're faced with time limitations.

Based on our discussion yesterday, I talked with the Chair about what I foresee moving ahead. We have an October annual meeting where we'll be dealing with this addendum; Addendum VI probably will take some time. There is going to be conservation equivalency programs, and measures that are going to be needed to be considered at the winter meeting, which will likely take a great deal of time.

I'm thinking, Mr. Chairman that it may be best to postpone this motion and the consideration of the initiation of an amendment until the spring meeting of 2020. If you're okay with it, I would make that motion to postpone consideration of the initiation of the amendment to, I guess it will be the spring

meeting of 2020, or move to postpone, what's up on the board.

The intent of the motion originally was to wait until Addendum VI had kind of cleared the decks before we begin the discussion. But I think just the motion in itself, and the initiation of an amendment is going to require a great deal of discussion, given what's been talked around about the table. Another idea that we may want to think about is putting together a small working group between now and May, to flesh out a little bit of what this amendment might look like, just something to consider.

CHAIRMAN ARMSTRONG: Is that enough of a motion to do what we need to do? All right, is anyone opposed?

MR. LANGLEY: We have a motion to amend; I believe that should be addressed first, before the main motion. I may be incorrect but that is my assumption.

MR. APPELMAN: Mike, is your intent to postpone both of these, the main motion and the motion to amend?

MR. LUISI: Just as we did in May. My motion is to postpone the whole action, because I believe that there will be additional items such as conservation equivalency that may be brought up. We don't have time to get into that full debate today.

CHAIRMAN ARMSTRONG: Emerson.

MR. HASBROUCK: If we delay any discussion about an amendment until next May, does that mean we essentially now have nine years to rebuild spawning stock biomass, or we will have nine years to rebuild?

CHAIRMAN ARMSTRONG: Well, we will be rebuilding at an F of 0.2. It just becomes more and clearer as time goes along, if we can do it in ten years. It's not like we're getting behind the eight ball by delaying it for six months, or whatever.

MR. APPELMAN: The ten year timeframe, the clock is ticking on that yes.

CHAIRMAN ARMSTRONG: All right, let's have a vote on the motion, all in favor.

MS. WARE: Could we have two minutes for caucus, please, 30 seconds.

CHAIRMAN ARMSTRONG: Yes. Andy.

MR. SHIELS: Before we take a vote could I add a comment or ask a question?

CHAIRMAN ARMSTRONG: Sure.

MR. SHIELS: Do you want me to wait until they're done caucusing, or just jump in?

CHAIRMAN ARMSTRONG: I think we're done.

MR. SHIELS: This brings me right back to where I was two hours ago, and so my concern then was that the Addendum that we just approved going out for public comment was not going to address the spawning stock biomass part. I read the section of Amendment 6 that says where we're supposed to do that.
Emerson asked the question, now we're nine years and counting. We're going to go out to the public with only half of the story. What are we going to tell and convey to the public, either in the news releases that go out after today, or when we go out to the public in the next two months. Well, you have to wait until May or August or next year at the Annual Meeting, before we actually do anything on the spawning stock biomass part. I cannot vote for this in good conscience.

Although I know that we have no time left today that there is no time afforded for it at the October meeting, I can't support this in good conscience, because I'm helping to contribute

to violating what's in Amendment 6. I have to vote against this for that reason, and I want that on the record.

CHAIRMAN ARMSTRONG: The reason we're going this route is because an amendment would be six months or a year from now, and so we're starting rebuilding now. We have a projection that gets us to 95 percent of the SSB target in ten years, and we'll be above the trigger in four or five years. We're being very progressive. We have to relook at it and make sure we hit it by ten, but we're coming very close, and we're moving forward in management quite a bit with this Addendum. Yes.

MR. SHIELS: Just a brief follow up, and I'm not going to be argumentative, only that when I recapped what I thought Max said was that what we just passed was dealing with the overfishing part, but was not dealing on the spawning stock biomass rebuild. That's what I understood, and so that is not gelling with what I'm hearing right now. I'll stop at that.

CHAIRMAN ARMSTRONG: **Yes let's vote, are you all ready. All in favor raise your hand, opposed, null and abstention. The motion passes 11 to 5.** Tom Fote.

MR. FOTE: I disagree with Andy vehemently on this. We are dealing with the spawning stock biomass. This is what the rules are basically put in place so you can reach the target. We're not looking at whether it's going to accomplish in ten years or not, we have a 95 percent in doing that. Do we need to fine tune it?

You also forget that we got hit with a bunch of data, and I've been sitting around this table a long time. I said to Dirk before, I said what's going to happen three years from now when they reevaluate what they just did with MRIP, and tell us while we were wrong here, we've got to change here and change there, because they've done that to us over and over again.

We should be taking a right path, and again we need to deal with hook and release mortality. I can't accept the comments that we can't do anything about it, because people are going to fish. If we start basically going to look at what's happening, people right now are out fishing in Bays and estuaries where the water is 90 degrees, and they tell me well they're only catch and release fishermen.

I'm saying, you're catch and kill fishermen. With a 30 or 40 percent hook and release mortality, people that are conservation minded are not fishing in Bays and estuaries with 80 degree water right now for striped bass. I applaud Maryland for what they did by putting in that weather alert, and we should be doing that in the Delaware River when the water gets between 80 degrees for both New Jersey and Pennsylvania. I'm looking at a whole bunch of other issues that need to be covered under an amendment. Also, we are 40 million pounds higher than we produced the highest young of the year. We managed in 2011 and 2015, to produce, and '14 also, record year classes. It's not the spawning stock biomass that's the problem, it's a whole bunch of other issues like catch and release and other things that are going on that are causing the high mortality and environmental issues, which sometimes we don't have the control over. That's where I'm going to leave it.

CHAIRMAN ARMSTRONG: Doug.

MR. GROUT: Yes. I just wanted to make two points, one that I do think when we pass this Addendum, if we take the measures that are in this Addendum, we will start rebuilding the stock. There is clearly an indication we're reducing F back to the target. The reason I voted against postponing is because I think we can start the Amendment even sooner. I think we can start discussion at a minimum in January. If I was still going to be here, I might make another motion to try and un-postpone it.

CHAIRMAN ARMSTRONG: Well we're thankful about that Doug. All right we're done with this item.

CONSIDER APPROVAL OF 2019 FISHERY MANAGEMENT PLAN REVIEW AND STATE COMPLIANCE

CHAIRMAN ARMSTRONG: The next item we're going to eliminate, we will be doing the FMP Review by e-mail, is that correct?

OTHER BUSINESS/ADJOURN

CHAIRMAN ARMSTRONG: Which leaves us to other business, any final comments other business? Yes, sir.

MR. J. BRYAN PLUMLEE: My name is Bryan Plumlee. I just wanted to recognize Rob O'Reilly for his 32 years of service for the Commonwealth. I had the pleasure of serving on the State Management Board while Rob was the Chief of Fisheries. He was terrific. Jack Travelstead is here.

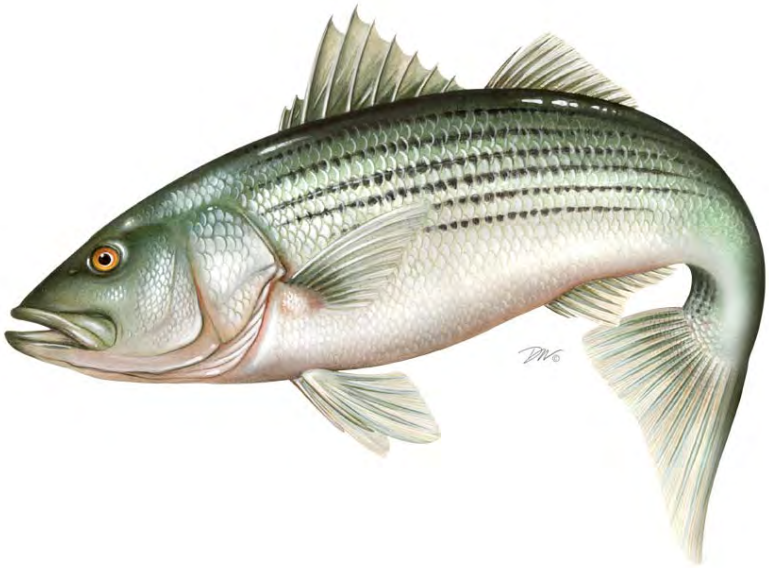
I think he would agree with me that Rob has been universally recognized as a source of great information and fairness for the Commonwealth, and I didn't want to let him slip away from his last meeting without us recognizing all the good work he has done, so thank you, Rob. (Applause) Just so he can relax a little bit, I want everyone to know that applications close out on Monday, so please submit.

CHAIRMAN ARMSTRONG: Let the record show that was a standing ovation. Any other business, seeing none we are adjourned?

(Whereupon the meeting adjourned at 12:15 o'clock p.m. on August 8, 2019)

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM VI TO AMENDMENT 6 TO THE INTERSTATE FISHERY MANAGEMENT PLAN FOR ATLANTIC STRIPED BASS



August 2019

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Public Comment Process and Proposed Timeline

In May 2019, the Atlantic Striped Bass Management Board (Board) initiated the development of an addendum to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass to consider changes to coastwide commercial and recreational regulations to address overfishing. This Draft Addendum presents background on the Atlantic States Marine Fisheries Commission's (Commission) management of striped bass; the addendum process and timeline; and a statement of the problem. This document also provides management options for public consideration and comment.

The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is **October 7, 2019 at 5:00 p.m.** Comments may be submitted at state public hearings or by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below. Organizations planning to release an action alert in response to this Draft Addendum should contact Max Appelman at 703.842.0740.

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Arlington, VA 22201

Email: comments@asmfc.org
(Subject: Striped Bass Draft Addendum VI)
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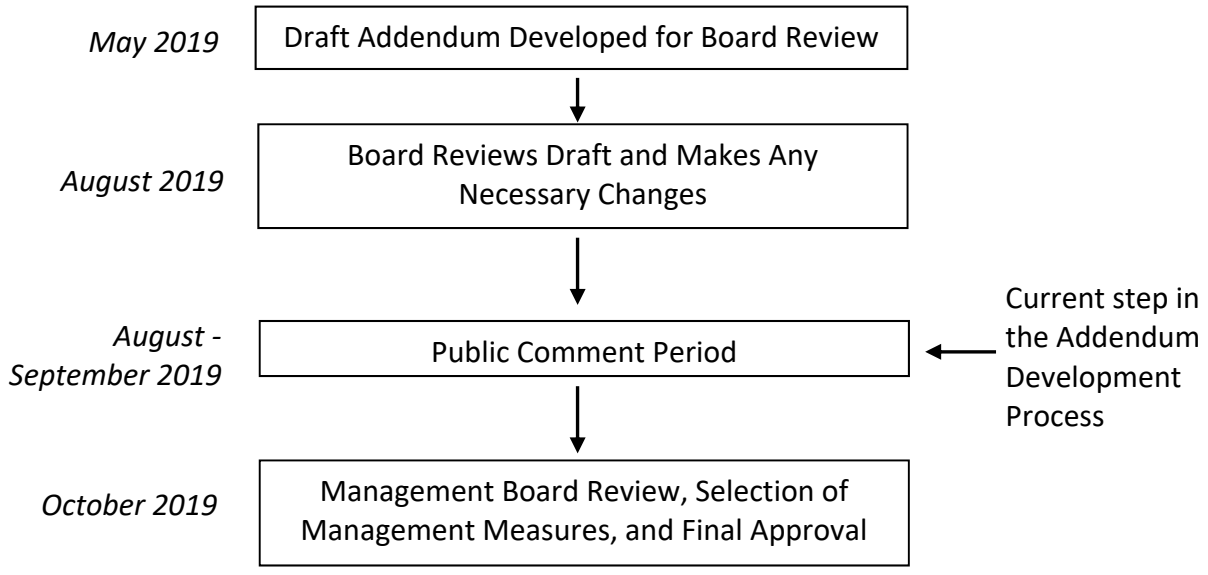

1.0 Introduction

Atlantic striped bass (*Morone saxatilis*) are managed through the Commission in state waters (0-3 miles) and through NOAA Fisheries in federal waters (3-200 miles). The management unit includes the coastal migratory stock between Maine and North Carolina. Atlantic striped bass are currently managed under Amendment 6 (2003a) to the Interstate Fishery Management Plan (FMP) and Addenda I–IV.

At its May 2019 meeting, the Board initiated the development of Draft Addendum VI to Amendment 6 to the Atlantic Striped Bass FMP to consider coastwide changes to commercial and recreational regulations to bring fishing mortality to the target level. The Board's action responds to results of the 2018 benchmark stock assessment for Atlantic striped bass which indicates the stock is overfished and experiencing overfishing.

2.0 Overview

2.1 Statement of the Problem

The 2018 benchmark stock assessment indicates the stock is overfished and experiencing overfishing relative to the updated reference points defined in the assessment. Female spawning stock biomass (SSB) was estimated at 68,476 metric tons (151 million pounds), which is below the SSB threshold of 91,436 metric tons (202 million pounds). Total fishing mortality (F) was estimated at 0.31, which is above the F threshold of 0.24. The benchmark assessment and its single-stock statistical catch-at-age model was endorsed by the Peer Review Panel and accepted by the Board for management use.

By accepting the assessment for management use, the reference point management triggers in Amendment 6 have been tripped. In response, the Board initiated the development of Draft Addendum VI to address overfishing status and consider measures to reduce F back to F target. Accordingly, Draft Addendum VI proposes alternative measures for the commercial and recreational fisheries aimed to reduce total removals by 18% compared to 2017 levels in order to achieve F target in 2020. Other management issues including (but not limited to) reference points and rebuilding the biomass, will be addressed in a subsequent management document.

Roughly 90% of annual Atlantic striped bass recreational catch is released alive, of which 9% are estimated to die as a result of being caught (referred to as "release mortality" or "dead releases"). Catch and release fishing has been perceived to have a minimal impact on the population, however a large component of annual striped bass mortality is attributed to release mortality – accounting for roughly 48% of total removals in 2017 (49% in 2018). The current recreational striped bass management program uses bag limits and size limits to limit the number of fish that are harvested. However, these measures are not designed to reduce fishing effort and subsequent release mortality. While the proposed measures herein result in lower overall removals, the majority of them also increase dead releases. In order to address dead releases, effort controls that are better designed to reduce the number of fishing trips that encounter striped bass should be considered (e.g., closed seasons).

2.2 Background

2.2.1 Status of the Stock

The 2018 benchmark stock assessment for Atlantic striped bass is the latest and best information available on the status of the coastwide striped bass stock for use in fisheries management. The assessment was completed and peer-reviewed at the 66th Northeast Regional Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC) meeting in November 2018. The accepted model for use in striped bass stock assessment is a forward projecting statistical catch-at-age (SCA) model which uses catch-at-age data and fishery-dependent and -independent survey indices to produce annual estimates of female SSB, F, and recruitment.

The results of the 2018 benchmark indicate that the Atlantic striped bass stock is overfished and overfishing is occurring. Female SSB in 2017 was estimated at 68,576 metric tons (151 million pounds), which is below the SSB threshold of 91,436 metric tons (202 million pounds) (Figure 1). Female SSB peaked in 2003 and has been declining since then; SSB has been below the threshold level since 2013. Total F in 2017 was estimated at 0.31, which is above the F threshold of 0.24 (Figure 2). Total F has been at or above the threshold in 13 of the last 15 years of the assessment (2003-2017). Recruitment in 2017 was estimated at 108.8 million age-1 fish, which is below the time series average of 140.9 million fish (Figure 1). Striped bass experienced a period of lower recruitment from 2005-2011 which contributed to the decline in female SSB that the stock has experienced since 2010. Recruitment was high in 2012, 2015, and 2016 (corresponding to strong 2011, 2014, and 2015 year classes), but estimates of age-1 striped bass were below average in 2013, 2014, and 2017.

The reference points currently used for management are based on female SSB levels during the 1995 reference year. The 1995 reference year is used as the female SSB threshold because many stock characteristics (e.g., an expanded age structure) were reached by this year and the stock was declared rebuilt. The female SSB target is 125% of SSB threshold. To estimate the associated F reference points, population projections are made using a constant F and changing the value until the female SSB threshold and target are achieved. For the 2018 benchmark, the reference point definitions remained the same, but the values have been updated. The 2018 benchmark was the first assessment for striped bass to use the improved Marine Recreational Information Program (MRIP) survey methods to estimate recreational fishery catches. The new MRIP removals estimates are on average 2.3 times higher than recreational removals used in previous stock assessments, resulting in higher estimates of female SSB and, therefore, higher estimates for the SSB reference points.

2.2.2 History of the Fishery Management Plan

The first Interstate FMP for Atlantic Striped Bass was approved in 1981 in response to declining juvenile recruitment and landings occurring along the coast from Maine through North Carolina. The FMP and subsequent amendments and addenda focused on addressing the depleted spawning stock and recruitment failure. Despite these management efforts, the Atlantic striped bass stock continued to decline prompting many states (beginning with

Maryland in 1985) to impose a complete harvest moratorium for several years. State fisheries reopened in 1990 under Amendment 4 which aimed to rebuild the resource rather than maximize yield. The stock was ultimately declared rebuilt in 1995 and as a result, Amendment 5 to the Atlantic Striped Bbass FMP was adopted which relaxed both recreational and commercial regulations along the coast.

The Atlantic striped bass stock is currently managed under Amendment 6 and its subsequent addenda, the most recent being Addendum IV which implemented new commercial and recreational regulations beginning with the 2015 season (ASMFC 2014). The addendum was initiated in response to the findings of the 2013 benchmark stock assessment which triggered management action; female SSB was below the target for two consecutive years and F was above the target in at least one of those years (ASMFC 2003a). Although the stock was not overfished, a steady decline in female SSB had occurred since the mid-2000s. The addendum established new F reference points (target and threshold) and a suite of regulatory measures aimed to bring F back down to the new F target. All states/jurisdictions (hereafter states) were required to implement regulations to achieve a 25% reduction from 2013 removals in the ocean fishery, and Chesapeake Bay fisheries implemented regulations to achieve a 20.5% reduction from 2012 removals. To achieve this, the ocean commercial quota was reduced by 25% and the Chesapeake Bay commercial quota was set at 2012 harvest, less 20.5%. For the recreational fishery, states implemented a 1 fish bag limit with a minimum size of 28 inches in the ocean fishery, and Chesapeake Bay jurisdictions submitted implementation plans to achieve the required reductions. Several states also had conservation equivalency proposals approved which allowed them to adopt different management programs while still achieving the required reductions.

The U.S. Exclusive Economic Zone (EEZ; 3-200 miles) has been closed to the harvest, possession and targeting of striped bass since 1990, with the exception of a defined route to and from Block Island in Rhode Island which allows for the transit of vessels in possession of striped bass legally harvested in adjacent state waters. A recommendation was made in Amendment 6 to re-open federal waters to commercial and recreational fisheries. However, NOAA Fisheries concluded opening the EEZ to striped bass fishing was not warranted at that time. Following the completion of the 2018 benchmark stock assessment, NOAA Fisheries, in consultation with the Commission, is directed to review the federal moratorium on Atlantic striped bass, and to consider lifting the ban on striped bass fishing in the Federal Block Island Transit Zone (Consolidated Appropriations Act, 2018).

2.2.3 Status of the Fishery

Atlantic striped bass is arguably the most iconic finfish on the Atlantic coast and has supported valuable fisheries for centuries. The current fishery is predominantly recreational with the sector accounting for roughly 90% of total harvest by weight since 2004 (commercial and recreational harvest, combined; Table 1). In 2017, total striped bass removals (harvest and dead discards/release mortality from both sectors) were estimated at 7.06 million fish, 90% of which was attributed to the recreational sector (Table 2; Figure 3). In 2018, total removals were estimated at 5.8 million fish, with 88% attributed to the recreational sector.

Commercial Fishery Status

The commercial fishery is managed via a state-specific quota system based on average landings during the 1970s, resulting in relatively stable landings since 2004. From 2004 to 2014, coastwide commercial landings averaged 6.8 million pounds (1 million fish) annually (Table 1; Table 2). From 2015-2018, commercial landings have decreased to an average of 4.8 million pounds (611,000 fish) due to implementation of Addendum IV and a reduction in the commercial quota. In 2017, commercial landings were estimated at 4.8 million pounds (592,670 fish). In 2018, commercial landings were estimated at 4.7 million pounds (622,451 fish). Commercial dead discards (the portion of commercially caught striped bass that are released and assumed to die) account for approximately 13% of total commercial removals in numbers of fish since 2004. In 2017, commercial removals (landings plus dead discards) accounted for 10% of total removals (commercial plus recreational) in numbers of fish, and 12% of total removals in 2018.

The majority of commercial striped bass landings come from Chesapeake Bay; roughly 60% by weight annually since 1990, and 80% in numbers of fish. The differences between landings in weight and in numbers of fish is primarily attributed to availability of smaller fish and lower size limits in Chesapeake Bay relative to the ocean fishery.

Unlike the commercial fishery in Chesapeake Bay, the ocean fishery regularly underutilizes the quota. The ocean quota underage is mainly attributed to designated game fish status in several states including Maine, New Hampshire, Connecticut, and New Jersey which collectively share about 10% of the commercial quota in the ocean region. Furthermore, the underage has increased in recent years since migratory striped bass have not been available to the ocean fishery in North Carolina resulting in zero harvest since 2012 (North Carolina holds 13% of the ocean quota).

Recreational Fishery Status

The Atlantic striped bass recreational fishery is managed via bag limits and minimum size limits in order to constrain fishing mortality. Approximately 90% of recreational catch is released alive (Figure 4) – either due to angler preference (i.e., catch and release fishing) or regulation (e.g., undersized, or the angler already caught the bag limit). The assessment assumes, based on previous studies, that 9% of the fish that are released alive die as a result of being caught.

Total recreational removals (harvested fish plus released fish that died as a result of being caught) increased from a low of 2.7 million pounds (434,665 fish) in 1984 to a high of 75.8 million pounds (7.6 million fish) in 2013. Total removals decreased to an average of 53.5 million pounds (5.8 million fish) since the implementation of Addendum IV in 2015. In 2017, recreational removals were estimated at 53.7 million pounds (6.4 million fish). Of those removals, 37.9 million pounds (2.9 million fish) were harvested (Table 3). In 2017, 38.0 million striped bass (equivalent to 176 million pounds) were released alive resulting in an estimated 3.4 million dead releases (15.8 million pounds), which accounted for 48% of total striped bass removals in numbers of fish (Table 4). In 2018, 49% of total removals were attributed to dead

releases (2.8 million fish or 12.3 million pounds). Recreational dead releases make up a large portion of total removals because most of the catch is released.

A large proportion of recreational harvest comes from Chesapeake Bay. From 2004-2014, 33% of recreational harvest in numbers of fish came from Chesapeake Bay. From 2015-2018, that percentage increased to 45%, likely as a result of the strong 2011, 2014, and 2015 year classes moving through the fishery.

2.2.4 Performance of Addendum IV and the Effects of Changes in Effort and the Availability of Strong Year Classes

In 2016, following the first full year under Addendum IV measures, the Striped Bass Plan Review Team compared observed removals in 2015 to the reference period (2013 for the ocean fishery and 2012 for Chesapeake Bay) to evaluate whether the reductions needed to bring F back down to the target had been achieved. The results indicated the overall reduction was nearly the same as the predicted reduction on a coastwide level. The observed commercial reduction was very close to the predicted reductions, but the observed recreational reduction in the ocean and Chesapeake Bay fisheries diverged significantly from the predicted values. Recreational fisheries in the ocean saw a greater reduction than what was predicted, while recreational fisheries in Chesapeake Bay experienced an increase in harvest relative to the reference period. Upon further review, the Technical Committee (TC) identified changes in effort and changes in the size, age structure, and the distribution of the 2011 year class in the ocean relative to the Chesapeake Bay as the most significant variables contributing to the large differences in the observed harvest compared to that predicted by the TC during the development of Addendum IV (ASMFC 2016). At that time, the 2011 year class was the largest recruitment event since the early 2000s. Those fish continued to grow and migrate to the ocean, becoming increasingly available to ocean fisheries and leading to significant increases in removals in 2016 and 2017 under the same management program[1]. It should also be noted that decreased effort in the ocean fishery in 2018 resulted in roughly an 18% reduction in total removals relative to 2017 (and a 5% reduction from 2015 levels) under the same management measures. The decrease in effort was observed across all recreational fisheries, not just effort directed at striped bass. These annual fluctuations in catch (and in fishing mortality) under constant regulations highlight the effect of changes in effort and strong year classes on future catch, and the degree of uncertainty associated with bag and size limit analyses.

It is difficult to account for changes in effort and the impacts of emerging year classes in bag limit and size limit analyses, and harvest reduction calculations. The 2011, 2014, and 2015 year classes (corresponding to the 2012, 2015, and 2016 recruitment estimates) have all been above average with the 2015 year class being the largest recruitment event since 2004. It is expected that the availability of the 2014 and 2015 year classes in 2020 will be similar to what was

[1] A stock assessment update in 2016 also indicated that Addendum IV successfully reduced F below the target in 2015. As a result, the Board initiated Draft Addendum V to consider relaxing coastwide measures to bring F back up to the target level. However, the Board withdrew Draft Addendum V from consideration after preliminary MRIP estimates revealed that 2016 removals increased without changing regulations.

observed for the 2011-year class in 2016 and 2017. These strong year classes become available to the Chesapeake Bay fishery first and become more readily available to the ocean fishery as they grow and begin to migrate to the ocean. While strong year classes are a positive sign for the population, the abundance of undersized striped bass often leads to anglers catching and releasing a larger number of fish, thus driving up the number of recreational releases. When considering management changes, it is important to consider the impact such changes could have on strong year classes and to account for the emergence of strong year classes to the extent possible in supporting analyses.

2.2.5 Socioeconomic Impacts

Overall, there are many potential socioeconomic impacts that could result from striped bass harvest reductions. In general, the reduction in striped bass removals is likely to translate into a short-term negative impact on the regional economy and jobs associated with the fishing industry for this species. However, the positive long-term economic impacts stemming from stock recovery and subsequent catch increases in successive years will likely outweigh the short-term impacts.

The impacts associated with the reduction in removals will be different for the commercial and recreational sectors, primarily because the two sectors do not contribute equally to the local economy. A recent 2019 report from Southwick Associates[2] indicates 97% of total economic contribution associated with striped bass fishing came from the recreational sector in 2016. According to the report, total revenues in the commercial sector (from Maine to North Carolina) were $19.8 million that year, while total expenditures in the recreational sector amounted to $6.3 billion. The contribution of the commercial sector to the region's gross domestic product (GDP) when attempting to account for all industries involved in harvesting, processing, distributing, and retailing striped bass to consumers, was $103.2 million and supported 2,664 regional jobs. In comparison, the contribution of the recreational sector to the region's GDP was $7.7 billion and supported 104,867 jobs. Importantly, the report acknowledges that it is not intended to be used to set fishery regulations, but rather to demonstrate the economic significance of striped bass to local economies. It should also be noted that these numbers are an average for the entire region and actual economic impacts are expected to vary by state.

The dollar values above refer to economic impacts, not to the economic value (or net economic benefit for society) associated with the recreational and commercial fisheries. While data required to quantify these measures are not currently available, the effects of changes to the striped bass management program approved through this addendum can be qualified as follows: for the recreational sector, increased minimum size limits or other restrictions can lead to decreased availability of legal sized striped bass which can lead to increased effort and an increase in dead releases. Conversely, increased fishing restrictions could result in a reduction in number of recreational trips which could translate into a reduction in angler welfare. For the

[2] While this is a useful source of updated information, it is not peer-reviewed and, therefore, the methods behind the report's figures should be consider accordingly.

commercial sector, a reduction in quota will likely reduce profits and may increase the consumer price of striped bass. However, as in the case of the economic impacts (and assuming increased restrictions do not permanently deter stakeholders from the striped bass fishery), these effects are expected to be outweighed by the positive effects on anglers', harvesters', and consumers' welfare associated with stock recovery in successive years.

2.2.6 Management Program Equivalency

The use of management program equivalency (hereafter referred to as "conservation equivalency") is an integral component of the Commission's Interstate Fisheries Management Program, particularly for Atlantic striped bass. Conservation equivalency allows states flexibility to develop alternative regulations that address specific state or regional differences while still achieving the goals and objectives of the FMP. Under Amendment 6 to the Striped Bass FMP, a state may submit a proposal for a change to its regulatory program for any mandatory compliance measure. It is the responsibility of the state to demonstrate the proposed management program is equivalent to the measures selected through this addendum. All conservation equivalency proposals are subject to TC review and Board approval.

Several states currently use conservation equivalency. For example, the use of closed seasons have been used as an effective tool to implement smaller size limits or increased bag limits while still achieving the same quantified level of conservation. Note the PDT did not develop closed season options for the ocean or Chesapeake Bay regions because the impacts are expected to vary by state and fishery. While closed seasons could be very effective in regions and seasons when striped bass is the only viable fishing choice, closed seasons may have little or no impact in fisheries that operate as catch and release, or in areas where other species are available for harvest. For example, Atlantic mackerel and bluefish are commonly caught with striped bass, so trips that target those species may still catch striped bass and contribute to striped bass release mortality even if striped bass are not targeted or retained.

States should consult the Commission's Conservation Equivalency Technical Guidance Document before considering the development and submission of conservation equivalency proposals. If this document is approved for public comment, the TC will develop criteria for conservation equivalency with this addendum.

3.0 Proposed Management Options

The striped bass ocean fishery is defined as all fisheries operating in coastal and estuarine areas of the U.S. Atlantic coast from Maine through North Carolina, excluding the Chesapeake Bay and Albemarle Sound-Roanoke River (A-R) management areas. The Chesapeake Bay fishery is defined as all fisheries operating within Chesapeake Bay. This document does not propose changes to the A-R management program.

The proposed recreational management options herein were developed using MRIP catch and harvest estimates. To account for year class strength, the Plan Development Team (PDT) used catch-at-length data from 2016 and 2017 to characterize the catch in 2020. The PDT also assumed the same level of non-compliance observed in 2016 and 2017 will occur in 2020,

including undersized fish harvested legally through conservation equivalency. States may voluntarily implement management programs that are more conservative than those required herein. As noted, several states currently implement conservation equivalency programs in order to have management measures that meet the needs of their state's fishery (see *Appendix 1* for a summary of striped bass regulations by state and fishing sector in 2017).

Projecting Harvest Reductions to Achieve the Fishing Mortality Target

The PDT used the same forward projecting methodology that was used in the 2018 benchmark assessment to estimate the removals needed to achieve F target (0.20) in 2020 with a 50% probability. The projections account for the uncertainty in the stock assessment estimates of striped bass abundance and recruitment, and so for a given level of removals in 2020, there is some uncertainty about the F rate that results. A 50% probability of achieving F target means that in 2020, the projected F rate will be centered around F target, with a 95% chance that F will be between 0.17 and 0.23. There is also a 95% chance that F will be below F threshold in 2020, meaning that striped bass will not be experiencing overfishing even if F is above F target. Importantly, there is a 99.8% chance of F being lower than F in 2017 (F_{2017} = 0.31) (Figure 5).

The projections were made using final 2018 landings and dead discard estimates, and average removals from 2016-2018 were used as a proxy for 2019 to account for interannual variability in removals. Results indicate an 18% reduction from 2017 total removals is needed to achieve F target in 2020. If the stock continues to be fished at F target, female spawning stock biomass is projected to be above the SSB threshold by 2023 and be at 93% of the SSB target in 2027 (Figure 6). Additional reductions may be needed to achieve the female SSB target within the timeframe required by the Amendment 6 management triggers (i.e., the stock rebuilding schedule cannot exceed 10 years).

3.1 Proposed Management Scenarios

The following section outlines three management scenarios (including status quo) that are designed to reduce total removals by 18% relative to 2017 levels in order to reduce F to the target in 2020. These scenarios, which are mutually exclusive, include (1) status quo; (2) an 18% reduction in total removals where the desired percent reductions are applied equally (proportionally) to both the commercial and recreational sectors; and (3) an 18% reduction in total removals where the commercial sector takes a smaller percent reduction than the recreational sector.

***Note for all commercial fishery quota options**: quotas are allocated on a fishing year basis. In the event a jurisdiction exceeds its allocation, any overage of its annual quota will be deducted from the state's allowable quota in the following year. None of the scenarios propose changes to existing commercial size limits or the quota transfer provision.*

***Note for all recreational fishery options:** the options herein are designed to reduce harvest and total removals; they are not designed to address effort, and in effect, release mortality. The proposed measures are projected to increase releases because effort is assumed to be constant (i.e., the same level of fishing trips encountering striped bass in 2016 and 2017 will occur in*

2020). Accordingly, to offset the expected increase in releases, larger reductions in harvest are needed in order to achieve the desired overall reduction in total removals. To reduce both harvest and release mortality, additional effort controls should be considered to reduce the number of fishing trips that encounter striped bass. Additionally, the long term conservation benefits of implementing slot limits (i.e., protecting larger, older fish) may not be realized if effort is concentrated on fish within the slot limit, thus reducing the number of fish that survive to grow out of the slot. While the PDT expects fish larger than the slot limit will be protected, concentrating effort within the slot limit may reduce the number of fish that are able to grow out of the slot thus potentially reducing the population of larger, older fish over time.

When providing input on this document, please first identify your preferred management scenario (Option 1, 2, or 3) and then select your preferred management measures within that scenario. All three scenarios present management options for each fishery and management area combination (recreational measures for the ocean and Chesapeake Bay fisheries and commercial quotas for the ocean and Chesapeake Bay fisheries). All recreational options assume the same fishing seasons as in 2017, unless otherwise noted. All commercial quota options assume the same commercial size limits as in 2017.

Adopted options (other than status quo) would supersede Addendum IV, Sections 3.1 and 3.2, and replace corresponding sections in Amendment 6.

Option 1: Status Quo

The language of Addendum IV, Sections 3.1 and 3.2 would remain in place. In essence, if Option 1 is selected, Atlantic striped bass fisheries will continue to operate under the provisions of Addendum IV. It should be noted this option does not meet the projected reductions needed from 2017 levels to achieve F target in 2020.

Ocean Recreational Fishery

All coastal fisheries (excluding Chesapeake Bay and the Albemarle Sound-Roanoke River) will be constrained by a one fish bag limit and 28-inch minimum size limit. Any jurisdiction submitting a proposal for conservation equivalency must demonstrate through quantitative analysis that its proposal achieves at least a 25% reduction in harvest (including estimated dead discards) from its ocean recreational fishery. All conservation equivalency proposals are subject to Technical Committee review and Board approval.

Note: the Chesapeake Bay spring trophy fishery is part of the coastal fishery for management purposes.

Chesapeake Bay Management Area Recreational Fishery (Maryland, Potomac River Fisheries Commission and Virginia)

The Chesapeake Bay jurisdictions will submit a management program that achieves at least a 20.5% reduction from 2012 harvest (including estimated dead discards) in the Chesapeake Bay recreational fishery for Technical Committee review and Board approval.

The Chesapeake Bay fisheries reductions were based on 2012 harvest because the Bay-wide quota had already been reduced by 14% in 2013, in keeping with the Bay commitment to raise or lower quotas, with definitive changes in the exploitable stock biomass as approved by the FMP. The commercial Chesapeake Bay fisheries' quota reduction meant harvesters were provided 14% less tags or pounds of harvestable quota in 2013, as compared to 2012 and the 2013 recreational summer and fall quotas were reduced by 14% compared to 2012.

Ocean Commercial Fishery

The table below indicates each states commercial quota in pounds. These quotas reflect a 25% reduction from the previous Amendment 6 quotas.

State	Status Quo Addendum IV Quota (Pounds)	2017 Harvest For Reference
Maine*	188	-
New Hampshire*	4,313	-
Massachusetts	869,813	823,409
Rhode Island^	182,719	175,312
Connecticut**	17,813	-
New York	795,795	701,216
New Jersey**^	241,313	-
Delaware	145,085	141,800
Maryland^	98,670	80,457
Virginia	138,640	133,874
North Carolina	360,360	-
Coastal Total	**2,854,706**	**2,056,068**

* Commercial harvest/sale prohibited, with no re-allocation of quota to the recreational fishery.
** Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery.
^ Addendum IV quota reduced through conservation equivalency for RI (181,572 lbs), NJ (215,912 lbs), and MD (90,727 lbs)

Chesapeake Bay Management Area Commercial Fishery (Maryland, Potomac River Fisheries Commission and Virginia)

The Chesapeake Bay jurisdictions will submit a management program that achieves at least a 20.5% reduction from 2012 harvest in the Chesapeake Bay commercial fishery for Technical Committee review and Board approval. A 20.5% reduction from 2012 harvest results in a Chesapeake Bay commercial quota of 3,120,247 pounds.

Option 2: Equal Percent Reductions

An 18% reduction in total removals relative to 2017 levels to reduce F to the target in 2020 where the desired percent reduction is applied equally (proportionally) to both the commercial and recreational sectors; both sectors would take an 18% reduction from 2017 levels. Under all sub-options, states have the flexibility to develop alternative regulations through conservation equivalency, including the allocation of the required reductions between the commercial and recreational sectors.

Recreational Fishery Management:

The tables below provide a suite of options for both the ocean and Chesapeake Bay recreational fisheries. Size limits are in total length. Bag limits are per person per day. The Board will choose one option from each table, and all states would be required to implement the selected sub-option for striped bass fisheries in their respective state waters.

Sub-Option 2-A: Ocean Recreational Fishery (All jurisdictions would implement).

Under all sub-options, New York would be required to submit a proposal that achieves an 18% reduction in removals relative to 2017 levels for the Hudson River management area, and Pennsylvania would be required to submit a proposal that achieves an 18% reduction in its state waters (catch from Pennsylvania and the Hudson River is not covered by MRIP).

Sub-Option	Bag Limit	Size Limit	Season and Trophy Fish/Season	% change from 2017		
				Harvest	Release Mortality	Total Removals
2-A1	1	35" min	Same seasons and trophy season as 2017^ (see *Appendix 1*)	-43%	+3%	-18%
2-A2	1	28"-35" slot		-46%	+3%	-19%
2-A3	1	30"-38" slot		-44%	+3%	-18%
2-A4	1	32"-40" slot		-49%	+4%	-21%

^Under sub-option 2-A3 and 2-A4, ocean trophy fish fisheries would be capped with a 38" and 40" maximum size limit, respectively.

Sub-Option 2-B: Chesapeake Bay Recreational Fishery (MD, PRFC, DC and VA would implement).

Sub-Option	Bag Limit	Size Limit	Season and Trophy Fish/Season	% change from 2017		
				Harvest	Release Mortality	Total Removals
2-B1	1	18" min	Same seasons and trophy season as 2017 (see *Appendix 1*)	-40%	+4%	-20%
2-B2	2	22" min		-34%	+4%	-18%
2-B3	2	18"-23" slot	Same seasons as 2017 but *without* trophy fish season^	-36%	+5%	-19%
2-B4	2	20"-24" slot		-35%	+5%	-19%

^Under sub-options 2-B3 and 2-B4, states would be required to submit for conservation equivalency to reinstate a trophy fish season.

Commercial Fishery Management
This option is an 18% reduction from the Addendum IV quotas (in pounds) after accounting for approved conservation equivalency programs.

The following table presents quotas for both the ocean and Chesapeake Bay commercial fisheries. Note this option can achieve an 18% reduction from 2017 levels if active commercial fisheries perform the same as they did in 2017. However, there is potential for commercial removals to increase relative to 2017 if active fisheries fully utilize their quotas in 2020.

State	Addendum IV Quota	2017 Harvest	18% Reduction
Chesapeake Bay Commercial Quota^			
Maryland	1,471,888	1,439,760	1,206,948
PRFC	583,362	472,719	478,357
Virginia	1,064,997	827,848	873,298
Chesapeake Bay Total	**3,120,247**	**2,740,327**	**2,558,603**
Ocean Commercial Quota			
Maine*	188	-	154
New Hampshire*	4,313	-	3,537
Massachusetts	869,813	823,409	713,247
Rhode Island^^	182,719	175,312	148,889
Connecticut**	17,813	-	14,607
New York	795,795	701,216	652,552
New Jersey**^^	241,313	-	177,048
Delaware	145,085	141,800	118,970
Maryland^^	98,670	80,457	74,396
Virginia	138,640	133,874	113,685
North Carolina	360,360	-	295,495
Ocean Total	**2,854,706**	**2,056,068**	**2,312,579**

*Commercial harvest/sale prohibited, *with no* re-allocation of quota to the recreational fishery.
**Commercial harvest/sale prohibited, *with* re-allocation of quota to the recreational fishery.
^Jurisdiction-specific quotas for Chesapeake Bay are based on the 2017 allocation of the Bay-wide quota.
^^Addendum IV quota reduced through conservation equivalency for RI (181,572 lbs), NJ (215,912 lbs), and MD (90,727 lbs). An 18% reduction is calculated relative to these reduced quota.

Option 3: The Commercial Sector Takes a Smaller Percent Reduction

An 18% reduction in total removals relative to 2017 levels to reduce F to the target in 2020 where the commercial sector takes a smaller percent reduction than the recreational sector. In this option, the commercial sector will take a 1.8% reduction in quota [the product of the percent total reductions needed (18%) and the proportion of 2017 removals from the commercial sector (10%)]. The commercial percent reduction in numbers of fish is subtracted from the total reductions needed to achieve F target in 2020 to calculate the reduction the recreational sector must take. This reduction is subtracted from the 2017 recreational removals estimate to calculate the new target percent reduction for recreational removals (20%). Under all sub-options, states have the flexibility to develop alternative regulations through conservation equivalency, including the allocation of the required reductions between the commercial and recreational sectors.

The rationale for this suite of options is the commercial fishery is managed via a static quota system which keeps effort and removals relatively constant from year to year, while the recreational management program does not have a harvest limit. This has allowed recreational effort and, therefore, removals to increase with resource availability and other social and economic factors.

Recreational Fishery Management*:*

The tables below provide a suite of options for both the ocean and Chesapeake Bay recreational fisheries. Size limits are in total length. Bag limits are per person per day. The Board will choose one option from each table, and all states would be required to implement the selected sub-option for striped bass fisheries in their respective state waters.

Sub-Option 3-A: Ocean Recreational Fishery (All jurisdictions would implement).

Under all sub-options, New York would be required to submit a proposal that achieves an 18% reduction in removals relative to 2017 levels for the Hudson River management area, and Pennsylvania would be required to submit a proposal that achieves an 18% reduction in its state waters (catch from Pennsylvania and the Hudson River is not covered by MRIP).

Sub-Option	Bag Limit	Size Limit	Season and Trophy fish/season	% change from 2017		
				Harvest	Release Mortality	Total Removals
3-A1	1	36” min	Same seasons and trophy season as 2017 (see *Appendix 1*)	-48%	+4%	-20%
3-A2	1	28”-34” slot		-52%	+4%	-22%
3-A3	1	30”-37” slot		-51%	+4%	-21%
3-A4^	1	32”-40” slot		-49%	+4%	-21%

^Under sub-option 3-A3 and 3-A4, ocean trophy fish fisheries would be capped with a 37” and 40” maximum size limit, respectively.

Sub-Option 3-B: Chesapeake Bay Recreational Fishery (MD, PRFC, DC and VA would implement).

Sub-Option	Bag Limit	Size Limit	Season and Trophy Fish/Season	% change from 2017		
				Harvest	Release Mortality	Total Removals
3-B1^	1	MD: 19" min PRFC, DC, VA: 20" min	Same seasons and trophy season as 2017 (see *Appendix 1*)	-48%	+4%	-29%
3-B2	1	18” min		-40%	+4%	-20%
3-B3	2	23” min	Same seasons as 2017 *except* the trophy season starts no earlier than May 1	-42%	+6%	-20%
3-B4	2	18”-22" slot		-48%	+6%	-21%
3-B5	2	20”-23" slot		-47%	+6%	-20%
3-B6	2	22”-40" slot	Same seasons as 2017; same trophy season and minimum sizes *except* with a 40” max size limit	-39%	+5%	-21%

^Sub-option 3-B1 drops the bag limit to 1-fish but maintains 2018 size limits. The PDT notes that a higher percent reduction is projected relative to 2017 size limits (i.e., when all fisheries were at a 20” minimum).

(COMMERCIAL FISHERY MANAGEMENT OPTION FOR OPTION 3 ON NEXT PAGE)

Commercial Fishery Management
This option is a 1.8% reduction from the Addendum IV quotas (in pounds) after accounting for approved conservation equivalency programs.

The following table presents quotas for both the ocean and Chesapeake Bay commercial fisheries. Note this option can achieve a 1.8% reduction from 2017 levels if active commercial fisheries perform the same as they did in 2017. However, there is potential for commercial removals to increase relative to 2017 if active fisheries fully utilize their quotas in 2020.

State	Addendum IV Quota	2017 Harvest	1.8% Reduction
Chesapeake Bay Commercial Quota^			
Maryland	1,471,888	1,439,760	1,445,394
PRFC	583,362	472,719	572,861
Virginia	1,064,997	827,848	1,045,827
Chesapeake Bay Total	**3,120,247**	**2,740,327**	**3,064,083**
Ocean Commercial Quota			
Maine*	188	-	185
New Hampshire*	4,313	-	4,235
Massachusetts	869,813	823,409	854,156
Rhode Island^^	182,719	175,312	178,304
Connecticut**	17,813	-	17,492
New York	795,795	701,216	781,471
New Jersey**^^	241,313	-	212,026
Delaware	145,085	141,800	142,473
Maryland^^	98,670	80,457	89,094
Virginia	138,640	133,874	136,144
North Carolina	360,360	-	353,874
Ocean Total	**2,854,706**	**2,056,068**	**2,769,454**

*Commercial harvest/sale prohibited, *with no* re-allocation of quota to the recreational fishery.
**Commercial harvest/sale prohibited, *with* re-allocation of quota to the recreational fishery.
^Jurisdiction-specific quotas for Chesapeake Bay are based on the 2017 allocation of the Bay-wide quota.
^^Addendum IV quota reduced through conservation equivalency for RI (181,572 lbs), NJ (215,912 lbs), and MD (90,727 lbs). A 1.8% reduction is calculated relative to these reduced quota.

3.2 Circle Hook Provision

This section proposes options regarding the use of circle hooks when fishing with bait to reduce striped bass discard mortality in recreational fisheries.

Discard mortality accounts for a considerable amount of removals in the Atlantic striped bass fishery along the east coast. The latest assessment assumes 9% of fish that are released alive die as a result of being caught (Diodati and Richards 1996), although there is some evidence it may be higher, particularly in the summer months. Management measures that increase the minimum size limit or reduce bag limits can lead to an increase in the number of striped bass released.

The use of circle hooks by anglers targeting striped bass with bait, live or chunk, has been identified as a method to reduce the discard mortality of striped bass in recreational fisheries. The ASMFC defines circle hooks as "a non-offset hook where the point is pointed perpendicularly back towards the shank" (ASMFC 2003b). The term non-offset circle hook means the point and barb are in the same plane as the shank (e.g. when the hook is laying on a flat surface, the entire hook and barb also lay flat). When a circle hook begins to exit the mouth of a fish, the shape causes the shaft to rotate towards the point of resistance and the barb is more likely to embed in the jaw or corner of the fish's mouth. Circle hooks can reduce rates of "gut-hooking" and lower the likelihood of puncturing internal organs if the hook is swallowed.

Caruso (2000) found discard mortality was reduced by 12.5% by using circle hooks compared to j-hooks in Massachusetts waters and the incidence of potentially lethal wounding was low with circle hooks. Lower discard mortality was also estimated on the Hudson River with circle hook usage when compared to j-hooks (Millard et al. 2005). Within Chesapeake Bay, Lukacovic and Uphoff (2007) collected data on striped bass hooking mortality using natural cut bait on j-hooks and circle hooks. The study found that j-hooks were 3.7 times more likely to result in deep-hooking than circle hooks, and deeply-hooked fish were 17 times more likely to die when released.

While circle hooks have been demonstrated to reduce hooking mortality rates, factors other than hook type can also affect the release mortality rate. These other factors include water temperature (Nelson 1994; Wilde et al. 2000; Millard et al. 2005), air temperature (Lukacovic and Uphoff 2007), salinity (RMC 1990), hook size (ASMFC 2003b), fish length (Lukacovic and Uphoff 2007), and hooking location (Nelson 1994; Millard et al. 2005; Lukacovic and Uphoff 2007). Additionally, it is unknown how many anglers currently use circle hooks, resulting in uncertainty on how many additional fish could be saved if mandatory circle hook measures are put in place. Enforceability and compliance are also concerns depending on how regulations are implemented, specifically depending on which anglers these regulations would apply to (e.g., to only those targeting striped bass, or all bait fishing in a state).

If Option B or Option C is selected, the Board must specify an implementation schedule. The schedule should consider state legislative and regulatory/public outreach development processes, including consultation with its stakeholders and user groups.

Option A. Status Quo
The language from Amendment 6, Section 5.3.1 would remain in place:
The states/jurisdictions are recommended to encourage the use of circle hooks to reduce the mortality associated with hooking and releasing striped bass. A number of studies have been conducted that have demonstrated that release mortality is decreased significantly with the use of circle hooks. In order to promote the use of circle hooks, states are encouraged to develop public relations/education campaigns on their benefits.

Option B. States/jurisdictions would be required to implement regulations requiring the use of circle hooks, as defined above, with the intent of reducing striped bass discard mortality in their recreational fisheries when fishing with bait. States have the flexibility to develop regulations that address specific needs of their fisheries. In order to promote the use of circle hooks, states are encouraged to develop public education and outreach campaigns on their benefits when fishing with bait.

Option C. States/jurisdictions would be required to promote the use of circle hooks by developing public education and outreach campaigns on their benefits when fishing with bait. States/jurisdictions must provide updates on public education and outreach efforts in annual state compliance reports.

4.0 Compliance Schedule

If approved, states must implement Addendum VI according to the following schedule to be in compliance with the Atlantic Striped Bass Interstate FMP:

XXXXXX: States submit proposals to meet requirements of Addendum VI.

XXXXXX: Management Board reviews and takes action on state proposals.

[Month Day, Year]: States implement regulations.

5.0 Literature Cited

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6.0 Tables and Figures

Table 1. Total removals (harvest and discards/release mortality) of Atlantic striped bass by sector in pounds, 2004-2018. Note: Harvest is from ACCSP/MRIP, dead discards and release mortality is from ASMFC. Estimates exclude inshore catch and harvest from North Carolina.

