



Atlantic States Marine Fisheries Commission

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A.G. "Spud" Woodward (GA), Chair

Joseph Cimino (NJ), Vice-Chair


Robert E. Beal, Executive Director

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

MEMORANDUM

July 19, 2023

TO: Commissioners; Proxies; American Eel Management Board; Atlantic Striped Bass Management Board; Coastal Pelagics Management Board; Coastal Sharks Management Board; Executive Committee; ISFMP Policy Board; Spiny Dogfish Management Board; Tautog Management Board; Shad & River Herring Management Board

FROM: Robert E. Beal 
Executive Director

RE: ASMFC Summer Meeting: August 1-3, 2023 (TA 23-043)

The Atlantic States Marine Fisheries Commission's Summer Meeting will be held August 1-3, 2023 at **The Westin Crystal City**. The room block is now closed; if you need assistance reserving a room, please contact Lisa Carty at lcarty@asmfc.org. This will be a hybrid meeting (both in-person and remote) to allow for participation by Commissioners and interested stakeholders.

The final agenda and meeting materials for the Summer Meeting are now available at <https://www.asmfc.org/home/2023-summer-meeting>; click on the relevant Board/Committee name to access the documents for that Board/Committee.

Webinar Information

Board meeting proceedings will be broadcast daily via webinar beginning Tuesday, August 1 at 9 a.m. and continuing daily until the conclusion of the meeting (expected to be 11 a.m.) on Thursday, August 3. To register for the webinar, please go to:

<https://attendee.gotowebinar.com/register/8211916328494316377> (Webinar ID 505-145-715).

If you are joining the webinar but will not be using voice over internet protocol (VoIP), you can also call in at +1 (914) 614-3221, access code 865-531-935. A PIN will be provided to you after joining the webinar; see webinar instructions for details on how to receive the PIN.

For those who will not be joining the webinar but would like to listen to the audio portion only, press the # key when asked for a PIN.

Meeting Process

In terms of meeting process, board chairs will ask both in-person and virtual board members if they wish to speak. In-person members can simply raise their hands at the meeting without logging on to the webinar, while virtual members will raise their hands on the webinar. The chair will work with staff to compile the list

MAINE • NEW HAMPSHIRE • MASSACHUSETTS • RHODE ISLAND • CONNECTICUT • NEW YORK • NEW JERSEY • DELAWARE
PENNSYLVANIA • MARYLAND • VIRGINIA • NORTH CAROLINA • SOUTH CAROLINA • GEORGIA • FLORIDA

of speakers, balancing the flow of questions/comments between in-person and virtual attendees. The same process will be used for public comment. Depending upon the number of commenters, the board chair will decide how to allocate the available time on the agenda (typically 10 minutes) to the number of people who want to speak.

Each day, the webinar will begin 15 minutes prior to the start of the first meeting so that people can troubleshoot any connectivity or audio issues they may encounter. If you are having issues with the webinar (connecting to or audio-related), please contact Chris Jacobs at 703.842.0790.

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

Enclosed: Final Agenda, Hotel Directions, TA 23-036, Travel Reimbursement Guidelines



Atlantic States Marine Fisheries Commission

Summer Meeting

August 1-3, 2023

The Westin Crystal City

Arlington, Virginia

Public Comment Guidelines

To provide 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 the opportunity for the public to bring matters of concern to the board's attention at the start of each board meeting. Board chairs will ask members of the public to raise their hands to let the chair know they would like to speak. Depending upon the number of commenters, the board chair will decide 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 three weeks prior to the start of a meeting week (July 10th) will be included in the briefing materials.
2. Comments received by 5:00 PM on Tuesday, July 25th will be included in supplemental materials.
3. Comments received by 10:00 AM on Friday, July 28th will be distributed electronically to Commissioners/Board members prior to the meeting.

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 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.

Tuesday, August 1

9 – 10 AM

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

Chair: Fegley

Other Participants: Eakin, Sabo

Staff: Boyle

1. Welcome/Call to Order (*L. Fegley*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from February 2023
3. Public Comment
4. Consider Update to Potomac River Fisheries Commission American Shad Sustainable Fishery Management Plan (*W. Eakin*) **Final Action**
5. Update on US Geological Survey Alosine Genetic Repository and Expanding Collection Efforts (*W. Eakin*)
6. Progress Update on the 2024 River Herring Benchmark Stock Assessment (*K. Drew*)
7. Other Business/Adjourn

10:15 – 11:45 AM

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: Edwards

Other Participants: Carty, Beal, Eyler

Staff: Starks

1. Welcome/Call to Order (*P. Edwards*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from February 2023
3. Public Comment

4. Consider Stock Assessment Subcommittee Report on Alternative Analysis of Index Methods for Setting Management Measures **Action**
 - Presentation of Stock Assessment Subcommittee Report (*S. Eyster*)
 - Consider Acceptance of 2023 Benchmark Stock Assessment and Peer Review Report for Management Use
 - Consider Management Response, if necessary
5. Review Maine Glass Eel Quota Provision of Addendum V (*C. Starks*) **Action**
6. Review Maine Life Cycle Survey Report (*D. Carty*)
7. Consider Approval of 2024 Maine Aquaculture Proposal (*C. Starks*) **Action**
8. Other Business/Adjourn

11:45 AM – 12:30 PM **Lunch Break (provided)**

12:30 – 1:30 PM

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
Chair: Burgess
Other Participants: Willey, Thomas
Staff: Starks

1. Welcome/Call to Order (*E. Burgess*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from May 2023
3. Public Comment
4. Presentation on Scoping for Draft Amendment 16 to the Highly Migratory Species Fishery Management Plan (*K. Brewster-Geisz*)
5. Consider Approval of Fishery Management Plan Review and State Compliance for the 2021 Fishing Year (*C. Starks*) **Action**
6. Other Business/Adjourn

1:45 – 5:45 PM

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: Gary
Other Participants: Lengyel Costa, Mercer
Staff: Kerns

1. Welcome/Call to Order (*M. Gary*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from May 2023

3. Public Comment
4. Consider Approval of Fishery Management Plan Review and State Compliance for the 2022 Fishing Year *(T. Kerns)* **Action**
5. Review Status of 2023 Emergency Action **Possible Action**
 - Public Hearing Summary *(T. Kerns)*
 - Discuss Timeline for Possible Extension of Emergency Action
6. Consider Approval of Draft Addendum II on 2024 Management Measures for Public Comment *(T. Kerns)* **Action**
7. Other Business/Adjourn

Wednesday, August 2

8 – 10 AM

Breakfast will be served at 7:45 a.m.

Executive Committee

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

Members: Abbott, Bell, Burgess, Cimino, Clark, Davis, Fegley, Geer, Gilmore, Keliher, Kuhn, McKiernan, McNamee, Miller, Patterson, Rawls, Woodward

Chair: Woodward

Staff: Leach

1. Welcome/Introductions *(S. Woodward)*
2. Committee Consent
 - Approval of Agenda
 - Approval of Meeting Summary from May 2023
3. Public Comment
4. Consolidated Appropriations Act Update *(R. Beal)*
5. Review Findings of the Legislative and Governor Appointee Commissioner Survey Regarding Stipends *(R. Beal)*
6. Legislative Update *(A. Law)*
7. Discussion on Per Diem Rates *(R. Beal)*
8. Other Business/Adjourn

10:15 AM – 12:45 PM

Coastal Pelagics Management Board

Member States: Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida

Other Members: NMFS, PRFC, SAFMC

Chair: Cimino

Other Participants: Giuliano, Pearce

Staff: Tuohy

1. Welcome/Call to Order *(J. Cimino)*
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from November 2022
3. Public Comment

4. Consider Approval of Fishery Management Plan Review and State Compliance for Atlantic Cobia for the 2022 Fishing Year (*C. Tuohy*) **Action**
5. Consider Total Harvest Quota for Atlantic Cobia for the 2024-2026 Fishing Years **Final Action**
 - Technical Committee Report (*A. Giuliano*)
 - Consider Setting Total Harvest Quota for 2024-2026
6. Consider Timeline for Potential Review of State Recreational Allocation for Atlantic Cobia **Possible Action**
7. Consider 2022 Spanish Mackerel Stock Assessment Update
 - Presentation of Stock Assessment Report
 - Presentation of Peer Review Report and Response from South Atlantic Fishery Management Council (*J. Carmichael*)
8. Update from the South Atlantic Fishery Management Council on Spanish Mackerel Port Meetings (*J. Carmichael*)
9. Other Business/Adjourn

12:45 – 1:45 PM

Lunch

1:45 – 3:45 PM

East Coast Climate Change Scenario Planning Initiative

1. Welcome/Call to Order (*S. Woodward*)
2. Review Findings from the East Coast Climate Change Scenario Planning Initiative (*T. Kerns*)
 - Overview of Summit
 - Review Draft Possible Action Plan
 - Discuss Next Steps
3. Public Comment
4. Other Business/Adjourn