Year	Commercial		Recreational		Total Removals
	Harvest	Dead Discards	Harvest	Release Mortality	
2004	7,335,116	1,262,136	54,221,282	14,307,082	76,144,795
2005	7,121,319	1,078,391	57,587,212	14,412,620	79,581,675
2006	6,785,006	1,333,235	50,674,893	16,303,942	74,333,557
2007	7,047,195	1,181,533	42,841,560	12,680,939	63,054,061
2008	7,190,685	953,364	56,665,831	12,436,713	76,637,612
2009	7,216,792	1,076,465	54,411,882	11,236,287	73,903,661
2010	6,996,713	920,564	61,528,673	10,833,398	80,236,228
2011	6,789,792	809,577	59,592,631	7,569,260	74,729,834
2012	6,516,868	1,411,621	53,257,096	8,046,178	69,269,469
2013	5,819,678	901,326	65,057,882	10,731,891	82,432,216
2014	5,937,949	1,167,696	47,949,041	8,177,402	63,484,692
2015	4,830,124	1,031,887	39,899,162	11,621,265	57,294,717
2016	4,831,442	1,085,060	43,687,890	11,655,870	61,229,668
2017	4,803,867	1,110,833	37,896,893	15,818,534	59,392,844
2018	4,714,661	870,348	23,069,028	12,343,941	40,997,978

Table 2. Total removals (harvest and discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 2004-2018. Note: Harvest is from ACCSP/MRIP, dead discards and release mortality is from ASMFC. Estimates exclude inshore catch and harvest from North Carolina.

Year	Commercial		Recreational		Total Removals
	Harvest	Dead Discards	Harvest	Release Mortality	
2004	879,768	160,196	4,553,027	3,665,234	9,258,224
2005	970,403	145,094	4,480,802	3,441,928	9,038,227
2006	1,047,648	158,260	4,883,960	4,812,332	10,902,201
2007	1,015,226	166,397	3,944,679	2,944,253	8,070,556
2008	1,027,837	108,962	4,381,186	2,391,200	7,909,184
2009	1,049,959	128,191	4,700,222	1,942,061	7,820,433
2010	1,031,430	133,064	5,388,440	1,760,759	8,313,693
2011	944,777	87,924	5,006,358	1,482,029	7,521,088
2012	870,606	191,577	4,046,299	1,847,880	6,956,361
2013	784,379	112,097	5,157,760	2,393,425	8,447,661
2014	750,263	121,253	4,033,747	2,172,342	7,077,604
2015	623,313	101,343	3,085,725	2,307,133	6,117,515
2016	607,084	105,119	3,500,434	2,981,430	7,194,066
2017	592,670	108,475	2,934,293	3,419,651	7,055,089
2018	622,451	90,092	2,244,766	2,826,667	5,783,976

Table 3. Total recreational harvest of Atlantic striped bass by state in numbers of fish, 2004-2018. Harvest is from MRIP. *Estimates exclude inshore harvest from North Carolina.

Year	ME	NH	MA	RI	CT	NY	NJ^	DE	MD	VA	NC*	total
2004	118,305	22,104	666,703	159,552	134,502	458,148	1,042,093	66,567	668,512	893,302	323,239	4,553,027
2005	118,323	35,480	536,058	195,580	202,636	854,633	958,051	48,815	819,052	517,320	194,854	4,480,802
2006	140,868	20,865	483,187	129,264	168,265	614,759	972,248	44,453	1,342,324	833,543	134,184	4,883,960
2007	95,474	8,146	471,873	135,771	163,871	602,845	722,166	17,171	1,127,310	518,275	81,777	3,944,679
2008	133,379	11,884	514,064	73,408	132,755	1,169,855	791,013	67,708	779,700	670,543	36,877	4,381,186
2009	146,497	17,291	694,992	138,357	100,267	574,188	1,141,495	64,776	1,104,647	711,164	6,548	4,700,222
2010	37,299	21,383	808,175	162,049	170,199	1,449,043	1,091,368	61,374	1,151,822	368,584	67,144	5,388,440
2011	48,517	54,202	873,496	202,237	91,104	1,005,255	1,038,894	43,662	1,112,977	328,404	207,610	5,006,358
2012	31,379	37,302	1,010,563	130,689	137,125	927,503	742,420	51,320	719,622	258,376	0	4,046,299
2013	73,345	63,157	658,713	308,312	269,562	902,452	1,324,245	70,635	1,185,023	302,316	0	5,157,760
2014	86,409	16,522	523,531	171,984	131,829	804,490	501,949	26,171	1,639,631	131,231	0	4,033,747
2015	14,434	10,036	485,317	67,036	140,783	406,786	600,269	41,895	1,111,503	207,666	0	3,085,725
2016	14,180	17,627	230,069	128,354	63,334	697,675	659,574	5,892	1,545,587	138,142	0	3,500,434
2017	22,042	37,723	392,347	59,582	94,536	472,321	625,909	27,786	1,091,645	110,402	0	2,934,293
2018	16,025	13,378	389,457	39,169	85,467	181,681	465,289	4,174	993,305	56,821	0	2,244,766

Table 4. Total recreational releases of Atlantic striped bass by state in numbers of fish x1000, 2004-2018. Recreational releases are from MRIP and a 9% mortality rate is applied to calculate release mortality. *Estimates exclude inshore harvest from North Carolina.

Year	ME	NH	MA	RI	CT	NY	NJ^	DE	MD	VA	NC*	Total Releases	Release Mortality (9% of Releases)
2004	1,597	593	13,338	1,899	1,414	4,568	3,685	373	8,748	4,263	247	40,725	3,665
2005	4,729	1,001	9,043	2,052	4,172	3,468	3,078	560	7,492	2,469	179	38,244	3,442
2006	8,059	889	19,279	2,094	2,016	4,407	3,605	685	9,024	3,375	37.2	53,470	4,812
2007	1,927	451	10,840	1,485	1,863	3,011	4,673	597	5,660	2,185	22.5	32,714	2,944
2008	1,157	197	7,496	778	5,063	2,782	3,668	633	3,222	1,547	26.4	26,569	2,391
2009	674	124	5,989	1,070	2,427	2,262	3,503	444	4,011	1,072	1.00	21,578	1,942
2010	522	161	5,090	619	1,416	3,036	2,436	256	5,390	586	51.4	19,564	1,761
2011	453	191	4,036	621	1,571	2,692	2,447	338	3,484	389	245	16,467	1,482
2012	657	164	3,629	1,292	892	2,428	1,822	358	9,001	289	0.00	20,532	1,848
2013	985	295	4,670	2,574	2,312	3,956	4,349	273	6,676	503	0.00	26,594	2,393
2014	1,023	316	6,425	438	740	2,784	2,840	530	8,304	738	0.00	24,137	2,172
2015	824	262	4,471	1,653	1,761	3,682	2,440	309	8,524	1,709	0.00	25,635	2,307
2016	2,162	819	6,299	1,416	1,208	3,739	1,808	218	13,781	1,638	39.2	33,127	2,981
2017	2,719	1,418	12,866	1,543	4,993	2,761	2,316	254	7,788	1,333	5.15	37,996	3,420
2018	2,174	356	5,377	2,180	7,514	1,989	2,756	352	7,458	1,247	3.49	31,407	2,827

Figure 1. Female spawning stock biomass (SSB) and recruitment (age-1 fish), 1982-2017. Source: 2018 benchmark stock assessment for Atlantic striped bass.

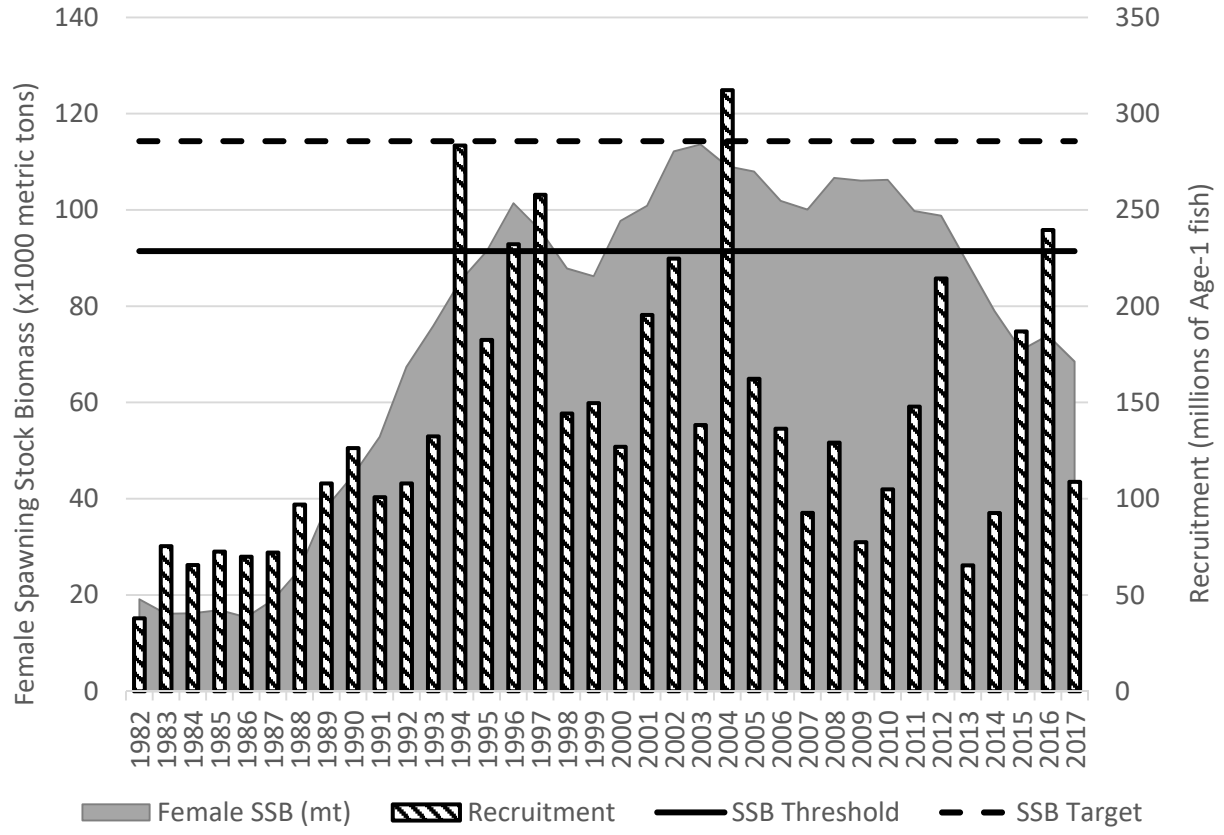


Figure 2. Total fishing mortality (F), 1982-2017. Source: 2018 benchmark stock assessment for Atlantic striped bass.

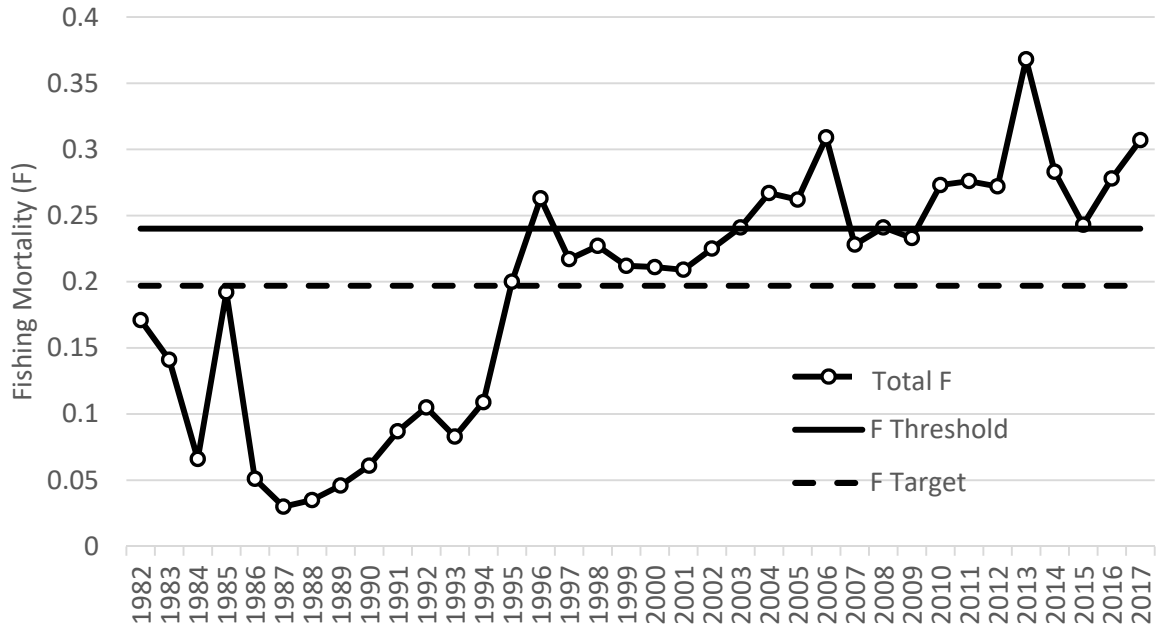


Figure 3. Total striped bass removals by sector in numbers of fish, 1982-2018. Note: Harvest is from ACCSP/MRIP, dead discards and release mortality is from ASMFC. Estimates exclude inshore catch and harvest from North Carolina.

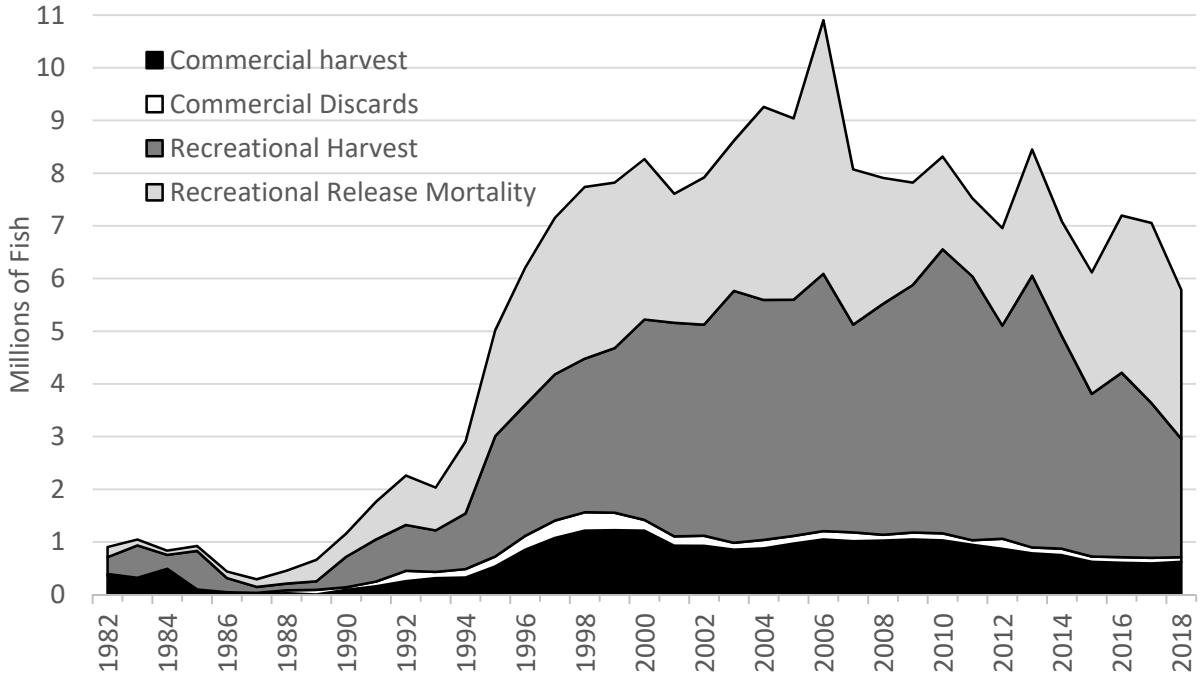


Figure 4. The proportion of recreational fish caught and released alive, 1982-2018. Source: MRIP. Excludes inshore catch from North Carolina.

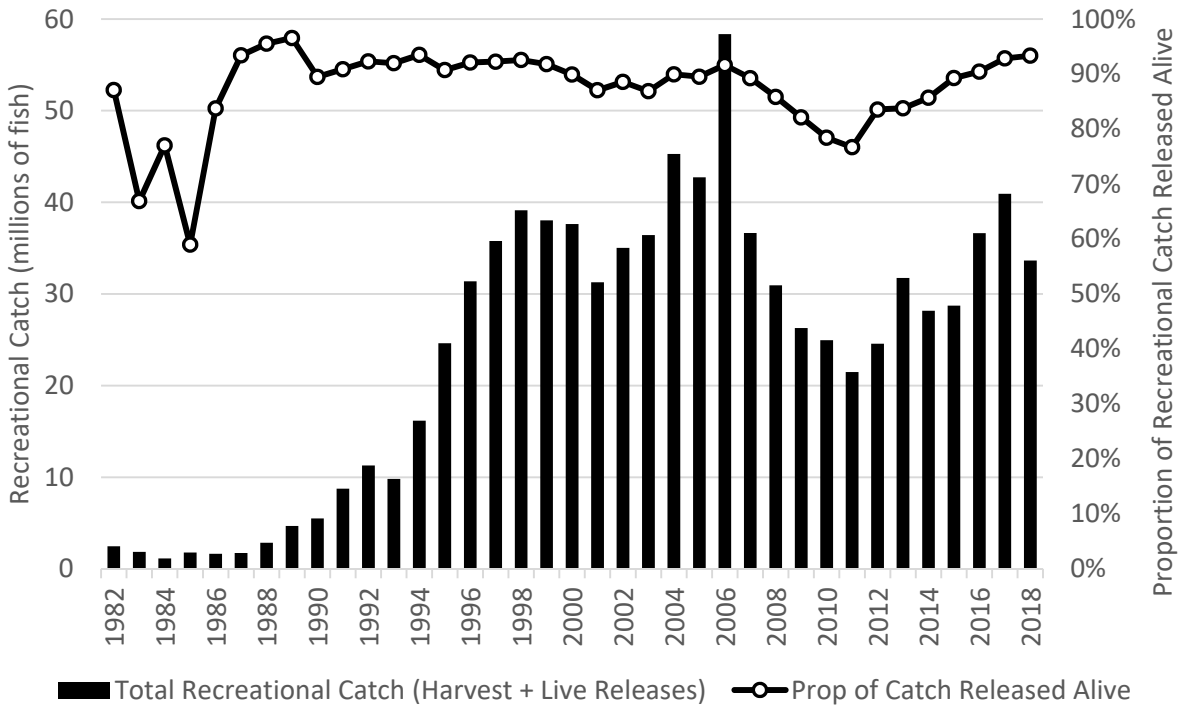


Figure 5. Projected fishing mortality and 95% confidence intervals if total removals in 2020 equal an 18% reduction from 2017 removals, plotted with the F target, F threshold, and F in 2017.

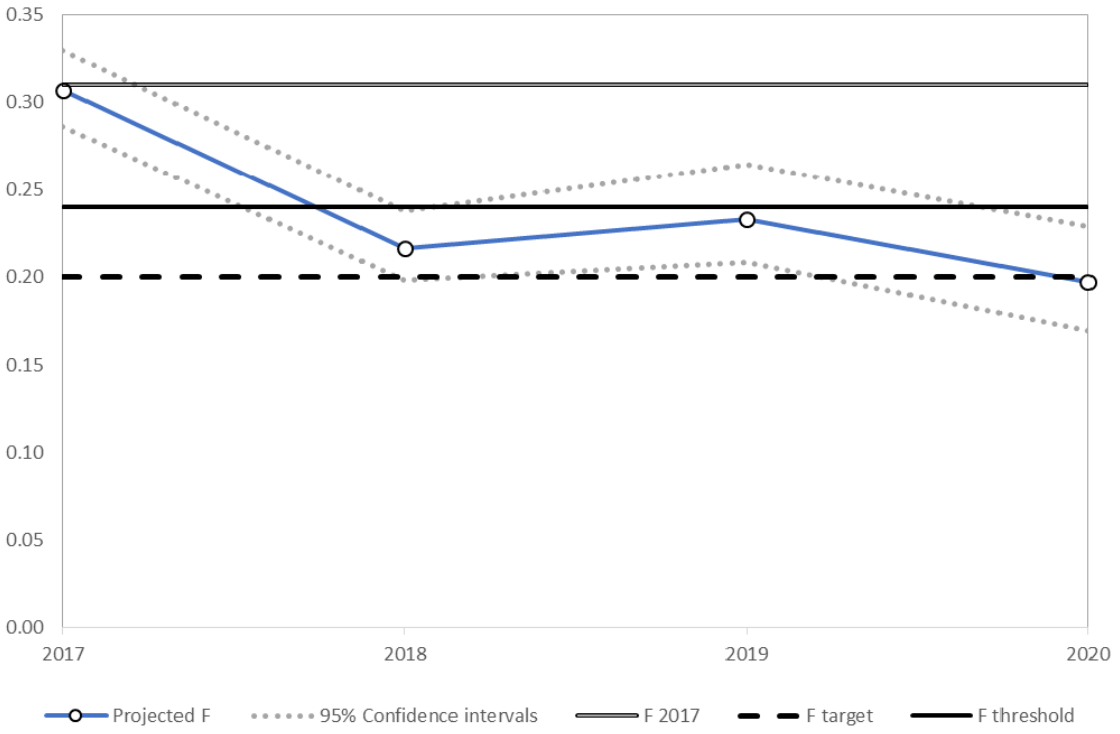
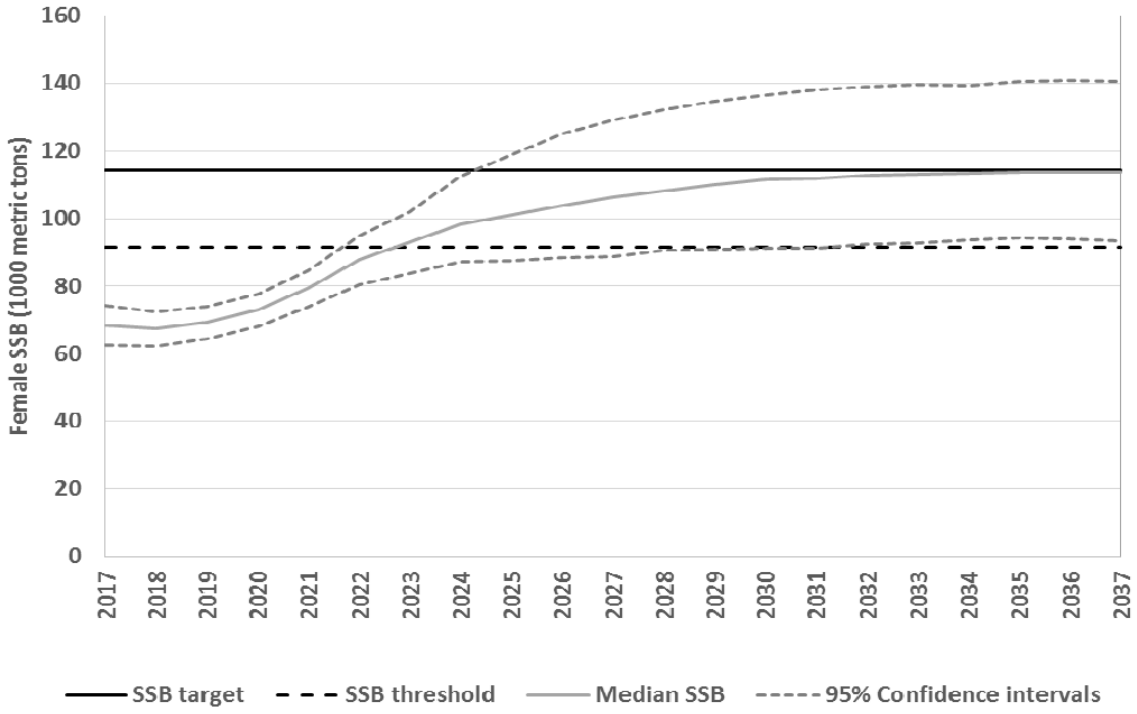


Figure 6. Projecting female spawning stock biomass (SSB) forward until SSB target is achieved while fishing at the fishing mortality target (F = 0.20) beginning in 2020.



Appendix 1. <u>Summary of Atlantic striped bass regulations in 2017.</u> Source: 2018 State Compliance Reports. Minimum size limits and slot size limits are in total length (TL). *commercial quota reallocated to recreational bonus fish program

<u>Commercial</u> regulations in 2017.

STATE	SIZE LIMITS	SEASONAL QUOTA	OPEN SEASON
ME	Commercial fishing prohibited		
NH	Commercial fishing prohibited		
MA	34" minimum size	869,813 lbs. Hook & line only	6.23 until quota reached, Monday and Thursdays only; 15 fish/day with commercial boat permit; 2 fish/day with rod and reel permit (striped bass endorsement required for both permits)
RI	Floating fish trap (FFT): 26" minimum size General category (GC; mostly rod & reel): 34" min.	Total: 181,540 lbs., split 39:61 between the FFT and GC. Gill netting prohibited.	FFT: 4.1 – 12.31, or until quota reached; unlimited possession limit until 70% of quota projected to be harvested, then 500 lbs/day GC: 5.28-8.31, 9.10-12.31, or until quota reached. Closed Fridays and Saturdays during both seasons.
CT*	Commercial fishing prohibited; bonus program: 22 – <28" slot size limit, 5.1 – 12.31 (voucher required)		
NY	28"-38" minimum size (Hudson River closed to commercial harvest)	795,795 lb. Pound nets, gill nets (6-8"stretched mesh), hook & line.	6.1 – 12.15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: 1 fish at 24 – <28" slot size limit, 9.1 – 12.31 (permit required)		
PA	Commercial fishing prohibited		
DE	Gillnet: 28" minimum size, except 20" min in Del. Bay and River during spring season. Hook and Line: 28" min	Gillnet: 137,831 lbs. Hook and line: 14,509 lbs.	Gillnet: 2.15-5.31 (2.15-3.30 for Nanticoke River) & 11.15-12.31; drift nets only 2.15-2.28 & 5.1-5.31; no fixed nets in Del. River. No trip limit. Hook and Line: 4.1–12.31, 200 lbs/day trip limit

Appendix 1, commercial regulations in 2017 (continued).

STATE	SIZE LIMITS	SEASONAL QUOTA	OPEN SEASON
MD	Ocean: 24" minimum CB and Rivers: 18–36"	Ocean: 90,727 lbs. CB and Rivers: 1,471,888 lbs. (part of Bay-wide quota).	Ocean: 1.1-5.31, 10.1-12.31, Mon- Fri Bay Pound Net: 6.1-12.30, Mon-Sat Bay Haul Seine: 6.1-12.29, Mon-Fri Bay Hook & Line: 6.1-12.28, Mon-Thu Bay Drift Gill Net: 1.2-2.28, 12.1-12.29, Mon-Thu
PRFC	18-36" slot size limit 2.15-3.25 and 18" minimum size all other seasons	583,362 lbs. (part of Bay-wide quota). Allocated by gear and season.	Hook & line: 1.1-3.25, 6.1-12.31 Pound Net & Other: 2.15-3.25, 6.1-12.15 Gill Net: 1.1-3.25, 11.13-12.31 Misc. Gear: 2.15-3.25, 6.1-12.15
DC	Commercial fishing prohibited		
VA	Bay and Rivers: 18" min size, and 18-28" slot size limit 3.26–6.15 Ocean: 28" min	Bay and Rivers: 1,064,997 lbs. (part of Bay-wide quota). Ocean: 136,141 lbs. ITQ-system for both areas.	Bay and Rivers: 1.16-12.31 Ocean: 1.16-12.31
NC	Ocean: 28"	360,360 lbs. (split between gear types). Number of fish allocated to each permit holder. Allocation varies by permit.	Seine fishery was open for 120 days, 150 fish/permit Gill net fisher was open for 45 days, 50 fish/permit Trawl fishery was open for 70 days, 100 fish/permit

Appendix 1, recreational regulations in 2017. C&R = catch and release

STATE	SIZE LIMITS	BAG LIMIT	GEAR RESTRICTIONS	OPEN SEASONS
ME	28" minimum size	1 fish/day	Hook & line only; circle hooks only when using live bait	All year, except spawning areas are closed 12.1 – 4.30 and catch and release only 5.1 – 6.30
NH	28" minimum size	1 fish/day	Gaffing and culling prohibited	All year
MA	28" minimum size	1 fish/day	Hook & line only; no high-grading	All year
RI	28" minimum size	1 fish/day	None	All year
CT	28" minimum size	1 fish/day	Spearing and gaffing prohibited	All year
NY	Ocean and Delaware River: 28" minimum size Hudson River: 18"-28" slot limit, or >40"	1 fish/day	Angling only. Spearing permitted in ocean waters. Catch and release only during closed season.	Ocean: 4.15 – 12.15 Hudson River: 4.1 – 11.30 Delaware River: All year
NJ	1 fish at 28" to < 43", and 1 fish ≥ 43"		Circle hooks required while fishing with natural bait during springtime spawning ground closure.	Ocean: All year All other waters: 3.1 – 12.31, except spawning ground closure from 4.1 – 5.31 in the lower Delaware River and tributaries
PA	Upstream from Calhoun St Bridge: 1 fish at ≥ 28" minimum size, year round Downstream from Calhoun St Bridge: 1 fish at ≥ 28" minimum size, 1.1 – 3.31 and 6.1 – 12.31 2 fish at 21"-25" slot size limit, 4.1 – 5.31			
DE	28" minimum size, no harvest 38-43" (inclusive)	2 fish/day	Hook & line, spear (for divers) only. Circle hooks required in spawning season.	All year except 4.1-5.31 in spawning grounds (C&R allowed). In Del. River, Bay & tributaries, may only harvest 20-25"slot from 7.1-8.31

Appendix 1, recreational regulations in 2017 (continued). C&R = catch and release

STATE	SIZE LIMITS	BAG LIMIT	OTHER	OPEN SEASON
MD	Ocean: 28”-38” slot limit or ≥44” CB Spring Trophy: 35” minimum CB Summer/Fall^: 20” minimum and only one fish can be >28”	Ocean: 2 fish/day CB Spring Trophy: 1 fish/day CB Summer/Fall^: 2 fish/day	See compliance report for specifics.	Ocean: All year CB: C&R only 1.1-4.14^ CB Spring Trophy: 4.15-5.15 Bay Summer/Fall: 5.16-12.20
PRFC	Spring Trophy: 35” minimum Summer/Fall: 20” minimum and only 1 fish can be >28”	Trophy: 1 fish/day Summer/Fall: 2 fish/day	No more than two hooks or sets of hooks for each rod or line	Spring Trophy: 4.15 -5.15 Summer/Fall: 5.16-12.31
DC	20” minimum and only one fish can be >28”	2 fish/day	Hook & line only	5.16-12.31
VA	Ocean: 28” minimum Ocean Trophy: 36” minimum CB Trophy: 36” minimum CB Spring: 20-28” (with 1 fish >36”) CB Fall: 20” minimum and only one fish can be >28”	Ocean: 1 fish/day Ocean Trophy: 1 fish/day Bay Trophy: 1 fish/day Bay Spring: 2 fish/day Bay Fall: 2 fish/day	Hook & line, rod & reel, hand line only. Gaffing is illegal in Virginia marine waters. No possession in the spawning reaches of the Bay during trophy season	Ocean: 1.1-3.31, 5.16-12.31 Ocean Trophy: 5.1-5.15 Bay Trophy: 5.1-6.15 Bay Spring: 5.16-6.15 Bay Fall: 10.4-12.31
NC	Ocean: 28” minimum	Ocean: 1 fish/day	No gaffing allowed.	Ocean: All year

^in Susquehanna Flats and Northeast River: C&R only from 1.1-5.3 and 1 fish/day at 20-26” slot size limit from 5.16-5.31

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Atlantic Striped Bass Management Board

FROM: Max Appelman, FMP Coordinator

DATE: October 11, 2019

SUBJECT: Atlantic Striped Bass Draft Addendum VI Public Hearing Summaries

Twenty one public hearings were held in fourteen jurisdictions. Approximately 888 individuals are estimated to have attended the hearings. Each public hearing is summarized in the following pages. Public hearing summaries are ordered from north to south, and by date. This is then followed by public hearing attendance (sign-in sheets) including any written comment submitted at the hearings.

Note: A summary of all public comment received by ASMFC on Striped Bass Draft Addendum VI will be included in supplemental materials.

M19-080

Kennebunk, Maine
October 1, 2019
15 Attendees

Meeting Staff: Megan Ware (ME DMR)
Meeting Participants: See enclosed sign in sheet

Overview

- All participants strongly supported Option 2: Equal Percent Reductions such that the commercial and recreational sectors both take an 18% reduction. Participants were split on which sub-options should be chosen for the ocean recreational fishery.
- All participants strongly supported the mandatory use of circle hooks, Option B.
- There was agreement that large breeders in the population need to be protected so the population can rebound.
- Many participants voiced concern about the impact of the commercial fishery on the stock, noting this fishery targets large breeding fish and produces high levels of discards.

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

- All fifteen participants commented in favor of Option 2. Support for specific sub-options was split and is described below:
    - Eight people commented in favor of sub-option 2-A1 (35" minimum)
        - One individual (a part of the American Saltwater Guide Association) noted the impacts of a slot limit are up in the air and supported the 35" minimum size as the best measure moving forward.
        - Another individual expressed concern about the enforcement of a slot limit.
    - Four people commented in favor of sub-option 2-A3 (30-38" slot)
        - Those in support commented this slot limit would protect spawning fish and allow the brood stock to increase.
        - One individual noted a 40" fish should never be kept.
        - Another individual commented that an upper size limit would allow large fish to spawn multiple times.
    - Eight people commented in favor of sub-option 2-B1 (18" minimum in the Chesapeake Bay)
        - Several individuals noted that while they support the 18" minimum size for the Chesapeake Bay, the entire coast should be subject to a 28" minimum size so that fish are protected in nursery areas and everyone is held to the same standard.
    - One individual supported the 20-26" slot limit that was in place several years ago. He commented that this protected large spawning fish.

3.2 Circle Hook Provision

- All fifteen participants (including one individual from the American Saltwater Guide Association) supported a requirement to use circle hooks (Option B).
    - Several individuals noted that Maine already requires the use of circle hooks and other states should meet this standard.
    - One individual noted barbless hooks should be considered to reduce the discard mortality.
    - There was agreement from participants that states should also conduct education on circle hooks and how to release fish. They recommended a short video and quiz be required before obtaining a recreational fishing license. They noted tackle shops sell a wide variety of hooks and so some people may not know which hook to use or the conservation benefits of the circle hook. There was also support for increasing the cost of a recreational license (no higher than $10) to support these educational efforts.

<u>General Comments</u>

- All participants expressed significant concern about the impacts of the commercial fisheries on the stock.
    - Seven individuals recommended that there be no commercial fishery for stripers.
    - Several expressed concern that, even though the numbers suggest the commercial fishery is responsible for 10% of removals, they are removing large breeding fish which are important for the future of the stock; the value of these fish is overlooked.
    - Two individuals commented they have personally seen the commercial fishery operate and highlighted the high number of boats in a specific area and the high number of discards. One of these individuals commented that many commercial license holders in New England double as a commercial and Charter captain. These boats will buddy up to ensure each boat gets the largest size fish.
    - One individual expressed concern about the illegal selling of fish in the commercial fishery.
- Many participants did not have a high level of confidence in the data and figures presented.
    - One individual noted the graphs presented do not capture reality because they do not include the illegal harvesting and selling of fish that is occurring.
    - Another individual noted the table which shows total recreational release mortality by state suggests Maine has an equivalent or higher release mortality than states such as Rhode Island and New York. This individual didn't think that was correct and had low confidence in the table presented. He highlighted that accurate numbers are needed to ensure a successful plan.
    - One individual recommended the MRIP survey ask anglers about conservation goals. This would provide routine feedback on what fishermen would like to see.
- As noted above, there was strong support for additional education around the size limits, the use of circle hooks, and how to properly release fish. Individuals commented they would

be willing to have a higher cost of a recreational license if that additional money went to education efforts.

- One individual asked that analysis be presented on what the health of the population would look like minus the fishery (i.e. F=0).
- One individual highlighted the economic value of the recreational fishery. He commented that this economic impact must be considered when making a final decision.
- One individual recommended there be more scientific collaborations with universities in New England.
- One individual noted the value of fish in the water needs to be recognized. He noted that a maximum extraction policy does not account for the fact that anglers enjoy time on the water and the memories made fishing.
- One individual recommended that, in Maine, all tributaries be made catch and release in the spring. He recommended that management plan mimic what is done in the Kennebec River.

Yarmouth, Maine
October 2, 2019
Approximately 19 attendees

Meeting Staff: Megan Ware (Maine DMR), Toni Kerns (ASMFC),
Meeting Participants: See enclosed sign in sheet(s)

Overview

- Most commenters spoke in favor of option 2. No comment in favor of option 3. There were three that spoke in favor of status quo in part because there was already a reduction in harvest in 2018 relative to 2017 levels.
- All commenters favored mandatory use circle hooks.
- Some commenters wanted to see Maine use conservation equivalency to provide a better opportunity to catch a fish.

3.0 Proposed Management Program

3.2 Proposed Management Scenarios

- Three people commented in favor of Option 1. A few commented that the state had already reduced its harvest in 2018 relative to 2017 levels.
    - One commenter was in favor of Maine going back to the 20-26" slot. Even with the current regulations in Maine. It is difficult to keep a fish, the old slot limit allows fishermen to take home a fish.
    - 15 people commented in favor of Option 2, including the Maine Charter Boat Association. Few people spoke directly to why they chose equal reduction but those that did favored equity across the two sectors. There was no support for option 3.

Many commenters felt it was important to note the options will have a much greater impact on Maine fishermen to take home one keeper in comparison to the Mid-Atlantic States and producer areas. Support for specific sub-options are as follows:

- 10 people commented in favor of sub-option 2-A1
  - This is the best of the worst options. It is the only option without a slot.
  - This option gives the fish a chance to spawn and it works for a coastwide effort.

  Comments Against:
  - There were concerns from some that such a high minimum size would shut Maine fishermen out of the recreational fishery. A 35" minimum size would be a much larger reduction in Maine than 18%, more like a 95% reduction in harvest.
- Four people commented in favor of sub-option 2-A2,
  - Slots allow for a better opportunity for Maine fishermen to take home a keeper. Fishermen should not have to go through so many fish to take just one keeper.
  - Slot allows the large female to breed.
  - Similar slot limits have been successful in other U.S. fisheries like red drum and snook

  Comments Against:
  - Some commenters were concerned the slot would focus harvest on breeding fish.
- One person commented in favor of sub-option 2-A4.
  - This person is in-favor of slot limits and the options provided the greatest overall reduction in harvest
  - Similar slot limits have been successful in other U.S. fisheries like king salmon and snook
- The Maine Charter Boat Association commented in favor of sub-option 2-B1

3.2 Circle Hook Provision

- 16 people support Option B, it is already a law in Maine.
  - Prior to implementation of mandatory circle hooks in Maine there were many people that spoke against it; however those same individuals now speak out in favor of circle hooks, particularly their effectiveness.
  - Circle hooks brought the release mortality down in Maine. They are effective.

<u>General Comments- also see written testimony behind the sign in sheet</u>

- There is an issue with the fishery but a moderate approach to correct the problem would be best.
- The coastwide regulation will have a different impact depending on the state (smaller or larger harvest reduction). These measures will have a significant impact on Maine harvest but a small impact on the overall population. The Board should consider changes in regulations where there will be the most effective impacts for the stock.

- Should consider making the same circle hook provisions for the commercial fishery as the recreational fishery.
- There is some desire to use conservation equivalency to create measures that would allow Maine fishermen take home a keeper. Big stripers do not make it above Casco Bay. If you take this fishery away, Maine fishermen will not have another recreational species to fish for. Maine is not like other states where there are many other options for recreational fishermen to choose from.
- Need to strengthen conservation equivalency review process and need better accountability: should be able to quantify reductions for proposed management measures
- There was an overall agreement that no one should be fishing on prespawn fish. States like Maryland that have a spring trophy season seems to be insane.
- There should be a law for a single hook on the back of treble hooks.
- There is a general disbelief in the MRIP data. There should be a different accounting for the recreational fishery like a stamp or a tag so once you catch your fish you have to tag it and cannot throw it back over (dead) when you catch a bigger fish.

Portsmouth, New Hampshire
October 1, 2019
Approximately 24 attendees

Meeting Staff: Doug Grout (NH F&G), Toni Kerns (ASMFC),
Meeting Participants: See enclosed sign in sheet(s)

Overview

- All commenters spoke in favor of option 2. No comments in favor of status quo or option 3. The group wanted to see the fishery rebuild and get strong again.
- Most commenters favored mandatory use circle hooks noting, however, noting there should be an exception for the tube and worm live bait in New Hampshire.
- A number of participants voiced concerns about the use of conservation equivalency and would like to see it eliminated as an option.

3.0 Proposed Management Program

3.3 Proposed Management Scenarios

- 15 people commented in favor of Option 2. Few people spoke directly to why they chose equal reduction but those that did favored equity across the two sectors. There was no support for Options 1 or 3. Support for specific sub-options are as follows:
    - 13 people commented in favor of sub-option 2-A1, including CCA NH
        - Allows the fish to spawn a few years before you can start to catch them.
    - 2 people commented in favor of sub-option 2-A2

        - It prevents harvest of the big fish, allows for a keeper and reduces enforcement issues.
        - Good to take a few small fish and put back the big fish.
        - There are not many 35" fish in NH so a slot will let you get a keeper.
        - It does a little more than the 18% requirement.
    - 11 people commented in favor of sub-option 2-B1, including CCA NH
    - Two people commented in favor of sub-option 2-B2

3.2 Circle Hook Provision

- One person supported Option A
- 16 people support Option B, including CCA NH, because it is viable and proven method to reduce release mortality
    - Several people commented there should be an exception for the tube and worm live bait in New Hampshire.
- Two people support Option C because a mandatory circle hook requirement would be impossible to enforce

<u>General Comments</u>

- It is confusing when New Hampshire and Maine have different regulations. All the states should have the same regulations. Slot limits caused confusion when neighboring states has different regulations. You could not travel between two state waters.
- Slot limits are good when people comply with the law but very bad when there is illegal fishing.
- If all the states have different regulations it becomes harder to assess how the regulations are performing. That is not good.
- I charter about 150 days per season and roughly 50 % is on fly and 50% is on bait. People just want to see a strong fishery and catch some fish.
- While slot limits can be nice having one minimum size just makes more sense for the fishery.
- It would be good to know who produces more eggs, a few big fish or a lot of 28 inch fish.
- I encourage people to use circle hooks in my bait shop. Circle hooks do not work for all fisheries so do not make then mandatory for every fishery. I would like an exception to allow non-circle hooks for tube and worm fishery in NH.
- The Board should consider a regulation to stop fishing when someone has caught their limit.

Woburn, Massachusetts **Bourne, Massachusetts**
October 2, 2019 **October 3, 2019**
35 attendees **62 attendees**
(Comments from both hearings were combined into one summary due to their similarity.)

Meeting Staff: Michael Armstrong, Dan McKiernan, David Pierce, Nichola Meserve, Jared Silva (MA DMF)
Meeting Participants: See enclosed sign-in sheets (sign-in sheets do not reflect full attendance)

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

- 9 participants favored Option 1 (Status Quo) for reasons including:
    - Harvest in 2018 dropped by at least 18% from 2017, so the goal is already met.
    - Other factors such as predation (seals, white sharks), water temperature, dragger discards, forage availability, and the health of Chesapeake Bay spawning grounds deserve more review before imposing cuts on the fisheries.
    - The issue can be solved with education about catch and release technique.
- 80 participants favored Option 2 (Equal Percent Reductions) for reasons including:
    - Everyone should share equally in ending overfishing and rebuilding the stock.
    - The commercial fishery has a discard issue too and should not be exempt; commercial discards are much higher than is being estimated.
    - The commercial fishery removes too many large fish, impacting stock productivity and the quality of the fishery for the recreational sector.
    - So-called "equal" reductions actually favor the commercial fishery because of underperformance of the commercial quota and the commercial quota isn't reduced by expected discards like recreational harvest is.
    - Recreational fishery should not be punished more for being largely a catch and release fishery; 9% release mortality is among the best; recreational fishery drives more economic value than commercial fishery.
    - The clustered nature of commercial fishing effort makes it more damaging to the resource than the diffuse effort of the recreational fishery.
- 10 participants favored Option 3 (Smaller Commercial Reduction) for reasons including:
    - The scale of the commercial fishery indicates it is not the problem; equal reductions will penalize the commercial fishery for a recreational fishery problem.
    - Commercial fishery growth has been capped by quotas while the recreational fishery has not.
- 57 participants favored Sub-Option A1 (35" or 36" Minimum Size Limit) for reasons including:
    - Best option to rebuild the stock; higher minimum sizes have a proven track record of rebuilding striped bass; will allow fish to spawn multiple times before they can be kept.
    - Slot limit will put too much pressure on individual year classes.
    - Will likely decrease effort and do more to rebuild the stock than a slot limit.
    - DMF has said in the past that slot limits likely won't work to reduce harvest for striped bass; now is not the time to experiment.
    - The mentality of the charter fleet needs to change to selling the experience as opposed to guaranteeing fish to take home. Believe that people will continue to go charter fishing even if probability of taking home a keeper is limited.

    - If pick a slot limit, can't keep a once-in-a-lifetime trophy fish.
- 24 participants favored Sub-Option A2 (28–35" or 28–34" Slot Limit) for reasons including:
    - Will protect the largest, most fecund females.
    - The higher minimum size will destroy the charter boat industry; there are not enough fish of that size and clientele will stop booking trips if can't take even one fish home for supper. Only fly fishing guides targeting schoolies for catch and release would survive. Not enough variety of other species to keep on charters north of the Cape. Catch and release may work elsewhere (e.g., FL) but tourism industries are distinct and what works in one place is not indicative of what works in MA. The higher minimum size may work for private anglers in MA who can fish many times a year but not the charter customer that is here on vacation and takes just one trip.
    - The higher minimum size will increase discards more than projected because people will keep fishing until they get a keeper, negating its benefit. Will be easier to catch a fish in the slot limit, so it's more likely to actually reduce removals.
    - Smaller fish taste better and have less toxin accumulation.
- 1 participant favored Sub-Option A4 (32–40" Slot Limit).
- 1 participant favored Sub-Option 2-B1 & 3-B2 (1 fish @18" Minimum Size in Chesapeake Bay).

3.2 Circle Hook Provision

- 6 participants favored Option 1 (Status Quo) for reasons including:
    - MA already has a sufficient program in place under the current guidelines. Mandatory use is an overreach of authority.
    - The benefit of requiring circle hooks is unquantifiable.
    - Circle hooks were selected arbitrarily among other gear configuration changes that could do more to save fish; selection of circle hooks as the "low hanging fruit" disproportionately disadvantages certain populations of anglers.
- 45 participants favored Option 2 (Required Implementation) for reasons including:
    - While difficult to quantify the benefit, it is indisputable that circle hooks save fish and that's what is needed now.
    - Circle hooks have an added benefit of safety to anglers.
- An additional 17 participants favored Option 2 (Required Implementation) <u>provided</u> that the requirement can have the same exemptions as MA's circle hook rule to be implemented in 2020, i.e., not applicable to the for-hire fishery and certain configurations like tube & worm; a one-year phase-in period. Rationale included that the charter fleet has a much lower release mortality rate (due to captain experience) than the average private angler; tube and worm does not gut hook fish; and tackle shops and anglers ought to be afforded a year to turn over their supply of hooks. If these exemptions are not possible, these 17 participants would favor Option 3 (Required Promotion).
- 5 participants favored Option 3 (Required Promotion) for reasons including:
    - Enforcement of required use of circle hooks is too difficult between identifying what is being targeted and what is called a circle hook.

- Want to maintain the option of switching to a circle hook after catching a keeper on a j-hook, as is frequently done already.

General Comments

- Would have liked to see even more conservative options. Examples: catch & release only for the recreational fishery; a vessel harvest cap on charter trips that is less than 1 fish per angler.
- Opposed to allowing conservation equivalency proposals; there should be uniformity along the Atlantic coast.
- Need enforcement to be increased along with any of these options.
- Only when people are too discouraged to go fishing will the projected harvest reductions be realized.
- Separate rules should be considered for the charter fleet (e.g., the slot limit) compared to the private recreational fishery (e.g., the higher minimum size limit). The two groups shouldn't be bundled and one disadvantaged by the other.
- The current situation of being back to where we were 30 years ago is indicative of mismanagement of this resource; need a paradigm shift.
- Anglers should be required to watch an educational video about circle hook use and other responsible catch & release techniques when obtaining a saltwater fishing permit.
- Treble hooks should be prohibited.

Narragansett, Rhode Island
September 24, 2019
Approximately 33 attendees

Meeting Staff: Max Appelman (ASMFC), Jason McNamee (RIDEM), John Lake (RIDEM), Chris Parkins (RIDEM), David Borden (Commissioner)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- 21 people commented in favor Option 2; no comments in support of Options 1 or 3
- Participants generally favored mandatory use circle hooks noting, however, states should focus efforts more on angler education regarding safe handling rather than hook type
- A few participants expressed concerns regarding the use of treble hooks noting that the use should be prohibited
- A notable amount of participants voiced concerns about not enough law enforcement officers, high level of poaching, and penalties for violations should be increased

3.0 Proposed Management Program

3.4 Proposed Management Scenarios

- Twenty one people commented in favor of Option 2 because all sectors use the resource and should share the burden of harvest reductions equally. There was no support for Options 1 or 3. Support for specific sub-options are as follows:
    - Four people commented in favor of sub-option 2-A1
        - Pros and cons with every option, but hard to ignore past history
        - Focus on protecting the smaller fish so they can grow into the spawning biomass and possibly consider a slot limit on larger fish down the road
    - Seventeen people commented in favor of sub-option 2-A4 including the following organizations: RI Saltwater Guides Association, American Saltwater Anglers Association
        - Similar slot limits have been successful in other U.S. fisheries like king salmon and snook
    - Twenty one people commented in favor of sub-option 2-B1 because it achieves the greatest reduction for the Chesapeake Bay and overfishing in the Bay has to stop

3.2 Circle Hook Provision

- Four people support Option B because it is viable and proven method to reduce release mortality
- Seventeen people support Option C because a mandatory circle hook requirement would be impossible to enforce
- All commenters noted that circle hooks alone are not enough to address the issue. States should focus more on aggressive education programs to teach proper fish handling techniques including no gaffing, no photos of fish that aren't being kept, online training modules, etc.