4 – 5 PM

Tautog Management Board

Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia

Other Members: NMFS

Chair: Luisi

Other Participants: Weedon, Snellbaker

Staff: Boyle

1. Welcome/Call to Order (*M. Luisi*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from January 2022
3. Public Comment
4. Consider Approval of Fishery Management Plan Review and State Compliance for the 2022 Fishing Year (*J. Boyle*) **Action**

5. Consider Committee Reports on Commercial Tagging Program and Possible Changes to the Tagging Program **Possible Action**
 - Technical Committee Report (*C. Weedon*)
 - Law Enforcement Committee Report (*K. Blanchard*)
6. Progress Update on the 2025 Tautog Stock Assessment Update (*K. Drew*)
7. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
8. Elect Vice-Chair **Action**
9. Other Business/Adjourn

Thursday, August 3

8:30 – 9 AM

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: Meserve

Other Participants: Baker, Newlin, Ferrio

Staff: Boyle

1. Welcome/Call to Order (*N. Meserve*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from February 2023
3. Public Comment
4. Review Progress on Mid-Atlantic and New England Fishery Management Councils' Joint Action on Monkfish and Dogfish Fisheries to Reduce Atlantic Sturgeon Bycatch (*C. Ferrio*)
5. Consider Approval of Fishery Management Plan Review and State Compliance for the 2021-2022 Fishing Year (*J. Boyle*) **Action**
6. Other Business/Adjourn

9:15 – 10:45 AM

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: Woodward

Staff: Kerns

1. Welcome/Call to Order (*S. Woodward*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from May 2023
3. Public Comment
4. Executive Committee Report (*S. Woodward*)
5. Review and Consider Changes to Conservation Equivalen Policy and Technical Guidance Document (*T. Kerns*) **Possible Action**

6. Report from the Atlantic Coast Fish Habitat Partnership (*S. Kaalstad*)
7. Review Noncompliance Findings, if necessary **Action**
8. Other Business/Adjourn

10:45 – 11:00 AM

Business Session of the Commission

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

Chair: Woodward

Staff: Beal

1. Welcome/Call to Order (*S. Woodward*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from November 2022
3. Public Comment
4. Review Noncompliance Findings, if necessary **Final Action**
5. Other Business/Adjourn

Atlantic States Marine Fisheries Commission

Shad and River Herring Management Board

*August 1, 2023
9:00 – 10:00 a.m.
Hybrid Meeting*

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*) 9:00 a.m.
2. Board Consent 9:00 a.m.
 - Approval of Agenda
 - Approval of Proceedings from February 2023
3. Public Comment 9:05 a.m.
4. Consider Update to Potomac River Fisheries Commission American Shad Sustainable Fishery Management Plan (*W. Eakin*) **Final Action** 9:15 a.m.
5. Update on US Geological Survey Alosine Genetic Repository and Expanding Collection Efforts (*W. Eakin*) 9:30 a.m.
6. Progress Update on the 2024 River Herring Benchmark Stock Assessment (*K. Drew*) 9:50 a.m.
7. Other Business/Adjourn 10:00 a.m.

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111,) and via webinar; click [here](#) for details

Atlantic States Marine Fisheries Commission

MEETING OVERVIEW

Shad and River Herring Management Board

August 1, 2023

9:00 – 10:00 a.m.

Hybrid Meeting

Chair: Lynn Fegley (MD) Assumed Chairmanship: 2/23	Technical Committee Chair: Wes Eakin (NY)	Law Enforcement Committee Representative: Thomas Burrell (PA)
Vice Chair: Phil Edwards	Advisory Panel Chair: Pam Lyons Gromen	Previous Board Meeting: February 2, 2023
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 2, 2023

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 Update to Potomac River Fisheries Commission American Shad Sustainable Fishery Management Plan (9:15-9:30 a.m.) Final Action

Background

- Amendments 2 and 3 to the Shad and River Herring FMP require all states and jurisdictions that have a commercial fishery to submit a sustainable fishing management plan (SFMP) for river herring and American shad, respectively. Plans are updated and reviewed by the Technical Committee (TC) every five years.
- Potomac River Fisheries Commission (PRFC) submitted an updated SFMP for TC review and Board consideration at the 2023 Summer Meeting (**Briefing Materials**).
- The TC reviewed this SFMP update and recommendation the plan for Board approval (**Briefing Materials**).

Presentations

- American Shad Sustainable Fishery Management Plan Update for Board Consideration by W. Eakin

Board Actions for Consideration

- Consider approval of updated SFMP for PRFC

5. Update on US Geological Survey Alosine Genetic Repository and Expanding Collection Efforts (9:30-9:50 a.m.)

Background

- In response to a Board request, the Technical Committee reviewed a presentation from the U.S. Geological Service about the Alosine Genetic Repository Program to identify data gaps and help to improve future sample collection (**Briefing Materials**).

Presentations

- Technical Committee Report by W. Eakin

6. Progress Update on the 2024 River Herring Benchmark Stock Assessment (9:50-10:00 a.m.)

Background

- The river herring benchmark stock assessment was initiated in April 2022. The assessment workshop is scheduled for August 2023.

Presentations

- Update on River Herring Stock Assessment Progress by K. Drew

7. Other Business/Adjourn

Shad and River Herring 2023 TC Tasks

Activity level: Medium

Committee Overlap Score: Medium (Multi-species committees for this Board)

Committee Task List

- 2024 River Herring Benchmark Stock Assessment
- Updates to state Shad SFMPs
- Annual state compliance reports due July 1

TC Members: Mike Brown (ME), Conor O'Donnell (NH), Brad Chase (MA), Patrick McGee (RI), Kevin Job (CT), Wes Eakin (Chair, NY), Brian Neilan (NJ), Brian Niewinski (PA), Johnny Moore (DE), Matthew Jargowsky (Vice-Chair, MD), Ingrid Braun (PRFC), Joseph Swann (DC), Patrick McGrath (VA), Holly White (NC), Jeremy McCargo (NC), Bill Post (SC), Jim Page (GA), Reid Hyle (FL), Ken Sprankle (MA), Ruth Hass-Castro (NOAA), John Ellis (USFWS), Ted Castro-Santos (USGS), C. Michael Bailey (USFWS)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
SHAD AND RIVER HERRING MANAGEMENT BOARD**

**The Westin Crystal City
Arlington, Virginia
Hybrid Meeting**

February 2, 2023

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

Draft Proceedings of the Shad and River Herring Management Board Hybrid Meeting
February 2023

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Adjournment 8

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

INDEX OF MOTIONS

1. **Move to approve agenda** by Consent (Page 1).
2. **Move to approve proceedings November 8, 2022** by Consent (Page 1).
3. **Move to approve the updated Shad Sustainable Fishery Management Plan from North Carolina as presented today** (Page 3). Motion by Malcolm Rhodes; second by Russell Dize. Motion approved by consent (Page 3).
4. **Move to approve the Fishery Management Plan Review, state compliance reports, and *de minimis* requests for ME, NH, MA, and FL for American shad and NH, GA, and FL for river herring for the 2021 fishing year** (Page 7). Motion by John Maniscalco; second by Erika Burgess. Motion approved by consent (Page 7).
5. **Move to approve Stephen Gephard and William Lucey of CT to the Shad & River Herring Advisory Panel** (Page 7). Motion by Justin Davis; second by Roy Miller. Motion approved by consent (Page 7).
6. **Move to nominate Phill Edwards as Vice-Chair of the Shad & River Herring Board** (Page 8). Motion by Pat Keliher; second by Eric Reid. Motion approved by consent (Page 8).
7. **Motion to adjourn** by Consent (Page 8).

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	John Clark, DE (AA)
Steve Train, ME (GA)	Roy Miller, DE (GA)
Rep. Allison Hepler, ME (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Cheri Patterson, NH (AA)	Lynn Fegley, MD (AA, Acting)
Doug Grout, NH (GA)	Russell Dize, MD (GA)
Mike Armstrong, MA, proxy for D. McKiernan (AA)	Pat Geer, VA, proxy for J. Green (AA)
Raymond Kane, MA (GA)	Shanna Madsen, VA, proxy for Sen. Mason (LA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Phil Edwards, RI, proxy for J. McNamee (AA)	Chad Thomas, NC, proxy for Rep. Wray (LA)
David Borden, RI (GA)	Ross Self, SC, proxy for M. Bell (AA)
Justin Davis, CT (AA)	Malcolm Rhodes, SC (GA)
Bill Hyatt, CT (GA)	Chris McDonough, SC, proxy for Sen. Cromer (LA)
John Maniscalco, NY, proxy for B. Seggos (AA)	Spud Woodward, GA (GA)
Emerson Hasbrouck, NY (GA)	Erika Burgess FL, proxy for J. McCawley (AA)
Heather Corbett, NJ, proxy for J. Cimino (AA)	Gary Jennings, FL (GA)
Peter Clarke, NJ, proxy for T. Fote (GA)	Marty Gary, PRFC
Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)	Dan Ryan, DC, proxy for R. Cloyd
Kris Kuhn, PA, proxy for T. Schaeffer (AA)	Rick Jacobson, USFWS
Loren Lustig, PA (GA)	Max Appelman, NOAA