<u>General Comments</u>

- Would like a fourth option for a total moratorium
- Need more funding for law enforcement so they can effectively do their jobs.
- Should consider permit system for striper fishing, or purchase tags for a trophy fish, to raise funds to support wildlife enforcement efforts
- Don't support conservation equivalency. The process is subjective and disparate measures creates winners and losers among the charter/party boat industry, particularly when a neighboring state has a lower size limit or higher bag limit
- Need to strengthen conservation equivalency review process and need better accountability for states that overharvest their targets
- Treble hooks need to go; most destructive fishing method for striped bass
- Would like to barbless hooks to be considered for fly-fishing and other artificial lure
- Should put an end to commercial fishing in order to take away the market and stem poaching

- Catch and release fishing is a good thing, and there is an increasing trend with catch and release fishing among anglers in other fisheries (e.g., bluefish)

Old Lyme, Connecticut
September 23, 2019
Approximately 57 attendees

Meeting Staff: Max Appelman (ASMFC), Justin Davis (CTDEEP), Matt Gates (CTDEEP), William Hyatt (Commissioner)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- There was strong support for Option 2, however, there was no consensus on which specific sub-option is best for the fishery and population
- Participants generally favored mandatory use circle hooks noting, however, states should focus efforts on angler education regarding safe handling and increasing survivability to the extent possible.
- Many participants expressed concerns regarding the use of treble hooks
- A notable amount of participants voiced concerns about the high level of poaching going on and commented that there aren't enough law enforcement officers. Also penalties need to be increased significantly.

3.0 Proposed Management Program

3.5 Proposed Management Scenarios

- Two participants are in favor of Option 1 because there was no opportunity for public input in the option development phase and because all the options will lead to increased releases
- Twenty six participants commented in favor of Option 2. Support for specific sub-options are as follows:
    - Sixteen people commented in favor of sub-option 2-A1
        - Don't know how many years fish will be managed in a slot
        - Need to allow fish grow into the SSB
        - Difficult to ignore past history which successfully recovered the fishery
        - Not enough data to support the use of slot limits
    - Seven people commented in favor of sub-option 2-A2
        - A higher minimum size would put charter/party boats out of business, especially if neighboring states have a smaller size limit
    - One person commented in favor of sub-option 2-A3
    - Two people commented in favor of sub-option 2-A4 because it would protect small fish and give them time to spawn before being harvested, while also protecting large females

    - Two people commented in favor of sub-option 2-B1 because it achieves the greatest reduction in Chesapeake Bay
- Three participants commented in favor of Option 3; two in favor of sub-option 3-A1 and one in favor of 3-A2

3.2 Circle Hook Provision

- Sixteen people are favor the use of circle hooks, of which 12 support Option B. Many participants that favored circle hooks also support a ban on treble hooks

<u>General Comments</u>

- Should have a separate regulation for party/charter boats
- Increase fines for poaching in every state
- If SSB keeps declining, should implement a total moratorium
- Need more funding for law enforcement so they can effectively do their jobs.
- Should consider permit system for striper fishing and giving that money to law enforcement or for drones to aid law enforcement efforts
- Need better accountability for states that overharvest their targets
- Concerning that all the options still allow the harvest of large females
- Challenge ASMFC to manage for the greater good
- Recommend a catch and release only fishery
- The ecosystem is changing fast, populations are shifting range, new predator/prey interactions in the area (seals of the Cape, jellyfish, and other bait present) and environmental conditions are changing; this needs to be accounted for in the assessment and the options
- Treble hooks need to go; most destructive fishing method for striped bass
- No fish over 40" should be kept and these fish should all be released without being hauled on the boat for a picture
- Omega Protein over harvest in the Bay is destroying in fishery at the source
- Would like to see a season limit or daily vessel limit for party/charter boats rather than an angler daily bag limit
- Would like to see more voluntary reported data (angler information) being used in stock assessments and in the decision making process
- Connecticut should close the winter fishery and/or require fishing with barbless hooks
- Would like to see a smaller slot limit with a 16" or 18" minimum because that is the resilient part of the population
- An "apex" predatory like striped bass shouldn't be managed to maximize abundance
- Would like to see different regulations for boat and shore fishing
- Would like to see the commercial fishery go away; the way to put an end to poaching is to take away the market

Bridgeport, Connecticut
September 25, 2019
Approximately 28 attendees

Meeting Staff: Justin Davis (CTDEEP), Matt Gates (CTDEEP), David Molnar (CTDEEP) and Renee St. Amand (CTDEEP)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- There was universal support for Option 2.
- Option 2-A1 (1 fish at 35") was favored by most commenters.
- Options 2-A2 had support from 2 commenters and 2-A4 was supported by one.
- Participants generally favored mandatory use of circle hooks.
- A notable number of participants voiced concern over the high level of poaching going on and commented that there aren't enough law enforcement officers. Penalties need to be increased significantly to ensure compliance.

3.0 Proposed Management Program

3.6 Proposed Management Scenarios

- Nine participants commented in favor of Option 2. Support for specific sub-options are as follows:
    - Six people commented in favor of sub-option 2-A1
        - Need to allow fish grow into the SSB.
        - Difficult to ignore past history which successfully recovered the fishery.
        - There was concern that slots concentrate the mortality on certain sizes (creating "kill zones").
        - Keeps it simple.
    - Two people commented in favor of sub-option 2-A2.
        - Commenters thought this would protect larger, breeding females.
    - One person commented in favor of a slot of 35"-39" to protect incoming year classes and larger breeders with option 2-A4 as a fall back.
    - Two people commented in favor of sub-option 2-B1 because it will not result in an increase of discards in the Chesapeake Bay the way increasing the minimum size will.

3.2 Circle Hook Provision

- Five people were in favor of mandatory use of circle hooks.

General Comments

- Increase fines for poaching in every state.
- Need more funding for law enforcement so they can effectively do their jobs.

- Should use funds derived from violations to fund more law enforcement
- Need better accountability by ASMFC for states that over-harvest their targets and penalize states that exceed their allocation.
- Challenge ASMFC to manage to the targets and not the thresholds.
- Omega Protein over-harvest in the Chesapeake Bay is destroying the fishery at its source.
- Connecticut should consider closing the winter fishery on hold-over stripers.
- ASMFC should stop single species management and look at the big picture (ecosystem based management).
- Should consider a "sliding slot" that adapts over time to protect incoming year classes of fish.

Bethpage State Park, New York
September 4, 2019
Approximately 180 attendees

Meeting Staff: Max Appelman (ASMFC), Jim Gilmore (NYDEC), Maureen Davidson (NYDEC), John Maniscalco (NYDEC), Stephanie Rekemeyer (NYDEC), Carol Hoffman (NYDEC), John McMurray (LA, proxy)
Meeting Participants: See enclosed sign in sheet(s). Written comment submitted at the hearing is also enclosed and included as part of the hearing summary.

Overview

- There was strong support for Option 2, however, there was no consensus on which specific sub-option is best; no one commented in support of Option 1 or Option 3
- Commenters generally favored circle hooks noting, however, efforts should focus more on angler education regarding safe handling and increasing survivability to the extent possible
- A notable amount of participants voiced concerns about striped bass poaching and suggested increasing enforcement.

3.0 Proposed Management Program

3.7 Proposed Management Scenarios

- Nineteen participants commented in favor of Option 2 including the following groups: NY Rec and For-hire Fishing Alliance, NY Coalition for Recreational Fishing, Theodor Roosevelt Conservation Partnership, NY Boatman's Association, One at 32" Pledge Group, American Saltwater Guides Association, Gateway Striper Club, NY Salty Fly Fishing, NY Fishermen Conservation Association, Montauk Surfcasters, Long Island (??) Associations. Most common reason being that all sectors benefit from the resource, and, therefore, all sectors should share the burden and responsibility of protecting the resource. There was no consensus on which specific sub-option would be best for everyone. The shore and private angler sector generally favors a 35" minimum size while the for-hire/party boat sector

generally does not support a 35" minimum size. Support for specific sub-options are as follows:

- Seventeen people commented in favor of sub-option 2-A1, noting that a similar size limit successfully rebuilt the fishery once before and that all the small fish in the population should be protected. Commenters also questioned whether a slot limit would put too much effort on fish within the slot limit and negatively impact spawning stock biomass down the road.
- Two people commented in favor of sub-option 2-A2, noting that the lower slot limit would work for most boats and a 35" minimum size would put the charter industry out of business
- Eight people commented in favor of sub-option 2-B1, noting that the Bay should be at the same bag limit as the rest of the coast and an 18" minimum size should address the problems the Bay has had with release mortality

3.2 Circle Hook Provision

- One person favors Option A. Making the use of circle hooks mandatory is overreaching.
- Eleven people are in favor of Option B. The most common reason being that the use of circle hooks is a proven method to reduce discard mortality and should be required in all recreational striped bass fisheries. Would like to have this phased in to allow tackle shops to get through their inventory.

<u>General Comments</u>

- Need to close all spawning grounds during the spawning season (referring to the Hudson)
- Would support more stringent measures; tighter slots
- Any fish that are not being kept should stay in the water
- Treble hooks should be banned from the striped bass fishery
- Need to address the high amount of poaching going on
- Need more law enforcement officers, stricter penalties, and steeper fines
- Would like to see a ban on bait; artificial baits only
- EEZ closure is loosely enforced, a lot of fishing going on there
- Political appointees should not be part of the management process at ASMFC
- Stricter regulations don't make good fishermen, but they will lead to more and more discards
- Highest rate of discard mortality is with the light tackle surf catch and release fishery
- Best answer to discard mortality is education; should focus resources on angler education and outreach programs to promote the use and benefits of circle hooks and teach anglers how to handle a fish properly
- Would like to see a CE program one fish at 30" minimum size from May 1 – Nov 30, and no retention of bass for captain and crew (NY Rec and For-hire Fishing Alliance)
- Setting a 35" minimum is a contradiction. Going to have to fish all day long and release 50 plus fish to keep one fish. Anglers will cull through tons of fish before catching a keeper

- The fish are further north, and aren't up on the flats because of the high water temps
- There are pros and cons to each of the recreational sub-options
- CE compromises the effectiveness of slot limits; need all states to have the same lower and upper limits for the slot options to be effective
- CE should not be allowed
- Urge to manage for the benefit of the great majority, recognizing that the ASMFC represents many different stakeholder and user groups
- The less fish that are handled the better, more fish will be handled with these options which is not a good idea
- Recommend CE for NY; reduce the season, adopt circle hook regulations, ban gaffing of striped bass, and eliminate the out of season catch and release fishery, and ban crew retention of striped bass on party/charter boats
- Commercial fish tags should be transferable to party/charter boats on a voluntary basis
- Transparency in the adaptive management process can be improved

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New Paltz, New York
September 12, 2019
Approximately 50 attendees
Meeting Staff (all NYSDEC): Jim Gilmore, Maureen Davidson, John Maniscalco, Stephanie Rekemeyer, Wendy Rosenbach, Stephanie Mossey, Jessica Best, Gregg Kenney, Rhianna Bozzi, Caitlin Craig
Meeting participants: see enclosed sign in sheets

Overview

- The first portion of this meeting was the ASMFC presentation of Draft Addendum VI to Amendment 6 to the ISFMP for Striped Bass
- The location of this meeting attracted mostly Hudson River anglers. Since the Hudson River was specifically excluded under options 2 and 3, stakeholders were more interested in what may happen in the Hudson River than the different addendum options
- The second portion of this meeting was a general discussion of stakeholder preference regarding the kinds of things that we could consider in conservation equivalency

3.1 Proposed Management Scenarios

- Only one commenter specifically identified a preferred management scenario. Their preference was for Option 2.

3.2 Circle Hook Provision

- 3 of 18 commenters thought circle hooks should be encouraged but not required. 3 of 18 commenters thought circle hooks should be required. 2 of 18 commenters did not think circle hooks would be effective at reducing mortality. One third (6 of 18) of commenters thought we should minimize release mortality rates through education about catch and release practices.

Hudson River Discussion

Since the Hudson River management is required to submit a separate program to achieve the required reductions, Hudson River anglers were invited to discuss ideas they would support or oppose in order to meet an 18 or 20% conservation equivalency reduction. Eighteen people participated in this discussion. One third of commenters (6 of 18) voiced support for an early closure to the season as an option. Five people supported the idea of eliminating the 40"+ fish from the current Hudson River regulations. Four people indicated that they want to keep the existing slot limit. Three commenters were opposed to delaying the opening of the season in the Hudson River.

Additional comments and discussion included a general concern about the water quality in the Hudson River and other spawning areas for Striped Bass. Five people indicated that they wanted more of a law enforcement presence on the Hudson during striped bass season. Two people felt that anglers should be paying for a fishing license to improve management and law enforcement.

Roselle Park, New Jersey
September 3, 2019
7 attendees
Meeting Staff: Max Appelman (ASMFC), Joe Cimino (NJ DF&W), Heather Corbett (NJ DF&W), Mike Celestino (NJ DF&W), Brendan Harrison (NJ DF&W), Ray Bukowski (NJ DEP), Tom Fote (GA)
Meeting Participants: See enclosed sign in sheet

Overview

- Attendees generally favor harvest reductions to address overfishing and rebuild the biomass
- Everyone in the fishery should take the same reduction; the same responsibility to save this fishery
- Commenters generally favored circle hooks noting, however, efforts should focus more on angler education regarding safe handling and increasing survivability to the extent possible

3.0 Proposed Management Program

3.1 Proposed Management Scenarios
Five people are in favor of Option 2.

- Four people are in favor of sub-option 2-A1
    - One person expressed concerns with slot limits that they focus effort on a few year classes of fish
- One person is in favor of sub-option 2-A4
    - Commenters added that season and area closures should be considered with all options because release mortality is dependent on environmental conditions like water and air temperature, salinity, depth, etc.
- Two people are in favor of sub-option 2-B1 for Chesapeake Bay

3.2 Circle Hook Provision

- Two people are in favor of Option B

General Comments

- Need to do as much as possible to conserve the fishery. When one fishery is diminished, it just puts more pressure on other fisheries in the area that are still viable
- Spawning areas in the Hudson River should be closed to striped bass fishing before, during, and after spawning season (April, May) to protect large spawning females
- Commercial gillnetting in the Chesapeake Bay during the spawn is more harmful than the recreational catch in the Hudson
- Need more consistent regulations across states and jurisdictions
- Would like to see more educational handouts regarding safe handling of fish to address release mortality
- The captain and mates should not count as anglers on for-hire trips (i.e., the per person component of regulations should not apply to the captain and mates)
- Circle hooks might not be the answer because release mortality is largely dependent on how the angler fishes, where and when the fish is caught, and how the fish is handled
- Some circle hooks do more damage to fish than J-hooks (like bunker spoons and mojos)
- Trolling for striped bass is a destructive practice; these fish rarely survive

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Ocean City, New Jersey
September 4, 2019
Approximately 41 attendees
Meeting Staff: Joe Cimino (NJ DFW), Jeff Brust (NJ DFW), Heather Corbett (NJ DFW), Mike Celestino (NJ DFW), Brendan Harrison (NJ DFW), Ray Bukowski (NJ DEP), Dave Golden (NJ DFW), Tom Fote (GA)
Meeting Participants: See enclosed sign in sheet

Overview

- Commenters favor harvest reductions and the promotion of catch & release practices to address overfishing and rebuild the biomass
- In contrast, some commenters favor slot size to protect breeding females
- Recreational and commercial sectors should take the same reduction
- Commenters generally favored circle hooks noting, however, efforts should focus on angler education regarding safe handling to increase survivability to the extent possible

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

Six people (including one organization) are in favor of Option 2.

- Three people (including one organization) are in favor of sub-option 2-A1
    - Commenters added that season and area closures should be considered to protect spawning fish
    - Concerns that slot limits and Conservation Equivalency programs severely limit effectiveness of coastwide measures
    - Commenter added that smaller females are carrying spawn. Does not see large females entering river systems
- Two people are in favor of sub-option 2-A2
- One person is in favor of Option 2, but did not specify sub-option
    - Commenter added that there should be no trophy seasons and all states should designate striped bass as Game Fish, no commercial fishery
- Two people are in favor of sub-option 2-B1 for Chesapeake Bay

3.2 Circle Hook Provision

- Eight people (including one organization) are in favor of supporting the use of circle hooks. Commenters added that education is also needed to decrease release mortality

General Comments

- Need to do as much as possible to conserve the fishery. Serious problem, aggressive measures needed.
- Suspend Striped Bass Bonus Program. Adds pressure on strong year classes.
- No longer allow Conservation Equivalency programs. Need more consistent regulations across states and jurisdictions up and down the coast.
- Support for Conservation Equivalency programs. Wants fishery to be available to all anglers, regardless of mode.
- Does not want to lose consumptive component of fishery. Does not want to see fishery move fully to catch & release. Problem is discard mortality
- Protection of forage fish is needed. Reduction of forage fish has led to decline in striped bass population.
- Reduce striped bass bycatch in other fisheries.

- Must promote catch & release and increase awareness of proper handling and catch & release methods to reduce release mortality
- The captain and mates should not count as anglers on for-hire trips (i.e., the per person component of regulations should not apply to the captain and mates)
- For-hire captains should be required to go through training to reduce release mortality
- No gaffing
- Hold ASMFC to 10-year rebuilding plan
- Need to reassess the way striped bass is managed. Fear 20% reduction will do nothing.
- Would like to see reference points adjusted. Have never reached SSB target.
- Commenter did not like any proposed sub-options and would like to see NJ use Conservation Equivalency to achieve 24"-28" slot and shut down the harvest of older, breeding females
- Need to increase enforcement

Manahawkin, New Jersey
September 12, 2019
Approximately 95 attendees
Meeting Staff: Joe Cimino (NJ DFW), Heather Corbett (NJ DFW), Mike Celestino (NJ DFW), Brendan Harrison (NJ DFW), Brian Neilan (NJ DFW), Chad Power (NJDFW), Shanna Madsen (NJ DFW), Jamie Darrow (NJ DFW), Matt Heyl (NJ DFW), Stacy VanMorter (NJ DFW), Ray Bukowski (NJ DEP), Tom Fote (GA), Adam Nowalsky (LA)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- Comments and preferences varied regarding options. Opposing opinions on what is best way to conserve species
- Recreational and commercial sector should take same reduction
- Several commenters suggested distrust in data, especially MRIP
- Commenters commonly expressed complete dislike for all options and would like NJ to pursue Conservation Equivalency

3.0 Proposed Management Program
3.1 Proposed Management Scenarios

One person is in favor of Option 1, status quo

- Commenter angered by Board's decision to calculate reductions relative to 2017 numbers since an 18% reduction was already achieved in 2018

17 people are in favor of Option 2 including two groups

    - All agreed that reduction should be applied equally across sectors
- 6 people are in favor of sub-option 2-A1
    - Fastest way to restore population is to protect 2014 and 2015 year class
    - Commenters added in the early '90s, the stock was recovered using a larger size minimum allowing smaller fish to spawn multiple times before being harvested. Larger fish may not spawn every year. Smaller fish carry the spawn.
    - Opposed to slot options, especially 2-A2 & 2-A3 because it unfairly punishes trophy/tournament fishermen and it hurts bait and tackle shops
    - Commenter (group Saltwater Guides Association) supported 2-A1 because it was the most conservative option and the option with least total removals. Note that this is an incorrect understanding of table and options. Other commenters in hearings have seemed to be confused by this as well.
    - Breeders are available for harvest in all slot options as well
    - Larger fish have higher release mortality rate
- 4 people (including 1 group) are in favor of sub-option 2-A2
    - Commenter (surf fisherman) noted that large fish (35"+) are not available in the surf or back bays for shore-based fishermen
    - Commenters added for-hire captains are in the business of harvesting fish for customers but also preserving resource. Do not need trophy fish.
    - Protect larger, breeding females
- 2 people (including 1 group) are in favor of sub-option 2-A4
    - More action is needed to conserve striped bass. Options are not doing enough.
- 1 person did not like any options but if had to pick, in favor of 2-A1
- 2 people did not like any options but if had to pick, in favor of 2-A2
    - Commenter added that slot size is a good-eating fish and need to protect breeders

No support for Option 3

Commenters added dislike for all sub-options and offered Conservation Equivalency (CE) suggestions:

- 3 people suggested pursuing CE (2 fish smaller than 28")
    - Commenters would like NJ to pursue CE for two smaller fish (slot or maximum size) so people can catch their limit and stop fishing for the day, therefore decreasing release mortality and protecting breeding fish.
- 4 people suggested pursuing CE (1 fish ≥ 28")
    - Commenter suggested 1 fish ≥ 28" with closed seasons (summer and spawning times) and take actions to reduce release mortality
    - Allows fishermen to bring home various sized fish instead of targeting specific year classes
- 1 person suggested pursuing CE (2 fish ≥28")
- 1 person suggested pursuing CE (1 fish 21"-28" slot)

- 1 person suggested pursuing CE (1 fish 24”-28” slot) and trophy tag

3.2 Circle Hook Provision

- 2 people are in favor of Option A
    - Commenter added circle hook regulations will be difficult to enforce and would no longer be able to use snag & drop fishing techniques
- 4 people are in favor of Option B
- 4 people support the use of circle hooks
- Commenter suggested offset circle hooks should be allowed – still catch the fish in the mouth. Does not like using non-offset circle hooks.
- Commenter added he has gut hooked more fish with circle hooks than j-hooks
- Commenter added circle hooks are not the solution. Education would be helpful.
- 2 commenters expressed no preference.
- 4 commenters spoke about circle hooks but not in a way that allowed us to discern their preference.

<u>General Comments</u>

- As mentioned before, there seemed to be confusion regarding the table and options. People seemed to be misunderstanding the percent reductions in harvest and total removals. Commenters chose 2-A1 stating it was the most conservative option.
- One commenter stated he previously had a rule on his boat that only a fish between 28”-32” can be kept and throws back any fish larger, yet he is in favor of Option 2-A1 and now he will have a no kill rule on boat
- Trophy seasons in the Chesapeake Bay fisheries need to be eliminated
- Something needs to be done regarding commercial discards; allow them to keep smaller fish and deduct it from commercial quota to reduce commercial dead releases
- States should use bait, tackle, and fuel taxes to raise fish in hatcheries to support the striped bass population
- Striped bass should be made a no-sale “game fish” along entire coast
- Poaching and illegal sale of striped bass in states that allow commercial fishing is a significant problem, especially hook and line fishing in New England
- Striped Bass Bonus Program should be suspended
- Supports the continuation of the Striped Bass Bonus Program, especially at current slot size
- Problems in bays and estuaries (water quality, too shallow and warm)
- Beach replenishment is destroying fishing grounds – both along the beaches being replenished and offshore where the sand is taken from. Since beach replenishment started after Superstorm Sandy, there are no fish along the beaches, but acres of fish can be found offshore
- Does not like any options because if overfishing is occurring there should be no harvest (moratorium)

- Restrictions on black sea bass fishing puts more fishing pressure on striped bass
- Commenter offered suggestions on improving management: ASMFC should manage fisheries with the main goal of increasing abundance not for Maximum Sustainable Yield, increase penalties for poachers, and increase budgets for enforcement
- Close Raritan Bay fishing in the spring and noted that if the rivers (spawning areas) are closed, the bays should be closed as well since the fish utilize the bays to access spawning areas in rivers
- The Delaware estuary spawning run is gone. There have been no fish utilizing this estuary in 6 years
- There are large schools of striped bass offshore beyond the 3-mile line. Commenters expressed concerns that fish offshore are not getting counted by MRIP or fishery-independent surveys and therefore questioning results of stock assessment
- Distrust in the data being used for stock assessments. MRIP sample sizes need to be increased.
- Education is needed to promote better catch and release practices
- Pollutants, run-off, and other environmental factors are causing low spawning and recruitment events in the Chesapeake and Delaware estuaries. Need to manage bigger picture (including water quality, bait fish availability, etc.)

Bristol, Pennsylvania
August 28, 2019
Approximately 33 attendees
Meeting Staff: Max Appelman (ASMFC), Andrew Shiels (PA F&B), Bryan Chikotas (PA F&B)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- Participants generally support actions to reduce fishing and fishing mortality to rebuild the stock, but there were individuals that expressed opposition to any new management measures without better data, particularly regarding release mortality rates
- There was general support to pursue circle hooks to address release mortality in the fishery

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

- Two people are in favor of Option1, status quo
- Three people are in favor of Option 2.
    - One is in favor of 2-A1
    - Two are in favor of 2-A3
- One person is in favor of Option 3, and prefers 3-A2 for the ocean fishery and 3-B1 for Chesapeake Bay

3.2 Circle Hook Provision

- Four people are in favor of Option B
- One person is in favor of Option C

General Comments

- One person recommends catch and release only for two years to rebuild the biomass quickly
- One person was concerned about the use of treble hooks
- Pennsylvania staff distributed a draft proposal to reduce the slot fishery in the Delaware system in April and May by 18-20%.

Dover, Delaware
August 29, 2019
Approximately 17 attendees
Meeting Staff: Max Appelman (ASMFC), John Clark (DE DNREC), Jason Boucher (DE DNREC), Roy Miller (GA), Craig Pugh (LA, proxy)
Meeting Participants: See enclosed sign in sheet(s).

Overview

- Attendees representing the commercial sector expressed discomfort with any management options that further reduce the commercial quota

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

- Seven people are in favor of Option 1, status quo. Comments include:
    - There is low spawning stock biomass but it's not from fishing, it's from poor recruitment and the problem will fix itself when the strong recent year classes grow into the spawning stock biomass
    - Not much fishing mortality coming from the commercial sector
    - There are enough fish out there
    - The proposed bag limits and size limits will only increase mortality
    - The stock is fine; some years the fishing can be tough because of high rainfall, but generally able to catch [my] quota in one day
- Two people (including one organization) are in favor of Option 2.
    - One person (representing the American Saltwater Guides Association, *full comment letter enclosed*) is in favor of sub-option 2-A1 because the stock was rebuilt once before with a similar size limit and 2-B1 is the most restrictive and quantifiable option for reducing harvest in Chesapeake Bay

- One person is in favor of Option 3 because, if reductions must happen, this is the best option for the fishery because recreational fishing is the largest portion of mortality
    - A few people that support Option 1 expressed support for Option 3 if reductions are going to happen
    - One person favors sub-option 3-A1 for the ocean and 3-B2 for Chesapeake Bay

3.2 Circle Hook Provision

- One person is in favor of Option A because of enforceability concerns
- Two people (including ASGA) are in favor of Option B. Enforcement is difficult but we need to do everything we can to keep fish alive that we don't keep

General Comments

- It's not appropriate to say overfishing was occurring all those years when we didn't know it at the time; the old assessments didn't show overfishing
- Concerns that Option 3 will create hostility between the commercial and recreational sectors
- ASGA commented that conservation equivalency should not be permitted because it severely limits the effectiveness of coastwide measure
- One person commented that
- One person commented that circle hooks won't save fish from high-grading
- The size limits are getting very limiting and it's getting very hard to keep a fish
- One person recommends a new option of 1 fish at 20"-28" slot and 37"-44" slot (e.g., 20" min, no harvest 29"-36" inches)

Annapolis, Maryland
September 25, 2019
Approximately 60 attendees
Meeting Staff: Max Appelman (ASMFC), Mike Luisi (MDDNR), Toni Kerns (ASMFC)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- Majority of participants favored Option 2, however there was significant support for Option 1 and Options 3 also; there was no support for any of the recreational sub-options
- Participants generally support the use of conservation equivalency to develop objective and quantifiable measures that will work for all fishermen in MD
- Participants generally favored the use of circle hooks to address recreational release morality with emphasis on robust education programs across the coast
- Participants expressed strong concerns regarding the accuracy and application of recreational catch and harvest data

3.0 Proposed Management Program

3.8 Proposed Management Scenarios

- Nineteen people commented in favor of Option 1, including Maryland Charterboat Association, because status of fish populations is more dependent on environmental factors than fishing effort. Additional comments include:
    - Hard to vote for options in Maryland without knowing what CE options would be
    - Shouldn't vote on any options until we have more information and better data
    - Doesn't matter what we do in terms of fishing measures because the population is driven by environmental conditions
    - Fishermen should be able to work has hard as want to make a living
- Thirty three people commented in favor of Option 2, including the Annapolis Anglers Club, Coastal Conservation Association - Maryland, and Pasadena Sportfishing Group, because all stakeholders should share the responsibility of reductions equally. Additional comments include:
    - Option 3 represents an unbalanced approach to decrease total removals and includes potential increases in harvest from the commercial sector
    - Support the use of conservation equivalency to implement the required reductions in a way that will work for all MD anglers and reduce recreational dead discards
- Sixteen people commented in favor of Option 3, including the Maryland Waterman's Association and Delmarva Fisheries Association, because this is more of a proportional reduction since recreational removals are far greater than the commercial sector. Additional comments include:
    - Would prefer no reductions on the commercial side
    - An 18% reduction in commercial quota will crush the small guys that already have few tags
    - The commercial sector never seems to get quota back
    - The commercial fishery has hard catch limits and payback provisions which is not in place for the recreational fishery
    - To share the burden equally does not mean equal reductions in terms of percentages
- The Chesapeake Bay Foundation does not support a particular option, but supports swift action to address overfishing and believes all sectors should contribute to future viability of the fishery as all fishermen are benefactors of the resource regardless of disposition.

3.2 Circle Hook Provision

- Participants, including Delmarva Fisheries Association and Chesapeake Bay Foundation, generally support the use of circle hooks to address release morality in the recreational sector. Additional comments include:
    - Circle hook requirements are a common sense approach and should be mandatory with a robust education program across the Atlantic coast
    - Circle hook requirements come with enforcement challenges, but Maryland has proven that circle hooks can be implemented successfully

General Comments

- The states and ASMFC should also consider other hook types to reduce release mortality
- Shouldn't see this as winners and losers, all sectors and states should be in this together
- Concerns with MRIP and how the data is collected and used in population assessment and subsequent management
- Commercial harvest comes under quota every year because PRFC doesn't distribute enough tags to fill the quota
- Southwick Associates economics analysis is biased towards the recreational sector and there needs to be an official economic impact statement
- Doesn't make any sense to raise the size limit to save the fish; you're culling through more and more fish to get to the bigger fish
- Need to stop chasing the big fish
- Conservation Equivalency is doing harm the stock and fishery and should not be allowed unless the program is enforceable, measurable, and actually equivalent to the standard.
- Conservation Equivalency has created a situation where political views endanger striped bass and have been used to lessen the reductions on industry on a stock that is overfished
- Conservation Equivalency proposals should only have objective and quantifiable measures and the same standards used to enforce compliance should also apply to CE programs
- Commercial fishermen have the best equipment to find and catch fish, so we have to consider poor stock condition as reason for not catching the quota
- Need to consider the people in the fishery with these decisions; to share the burden equally does not necessarily mean equal percentages
- Maryland has to get this right as the leading producer of striped bass
- The Draft Addendum is biased against the recreational sector and there should be a suite of options where the recreational sector takes a smaller percent reduction than the commercial
- 18% reduction from the commercial sector is a huge cut to our income but a drop in the bucket for total removals

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Cambridge, Maryland
October 3, 2019
Approximately 72 attendees
Meeting Staff (MD DNR only): Mike Luisi, Angela Giuliano, Harry Hornick, Lynn Fegley
Meeting Participants: See enclosed sign in sheet(s)

Overview

- Mostly commercial fishermen, some recreational, also interested citizens. Overall conversation centered around commercial opposition to taking any reductions to the

commercial fishery and the lack of accurate harvest estimation for the recreational fisheries. There was also discussion about the resident stock in Chesapeake Bay that is predominantly male and that reducing fishing pressure on these fish will not improve the coast wide SSB. There were a few Chesapeake Bay – specific comments suggesting that July and August be closed due to heat and opposing the trophy season and fisheries that interact with the breeding stock. One person noted that the majority of options raise size limits which will make the discard problem worse.

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

- **Option 1:** person said they would prefer Option 1, status quo. No substantive comment
- **Option 2:** 1 person (representing American Saltwater Guides Association) spoke in favor. ***Note,*** *no show of hands for those in favor of option 2 was requested. A statement supporting option 2 was offered just before 8pm and arguments erupted during the individual's statement. The meeting was adjourned due to lack of order and the late hour.*
    - The individual who provided comment stated they would submit their statement to the Commission but in summary:
      2010-2011 science told us there was a problem with striped bass. Management used robust 2011 year class to hedge bets and reduce reductions. Now, striped bass at 26-year low and ASMFC cannot claim they have recovered anything. The problem is lack of Commission accountability. CE is not achieving goals and is the number 1 threat to striped bass. 2011 year classes did not recruit to SSB and has been decimated which is proof that CE proposals do not work. ASMFC uses a 50% probability of success. This is not good enough. Changes in climate and environment, and predation are not included in models. Cites statistics on recreational economics from department of commerce. The comment that the coast is overfishing is highly inaccurate. Any state that applies for CE should be held accountable. If a CE state goes over, then they should pay back the following year.

- **Option 3:** 34 people (show of hands), including 2 organizations, in favor– public comment opened with those in support of option 3 and included:
    - *Representing Delmarva Fisheries Association*: Best of 3 evils. Since rec fishery is responsible for 90% of mortality then they should be responsible for bigger cut. Equal reduction is ludicrous, and status quo doesn't make sense. Was also interested in conservation equivalency. Wants to require ASMFC to do an economic impact study as required in federal law (cites NEPA). *Note: This individual was present and provided comment at the first hearing in Annapolis*.
    - *Representing Maryland Watermans Association*: 48% of dead fish are from recreational dead discards and Option 3 provides proportional cut which makes sense. Commercial discard estimates are reasonable but questions MRIP discard estimates. Provides scenario where fishing buddies get into competition about who threw back the most fish, so discard estimates get out of hand. So to

require anyone to take an 18% redux on that data is not correct. Cites commercial sector accountability - tags fish, check stations etc. Calls into question the current reference points, suggests they should be revisited. Quoted report from Dr. Desmond Kahn—says if we only have average recruitment, we will never be able to achieve SSB. Also commented on triggers—actions are too severe because of the way the amendment is written RE triggers. Need more flexibility on response to assessment results. Fishery management is really hard and based on a lot of assumptions.

- In these things, there has always been an allowable discard rate because discards are unavoidable. If commercial fishery is within their discard rate, we should be able to keep what we've been doing.
- The cut to the commercial sector 5 years ago was more than 25% and industry is suffering. NE states are way over. Commercial fishermen on coast were told 5 years ago that if they took the cuts, they'd get their fish back, but here we are again. Somehow, the rec sector must be held accountable. Illegal fishing occurring in EEZ is really hard to take. Make rec guys check in their fish. Something needs to be done on rec side. Would prefer Option 1 status quo, but if something has to happen, option 3 is preferred.
- Two individuals simply stated they support this option – one had stories about ecosystem imbalance and invasive species. Rockfish need to be thinned out.

3.2 Circle Hook Provision

1 person in favor of requiring circle hooks by regulation

General Comments

- One individual was concerned that many of the options raise size limits. Thinks that discards will be less with smaller size limits. We're killing a lot of fish to hit their bag limits, particularly in July and August.
- Question on whether we're looking at the Susquehanna Flats catch and release fishery.
- One individual wanted to remove July and August fishing as it is just wasting fish. Also suggested not allowing anglers to keep fish >40" at any time of year. Problem with enforcement on recreational fish—limit days of week (i.e. Mon-Wed) and increase in enforcement. May be easier to enforce. May also want to decrease 50% of cormorants because they eat too many little fish.
- Many comments on why recreational fishery couldn't be more accountable. Either phone calls like for deer or use of tags, like when the fishery reopened in MD after the moratorium.
- Many comments about the fact that the previous regulations did not constrain the recreational fishery enough and that the onus of this action should be on the recreational end.

- Comments about substantial amount of illegal recreational fishing is happening. Question as to whether enforcing and stopping this activity could achieve reduction needed in Maryland.

Colonial Beach, Virginia (Potomac River Fisheries Commission)
September 10, 2019
Approximately 31 attendees
Meeting Staff: Max Appelman (ASMFC), Martin Gary (PRFC), Ellen Cosby (PRFC)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- Attendees representing the commercial sector favor Option 3 because the data overwhelming demonstrates that recreational fishing is the root of the issue
- Attendees favored the mandatory use of circle hooks, Option B, noting that recreational discard mortality is the only issue that needs to be addressed

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

- Three people (including the Saltwater Guides Association) are in favor of Option 2.
    - All fishermen are benefactors of the resource and should contribute to continued viability of the resource
    - Two people (Saltwater Guides Association) favor 2-B1. The charter industry has noted that the increased size limit has increased mortality and that they want to get there fish and get off the water, so this option does that for them.
    - One person favors 2-A2 for the ocean region

- Eight people (including MD Waterman's Association) are in favor of Option 3. Notable comments include:
    - The data shows the entire problem is the recreational sector, and an 18% reduction in quota would really hurt our livelihood
    - The only issue that really needs attention is that of recreational release mortality
    - One person supports 3-B2 because it's the same as picking 2-B1 for the rec guys
    - One person supports 3-B4

3.2 Circle Hook Provision

- Two people favor Option B because it's a proven way to reduce release mortality. It's imperative that states educate anglers on the benefits of circle hooks, and safe handling of fish, regardless of which option is selected

General Comments

- Conservation equivalency is helpful if used in the right way
- The ASMFC needs to deal with the issue directly this time, which is recreational fishing
- Most of the catch and release mortality is coming from light tackle fishing and charter boats live lining and chumming, catching tons of small fish before catching their limit
- Will get overwhelming comments from the recreational sector because the commercial sector is so small, but the problem is with the recreational side
- All commercial fish are accounted for, but no concrete numbers on recreational catch
- The triggers for overfishing aren't appropriate, it takes more than a year to get us here and it will take more than a year to get us out
- Need to improve the way we collect data on the recreational sector; improve reporting
- The commercial fishery is a clean fishery, the pound net fishery when done properly is a no kill fishery unless we get some bad water (algae), and there are very few discards in the gill net fishery
- Would like to see the charter sector managed separately under a quota system; tagging system similar to the commercial sector
- The real issue is the take of 28" or great fish along the eastern seaboard
- Need greater recreational accountability
- Fine to increase minimum sizes in certain jurisdictions, but doesn't make sense for the Bay because all the fish are small and around the same size

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Anacostia, District of Columbia
September 12, 2019
Two attendees
Meeting Staff: Max Appelman (ASMFC), Luke Lyon, Bryan King
Meeting Participants: See enclosed sign in sheet(s)

Overview

- One participant representing American Saltwater Guides Association submitted written comment (see enclosed) supporting Option 2, 2-A1 and 2-B1, and Option B for circle hooks. The second participant supported those same comments.

Hampton, Virginia
September 9, 2019
Approximately 24 attendees

Meeting Staff: Max Appelman (ASMFC), Pat Geer (VMRC), Alex Aspinwall (VMRC)

Meeting Participants: See enclosed sign in sheet(s)

Overview

- Majority of attendees represented the commercial sector and favor no change in management because Virginia's quota has already been unfairly reduced over the years
- Attendees support Option 3 as a fall back. Option 1 is still preferred, but willing to take a 1.8% reduction in quota if necessary
- Attendees favored the mandatory use of circle hooks, Option B, noting that recreational discard mortality is the only issue that needs to be addressed

3.0 Proposed Management Program

3.1 Proposed Management Scenarios

- Nine people are in favor of Option 1, status quo. Notable comments include:
    - There is no need to change on the commercial side
    - The commercial sector has suffered from the reductions with Addendum IV and Virginia is such a small player in total harvest
    - The recreational sector is not held accountable for increases in harvest or mortality
    - The scientific community has been wrong for years; there are less people fishing now than ever before, and the increase in fishing mortality isn't real
    - The biomass will go back up once these strong year class recruit into the SSB

- Two people are in favor of Option 2.
    - Conservation minded recreational anglers recognize that they are part of the problem and are willing to take cuts to rebuild the biomass and get the fishery back on track
    - Would prefer to see the cuts applied evenly because all anglers have contributed to fishing mortality
    - One person supports 2-A2 and 2-B2

- Seventeen people are in favor of Option 3 (note: those in favor of Option 1 support this option as a second choice; a fallback). Notable comments include:
    - Many of the same comments noted for Option 1
    - Don't need to do anything, but will tolerate a 1.8% reduction in quota if necessary
    - The only issue that really needs attention is that of recreational release mortality
    - One person supports 3-A2 and 3-B4

3.2 Circle Hook Provision

- About twenty attendees favor Option B noting that release mortality is the only issue that needs to be addressed

General Comments

- Doesn't like what New Jersey and Connecticut have done with their commercial quota

- Recreational mortality is not paid back like the commercial sector (overages are paid back the following year) and the commercial sector should get a credit or increase in quota for the reductions taken in years past
- Striped bass prey on young blue crabs. Increases in the striped bass population will decimate the blue crab fishery
- Northern states shouldn't have longer seasons than the Bay states
- Anglers should not be allowed to remove a striped bass from the water, unless the intent is to keep the fish. All other striped bass should be released without taking it out of the water.
- Catch and release fishing should be shut down
- These options are pegging the commercial sector against the recreational sector
- ASMFC is not addressing real overages or real mortality (referring to individual states recreational fisheries)
- There is no socioeconomic long term gains for the commercial sector; the commercial sector never gets quota back
- Recreational anglers are supportive of the VMRC emergency rule, but are confused as to how it will play out with the ASMFC process with Addendum VI

Manteo, North Carolina
September 11, 2019
Three attendees

Meeting Staff: Max Appelman (ASMFC), Chris Batsavage (NCDMF)
Meeting Participants: See enclosed sign in sheet(s)

Overview

- Three participants attended to receive information and ask questions, but did not provide comment

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: October 1, 2019

Location: Kennebunk, Maine

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

	Name	Company/Organization	City, State
	Bob Gaulet		Biddeford ME
	DAVE RAND		KPORT
	Paul KorenKiewicz		Windham, ME
	Laurent Blanchette		WELLS, ME
	Niels Jacob		Kennebunkport ME
	Mike Lorello		South Portland Me
	Parker Gerrish		South Portland, ME
	Luis TIRADO		South Portland, ME
	Justin Cooper		Kennebunk, ME
	Bruce Hebert		Kennebunkport, ME.
✓	Kyle Schaefer	Saltwater Guide Assoc.	Kittery, ME
	Kitri Doherty		Kittery, ME
	JANNIE HOUTZ	Ø	K.PORT, ME
	BRUCE READ	Ø	Arundel ME
	PETER SPADONE	Ø	ARUNDEL, ME, 04046

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: Oct 2, 2019

Location: Yarmouth, ME

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Jason Farris	MACC/ Maine Experience Guide Service	Bath Maine
Chris Uraneck		Freeport ME
Dom Pucci	Johns Bay Bass Club	Bristol ME
✓ Larry Grimard	Rec Angler	Jefferson, Me
Barry Gibson	Charter Operator	Boothbay Hbr
Mike Falkingham	Charter Capt	South Portland ME
Toby Lacey		Saco ME
Eric Wallace	Chart Capt	Scarbrough ME
Bob Humphrey	Charter Capt	Pownal, ME
Nick Popoff	USFWS	Yarmouth, ME
Clarisse Brown	MEDMR	W Boothbay Hbr ME
Dana Eastman	Tackle Shop	Portland
Parker Gerrish	" "	South Portland
Mike Roy	Tidal Expeditions	Freeport
Robin Thayer	Province Mountain Outfitters	West Newfield, ME
Peter Mohlin	Rec Angler	Portland, ME
Zach Whitener	Anadromous Adventure Guide Se	Freeport Maine
George Norris	Tackle Shop	Falmouth, Maine
[signature]	Self	Brunswick

Comments on Striped Bass Draft Addendum VI

10/2/2019

My name is Chris Uraneck and this my own opinion on Draft Addendum VI to end overfishing of striped bass.

I do believe there is a problem with the striped bass fishery and I am glad action is being taken to address it. However, I believe a moderate approach to correcting the problem is the best approach. I have been fishing for stripers in Maine for over 20 years. This past year while I did have a few slow days fishing on most days I was able to find fish or at least some action. Also hearing reports from other fisherman I would hear of people complaining of no fish and not doing well to people catching big fish on the schools of pogies and or catches of large numbers of smaller striped bass. Overall it seemed to be hit or miss fishing this year to me.

I think it is important to note that the options and the predicted reductions in harvest and total removals in this document are for the whole coastal striped bass fishery. They do not necessarily represent how the management measures would affect fishing in Maine.

For example, let's look at sub-option 2-A1, which proposes a 1 fish bag limit with a minimum size of 35" and predicts a reduction in harvest by 43%. There is no way these numbers are correct for Maine. If the size limit was 35" in Maine I believe it would be more like a 95% reduction in harvest. I just don't think we need that drastic of a reduction at this point.

If I had to pick one of the options I think sub-option 2-A2 would be the best. This has a bag limit of one fish and a slot size limit of 28" – 35". Under this option I believe the average fisherman still has a chance of catching a keeper while it protects the bigger breeders who will hopefully be able to spawn.

If I really could get the options I wanted I would like to see the State of Maine develop its own options, which it says in this document we are allowed to do. I think just changing the size limit to 29" or 30" with a bag limit of 1 fish per day coupled with our circle hook law would achieve the desired 18% reduction in total removals here in Maine.

Thank you,

Chris Uraneck, Freeport, ME

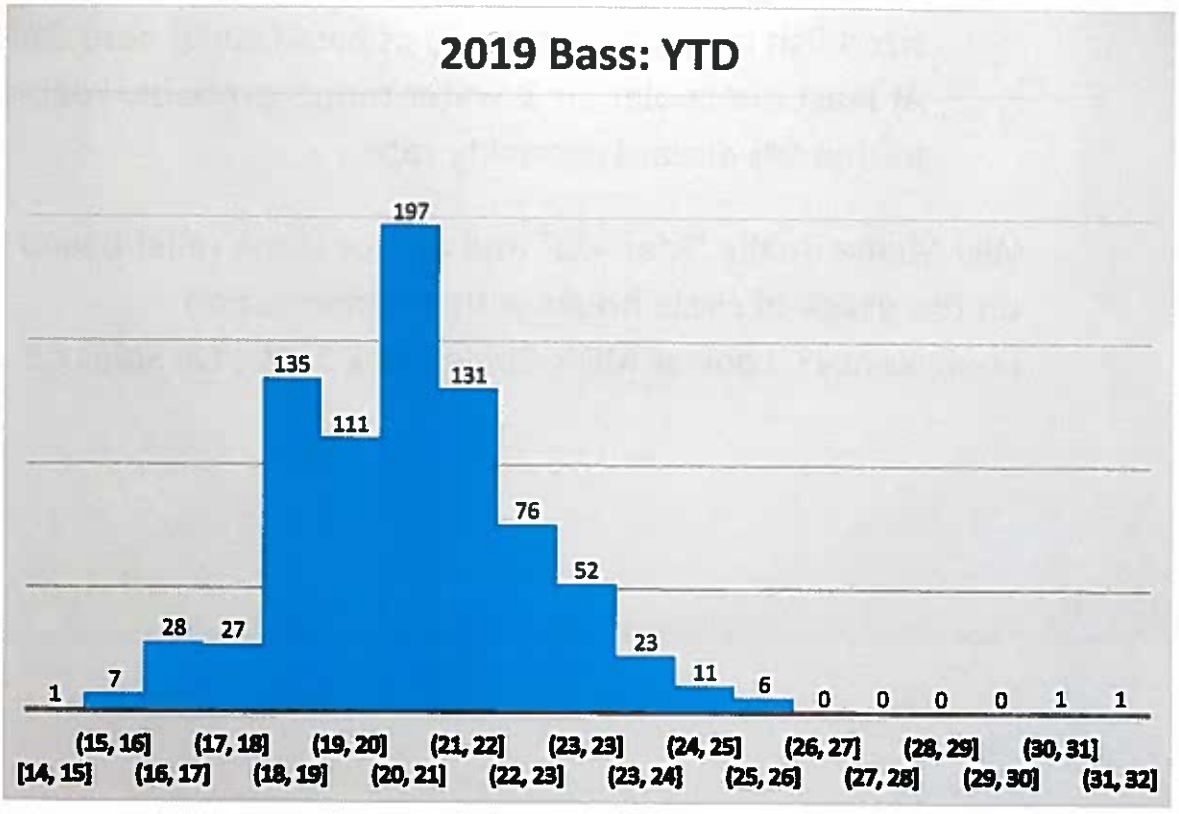
D. Pucci 2019 Striper Summary YTD

- Season Start – May 30, 2 days later than latest in prior years

- Season End – Still catching, but main body of local fish departed mid-August.

- Statistics:
  - Once fish arrived 106 Striper Trips, average 2 hrs or less
  - 787 fish caught YTD, 309 < 20", 476≥ 20", < 28", 2 ≥ 28"
    - 7.4 Bass caught per outing
    - Mean Length = 20.04"
    - Median Length = 20"
    - Previous years sub 20" fish greatly outnumbered 20+" fish

- Noteworthy items
  - 2 tagged fish caught, HRF & Berkeley Striper Club
  - 1 fish caught with mild mycobateriosis infection



- Questions for ASMFC/Maine
    - I can't more strongly recommend the 28 – 35" slot. It's time to stop harvesting the prime breeding fish, especially in light of a recent publication that showed a single 20 lb fish has more eggs than 2, 10 lb fish. That being said, I would entertain some sort of trophy tag option by state to let that person who finally caught their 50 lb fish retain it.
    - What exactly are the Maine assumptions for the MRIP data on striped bass?? How close to reality do they feel it is?
    - What suggestions do you have for "reducing fishing pressure on striped bass"?
        - It's not like there are many inshore fishing options in Maine, especially with the almost total moratorium on cod.
        - Based on the coastal dynamics of being the Northern most fringe of the coast migration, the lack of keeper-sized fish makes the majority of bass fishing here C&R. At least our cooler air & water temps probably keep us at that 9% discard mortality rate.
    - Will Maine finally "Man Up" and ask for some relief based on the usage of circle hooks with a Conservation Equivalency? Look at MD's Circle Hook Snake Oil Sales CE.