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

Ex-Officio Members

Wes Eakin, Technical Committee Chair

Staff

Bob Beal	Lindsey Aubart	Caitlin Starks
Toni Kerns	Kurt Blanchard	Gabe Thompson
Madeline Musante	James Boyle	
Tina Berger	Emilie Franke	

Guests

Ashley Asci, NOAA	Sheila Eyler, US FWS	Matthew Jargowsky, MD NDR
Pat Augustine, Coram, NY	Emily Farr, Manomet	Jeff Kaelin, Lund's Fisheries
Rob Beal, ME DMR	Jared Flowers, GA DNR	Jared Lamy, NH F&G
Emily Bodell, NEFMC	Steve Gephard, Deep River, CT	William McDavitt, NOAA
Jason Boucher, NOAA	Ben German, NOAA	Patrick McGrath, VIMS
Ingrid Braun, PEFC	Lewis Gillingham, VMRC	Steve Meyers
Joe Cimino, NJ (AA)	Willy Goldsmith, Pelagic Strategies	Mike Nardolilli, ICPRB
Caitlin Craig, NYS DEC	Pam Gromen, WildOceans	Brian Neilan, NJ DEP
Wes Eakin, NYS DEC	Jay Hermsen, NOAA	Conor O'Donnell, NH F&G

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

Draft Proceedings of the Shad and River Herring Management Board Hybrid Meeting
February 2023

Guests (continued)

Nicole Pitts, NOAA
Marisa Ponte, NC DENR
Will Poston, SGA
Eric Roach, Seabrook, NH
Jeff Sabo, PA F&B

Somers Smott, VMRC
Michael Stangl, DE DFW
ElizaBeth Streifeneder, NYS DEC
Kevin Sullivan, NH F&G
Jonathan Watson, NOAA

Holly White, NC DENR
Kate Wilke, TNC
Chris Wright, NOAA
Darrel Young, MEFA

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

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, via hybrid meeting, in-person and webinar; Thursday, February 2, 2023, and was called to order at 8:30 a.m. by Chair Lynn Fegley.

CALL TO ORDER

CHAIR LYNN FEGLEY: Good morning, everybody. We're going to get ready to get started on the Shad and River Herring Board meeting. I want to say for the record that I'm terrified to chair this meeting after yesterday's parliamentary training. We'll see how it goes. We're going to go ahead and get started. Welcome everyone, we've got a pretty quick agenda.

We do have four action items, so please be ready for that. My name, if you don't know who I am, my name is Lynn Fegley, I represent the state of Maryland, and I'm happy to serve as your Chair today. I've got James Boyle and Katie Drew up here with me, and we're also going to hear from Brian Neilan, who I want to flag. This is his last meeting as our TC Chair, so I want to thank Brian for all the great work that he's done for these two important species.

APPROVAL OF AGENDA

CHAIR FEGLEY: With that, the first order of business is Approval of the Agenda. Are there any modifications, additions or changes to the agenda? Seeing none; we'll consider that approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR FEGLEY: Next, we're moving to the proceedings from November, 2022. Does anybody have any changes, additions, modifications to the proceedings?

Okay, seeing none, we will consider those approved by consent.

PUBLIC COMMENT

CHAIR FEGLEY: Next, we move to Public Comment. I do have, is Mr. Mike Nardolilli in the audience, and I apologize if I massacred your name, but welcome.

MR. MIKE NARDOLILLI: Thank you, Madam Chair. I'm Mike Nardolilli; I'm the Executive Director of the Interstate Commission on the Potomac River Basin, ICPRB. In 1940, Congress approved the compact between all of the basin states of the Potomac watershed; Virginia, West Virginia, Maryland, Pennsylvania and the District of Columbia.

I am here to just introduce myself and my Commission. Some of you may remember that we were very involved with the return of the shad to the Potomac River. This was an operation done by our aquatic biologist in the 1990s. Jim Cummings may be a name familiar to some of you. I'm just here to learn about how the shad are doing, and look forward to any further interactions with your Commission. Thank you very much.

CHAIR FEGLEY: Thank you very much for being here.