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: October 1, 2019

Location: Portsmouth, NH

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Dale Pike	CCA	Newmarket, NH
Kevin Mullavey		Rye
Bill Blackwell		Dover NH
CLIFF CHADWICK		Hampton Falls NH
✓ Marc Stettner		Portsmouth NH
Christian Stallkamp		Portsmouth NH
Peter Whelan		Portsmouth NH
Lauren Staples		Rochester, NH
EDWARD S. LOKER, DDS		DOVER, NH
Jean Amato		Portsmouth NH
Geno Marcoux	Marine Fish Com	Pdr
Chris Callahan	Marine Fisheries	Ports
Delayne Brown	NHFG Law Enforcement	Durham FG office
Zak Robinson	CCA - Rising tide Anglers	Portsmouth NH
✓ Tom Brightman	CCA-NH	Dover NH
Ellen Goethel	F/V Ellen Diane	Hampton, NH
Peter T. Tilton Jr		Hampton, NH
Eric Reed		Exeter, NH
SCOTT SYLVESTER		NEW CASTLE, NH
John McKernan	McKernan Guide	MADBURY NH
PAUL McINNIS		North Hampton NH

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
✓ Robert Stevens		Rye, NH
Ritchie White		
Dennis. Abbott		

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: Oct 2

Location: Woburn, MA

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
James Jenkes	Plum Island Surfcasters	Woburn Ma
Georgette Henrich	PI Surfcasters	Dracut, MA
Kevin Henrich	PI Surfcasters	Dracut, MA
Mark Banny	PISC	Middleton MA
✓ James Goodhart	Shadowcaster Charters	Newburyport, MA
Paul Diggins	SBCBA	Marshfield, MA
Jaron Frieden	Lucky 7 Charters	Charlestown, MA
Rob Savino	C.J. Victoria	Winthrop MA
★ MICHAEL SPINNEY	STRIPERS FOREVER	TOWNSEND MA
SEAN CONWAY	Plum Island Surfcasters	Wilmington, MA
KALIL BOGHDAN	DMF-MFAC	HAMILTON, MA
Clayton Patles	Plum Island Surfcasters	Plaistow NH
Nicole Beaudet		Winthrop, MA
Scott Babineau		Boston, MA
Charlie Babineau		Malden MA
Brett LaFosse		Nashua, NH
STEPHEN DeSISTO	Plum Island SC	WAKEFIELD MASS
John Lasofsky	PISC	Billerica, MA
Nicholas Jones		Charlestown, MA
Scott Campbell		Boston, MA
Angela Laschi	Plum Island Surfcasters	Methuen MA

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: Oct. 2

Location: Woburn, MA

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

	Name	Company/Organization	City, State
✓	Jerry Audet		Douglas, MA
	Bob LaRiche		Westfield MA
	Charlene LaRoche		Westfield MA
	Joe Cresta	Project Healing Waters	Wakefield MA
	JOE GUGLINO	COSTA SUNGLASSES	WINTHROP, MA
	Vincent Simeone	Storm Buster Charters	Billerica MA
	Brian Coombs	Get Tight Sport Fishing	Medford, MA.
	Dan Bell		Waltham, MA
✓	Ron Rivers	OTW	Stoneham MA
	Michael Sullivan		Waltham, MA
✓	Joseph J. Welch IV		Abington, MA

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 10/3/19

Location: Bourne, MA

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

	Name	Company/Organization	City, State
	Ross Kessler	MDMF	Mattapoisett, MA
	MICHAEL PAVLOV	CCF	BREWSTER, MA
	TOM SLEDZIK	CCF	HARWICH, MA
	BOB MAHONEY	CCF	YARMOUTH, MA
	Paul Caruso	—	Marstons Mills, MA
✓	Patrick Paquette	MSBA / MBBA	Hyannis MA
	WENDY PAQUETTE	MSBA / MBBA	HYANNIS, MA
	Bill Cottle	Cape Cod Salties	Bourne, MA
	DAVID DATREY	Steelwagon Dark	Marshfield
	Paul Cronin	Rec	Norwell, MA
	Chris Collins	GF Conference Fishing	Canton MA
	MARK GMYREK	—	BOURNE, MA
	KEN WHITING	CAPE COD SALTIES	HARWICH MA
	Richard Buckley		Sandwich MA
✓	BILL PRODOUZ	REC	POCASSET MA
✓	DON CIANCIOLO	C.C. CHARTER BOAT ASSOC	SANDWICH MA
	Doug Amorello	~~Capeloss Charters~~	Plymouth, MA
	BOB DYER		WHITMAN MA
	John Thibodeau	STAN Gibbs	BOURNE MA
	Rick Golden	1620 Anglers	Plymouth, MA
✓	Patrick Carridy	CapeCodOnTheFly	Harwich, MA
	BOB CHASTLE		

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 10/3/19

Location: Bourne, MA

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
DON CORDTS		Falmouth, MA
ALAN E CORDTS		Falmouth, MA
GEORGE CHRISTMAN		Falmouth, MA
~~Patrick Cassidy~~		
Tom Heath	BBAC	Wareham
Kim Heath	BBAC	Wareham
Ed Rosenbloom	Crossroads Anglers	Foxboro
Dave Peros		Bourne MA ✓
Robert Hussey	ERIN-H Charters	Wellfleet MA
David Waldrip	Stellwagen Bank CBA	Rockland, MA
Doug Fraser	Cape Cod Times	MA
Kevin Downs	Fal. Fisherman ASS	Falmouth, Ma.
Sam Mullin		Brewster, MA
Jerry Doane		Bourne
Rob Walsh		SANDWICH
Stephen Maddison		
Benj Sousa	Bubba Duck Fish Co	HARWICH
Leo Munafo	Stellwagen Bank CBA	Wrentham, MA

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Dennis Chyrale	ProJature Sportfishing	Hyannis, Mass.
Richard Cotti	comm. fisherman	Ludlow MA
Nancy Hobson	Wavelength Charters	Plymouth MA
Dave Hobson	Wavelength Charters	Plymouth MA
Louis Mackell		

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/24/19

Location: Narragansett, RI

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
David Borden	RI GA	
Jeff BARKER	West Bay Anglers	
Stephen Medeiros	RISAA	
Greg Vespe	Aquidneck Island Striper	Tiverton RI
Kurt Rivard	Aquidneck Island Striper	Team Warren, RI
Doug Anne Pearson	RISAA	Pawtucket, RI
David Pollack	RISAA	Wakefield, RI
John Lafia	RIDEM	Charlestown, RI
Tom HOUDE	AQUIDNECK ISLAND STRIPER	Team WESTERWICK, RI
RICHARD CHATOWSKY	DRIFTER CHARTERS	CHARLESTOWN RI
Rich Hittinger	RISAA	Warwick RI
Robert S. Murray	RISAA	Foster RI
JOHN MARTIN	CRRA	WAKEFIELD RI
FREDLECUIE	PURA VIDA CHARTER	NARRAGANSETT RI
THAYER TEWKSBURY	F/V NORTHEASTERN	NEWPORT, RI
Andy Dangelo	Maridee II charters	Pt Judith RI
Peter Jenkins	Saltwater Edge	Newport, RI
Todd Corrago	FISHWRDPWRITER.com	Wakefield RI
Ricardo Ferrer	AIST	Cumberland, RI
Damon Phelps	N/A	South Kingstown, RI
RICHARD FERRIS	N/A	Westerly RI

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Susan Stabrook	RISAA	Newport RI
Mel Blake	RISAA	Narragansett
Paul Jutras	RISAA	Jamestown
Dave Michael	RI SAA	Jamestown
Chris Parkis	RI DEM	Jamestown
Glenn Monin	RI SAA	S. Kingstown RI
DANIEL RUBINO	RI DEM	WAKEFIELD RI
Dave Monti	RISAA/ASGA/RIYCBT	Coventry, RI
RICH HEFFERNAN	RISAA & NARR. SURFCASTERS	WAKEFIELD, RI
PHIL SHEFFIELD	SELF	MYSTIC, CT.
Mark Phillips	SELF	Burlington, CT
Mike Laptew	Laptew Productions	N. Kingstown RI

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/23/2019

Location: Old Lyme, CT

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Ernest Kulso	Self	No Haven Ct.
Kevin Wagner	SELF	Norwich CT
T.J. Karbowski	Rock & Roll Charters	Clinton
Mike Kraemer		N. BFD.
Chris Parisi	Black Hall Outfitters	Old Lyme / Westbrook
Tom Fucini	Tsunami Tackle / Folsom	Middletown CT
Phil Sheffield		Mystic, CT.
✓ Edward D'Agostino	Self	Chester, CT
Greg Dubrule	Blackhawk	Niantic CT
George Bethem	CT Surfcasters Association Surf School	Northford, CT
Charles Garland	CT Surfcasters Assn	Guilford, CT
Thom Sandhaus	Self	Ledyard, CT
Mark Philippe	Self	Burlington, CT
Diane Philippe	—	Burlington, CT
Myron Schulman	self	W. Hartford, CT
Joe Diorio	Joe Diorio Guide Service	New Britain, CT
Sam Johnson	self	East Haddam, CT
Liam Rosati	Angler Adventures	Old Lyme CT
[illegible]	Angler	[illegible] CT.
Sara Chairmont	Self	Mansfield, CT
Michael Richardson	Harborman	Norwich CT.

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Steve Garling		Ashford Ct.
Charles Wilson		Wellington Ct
Patrick Abate		Madison CT
Dan VanVaughn		Waterford Ct.
✓ Steve Culton	The Fisherman LLC	Middletown, CT
Dale Nicholson	The Fisherman Magazine	
John Walker	CFFA	Griswold, CT
Carey Pelletier		
Andrew Bade	CT DEEP	Tolland, CT
Jonathan Weeks	Cobra Bait	Haddam, CT
Steve Hasselbacher	Me	Norwich CT
Mike Kelley		Portland, CT
Karsten Lucks		Glastonbury, CT
Patrick Perfetto		Burlington, CT
Bob Hammel		Plainville Ct
Daniel T. Buck		Bolton Ct
John Potter	CT/RI ASGA	Groton Ct.
Steve Curreter	CT/RI	Old Lyme
Bill Goeben		Bfd CT
Debbie Goeben		Branford CT
Capt Jay Salvatore	FV Osprey	East Lyme CT
Tony Notaro	Lucky Hook Charter	Clinton CT
Jason Keenan		New Haven CT.
George Stowe	RISA	S. Windsor CT
Fred Mueller		Canton
Bud Russell	CFFA	Rocky Hill CT
Mike Kyte	[illegible]	Middletown
Mike Stepski	Tartan II	Niantic CT
Chris Anderson	Lucky Hook Charters	Clinton, CT

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Rob Gillis	Lucky Hook Charters	Clinton, CT
Bob Burger	—	Guilford CT
MATT LEJEUNE	—	PORTLAND, CT
Richard Seifert	~~Fish~~	East Hampton, CT
Bob Romeo	Firstlight Charters	Norwalk, CT
Jed Apuzzo	N/A	Durham CT
Jesse Roche	—	Old Lyme CT,

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/25/19

Location: Bridgeport

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Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Scott Conn	STFD Dept	STFD CT
Bob Pluda	Post 5	Bpt CT
Jack Cunningham	Milford Striped Bass	Stfd CT
Tony URBAN	Post 5	MILFORD CT.
Lindsay Urban		Milford, CT
Tommy St Cyr	Tica Pro Staff	Bpt
Mike Grasiski		BPT CT
Robert Cohn	CT Surfcasters	Orange CT
Tom Enda		Shelton CT
Taylor Lupcham	ASGA/Affiliated	Norwalk, CT
Peter Brand		Milford, CT
Greg McNamara	CT Surfcasters	Clinton CT
Michael Majewski	Fishermans Paradise	Milford CT
William Bullard		FAIRFIELD CT
ROGER GENDRON	CT ISLAND OUTFITTERS	WESTPORT, CT
Ian Devlin	Devlin Fishing	Norwalk, CT.
Aram Berberian	CT surfcaster	New Haven CT
Theresa Razmatchnia	CT Surfcasters	New Haven CT
Matt DiScala	CT surfcaster	Norwalk, CT
SAM LIBERTINO	CT surfcaster	Norwalk, CT
GIANFRANCO ZAFFINA	CT WESTPORT STRIPED BASS CLUB	WESTPORT, CT

Put a check mark ✓ next to your name if you'd like to provide comment

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Ben Burdine		Fairfield, CT
Rich Rosen	Trout Unlimited	Trumbull, CT
Kierran Broatch		Milford, CT
Jason Samaha		Milford CT
Scott Bennett	Compleat Angler	Darien CT
John Kollar	—	Fairfield, CT

SPEAKING

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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SPEAKING

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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Chris Spies	—

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SEPTEMBER 4, 2019

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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SEPTEMBER 4, 2019
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SEPTEMBER 4, 2019

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Russell Mascioli	
Brendan Losing	
Thomas P Bell	
John Durante	
Ed Rapp	

Speaking →

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SEPTEMBER 4, 2019
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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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SEPTEMBER 4, 2019
BETHPAGE STATE PARK

Speaking →

	NAME	EMAIL
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1075 Tooker Avenue
West Babylon, NY 11704
September 4, 2019

Max Appelman, Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200A-N
Arlington, VA 22201

RE: Striped Bass Draft Addendum VI

Dear Mr. Appelman:

I am taking this opportunity to provide comments on the *Draft Addendum VI to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass* (the "Draft Addendum").

I have been an active and regular participant in the recreational striped bass fishery since the mid-1960s, fishing primarily in Long Island Sound off western Connecticut and in the Atlantic Ocean off the central south shore of Long Island, New York, although I have also fished for striped bass in other areas ranging from Cape Cod, Massachusetts to both the Maryland and Virginia sections of Chesapeake Bay.

The experience gained over that time, and at the various places where I've fished, lead me to ask that the Atlantic States Marine Fisheries Commission's Atlantic Striped Bass Management Board (the "Management Board") take the following actions with respect to the Draft Addendum.

I

WITH RESPECT TO SECTION 3.1, PROPOSED MANAGEMENT SCENARIOS, THE MANAGEMENT BOARD SHOULD ADOPT OPTION 2, EQUAL PERCENT REDUCTIONS, SUB-OPTION 2-A1, A 35-INCH MINIMUM SIZE IN THE COASTAL FISHERY, AND SUB-OPTION 2-B1, A ONE-FISH BAG AND 18-INCH MINIMUM SIZE IN THE CHESAPEAKE BAY

A

Option 2, equal percent reductions, will equitably distribute the burdens and benefits of ending overfishing

The most recent benchmark assessment of the Atlantic striped bass stock (the "2018 Assessment") found that recreational fishermen were responsible for about 90 percent of striped bass fishing mortality in 2017, the terminal year of the assessment, while commercial fishermen were responsible for the other 10 percent.[1] Assuming that such percentages remain constant, anglers will reap about 90 percent of the benefits gleaned from a recovered stock, while commercials will glean the other 10 percent.

[1] Northeast Fisheries Science Center, 2019, 66th Northeast Regional Stock Assessment Workshop (66th SAW) Assessment Report, US Dep Commer, Northeast Fish Sci Cent Ref Doc 19-08; 1170 p. Available from http://nefsc.noaa.gov/publications/ p. 510.

1

By reducing the fishing mortality attributable to both sectors by the same 18%, anglers will also shoulder 90 percent of the conservation burden, while commercial fishermen will only be responsible for 10 percent of the reductions. That is a fair and equitable approach to ending overfishing.

On the other hand, the Option 3 approach, which would see anglers shouldering 99 percent of the conservation burden while being responsible for only 90 percent of the fishing mortality, is neither equitable nor appropriate. If commercial fishermen will receive 10 percent of the benefits of conservation measures, they should be responsible for 10 percent of the costs of achieving such benefits.

B

Sub-option 2-A1, a 35-inch minimum size, is the preferable way to achieve an 18 percent reduction in the coastal recreational fishery.

Although, on paper, sub-option 2-A1 only achieves the minimum 18 percent reduction, less than two of the slot limit options,[2] such 35-inch minimum size probably brings the most certainty to the management process.

As noted in the Draft Addendum, the benefits of slot limits in the striped bass fishery are not easily quantified, as there is a distinct possibility that, by focusing harvest on the occasional strong year classes as they pass through the slot, slot limits may have the effect of reducing the number of fish that ultimately survive to escape the slot, and so reduce the number of older, larger females in the spawning stock in the long term.[3]

Another issue, not directly addressed in the Draft Addendum, is whether slot limits would result in increased release mortality, due to the fact that older, larger striped bass tend to fight harder and longer than smaller fish, are more stressed when brought to the boat or shore, and thus are less likely to survive release unless the angler takes time to properly revive his or her catch before allowing it to swim away. Add the likelihood that such larger fish are more likely to be caught on bait than are smaller fish, and the likelihood that an angler catching a larger fish will keep it out of the water for an extended period in order to take photographs prior to release, and the probable increase in release mortality attributable to a slot limit becomes apparent.

On the other hand, a management strategy built around a 35-inch minimum size is somewhat similar to, although less restrictive than, the strategy that led to the striped bass recovery of 1995,[4] and thus can be viewed as a tested and successful approach to reducing fishing mortality.

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[2] Atlantic States Marine Fisheries Commission, *Draft Addendum VI to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass*, August 2019, p. 11

[3] *Ibid.*, p. 9

[4] Atlantic States Marine Fisheries Commission, *Amendment 3 to the Interstate Fishery Management Plan for Atlantic Striped Bass*, October 1985

C

Sub-option 2-B1, an 18-inch minimum size and one-fish bag limit, is the preferable way to achieve the needed reduction in the Chesapeake Bay recreational fishery.

Fishing mortality in the Chesapeake Bay recreational fishery was not sufficiently constrained when the Management Board adopted *Addendum IV to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass* (Addendum IV). While Addendum IV called for a 20.5 percent reduction in fishing mortality attributable to Chesapeake Bay anglers, compared to a 2012 base year,[5] such reduction was never achieved. Instead, recreational fishermen in the Chesapeake Bay actually *increased* their fishing mortality by more than 50% in 2015,[6] the first year that regulations adopted pursuant to Addendum IV were in effect, and maintained such excessive harvest levels through 2018.[7]

Much of that fishing mortality was due to release mortality attributable to undersized fish. At the Management Board's October 2016 meeting, a Mr. Phil Langley, president of the Maryland Charterboat Association, objected to the 20-inch minimum size adopted by Maryland, saying that "we saw an abundance of fish. However, most were 16 to 19.75 inches, below the legal harvest size. Most captains I've spoken to were experiencing a 20 to 1 ratio of undersized fish versus kept fish. With an assumed 9 percent mortality, this is 1.8 fish lost for each legal fish harvested."[8]

It is a valid point. When the Management Board was discussing the Draft Addendum at its April 30, 2019 meeting, Michael Luisi, a fisheries manager for the State of Maryland, argued that "I'm a little disappointed and slightly discouraged that we're sitting here talking about options to increase minimum size limits across the board; only knowing that it's going to exacerbate the situation that we are currently in with dead discards being as high as they are."[9]

Sub-option 2-B1, which would reduce the minimum recreational size limit to 18 inches while also reducing the bag limit to a single fish, would appear to be a perfect way to address both Mr. Langley's and Mr. Luisi's concerns. By dropping the size limit to 18 inches, the number of undersized fish being released, and thus the overall release mortality, would be reduced; by reducing the bag limit to a single fish, anglers would fill their bag limit more easily, and would not be forced to catch and release additional striped bass, and so add to the losses from release mortality, while attempting to catch a second legal striped bass.

Thus, sub-option 2-B1 seems to be the most effective way to manage anglers in the Chesapeake Bay.

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[55] Atlantic States Marine Fisheries Commission, *Addendum IV to Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass*, October 2014, p. 8

[6] Atlantic States Marine Fisheries Commission, Atlantic Striped Bass Technical Committee, Memorandum RE: 2016 Atlantic Striped Bass Stock Assessment Update, October 5, 2016, p. 5

[7] Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, September 3, 2019

[8] Atlantic States Marine Fisheries Commission, *Proceedings of the Atlantic States Marine Fisheries Commission Atlantic Striped Bass Management [Board]*, October 24, 2916, p. 1

[9] Atlantic States Marine Fisheries Commission, *Proceedings of the Atlantic States Marine Fisheries Commission Atlantic Striped Bass Management Board*, April 30, 2019, p. 26

II

WITH RESPECT TO SECTION 3.2, CIRCLE HOOK PROVISION, OPTION B, WHICH REQUIRES STATES TO IMPLEMENT REGULATIONS REQUIRING THE USE OF CIRCLE HOOKS IN BAIT FISHERIES, IS THE MOST APPROPRIATE OPTION

As noted in the Draft Addendum, the use of circle hooks in striped bass bait fisheries substantially reduces release mortality, compared to the use of traditional J-hooks.[10] That is a particularly important consideration in the striped bass fishery, where many of the larger fish are caught on baits such as live eels and menhaden ("bunker").

While some anglers are already voluntarily using circle hooks when fishing with bait, many still employ traditional J-hooks. Here in New York, there is also a substantial contingent of anglers who eschew even those, and instead prefer to use treble hooks when livelining baits such as menhaden. While such treble hooks do provide a higher percentage of hook-ups compared to J-hooks, they also can do far more damage to fish hooked in the gills or gut. The mandatory use of circle hooks would end such abuses in the recreational striped bass fishery.

III

SUMMARY

The striped bass stock is overfished and experiencing overfishing. While the Draft Addendum does not, unfortunately, contain any provisions intended to rebuild the stock, it will hopefully end overfishing and so halt the stock's decline. That being the case, I ask that the Management Board take the following actions:

In Section 3.1

- Adopt **Option 2**
- Adopt **Suboption 2-A1**
- Adopt **Suboption 2-B1**

In Section 3.2

- Adopt **Option B**

Thank you for considering my views on this matter.

Sincerely,

Charles A. Witek, III

[10] ASMFC, Draft Addendum VI, p. 16

Good evening my name is Craig Cantelmo and I represent Van Staal fishing products a manufacturer of fish reels and accessories. I'm also a light tackle guide and father of two boys that are avid fisherman.

The striped bass is worth 8 billion dollars to local communities from North Carolina to Maine and is one of the most important gamefish to recreational anglers that support the tackle industry. Abundance is critical for an angler to have a reasonable expectation of catching a fish and for them to spend money on fishing tackle. We're now seeing the effects of a declining Spawning Stock Biomass and a drop in abundance effecting the number of people actively fishing for striped bass.

As we all came together in 2014 to demand stricter regulations to help protect the striped bass and what many anglers believed was an overfished fishery we hoped that the 25% reduction that only had a 50% chance of succeeding would help. As we've learned the fishery was in a far worse position then ASMFC data represented and today we're here to say we need to ACT and reduce mortality and increase SSB before we're here 5 years from now trying to avoid an even more dire situation.

I believe the following options are required:

Option 2: An 18% reduction applied equally between both the recreation and commercial sectors

Option 2-A1: 1 Fish @35"

This was a very tough choice as many of the slot limits looked appealing to help protect the largest breeding fish in the stock. However, there is no precedence for slot limits in this fishery and we have evidence that 1@36" worked previously to help protect the smallest fish and allow them to reach sexual maturity.

Chesapeake Bay, Option 2-B1: 1 @18"

Option 3.2.B: Mandatory Use of circle hooks

This option is extremely important and should be required when using chunks and live bait to reduce fishing mortality.

If and when conservation equivalency is used measures must be put in place to manage the harvest and we MUST be able to act to make changes to insure that excesses like those that occurred in Maryland with the 2011 year class do not happen again....and if they do they get penalized the following year.

Thank You for your time.

Joe Tangel

New York Recreational & For Hire Fishing Alliance

King Cod...Center Moriches

The NY RFHFA has had a poll posted on our Facebook page for the last 4 days.

We currently have around 1400 members including approximately 100 for hire vessels from New York City to the east end of Long Island, Marinas, Tackle Shops, private boat fishermen, shore bound anglers, and other large organizations such as the Huntington Anglers Club, and the Montauk Boatmen's and Captains Association make up the membership of our organization. So we are a very diverse group.

The options in poll where as follows:

1. A Slot Limit of 1 fish @ 28-35"
   No change to season.

2. A Slot Limit of 1 fish @ 30-38"
   No change to season.

3. A Slot Limit of 1 fish @ 32-40"
   No change to season.

4. 1 fish with a 35" minimum size.
   No change to season.

The final option would be a proposed Conservation Equivalency option:

5. 1 fish with a 30" minimum size.
   With a season of May 1st. to November 30th.
   We also added no retention of Bass for Capt. & Crew to this option if it was needed to meet the required reduction.

The Results:

In 4 days, 169 votes were cast.

The slot limit of one 32-40" fish, received ZERO votes.

The slot limit of one 30-38" fish, received ZERO votes.

1 fish @ 35", no change to season received 3% of the votes, with 5.

The slot limit of one 28-35" fish, no change to season, received 31% of the votes with 53.

The proposed conservation equivalency option of a 30" minimum, with a May 1st – November 30th season received 66% of the votes with 111.

Many of the comments attached to the poll expressed that a 35" minimum size would be devastating to the for hire industry.

Many in the industry have also expressed the desire to bring back the Party/Charter Boat Striped Bass permit, in order to separate from private boat and shore bound modes. This would effectively bring about differential regulations for the industry that harvests a very small number of Striped Bass compared to the rest of the recreational modes.

We hope you will consider this poll and the attached comments when moving forward with the required reduction.

Thank you...

Bay Shore Fishing Corp.

90 Cedar Point Drive
West Islip, NY 11795
(631) 661-1867
www.captree.com

LAURA LEE
CAPT. NEIL DELANOY

September 4, 2019

To: ASMFC

Re: Striper bass addendum comment:

My name is Neil Delanoy. I am commenting for the Captree Boatmen's Association. We take over 300,000 anglers fishing each year. Many of our trips target striped bass.

All the proposed options create a great and unnecessary burden to our operators and patrons.

I would like to suggest Conservation Equivalency as a better way to accomplish the required reduction in mortality. The following tools could be used to get to an 18% reduction:

1) Reduce season to May 1 through November 30.
2) No retention for the crew of for hire vessels.
3) Adopt the state of Maine's circle hook regulations and ban gaffing.
4) Eliminate out of season directed catch and release.

I would also note that all the recent and proposed sacrifice has been by the Party and charter boats. Our neighboring states give their commercial allocation to the recreational and for hire side.

We need some relief. There is a win, win option. Make commercial tags transferable to charter and party boats on a totally voluntary basis.

(1)

Respectfully Submitted,

Neil Delanoy

Executive Director

Captree Boatmen's Association

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SIGN-IN SHEET

SEPTEMBER 12, 2019, 6:00PM
NYSDEC Region 3
New Paltz, New York

NAME	EMAIL	Would you like to make a public comment?
Richard Booth	reelhapyl@gmail.com	☐
JOE WALLNER	JWconstruction@frontiernet.net	☐
BOB TRENZ	OFFTHECHARTERS@VERIZON.NET	☐
Michael Betts	M.c 5022@AOL.COM	☐
Adam Haines	hainesam01@mail.buffalostate.edu	☐
Jay Martin	CAPTAINJAYMARTIN@YAHOO.	☑
Scott Fairchild	FairchildScott1@Gmail.com	☑
JEFF HELMUTH	jhelmuth@dep.nyc.gov	☑
Ralph J. Albino	gw1326@yahoo.com	☐
Audrey Van Genechten	audrey.vangenechten@health.ny.gov	☐
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Kenneth Luis	Kluis1337@GMAIL.Com	☐
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Ethen VanSlyke	ethenvanslyke@gmail.com	☐ ✓
GARY SOTTOSANTI	GASOT1951@yahoo.com	☑
Butch Klinck		☐
WIC Conners		☐

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SIGN-IN SHEET

SEPTEMBER 12, 2019, 6:00PM
NYSDEC Region 3
New Paltz, New York

NAME	EMAIL	Would you like to make a public comment?
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Thomas V. Forstner	tvforstner@hvc.rr.com	☐
AJ WERKEMA	SAEKAZIR@YAHOO.COM	☐
Dan White	CloudnineCharters@yahoo.com	☐
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OWEN J. SULLIVAN	SULLIVAN@HIGHLANDS.COM	☐
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GEORGE JACKMAN	GJACKMAN@RIVERKEEPER.ORG	☒
Larry D. Dong	landrd76@gmail.com	☑
Anthony Pucci	apucci@commodaseca.com	☑
Roger Cornell	2RCORNELL@gmail.com	☐
ED SKORUPKA	ESKORUP@NYCAP.RR.COM	☐
		☐

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SIGN-IN SHEET

SEPTEMBER 12, 2019, 6:00PM
NYSDEC Region 3
New Paltz, New York

NAME	EMAIL	Would you like to make a public comment?
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Paul Wipf	paulwipf@ccimail.com	☐
[illegible]	LecJR85@Ymail.com	☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
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		☐
		☐

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/3/2019

Location: Roselle Park, NJ

-- PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
STEPHEN MACHALABA	HI-MAR STRIPER CLUB	MIDDLETOWN NJ
Chuck Many		Annandale, NJ
John VEKEL		Iselin NJ
Bernie Kosinski		Middletown NJ
Tom Kosinski		Red Bank NJ
Anthony Sean		Hamilton Square NJ. 08690
FRANK / BEATO		RAHWAY NJ 07065

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/4/2019

Location: Ocean City, NJ

--PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
Joe Gerace	South Jersey Coastal Fly Anglers	Ocean City, NJ
Bob Yeager	Somerset Cove Marina	Egg Harbor Twp. NJ
Mark Christiansen		Ocean City NJ
Norm Hafsrud		
Craig Peters	Fish Tale Charters	Marmora NJ
Brian Williams	Bad Fish Charters	Scullville, NJ
Dean Dennehower		Williamstown, NJ
John Ryan		Mays Landing NJ
Bob Bolger	Cape May Co. Party + Charter Boat Assoc.	Newtown, PA
Ray Poruteki	Rec. Fisherman	ATCO, N.J.
Kathy Poruteki	" "	ATCO N.J.
George Bucci	Cape Atlantic Striper club	Northfield, N.J.
Howard Ware	SSCFA	EHT N.J.
Eleanor Buchanan	Rutgers U.	Cape May, NJ
Jim Hutchinson	The Fisherman	Brick, NJ
John DeBona	The Fisherman	Brick, NJ
Mike Shepherd	Sitcup-on Fishing	Linwood, NJ
James Lutz	New-R-Enuf Sportfishing	Avalon, NJ
Jim Becotte		
Chip Schemmer	Super "S" Charters	Ocean City NJ.
Duane Eggie		Seaville, NJ
Greg O'Connell		Mays Landing, NJ
Irby Eggie		Seaville, NJ.
Tim Kubiel		Egg Harbor Twp, NJ.

Name	Company/Organization	City, State
GENE DOEBLEY		SOMERS PT NJ
FRANK CIPRIANO		OCEAN CITY NJ
Mark Barsum		"
KIETH VAN LAARHOVEN		BROWNS MILLS, NJ
Michael Morgan		Blackwood, NJ
Tony Deacon		Somers Point N.J.
MICHAEL DECKARD		OCEAN CITY, NJ
B.B RUSH	STRIZFISHBOATS.com	SEA ISLE CITY NJ
Christopher Winkel	Cape May Striper Club	Atlantic County

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 12 Sept. 2019

Location: Hatfield Twp Community Center, Manahawkin

--PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
Gary Bretmann		Barnegat NJ
Dustin Strehl	Sea Beast Charters	Leonardo NJ
Ed STUDLEY	—	Tom River NJ
GENE GELD		BARNEGAT LIGHT NJ
Jeremy Johnson		little egg harbor NJ
Paul Haertel		Clifton, NJ.
ROB WINCOC	NJSFSC	SOUDERTON, NJ
FRANK BELGIOVANE		Toms River, NJ
Bob Misak	The Fisherman	
Susan Foti		
Jay Andrews		Brick, NJ.
Richard Evan		Brick, N.J.
BOB HAINES		SOUTHAMPTON N.J
Carl Sheppard	Star Fish	Beach Haven, N.J
RON TENSEN		ATCO, N.J
JOE RIZZO	NJMFC	MAYETTA NJ
John DeBow	The Fisherman	BRICK, NJ 08723
John Isdenouye	Coastal Angler Fly Fishing	Beachwood NJ 08722
CARLTON LEE		BAYVILLE NJ 08721
Jim Hutchinson	The Fisherman	BRICK NJ
Helen M Leslie		Stiff Bottom NJ Berlick
Greg O'Connell	AJAC	lefty oconnell@yahoo.com
Joanne Pellegrino	NOAA	joanne.pellegrino@noaa.gov
STAFF ORSOB		TABERNACLE, N.J

Name	Company/Organization	City, State
William A. Justad	A.S.W.F	Brick, N.J.
Loren Adrian		Ocean Gate NJ
Kevin Adrian		Manahawkin NJ
Ian Fauthy		Medford NJ
Dante Simeate	Magic Tail Bucktails	Little Egg Harbor NJ
Chris O'Brien	Magictail Bucktails	Blackwood NJ
Matteo Delmonico	Magictail Bucktails	Ewing NJ
Wendy Essinger		Manahawkin, NJ
Jason Dapore	Guides Assoc.	Lincroft NJ
Eddie Yates	Susan Hudson's LLC.	Barnegat Light
Steven N. Chiolan		Willias Boro & Manahawkin NJ
Bruce C. Leiggi	Angaler	Hamilton, NJ.
Thomas J Bisk		Barnegat, NJ
[illegible]	Angler	Egg Harbor City
Jimmy Elmore	Angler	Egg Harbor City
Darlene Elmore	Angler	Egg Harbor City
Ron Nachmann	South Jersey Anglers	Manahawkin NJ
John Krauchek	Berkeley Striper Club	Seaside Park. N.J
Bob Bogan	United Boatmen	Point Pleasant
Conrad Reinner		Beach Haven, NJ
Ralph Leyrer	Fishing Charter Boat	Neptune N.J.
Ed Zakrzewski	Surf Angler	Cream Ridge NJ
Erik Zakrzewski	E ZAK	Manahawkin
Dennis Huber	Angler	Brigantine NJ.
Steven Perna	BSC / OTW	Point Pleasant Bch, NJ
Wayne Kuborn		Bristol PA

Name	Company/Organization	City, State
DAVE SPENDIFF	VILLAGE HARBOUR F/C	MANAHAWKIN, NJ
John Kravchak	Berkeley Striper Club	Seaside Park NJ
David Rabach	Queen Mary Fishing	Pt. Pleasant Beach, NJ
RON SANTAK	FISHERMAN	ATL. HIGHLANDS
ROB SEMKOWSKI	SEA HUNTER	ATL. HLNDS
John Budisin	Midway Lures	Brick, NJ
JOE GALLINOTO		BARNEGAT, NJ
PAUL EIDMAN	Reel Therapy Charters	Tinton Falls NJ
VINCE DIPALMA	CONCERNED CITIZEN	RUMSON, NJ
CHRIS HUETH	BIG MOHAWK	BELMAR NJ
Greg Hueth	SHARK RIVER SURF Anglers	Sea Girt NJ
STEVE GEORGE	Berkeley Striper CLUB	BARNEGAT NJ
MICKEY SHERRY	FISH HAWKS	BARNEGAT NJ

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 8/28/2019

Location: Bristol, PA

-- PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
RICK MAWSON	DRFA	PHILA, PA.
JB Newton	DRFA	NJ.
JOHN PEDRICK	DRFA	BENSALEM PA
Michael Blair	PFBC	Bucks PA
David Zimmerman	ED's Bait & Tackle	Bucks PA
MANNY BUTERA	MYSELF	YARDLEY PA
MIKE NUCERO	DRFA	NEWTOWN. PA
PETE MARCOLINA	"	
Bob JACK	DRFA	NEW JERSEY
FRANK BECK	DRFA	South PHILA
Stan Pinkus		
Ken Lewis		
Mike Hatfield		
Rich GASPER	DRFA	
RON SOTO	DRFA	LEVITTOWN PA
LYNNETTE GOODNOW	DRFA	MORRISVILLE PA
Brian Milkiewicz	DRFA	Titusville, NJ
PETE ANTONELLI	DRFA	LAWRENCEVILLE NJ
MICHAEL ECKSTEIN	DRFA	PHILA PA
Ken Reitz	DRFA	Phila Pa.
Bob Estock	DRFA	LEVITTOWN PA
Greg Shriver	DRFA	
HARRY WIREBACH	DRFA	
CHICK		LUTZ
Phil KAMIENIECKI		NJ

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 8/29/2019

Location: Dover, DE

-- PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
DAVID DEASON	CITIZEN	Harrington DE
Ken Logan	Commercial	Lewes De
ROY MiLLER	ASMFC APPT	LEWES, DE
ERIC BURNley	Cape Gazette	Lewes De
Ron M. Smith	CITIZEN	LEWES DE
Robert Virasco...	Commercial fisherman	Dover De
Larry Mid	Commercial Fisherman	Milford, DE
Tyler O'Neill	American Saltwater Guides Ass	Hollissm, DE
Steven R. Smith Sr	Smith's Bait SHop	Dover, DE
MIKE GUMROT	CITIZEN	HARRINGTON DE
LEONARD VOS	WATERMAN	SMYRNA DE
Amy Roe		Newark DE
Joseph Smith	Finfish Council	Townsend DE
Brian Hoffecker	Finfish Council	Smyrna DE
Anthony Gundry	commercial	Seaford DE
Craig Pugh	Town of Leipsic	
Greg Jackson		Dover DE

Dear Commissioners

The American Saltwater Guides Association appreciates the opportunity to comment on Addendum VI to Amendment 6 to the Interstate Fisheries Management Plan for Striped Bass. Rebuilding the striped bass population is critical for future viability of our businesses. Our lives are intrinsically linked to health of our shared marine resources.

Striped bass are overfished and overfishing is occurring. We have overfished the stock for 11 of the last thirteen years. It is time for all stakeholders to give back to the resource.

We spend our lives on the water and have known there was a problem for almost a decade. We have voiced our concerns. We patiently waited for the stock assessment to be completed. Now, the science paints a picture that is far more daunting than most would have imagined.

As we have mentioned in the past, the flexibility that is permitted at the commission has allowed striped bass populations to plummet to levels not seen since the early nineties. This flexibility is not allowed at the councils. We can be almost certain that striped bass would be in far better shape if managed under a Magnuson Stevens framework. Under the best circumstances, this amendment won't rebuild the stock until 2033. All the while, The Striped Bass Management and Conservation Act mandates rebuilding within a ten-year time frame. This is a glaring example of the lack of accountability with ASMFC.

While we believe more decisive action is required, we also understand the parameters of the comments for this addendum. We are committed to working within the system.

The American Saltwater Guides Association strongly urges the Commission to adopt the following options to end overfishing and rebuild the stock.

Option 2:

Equal Percent Reductions

We are all stakeholders in this fishery. We all benefit from an abundant population of striped bass and we should all shoulder the burden of rebuilding the stock equally.

Sub-Option 2A-1

1 fish @35" for the Coast Ocean Recreational Fishery

We rebuilt the stock with a similar size and creel limit before. We know that this approach has a history of success.

Furthermore, conservation equivalency severely limits the potential effectiveness of a slot limit. If all states are not *REQUIRED* to adhere to a maximum size, how can a slot limit possibly work?

Sub-Option 2B-1

1 Fish @ 18" for the Chesapeake Bay

As you are well aware, the recreational sector in Maryland was allowed to grossly overfish because their conservation equivalency proposal was not properly vetted by the Technical Committee. This resulted over a million extra striped bass harvested by Maryland recreational anglers in the last few years. Sub-option 2B-1 is the most restrictive and quantifiable option for harvest reductions in the Chesapeake Bay. One fish would also address many of the concerns regarding catch and release mortality.

Circle Hook Provision

Option B

If we are truly concerned about catch and release mortality and it is not a "red herring" to take the focus away from overharvest, then we must adopt mandatory circle hook regulations. Peer reviewed science show us that circle hooks greatly improve catch and release mortality numbers. We urge the commission to adopt this measure.

Thank you again for the opportunity to comment

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/25/19

Location: Annapolis, MD

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
John G. Neely	MD SFAC	Annapolis, MD
George O'Donnell	DNR	" "
Rick morlock	waterman	Rock Hall
Ken Jeffries	MCBA	Severna Park, Md
Brian Hardiman	UBCCA	Kent Island Md
Fred Menage	PSG	Edgewater MD
Tony Vacca	PSG	Pasadena
Don Heinbuch	Pasadena Sport Fishing	Sydney Beach
Mark Eustis	Self	Davidsonville, MD
Frank Abner	MCBA	Owings MD
Bob Munro	MCBA	Ches. Beach, MD
Genevieve Croker	Delmarva Fisheries Assoc.	Chestertown, MD
Beth Versak	MD DNR	Annapolis
Lynn Fegley	" "	Annapolis
Angela Giuliano	MD DNR	Annapolis, MD
Erin Nossf	MD DNR	Annapolis MD
John Nevens		Kent Island
Rudy Lukacovic	self	Kent Island
Tom Taneyhill	Annapolis Anglers Club	Annapolis MD
Eric Packard		Solomons, MD
Victoria Brown	MWA	Colton Pt, MD

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
ROBERT CHRISTY	PSG	PASADENA MD
TED PEAPOS	PSG	PASADENA MD
Paul Kuludes	CBF	Annapolis, MD
Frank Bonanno	CCA	Baltimore, MD
Billy Gee	MCBA	Dale MD
✓ Robert T. Brown	MWA	Annapolis Md
✓ CRAIG MASK	MWA / MASK CHARTERS	PORT REPUBLIC, MD
✓ Dawn Penney	Waterman	Westminster, MD
Ed Lichtenberg	CCA	QUEENSTOWN MD
Ray Julie	CCA	QUEENSTOWN, MD
Bill Barker	—	Annapolis, MD
John Rodenhauser	—	Arnold, MD
Mike Smolek	MCBA	Edgewater, MD
Mark Gregory	CCA	Edgewater, MD
✓ Kevin McMenamin	Annapolis Anglers Club	Annapolis
Danny Petkett	MCBA	Solomons
TIM CAMPBELL	CCA	PHOENIX, MD
DAVID ZAJANO	CCA	PHOENIX, MD
DAVID SIKORSKI ✓	CCA	BALTIMORE, MD
Allison Colden	CBF	Annapolis, MD
Keith Graffius	Andy Harris	Taylors Island, MD
Mike Sadler	MCBA	Stevensville MD.
Lenny Rudow	Fishtalk.org	Edgewater, MD
Brian Councell	Councell Charters	Rockhall MD
Larry Jennings	CCA/MD	Annapolis, MD

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Ed Kuchnuski	Essex Middle River FC	Essex Md
Bobby Rhodes	Bonnie Sue Charters	Deale, Md
Rich Kuhlman	Self / CCA	Annapolis, MD
Fred Berry	Self	Crofton, MD
Tawn Tipsword	Lucky Strike Charters	Deale, MD
Marty Simonet	Ches Bay Charter Boat Assoc	Chese Beach
Steve Goins	Storm Petrel Charters	Deale MD
✓ Rachel Dean	Pax River Seafood	Solomons MD
✓ Simon Dean	"	"
Greg Shute	ifishMD / Judge Yachts	Annapolis MD
✓ Kim Hastings	Marin Springs Cons.	Mechanicsville, MD
Harry T Hornick	MD DNR	Annapolis MD
Gerry Hagerty	Reel Charters	Crofton MD
Bill Walling	AAC	Annap. MD

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: October 3, 2019

Location: Cambridge, MD

-- PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
Robert M. Shenton	Mid Shore Fishing Club	Cam. Md.
Bob Whaples	Dorchester Seafood Heritage	Camb MD
[illegible]	Private	Wye Mills MD
Nick Carter	Citizen	Greensboro MD
Lennard Wooters		Cambridge Md
Tony Haydle		
Justin Aaron		Church Creek MD
Sonny Gwin	FV Skillygalee	O.C. MD
George Topping	Rita Diane	O.C. Md.
A. H. Haddaway	Screaming Eagle Charter	Easton, MD
Dudley Cam	Waterman	Crisfield Md.
Gordon Ford	Waterman	Marion MD
Robert T. Brown	MWA	Annapolis Md
Burl Lewis	Waterman	Cambridge MD.
L.A. Carson III	Harvester	Crisfield, MD.
David Crow	Waterman	Tilghman Md.
Charles Denton	Friends of Wicomico	Whitehaven MD
Gibby Dean		East New Market, MD
Steve Schneider	Mid-Shore Fishing Club	Easton, MD
Toby Frey	SFAC, CCA, MSFC	Oxford
Calvin Yowell	Self - IWLA	Easton, MD
[illegible]	[illegible]	
Captain Steve Mason	Beach to Bay Guide Service	Princess Anne, MD
Thomas L. Powley	Waterman	Church Creek Md
Stephen L Smith	MSFC	Cambridge, MD.
Walt Pritchett	Waterman	Cambridge MD.
Jerry Oles	Waterman	Secretary MD
Gary LeCompte		
Hilary Gibson	Chesapeake Bay Foundation	Cambridge, MD
Anthony Friedrich	American Saltwater Guides Assoc.	[illegible] MD

October 3 2019 Cambridge, MD

Atlantic States Marine Fisheries Commission

Name	Company/Organization	City, State
SHAH AMER		BERLIN, MD
Eddie Lynch		Snow Hill md
Ed Ebersole		Hurlock Maryland
JERRY LAMPSON		Girdletree MD
[illegible]		TILGHMAN MD
Herb & Rhonda Floyd		Trappe, MD
HARRY MILLER	MID SHORE FISHING CLUB	CAMBRIDGE
Elijah Lee Wilson Jr	Somerset County	Md.
DALE KIRKENDALL		ARNOLD MD
Joey [illegible]		Q/A Cnty
Damian [illegible]	Waterman	
LARRY POWLEY	STRIPED BASS WORK GROUP	Fishing Creek, MD
Jason Wils[illegible]	MWA	Tilghman
Robbie Wils[illegible]		
JOHN RIPPLE	MID SHORE FISH	TRAPPE MD
Joe Rupp Jr.	Waterman	Hoopers Island
Roger Diaz	CCA	Sherwood Rumbley md
Tim Riley		
David R. Poe	—	Oxford, MD 21654
Allan Ellis	media	Easton, MD 21601
BOB GEISLER		
JOHN R MARTIN	MARTIN FISH CO.	OCEAN City MD
Buddy [illegible]		
Capt. R. Newberry	DFA	Chestertown, MD.
DAVID SIKORSKI	CCA MD	BALTIMORE, MD
Jeff Harrison	Talbot Waterman Assoc	Tilghman
Josh Cooper	CCA	St Michaels
David I. Maginnes	Maginnes Productions	
Dean Price		Cambridge Md
Victoria Brown	MWA	Colton Pt, MD
Chris Weber	Waterman	Camb. Md. 21613

2-A2

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/10/2019

Location: Colonial Beach, VA

-- PLEASE PRINT CLEARLY --

Please put a check mark if you'd like to provide ~~comm~~ comment

	Name	Company/Organization	City, State
☑	Phil Langley	PRFC	Dameron, MD
☑	Robert T. Brown	MWA	Annapolis
	Tracey France		Montross VA
	Wayne France		Montross VA
	Dusty [illegible]		
	Ryan Roberts	Midnight Sun Charters	Reedville Va.
	[illegible]	Charles	
	[illegible]	Charles Co. MD	
	Monica Schenemann	PKWWA	Lewisetta VA
	Stan Sutliff	CBF	W MBG, VA
	[illegible]	Com Fish	Col. Bch, Va.
☑	Billy [illegible]	Com. Fish	New Burg MD.
	John Dean	St Marys	
	Zeb Brundage	Coles Point, VA.	Hague, VA.
☑	Bill Kilinski	Charles County Watermen	Cobb Island MD
	Barber Poe	St. Mary's	St. Geo. Is. Md.
	Victoria Brown	St. Mary's	Cottonis Pt, MD
	Doug Hands		Cobb Island, MD
	John Bello	VSSA	Ashburn VA
	Will Robertson	Charles County	LaPlata MD
	Gary [illegible]		Coles Point
✓	Frank [illegible]	Charles Co.	Newburg
	Wayne Tolle	Comm. Fish	Colonial Beach Va.
	Dennis Fleming		Newburg, MD
	Dennis Simms		Newburg, MD
☑	Chad Keen	ASGA	Avenue, MD
	Ellen Cosby	PRFC	Col. Bch, VA
	Mike Swann	Charles County	Charles
	Kenny Persons		King George VA
	John T. Dameron	Comm Fish	Kinsale VA
	Lewis T. Dameron	Comm Fish	Kinsale VA

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/12/2019

Location: Aquatic Resource Education Center, D.C

-- PLEASE PRINT CLEARLY –

Put a check mark ✓ next to your name if you'd like to provide comment

Name	Company/Organization	City, State
Will Poston		Bethesda, MD
RICHARD FARLEY	DISTRICT ANGLING	ARLINGTON, VA

American Saltwater Guides Association

AMERICAN SALTWATER GUIDES ASSOCIATION
Promoting Sustainable Business Through Marine Conservation

Dear Commissioners and Staff,

The American Saltwater Guides Association appreciates the opportunity to comment on Addendum VI to Amendment 6 to the Interstate Fisheries Management Plan for Striped Bass. Rebuilding the striped bass population is critical to the future viability of our businesses. Our lives are intrinsically linked to the health of our shared marine resources.

Striped bass are overfished and overfishing is occurring. We have overfished the stock for eleven of the last thirteen years. It is time for all stakeholders to give back to the resource.

We spend our lives on the water and have known there was a problem for almost a decade. We have voiced our concerns. We have patiently waited for the stock assessment to be completed. The science paints a picture that is far more daunting than most would have imagined.

As we have mentioned in the past, the flexibility that is allowed at the Commission has caused striped bass populations to plummet to levels not seen since the early nineties. Under a more rigid framework like that governing the actions of federal fishery management councils, created by the Magnuson-Stevens Fishery Conservation and Management Act, striped bass would likely not be in this situation. In fact, under the best circumstances, this amendment won't rebuild the stock until 2033. All the while, Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass mandates rebuilding within a ten-year time frame. This is a glaring example of the lack of accountability with ASMFC.

202.744.5013 info@saltwaterguidesassociation.org

AMERICAN SALTWATER GUIDES ASSOCIATION
Promoting Sustainable Business Through Marine Conservation

While we believe that more decisive action is required, we also understand the parameters of the comments for this addendum. We are committed to working within the system.

The American Saltwater Guides Association strongly urges the Commission to adopt the following options to end overfishing and rebuild the stock.

Option 2:
Equal Percent Reductions
We are all stakeholders in this fishery. We all benefit from an abundant population of striped bass and we should all shoulder the responsibility of rebuilding the stock equally.

Sub-Option 2A-1
1 fish @35" for the Coast Ocean Recreational Fishery
We rebuilt the stock with a similar size and creel limit before. We know that this approach has a history of success. Furthermore, conservation equivalency severely limits the potential effectiveness of a slot limit. If all states are not REQUIRED to adhere to the same slot size, how can a slot limit possibly work?

Sub-Option 2B-1
1 Fish @ 18" for the Chesapeake Bay
As you are well aware, the recreational sector in Maryland was allowed to grossly overfish because their conservation equivalency proposal was not accurately assessed by the Technical Committee.

AMERICAN SALTWATER GUIDES ASSOCIATION
Promoting Sustainable Business Through Marine Conservation

This is the most restrictive and quantifiable option for harvest reductions in the Chesapeake Bay. One fish would also address many of the concerns regarding catch and release mortality.

Circle Hook Provision

Option B

If we are truly concerned about catch and release mortality, and it is not a "red herring" to take the focus away from overharvest, then we must adopt mandatory circle hook regulations. Peer reviewed science shows us that circle hooks greatly improve catch and release mortality numbers. We urge the commission to adopt this measure.

As guides, it feels like we are being hit from all sides. Pollution, climate change, and overharvest are constantly threatening our ability to provide a stable life for our families. This addendum addresses overharvest. We hope that one day soon, we will be proactively addressing all the issues that impact our ability to introduce anglers to the outdoors as well as instill a love and stewardship for the ocean.

Thank you again for the opportunity to comment

Tony Friedrich

Tony Friedrich
VP/Policy Director
American Saltwater Guides Association

VIRGINIA MARINE RESOURCES COMMISSION

380 FENWICK RD, BUILDING 96, FORT MONROE, VA

VMRC COMMISSION ROOM

Monday, September 9, 2019 - 6:30 PM

Public Sign-In Sheet

Please make a check mark next to your name if you intend on making public comment

✓ Douglas F. Jenkins — James River Watershed Assn.

MICHAEL QUINAN, THOMPSON M. MULLAN

Lynnée A Squires

Bernard Wayne Morris

Stan Simmerman - PSWSFA

Mike Avery - VSSA

Buddy Carson Com. Fulton

Bill Pruitt Comm Fisheries

J.C. Hudgins - VMA

John Dameron

Curtis Jenkins

David Johnson

Wayne MacMaster

✓ Kelly Place

Ernest Bowden

Danny Bowden
Chris Moore
John Pinder
Cameron Sprott
Charles Dryden
George Trice
M Scott Blaxon
Edward Sutton
Jeff Deety

Atlantic Striped Bass Draft Addendum VI for Public Comment

Date: 9/11/19

Location: Manteo, NC

-- PLEASE PRINT CLEARLY --

Please indicate if you'd like to provide comment with a check mark (✓)

Name	Company/Organization	City, State
TONY LOMBARDI	ASMFC	KITTY HAWK
Chris Smith	NCWRC	Elizabeth City
Linda Lombardi	angler	Kitty Hawk

Atlantic States Marine Fisheries Commission

ISFMP Policy Board

October 31, 2019
8:00 - 10:00 a.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order *(J. Gilmore)* — 8:00 a.m.

2. Board Consent *(J. Gilmore)* — 8:00 a.m.
   - Approval of Agenda
   - Approval of Proceedings from August 2019

3. Public Comment — 8:05 a.m.

4. Update from Executive Committee (*J. Gilmore*) — 8:15 a.m.

5. Discuss Process Implications for Ecological Reference Point Benchmark Assessment (*T. Kerns/K. Drew*) — 8:30 a.m.

6. Committee Reports **Action** — 8:45 a.m.
   - Law Enforcement (*M. Robson*)
   - Habitat (*L. Havel*)
   - Atlantic Coastal Fish Habitat Partnership (*L. Havel*)
   - Management and Science (*S. Murray*)
   - Assessment Science (*S. Murray*)
     - Consider Approval of the Assessment Schedule **Action**

7. Review Noncompliance Findings, If Necessary **Action** — 9:20 a.m.

8. Other Business — 9:45 a.m.

9. Adjourn — 10:00 a.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

ISFMP Policy Board Meeting
Thursday October 31, 2019
8:00 - 10:00 a.m.
New Castle, New Hampshire

Chair: Jim Gilmore (NY) Assumed Chairmanship: 10/17	Vice Chair: Pat Keliher (ME)	Previous Board Meeting: August 7, 2019
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 7, 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Update from Executive Committee (8:15-8:30 a.m.)
Background • The Executive Committee will meet on October 30, 2019
Presentations • J. Gilmore will provide an update of the two meetings
Board action for consideration at this meeting • none

5. Discuss Process Implications for ERP Benchmark Assessment (8:30-8:45 a.m.)
Background • The results of the ERP Benchmark Assessment will be presented at the 2020 Winter Meeting.
Presentations • T. Kerns will provide some background on the issue.
Board discussion at this meeting • Since this assessment could have implications for other species management boards, staff seeks guidance from the Policy Board regarding what process to follow up in making management decisions (e.g., what board(s) should have oversight).

6. Committee Reports (8:45-9:20 a.m.) Action
Background • The Law Enforcement Committee will meet on October 29-30, 2019 • The Atlantic Coastal Fish Habitat Partnership Steering Committee will meet on October 28-29, 2019 • The Habitat Committee will meet on October 30, 2019 • The Management and Science Committee will meet on October 28-29, 2019 • The Assessment Committee met on August 29, 2019 to discuss several topics including the ASMFC Stock Assessment. The ASC made revisions to the schedule for Board review and approval (**meeting materials**)
Presentations • Staff will present an overview of the LEC, ACFHP, Habitat, MSC and ASC activities
Board action for consideration at this meeting • Under the ASC report: Consider approval of the ASMFC Stock Assessment Schedule

7. Review Non-Compliance Findings, if Necessary Action

8. Other Business

9. Adjourn

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ISFMP POLICY BOARD

The Westin Crystal City
Arlington, Virginia
August 7, 2019

These minutes are draft and subject to approval by the ISFMP Policy Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the ISFMP Policy Board Meeting
August 2019

TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Sen. David Miramant, ME (LA)
Doug Grout, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Dan McKiernan, MA, proxy for D. Pierce (AA)
Raymond Kane, MA (GA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Jim Gilmore, NY (AA)
Maureen Davidson, NY, Administrative proxy
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak
Andy Shiels, PA, proxy for T. Schaeffer (AA)
Stewart Michels, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Luisi, MD, Administrative proxy
Robert Brown, MD, proxy for R. Dize (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Rob O'Reilly, VA, proxy for S. Bowman (AA)
Steve Murphey, NC (AA)
Robert Boyles, SC (AA)
Mel Bell, SC, Administrative proxy
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Sen. Thad Altman, FL (LA)
Marty Gary, PRFC
Alesia Read, NMFS
Sherry White, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Caitlin Starks
Jessica Kuesel
Mark Robson

Guests

The Interstate Fisheries Management Program Policy Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Wednesday, August 7, 2019, and was called to order at 8:30 o'clock a.m. by Chairman James J. Gilmore.

CALL TO ORDER

CHAIRMAN JAMES J. GILMORE: Good morning everyone. Welcome to the ISFMP Policy Board. My name is Jim Gilmore, I will be chairing the meeting today, along with our assistant Chairman, whatever, I'm all right, Pat Keliher, and Toni of course will be keeping me out of trouble, and she's already failed. But first before we get going, I would like to recognize Mike Luisi. Mike had wanted to make a statement. Mike.

MR. MICHAEL LUISI: I thought that this would be a good time to recognize the passing of a good friend and long-time colleague of mine, Captain Ed O'Brien, who I know all of you know very well. Ed passed away on June 1st of this year after a long battle with cancer. He was an amazing man, and lived a life that folks in Hollywood make movies about.

Ed's passion and dedication was recognized this past March, when our Governor Larry Hogan bestowed the highest honor to Captain Ed, naming him Admiral of the Chesapeake Bay, for committing his talents to improving the management of our natural resources, and preserving our state's fishing heritage and charterboat industry for over 40 years.

I was fortunate enough to be there that day when Ed, surrounded by his family, was recognized for this great achievement, and in true Ed fashion when I shook his hand to congratulate him, the first thing he said to me was, "Are there any updates on the striped bass situation?" Ed spoke of this Commission as an extension of his family, and in recognition of his passing I ask that we honor him with a moment of silence. Thank you, Mr. Chairman.

CHAIRMAN GILMORE: Thank you, Mike, and yes we'll definitely miss Ed. Ed was a great guy.

APPROVAL OF AGENDA

CHAIRMAN GILMORE: Okay, we're going to first go into approval of the agenda. Are there any changes to the agenda or additions? I have a couple already. We're going to add on an LGA Summary, and Dennis Abbott is going to be doing that. Then we had a comment about striped bass tagging, Marty Gary put it on, so we're going to add that to Other Business. Are there any other changes to the agenda? David Borden.

MR. DAVID V. BORDEN: I request like two or three minutes to talk about right whales.

CHAIRMAN GILMORE: What kind of whales? No. Okay, any other changes to the agenda? I will put that on at the end, David.

APPROVAL OF PROCEEDINGS

CHAIRMAN GILMORE: Moving along, we had the proceedings from the May, 2019 meeting. They were in your briefing packet. Are there any changes or additions, subtractions from the proceedings? All right seeing none, we will adopt that by unanimous consent.

PUBLIC COMMENT

CHAIRMAN GILMORE: Next is public comment. Is there anyone in the audience that would like to make a comment on things not on the agenda? Now is the time you could come up. But we haven't exactly packed the room, so I don't think we have public comment, so we'll move right along.

UPDATE FROM THE EXECUTIVE COMMITTEE AND THE STATE DIRECTORS MEETING

CHAIRMAN GILMORE: The first business item is the update from the Executive Committee and the State Directors Meeting.

I'll start with the Executive Committee, because that is more fresh in my mind. I think Toni and Bob maybe will help out on the State Director's Meeting, since that was so many days ago. Anyway, yesterday the Executive Committee met, and we had several topics we went over. The first was about dues in arrears for the ASMFC dues.

There had been an issue that came up, and Pennsylvania had been in arrears. But thanks to the efforts of Andy Shiels, we've pretty much got that back on track. Their process for doing this was different from the other states, so it had been lagging actually for several years. Currently, and Andy reported out yesterday that the 2019 dues are up-to-date for all three Commissioners.

Then the back fees that hadn't been sent to the Commission, we should be receiving them in the next 30 to 60 days. Andy again, thanks for resolving that whole thing, so that made it a much quicker discussion. However, after reviewing this it turns out this is not the first time this has happened, it's actually happened a couple of times in the past.

The Executive Committee, we talked about it a bit and we decided it was probably not the best place to resolve this, if you've got a state that is currently in arrears. Now that everybody is sort of paid up, we decided we would proceed with putting together a policy on this so that it is clear. If we do get into a situation where some state cannot pay or whatever, or is behind their payments that there is some clear guidelines as to what we should or shouldn't be doing, and that they understand.

I think Andy made a comment too at this particular instance. If they had had a policy it probably would have been easier to bring that to say look, if we don't get caught up these are the steps that are going to happen. Pat and I and Bob are going to flesh out a policy, for essentially a document. Laura has already been working on that that we'll bring before the Annual Meeting, and we'll try to get that finalized so that we have some clear guidance, so if this happens again in the future we'll all be clear as to what happens. Are there any questions on that?

Okay, next item was Revision of the Annual Report. We had talked about that the report had gotten very large, and Tina has done a great job as to this magnificent report, and the information on it. But it was getting to the point it was a great deal of work, it was getting very large. A lot of the information was available on the website.

We're going to have, I think everyone in the room pretty much agreed, that a printed copy of the report was still important because we could bring that to Capitol Hill or State Legislatures, whatever. But we were going to do a reduced version of it, so a scaled down one that maybe people will look at when we bring it. The larger document tended to get maybe thrown on a coffee table or whatever. We're going to have the larger version reduced down to maybe a quarter of the size. We'll be I guess putting together some drafts on that.

Tina has already gotten one version that looked pretty good. However, all the information will still be available on the website, so it's kind of like if you've got the report you can use that as a guide, but if people really want to get into the weeds on it they still can get referred to the website, which has everything that ever want to know about ASMFC, questions on that?

Seeing none, the next topic was the For-Hire Telephone Survey Transfer. I think at the last Executive Committee meeting there was probably a split 50/50 about maybe some states wanted to do the survey, others didn't. But after getting more detail on it, yesterday's discussion pretty much it was almost unanimous that most of the states are going to take on the Federal Survey, and add onto what they're doing with APAIS.

They'll be doing the phone calls for the for-hire part of the survey, with the exception of Delaware. Delaware for other reasons, they were concerned about it. They have such a small for-hire fleet that the Commission is just going to take over that part of it, and they'll be doing the calls for that.

But the other states that serve part of the survey will be transitioned to the individual states. The NOAA Fisheries has provided additional funding for this, so we'll all be working on implementing that as we move forward, questions on that? Seeing none, the next topic was Bio-security in Bait Sources.

There was a concern about some of the baits that are being brought in now, and this was actually an education for me after we talked about it. I run the shellfish program in my state, and we have very strict standards about what can be brought in, because of disease or parasites or whatever that could be being transported with that.

But now that we're getting creative in the types of baits that are being brought in from different areas, either different regions of the U.S. or even internationally that there is some concern about that. This started with the Lobster Board, and there was a draft Resolution that was put together that we reviewed yesterday.

There was pretty much agreement that this would be a good thing to pursue, and maybe put together a work group to figure out how we want to proceed on this. We agreed that the resolution would be brought forward. I think we're going to make some modifications to it. Then we would bring it before the Policy Board at the Annual Meeting.

You should be seeing a version of that between now and the Annual Meeting. Are there any comments on that? Okay lastly, Laura went over the Annual Meetings, just an update of where we are. The next meeting is going to be in New Hampshire, and I know that New Hampshire folks are working diligently on that. In fact they're meeting with Laura at lunchtime today to finalize everything. From what they've told me, it sounds like it's going to be a great time. There is some kind of a lobster smack down with Maine, but I'm not getting in the middle of that. Who has got the biggest lobsters in the northeast? Then the following year will be in New Jersey, so we'll be somewhere in New Jersey, but I don't think they've picked a spot yet at this point, and then after that North Carolina.

Then I know this one, because I will have done the circuit, because the first meeting I went to was Maryland, so I will be here 15 years and 3 years. We're looking forward to that. On that we'll go into the Monday meeting. We essentially met, for all you who aren't aware is that once a year we meet with NOAA Fisheries at the start, and it's pretty much been the Monday of the Summer Meeting.

The State Directors sit down with NOAA Fisheries, and we go over a bunch of things; issues that are up before us, budgets, and a whole list of things, so we get a more candid discussion. Sam Rauch had come down from Silver Springs along with Kelly Denit, Derek, and a whole bunch of other folks. We had a pretty good representation from NOAA Fisheries. It was a productive meeting. Bob, do you want to go into any specific details about the meeting? Okay, go ahead.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Just a couple quick highlights. The meeting was a full day, so I won't go into all those details. One of the primary reasons that we get together with the NOAA leadership from Headquarters, as well as the Southeast and Northeast Region is to talk about budget priorities for the Commission.

Hopefully, as NOAA develops their out year budgets, they'll consider the priorities and the feedback from the states. It also gives all the states and Deke and I some perspective when

we go to Capitol Hill and talk to staff and appropriation staff, on what are the priorities and what are the things the Commission would like to see.

Make sure that the funding continues and isn't degraded over time, and then maybe even some increases. The budget lines that came out as priorities during that conversation were obviously the Atlantic Coastal Act, which is a portion of the Federal Council and Commission's Line in the federal budget.

There is one line that funds the three Interstate Commissions and the eight Regional Councils. The share that we, ASMFC we receive of that is under the Atlantic Coastal Act. Obviously looking out for the Council and Commission budget line, and the ASMFC share of that is the highest priority, and really what keeps us going here.

There was a pretty significant increase in that line last year, about a 12 percent increase. Of that increase the Commission decided that that increase all should go out to the states, to conduct state level data collection and keep all the programs going at the state level that are needed to implement the Atlantic Coastal Act.

That was a big success, and I think that the allocation directly to the states seems to be having the desired effect, and a lot of the state budgets have been cut over the years, and this has allowed a lot of states to reinvigorate some surveys, or at least keep some surveys going at baseline levels, which was good. Some of the other priorities that came out, obviously we'll go with the NEAMAP Program, which is a fishery independent survey in the northeast, SEAMAP Program, which again is fishery independent work, but in the southeast. SEAMAP Program has not received much of an increase over time, and is in fact losing sampling stations and is in a pretty tough spot. We want to keep looking out for that.

The next priority was fishery information networks, the FIN Programs, we call that ACCSP, but the other coast calls it FIN Programs. Interjurisdictional Fisheries Act, which is a grant program that goes out to the states, there is a requirement for matching funds at the state level, so it's about a 2 million dollar program, but once you put the matching funds in it amounts to about 4 million dollars-worth of work that goes on up and down the coast. It's pretty important.

Recreational data collection obviously is important. Funding for that is spread out across a couple lines in the federal budget. But the notion that we need to keep MRIP going at current levels, and in fact any time we can increase sample sizes through the site intercepts that provides better data to the program.

Then we also talked a little bit about Saltonstall-Kennedy, which is a competitive grant program. It was zeroed out essentially for the competitive grants in this year. Next year we're hopeful that there will be more competitive money available, and S-K will be again available for the states and other folks to apply to receive some money.

There were a number of other discussion topics that we had. We wanted to ensure that the continuing support comes out of the Northeast and Southeast Fishery Science Center at NOAA. A lot of those folks sit on our Technical Committees, and they do great work for us. We wanted to make sure that again that work continued.

We did have some concern about some of the peer review slots through the SAW/SARC Process and the SEDAR Process in the Southeast, and wanted to make sure that we are still able to get ASMFC species into the mix there and on the schedule, and peer reviewed. If we're unable to do that then we have to revert back to ASMFC peer reviews, which are equally robust, but they cost the Commission a

fair amount of money to find reviewers and venues and other things.

That was another topic. We did talk a bit about the Modern Fish Act. Kelly Denit provided an update on the Modern Fish Act. That was the act that was approved December 31, 2018, I believe. It includes a number of provisions and a number of studies looking at limited access, LAPPs, Limited Access Privilege Programs, and there is recreational data provisions in there about how do we incorporate states and other data into stock assessments and management. There is going to be a study on in-season adjustments using the MRIP data.

There is a series of studies coming out. Most of them end either at the end of this calendar year, or at the end of 2020. We do have a Power Point on that if anyone would like it, just let me know, I can forward that PowerPoint to you. Mr. Chairman, I think those are the highlights. We did talk about some other ESA issues and aquaculture, and what's the disposition of seized illegal harvest, and a number of other things. But in the interest of time I'm happy to answer any questions, but I don't want to provide a whole lot of detail on that unless folks want it.

CHAIRMAN GILMORE: Thanks Bob, any questions on the State Directors Meeting? Okay again, if anybody has got stuff, we would be happy to talk about it more after the meeting today. Just before we go into the LGA Report, I'm going to put you up next Dennis, if you're ready. I just wanted to acknowledge, I was remiss that we have a new member at the table. Alicia Reid is sitting at the table, representing NOAA Fisheries at the Policy Board. Welcome, Alicia. You've got a big pile of people that you follow, so welcome. Okay Dennis, it's all yours.

MR. DENNIS ABBOTT: I'm going to defer to Roy Miller to give the report.

CHAIRMAN GILMORE: Okay Roy.

LGA REPORT

MR. ROY W. MILLER: Thank you, Dennis. We had good attendance at the LGA Luncheon, a good crowd. Just about everyone contributed to our discussions. Dennis got the ball rolling by posing a question to each and every one, and that question was specifically. If you were king, how would you address the problems associated with shifting fish stocks and antiquated allocation methods?

Tina and I took some notes, and Tina was kind enough to summarize them, so I'll quickly go through the summarization that Tina provided. The discussion was robust, and some of the issues discussed included building in the concept of conditional allocation into our management programs that would allow dynamic allocation, based on resource, health and distribution.

For quota managed species, establish a pool of unassigned quota that could either be used by the states that need it, or held back when the species conservation demands it. Next bullet point is recognition that the public is increasingly intolerant of allocation paralysis. The observation that we may not be including important information or data on species, due to the rigorous criteria maintained by our Technical Committees regarding the number of samples in the dataset, or the limited time series of a data collection program.

Next bullet point, the need to evaluate current studies identifying those species that are most vulnerable to distribution shifts, and I should point out that some of the species that were used repeatedly as examples in our discussion, included Atlantic menhaden and black sea bass. Certainly there are others.

The concept of using the market to determine species allocations between sectors that was discussed. Next bullet point, how do you reallocate quota and maintain critical infrastructure that was created as a result of historical allocations schemes? Then the final

bullet point, the recognition that if we don't address this head on, someone else will force our hands to do so, or do it for us, i.e. Congress for instance.

Based on this discussion the LGAs recommended the ISFMP Policy Board consider a workshop to allow for a thorough discussion of shifting species distribution and reallocation that is not tied to a specific species. It further recommended that the staff draft a white paper that provides background on those species that are exhibiting distribution shifts, with some examples of some species allocation schemes. We even went so far as to bring in invasive species. Blue catfish were brought up as an example of an invasive species that is having an impact on our managed resources. If the Chair is inclined, I would consider making a motion to the effect that and I'll repeat that last paragraph. Recommend that the ISFMP Policy Board conduct a workshop to allow for a thorough discussion of shifting species distribution and reallocation, and recommend that the staff draft a white paper that provides background on those species that are exhibiting distribution shifts, with some examples of some species allocation schemes. Mr. Chair, if you're inclined I will make that motion to that effect.

CHAIRMAN GILMORE: Okay Roy, hang on to the motion for a moment. I would like to get some discussion on this, and I'm not even sure if we need a motion, depending on how that goes. Let's start with just; does anybody have questions, comments, whatever for Roy? Dave Borden.

MR. BORDEN: I was not in attendance. I was in an airplane at the time. I support the motion, but I would raise a concern that this is very similar to what you discussed yesterday, and the fact that the leadership is already working on this. I just raise the concern that it may be a little bit duplicative. I think the message that the LGAs have sent is a powerful, useful message. But I think the leadership should try to figure out what the best methodology is for doing this. I'm not sure we need the motion.

CHAIRMAN GILMORE: Other comments, questions? Mel Bell.

MR. MEL BELL: Just somewhat similar. From the Council perspective or the Council Coordination Committee perspective, those same things are being discussed by others, and workshops. I don't know if there are advantages to kind of syncing some of this up to take advantage of folk's already discussing similar things, perhaps for different species or the same species. I guess everybody is aware that's going on with the Council's and all as well.

CHAIRMAN GILMORE: Ritchie White.

MR. G. RITCHIE WHITE: If the timing is not right for this motion at this point, I think the concept of what the LGAs did I think would be helpful for the Board to use as a process, because we just don't. The Full Commission very seldom has the ability to sit around and figure out stuff and talk back and forth. We're always in the more structured situation. I thought we got some good ideas out from that process. Whether it's now or later on, I think using that process might be helpful.

CHAIRMAN GILMORE: Steve Murphy.

MR. STEVE MURPHY: I concur with that comment that it would be a little less structured environment, probably more productive than standing amongst the Full Board. I would also like to just remind the Board that it's not just distribution it's expansion as well, so that we kind of bring all of that in.

CHAIRMAN GILMORE: Any other comments on that? Tom Fote.

MR. THOMAS P. FOTE: Again I pointed out that basically when we look at distribution and expansion, we also look at the fact that some of

the bigger fish are up in the northern areas, but there might be just as many fish, and when we start looking at this we start looking at it by numbers, not just by the size of fish. Because if you just look at the size of fish, and you look at the size limits, you can skew the data about what's available in all the regions.

CHAIRMAN GILMORE: Doug Grout.

MR. DOUGLAS E. GROUT: Yes, and if we do move forward with this workshop, I think you should bring forward the policy that we passed about two or three years ago on management and climate change.

CHAIRMAN GILMORE: Yes, good point, Doug. Are there any other comments? Mike Luisi.

MR. LUISI: I think there is a little bit of a chicken and an egg thing happening here as well. You know we just did the Summer Flounder Amendment; we're having discussions about black sea bass. I think the Board needs to figure out what's going to come first, deciding on allocation policy or doing it on the fly as we go.

CHAIRMAN GILMORE: Okay, any other comments? Okay based upon what I'm hearing, and I pretty much I think Dave, you summarized it pretty well. Yes, leadership has sort of already been tackling this. I think there was some appeal I had yesterday. I sat through the meeting, and the fact that we tend to talk about it in the context of a particular species board maybe doesn't help, so a more generic discussion I think would be helpful.

But I think we do have a lot of different efforts going on, and I think leadership needs to sort that out. I think for the time being, Roy. I think we'll hold off on a formal motion for a workshop. Not to say I think we may end up getting there, but I think we need to kind of sit down and figure out an efficient path for dealing with this thing. If that is okay with the LGAs, I think we'll definitely pursue that but not at this particular time. Is that okay, Roy?

MR. MILLER: It's okay with me. Dennis.

CHAIRMAN GILMORE: David.

MR. BORDEN: A follow up question. Could we anticipate a report at the next meeting on that very issue, in other words a status report?

CHAIRMAN GILMORE: Yes, I think that's well obviously it is due at this point, and the fact that the LGAs have raised it. I think that term that came out yes, with allocation paralysis or whatever the right term was. I think it is pretty clear that we really need to address this as we move forward, so yes we'll get something for the next meeting.

MR. BORDEN: Thank you.

CHAIRMAN GILMORE: Tom Fote.

MR. FOTE: Sitting here thinking about it, and I think about Summits we've had, NMFS has put together on recreational fishing and other Summits, and back when Hogarth was head of NMFS. We did a lot of workshops and facilitated meetings to discuss important issues, like what we did about law suits and things like that back in the '90s.

Maybe it's a time to basically do that kind of Summit, where we have a facilitated meeting just to deal with this issue, because I think it's a good place to iron out deals, and you have somebody independent going through and basically looking at the Councils and Commission at the same time.

CHAIRMAN GILMORE: We'll definitely take that into consideration. Are there any other comments on this? Go ahead, Toni.

MS. TONI KERNS: Not directly related to this, but for those of you that are interested in allocation for shifting marine species, the Lenfest Foundation is having a three day workshop in October, which may overlap with our Annual Meeting. I'm not 100 percent, it's

the days before. They have an open application for folks to apply, and they're looking for fishermen, stakeholders, managers, and scientists. If anybody is interested let me know, and I can send the link on to you. The workshop is here in D.C.

REVIEW OF THE 2019 ANNUAL PERFORMANCE OF THE STOCK

CHAIRMAN GILMORE: Great and we'll be leaving town. Perfect. Okay, moving on to the next topic, we have Review of the 2019 Annual Performance of the Stock and Toni is going to lead that. Toni.

MS. KERNS: I'm going to just go ahead and start. The first couple of slides are not really necessary. We are going to go through the annual performance of the stocks as the title states. It's something that we do every year. It's a part of the strategic planning process and in the Action Plan. We started doing this back in 2009.

This is to review the status of the stocks, look at the rate of progress that we are bringing back those stocks that are unhealthy, and a time for the Policy Board to identify if the rate of progress is not acceptable to identify corrective action. For today what I'm looking for is any direction or feedback to bring back to species management boards, if the Policy Board feels that there needs to be corrective action, as well as gathering input for issues that we feel might be priority issues for the 2020 Action Plan.

As you all remember, we have changed how we do the Action Plan to have high priority species and low priority species. We have five categories for stock status, rebuilt sustainable, which is stock biomass is equal to or above the biomass level established by the FMP to ensure population sustainability.

When between benchmark assessments, a stock can still be considered rebuilt and sustainable if it drops below the target but remains above the threshold. For recovering and rebuilding these stocks exhibit stable or increasing trends. The stock biomass is between the threshold and the target level established by the FMP. For those species that are concerned, the stocks are developing some type of emerging issue, for example it could be increased effort but declining landings, or having impacts due to environmental concerns. For depleted, this is stocks that reflect low levels of abundance though it's unclear why fishing mortality is the primary cause for reduced stock size, and lastly is unknown, where we don't have an accepted stock assessment to estimate stock status.

For the rebuilt and sustainable, and recovering and rebuilding stocks, the changes that we saw here were Atlantic herring moved out of the rebuilding and sustainable to depleted. Horseshoe crab went from species of concern to rebuilt-sustainable for the southeast, as well as for recovering and rebuilding for the Delaware Bay stock.

Summer flounder went from a species of concern to recovering and rebuilding. For species of concern, the two stocks in here are coastal sharks and winter flounder, Gulf of Maine. For winter flounder we haven't had an assessment in recent years. I believe there will be an assessment next year through the SAW/SARC Process.

In 2018 NOAA Fisheries reduced the state waters subcomponent to 67 metric tons, and reduced the total stock wide ACL to 428 metric tons. The Commission has maintained trip limits and size limits in Gulf of Maine winter flounder since 2012. For depleted species, I'll note that striped bass, Atlantic herring, and horseshoe crab for the New York/Connecticut area all moved into depleted.

Striped bass is unique in that it doesn't fit in really well with any of our categories. It is overfished, and overfishing is occurring, and we know the source of mortality so we put it in depleted. But if we have an overfished or

overfishing status we would have stuck it into there. As I said it is overfished and overfishing is occurring, the stock experienced a period of low recruitment from 2005 to 2011, and with a continued constant fishing effort the stock is overfished. The scientific advice is to have an 18 percent reduction in overall removals.

The Board has initiated an Addendum to address the overfishing status that will be reviewed tomorrow, and has begun discussions of what to do to address the overfished status through a potential amendment, which also will be re-discussed tomorrow. For Atlantic herring, based on projections and assuming the recruitment and landings trends continue the stock is expected to become overfished, with overfishing occurring starting in this year.

A stock assessment update would be done to confirm that next year. The Council significantly lowered the ACLs to respond to this changing stock status immediately after the assessment came out last year. The Board has approved new spawning protections in the Area 1A to respond to this changing stock status, as well as the Board is working with the New England Fishery Management Council to evaluate what types of spawning protections we could put into the offshore.

For river herring, of the 54 in-river stocks of river herring, for which data were available, 16, are experiencing increasing trends over the 10 most recent years of the assessment update. Two are experiencing decreasing trends, 8 were stable, 10 rivers experienced no discernible trend, and 18 did not have enough data to assess recent trends, including one that had no returning fish. One of the 16 young-of-the-year seine surveys indicated the declining trend over the last 10 years, and 2 indicated increasing trends, and 13 indicated no trends at all. States have implemented sustainable fishery management plans for in-river herring harvest. Both the New England Council and the Mid-Atlantic Fishery Management Council have implemented catch caps for fisheries with high incidental river herring bycatch in federal waters.

The Mid-Atlantic Council will be addressing catch caps in their mackerel fishery next week, and the New England Council is still working on setting their catch caps for next year as well. For northern shrimp, based on the results of the 2018 assessment update the stock remains depleted, with a spawning stock biomass at extremely low levels since 2013.

The Board has implemented a three-year moratorium starting last year. We've had a moratorium in place since 2015. Low recruitment and high natural mortality hinder stock recovery in this species. For winter flounder southern New England and Mid-Atlantic, the stock is at 18 percent of its SSB target. The stock has remained low and declining since the early 2000s.

Since 1981 recruitment has been declining to an all-time low in 2013, and there has been a slight increase in recruitment in recent years. Following the TC advice the Board maintained a 50 pound trip limit for non-thoroughly permitted commercial vessels, and in 2018 NOAA Fisheries set the state water subcomponent at 73 metric tons, which is a slight increase from the 70 metric tons in 2017, and the total stock wide annual catch limit was reduced to 700 metric tons from 749.

For the unknown species, horseshoe crab New England moved into unknown from concerned. Jonah crab, we have yet to have been able to do a stock assessment for Jonah crab. We're continuing to do research on maturity and migratory patterns, in order to be able to create and complete an assessment.

But, Jonah crab landings have increased 6.5 fold since the early 2000s. Over 17 million pounds were landed in 2014. These high landings have continued. Last year the landings were at 20.2 million pounds, which was up about 3 million pounds from 2017. To address concerns about

bycatch the Board did approve 1,000 pound crab limit for non-trap lobster gear, as well as to address concerns about unknown information on landings.

We have increased harvester reporting along with the increased harvester reporting for lobster, and we'll have better spatial resolution of the harvester data, and that reporting requirements will come into fruition for states that don't have them in the next three years. Then lastly, horseshoe crab New England, with one of two surveys, well the stock is considered neutral. One of the two surveys in the analysis showed an increasing trend in the stock, and the other two showed a decreasing trend, so we called it neutral.

But it said we are unknown on the stock status because of those two diverging analyses. It may be an improvement from the previous two stock assessments, which categorized this region as poor. However, there is considerable uncertainty due to this designation due to the conflicting signals in the different surveys, and the limited amount of spatial coverage by the surveys that were modeled. That is the species that I am going to go through.

CHAIRMAN GILMORE: Questions for Toni go ahead Ritchie White.

MR. WHITE: More of a comment. Just after listening to the presentation, which is always good, Toni, I was wondering if we should have a category below depleted. My thinking is northern shrimp, maybe southern New England lobster that it gives us a bad record to list it as depleted, when we have absolutely no control over restoring the stock.

Should we have a category, I don't know what you would call it, but something unable to recover due to environmental conditions or something. That way we would have less in the column of depleted that the public would be saying, why aren't you doing something to fix that?

MS. KERNS: Ritchie, so depleted was that category. That is why we did create that category. The definition is that it reflects low level of abundance, but it's unclear whether fishing mortality is the primary cause for that reduced stock size. I guess maybe you're looking for something even more directed on that.

I guess what we could do is talk through whether we need to change the depleted category definition. Something Katie and I talked about was we probably should add an overfishing category as well, with the issue that we came into with striped bass, it not fitting in here, because we do know what the cause of that mortality is in striped bass, where in shrimp we don't.

CHAIRMAN GILMORE: That was my understanding too, Ritchie, it was like we added that in because it was always this overfishing was when we were doing something wrong and weren't. I think we're okay. If it turns out it doesn't cover it at some point, we could always depleted with an asterisk or something along those lines. Roy Miller.

MR. MILLER: Along those same lines, Ritchie and I had a similar thought process on this. I was somewhat surprised to see striped bass lumped into the depleted category along with weakfish, which I think of as a classic depleted species. I was also surprised to see tautog among the depleted.

Instead of a category, are we avoiding the terms overfished and overfishing occurring? Is that a conscious decision on our part, or are we just lumping everything into depleted that result either from overfishing or from other causes beyond our immediate control? If you could address that I would appreciate it.

MS. KERNS: I think that for species like weakfish where we've had basically a moratorium in place for four or five years, and it has not responded back. We would still

consider the fishing mortality somewhat unknown. Mortality levels from an unknown source. Weakfish I'm not sure would fit into an overfishing status. But tautog, we could have some questions there.

I turn to Katie perhaps to answer that one. But for example, as I said before, when we developed these definitions we did not put in an overfishing status, and that might have just been oversight on staff's part, because at the time when we were doing these definitions, none of the species that were in depleted had an overfished status. I think it was an oversight on our part for leaving that out. It's something that we can change based on direction that Ritchie has just given, which I don't think anybody was disagreeing with. We can reevaluate these definitions and bring them back to the Board to add an overfishing, and see if we could change the definition of depleted or add another one for those species that we really just don't seem to have any control over changing the status of that resource, even when a moratorium has been put in place.

CHAIRMAN GILMORE: Are you good, Roy?

MR. MILLER: I think so. I think Ritchie and I were getting at the same general idea. It is glaringly obvious that striped bass is thrown into the depleted category, and I just don't think of that species yet as a depleted species.

CHAIRMAN GILMORE: Good point. Dan McKiernan.

MR. DANIEL McKIERNAN: I'm looking at the graph up on the screen, and I have a concern about it, because there is a line that is about more than twice as high as the landings and the line represents the ASMFC quota and the landings appear to be less than half of that. That sort of suggests that the fishery is underperforming, but in fact our regulations reduced the ASMFC quota by half.

In our wisdom we think the ASMFC approved quota in the early 2000s was inflated. It was based on data that was probably unsubstantiated. I'm not sure what message is trying to be sent with that. But we have very aggressive horseshoe crab regulations. We're satisfied with what we're accomplishing there.

I would point out our striped bass commercial fishery may not reach its commercial quota this year, because we have very, very aggressive rules on number of days you can fish, and a very high minimum size. I don't want the inability to reach a quota to suggest that the stock is in trouble, when it represents good conservation.

MS. KERNS: I guess Dan; the reason why we put this stock in the unknown category is because there are two conflicting surveys. One says the stock is in good health, the other one says the stock is in poor health. Therefore, the TC put it as considered neutral or unknown, and therefore it fell into this category. Until we have more information where we can develop reference points, and have a model for each of the stock areas for horseshoe crab, and that would need additional survey data et cetera. Then we're in a bit of a tough spot.

CHAIRMAN GILMORE: Adam Nowalsky.

MR. ADAM NOWALSKY: I think the discussion I've heard so far makes it clear that there is concern around the table about striped bass in particular in the depleted category. I think that is spurring a lot of the conversation. Two questions I have. One is there any opportunity for feedback from this Board today to move something, maybe say it belongs in the concerned category not depleted, based on our definitions.

The second question is the depleted definition says reflects low levels of abundance, but the question is relative to what? The striped bass female SSB may be somewhere below a recent high, but it's still three times higher than where it was in the charts we're presenting to the

public. I think that also contributes to the conversation we're hearing about is it really depleted, depending on that? Those would be the two questions. Do we have the ability to suggest moving something here today? How would we go about doing that? Then two, what is staff using as a benchmark for reflects low levels of abundance?

CHAIRMAN GILMORE: Yes, and Toni will go for more detail.

MS. KERNS: I was happy to have feedback on moving stocks. I would even be more happy to have feedback on how the information that it receives here helps you all guide staff to action planning. Are there some species that you think should be high priority for us to work on different issues for 2020? As well as that is there any feedback back to any of the management boards on how they are rebuilding stocks?

As I said at the beginning when I went through striped bass, we said that it didn't fit into any of the categories. If we had an overfishing category we would have put it in there. We didn't think it was depleted, but that was the best fit in all of them, because it certainly wasn't rebuilt, it wasn't rebuilding, it wasn't unknown.

It wasn't necessarily a concern, because we knew that overfishing was occurring and it was overfished. We can create a new category based on the Board's direction, and we'll move it into the overfished category or overfishing category. But it would be great to hear feedback on other stocks to change them.

CHAIRMAN GILMORE: Okay, Tom Fote.

MR. FOTE: I was going to confirm what Adam was saying. I mean, we talked about putting striped bass in that category, yet we had the fourth highest young of the year in 2011 and the eighth highest young of the year in 2015. Now, when we look at weakfish, I know time speeds up. We forget how long it has been, but it's been 10 years flew by that we really started trying to do something with weakfish, and nothing we have done.

Winter flounder is close behind the 10 years right now and we have nothing. There must be a category that we put fish in. At least with sturgeon we could basically look at 75 years they would rebuild, or something like that. I have no idea what's going to happen with winter flounder or with weakfish, and it's one of my biggest disappointments with sitting around this table for the last 29 years. Because we did everything I think right on both of those species, and still we see no headway.

CHAIRMAN GILMORE: I've got Loren Lustig; I've got Rob O'Reilly and then Steve Murphy. Loren.

MR. LOREN W. LUSTIG: I've listened closely to the discussion, and I appreciate it. Getting back to the points made by Roy and Ritchie, in considering the highest level, which I believe is entitled rebuilt and sustainable. I would wonder whether we should have a higher category than that based upon historic numbers of the species. If the habitat itself, if the ecological health itself would allow for recovery at a higher level, I would encourage that sort of change, so that we could have a goal that would be more reflective of what the habitat would actually allow. Perhaps we could consider that. Also it would give the public, who may be looking at these analyses in a somewhat casual way, it would give them a false sense that the numbers were up, at or near the maximum that could be allowed by the habitat. I would be concerned about that.

CHAIRMAN GILMORE: Rob O'Reilly.

MR. ROB O'REILLY: Thank you Toni and I recognize that this is not just an easy process, and it's difficult to get the categorization exactly right. I do understand that. I think the feedback we're able to give is really important, and mine is on summer flounder. A year ago I

would have thought more of a rebuilding situation for summer flounder.

The benchmark assessment changed that from 2018. It's a little contrary; because we know the commercial fishery had a 60 percent increase. The process we're under and the new MRIP didn't fare so well on the recreational side. But the public knows that there have been these increases. There is not an overfishing, and I guess Toni that is something as well for summer flounder that you know the assessment came back not overfished, overfishing is not occurring.

I don't know how you look at that. We would like summer flounder to rebuild some more, absolutely. We would actually like to reach the target, get to BMSY, which we thought happened earlier but then we found out no. That didn't happen. I just want to say I recognize the difficulties to categorize everything, and this feedback I hope will help.

CHAIRMAN GILMORE: Steve Murphy.

MR. MURPHY: I just wanted to share what we've done in North Carolina on this with the 13 managed stocks that we have in our state fishery management plans. We're mandated by law to manage those stocks. We kind of got in a box with categories, because the difference between one category and another tended to boomerang. The public didn't understand them as completely.

Now, we've eliminated the categories, and we basically do a stock overview, where we tell the public the facts that we know, is overfishing occurring, is it overfished, do we have a stock assessment? What are the conditions of that stock relative to the established reference points that we've developed for that? There was a little resistance to that but I think it provides a clearer understanding, without trying to say whether this is four stars of five stars. I think that is the trap you fall into with categories.

CHAIRMAN GILMORE: It's a good point. I think we recognize this is somewhat subjective. That is probably why we're getting so much discussion on it. Mike Luisi.

MR. LUISI: Just a quick question for Toni. Toni, do you define rebuilding as actually seeing a positive trend in the biomass, or could it be? I think of it in two different ways. You see the positive trends or that the Management Board is taking significant action to reverse the declining trend, in a case like striped bass. How would you best define your use of rebuilding when you're aligning these species?

MS. KERNS: For rebuilding we define them as a stock that exhibits stable or increasing trends, and the biomass is between the threshold and the target level that has been established by the FMP. I will reiterate at this time, just to try to move us along out of the category discussion, which I think I have direction on what you all want us to do.

Moving us to is there feedback on anything for action planning stocks that you think we should be addressing as high priority species or low priority species, or is there any direction back to the individual management boards on actions that they are actually taking, or not taking to make some corrective action on these species that are not doing as well, or even the recovering and rebuilding ones.

CHAIRMAN GILMORE: We'll think about that for a moment, because that is really the feedback Toni is trying to get. We probably could spend the entire day talking about what category is right and what we should add or subtract. But let's go to some wisdom from the audience, and bring up Arnold Leo, who will give us some great guidance. Arnold.

MR. ARNOLD LEO: Thanks, Jim. Arnold Leo, I represent the fishing industry of the Town of East Hampton, Long Island. With regards to the depleted status for striped bass that is really, I feel extremely misleading, and tends to bring

some of the screechers out of the woodwork, you know it's depleted. We would have to like ban all commercial fishing or whatever.

As I understand it, the striped bass stock, the total numbers are actually still up at the rebuilt level, and it's a question of the spawning stock and the recruitment being below certain trigger points. I just wonder, instead of depleted Toni, I'm addressing this to you, though so far you haven't heard. Toni, I'm addressing this to you. It seems to me that instead of depleted, which in the case of striped bass as many people have made the point around the table here, is quite misleading.

How about something along the lines of action required, you see? There is a category of depleted, which would include weakfish and winter flounder. Then there is action required, which would be an appropriate category for striped bass. I mean when the total numbers of the stock is up at the rebuilt level, depleted is extremely misleading. Thanks.

MS. KERNS: Thanks Arnold. As I said before, depleted was the only option that we had for striped bass, and because we didn't have an overfishing category. By the direction of the Board we have been given the latitude to add a category to this, and we are going to move it into overfishing, because that is what is occurring in striped bass. We will add that as the category and move it. As I said from the beginning, we never thought it was depleted, but it was the only one that it would fit in for what we had available for our use.

CHAIRMAN GILMORE: All right guys we really need to focus in on the big picture on this. We're having a striped bass meeting tomorrow, so enough on striped bass. If someone's got a general thing that's going to help Toni, in terms of are we doing enough for the particular species that's what we need input on. I'll go to Justin first.

DR. JUSTIN DAVIS: Toni, I have a question relative to tautog. I noticed in going through the materials here there doesn't appear to be the next assessment for tautog on the schedule. There is an indefinite time for it. That was my first question, is there a timeframe for the next assessment on tautog? Then related to that the most recent benchmark split the stock out into regions, and in particular the Long Island Sound Region was experiencing overfishing, was overfished, was in a poorer status relative to the other regional stocks.

I'm wondering generally if it's not viewed as a priority to do another assessment for tautog anytime soon, if it might be possible to do an assessment just for the Long Island Sound stock, given the status of the stock in the last assessment, and the fact that we made some changes to measures. I'm personally sort of interested in seeing on a pretty short timeframe whether those changes and measures we made have produced any sort of recovery.

MS. KERNS: We are evaluating when to do the next assessment. We're waiting to hear back if some genetic work is going to be available soon. If it's not then we would do an update next year, or am I off Katie? Sorry, I was looking for a head nod.

DR. KATIE DREW: Sorry, yes the Technical Committee's plan would be to do an update in 2021 with data through 2020, because we use a three-year average to calculate F, we would want the full three years under the new management scenarios in all of these regions, in order to get the full picture about whether management has had an effect or not. I think the intent would be in the absence of new genetic data, or other reasons to do a benchmark assessment, we would do an update in 2021 with data through 2020.

MS. KERNS: Would that fit the sort of immediate timeframe for you, Justin?

DR. DAVIS: Yes it would, thank you.

CHAIRMAN GILMORE: That was Justin Davis. I have to say it for the people listening from around the world. Adam Nowalsky.

MR. NOWASLKY: The two species that I look at here that I think maybe warrants concern, when you look at Gulf of Maine lobster and questions about settlement in recent years, and we've had discussions. Does that warrant concern would be a question, and what are staffs thoughts are about that?

I see cobia here as well, when I see the increased landings that they're dealing with, significant potential for change in measures. Those are concerns I have, and would be interested in feedback that you had in your discussions why those concerns didn't translate to putting it in that category.

MS. KERNS: I guess we didn't have this discussion on cobia. We knew that there would be an assessment coming up, and so we figured we would leave it as it was and be able to change next year in response to the assessment for cobia. We welcome feedback on whether or not we think that we should be moving it into concern. I see where you're going, and could see how you would want to move it there. For Gulf of Maine lobster it is definitely something that has been an issue on my mind that there is a concern about the low levels of settlement, and high levels of landings. This year landings are definitely down in Gulf of Maine, but sometimes they come in late.

While we've had these low levels of settlement, the landings have continued to remain viable. It is a discussion that the TC continuously has. That is why we have the stock indicators, because we want to make sure that we don't have the same scenario happen that we did have in southern New England happen to the Gulf of Maine resource. I welcome discussion from the Full Board on whether or not you think we should move it into species of concern. We are here to do and make these changes based on what the Board desires.

CHAIRMAN GILMORE: Andy Shiels.

MR. ANDREW SHIELS: I certainly did not think that this was going to be a controversial meeting this morning. I thought it would be a rather mundane checklist of policy items. I'm very concerned what I'm hearing is that we're arguing over definitions of the worst of the worst, rather than concerning ourselves that by my count 33 percent, a third of all the species we manage are either depleted or in the rebuilding stage.

That's not a good track record, and maybe like the rest of you I'm getting deluged with e-mails right now regarding tomorrow's meeting on striped bass. A lot of those e-mails start out with; confidence in Atlantic States Marine Fisheries Commission is at an all-time low. There is distrust, you don't know what you're doing, you don't know how to do your job, you're not rebuilding fisheries, and you're not protecting fisheries. I keep seeing that statement.

Well those are opinions, but those opinions could be supported by what we're hearing this morning that a third of our species are in serious trouble. We're sitting here arguing about how to define the worst of the worst, and whether we should move it up a category so we can check one off, so instead of being 33 percent depleted maybe it is 30 percent depleted.

As I heard there was an LGA discussion regarding what we might do about stock shifting and allocation. We also hear that discussion over at the Council, Mi-Atlantic Council. That is a legitimate and good discussion that should be had. I'm wondering if the Board has a policy, or the Policy Board or the Commission has a policy on what is our threshold for the number of species we will not tolerate reaching the rebuild or depleted phase. I'm sorry, depleted or needing rebuilt phase?

As a goal maybe moving forward we should say, we should take all steps necessary that no less than X percent, maybe no less than 80 percent, maybe no less than 90 percent are in this category that we're worrying about right now. I don't know what it would take to do that but that seems like a policy discussion about how the Board operates, about how the Board provides guidance to the rest of the Commission, and the different management boards about where we should be. I think we need to refocus and be more concerned about what we're not doing as opposed to defining the lowest levels of the bad. Let me check my list and see if there is anything else. Nope that's it. Thank you very much.

MS. KERNS: We don't have a policy; I can tell you that Andy. But I would like to go back to Adam's point. I think he raised two good points on two species that have the potential to move into concerned for valid reasons, and I would like to hear if that is something that the Board would like us to do or not like us to do, from their perspective.

CHAIRMAN GILMORE: Doug, you have a comment?

MR. GROUT: I certainly have been quite aware of the low Settlement Survey, particularly in the southwest portion of the Gulf of Maine for a number of years. But one of the things that I've been also looking at with my staff is the Ventless Trap Survey, which is essentially the pre-recruitment. From what I've seen so far from that that low settlement isn't translating into lower recruitment, pre-recruits excuse me, from the Settlement Survey.

If that indeed does transpire in the near future, and I know we have a stock assessment that they're working on right now. Then I would definitely, I think the new stock assessment would show that and it certainly should result in this Commission taking some actions to try and address that.

One of the things that the Lobster Board had been working on, prior to having to get into endangered species and right whale, was trying to have a management action that would improve the resiliency of lobster. But with our new assessment of right whales, suddenly our efforts have suddenly had to be focused away from trying to improve the resiliency of lobsters into trying to avoid the right whales being affected by our lobster fishery.

I hope that at some point in the future, once we get beyond this endline reduction and changing of lines and what we need that we can develop a management action that will improve the resiliency of lobsters. That is my one thing on lobsters. I can't speak to cobia, because I'm not on cobia. I certainly think that striped bass should be a high priority, and I think we are headed in that direction with our meeting tomorrow.

Hopefully we'll continue to make that a high priority to end overfishing, and then eventually to rebuild the stocks above the SSB threshold. The same thing with Atlantic herring, I think that's a high priority now that we're at a low level, but we've already taken some significant action to reduce the quotas, to try and prevent overfishing and to try and rebuild those stocks. But I think those are the two high priorities that I see within that depleted category. Thank you.