CONSIDER THE NORTH CAROLINA AMERICAN SHAD SUSTAINABLE FISHERY MANAGEMENT PLAN

CHAIR FEGLEY: Okay, so next we will move on to consideration of the North Carolina American Shad Sustainable Fishery Management Plan, this is an update. This will require a final action, so I'm looking for a motion at the end of the presentation by Brian Neilan. Brian, if you're online, take it away, please.

MR. BRIAN NEILAN: Thank you for those kind words, Madam Chair, and good morning to the Board. My name is Brian Neilan and I'm the current TC Chair, not for long, as Madam Chair just told you guys, and I'm also the TC Rep from New Jersey. Today I have a quick overview of an updated sustainable fishery management plan from North Carolina for your consideration, so we'll fall right into it.

I would like to include some quick background info, so Board members have some frame of reference for reviewing the plan presentations. Amendment 2 and 3 of the Shad and River Herring FMP requires states requesting a fishery to submit a sustainable fishery management plan. A fishery management plan defines sustainable as demonstrating a stock could support a commercial and/or recreational fishery that will not diminish the future of the stock reproduction and recruitment.

These plans are updated every five years to reassess stock status and sustainability. Last month the TC reviewed an update for shad from North Carolina that concludes this plan would be in place from 2023 through 2027. After reviewing the updates and changes to the plan, the TC recommended the approval of the SFMP as presented. North Carolina does not qualify for *de minimis* status, so it made a request for both commercial and recreational fisheries.

They do quite a bit of work in view of their river systems throughout the state, and they use the data, both fishery dependent and independent from those rivers to support their fishery management plan. The most recent stock assessment of American shad in North Carolina determined that the population in Albemarle Sound are sustainable and not overfished, whereas the determination of status could not definitely be assigned for the Tar-Pamlico, the Neuse and Cape Fear Rivers, due to limited information from the 2020 benchmark stock assessment.

While stock status for the Neuse and Cape Fear River Systems could not be determined, the SAS noted that adult mortality for the Neuse was considered sustainable, and there is an increasing trend in adult abundance in the Cape Fear River since 2005. This plan was an update, so the general framework of the plan remains relatively the same, with some changes to a few of the sustainability parameters, to better reflect the data currently being collected, and

how that data is analyzed and applied to develop the various parameters.

This slide here just kind of summarizes some of the changes, and this plan updates North Carolina's sustainability parameters. Albemarle Sound index of juvenile abundance was added after it was developed through the 2020 benchmark stock assessment, and it's been incorporated to the plan as a new sustainability parameter, catch per unit effort.

Additionally, sink nets were removed from their independent gillnet survey. These nets were removed to reduce interactions with sturgeon. The removal of the sink gillnets from the data did not significantly impact the relative abundance estimates of shad, since most of their shad gillnet surveys are getting caught in their floating nets. Finally, for the Albemarle Sound, relative F is now calculated using the female CPUE index as a sustainability parameter and commercial harvest of those is now coming from all gear types, so that is how they are generating their relative F.

These modifications are necessary to capture changes in the commercial fishery due to management restrictions, as well as changes in sampling methodology. In their independent gillnet survey, the modifications to the relative F calculation are now more representative of American shad abundance than fishery independent and fishery dependent data.

For the Tar-Pamlico and Neuse, the relative F now incorporates recreational harvest into the calculation. This was due to a significant decrease in commercial harvest over the past 10 year of the previous plan. The Rec data will help round out the declining data typically available from the commercial fishery in the past.

For the Cape Fear River, the plan now incorporates recreational harvest data as well, for the same reason declining commercial harvest, as well as the electrofishing CPUE that they also use, as was adjusted due to some fish passage issues at one of

the survey sites that didn't artificially inflate abundance estimates.

Here is a slide of the Summary of Changes for the commercial and the recreational harvest restriction. For all the waterways highlighted here, commercial season dates have been changed from fixed-season dates to potential timeframes in which the fishery can occur. The dates listed on this slide should be considered the maximum potential duration of the fishery in a given year.

The actual dates of each year's fishery will be determined by North Carolina's Shad Working Group taking into account the previous seasons fishery harvest, independent data, whether or not sustainability parameters have been exceeded, and put some stakeholders and other applicable parameters.

For the Albemarle Sound/Roanoke River, the potential timeframe for the commercial fishery was extended from the previous plan. It is now January 1st, potentially January 1st through April 14th. The expansion of the potential season for this part of the state only was due to the Albemarle/Roanoke complex being assessed as not overfished and overfishing not occurring.