CHAIRMAN GILMORE: All right, I'm going to take one more comment and I think we're going to move on after this, because again, we had a little more discussion, this was really not supposed to be a discussion on the categories, and most of it got dominated by that. We'll regroup a little on this, but we'll let Ray Kane have the last comment on this. Ray.

MR. RAYMOND W. KANE: I think Doug said it all. We're looking at a benchmark lobster assessment Gulf of Maine, Georges Bank in February.

MS. KERNS: That assessment has been delayed until summer/fall.

CHAIRMAN GILMORE: Toni just wanted to know does anybody have a comment just on cobia. Don't feel obliged, but if you have a burning need to bring something up on cobia, does anybody have a comment on that?

REVIEW AND CONSIDER CHANGES TO COMMISSION GUIDING DOCUMENTS

CHAIRMAN GILMORE: Seeing none, we're going to move on to the next topic, Review and Consider Changes to Commission Guiding Documents. We've got a few things here. This is an action item, so we're going to need motions on this, so Toni, take it away.

MS. KERNS: Do you want to try to do one motion or individual ones?

CHAIRMAN GILMORE: If we can that would be great to do it all in one motion.

ISFMP CHARTER

MS. KERNS: All right then I'm going to go through all three documents. It's pretty simple, so hopefully it won't be too bad. The first is the ISFMP Charter. We changed the Charter a few years ago, and one of the changes that we made was dropping the number of required public hearings when you do an FMP or an amendment from four to three.

Well it turns out that the Atlantic Coastal Fishery Cooperative Management Act requires four public hearings, so we need to change the Charter back to four hearings. That is the only change for the Charter.

TECHNICAL GUIDANCE DOCUMENT AND STOCK ASSESSMENT PROCESS

MS. KERNS: For the Technical Guidance Document and Stock Assessment Process, I would like to thank Dr. Katie Drew and Kirby Rootes-Murdy for going through this document with both the science and ISFMP stuff very thoroughly to update this document, and make sure all of our processes are clear and transparent.

We added the ACCSP Committees to this document, as well as clarified some of the sections to better provide guidance on process to our Committee members and the general public. Those sections that had major significant changes to them were the Committee member expectations for committee meetings as well as the assessment process.

The Methods Workshop for assessment, and lastly in the Appendix the checklist for tracking progress for assessments. None of the clarifications changed any of the actual steps that we're taking, but it just made things a little bit clearer. The only real change to the document was adding ACCSP.

WORKING GROUP SOPPS

MS. KERNS: Then, lastly are Work group's thoughts, in recent years the Commission management boards have started using work groups a lot more to efficiently explore complex management issues. The process and procedures the different work groups followed were different, and we felt that as the practice of using work groups becomes more and more, we should have some SOPPs for how we establish work groups, and then how they work.

The Executive Committee reviewed the document that was on the meeting materials and approved it. I'll go through this document. To establish a work group can be done by species management board or the Policy Board. The membership is limited to a subset of Board members, the Board itself, or the Board Chair can approve the members of the work group. Ideally the work group will represent a diverse perspective on the issue at hand, and they can also request non Board members to provide information to them, but those individuals would not be actual members of the work

group itself. Each work group will have a designated Chair. To the extent possible we try not to have Commission staff be those Chairs, and the Board Chair does not necessarily have to be the work group Chair. The Chair will facilitate and lead all work group meetings and conference calls.

The Board should fully describe the task at hand for that work group. There should be a clear directive of deliverables and a timeline to bring the issues back to the Board for their review. We should try to limit the membership of the work group to have efficiency in the process. If the entire Board is a member of the work group then it's not really a work group any more.

For the purpose of the work group itself, they are established when the Board needs additional time outside of our quarterly meeting weeks to work through an issue. A work group is not deliberative, nor is it decision making. They are intended to present and explore a range of strategies that have the potential to address an issue the Board is trying to take on.

Work groups are intended to deliver strategies to address the issue for Board deliberation at a later meeting. All approaches that the Board believes have merit would then be further fleshed out, either by a Technical Committee or a Plan Development Team. At the start of each meeting the work group Chair would always remind the work group of what their purpose is, and what task they were assigned by the Board.

All these meetings are open to the public, and will be posted on the Commission's website. The work group should be used to present ideas and engage in constructive discussion. It is the responsibility of the work group members to reach out to the rest of the Board to gather ideas and thoughts that the work group should be exploring.

It is also the responsibility of the Board to reach out to work group members when they have ideas that they want the work group to further explore as well. Staff will provide a progress report to be given to the Board between quarterly meetings when it's possible, as long as the work group members have gotten their work done to provide that update to the Board staff can do that.

But if the work group members don't do their work, then it's difficult for us to provide an update to the Board. Then the either work group Chair or Commission staff will provide updates at meetings if it takes the work group longer than one meeting to get their assignment done. Then all ideas will be presented to the Board, as well as key considerations for the Board to be taken into account once the work group is finished, and that is all.

CHAIRMAN GILMORE: Does anyone have questions or comments on any of the three documents? Adam Nowalsky.

MR. NOWALSKY: With the work groups I've seen established, typically at that Board meeting we'll ask for volunteers. There will be other suggestions, and it will kind of be by consent these are the people that get added. There has been some concern raised, and I think it is part of the impetus for this document that there have sometimes been people added that nobody knew was added from the Board level. I'm just wondering if there are two elements. Obviously the Board elects the Chair, so there is a confidence level in the Board Chairs, but I'm wondering if we could tweak the Working Group Operating Procedures as they're here, to the elements that where members are approved by the Chair, and the Chair of the Board appoints the working group Chair.

I wonder if it might be practical to include with the consent of the Board, or something to that point, just to complete that element of transparency, and just so that nobody can go back and say there were any surprises, or I wish I would have known there were people being

added, such and such would have been a good addition. I think there is a small area for improvement there.

CHAIRMAN GILMORE: I think that's a good idea. Are there any other comments? Okay, we're going to need a motion, and since there seems to be general consensus on it if we get a motion to approve all three would be terrific. Let's flesh out a so moved from Dennis, and see if we can get a second to it. Okay do we have a second to the motion up on the board? Justin Davis. Dennis, go ahead and read it. It's your motion.

MR. ABBOTT: Move to approve changes to the ISFMP Charter, changes to the Technical Guidance and Benchmark Stock Assessment document, and approve Working Group SOPPs as modified today.

CHAIRMAN GILMORE: It is seconded by Justin Davis. Is there any discussion on the motion? Go ahead, Justin.

DR. DAVIS: I just wanted the record to reflect that the document, the Working Group SOPPs will reflect the change that Adam wanted in the final version.

CHAIRMAN GILMORE: Yes. Any other comments, yes Senator Miramant?

SENATOR DAVID MIRAMANT: SOPPs as opposed to SOPs? What does that mean?

MS. KERNS: Practices and procedures, standard operating practices and procedures.

CHAIRMAN GILMORE: **Any other discussion on the motion? Okay, is there any objection to the motion? Seeing none, we will adopt this by unanimous consent. The motion is approved.**

UPDATE ON THE LOBSTER ENFORCEMENT VESSEL

CHAIRMAN GILMORE: The next order of business, we're going to have an update on the Lobster Enforcement Vessel**,** and Bob is going to lead us on that. Bob. Wait a minute, well it said you, Bob, but Pat is just itching to talk about this, so do you want to do it, Pat? Toni cut Pat off.

MR. PATRICK C. KELIHER: Yes, I was starting to think that was on purpose. There have been a lot of conversations around an offshore patrol vessel, as it pertains to in particular the lobster fishery. This has been driven, in regards to issues around right whale and compliance within the offshore fleet.

We have had several conversations with a small working group, as well as the Law Enforcement Committee. The original focus of an offshore patrol vessel was pertaining to a large steel vessel in the 70 to 75 foot range. The costs were becoming prohibitive, there were some challenges in regards to staffing as it pertained to state law enforcement agencies, especially as you linked it back to the differences in contractual agreements and staffing and overnights. This has morphed now into a little bit smaller vessel with a focus of the vessel, instead of being a NOAA vessel, becoming a Maine vessel.

There have been conversations with law enforcement leadership, in regards to staffing. It would be a Maine focused vessel that would still work in Area 3, and would be shared crews on specific details. The smaller vessel, the only way this will work will be through an agreement with the Coast Guard, so they can have a shadow vessel to work within weather windows, and then have a safety net if there were issues around whether when they're looking at hauling gear greater than 70 miles offshore.

All of that said, there is an onus now on the state of Maine to provide the Commission with

an outline of how this would look, the Specs of a vessel, and kind of talking about the shared work agreement with the other New England states. That is still ongoing. We are late providing that and the reason we're late providing that is that my Major of the Maine Marine Patrol is working with some individual Captains and boat owners, to try to figure out if we can create this boat to haul the varying styles of gear within the offshore fishery.

We've tried to haul lobster gear with our 46 plus boats that we have, but the Area 3 fishery the gear is set up, it's so much more heavier that it's become problematic. Once we've worked out those details, we'll be able to figure out how we can finalize the specifications on the boat, and then we'll give further update, both through the Lobster Board and the Policy Board. That's all I have, Mr. Chairman.

CHAIRMAN GILMORE: Questions for Pat, Ritchie White.

MR WHITE: I have been serving on the Committee. I favored the 70-75 foot steel boat that would provide adequate law enforcement for Area 3. We were unable to as Pat has said, figure out cost and staffing and stuff from a state perspective. My opinion is the vessel we're getting will add a great piece of law enforcement, and it's certainly needed in Offshore Area 1, and will do some enforcement in Area 3.

But I don't believe in any way that it's adequate law enforcement for Area 3, and since the states have been unable to kind of figure out this process, I think the Service needs to proceed with a vessel that would provide adequate law enforcement. I think especially with the right whale issue, I think it's critical that the Service starts this process as soon as possible.

CHAIRMAN GILMORE: Other comments, questions. David Borden.

MR. BORDEN: I concur with Ritchie's comments, in terms of the size. I also support what Pat outlined in terms of this kind of intermediate size vessel, and being able to put that to work in the near term. But we shouldn't lose track of the fact that we need a bigger boat to operate in the offshore areas, and it probably should be a 75 or 80 foot boat if you want to have adequate enforcement. I think it's really incumbent upon the system to try to get on with this as soon as possible, figure out the most expedient way to build this vessel, equip it, and put it into operation. If you start talking to some of the states about different fisheries, there is a whole range of uses that I think the states could put a vessel like this to work at. If you talk to some of the enforcement staff in the Mid-Atlantic, I think they'll be talking about well we need more black sea bass enforcement offshore, and those types of considerations. There is some real urgency here to get on with this, but we should continue our planning for the bigger boat.

CHAIRMAN GILMORE: Pat.

MR.KELIHER: I concur with both comments from Ritchie and David. David, I know you're going to bring up an issue in regards to right whales at the end of the agenda. A comment in this regard from an enforcement perspective through the process that you want to outline might be very appropriate at this time.

CHAIRMAN GILMORE: This is true. It's not a gender thing. My wife says men always want a bigger boat, so we really do need a bigger boat though. Are there any other comments on this? Thanks Pat, and yes I think the importance of this is pretty well discussed and understood, so hopefully we'll get this going soon.

ATLANTIC COASTAL FISH HABITAT PARTNERSHIP REPORTS

CHAIRMAN GILMORE: Next, we're going to go to the Atlantic Coastal Fish Habitat Partnership Reports, and Lisa Havel is going to lead us in that. Lisa.

MS. LISA HAVEL: The Atlantic Coastal Fish Habitat Partnership ACFHP met May 15 through 16 in Fernandina Beach, Florida. We received an update on the FY2019 project funding, an update on our Conservation Mapping Projects both in the southeast and the northeast. We finalized our Business Plan and discussed implementation.

We discussed our Outreach and Communications Initiatives through 2019, came to consensus on the Melissa Laser Fish Habitat Conservation Award recipients for 2019, and reviewed the 2017 through 2019 Action Plan. Currently the FY2020 National Fish Habitat Action Plan, U.S. Fish and Wildlife Service, On the Ground Conservation Funding RFP is now open.

The deadline to submit proposals is September 13, 2019. To learn more about how to submit proposals, you can visit our website at www.atlanticfishhabitat.org/funding-opportunities or shoot me an e-mail and I can send you the link directly. Our black sea bass research in the Mid-Atlantic Bight was completed in the spring, and our final report was received in May.

The results will be presented by Dr. Stevens of University of Maryland Eastern Shore later today at the Summer Flounder, Scup, Black Sea Bass Management Board. They came in under budget, so they asked for a no cost extension through December 31, 2019, in order to continue monitoring sea whip growth, present findings at a conference, publish the results, buy some new scuba gear, and also add a little bit to their salary.

We endorsed two projects recently. The first one was Fireplace Neck, New York, and this was a salt marsh habitat restoration project in Brookhaven. They are working to restore tidal wetland hydrology, in order to improve coastal resiliency. There is currently ponding and pool formation, which is increasing with rising sea levels and that, is drowning healthy vegetation and providing less protection from flooding and storm surge. This is due to intensive historical grid ditching, and their restoration methods that they will employ will demonstrate feasibility to other marshes in the area. This work will benefit winter and summer flounder, scup, bluefish, striped bass and many prey items as well. This complements other restoration efforts on a 500 acre marsh system. This marsh system is part of the largest remaining contiguous marsh on Long Island, and it's being led by New York DEC, and they are working with Ducks Unlimited and Henningson, Durham and Richardson Architecture and Engineering P.C., and seeking funding through NOAA Habitat Restoration.

The second project endorsement that we had recently was an AC Oyster recycling program. New Jersey DEP Bureau of Shellfisheries will work in Atlantic County, in order to collect clean, recycled oyster shells from local businesses. These shells will be placed on Mullica River seedbeds on the Atlantic Coast of New Jersey, and this bed is the last sustaining oyster bed on the Atlantic side of New Jersey.

This work will enhance the naturally occurring beds, and provide more habitat, filter the water, and stabilize sediments. Increasing the bed size will increase resiliency to storms, disease, predation, and sedimentation. Partners on this project include the Atlantic City Hard Rock Café, Jetty Apparel, Jetty Rock Foundation, Reclam the Bay, Inc., Stockton University, and Rutgers Cooperative Extension

We also welcomed two new partners, the PEW Charitable Trust and the Mid-Atlantic Fishery Management Council, and both are serving now on the Steering Committee, and also the Outreach and Communications Committee. As always we would like to thank ASMFC for your continued operational support, and I'm happy to take any questions.

CHAIRMAN GILMORE: Any questions for Lisa? Seeing none I have to do a disclaimer here,

because the Long Island Project of course is in my backyard, and our Jersey home is on the mouth of the Mullica River. I had absolutely nothing to do with either one of these things, so just to be clear. Go ahead, Lisa.

MS. HAVEL: If there are any projects in your area that you are interested in ACFHP endorsing, we can do a very quick turnaround in the course of about a week, and we endorse the project at any stage, so if you're in need of funding, a letter of support might be helpful with that all the way up to project completion.

If you want to add the ACFHP logo to your project we're happy to review the work that you've done, and then you can say that ACFHP endorsed it once it's finalized as well, so at any stage we're happy to look that over. Come to me if you have any questions about that and I can point you to how to apply for endorsement.

CHAIRMAN GILMORE: Thanks a lot Lisa, great report.

PROGRESS UPDATE ON THE SHAD BENCHMARK STOCK ASSESSMENT

CHAIRMAN GILMORE: Okay, the next item is we're going to have a Progress Update on the Shad Benchmark Stock Assessment, and Jeff Kipp is going to do that. Jeff.

MR. JEFF J. KIPP: The Shad and River Herring Stock Assessment Subcommittee have been working away on the methods, or identified as the Methods Workshop as part of the stock assessment process. We are meeting on roughly a biweekly schedule right now to review progress and provide feedback on the various methods, and we will be meeting for our last in-person meeting of the assessment in late November. That is the Assessment Workshop. I did just want to take this opportunity to encourage everyone, if you do have a staff member on the Stock Assessment Subcommittee. Shad assessment remains a high priority in our workload, and that they are able to devote adequate time to contributing to the assessment, so that we are able to stay on track and meet the assessment timeline. That's my update and I can take any questions on the shad assessment progress.

MS. KERNS: If you're reading between the lines of what Jeff is saying I will be more direct and say that it's very important for these Committee members to get their tasks done and turn them in on time. As we've reported to the Board before that this Committee has, for many reasons, not because people are just not doing their job, but they have so many different things going on back home that these tasks have not been getting done on time, and so therefore we did delay the assessment already once. We don't want to have to do that again.

CHAIRMAN GILMORE: Any questions for Jeff? Seeing none we're going to move on. Our next item is actually noncompliance findings, so we don't have any, so we don't have to get into that today, thank God!

OTHER BUSINESS

CHAIRMAN GILMORE: We're going to go into other business now, so the first topic under Other Business was Striped Bass Tagging, and Marty you have the floor.

STRIPED BASS TAGGING

MR. MARTIN GARY: Board members recall last Annual Meeting up in New York we brought up the issue of continuity for the Annual Tagging Survey that's been done on the striped bass wintering grounds. It targets striped bass, but also tags other species. It started in the late '80s, and I think last year or this most recent year was its 30th consecutive year.

There was a funding issue; the encumbrance for the funding of this tagging survey was largely on the shoulders of the state of North Carolina for many years. For reasons I won't go into, but

Steve had mention they no longer could shoulder that so a bridge was put in place for last year to keep that survey going.

When we had the discussion in New York, I brought up the question to staff, Katie, whether the data there was valuable and used, and she corroborated that it was. It was part of the assessment process. Given the concerns we have for this species and the discussions that we're having. It seems that this is probably something we would like to continue, at least that is my thought and I hope other Board members feel the same way.

In some years the fish have been difficult to find, and apparently that was the case this past year. But that's not the only time that's happened. But again the fish in the wintertime, the only data that we have for that species at that time of the year or on their wintering grounds, which has been changing. In recent years they've been out in the exclusive economic zone.

It just seems that this would be something we would want to continue, at least from my perspective. I wanted to put it back on the table for discussion. I didn't want it to sit until the Annual Meeting, and then all of a sudden we're doing triage at the last minute to see whether we can keep it going. The survey typically occurs in January, so I wanted to bring it up just to kind of get ahead of the curve, Mr. Chairman.

CHAIRMAN GILMORE: Anybody have some comments, suggestions, money? Ray.
MR. KANE: Yes Bob, we should have funds left in the up funding?

EXECUTIVE DIRECTOR BEAL: Thanks Ray for the question. There is a chunk of money left over from some Plus-up money from two years ago that we received. I don't know if Marty mentioned it, but you know this is relatively inexpensive, between $20,000.00 and $25,000.00 for between 10 and 15 trips out to tag fish, and in the past they've been able to tag hundreds of fish during the year.

Last year wasn't quite as productive. It is relatively inexpensive. I would suggest moving forward; Mr. Chairman that staff can reach out to the Captain of the vessel, see what the timeline is on when he would need a contract and commitment from the Commission to pay for this. Then if this decision can wait until the Annual Meeting, we can have the Executive Committee review this and decide if it's a priority for use of the remaining funds, and if it is we can go ahead and contract with the vessel.

When we talk to the Captain if it needs to happen prior to the Annual Meeting we can do something via conference call, the Executive Committee or correspondence via e-mail, or something along those lines. I think this is relatively inexpensive, but very important data. Losing this stream of 30 years plus tagging data would be detrimental to the stock assessment, and our understanding of the growth and migration of striped bass. Hopefully we can find some funds to cover it.

CHAIRMAN GILMORE: Thanks Bob that sounds like a good path forward. Is there any disagreement with moving forward on that? Marty is that good for you? Does that work with your schedule?

MR. GARY: Excellent, thank you Mr. Chairman, I appreciate it.

CHAIRMAN GILMORE: Okay, so I'll proceed on Bob's recommendations and hopefully get that done.

RIGHT WHALES

CHAIRMAN GILMORE: Okay, the next item we had was David Borden wanted to discuss right whales. David.

MR. BORDEN: This will be really brief. NOAA Fisheries is in the process of conducting eight scoping meetings up and down the coast. It's

going to start this Thursday in Rhode Island. What is entailed with that there isn't a document that's been presented to us or anyone else, but what I envision taking place according to the NOAA staff is that they're basically going to talk about the goals and objectives for the exercise, and some of the TRT recommendations, and solicit input.

What they'll be talking about is the line, in terms of goals and objectives, the line reduction targets, serious injury targets, the sharing arrangement 50/50 sharing arrangement with Canada, and those types of things. Then the ideas that came up at the TRT. Every state around this table will eventually have fishermen affected by the results of this process. I'm a little concerned that the Commission doesn't have recommendations on some of those goals and objectives. All I would request is that the leadership, you Bob, Pat, consider either drafting some comments on that or forming some kind of working group that could help you formalize some written comments.

As Pat suggested earlier in the day. I think the enforcement boat should be part of the comments that we submit, and then circulate a draft letter to the entire Commission, so we could make sure it meets the requirements of all the states. I'm not going to make a motion; I'm just deferring that to the leadership.

CHAIRMAN GILMORE: Yes I think we can. That's a good idea, Bob. Pat and I will get together, good suggestion. Are there any comments on that? Ritchie White.

MR. WHITE: Yes in addition to what Dave has brought up, the other issue the state's may be facing is that lobster fishermen with state licenses that also fish in federal waters, will be facing regulations in federal waters and the concern will be where different states may have different state regulations, and then how will those fishermen be treated in federal waters. Will they be treated the same or will they be able to carry their state regulations in essence to federal waters? I mean that's another issue I think for the Commission.

CHAIRMAN GILMORE: Toni.

MS. KERNS: Ritchie, just to get some clarification for what you are wanting in the letter regarding that. Are you looking to have consistent regulations? Are you looking to have the most restrictive rule apply, or are you wanting the state regulations to override the federal regulations, even though they may not be as conservative?

MR. WHITE: I certainly want the states that have less restrictive regulations in state waters to not have to adopt more restrictive regulations that other states may have to abide by. I want some recognition in federal waters for states that have less restrictive regulations. It's unclear whether the Feds can do that or not, and if they can how can they? That is just a concern at this point, so we don't know if this is a problem or not yet. But our fishermen are very concerned about that.

CHAIRMAN GILMORE: Doug.

MR. GROUT: I think in a simple way of putting this is to have the regulations tied to where their license comes out of, the state licenses they come out of. Now obviously those that don't have state fishing licenses and only fish in federal waters may be in a different category.

CHAIRMAN GILMORE: Pat.

MR. KELIHER: I think to both of those points. It's clear that under Marine Mammal Protection Act and Endangered Species Act they can implement rules that go right to the beach. I think the issue of consistency is important, but also a message of ensuring or asking the Agency to continue to work directly with the states on those consistencies becomes important.

CHAIRMAN GILMORE: Any other discussion on this? Okay David yes, we will be following up on it.

ADJOURNMENT

CHAIRMAN GILMORE: Okay, we've actually come to the end of our list. Is there any other business to come before the Policy Board? Seeing none, we are adjourned, and the Business Session will be starting at 10:30. Oh, now! Don't leave.

(Whereupon the meetings adjourned at 10:16 o'clock a.m. on August 7, 2019)

Atlantic States Marine Fisheries Commission

Assessment Science Committee Report

The Assessment Science Committee met on August 29th, 2019, to address several agenda items, including receiving updates from the Red Drum Subcommittee, discussing stock assessment training workshops, and reviewing the ASMFC stock assessment schedule.

Revised ASMFC Stock Assessment Schedule
The following proposed changes were made to the ASMFC Stock Assessment Schedule since the previous schedule was approved by the ISFMP Policy Board at the 2018 Annual Meeting:

- Assessment triggers were added in 2022 for American eel, Atlantic croaker, Atlantic sturgeon, river herring, and spot, based on five-year frequency triggers.
- **American shad:** The American shad assessment was shifted from 2019 to 2020.
- **Atlantic menhaden:** An update was added in 2022 based on the previous three-year assessment frequency.
- **Atlantic menhaden ERPs:** An update was added in 2022 to match the single-species update schedule.
- **Atlantic herring:** Management track assessments were added in 2020 and 2022.
- **Atlantic striped bass:** An update was added in 2021; this proposed change to the two-year update frequency was recommended to align with the timing of Draft Addendum VI.
- **Black drum:** The assessment trigger was shifted from 2019 to 2022 based on the Technical Committee's recommendation.
- **Black sea bass:** The 2020 update was removed, a 2021 management track assessment was added, and a 2022 research track assessment (SARC-Fall) was added.
- **Bluefish:** The five-year trigger in 2020 was removed, a management track assessment was added in 2021, and a research track assessment (SARC-Fall) was added in 2022.
- **Coastal sharks:** The large and small coastal sharks were combined into 'coastal sharks'; Atlantic blacktip sharks will be assessed in 2020 and hammerhead sharks in 2022, both through SEDAR.
- **Jonah crab:** Jonah crab was added to the species list, though no assessments are currently scheduled.
- **Northern shrimp:** The updates in 2019 and 2020 were removed.
- **Red drum:** A benchmark assessment (SEDAR) was added in 2022.
- **Scup:** A management track assessment was added in 2021.
- **Spanish mackerel:** The benchmark assessment in 2020 was removed and an operational assessment (SEDAR) was added in 2021 because the lead analyst was needed for other, higher priority assessments.
- **Spiny dogfish:** The updates in 2019 and 2020 were removed and a research track assessment was added in 2020 (SARC-Spring).
- **Summer flounder:** The updates in 2019 and 2020 were removed and a management track assessment was added in 2021.
- **Winter flounder:** Management track assessments were added in 2020 and 2022.

Long-Term Stock Assessment and Peer Review Schedule (DRAFT October 2019)

Species	2012	2013	2014	2015	2016	2017	2018		2019	2020	2021	2022
American Eel	ASMFC					Update						x
American Shad										ASMFC		
American Lobster				ASMFC						ASMFC		
Atlantic Croaker						ASMFC						x
Atlantic Menhaden	Update		SEDAR			Update			SEDAR			Update
Atl. Menhaden ERPs	Update		Update						SEDAR			*Update*
Atlantic Sea Herring	SARC 54			Update			SARC-Spring			Management		Management
Atlantic Striped Bass		SARC 57		Update	Update		SARC-Fall				*Update*	
Atlantic Sturgeon						ASMFC						x
Black Drum			ASMFC									x
Black Sea Bass	Update	Update	Update	Update	SARC- Fall	Update	Update		Operational*		Management	SARC - Fall
Bluefish	Update	Update	Update	SARC-Spring	Update	Update	Update		Operational*		Management	SARC - Fall
Coastal Sharks		SEDAR		SEDAR	SEDAR	SEDAR				SEDAR		SEDAR
Cobia									SEDAR			
Horseshoe Crab		Update							ASMFC			
Jonah Crab												
Northern Shrimp	Update	Update	SARC-Spring	Update	Update	Update	ASMFC				*Update*	
Red Drum				SEDAR								SEDAR
River Herring	ASMFC					Update						x
Scup	Update	Update	Update	SARC-Spring	Update	Update	Update		Operational*		Management	
Spanish Mackerel	SEDAR 28										Operational	
Spiny Dogfish	Update	Update	Update	Update	Update	Update	Update					SARC - Spring
Spot						ASMFC						x
Spotted Seatrout				VA/NC	FL							
Summer Flounder	Update	SARC 57	Update	Update	Update	Update	SARC-Fall				Management	
Tautog					ASMFC						Update	
Weakfish					ASMFC				Update			
Winter Flounder			Update	Update		Update				Management		Management

Note all species scheduled for review must be prioritized by management boards and Policy Board.

SEDAR Peer Review
ASMFC Peer Review
Fall SARC Review (November) (Research Track)
Spring SARC Review (June) (Research Track)
x = 5 year trigger date or potential review
Completed
Italics = under consideration, not officially scheduled

Additional Notes:

BSB, Bluefish, Scup	*Summer 2019 operational assessments with new MRIP data
Cobia	Stock Structure review Summer 2018, then benchmark assessment Fall 2019
Coastal Sharks	Blacktip benchmark assessment Fall 2020; Hammerhead benchmark assessment 2022
Spotted Seatrout	States conduct individual assessments
Management Track	Northeast region assessments allowing small to moderate changes (similar to Assessment Updates)
Research Track	Northeast region assessments open to all changes; also includes Research Topics (similar to Benchmark Assessments)

Atlantic States Marine Fisheries Commission

South Atlantic State/Federal Fisheries Management Board

October 31, 2019
10:30 a.m. – 12:15 p.m.
New Castle, New Hampshire

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1.	Welcome/Call to Order (*P. Geer*)	10:30 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from August 2019	10:30 a.m.
3.	Public Comment	10:35 a.m.
4.	Consider Approval of Atlantic Croaker Draft Addendum III and Spot Draft Addendum III for Public Comment (*M. Schmidtke*) **Action**	10:45 a.m.
5.	Discuss Differences Between Federal and Commission Management of Spanish Mackerel (*P. Geer*) **Possible Action**	11:25 a.m.
6.	Consider 2019 Fishery Management Plan Reviews and State Compliance for Red Drum, Black Drum, and Spotted Seatrout (*M. Schmidtke*) **Action**	11:45 a.m.
7.	Other Business/Adjourn	12:15 p.m.

The meeting will be held at Wentworth by the Sea, 588 Wentworth Road, New Castle, NH; 603.422.7322

MEETING OVERVIEW

South Atlantic State/Federal Fisheries Management Board Meeting
Thursday, October 31, 2019
10:30 a.m. – 12:15 p.m.
New Castle, New Hampshire

Chair: Pat Geer (VA) Assumed Chairmanship: 02/18	Technical Committee (TC) Chairs: Black Drum: Harry Rickabaugh (MD) Cobia: Angela Giuliano (MD) Atlantic Croaker: Chris McDonough (SC) Red Drum: Vacant	Law Enforcement Committee Representative: Capt. Chris Hodge (GA)
Vice Chair: Robert H. Boyles, Jr.	Advisory Panel Chair: Tom Powers (VA)	Previous Board Meeting: August 6, 2019
Voting Members: NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS, SAFMC (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 6, 2019

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Approval of Atlantic Croaker Draft Addendum III and Spot Draft Addendum III for Public Comment (10:45 – 11:25 a.m.) Action

Background

- In May 2019, the Board initiated Draft Addendum III to Amendment 1 to the Interstate Fishery Management Plan (FMP) for Atlantic Croaker and Draft Addendum III to the Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout (Omnibus Amendment) to incorporate Technical Committee (TC)-recommendations for the Traffic Light Approaches (TLA) applied to Atlantic croaker and spot.
- These Draft Addenda have been developed by the Atlantic Croaker and Spot Plan Development Team (PDT), with consultation of the Atlantic Croaker TC, Spot Plan Review Team, and South Atlantic Advisory Panel (AP) (**Supplemental Materials**).

Presentations

- Draft Addendum III to Amendment 1 to the Atlantic Croaker FMP by M. Schmidtke
- Draft Addendum III to the Omnibus Amendment by M. Schmidtke

Board actions for consideration at this meeting

- Review and consider approval for Draft Addendum III for Atlantic croaker to be released for Public Comment.
- Review and consider approval for Draft Addendum III for spot to be released for Public Comment.

5. Discuss Differences Between Federal and Commission Management of Spanish Mackerel (11:25 – 11:45 a.m.) Possible Action

Background

- In August, 2019, a review of the Omnibus Amendment's requirements for Spanish mackerel found inconsistencies with federal regulations. Additionally, further changes to federally regulations are under consideration by the South Atlantic Fishery Management Council. Staff provided a memo to the Board denoting the inconsistencies so the Board may consider any necessary actions (**Briefing Materials**).

Board actions for consideration at this meeting

- Consider initiating management action to the Omnibus Amendment so it may better align with or complement federal management.

6. Consider Approval of 2019 Fishery Management Plan Reviews and Compliance for Red Drum, Black Drum, and Spotted Seatrout (11:45 a.m. – 12:15 p.m.) Action

Background

- Red Drum State Compliance Reports are due on July 1. The Red Drum PRT has reviewed state reports and compiled the annual FMP Review. New Jersey and Delaware have requested *de minimis* status (**Briefing Materials**).
- Black Drum State Compliance Reports are due on August 1. The Black Drum Plan Review Team (PRT) has reviewed state reports and compiled the annual FMP Review. No states have requested *de minimis* status. (**Supplemental Materials**)
- Spotted Seatrout State Compliance Reports are due on September 1. The Spotted Seatrout PRT has reviewed state reports and compiled the annual FMP Review. New Jersey and Delaware have requested *de minimis* status (**Supplemental Materials**).

Presentations

- 2019 FMP Reviews for red drum, black drum, and spotted seatrout by M. Schmidtke.

Board actions for consideration at this meeting

- Consider approval of the 2019 FMP Reviews, state compliance, and *de minimis* requests for red drum, black drum, and spotted seatrout.

7. Other Business/Adjourn

South Atlantic Board

Activity level: High

Committee Overlap Score: Moderate (American Eel TC, Bluefish TC, Menhaden TC, Weakfish TC)

Committee Task List

- Cobia TC – Involvement of certain members in SEDAR 58 assessment process
- Atlantic Croaker and Spot PDT: Draft Addendum III (croaker) and Draft Addendum III (spot) to incorporate updated Traffic Light Analyses; Board Review for Public Comment in Fall 2019
- Red Drum SAS – Develop assessment roadmap with ASC
- Atlantic Croaker TC - July 1: Compliance Reports Due
- Red Drum TC – July 1: Compliance Reports Due
- Cobia TC – July 1: Compliance Reports Due
- Atlantic Croaker PRT – August 1: Update Traffic Light Analysis
- Spot PRT – August 1: Update Traffic Light Analysis
- Black Drum TC – August 1: Compliance Reports Due
- Spotted Seatrout PRT – September 1: Compliance Reports Due
- Spanish Mackerel PRT – October 1: Compliance Reports Due
- Spot PRT – November 1: Compliance Reports Due

TC Members:

Atlantic Croaker: Dawn Franco (GA, Chair), Kristen Anstead (ASMFC), Michael Schmidtke (ASMFC), Shanna Madsen (NJ, Vice Chair), Michael Greco (DE), Harry Rickabaugh (MD), Somers Smott (VA), Jason Rock (NC), Dan Zapf (NC), Chris McDonough (SC), Joseph Munyandorero (FL)

Black Drum: Harry Rickabaugh (MD, Chair), Jeff Kipp (ASMFC), Michael Schmidtke (ASMFC), Craig Tomlin (NJ), Jordan Zimmerman (DE), Ethan Simpson (VA), Chris Stewart (NC), Chris McDonough (SC), Ryan Harrell (GA), Liz Herdter Smith (FL)

Cobia: Angela Giuliano (MD, Chair), Michael Schmidtke (ASMFC), Shanna Madsen (NJ), Alex Aspinwall (VA), Anne Markwith (NC), Mike Denson (SC, Vice Chair), Chris Kalinowsky (GA), Christina Wiegand (SAMFC), Michael Larkin (SERO)

Red Drum: Jeff Kipp (ASMFC), Michael Schmidtke (ASMFC), Shanna Madsen (NJ), Michael Greco (DE), Robert Bourdon (MD), Ethan Simpson (VA), Lee Paramore (NC), Joey Ballenger (SC), Chris Kalinowsky (GA), Behzad Mahmoudi (FL), Roger Pugliese (SAFMC)

Spanish Mackerel (PRT): Michael Schmidtke (ASMFC), Randy Gregory (NC), BJ Hilton (GA), Dustin Addis (FL), Christina Wiegand (SAFMC), John Hadley (SAFMC)
Spot (PRT): Michael Schmidtke (ASMFC), Harry Rickabaugh (MD), Ethan Simpson (VA), Dan Zapf (NC), Chris McDonough (SC), Dawn Franco (GA)
Spotted Seatrout (PRT): Michael Schmidtke (ASMFC), Douglas Lipton (MD), Tracey Bauer (NC), Joey Ballenger (SC), Chris Kalinowsky (GA)

SAS Members:
Red Drum: Jeff Kipp (ASMFC), Michael Schmidtke (ASMFC), Angela Giuliano (MD), Lee Paramore (NC), Joey Ballenger (SC), Liz Herdter Smith (FL)

PDT Members:
Atlantic Croaker and Spot: Michael Schmidtke (ASMFC), Harry Rickabaugh (MD), Ethan Simpson (VA), Dan Zapf (NC), Chris McDonough (SC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

SOUTH ATLANTIC STATE/FEDERAL FISHERIES MANAGEMENT BOARD

The Westin Crystal City
Arlington, Virginia
August 6, 2019

Draft Proceedings of the South Atlantic State/Federal Fisheries Management Board Meeting
August 2019

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ATTENDANCE

BOARD MEMBERS

Jim Gilmore, NY (AA)
Maureen Davidson, NY, Administrative proxy
Emerson Hasbrouck, NY (GA)
Adam Nowalsky, NJ, proxy for Sen. Andrzejczak (LA)
Joe Cimino, NJ (AA)
Russ Allen, NJ, proxy for T. Fote (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Stewart Michels, DE, proxy for David Saveikas (AA)
Roy Miller, DE (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Lynn Fegley, MD, Administrative proxy
Robert Brown, MD, proxy for R. Dize (GA)
Sen. Monty Mason, VA (LA)
Pat Geer, VA, proxy for S. Bowman (AA), Chair
Ellen Bolen, VA, proxy for B. Plumlee (GA)
Mike Blanton, NC, proxy for Rep. Steinburg (LA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Mel Bell, SC, proxy for R. Boyles (AA)
Malcolm Rhodes, SC (GA)
Spud Woodward, GA (AA)
Doug Haymans, GA (GA)
Rep. Thad Altman, FL (LA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Marty Gary, PRFC
Roy Crabtree, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Angela Giuliano, Chair, Cobia Technical Committee
Chris McDonough, Chair, Atl. Croaker Technical Committee

Staff

Toni Kerns
Robert Beal
Mike Schmidtke
Tina Berger

Guests

Sam Chin, NOAA
Allison Colden, CBF
Heather Corbett, NJ DFW
Chris Dollar, TRCP
Walker Golder, Nat'l. Audubon Society
Joseph Gordon, Pew Trusts
Zach Greenberg, Pew Trusts
Aaron Kornbluth, Pew Trusts
Loren Lustig, PA (GA)
Tim Sartwell, NOAA
Sherry White, US FWS
Jack Travelstead, CCA

The South Atlantic State/Federal Fisheries Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, August 6, 2019, and was called to order at 10:15 o'clock a.m. by Chairman Pat Geer.

CALL TO ORDER

CHAIRMAN PAT GEER: Welcome to the South Atlantic State and Federal Fisheries Management Board. My name is Pat Geer. I am the Chairman, and I'll have a few introductions. To the left is Angela Giuliano who is the TC Chair for the Cobia Committee. Mike Schmidtke is to my right; he is our lead planner on all this.

Then, I have Chris McDonough, who is our Croaker and Spot TC Chair as well, and he'll be giving a presentation today as well.

APPROVAL OF AGENDA

CHAIRMAN GEER: Let's start the meeting with the approval of the agenda. Are there any additions or comments on the agenda, hearing none, Toni?

MS. TONI KERNS: It's not to the agenda, but just to the running of the meeting. Jess, who used to do motions, has gone on to Grad school, and so we have staff working on our motions today. But because we're a little rusty in doing motions, if everyone could just make sure you speak slowly when you do the motions and work with us as we get the motions up on the table, and have patience, it would be greatly appreciated.

CHAIRMAN GEER: And there are quite a few motions today. There are at least 13 or 14 on cobia.

APPROVAL OF PROCEEDINGS

CHAIRMAN GEER: Approval of the proceedings from the May, 2019 meeting, is there any additions or comments to that? Hearing none; the agenda and the proceedings are approved by consent.

PUBLIC COMMENT

CHAIRMAN GEER: Is there any public comment?

We don't have a list, but is there anybody who wants to speak from the public about issues that are not on the agenda? Hearing none we'll move on.

AMENDMENT 1 FOR THE COBIA FISHERIES MANAGEMENT PLAN FOR FINAL APPROVAL

CHAIRMAN GEER: We're going to move on to Amendment 1 for the Cobia Fisheries Management Plan for Final Approval. We'll start off with a presentation from Mike. Mike, you have the floor.

DR. MIKE SCHMIDTKE: First I'll be going through the public comment summary for Draft Amendment 1 to the Cobia FMP. After that I'll be giving the AP report as well. We weren't able to have our AP Chair represented here today, so I'll do that. Then we'll also have a TC report finally, going through the actual issues of the Amendment for the Board's consideration.

Just a reminder of kind of where we've come from with this entire amendment process, this was all started back in 2018, and today we are on the final step; where the Board will review public comment on Draft Amendment 1, and consider it for final approval by both this Board and passing it on to the whole Commission. Again, a reminder of the statement of the problem, this Amendment has come about because in part of Regulatory Amendment 31 to the Coastal Migratory Pelagics FMP from the South Atlantic Council. That became effective in March of this year, which means that Atlantic cobia is now managed solely through the Commission's FMP.

Previously the Commission had been managing in a complementary fashion with the Council under the original FMP. A lot of the language under the current FMP is reflecting that complementary relationship. In addition, the Board also gave direction to establish a process for specifying aspects of harvest, and being able to do so through Board action.

PUBLIC COMMENT SUMMARY

DR. SCHMIDTKE: For the public comment summary, and really kind of similarly throughout the presentation, I'm going to be dividing up the issues a little bit out of order that they are in the Amendment, but more to be able to group up the single-option issues, those that really don't have any alternative as they are written in the draft amendment, and then those with multiple options.

First of all, looking at the written comments, the written comment period was open during the summer through July 15. Eight comments, eight written comments were received. Three of those were from organizations; the American Sport Fishing Association, Hilton Head Island Sport Fishing Club, and Virginia Saltwater Sport Fishing Association, and five individuals submitted comments as well. Most of the comments that were submitted expressed support for the single-option issues or did not specifically address them.

The exceptions to this are shown on the screen. For Issue 3, the ASA recommended additional language that would allow the Board to establish fishing mortality and spawning stock biomass targets. The current language in the draft Amendment only reflects thresholds for these metrics. They also recommended renaming that section to reflect the inclusion of an overfished status definition, so they recommended something along the lines of stock status criteria more than just overfishing definition.

Issue Number 6, Sector Allocation, ASA recommended a description of the methods that were used originally to calculate the sector allocation. That was done in Amendment 18 of the Coastal Migratory Pelagics FMP, and the methods for that can be added. But they also asked for recalculation of the sector allocation based on the recalibrated MRIP estimates.

As a reminder for those that are not familiar, last year the Marine Recreational Information Program, which estimates recreational harvest, they transitioned their effort survey from a telephone survey to a mail-based survey. The management for cobia right now is still based on the telephone survey, because all of the limits and targets and all the allocations, they were all based on the telephone survey data.

Now with the shift to the mail-based survey that is kind of happening on a little bit of a slower time scale for cobia, because there is an ongoing stock assessment SEDAR 58, and that will incorporate the new mail-based recreational data. But the current Amendment has the same allocations and all of the units based off of the telephone data. That transition will happen for cobia after the assessment is completed. That is one of the things that are brought up by ASA in their comments. Additionally, they recommended for the recreational evaluation issue, Issue Number 7 that the time period of consecutive underharvest that would allow for application for relaxed measures that that be reduced to two years. In the current Amendment it is written as three years. Additional written comments included the ones that you see on the screen, one of them recommending delayed action on this Amendment until completion of the stock assessment, one recommending closure of all non-subsistence cobia fishing.

One, stating that cobia management specifically off South Carolina should be done exclusively by South Carolina, and finally ASA also recommended that the state allocation percentages that are used to calculate the recreational harvest targets that those be recalculated to reflect the FES calibration of MRIP harvest estimates as well.

There were four public hearings that were held, three of those were in person, and one of those was via webinar. Virginia, North Carolina and South Carolina held the in-person hearings. The webinar was intended as kind of a catch-all for any states that did not have in-person hearings, and announcements were sent out along with that.

There were no attendees to the webinar hearing, so there aren't any comments related to that webinar hearing; but there is in the Public Comment Summary you have the comments from the Virginia, North Carolina and South Carolina hearings. A couple of the highlights from those are Virginia and North Carolina continued to be concerned with MRIP harvest estimates, and some of the comments there asked for consideration of other data.

Specifically, a few of them mentioned the Virginia Cobia Reporting Program. For Issue Number 13 that was one where there were comments really from both sides of that issue. In general, Virginia supported recommending federal regulations based on the port of departure and return, regardless of the catch location or licenses held.

The comments from that hearing indicated that current options could be confusing for anglers, because of the language involving multiple licenses. For South Carolina that hearing, the public represented there. They expressed concerns with anglers from other states fishing reefs off of South Carolina, potentially with less restrictive regulations than what are allowed for those anglers.

There is a table in the Public Comment Summary Document. I do have to make one correction to that. Issue Number 8, Recreational Units. In that table in the document it is shown that A has the unanimous support. It's actually Option B, Numbers for the Recreational Units that had the unanimous support.

All of the numbers that are in A should be in B, and that is corrected in the table that you see there on the screen. But here you can see kind of the breakdown of the support for options on those issues that have multiple options. For Issue Number 5 the majority of comments supported Option A.

For Issue 8, all of the comments supported Option B. Issue 9 there was a pretty close split between Options A and B, but it was definitely done so on what looks like a regional basis. Issue 10 there was a split as well. Issue 12 there was a unanimous support for Option B, and Issue 13 was split as well. With that I can take any questions related to the public comments.

CHAIRMAN GEER: Does anybody have any questions for Mike? Hearing none, any comments? All right, Mike.

ADVISORY PANEL REPORT

DR. SCHMIDTKE: Next I will give the Advisory Panel Report. It's really not so much a Panel report as opposed to an individual report. We held a webinar on July 8, and there was one attendee from the South Atlantic AP. It was one of our representatives from Virginia attended, and he provided his comments.

In follow up to the webinar, I sent e-mails to the South Atlantic AP, both requesting that they provide additional comments, even if they agreed with those that were already given, if they would express some level of support so we could gauge this in different areas and throughout the Committee, and I didn't receive any additional comments.

Just bear that in mind as we go through this report. This was the one individual that did show up for the hearing. But he expressed no objections to the language for all of the single-option issues; 1, 2, 3, 4, 6, 7 and 11. He stated positions on the multi-option issues that I'll go through here on this next slide.

For harvest specification there was support for Option A, which is the two-year option. For the recreational unit, support for Option B, using numbers of fish. For the commercial minimum size, Option A, which is the status quo for that minimum size limit, for Issue Number 10, Option C, the four-fish per vessel. But he did specifically state that he would only support four-fish per vessel if this limit would apply regardless of the number of commercial license holders on the vessel.

This is kind of a Virginia-specific rule that's in place, in terms of the number of license holders that is applied to the commercial fishery. But as a general principal, and this is probably guiding more of his direction of support, he feels that the commercial vessel limit should be equal to or one fish greater than the recreational.

I know that doesn't quite line up with what's in the FMP, because the recreational can have a vessel limit of up to six fish, if the state wants to put that limit in place. But I think he's speaking more from a perspective of what he's experiencing as specifically a Virginia commercial fisherman.

For the commercial de minimis Issue 12, he supported Option B, which does allow for a commercial de minimis status, and finally Issue Number 13, the recommendation for federal waters, he supported Option A, which used regulations based on the license or permitted state for both the recreational and commercial sectors. With that I can take questions related to the AP.

CHAIRMAN GEER: Are there any questions for Mike? I would like to make a comment on this. Mike and I talked about this having only one AP member participate on the phone call. I mean, you get with your AP members and see if they're still interested in sitting on these committees. It's hard for us to function when only one person out of a whole group is participating. Get with them, and if they're not interested see if you can get new representation. We had that as well with some of the general public meetings as well, they weren't very well attended.

I think maybe it's a trend that we're seeing in general. Maybe we need to have a discussion moving forward on how we can get better participation, because we've got a lot of cobia fishermen in Virginia, but we only had less than a dozen folks show up. That is an ongoing trend that we see.

How can we get more people engaged in this process so that the regulations come out, and then they get upset, after we're done with the process? It's frustrating for us and it's frustrating for them, but they have a voice and they're just not taking advantage of it.

TECHNICAL COMMITTEE REPORT

CHAIRMAN GEER: We're going to move on to the TC Report, and Angela is going to give that. Oh, excuse me, Spud.

MR. A.G. "SPUD" WOODWARD: I'm disappointed too. I guess my concern at this point is that we even consider for the record this being an Advisory Panel Report, because it really isn't. I think we need to make clear that it was submitted on behalf of one individual, and that we don't have it in the record as an Advisory Panel report.

CHAIRMAN GEER: Toni.

MS. KERNS: On the report it does note that only one individual did show up for the meeting although Mike did send that report out to the full Advisory Board and he specifically asked, please look at this. Do you disagree, do you have other opinions? He did not get any responses, if I remember correctly. There was that that did happen, as well just as an FYI for the Board.

DR. SCHMIDTKE: Yes, I e-mailed the AP asking both for any additional comments as well as even if you agree. Craig Freeman was the representative that showed up. Even if you agree with Craig, please let me know that you agree with him. In addition, within that e-mail it also asks if those AP members wanted to continue to serve on that AP, or if we should contact the states to let them know if representation needs to change.

Even related to that I only got two responses affirming that they want to continue serving on the AP, and the two that responded in that way, they said that they would look at the report and send any additional comments, and I just never received anything further from that.

CHAIRMAN GEER: Anything else on this? Thank you, Mike. Let's move on to Angela, she's going to give the TC Report.

MS. ANGELA GIULIANO: The Technical Committee met on July 25, to review Draft Amendment 1. Similar to Mike's presentation, for all of the options that were either single options or just edited text, the TC was in support of the edits of the sections as edited or written. Moving on to Issue 5, which is the first one where there was an option. For harvest specification process, the TC supported Option B, which would allow specifications to be done up to every three years. However, this was with a caveat that should management change or we have an assessment, basically that the knowledge that the Board could act sooner if needed. For Issue 8, regarding recreational units being either in pounds or numbers of fish, in line with the Technical Committee Memo from July of 2018, the Technical Committee supported Option B, which is monitoring the quota and landings in numbers of fish.

This goes back to the fact that MRIP often has good estimates of numbers of fish, but especially for a species like cobia, the biological data is often lacking. There was some discussion on the TC call about the average weight used to convert the current recreational harvest limits from pounds to numbers. Currently they use the 28 pound average.

The TC discussed how landings weight can vary year to year, as well as spatially. There was some discussion on how often bait-specific pound information on average weights could be brought to the Board, but in general. Hopefully we'll be able to get a quota in numbers out of the upcoming assessment.

Issue 9, it's regarding the commercial size limit, of whether to keep it at 33 inches fork length, or 36 inches fork length, which would match the recreational fishery. The TC supported Option B, to match the recreational fishery. While the quota is monitored obviously in pounds when it's shut down, there is not really a biological reason for increasing the minimum size.

Obviously it's the higher size limit you're probably going to have fewer fish harvested at the same quota poundage. But the TC did recognize that having the two match could lessen angler confusion, as well as simplify enforcement. Moving on to Issue 10, just the commercial vessel limit, the TC supported the status quo, which is that the vessel limit not exceeds six fish per vessel. Similar to the previous issue, the quota is monitored and the fishery shuts down when it's been reached.

Lowering the vessel limit while it potentially could prolong the season, there didn't really seem to be much other information for it to be changed. On Issue 12, commercial de minimis, the TC supported Option B, allowing states to apply for a commercial de minimis status, and for Issue 13, the Technical Committee supported Option B, which for recreational regulations would expand the latitudinal boundaries of the states into federal waters, and commercial regulations would be based on the state of permitting. With that I can take any questions on the TC Report.

CHAIRMAN GEER: Are there any questions for Angela? Chris.

MR. CHRIS BATSAVAGE: Thank you for the report, Angela. Did the Technical Committee have any concerns about increased discards in the commercial fishery by raising the size limit to 36 inches?

MS. GIULIANO: That wasn't brought up by anybody on the Committee.

CHAIRMAN GEER: Lynn.

MS. LYNN FEGLEY: Thank you, Angela very much. Did the TC talk at all about the same issue, Issue 9 about the fact that the fish may be smaller to the north than if there is an access issue if you raise the commercial size limit?

MS. GIULIANO: That was not discussed on the TC call either.

CONSIDER FINAL APPROVAL OF AMENDMENT 1

CHAIRMAN GEER: Anyone else? Okay, I thank you Angela, greatly appreciate that. Moving on, we have 13 Issues you need to address. Of those issues, six of them have options. However, three of the ones without options we had some public comment that we need to address. The approach we're going to take is we're going to deal with Issues 3 – I'm looking at Mike, he can nod yes or no – 3, 6, and 7. Oh, it's up on the board, okay 3, 6, and 7. Then we'll discuss those and make a single motion?

Okay, we're going to do 1, 2, 4, and 11 first. We'll do a single motion on that and then we'll do the other ones are 3, 6, and 7. We'll do an individual motion on that and then we'll go to the issues that have options, and go by those one at a time, and we'll have our discussion as we move forward. There will be 13 motions, well there will be 10 total motions, I believe. Right, is that what it adds up to be? There is a lot. We're going to go through this. We're going to start, and Mike do you want to start the discussion on that?

DR. SCHMIDTKE: I just wanted to show on the screen for the Board's consideration those single option issues that don't have the suggested changes first. The first one would be Issue 1, Additional Language for the Goal of the Amendment that adds language talking about equitability and sustainability.

Then Issue Number 2 that adds two objectives related to the added language to the goal, as well as the harvest specification process. Issue Number 4 that describes how commercial landings and catch would be monitored under the Amendment, and how that process would now be going through the states.

Issue Number 11, discussing the establishment and the management of a commercial quota that also would be monitored in season by the states; we've had some conversations among those states that would potentially be non de minimis, Virginia, North Carolina, South Carolina as far as how that could be accomplished.

We're looking into some different avenues. SAFIS was brought up as one potential avenue for collecting that data. But that's not something that needs to be really addressed within this Amendment; kind of the how-to is something that we'll figure out in the aftermath, if these issues are approved. With that we can I guess pause.

CHAIRMAN GEER: Okay, is there any discussion on these four issues? Chris.

MR. BATSAVAGE: If there is no discussion, I would like to keep things moving along and make a motion to approve the language addressing Issues 1 (Goals), 2 (Objectives), 4 (Commercial Landings Monitoring), and 11 (Commercial Quota Management) in Draft Amendment 1 to the Cobia FMP.

CHAIRMAN GEER: Second by Dr. Rhodes. Is there any further discussion on this motion? All right, I'll read the motion. Move to approve language addressing Issues 1 (Goals), 2 (Objectives), 4 (Commercial Landings Monitoring), and 11 (Commercial Quota Management) in Draft Amendment 1 to the Cobia FMP. **Motion by Mr. Batsavage and seconded by Dr. Rhodes, all in favor raise your right hand; opposed, abstentions, and null. The vote carries 10 to 0, 1 abstention, and no null votes, okay, we're moving right along.**

DR. SCHMIDTKE: Next I'll go through the three issues that are single-option issues, but did receive some public comment related to them. First there is Issue Number 3, the definition of overfishing. This section was incorporated so that the Commission can now define overfishing. Previously that was set through the Coastal Migratory Pelagics FMP.

Right now the language in this section talks about addressing F and SSB thresholds, and the public comment that we received indicated some desire to incorporate target language within that. The threshold language was used previously a lot with the South Atlantic Council, and so that is kind of how that got carried forward.

There is kind of a description on the screen related to that section, as well as within the Amendment itself. Issue Number 6 is the next one that received some comment that had to do with the sector quota allocation. Right now we're currently operating under a 92 percent recreational quota, 8 percent commercial quota.

Finally Issue 7 had to do with the evaluation of recreational landings and the response to any overages. The three-year-averaging process that is in the original FMP that's been continued forward, there has just been some additional details related to that language that have been added through this Amendment process. The comments related to this had to do with changing that threshold at the bottom.

States with consistent underharvest for at least three years may apply to relax measures, changing that to two years. Sorry I didn't bring up previously, the comment related to the sector allocation had to do with basically running the same process that the Council ran to come up with the 92-8 split, running those same reference years to come up with what the sector allocation would be using the FES calibrated harvest estimates.

CHAIRMAN GEER: Are there any questions for Mike? Lynn.

MS. FEGLEY: I think I need a little clarification. Issue 5 is the one where we would decide whether we are doing harvest specification two, three or four years, correct? Does that relate to the table under Issue 7? For example, right now I think that under Issue 7, the evaluation and response to overages is this three-year-running average. But if we go to a two-year spec, does that change the calculation of that table so that you're evaluating on the average over two? To me the issues seem related, but I'm trying to understand if they are.

DR. SCHMIDTKE: The timeframes of those two things can be independent. That example assumes that in Issue 5 that Option B was selected, but it's not dependent on Option B being selected. The thing that would change is that instead of the evaluation being conducted every three years, as it is in the example, the evaluation would be conducted every two years. But it would still be done in a way that if regulations have been in place for three years, then a full three-year average could still be used on that running average type of basis. Does that make sense?

CHAIRMAN GEER: Are there any other questions or comments? I have Adam and then Chris.

MR. ADAM NOWALSKY: On Issue 7 that is still up on the board. I know we had quite a bit of discussion about this at the last meeting, with the takeaway at that time that changes would require some analysis from the PDT, and the preference of the Board was not to delay action on this, so we didn't pursue those concerns.

Where would this leave us with changing the underharvest timeline for evaluation for states to liberalize? If we chose to change that today, is it within the purview of the document that went out for us to change it, and does it in fact require PDT analysis when it seemed that was the takeaway when we discussed other options at the last Board meeting? I'll just note that I'm in favor of moving in that direction.

MS. KERNS: I think it's fine, Adam, because it goes from a single year to three years, so it falls within the realm of what you could say went for public comment to a degree, as long as there is no objection by the Board, and everybody consents to it then we can move forward with it. If it were more than three, then we might run into some issues.

CHAIRMAN GEER: Any other questions or comments, I'm sorry, Chris.

MR. BATSAVAGE: Also on Issue 7, a question that the public asked me was regarding if a state has exceeded their three-year average, and it has to adjust the regulations. Could other information besides MRIP data be used? It's not explicit in the document regarding whether a carcass collection program or other volunteer angler survey information could be used to craft regulations. Is that something that could be allowed, without explicitly stating it in the document, but then would potentially have to put it back out to public comment?

CHAIRMAN GEER: I believe the idea is if new data becomes available we can use it. It's not explicitly said in there. I'm under the assumption that yes, if new data becomes available it can be used. Toni.

MS. KERNS: The Technical Committee would have to do a thorough vetting of that information, dependent on what the Board is going to utilize that information for. For example, in some species we use alternative datasets to help craft regulations, but we do not use those datasets to determine the amount of the overage or underage that that state achieved. It could depend on what it's being used for, but regardless that dataset would need to be thoroughly vetted by the TC, and then considered for approval by the Board at the time of use for each time it is used.

CHAIRMAN GEER: It can be considered if it is vetted through the process. Okay. Adam.

MR. NOWALSKY: One other question. Under Issue 6 it explicitly states that the allocation could be changed via addendum. For Issue 7, the timeframes that we're talking about here as we go through the evaluation process, could that also be done through an addendum? What part of 7 could be done versus in an addendum versus amendment, since it doesn't explicitly state what can be changed in that section like it did under Issue 6? I'm glad I'm asking the easy ones to get us started this morning.

CHAIRMAN GEER: We always appreciate it, Adam. Adam, we really appreciate your question. It's a good one though.

MR. NOWALSKY: I really appreciate sarcasm.

DR. SCHMIDTKE: Adam, so changing that timeframe could be done through an addendum. It should be noted though as well, depending on what gets chosen in Issue 5 for the specification process that is the timeframe with which any application, so to speak, for underharvest would be evaluated. That is when that evaluation specification process would occur.

The underharvest for at least any timeframe of underharvest that application would be considered, the alternative regulations would need to be considered at the next evaluation. They wouldn't be considered like on the fly, in between evaluations. Does that make sense?

MR. NOWALSKY: Does that suggest that whatever the timeline we're applying in Issue 5, should match the timeframe that we're using in Issue 7? Is that what we're suggesting?

DR. SCHMIDTKE: It does not have to, no. The timeframe that you're using in Issue 5 runs on its own timeframe. You can still conduct a three-year-rolling average if you're evaluating every two years, because you just take the last three years. If there has been a regulation change the language here states up to the three most recent years of data. You may have some.

If say Option A were chosen with the harvest specification, you may have some years if a state is changing regulations often that they're going to be evaluated on a two-year average some years. That is the data that you would be working with so that no state gets penalized for unsustainable regulations that they've moved away from.
CHAIRMAN GEER: Lynn.

MS. FEGLEY: I know Adam has a follow up, but you know, so in my opinion, and I understand the response, but for simplicity of management and for the ability for the public to understand what is going on. It seems to me that those two things in 5 and 7 really ought to match. It just makes me very nervous when we're evaluating on one timeframe, and determining responses on another. I'm uncomfortable with that.

CHAIRMAN GEER: Spud.

MR. WOODWARD: I think what we're wrestling with there is the application of the principal of adaptive management, and one of the reasons that we have such a difficult time doing that is that we're trying to build in flexibility to accommodate an unpredictable future. I mean I can understand the desire to have the two things synced up, but I think it can disadvantage a state if we do that. I don't have a strong opinion one way or the other, but I think we need to keep our eye on the ball, and that is we're trying to use principals of adaptive management here. There is a little bit of trial and error in that.

CHAIRMAN GEER: Follow up Lynn?

MS. FEGLEY: To Spud's point, so for example the Table 11 is written on a three-year average. If Issue 7 was set to three years that wouldn't preclude the Board from acting at two if they saw a need, right?

DR. SCHMIDTKE: No. That wouldn't, the Board would specify, you know for any given timeframe, and if they saw a need, yes the Board could revisit during that timeframe.

CHAIRMAN GEER: Spud.

MR. WOODWARD: Just, I want to make sure I understand what the process will be. Let's just say theoretically that the state of Georgia had two zero years of recorded cobia harvest, and decided that it wanted to make petition for more liberal limits. It would present its case, and then the case was reviewed by the TC, and validated. Then this Board, not through an addendum or an amendment, because it would authorize the state of Georgia to change its regulations, or is it going to require an addendum or some other more structured action?

DR. SCHMIDTKE: It would be done through Board approval. I guess the stating of the case, just to point that out. It would be presenting the harvest from the time period in question, as well as what the new regulations would be, because that is what the TC would really be evaluating. They would be looking at what are the regulations you had in place, what were the harvest during that time? What are the new regulations that you want to put in place, and will those be sustainable and keep that state under its target?

CHAIRMAN GEER: Good point, are there any other questions or comments? No further discussion? Do you need to have a motion at some point? Does someone want to make a motion? We can either do each issue separately, or do them as a whole and accept the changes. We've already got something up there. Spud.

MR. WOODWARD: I'll make a motion. Move to approve language addressing Issues 3 (Definition of Overfishing), 6 (Sector Quota Allocation), and 7 (Recreational Harvest Evaluation).

CHAIRMAN GEER: Second by Lynn Fegley. Discussion, Adam.

MR. NOWALSKY: This motion as it is written would use the language, as it appears not any of the suggestions we got from the public input process and previously discussed, correct? I'm seeing nodding of heads, so to that end, I would move to amend this to change in Issue 7 the underharvest evaluation time period to at least two years.

CHAIRMAN GEER: Do we have a second on that motion? Second on the motion?

MR. WOODWARD: I'll second for the purpose of the further discussion, because I want to make

absolutely clear I understand. I think I know what your intent is, but as I read that language, we're not bound by three years; it can be some period less than three years, right? In my example I said if we had two years of zero harvest, and we felt like we could make a compelling case to change our regulations, we could still do it based on those two years.

DR. SCHMIDTKE: I was under the impression that the two years of harvest you described would, so no I'm sorry, I misunderstood your example. You would need three years of harvest underneath the target, in order to apply for liberalized measures. The state would then submit the liberalized measures that they would be proposing.

MR. WOODWARD: Well in that case I'll let my second of Mr. Nowalsky's motion stand as a second.

CHAIRMAN GEER: Spud, did you say you wanted your second on that? You do, okay, Doug and then Adam.

MR. DOUG HAYMANS: Just to clarify for myself. Page 44, the fourth paragraph that's what's changing, of at least two years?

CHAIRMAN GEER: Sorry, Doug we didn't have the document open.

MR. NOWALSKY: If it helps, Mr. Chairman as the maker of that motion that is exactly where I intended for this change to occur.

CHAIRMAN GEER: Mike yes that would be the only change; and that's in the correct place, Spud.

MR. WOODWARD: Follow up. I think a little bit of the confusion might be coming from the use of the term at least, and probably in hindsight if we had written it to be the underharvest evaluation time period of a minimum of two years, maybe some of this confusion might have been avoided. I'll offer that as a suggestion to the maker of the motion to change from at least to a minimum of two years.

CHAIRMAN GEER: Adam, would you support that?

MR. NOWALSKY: If without objection from the Board and if staff believes that contains the intent, I have no objection.

CHAIRMAN GEER: Any further discussion? Adam.

MR. NOWALSKY: Just the discussion we had at the last meeting suggested that if a state was to underharvest, zero harvest in the example two years and in the third year they were 0.01 pound over the harvest, then you would not be able to have the opportunity to discuss liberalization. I think in the vein of adaptive management, in the vein of flexibility, this provides flexibility and one of the takeaways here is that it remains within the purview of the state to ultimately make that decision, whether or not they want to pursue a liberalization of measures, and then the Board to approve those measures.

If it is not appropriate, even if they underharvest in that timeframe, but they choose not to pursue it, they would still have that flexibility, but it would preclude that issue of if you're just one pound over in the three years then you can't do it. It would give us that flexibility.

CHAIRMAN GEER: I have Chris.

MR. BATSAVAGE: I was on the PDT when we were putting this option together, and I think the discussion was around just the high variability of MRIP harvest estimates, to where three years would be a safer bet. But I see Adam's point, with maybe two years providing some flexibility with the state having the option to look at it, to determine whether or not they want to move forward with liberalizing.

The way things are going with the cobia fishery; this is more likely to apply at least in the short term, along the southern end of the range of the

fish, as they seem to be moving north and staying north for a longer period of time. Georgia was given as an example, but potentially North Carolina could find themselves in a situation like that too, where we're consistently under harvesting under regulations that weren't designed for what we're currently seeing. I think I might be able to support this amended motion.

CHAIRMAN GEER: Any further discussion? All right let's take this to a vote? Is there any opposition to the alternative motion as said? Let me read it into play first. **Move to amend to change in Issue 7 "the underharvest evaluation time period to a minimum of two years." Motion by Mr. Nowalsky and seconded by Mr. Woodward. Is there any opposition to this? Hearing none motion carries by consent.**

Now this becomes the primary motion, and we have to add this to the initial motion. Give us a second to move it up there. This is the main motion now. I'll read it. **Move to approve the language addressing Issues 3 (Definition of Overfishing), 6 (Sector Quota Allocation), and 7 (Recreational Harvest Evaluation), with the underharvest evaluation time period changed to a minimum of two years.** Well actually we need someone, is this change in the motion, no?

MS. KERNS: There is no maker and seconder; it becomes property of the Board when it changes.

CHAIRMAN GEER: Sorry about that**. Let's see a show of hands for this one in favor of, opposed, abstentions, and null votes. The motion carries, 10 to 0, 1 abstention and no null votes.** Good, moving along. We're moving into the issues that had options that we need to discuss at this point.

DR. SCHMIDTKE: This one and I think if this is right Pat, we're taking these in like issue by issue.
CHAIRMAN GEER: Yes, we're going to take them issue by issue.

DR. SCHMIDTKE: Okay, so Issue 5, this is the Harvest Specification Process. This defines what the Board can set through Board action in the maximum timeframe, which they can set these measures. These would include the total harvest quota, vessel limits, possession or bag limits, minimum size limits, and the commercial closure triggering mechanism. The distinguishing factor between these options is the maximum timeframe for which the Board can set these measures in place, with Option A being 2 year, B being three years, and C being four years.

CHAIRMAN GEER: Is there any discussion on this Issue? Hearing none, do I have a motion? Lynn.

MS. FEGLEY: I would move to adopt Option B under Issue 5 that the coastwide total harvest quota, vessel limits, possession or bag limits, minimum size limits, are set for up to three years. Probably more words than you needed.

CHAIRMAN GEER: Give us a second while we get it in. Do we have a second? Seconded by Spud Woodward, is there any further discussion? All right, I'll read the motion. **Move to adopt Option B under Issue 5 coastwide total harvest quota, vessel limits, possession or bag limits, minimum size limits, and commercial closure triggering mechanism may be set for up to three years. Motion by Ms. Fegley, seconded by Mr. Woodward; let's see a show of hands in favor, opposed, abstentions, and null votes. The motion carries, 10 to 0, 1 abstention, no null votes,** next issue.

DR. SCHMIDTKE: The next issue is Issue 8, the recreational units. Option A is the status quo of managing in units of pounds for the recreational fishery. Option B would manage in numbers of fish.

CHAIRMAN GEER: Any further discussion on this? Do we have a motion? Mel.

MR. MEL BELL: Yes Mr. Chair, I would move to adopt Option B under Issue 8.

CHAIRMAN GEER: Do I have a second to the motion? Chris Batsavage. Is there any further discussion? Hearing none, is that motion clear enough the way that's written? I think we have to have the links.

MS. KERNS: It's not required, but it would be nice so that the public can tell what that is.

CHAIRMAN GEER: Yes it would be nice to have.

MS. KERNS: We could add manage the fishery.

MR. BELL: I can fix that if you would like. That's the way we do it at the Council.

CHAIRMAN GEER: **Thank you very much for putting that in there, move to adopt Option B under Issue 8: Recreational landings, quotas, and targets will be evaluated and set in units of numbers of fish. Motion by Mr. Bell, seconded by Mr. Batsavage; let's see a show of hands in favor. That's going to be tired at the end of the day; opposed abstentions and null votes, the motion carries 10 to 0, 1 abstention, no null votes.** The next issue is 9.

DR. SCHMIDTKE: Issue 9 is for the commercial fishery. This is looking at the commercial size limit; Option A being to maintain the current minimum size for the commercial fishery of 33 inches fork length, or 37 inches total length. Option B would change this to match the recreational fishery at 36 inches fork length, 40 inches total length.

CHAIRMAN GEER: Lynn.

MS. FEGLEY: I would just like to preface this motion quickly with the idea that because the commercial fishery is managed under a quota that the biological reason for the size limit is not particularly impactful, and also because we tend to have smaller fish to the north. **With that I would like to move to adopt Option A, status quo, under Issue 9, so that commercial fisheries will continue to operate with a minimum size of 33 inches fork length, or 37 inches total length.**

CHAIRMAN GEER: Do I have a second? Let's get the motion up there. Adam, are you seconding that motion? Okay. Discussion, Doug.

MR. HAYMANS: I want to make sure that I understand that shall maintain a minimum size. I'm at 36 on commercial. I'm not going to go back down to 33 that is okay, right?

CHAIRMAN GEER: It's at least. Are you 36 on commercial, Doug? Okay, same as recreational?

MR. HAYMANS: Yes, we made it the same.

CHAIRMAN GEER: Would that be solved by having at least a minimum? Would the makers consider a friendly amendment?

MS. FEGLEY: Yes.

CHAIRMAN GEER: Adam, are you okay with that? Okay, any further discussion? Chris.

MR. BATSAVAGE: As we know, the commercial quota is pretty small, and we've been hitting that quota earlier in the year where we have close dates now in early September. Most of the landings are coming from two states. There is a lot of interest in trying to extend the season out as much as possible**. I would like to offer an amended motion. I move to adopt Option B under Issue 9; commercial fisheries would operate under a minimum size limit of at least 36 inches fork length or the total length equivalent of 40 inches.**

CHAIRMAN GEER: A substitute, okay, is there a second on this motion? Seconded by Mel Bell, discussion on the substitute motion? Let's go with Joe and then back to Chris.

MR. JOE CIMINO: I apologize if Angela covered this. I'm seeing this in the TC's recommendation. Could we just, if I forgot here, why they recommended this?

CHAIRMAN GEER: Angela.

MS. GIULIANO: I guess on the call there was some discussion of anglers being confused about two different regulations for commercial and recreational anglers, especially, like correct me if I'm wrong but, in some states anglers can have both commercial and recreational license. It was more that it might help simplify enforcement

and less any biological reason, especially because it's managed by a quota.

CHAIRMAN GEER: Just to follow up on that. The TC did not consider the possible dead discards?

MS. GIULIANO: No, we didn't discuss additional discarding.

CHAIRMAN GEER: All right, Chris.

MR. BATSAVAGE: Yes that is another kind of to that point. A lot of states have folks with both commercial and recreational licenses or for-hire and commercial licenses. It does make it easier for enforcement to have the same minimum size limit, so fishermen don't decide which hat they want to wear dependent on what size fish they catch. Again, being a small quota it comes down to numbers of fish, as far as hitting your 50,000 pounds when you know they're pretty good sized fish.

I asked about the discards too, whether that was a concern, because it's largely incidental catch in the commercial fishery. However, with the season closing in September the last couple of years and probably will close early again this year. We already have discard issues once the season closes. I'm not sure which is going to create more, but I think any opportunities to try to put in some measures to extend the season are a step in the right direction.

CHAIRMAN GEER: Mel.

MR. BELL: Yes and our rationale is I talked to law enforcement about this. They would prefer consistency, and also we have some of the same issues where some of the folks that are actually the directed fishery, if you will for cobia, are recreational/commercial, and they can kind of turn their hat one way or the other.

Enforcement asked me if we could have consistency. That would be much simpler for things. The way this sort of evolved too, while it was under the Council it was 33, 36, and I don't really know how that originated, but I know in the hand-off in Amendment 31 over to ASMFC, the Council was really focused on the recreational fishery, and we weren't even thinking about the commercial fishery.

You know the fact that there was a different size; I don't recall us talking about that a lot at the Council level. Then we basically, because the issues we were dealing with were recreational issues. I don't know if that was kind of an oversight on our part. Now and I realize what's going on now with the fish moving north, so there is opportunity, maybe smaller fish to the north. But that's not what back when it was managed under the Council, and the fish weren't doing that as much that wasn't an issue.

It's something that has just sort of presented itself as a potential opportunity or a potential issue. But I do know from our standpoint, my enforcement folks have really asked me if we could be consistent it would be less confusing for them and for the fishermen in general from our perspective.

CHAIRMAN GEER: Adam.

MR. NOWALSKY: I think this conversation about consistent measures is really important, because if you look at this from another direction it would really support the original motion. Specifically as per Doug's comments, if we went with Option A here that would not preclude a state with going to more restrictive commercial measures to match their recreational measures for consistency of regulations.

For the states that have de minimis recreational measures that currently are tied to Virginia's measures, as Virginia's measures change I know there is a lot of conversation in our own state, and I'm sure other de minimis states about going to some other measure, which is likely going to have a lower size limit. Option A would give those states the opportunity to bring their commercial measures closer, if not the same, to the recreational measures. For that reason I would continue to support the original motion.

CHAIRMAN GEER: Mel.

MR. BELL: I agree with Adam. I mean the state still has the flexibility to adopt consistent for itself, or more stringent measures. That's a very good point. I was just trying to kind of perhaps deal with our issues in one. We will have to go back as a state and adjust some things anyway. But that's a good point.

What you're saying does provide flexibility for other folks, where perhaps the fish aren't as big, so I get that. My thinking was kind of focused on my world down there, what we're dealing with. But you're absolutely right. The state would have the ability like Doug does to deal with that.

CHAIRMAN GEER: Adam, there is no tying de minimis states to Virginia or other states for the commercial measures.

MR. NOWALSKY: No, I understand that. But I was referring to the tie that currently most de minimis states have chosen on the recreational side. I suspect those states are going to be looking at moving in a different direction based on what's occurring.

CHAIRMAN GEER: Any further discussion on the substitute motion? All right we're going to take a vote. Move to substitute "to adopt Option B, commercial fisheries would operate under a minimum size limit of at least 36 inches fork length or the total length equivalent (40 inches). Motion by Mr. Batsavage, seconded by Mr. Bell; let's see a show of hands in favor. All opposed raise your hand, abstentions, null votes; the motion carries 9 to 0, 2 abstentions and no null votes. Excuse me? It fails, I'm sorry. The motion fails 0 to 9 to 2 abstentions, no null votes. I apologize on that. One, I thought there were two. Chris did you abstain?

MR. BATSAVAGE: We nulled.

CHAIRMAN GEER: I'm sorry. I will say this again**. It fails 0 to 9, 1 abstention, 1 null vote.** Okay, I need to look at the board more often. **That goes back to the main motion then, which is move to adopt Option A, status quo, under Issue 9, commercial fisheries would continue to operate under a minimum size limit of 33 inches fork length, or the total length equivalent (36 inches).**

That's all I need, I'm sorry. **All those in favor, those opposed, abstentions, null votes, I'm going to make sure I got it right this time, the motion passes 10 to 0, 1 abstention, no null votes.** The next issue is Issue 10, which is the vessel limits.

DR. SCHMIDTKE: Issue 10 is the Commercial Vessel Limit. Status quo is that states set their commercial vessel limit not to exceed 6 fish per vessel. The alternatives would reduce that maximum vessel limit to 5 or 4. The states would still maintain the ability to set their own vessel limit; it would just be how high could a state set that limit?

CHAIRMAN GEER: I'll open the floor for discussion. Hearing no discussion does anyone have a motion? Do we have a preferred motion? Doug.

MR. HAYMANS: I thought you all had this all worked out. **Mr. Chair, I would move that under Issue 10 we accept Option A. Oh that all states shall maintain a daily vessel limit not to exceed 6 fish per vessel.**

CHAIRMAN GEER: Which is status quo. Do we have a second on that? Ms. Bolen. Is there further discussion on this, any discussion on this? **All right hearing none, I'll read the motion. Move to adopt Option A, status quo, under Issue 10: All states shall maintain a daily vessel limit, not to exceed 6 fish per vessel, motion by Mr. Haymans, seconded by Ms. Bolen. All those in favor raise your hand, those opposed, abstentions and null votes. The motion carries 10 to 0, 1 abstention and no null votes**, all right Issue 12, Commercial De Minimis Options.

DR. SCHMIDTKE: Issue 12 determines whether a commercial de minimis status would be established. Option A is the status quo that

there is no de minimis status for the commercial fishery, Option B establishes this status with the criteria shown below. There are no alternative regulations for de minimis states, but they would not need to account for their commercial landings in season.

CHAIRMAN GEER: Discussion on this issue, Joe.

MR. CIMINO: This is an option that I was hoping was crafted for this with the intent that the 3 percent set-aside would allow de minimis states to continue to harvest throughout the year, to sort of a directed vs. bycatch quota, in my mind. But I've been reading this; I guess that second bullet as if the directed states harvested the entire quota. In other words, went over their 97 percent. The de minimis states would still need to shut down. It doesn't quite get at what I was hoping for with this option.

CHAIRMAN GEER: Any other? Lynn has her hand up.

MS. FEGLEY: I was going to make a motion, but also preface this that as a de minimis state. In the state of Maryland we have very little capability or resources right now to implement yet another in-season monitoring program for a fish that is so rare. **With that I would move to adopt Option B under Issue 12 which would allow states to apply for de minimis status for their commercial fishery.**

CHAIRMAN GEER: Do we have a second to that motion? Seconded by Mel Bell, is there any further discussion? Okay, I'll read the motion. **Move to adopt Option B under Issue 12 which would allow states to apply for de minimis status for their commercial fishery. Do we want to put the 3 percent de minimis set-aside in there?**

It's part of it, okay. Motion by Ms. Fegley, seconded by Mr. Bell, all those in favor raise your hand, opposed, abstain, and null vote; the motion carries 10 to 0, 1 abstention and no null votes. The last issue, Issue 13, I'm sure this is going to bring up quite a bit of discussion though.

DR. SCHMIDTKE: Yes the final issue has to do with the recommendation to NOAA Fisheries for regulations that would go into federal waters. Option A would have that recommendation be according to the vessels permitted or licensed state of landing, and this would apply to both the commercial and recreational sectors.

Option B would distinguish the sectors. Recreational would be determined by the location of catch, with regulations persisting along the latitudinal extension of state boundaries into federal waters. The commercial fishery would still operate under the vessels permitted or licensed state of landing.

CHAIRMAN GEER: Discussion on this issue, Doug or Mel, I see you're both raising your hand. Mel.

MR. BELL: I could make a motion and then we could discuss it, would that work?

CHAIRMAN GEER: If there is no discussion, is there any discussion? Chris.

MR. BATSAVAGE: Just a question. I know we talked about this at the meeting in May, where we talked about vessels of fishermen with multiple state licenses being held to the most restrictive state. How does this work, in other ASMFC managed fisheries? I suspect, especially in the northeast where the states are all pretty close to each other. It is probably not uncommon for a fisherman to have multiple state licenses while fishing for summer flounder, for instance out in federal waters. Does conservation equivalency just wave all that? I'm just having a hard time understanding the difference between what goes on for that fishery versus the options here for the state of landing option.

CHAIRMAN GEER: Toni.

MS. KERNS: For example, species in the northeast it is by state of landing, and no matter if you have multiple licenses, you're telling enforcement officers where you're going, and you have to follow the rules of the state that you

are landing in. If you had more fish than that state allowed for, then you would be in violation.

CHAIRMAN GEER: Adam.

MR. NOWALSKY: The option for the recreational side in B is pretty straightforward for states that have a truly north/south coastline, when you start deviating from that this definition has a very different meaning. For example, in the state of New Jersey where the majority of our coast runs northeast/southwest, turning east out our inlet we call going up the beach. That is what it is, because that is essentially what you're doing.

You look at Florida, where you've got more of a southeast/northwest orientation, going due east is essentially running down the beach. Then we go to New York, which obviously is a minimal player, although as we see shifts it changes entirely, where they have a predominantly east/west shoreline. What would this even mean to a state like New York? Do they have any waters here at this point from a federal perspective, if we went with this option?

I'm not clear as to why we didn't get any Law Enforcement feedback on this issue. The sense of continuity of regulations for where the fish are landed on the recreational side is complimentary to most of our other recreational species in the Mid-Atlantic. That is pretty much most of all our species are treated that way. I think from a consistency of measures that would have much more consistency, Option A here would, and that is what I'll be supporting on this issue.

CHAIRMAN GEER: Mel.

MR. BELL: No surprise, because I've mentioned this before, Option B would be my preference. There was some feedback from Law Enforcement I recall, I think the last meeting. They were kind of good points, bad points to either. It kind of depended on the perspective they were looking at perhaps with their own individual state.

I know in talking with our enforcement folks they would prefer B. Another reason for B, specifically for us, is that if the state is going to accept some responsibility for management of this species out into federal waters, we would like to be able to extend our influence and our management approach out there.

We have perhaps just a situation where, and it's primarily between us and Georgia, but as well as North Carolina/South Carolina, where South Carolina has a number of artificial reefs that we've built off of South Carolina, which depending on how you draw a line. You might shave a piece off and find it in Georgia, and it's the same for North Carolina. But we can talk about the due east versus what the CFR actually says for drawing that line. But our cobia fishery is really focused on those artificial reefs, so South Carolina would like to be able to extend management out onto those artificial reefs, and the only way to really do that. If we go to a system where Georgia still maintains the 6 fish boat limit, we have a 3 fish boat limit.

Fishermen come out of Savannah, which they do, and fish those artificial reefs. Now enforcement has got a situation where Georgia boats can have 6 fish out here, South Carolina boats can have 3 fish out here. It's not really so much the issue of the equitability, or really making our fishermen mad over that.

Our fishermen don't want 6, because recall that these fish are part of that southern distinct population segment that was identified in the last stock assessment that we're trying to rebuild. We know through acoustic tagging and regular tagging, monitoring movement. Those fish do not just appear in our inlets magically, they actually show up in federal waters, they move in, they move out, they go back and forth during like the month of May, April/May into June.

If we can conserve the fish and try to rebuild that DPS in our own state waters that's great, but if they all get caught out in the federal waters on these artificial reefs, our ability to rebuild that

DPS just lags behind, or we may never get there. That is why we have such an interest in extending some additional conservation maybe out a little bit farther, and being able to enforce it out there.

Because if you have a situation where you go back to whatever the neighboring state allows, then you could be extracting those fish off of that reef at twice the rate, perhaps as you might yourself. That is why we were focused on that. Enforcement has asked me to try to focus on that and make that happen. That is why it's appealing to us. For whatever reason, I think that is the way the TC went, in terms of their recommendation.

I know this may be a little unique, in terms of how they do it up the coast, but that is why we preferred Option B, and I would support Option B. I don't know if now we want to talk about the line, if that is a good time to talk about the line or not, how it's oriented. The way it says it and the way we took it to the public would be aligned due east that is what it says. But if you go into the CFR that defines the dividing lines between the states that extends out into the EEZ, it's a different line. It's not a due east.

On a 1-3-5 heading with North Carolina for us, and a 1-0-4 heading for Georgia, so it's basically an extension of the state lines. Those lines are used for other things, I know in consideration of wind energy discussions and mining and that sort of thing, gas exploration. Those are the lines that exist in the CFR, they exist in the CFR also related to coastal migratory pelagics related to the dividing line for North Carolina for king mackerel, I think. This is I guess a procedural question. I don't know that we can change that.

Even if we liked Option B and we chose Option B, I don't know because we've taken this out to the public and it's sort of been vetted that way, and commented on that way. I don't know that the public really cared if it was a 0-9-0 or 1-0-4 heading, but that would be a better line in my opinion is to follow the existing lines that are in the CFR, not the due east, if we went with the Option B. But that's my logic behind that. It may be a South Carolina specific issue, but if we're going to accept responsibility for helping to manage those fish out in federal waters, and particularly with us we have conservation measures in place to try to rebuild that DPS component of this stock. That is the direction we would like to go in.

CHAIRMAN GEER: Mel, since we are making a recommendation to the Feds on this that we can make some changes to this line, I mean all we're doing is putting forward a recommendation on these.

MR. BELL: Well that would make sense to them too, I guess. That's their line, so it might make more sense.

CHAIRMAN GEER: Spud.

MR. WOODWARD: Just a follow up on that. Are we using the CFR Line to delineate between the Atlantic group and the Gulf group? We're not using the CFR Line? For consistency sake it seems like we would be using, maybe Roy knows the answer to that question.

DR. ROY E. CRABTREE: I don't know the answer to that question off the top of my head. I would encourage you not to go down this path though. I think for this to work cleanly, regulations need to be based on where you land the fish. I think when we start turning this around to things that require at-sea enforcement on all of these; it just opens up a whole host of problems and issues.

I understand where you're coming from, Mel, but I just regard it as unworkable and very difficult to enforce. I think that's why, when you look at other times we've done these kinds of things we haven't gone down this path, because I just don't think it's a workable way. I'm going to support Option A. If there are questions about the CFR Lines we can look those up, but I can't tell you off the top of my head.

CHAIRMAN GEER: Are there any other comments on this? Roy Miller.

MR. ROY W. MILLER: It just occurred to me that I don't think the Commission manages any other species in the fashion suggested in Option B. Therefore, if we adopt Option B it would be precedent setting, and perhaps complicating for some other species that we all love. I'm inclined to go with Roy Crabtree's suggestion towards Option A.

CHAIRMAN GEER: We do not manage any other species that way. Are there any other comments or discussion? Do we have a motion? We need a motion from somebody, Adam.

MR. NOWALSKY: Move to adopt Option A for Issue 13.

CHAIRMAN GEER: Okay we have to get some verbiage in there.

MR. NOWALSKY: Yes, I didn't get the cheat sheet with what the right motions were, so thank you.

CHAIRMAN GEER: Do we have a second on this motion, motion by Mr. Pugh, further discussion, Lynn? Oh, okay. Christ Batsavage.

MR. BATSAVAGE: Since we enforced our regulations for fish like this, you know when the fish come back into the state. I think either option would work for our enforcement officers. You know it's a question about what happens when a fisherman is boarded out in federal waters is the question which gets to the Option B.

However, this is the only concern I have with Option B, is just with the CFR lines if we chose those. They make sense from a state boundary perspective for sure, if you look at due east, and for some of them it doesn't at all. My only concern is just the fishermen knowing exactly where they are beyond three miles with that line. Whether it is 90 degrees or 104 or 135, it could probably just get a little problematic, as far as fishermen crossing the line accidentally.

CHAIRMAN GEER: From my understanding, and Toni correct me if I'm wrong. If in federal waters and you're approached by an officer, they'll ask you where you are returning into, what port. If you provide license for that state that is what regulation you're under.

MS. KERNS: That is correct.

CHAIRMAN GEER: Roy.

DR. CRABTREE: Yes, and I suspect that will be a significant problem, because I think there will be a lot of recreational anglers who won't be sure what side of line they're on, or even if there is a line. But they're going to know where they're landing the fish, and they're going to think that's the rules they are supposed to follow. That is part of the complication interject that you've got to follow a set of rules where you're landing, then when you cross the line you've got to follow a set of rules that aren't where you're landing. I think that is going to confuse people.

CHAIRMAN GEER: Mel.

MR. BELL: Yes, and I follow all that. Ours is perhaps just a unique situation. This fishery is really focused on those specific artificial reefs, so they know when they're on the Hilton Head Reef, or the Betsy Ross Reef. That is where enforcement goes, because that is where the fishermen are.

Whether it's Coast Guard or our guys doing JEA work, it is perhaps a little oversimplified, the picture off of, but it is very, very geographically specific off of South Carolina. But I understand what you're saying, in terms of the complexity of it. It may not fit kind of the model, but that's why we're focused on that.

We also feel that since we built those reefs that we have a responsibility to try to extend our management out there. We take ownership. Even though they are in federal waters, they are permitted to our state, so we kind of assume some responsibility for that. We would like to be able to extend our conservation measures out there. But in terms of confusion over where they are, there is no confusion when they're on those

specific reefs. But then again, when they transit they're not. I get it.

CHAIRMAN GEER: Spud.

MR. WOODWARD: I hesitate to even ask this question. Could we bifurcate this and apply Option A to one area and Option B to another?

CHAIRMAN GEER: No. That's as simple as I can put it. Toni.

MS. KERNS: That would be called a special management zone, which is something that we can look into. I would need to talk with Roy about exactly how we would go about the process for doing SMZs, which for the sake of time, if that is something that South Carolina would like to pursue then we can work on that later on. But in order to keep us moving, and try to keep us as close to being on time. I would say we could explore that option at a later meeting.

CHAIRMAN GEER: Spud, my comment was referring to this Amendment. It can be done but Roy.

DR. CRABTREE: Yes, I was thinking along the lines of what Toni said. If there are a limited number of very specific places, then maybe we could identify those as some sort of special management zone and look at a future date coming in, and making some specific provisions for those spaces.

CHAIRMAN GEER: Mel.

MR. BELL: To that point specifically, those reefs are already designated as Special Management Zones within the context of the Snapper Grouper Plan, not cobia at the moment. Yes, maybe we could visit that in the future, perhaps.

CHAIRMAN GEER: Is there any other comment? All right I'm going to read the motion. **Move to adopt Option A for Issue 13: recommend to the Secretary to implement regulations in federal waters corresponding to vessels' permitted/licensed state of landing (for all sectors). Motion by Mr. Nowalsky, seconded by Ms. Fegley, all those in favor raise your hand, all those opposed, abstentions, null votes. The motion carries 9 to 1, with 1 abstention and no null votes.** Now we have to approve entire Amendment as we've discussed today. Wait a minute, Toni.

MS. KERNS: Included in that motion or in a separate motion, you would need an implementation date as well.

CHAIRMAN GEER: We have to approve the entire Amendment with an implementation date. We have to pick a day. We can start it January or whenever. I mean we have to come up with a date on that. Spud.

MR. WOODWARD: I believe some states, like our neighbors over here are going to have to do some of this through legislative process, so probably January 1 is not a realistic date for everybody. Just to put something out there for discussion, July 1, 2020.

CHAIRMAN GEER: Did you say July 1, 2021 or 2020? Would that be possible for all states? Mel.

MR. BELL: For us, assuming we could work this through, get it in, considered that would be probably the soonest that we could implement it in our state, in terms of working through the General Assembly, because we will have to change some things. That is our normal. Our normal start date on these sorts of things would be 1 July. That is just us. Chris.

MR. BATSAVAGE: There are some options that we approved earlier that aren't regulatory changes, but it changes how we do things, such as monitoring the quotas for instance. I mean this motion doesn't preclude states from putting those in place before July 1. I just want to make sure that's clear, because we can move quicker, but understand other states can't move as quickly.

CHAIRMAN GEER: States can go more quickly if they want, yes. Adam.

MR. NOWALSKY: How would the implementation process for the specification setting described in here be compatible with what is essentially an implementation date mid fishing year?

DR. SCHMIDTKE: One thing to consider within the discussion of dates is that kind of the plan from the PDTs perspective, and at the directive of Board members has been for that initial specification of harvest for the Board to occur following the assessment, following the stock assessment, which will be available in January of next year.

That is something for consideration. If the Board would like to take action to put in measures for the 2020 fishing year, the fishery really hasn't started in February, it starts later in the year. The actions at that meeting, they would impact the 2020 year. But that's for the Board's consideration.

CHAIRMAN GEER: Adam, follow up.

MR. NOWALSKY: If this had the implementation date of July 2020 then, we've put 2020 measures in place this winter. Would we then essentially use this Amendment for 2021 management? Is that essentially what we're saying?

DR. SCHMIDTKE: With a July implementation date then that would likely be for 2021 management.

CHAIRMAN GEER: Any further discussion? Lynn.

MS. FEGLEY: Just to clarify, with that implementation date the first year used in an evaluation would be 2021.

DR. SCHMIDTKE: Yes, but if there is the case where a state does not need to change their regulations, and they are able to keep their regulations the same, then the TC would have the data. Well, PRT would be the ones initially looking at it, but they would have the data needed to form that three-year-rolling average. They could consider earlier years. But with the three-year timeframe that was specified previously for the evaluations, the three-year average could start with 2021.

CHAIRMAN GEER: Are there any other comments, questions? We need a motion. Malcolm, or are you pointing at Spud?

DR. MALCOLM RHODES: Oh no, I thought it was already made. But move to recommend to the Commission the approval of Amendment 1 to the Cobia Interstate Fishery Management Plan as amended today, with an implementation date of July 1, 2020.

CHAIRMAN GEER: Second the motion by Spud Woodward. No further discussion on this, Adam.

MR. NOWALSKY: I just want to offer a word of thanks to this Board, to staff to PDT. I've been a very vocal voice on this issue, probably more so than I have been, but just because of the lessons we've learned recreationally. I think there have been a number of steps here towards recreational management that I hope we can see implemented in some other fisheries.

I hope this works well. I agree it's adaptive. There is going to be a learning process. But I think there have been many significant strides here from the way this Commission has managed other recreational species. I'm happy to say I'll vote in favor of this at this time. Thank you again.

CHAIRMAN GEER: Your comments have been greatly appreciated, and you beat my thunder on that. I was going to thank the PDT and Mike and everyone else. I appreciate that. I'm going to read the motion. **Move to recommend to the Commission the approval of Amendment 1 to the Cobia Interstate Fishery Management Plan as amended today, with an implementation date of July 1, 2020, motion by Dr. Rhodes, seconded by Mr. Woodward. All those in favor raise your hand. Toni.**

MS. KERNS: This is a final action, so we could ask if there is any objection, or if there is objection then we'll need to do a roll call.

CHAIRMAN GEER: **Are there any objections? Are there any abstentions? Thank you very much. The motion carries unanimously**. All right, thank you very much and hopefully we won't have to raise our hands to often. I thank you very much for doing that ten times.

UPDATE ON THE TRAFFIC LIGHT ANALYSIS FOR ATLANTIC CROAKER AND SPOT FOR 2018

CHAIRMAN GEER: We're going to move on. Chris McDonough has an update on the Traffic Light Analysis for Atlantic Croaker and Spot for 2018. Chris, it's all yours.

MR. CHRIS McDONOUGH: For the harvest composite for spot in 2018, the traffic light for the individual year did exceed the 30 percent threshold, just below 60 percent. The adult composite traffic light just exceeded the 30 percent threshold in 2018. However, since both of them did not trigger across the two consecutive years, there was no management concern triggered in 2018.

The decline in the harvest composite was driven mostly by a commercial decline. For the juvenile index, this is an advisory index. It did trigger above the 60 percent threshold in 2018, this is the Maryland Juvenile Fish Survey, as it has for a number of years. This basically just continues to indicate poor spot recruitment in that region.

Then the shrimp discards for 2018 were not available for this meeting. They will be for the annual meeting in October, but that was in really no danger at this point of triggering. Like the juvenile index, this is also an advisory index. To sum up for spot. Under the current traffic light management scheme, management concern was not triggered for this year, since neither the adult composite index nor the harvest composite exceeded the 30 percent threshold in two consecutive years.

The juvenile one did trigger in 2018, indicating poor recruitment, and then the shrimp traffic light will be available at the next meeting, when we'll discuss the regional applications for the traffic light, which is coming down, coming up. Are there any questions on spot before we go on for croaker?

For croaker, the harvest composite did trigger in 2018, the red proportion that exceeded 60 percent as commercial landings continue to decline. However, the adult composite characteristics, which is the SEAMAP Survey and the Woods Hole Fall Groundfish Survey did not trigger in 2018.

In recent years it actually did drop down a little bit, because you've got some red showing up in that composite index. But it's still not consecutive years, the three consecutive years in the case of croaker, unlike the two in the spot. All right for the juvenile indices, which are the VIM Survey in North Carolina, VMF Program 195, it did not trigger in 2018, although these two surveys have kind of been working back and forth, in terms of opposing trends in the last several years.

But as far as composite goes, it has stayed above the long term average. With the shrimp trawl fishery, it's like with spot, data is not available for 2018 yet, it will be in October, but hits through 2017 it stayed below the 30 percent threshold. To conclude for croaker, under the current management scheme it did not trigger for this year, since only the composite index triggered but not the adult index.

The juvenile composite did not trigger in 2018 either, but it has shown a fairly high pattern of variability between the two indices, and then the shrimp fishery data will be available, and like with spot we'll be discussing the regional approach in October with this for modifying the traffic light. With that any questions on either?

CHAIRMAN GEER: Are there any questions to Chris on the TLA? Not hearing any, it says action

here but we don't need to take an action today on this, it's just an update.

2019 FMP REVIEWS AND COMPLIANCE FOR ATLANTIC COBIA AND ATLANTIC CROAKER

CHAIRMAN GEER: If there are no questions or comments, all right. Thank you very much, Chris. To save some time, if there are no objections, I'm going to ask that the FMP Compliance Reviews for Atlantic Cobia and Atlantic Croaker be done via e-mail. Does anybody have any objections to that?

ADJOURNMENT

CHAIRMAN GEER: Is there any other business to come before the Board today? Hearing none; meeting is adjourned.

(Whereupon the meeting adjourned at 12:10 o'clock p.m. on August 6, 2019)

Atlantic States Marine Fisheries Commission

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MEMORANDUM

October 11, 2019

To: **South Atlantic State/Federal Fisheries Management Board**

From: **Michael Schmidtke, FMP Coordinator**

RE: **Spanish Mackerel Management**

On August 24, 2019, a federal commercial closure was issued for Atlantic Migratory Group Spanish mackerel in the Northern Zone (NY-NC). This closure prompted questions from states with waters adjacent to this zone on whether a response to this closure is required in state waters by the Commission's current management document for Spanish mackerel, the Omnibus Amendment to the Spot, Spotted Seatrout, and Spanish Mackerel Interstate Fishery Management Plans (Omnibus Amendment).

Upon review of the Omnibus Amendment, it was determined states are not required to change state management during a federal closure. Additionally, after consultation with the South Atlantic Fishery Management Council (SAFMC) the following inconsistencies were identified between the Omnibus Amendment's) and federal Spanish mackerel regulations:

1. **Definition of commercial regional management zones.** The Omnibus Amendment defines the Northern Zone from New York through Georgia and the Southern Zone as the east coast of Florida, while the SAFMC defines the Northern Zone as New York through North Carolina and the Southern Zone as South Carolina through the east coast of Florida (Amendment 20B to the Fishery Management Plan for Coastal Migratory Pelagic Resources [CMP FMP]).

2. **Southern Zone commercial management measures.** The Omnibus Amendment defines a similar process of adjusting trip limits based on commercial harvest relative to the adjusted quota for the Southern Zone. However, when 100% of the adjusted quota (250,000 pounds less than the commercial annual catch limit) is reached, the Omnibus Amendment sets a 500 pound trip limit which stays in place for the remainder of the fishing year (March 1 – end of February), while current SAFMC regulations set a 500 pound trip limit until 100% of the full quota is reached, after which the commercial fishery is closed for the remainder of the fishing year (Framework Amendment 2 to the CMP FMP).