The rest of the rivers and inland waters retained the previous plan set dates. As I mentioned before, these are no longer set dates, they are now potential timeframes for the fishery to be executed. For the commercial fishery, the statewide bag limit was changed from a 10-fish aggregate to a 10-fish shad aggregate with only 1 of those fish are permitted to be an American shad.

That is a potential reduction in American shad harvest there. That was the general summary of North Carolina's updated plan, just changes to how the sustainability parameters are calculated, as well as changes to commercial and recreational regulations coming up. I could take any questions if anybody has any.

CHAIR FEGLEY: Thank you, Brian. Are there any questions for Brian on this? Anybody online, Toni? Okay, Malcom Rhodes.

DR. MALCOLM RHODES: If you're ready for a motion, Madam Chairman. I would move to approve the updated American Shad Sustainable Fishery Plan for North Carolina as presented today.

CHAIR FEGLEY: Is there a second? Russel Dize, okay. We have a motion on the board, and that is: Move to approve the updated Shad Sustainable Fishery Management Plan from North Carolina as presented today. Motion by Dr. Rhodes, second by Russell Dize, and I now give the motion to the body to discuss.

Is there any discussion on the motion? Okay, well is there any objection to the motion? Okay, we'll consider this one approved by consent. Thank you very much.

UPDATE ON THE 2023 RIVER HERRING BENCHMARK STOCK ASSESSMENT

CHAIR FEGLEY: Moving on, the next item is an Update on the 2023 River Herring Benchmark Stock Assessment. Dr. Drew, take it away.

DR. KATIE DREW: Work continues on the 2023 stock assessment for river herring. The Index and Life History Work Groups of the SAS have been hard at work standardizing and evaluating the indices, as well as developing life history parameters, including growth, maturity, natural mortality and total mortality.

We'll be having our Methods Workshop the week after next, to finalize those data decisions and move on to developing methods for reference points and potential stock status options, as well as dealing with the bycatch question, and maybe some potential modeling population approaches for that. The goal is to have a final assessment workshop sometime in early summer, and to do the peer review in late summer, so that we can present to you at the annual meeting this year.

However, depending on how work progresses over this time, we may end up bumping back to the February Board meeting to give ourselves a little more time this year. Complete it this year, but do the Peer Review at the end of the year. I think after the methods workshop, we'll have a better sense of whether this year is a completable timeline. That's where things are, and I'm happy to take any questions.

CHAIR FEGLEY: Questions? Any online, Toni? All right, well we'll look forward to the results of those analyses. Okay, moving on.

MS. TONI KERNS: There was one question if there was a date for the Methods Workshop, Katie.

DR. DREW: Yes, so the Methods Workshop will be held via webinar. The date and the link are on the ASMFC Calendar, but it's going to be February 13th and 14th, and then 16th and 17th, so there will be sort of a break in the webinar on that Wednesday, to give the SAS some work time. But it will be the 13th and the 14th, and the 16th and the 17th, and like I said, the dates and the link for that webinar are on the ASMFC calendar if you're interested.

CHAIR FEGLEY: Great, thank you very much.

MS. KERNS: There is one question from Jeff Kaelin. He put his hand down, I think we covered it. Perfect, thank you.

**CONSIDER THE FISHERY MANAGEMENT PLAN
REVIEW AND STATE COMPLIANCE FOR THE
2021 FISHING YEAR**

CHAIR FEGLEY: Okay, moving on. We're going to go to, Consider the Fishery Management Plan Review and State Compliance for the 2021 Fishing Year. James Boyle, take it away.

MR. JAMES BOYLE: We'll jump right in. Here is an outline for the presentation. I'm going to start with a short reminder of historical landings over time, and then move on to cover the 2021

fishing year specifically. Then I'll move on to some of the monitoring and the compliance reports, including fish passage, stocking efforts and certain bycatch interactions.

Finishing off with the *de minimis* requests and the recommendations from the Plan Review Team. We've got a quick reminder of the historical context, so this figure shows the trajectories of commercial landings for river herring and American shad since 1950. Starting in the 1970s, river herring landings fell drastically, and then steadily decreased over time.

For shad there has also been a steady decrease in landings over time, which of course is in part due to the moratoria implemented through Amendments 2 and 3. To zoom in on the end of that time series, make it a little bit easier to see. Since 1990 there is more variation for river herring, which ended up with landings increasing from 2016 to 2019, but for shad you generally see a downward trend in landings since the '90s.

For 2021 specifically, this table shows state landings and coastwide totals for commercial shad and river herring, excluding confidential data. The river herring coastwide commercial landings including bycatch, totaled just over 2.1 million pounds, which is a 12 percent increase from 2020. Bycatch values continue to plummet by 99.7 percent from 2020, which is as a reminder, after a 77 percent drop from 2019 to 2020.