Additionally, at the September 2019 SAFMC meeting, Framework Amendment 9 to the CMP FMP was initiated, which proposes modifications to the commercial Spanish mackerel accountability measures to allow a 500 pound trip limit after commercial zones have met their respective quotas until the total ACL (commercial and recreational) has been met, at which

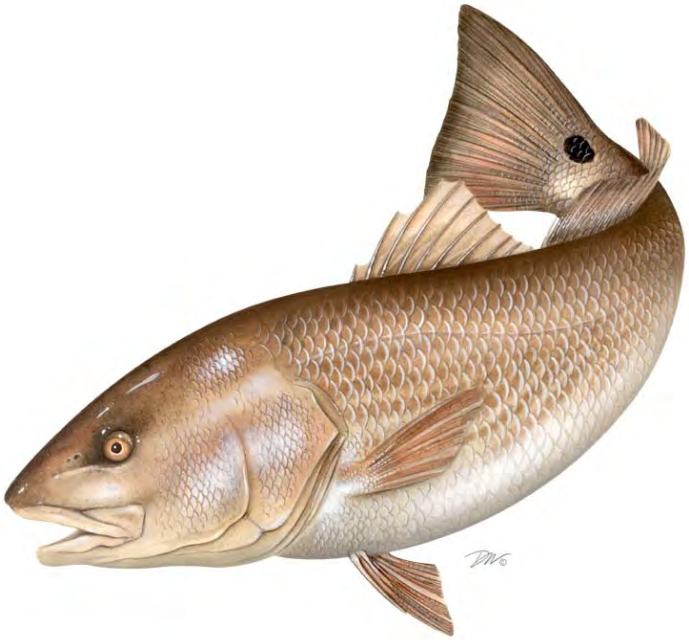
point the entire fishery would be closed. The SAFMC will review this amendment in December and intend to take final action during a special January webinar.

These items are being brought to the Board's attention for discussion at the 2019 Annual Meeting.

2019 REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN FOR

RED DRUM (*Sciaenops ocellatus*)

2018 FISHING YEAR



The Red Drum Plan Review Team

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Roger Pugliese, South Atlantic Fishery Management Council
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DRAFT DOCUMENT FOR BOARD REVIEW

Table of Contents

I. Status of the Fishery Management Plan

Date of FMP Approval:	Original FMP – October 1984
Amendments:	Amendment 1 – October 1991 Amendment 2 – June 2002 Addendum 1 – August 2013
Management Areas:	The Atlantic coast distribution of the resource from New Jersey through Florida Northern: New Jersey through North Carolina Southern: South Carolina through the east coast of Florida
Active Boards/Committees:	South Atlantic State/Federal Fisheries Management Board, Red Drum Technical Committee, Stock Assessment Subcommittee, Plan Development Team, Plan Review Team, South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted an Interstate Fishery Management Plan (FMP) for Red Drum in 1984. The original management unit included the states from Maryland to Florida. In 1988, the Interstate Fisheries Management Program (ISFMP) Policy Board requested that all Atlantic coastal states from Maine to Florida implement the plan's recommended management regulations to prevent development of northern markets for southern fish. The states of New Jersey through Florida are now required to follow the FMP, while Maine through New York (including Pennsylvania) are encouraged to implement consistent provisions to protect the red drum spawning stock.

In 1990, the South Atlantic Fishery Management Council (Council) adopted a FMP for red drum that defined overfishing and optimum yield (OY) consistent with the Magnuson Fishery Conservation and Management Act of 1976. Adoption of this plan prohibited the harvest of red drum in the exclusive economic zone (EEZ), a moratorium that remains in effect today. Recognizing that all harvest would take place in state waters, the Council FMP recommended that states implement measures necessary to achieve the target level of at least 30% escapement.

Consequently, ASMFC initiated Amendment 1 in 1991, which included the goal to attain optimum yield from the fishery over time. Optimum yield was defined as the amount of harvest that could be taken while maintaining the level of spawning stock biomass per recruit (SSBR) at or above 30% of the level which would result if fishing mortality was zero. However, a lack of information on adult stock status resulted in the use of a 30% escapement rate of sub-adult red drum to the off-shore adult spawning stock.

Substantial reductions in fishing mortality were necessary to achieve the escapement rate; however, the lack of data on the status of adult red drum along the Atlantic coast led to the adoption of a phase-in approach with a 10% SSBR goal. In 1991, states implemented or maintained harvest controls necessary to attain the goal.

As hoped, these management measures led to increased escapement rates of juvenile red drum. Escapement estimates for the northern region of New Jersey through North Carolina (18%) and the southern region of South Carolina through Florida (17%) were estimated to be above the 10% phase-in goal, yet still below the ultimate goal of 30% (Vaughan and Carmichael 2000). North Carolina, South Carolina, and Georgia implemented substantive changes to their regulations from 1998-2001 that further restricted harvest.

The Council adopted new definitions of OY and overfishing for red drum in 1998. Optimum yield was redefined as the harvest associated with a 40% static spawning potential ratio (sSPR), overfishing as an sSPR less than 30%, and an overfishing threshold as 10% sSPR. In 1999, the Council recommended that management authority for red drum be transferred to the states through the Commission's Interstate Fishery Management Program (ISFMP) process. This was recommended, in part, due to the inability to accurately determine an overfished status, and therefore stock rebuilding targets and schedules, as required under the revised Sustainable Fisheries Act of 1996. The transfer necessitated the development of an amendment to the interstate FMP in order to include the provisions of the Atlantic Coastal Fisheries Cooperative Management Act.

ASFMC adopted Amendment 2 to the Red Drum FMP in June 2002 (ASMFC 2002), which serves as the current management plan. The goal of Amendment 2 is to achieve and maintain the OY for the Atlantic coast red drum fishery as the amount of harvest that can be taken by U.S. fishermen while maintaining the sSPR at or above 40%. There are four plan objectives:

- Achieve and maintain an escapement rate sufficient to prevent recruitment failure and achieve an sSPR at or above 40%.
- Provide a flexible management system to address incompatibility and inconsistency among state and federal regulations which minimizes regulatory delay while retaining substantial ASMFC, Council, and public input into management decisions; and which can adapt to changes in resource abundance, new scientific information, and changes in fishing patterns among user groups or by area.
- Promote cooperative collection of biological, economic, and sociological data required to effectively monitor and assess the status of the red drum resource and evaluate management efforts.
- Restore the age and size structure of the Atlantic coast red drum population.

The management area extends from New Jersey through the east coast of Florida, and is separated into a northern and southern region at the North Carolina/South Carolina border. The sSPR of 40% is considered a target; an sSPR below 30% (threshold level) results in an overfishing determination for red drum. Amendment 2 required all states within the management unit to implement appropriate recreational bag and size limit combinations needed to attain the target sSPR, and to maintain current, or implement more restrictive, commercial fishery regulations. All states were in compliance by January 1, 2003. See Table 1 for state commercial and recreational regulations in 2018.

Following the approval of Amendment 2 in 2002, the process to transfer management authority to ASMFC began, including an Environmental Assessment and public comment period. The final rule became effective November 5, 2008. It repeals the federal Atlantic Coast Red Drum Fishery Management Plan and transfers management authority of Atlantic red drum in the exclusive economic zone from the South Atlantic Fishery Management Council to the Atlantic States Marine Fisheries Commission.

The Board approved Addendum I to Amendment 2 in August 2013. The Addendum revised the habitat section of Amendment 2 to include current information on red drum spawning habitat and life-stages (egg, larval, juvenile, sub-adult, and adult). It also identified and described the distribution of key habitats and habitats of concern.

II. Status of the Stocks

The 2017 Red Drum Stock Assessment and Peer Review Report indicate overfishing is not occurring for either the northern or southern stock of red drum (ASMFC 2017). The assessment was unable to determine an overfished/not overfished status because population abundance could not be reliably estimated due to limited data for the older fish (ages 4+).

Northern Region (NJ-NC)

Recruitment (age 1 abundance) has varied annually with a large peak occurring in 2012 (Figure 1). The trend in the three-year average sSPR indicates low sSPR early in the time series with increases during 1991 – 1997 and fluctuations thereafter (Figure 2). The average sSPR has been above the overfishing threshold ($F_{30\%}$) since 1994, and at or above the target ($F_{40\%}$) since 1996, except during one year (2002). Fishing pressure and mortality appear to be stabilized near the target fishing mortality. The average sSPR is also likely above the target benchmark.

Southern Region (SC-FL)

Recruitment (age 1 abundance) has fluctuated without apparent trend since 1991 (Figure 1). A high level of uncertainty exists around the three-year average sSPR estimates for the southern region. While the 3-year average sSPR estimate in 2013 was above both the target ($F_{40\%}$) and the overfishing threshold ($F_{30\%}$), indicating that overfishing is not occurring, the high level of uncertainty around this estimate indicates that this conclusion should be considered with extreme caution (Figure 2).

NOTE: In 2018, the Marine Recreational Information Program transitioned from estimating effort using the Coastal Household Telephone Survey (CHTS) to the mail-based Fishing Effort Survey (FES). The 2017 stock assessment used CHTS data to estimate recreational harvest. However, as red drum is not managed by a quota and to accommodate the transition, recreational harvest estimates based on the FES data or calibration are shown in this report. Due to differing estimation methodologies, these harvest data should not be compared to reference points from the 2017 stock assessment. Harvest estimates based on either effort survey can be compared at: https://www.st.nmfs.noaa.gov/st1/recreational/queries/.

III. Status of the Fishery

Total red drum landings from New Jersey through the east coast of Florida in 2018 are estimated at 8.3 million pounds (Tables 2 and 3, Figure 3). This is roughly 1.4 million pounds less than was landed in 2017. 2018 total landings are above the previous ten-year (2008-2017) average of 6.6 million pounds. The commercial and recreational fisheries harvested 2% and 98% of the total, respectively. The southern region includes South Carolina through Florida's east coast, while the northern region includes New Jersey through North Carolina. In 2018, 80% of the total landings came from the southern region where the fishery is exclusively recreational, and 20% from the northern region (Figure 4).

Coastwide commercial landings comprise a small portion of the total harvest. Landings have ranged from approximately 55,000 pounds (2004) to 423,000 pounds (1984) since 1981 (Figure 3). In 2018, red drum were commercially landed only in Maryland, Virginia, and North Carolina (Table 2). Coastwide commercial harvest decreased from 194,023 pounds in 2017 to 145,349 pounds in 2018, with 99% harvested by North Carolina. Historically, North Carolina and Florida shared the majority of commercial harvest, but commercial harvest has been prohibited in Florida under state regulation since January 1988. South Carolina and Georgia designated red drum as a gamefish, banning commercial harvest and sale since 1987 and 2013, respectively.

In North Carolina, a daily commercial trip limit and an annual cap of 250,000 pounds with payback of any overage constrain the commercial harvest. Unique to this state, the red drum fishing year extends from September 1 to August 31. In 2008, the Board approved use of this fishing year to monitor the cap. During the 2009/2010 and the 2013/2014 fishing years, North Carolina had overages of 25,858 pounds and 12,753 pounds, respectively. The commercial harvest for each following fishing year remained well below the adjusted cap allowance, providing sufficient payback.

Recreational harvest of red drum peaked in 1984 at 2.9 million fish (or 10.1 million pounds; Tables 3 and 4). Following this peak and a subsequent decline, the recreational fishery has shown an increasing trend from the late 1980s through the present, both in terms of harvest and catch (Figures 3 and 5). Recreational harvest decreased in number from 2.6 million fish (9.5 million pounds) in 2017 to 2.3 million fish (8.2 million pounds) in 2018. The 2018 harvest is greater than the previous 10-year average (2008-2017) for recreational harvest in numbers (1.8 million) and pounds (6.5 million). Florida anglers landed the largest share of the coastwide recreational harvest in numbers (47%), followed by Georgia (28%) and North Carolina (13%).

Anglers release far more red drum than they keep; the percent of the catch released has been over 80% during the last decade (Figure 5). Recreational releases show an increasing trend over the time series, due to an increasing trend in catch with roughly stable release proportions for the last 20 years. The proportion of releases in 2018 was 81% (versus 82% in 2017), and the overall number of fish released was 9.8 million in 2018 (Figure 5, Table 5). It is estimated that 8% of released fish die as a result of being caught, resulting in an estimated 781,708 dead

discarded fish in 2018 (Table 5). Recreational removals from the fishery are thus estimated to be 3.0 million fish in 2018 (Figure 6).

IV. Status of Assessment Advice

Current stock status information comes from the 2017 stock assessment (ASMFC 2017) completed by the ASMFC Red Drum Stock Assessment Subcommittee (SAS) and Technical Committee (TC), peer reviewed by an independent panel of experts through ASMFC's desk review process, and approved by the South Atlantic State-Federal Fisheries Management Board for use in management decisions. Previous interstate management decisions were based on the last coastwide assessment, SEDAR 18 (SAFMC 2009), and prior to 2009, decisions were based on regional assessments conducted by Vaughan and Helser (1990), Vaughan (1992, 1993, 1996), and Vaughan and Carmichael (2000) that reflected the current stock structure, two stocks divided at the North Carolina-South Carolina border. Several states have also conducted state-specific assessments (e.g., Murphy and Munyandorero 2009; Takade and Paramore 2007 [update of Vaughan and Carmichael 2000]).

In 2017, a state-specific stock assessment was completed by South Carolina, which indicated that the South Carolina population of red drum was experiencing overfishing (Murphy 2017). This assessment result prompted new state management regulations, which went into effect on July 1, 2018 (Table 1).

The 2017 coastwide stock assessment uses a statistical catch at age (SCAA) model with age-specific data for red drum ages 1 through 7+. This model is similar to that used in the 2009 assessment, with data updated through 2013. Data from 1989-2013 were included from the following sources: commercial and recreational harvest and discard data, fishery-dependent and -independent biological sampling data, tagging data, and fishery-independent survey abundance data.

The Peer Review Panel considered the use of a SCAA model appropriate given the types of data available for red drum. For the northern region, the Review Panel agreed that the model was informative of age 1-3 abundance and exploitation rates, but not for older age groups. The model was also found to be informative of annual trends in sSPR and the 2011-2013 average sSPR. For the southern region, the Review Panel agreed that estimates of age 7+ fish seemed to be more consistent with the population biology, leading to a large fraction of biomass being unavailable to exploitation. For both regions, most of the sSPR is contained within the larger, fully mature, age 7+ fish, thus even a small increase in fishing mortality on older red drum (due to harvest or other factors) could quickly lead to a decrease in sSPR and overfishing.

V. Status of Research and Monitoring

No monitoring or research programs are annually required of the states except for the submission of a compliance report. The following fishery-dependent (other than catch and effort data) and fishery-independent monitoring programs were reported in the 2018 reports.

Fishery Dependent Monitoring

- Delaware DFW – Commercial monitoring through mandatory logbook reports, supplemented by federal dealer reports (SAFIS). No samples collected in 2018.
- Maryland DNR – Commercial pound nets sampled bi-weekly in the Chesapeake Bay from late spring through summer (2018, n=4). Only three of the 24 years of sampling exceeded 20 fish, and no red drum were encountered in ten of the survey years. Seafood dealer sampling was conducted in 2018, but no red drum were encountered.
- PRFC – Red drum are harvested incidentally in the commercial pound net and haul seine fisheries. The mandatory commercial harvest daily reporting system, which collects harvest and discards/releases, reported zero red drum released in 2018.
- Virginia MRC – Volunteer anglers have participated since 1995 in the Virginia Game Fish Tagging Program (2018: 368 fish tagged, 10 reported recaptures). Carcasses are collected through the Marine Sportfish Collection Project since 2007 (2018, n=4). VMRC collects samples from commercial fish packing operations for length (2018, n=43), weight (2018, n=28), and age (2018, n=13).
- North Carolina DMF – Commercial cap monitored through trip ticket program. Commercially-landed red drum sampled through biological monitoring program since 1982 (2018, n=561 fish measured, primarily gill net). Recreational lengths from MRIP sampling (2018, n=206).
- South Carolina DNR – State finfish survey conducted in January and February (2018, n=129 caught and 19 harvested, mean catch rate: 10.36 red drum/targeted angler hour). Charter Vessel Trip Reporting (2018 caught (targeted and non-targeted): 59,377 red drum; live release rate: 93.4%). SC Marine Game Fish Tagging Program studies movement patterns, growth rates, and release-mortality rates (in 2018 fish tagged: 6,677; recaptured: 996). SCDNR Sub-Adult Red Drum Tagging Program tags fish caught by the SCDNR electrofishing and trammel net fishery-independent surveys and other fishery-independent sampling efforts (in 2018 fish tagged: 1,187; recaptured: 439). SCDNR Adult Red Drum Tagging Program tags fish caught by the SCDNR inshore fisheries research section longline fishery-independent survey (in 2018 tagged: 519; recaptured: 19). Tournament and freezer fish programs (2018 n=36).
- Georgia CRD – Age, length, and sex data collected through the Marine Sportfish Carcass Recovery Project (2018, n=917 red drum).
- Florida FWC – MRIP CPUE for 2018 increased in northeast Florida and declined in southeast Florida from 2017.
- NMFS – Length measurements and recreational catch, harvest, release, and effort data are collected via the Marine Recreational Information Program.

Fishery Independent Monitoring

- New Jersey DFW – Five annual nearshore trawl surveys conducted since 1988, in January/February, April, June, August, and October. Length and weight data, and catch per unit effort (CPUE) in number of fish per tow and biomass per tow recorded for all species. Only two red drum were caught in entire time series (single tow, 2013).
- Delaware DFW – 30-ft bottom trawl survey and 16-ft bottom trawl survey. Neither survey has ever captured red drum.

- North Carolina DMF – Seine survey since 1991 produces age-0 abundance index (2018, n=1,146; CPUE of 10.32, above long-term average). Gill net survey in Pamlico Sound since 2001 characterizes size and age distribution, produces abundance index, improves bycatch estimates, and studies habitat usage (2018, n=308; CPUE of 1.38, below long-term average). Longline survey since 2007 produces adult index of abundance and tags fish (2018, n=388; CPUE of 5.54, slightly above long-term average).
- South Carolina DNR – Estuarine trammel net survey for subadults (2018 CPUE below 10-year average). Electrofishing survey in low salinity estuarine areas for juveniles/subadults (2018 CPUE below 10-year average). Inshore and coastal bottom longline survey for biological data and adult abundance index (511 tagged, 82 sampled for life history in 2018). Genetic sub-sampling and tagging conducted during these three surveys.
- Georgia CRD – Estuarine trammel net survey for subadult biological data and abundance index (2018, both areas n=125). Estuarine gill net survey for young-of-year (YOY) biological data and abundance index (2018, both areas n=342). Bottom longline survey for adult biological data and abundance index (2018, n=37 in GA).
- Florida FWC-FWRI – Seine surveys characterizing young-of-year (YOY) (<40 mm standard length) and sub-adult (>299 mm) abundance along the northeast (NE) and southeast (SE) Florida coasts. 2018 NE YOY index declined from 2017. 2018 NE sub-adult index increased from 2017. 2018 SE YOY index declined from 2017. 2018 SE sub-adult index declined from 2017.

VI. Status of Management Measures and Issues

Fishery Management Plan

Amendment 2 was fully implemented by January 1, 2003, providing the management requirements for 2018. Requirements include: recreational regulations designed to achieve at least 40% sSPR, a maximum size limit of 27 inches or less, and current or more stringent commercial regulations. States are also required to have in place law enforcement capabilities adequate to successfully implement their red drum regulations. In August 2013, the Board approved Addendum I to Amendment 2 of the Red Drum FMP. The Addendum revises the habitat section of Amendment 2 to include the most current information on red drum spawning habitat for each life stage (egg, larval, juvenile, sub-adult, and adult). It also identifies the distribution of key habitats and habitats of concern, including potential threats and bottlenecks.

De Minimis Requests

New Jersey and Delaware requested *de minimis* status through the annual reporting process. While Amendment 2 does not include a specific method to determine whether a state qualifies for *de minimis*, the PRT chose to evaluate an individual state's contribution to the fishery by comparing the two-year average of total landings of the state to that of the management unit. New Jersey and Delaware each harvested zero percent of the two-year average total landings. *De minimis* status does not exempt either state from any requirement; it may exempt them from future management measures implemented through addenda to Amendment 2, as determined by the Board.

VII. Implementation of FMP Compliance Requirements for 2018

The PRT finds that all states have implemented the requirements of Amendment 2.

VIII. Recommendations of the Plan Review Team

Management and Regulatory Recommendations

- Consider approval of the *de minimis* requests by New Jersey and Delaware.
- Support a continued moratorium of red drum fishing in the exclusive economic zone.

Prioritized Research and Monitoring Recommendations (H) = High, (M) = Medium, (L) = Low

Stock Assessment and Population Dynamics

- Implement surveys (e.g. logbooks, electronic methods, etc.) in each state throughout the management unit to determine the length composition (and age data, if possible) of recreational discards (B2) of red drum. This information has been highlighted as the single largest data gap in previous assessments. (H)
- Further study is needed to determine discard mortality estimates for the Atlantic coast, both for recreational and commercial gears. Additionally, discard estimates should examine the impact of slot-size limit management and explore regulatory discard impacts due to high-grading. Investigate covariates affecting discard mortality (e.g., depth, size, seasonality), and explore methods of determining *in situ* mortality (as opposed to tank studies) and mitigating mortality (e.g. gear types, handling methods, use of descending devices on adults). (H)
- Improve catch/effort estimates and biological sampling from recreational and commercial fisheries for red drum, including increased intercepts of night fisheries for red drum. (H)
- Expand biological sampling based on a statistical analysis to adequately characterize the age/size composition of removals by all statistical strata (gears, states, etc.). (H)
- Each state should develop an on-going red drum tagging program that can be used to estimate both fishing and natural mortality and movements. This should include concurrent evaluations of tag retention, tagging mortality, and angler tag reporting rates. The importance of each state's tagging data to the assessment should be evaluated, including analysis of historical tagging data to determine if existing and historic recreational data sources (e.g., tagging) can be used to evaluate better B2 selectivity. (H)
- Establish programs to provide ongoing estimates of commercial and recreational discard mortality using appropriate statistical methods. Discard estimates should examine the impact of slot-size limit management and explore regulatory discard impacts due to high-grading. (M)
- Evaluate the broader survey needs to identify gaps in current activities and provide for potential expansion and/or standardization between/among current surveys. (M)
- Review all available stock structure data (genetics, tagging, etc.) to determine stock structure and most appropriate management boundaries. (M)

Biological

- Explore methods to effectively sample the adult population in estuarine, nearshore, and open ocean waters, such as in the ongoing red drum long line survey, and to determine the size, age and sex composition of the adults. (H)
- Continue genetic analyses (i.e., SC DNR analyses) to evaluate stock structure and mixing and temporal changes in genetic composition of the red drum population and other applications. (H)
- Refine maturity schedules on a geographic basis. Thoroughly examine the influence of size and age on reproductive function. Investigate the possibility of senescence in female red drum. Archive histological specimens across sizes to look for shifts in maturity schedules and make regional comparisons. Standardize histology reading methods of slides across states conducting such studies. (For reference, see SEDAR 44-DW02). (H)
- Determine habitat preferences, environmental conditions, growth rates, and food habits of larval and juvenile red drum throughout the species range along the Atlantic coast. Assess the effects of environmental factors on stock density/year class strength. Determine whether natural environmental perturbations affect recruitment and modify relationships with spawning stock size. (H)
- Continue tagging studies to determine stock identity, inshore/offshore migration patterns of all life stages (i.e. basic life history research). Specific effort should be given to developing a large-scale program for tagging adult red drum. (M)
- Fully evaluate the effects and effectiveness of using cultured red drum to facilitate higher catch rates along the Atlantic coast. (M)
- Conduct a tagging study using emerging technologies (i.e., acoustic tagging, satellite tagging, genetic tags) to evaluate stock mixing and identify movement of sub-adult fish transitioning to maturity. (M-L)
- Otolith microchemistry analysis should be considered for exploring links between sub-adult estuarine habitats and adult stock structure. (L)

Social (Unless otherwise indicated, the collection of sociological and/or economic data, also sometimes collectively described as "socioeconomic data," would be based on Atlantic Coastal Cooperative Statistics Program [ACCSP] standards.)

- Encourage the NMFS to fund socioeconomic add-on questions to the recreational fisheries survey that are specifically oriented to red drum recreational fishing. (H)
- States with significant fisheries (over 5,000 pounds) should periodically (e.g. every five years) collect socioeconomic data on red drum fisheries through add-ons to the recreational fisheries survey or by other means. (H)
- Using a human dimension analysis perspective, explore Atlantic red drum historical catch-release trends and explanatory factors such as the possible impacts of changes in recreational fishing technology and/or angler behavior on red drum catchability and selectivity over time. (H)
- Conduct applied research to evaluate the various projected (forecasted) social impacts on red drum fishery stakeholders of possible regulatory options (e.g. changing minimum sizes, etc.). (M)

Economic

- Using available secondary data and other information, develop models to estimate the local (community), state and regional level economic impacts (e.g. sales, jobs, income, etc.) of recreational red drum fisheries-related activities including the for-hire sector component (e.g. fishing guides). (H)
- Where appropriate, encourage individual member states to conduct studies to project and evaluate the estimated comparable net economic values associated with current and possible future regulatory regimes that could impact red drum recreational anglers, including those preferring catch and release fishing. (M)
- Using risk adjusted benefit-cost analysis protocols, project the estimated public sector-oriented net economic values over a time for various cultured red drum stocking scenarios compared to possible changes in other fishery management alternatives. (M)
- Encourage NOAA Fisheries to periodically conduct special surveys and related data analysis to determine the economic and operational characteristics of the recreational fishing for-hire component targeting red drum, especially fishing guide-oriented businesses in the South Atlantic states. (M)

Habitat

- Identify spawning areas of red drum in each state from North Carolina to Florida so these areas may be protected from degradation and/or destruction. Explore relationships between spawning activity (e.g. spawning sounds) and environmental parameters (e.g. temperature). (H)
- Identify changes in freshwater inflow on red drum nursery habitats. Quantify the relationship between freshwater inflows and red drum nursery/sub-adult habitats. (H)
- Determine the impacts of dredging and beach re-nourishment on red drum spawning and early life history stages. (M)
- Investigate the concept of estuarine reserves to increase the escapement rate of red drum along the Atlantic coast. (M)
- Identify impacts of water quality, environmental, and ecosystem changes on red drum stock dynamics for potential incorporation into stock assessment models. (M)
- Quantify relationships between red drum production and habitat and implications for future management planning. (L)
- Determine methods for restoring red drum habitat and/or improving existing environmental conditions that adversely affect red drum production. (L)

IX. References

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X. Figures

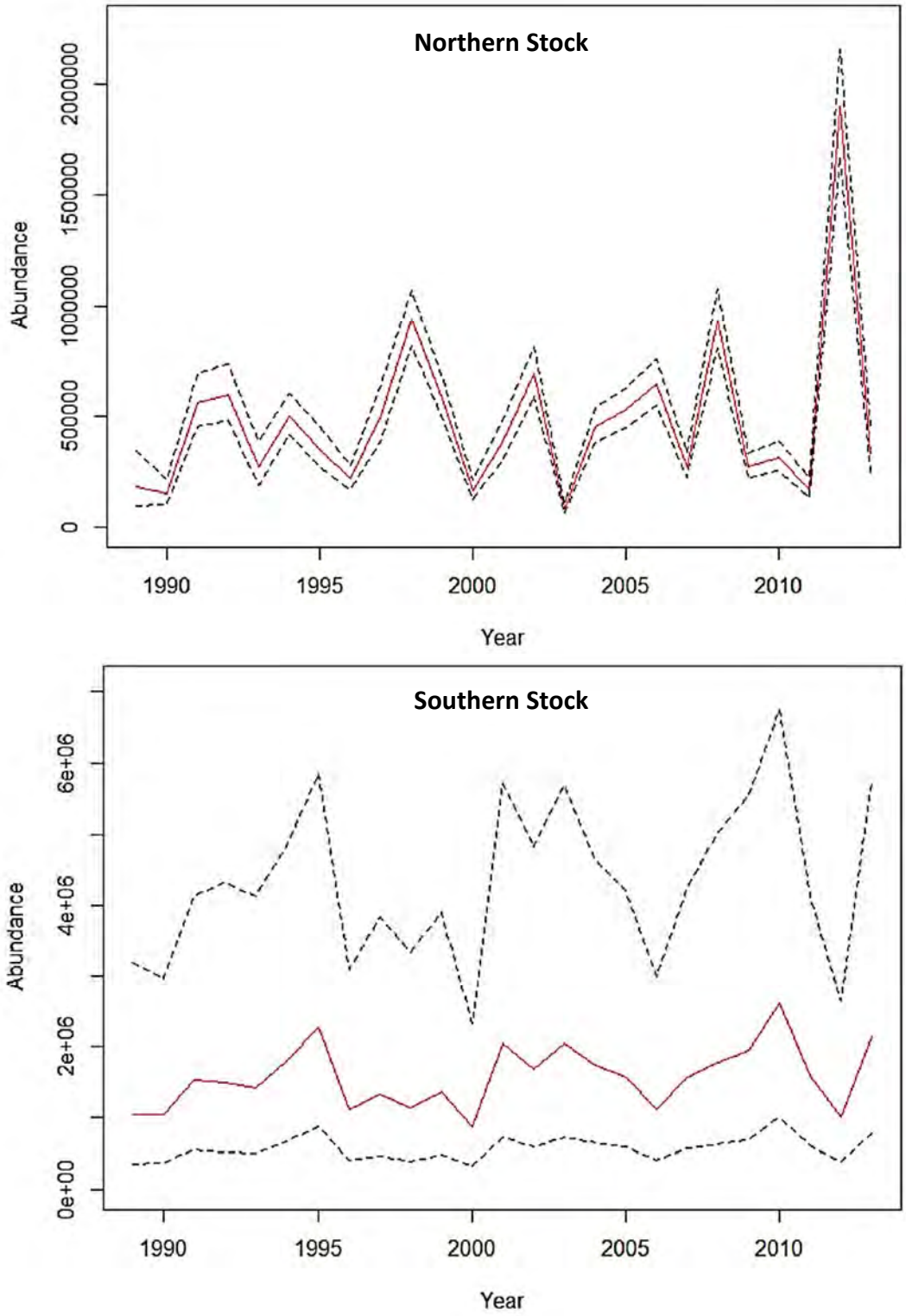

Figure 1. Predicted recruitment (age-1 abundance, red lines) with 95% confidence intervals (dashed black lines) for the northern (top) and southern (bottom) regions (Source: ASMFC 2017).

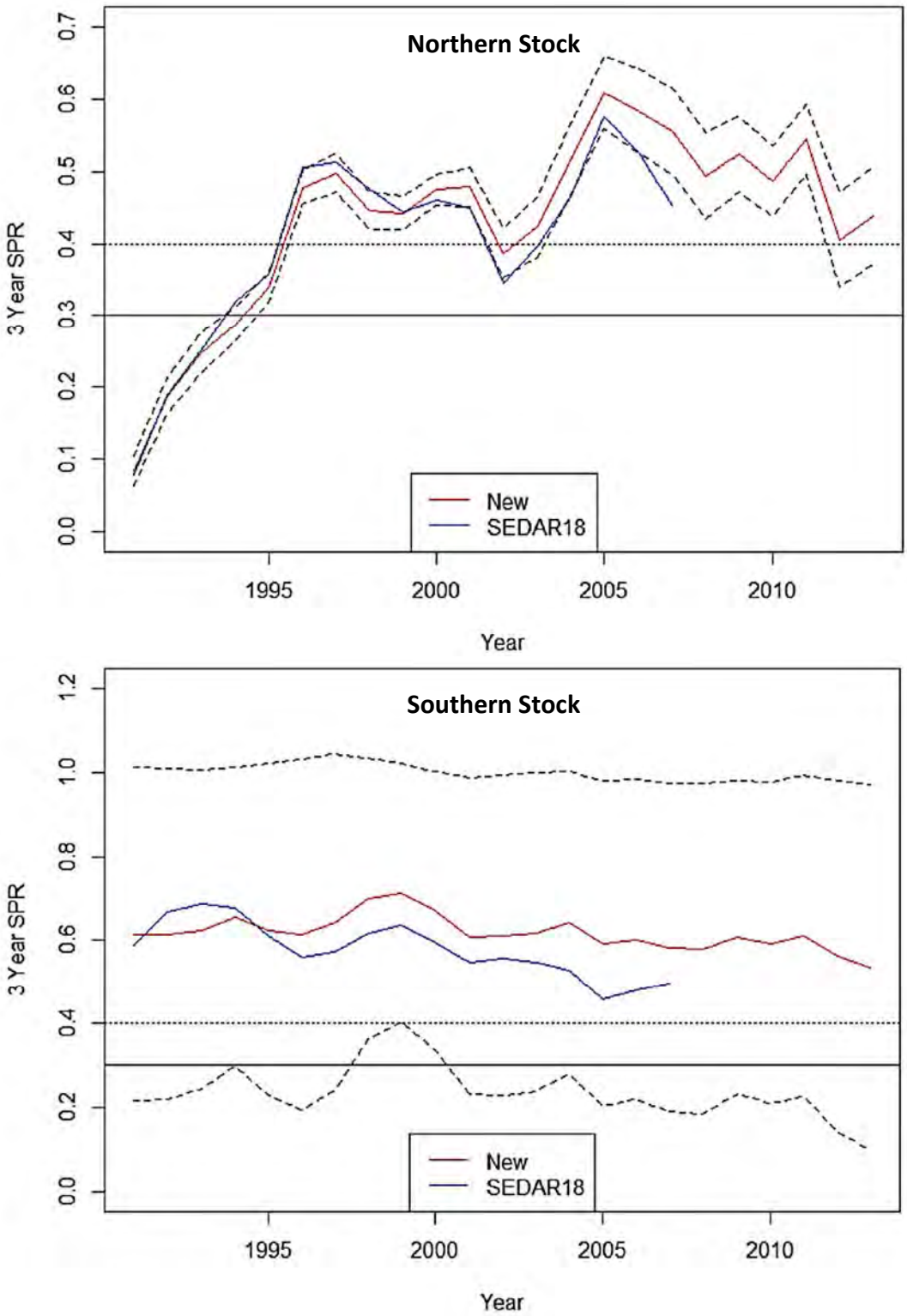

Figure 2. Three year average sSPR (red lines) for the northern (top) and southern (bottom) stocks with 95% confidence intervals (dashed black lines). Point estimates from the previous benchmark assessment (SEDAR18) are included for comparison. The target sSPR (dotted black line) is 40% and the threshold sSPR (solid black line) is 30% (Source: ASMFC 2017)**.**

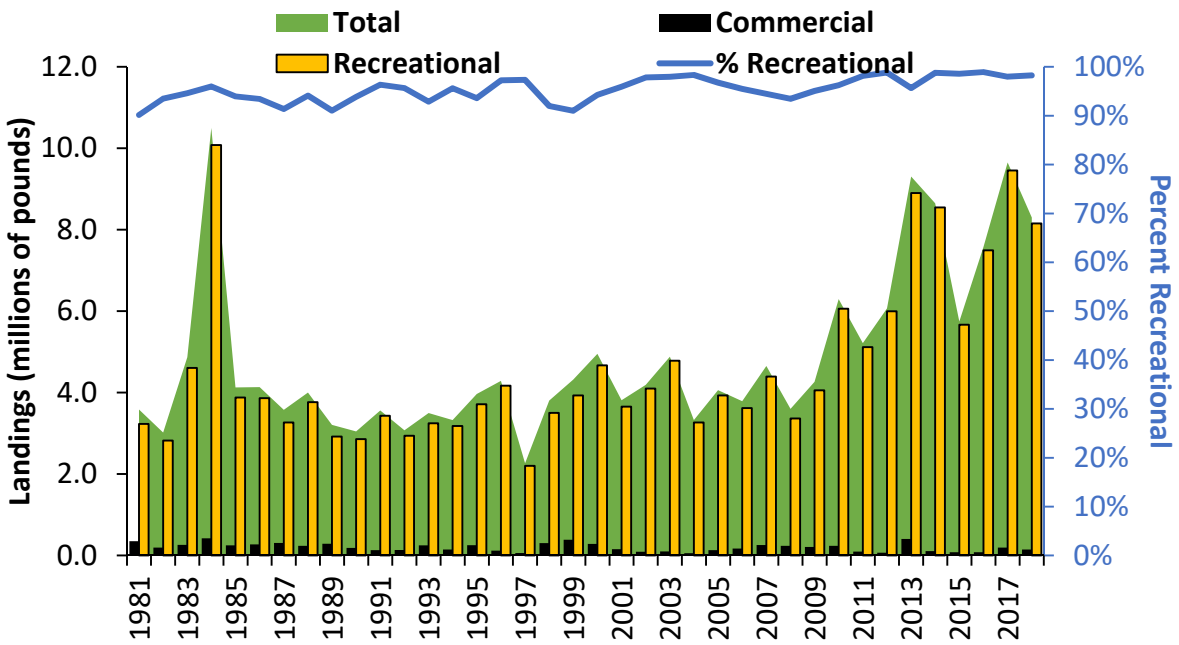

Figure 3. Commercial and recreational landings (pounds) of red drum. See Tables 2 and 3 for values and data sources.

*Recreational weight data for NC-FL in 1988 is unavailable. Recreational harvests in pounds were estimated for these states in this year by multiplying each state's 1988 harvest in numbers of fish by its time series average weight.

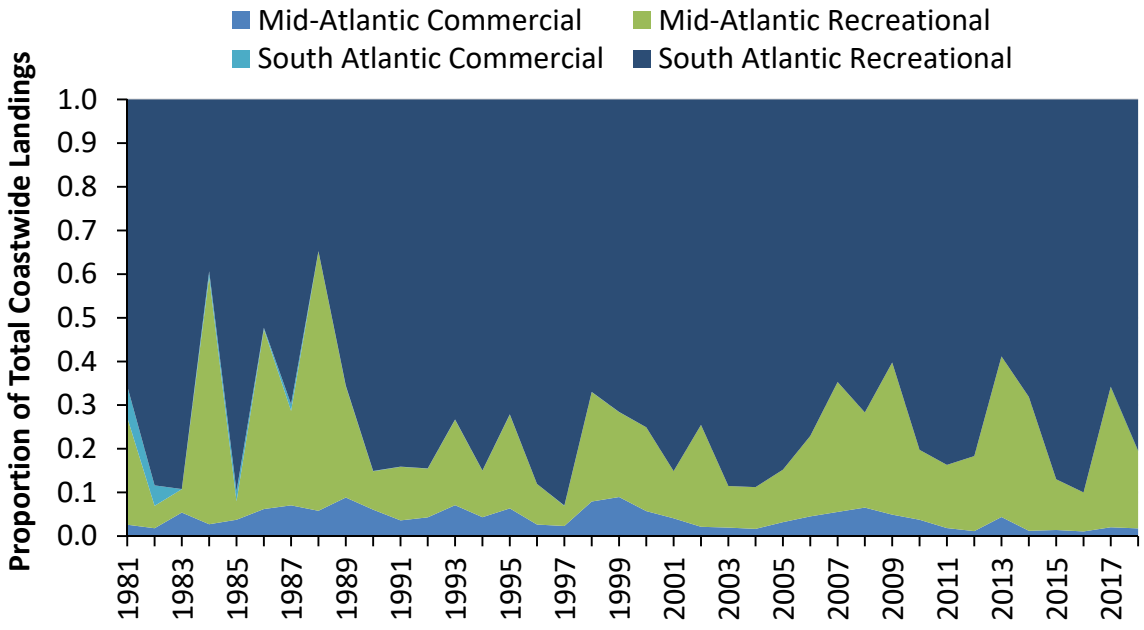

Figure 4. Proportion of regional, sector-specific landings to total coastwide landings (pounds). See Tables 2 and 3 for data sources.

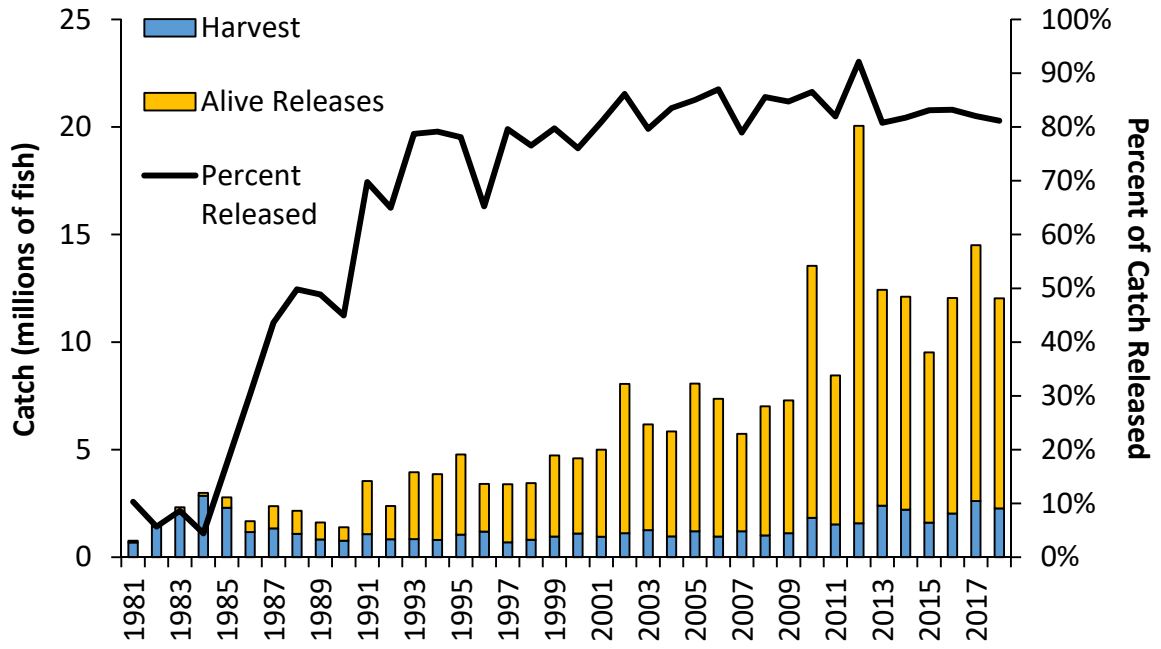

Figure 5. Recreational catch (harvest and alive releases) of red drum (numbers) and the proportion of catch that is released. See Tables 4 and 5 for values and data sources.

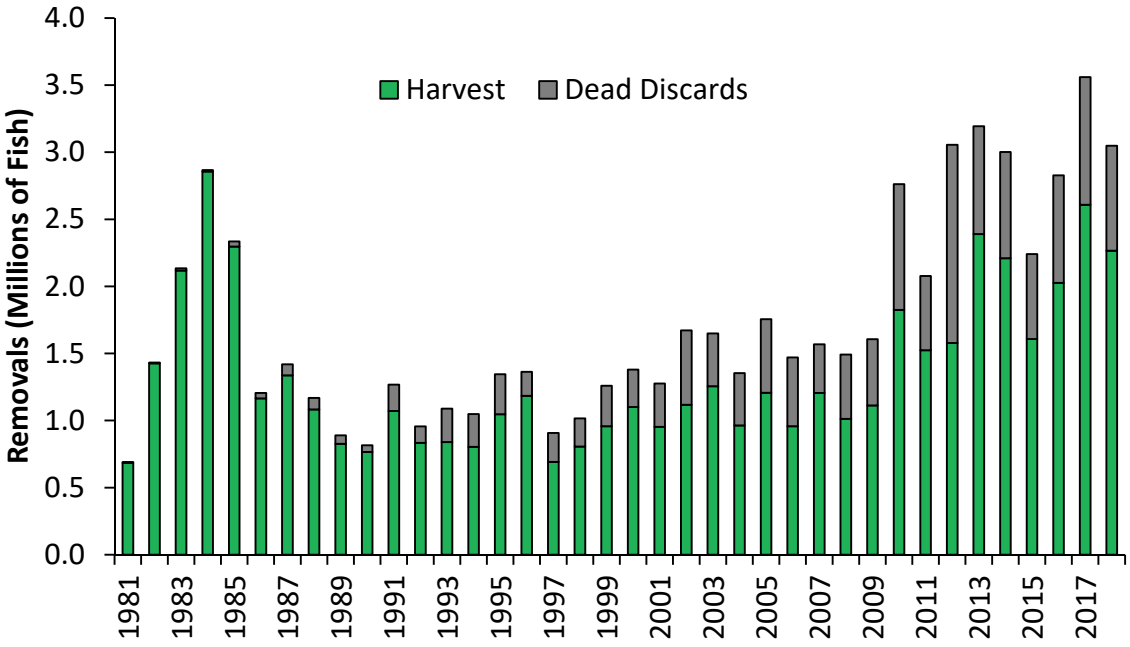

Figure 6. Recreational removals (harvest and dead discards) of red drum (numbers). Dead discards are estimated by applying an 8% discard mortality rate to alive releases. See Tables 4 & 5 for values and data sources.

XI. Tables

Table 1. Red drum regulations for 2018. The states of New Jersey through Florida are required to meet the requirements in the FMP; states north of New Jersey are encouraged to follow the regulations. All size limits are total length.

State	Recreational	Commercial
NJ	18" - 27", 1 fish	18" - 27", 1 fish
DE	20" - 27", 5 fish	20" - 27", 5 fish
MD	18" - 27", 1 fish	18" - 25", 5 fish
PRFC	18" - 25", 5 fish	18" - 25", 5 fish
VA	18" - 26", 3 fish	18" - 25", 5 fish
NC	18" - 27", 1 fish	18" - 27"; 250,000 lb harvest cap with overage payback (150,000 lbs Sept 1- April 30; 100,000 lbs May 1-Aug 31); harvest of red drum allowed with 7 fish daily trip limit; red drum must be less than 50% of catch (lbs); small mesh (<5" stretched mesh) gill nets attendance requirement May 1 - November 30. Fishing year: September 1 – August 31.
SC	15" - 23", 2 fish per person per day bag limit and 6 fish per boat per day boat limit (as of July 1, 2018)	Gamefish Only
GA	14" - 23", 5 fish	Gamefish Only
FL	18" - 27"; Northern Region – 2 fish, Southern Region – 1 fish	Sale of native fish prohibited

Table 2. Commercial landings (pounds) of red drum by state, 2009-2018. (Source: personal communication with ACCSP, Arlington, VA, for years prior to 2018 and state compliance reports for 2018, except as noted below.)

Year	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
2009	C		C	157	9,296	200,296		C		209,748
2010			C	22	3,966	231,828		C		235,816
2011				3	4,397	91,980		C		96,380
2012	C		334	81	2,786	66,519				69,720
2013	C		2,696	268	30,137	371,949				405,050
2014	C		295	3	14,733	90,647				105,677
2015			C	0	814	80,282				81,095
2016			C	0	1,898	77,833				79,731
2017	C		626	0	6,971	186,411	C			194,007
2018			C	0	885	144,464				145,349

Notes: PRFC landings from agency reporting program; "C" indicates confidential landings.

Table 3. Recreational landings (pounds) of red drum by state, 2009-2018. (Source: personal communication with MRIP for data prior to 2018; state compliance reports for 2018)

Year	NJ	DE	MD	VA	NC
2009			0	457,294	1,028,339
2010			0	173,622	835,143
2011	15,567			0	737,853
2012		9,948	158,313	225,732	648,342
2013		13,536	12,086	1,185,572	2,214,045
2014		0	0	979,388	1,674,595
2015			0	98,329	567,730
2016		0	0	45,451	633,496
2017			6,782	1,628,688	1,475,852
2018				27,922	1,452,358

Year	SC	GA	FL		Total
2009	441,162	289,257	1,838,613		4,054,665
2010	1,137,142	719,068	3,196,674		6,061,649
2011	1,058,774	433,306	2,871,989		5,117,489
2012	1,007,542	221,044	3,727,020		5,997,941
2013	682,544	452,283	4,341,545		8,901,611
2014	921,971	387,367	4,582,561		8,545,882
2015	656,747	394,787	3,949,000		5,666,593
2016	536,550	586,235	5,694,370		7,496,102
2017	1,048,249	826,857	4,470,905		9,457,333
2018	643,213	1,201,346	4,829,344		8,154,183

Table 4. Recreational landings (numbers) of red drum by state, 2009-2018. (Source: personal communication with MRIP for data prior to 2018; state compliance reports for 2018)

Year	NJ	DE	MD	VA	NC
2009			0	122,365	214,317
2010			0	44,123	179,828
2011	5,432			0	156,484
2012		2,256	62,444	90,856	152,005
2013		3,734	4,766	333,590	520,758
2014		0	0	251,501	324,303
2015			0	22,102	143,876
2016		0	0	15,866	169,195
2017			4,943	347,145	353,716
2018				5,989	299,577

Year	SC	GA	FL		Total
2009	190,841	164,289	420,728		1,112,540
2010	437,219	442,578	721,011		1,824,759
2011	373,083	200,521	787,958		1,523,478
2012	296,380	96,354	877,569		1,577,864
2013	282,688	236,760	1,007,729		2,390,025
2014	393,424	212,193	1,027,980		2,209,401
2015	258,493	201,049	981,685		1,607,205
2016	241,224	289,928	1,309,505		2,025,718
2017	455,887	467,522	978,520		2,607,733
2018	262,725	628,022	1,069,604		2,265,917

Table 5. Recreational alive releases and dead discards (numbers) of red drum by state, 2009-2018. Dead discards are estimated based on an 8% release mortality rate. (Source: personal communication with MRIP for data prior to 2018; state compliance reports for 2018)

Year	NJ	DE	MD	VA	NC
2009			34,729	605,836	1,238,158
2010			6,801	88,328	1,670,693
2011	0			156,584	587,369
2012		42,738	1,250,726	8,323,032	4,939,534
2013		1,325	7,125	576,743	1,892,171
2014		264	659	1,108,646	1,086,967
2015			1,456	78,590	1,308,072
2016		2,598	47,908	164,575	3,203,452
2017			14,148	1,722,618	2,165,656
2018	4,715		21,384	83,337	1,729,260

Year	SC	GA	FL	Total Releases	Dead Discards
2009	1,676,241	345,542	2,275,966	6,176,472	494,118
2010	2,269,230	926,494	6,759,301	11,720,847	937,668
2011	1,617,509	370,451	4,191,567	6,923,480	553,878
2012	1,083,096	220,312	2,614,554	18,473,992	1,477,919
2013	1,864,510	504,759	5,196,513	10,043,146	803,452
2014	1,874,809	750,619	5,074,602	9,896,566	791,725
2015	1,432,754	961,277	4,132,461	7,914,610	633,169
2016	1,266,931	601,153	4,734,303	10,020,920	801,674
2017	2,094,199	1,176,524	4,727,411	11,900,556	952,044
2018	1,493,803	1,063,841	5,375,011	9,771,351	781,708