Almost all of this is the result of lower bycatch reported from Massachusetts. Another quick reminder that I reported at the last FMP Review last year. Massachusetts eliminated their state portside sampling program, and so they report NOAA NEFOP data. In that compliance report, the NEFOP data they reported was 90,259 pounds, but I did not include that in this table, because it's a combined estimate of both shad and river herring, so it didn't really fit in the table.

That is also across several fisheries and regions. For reference, that same reporting counted 142,639 pounds in 2020. For American shad the total 2021

commercial landings, directed and bycatch included, reported in compliance reports were 195,642 pounds, which is a 39 percent decrease from 2020 landings.

However, bycatch landings of shad increased 96 percent and represent 17 percent of total landings. Hickory shad commercial landings amounted to 99,419 pounds, which is an 8 percent increase from 2020, although bycatch landings decreased by 89 percent, and are 2 percent of the total landings.

As part of the requirements in Amendments 2 and 3 for river herring and shad respectively. Passage counts are required on select rivers in the states on the slide, 4.44 million river herring were counted, which represents a 29 percent decrease compared to 2020, and 377,472 shad is a 47 percent decrease compared to 2020. There are a few caveats to note from the compliance reports. I'll give a couple examples. For instance, the American shad survey at the Stephen Dam in South Carolina was cut short, due to a gate mechanical failure, and two locations on the Susquehanna River were not in operation to prevent invasive species, although they did perform trap and transport operations, which transported 6,413 American shad upstream.

During 2021 half the American shad fry were stocked in the Pawcatuck, Nanticoke, Potomac and the Santee Rivers, totaling 16.24 million American shad, as a 10 percent increase from 2020. Maine also continues to participate in track and transfer stocking of adult pre-spawning alewife of wild origin on the Androscoggin River, although that is not included in the table in the document.

For sturgeon interactions in 2021, there were 40 reported with one fatality. However, as always, New Jersey gillnetters report the weight and not the number of individuals, so they reported 1,666 pounds. Of those 40 interactions, 33 were identified as Atlantic

sturgeon, 5 were shortnose and 2 were unclassified.

Again, as always, Rhode Island reports NOAA NEFOP and At-Sea monitoring data, which lags by a year, because it comes out after the compliance report deadline. They reported 4 interactions from 2020, and we will see the 2021 interactions in this year's compliance report in July. For the upcoming fishing year, Maine, New Hampshire, Massachusetts, and Florida have requested continued *de minimis* status for their American shad fisheries, and New Hampshire, Georgia and Florida also requested continued *de minimis* status for river herring.

They all meet the requirements and qualify based on their commercial landings, which is less than 1 percent of the coastwide total. Moving on to the PRTs recommendations. In evaluating the state compliance reports, the PRT noted a few inconsistencies with the requirements in Amendments 2 and 3. Similarly to 2020, some monitoring could not be completed due to the COVID-19 pandemic, which is detailed in Table 6 of the document.

Just so you know, there are a few longstanding issues that are related to funding or staffing shortages, where a state either cannot complete a survey or take samples, cannot process them for example. In previous years we included those only Table 6, but the PRT just wanted to note them in the body of the document as a reminder, but they've been longstanding for many years and does not represent, the PRT doesn't feel they need to take any action on them.

Another issue of note. It's in the document the Edisto River was below CPUE sustainability benchmark for three consecutive years, but management action was not listed as triggered in the compliance report. However, since the drafting of the document, a management measure has been implemented for the 2023 fishing year, and that measure will be evaluated by the TC in a future meeting.

There are other small inconsistencies looking at compliance report template, such as not including a

copy of the state fishing regulations, or a section in hickory shad, which the PRT requests, even if that section just said not applicable for the ease of our review. With those minor issues and given the circumstances regarding the monitoring, the PRT recommended approval for the compliance reports for 2021 for all states. There is one further recommendation the PRT is making. The group noticed some inconsistencies in bycatch reporting with some states utilizing NEFOP reporting, some states using their own catch reporting, and some not specifying the sources for their data.

Therefore, in the compliance report template for this year, staff will add a section for states to detail the sources of their bycatch data, and the PRT is going to use that to better identify gaps in reporting and use them for future reviews. With that information, the action for the Board is to consider approval of the 2021 shad and river herring FMP review, the State Compliance Reports and *de minimis* status for Maine, New Hampshire, Massachusetts, Georgia, and Florida. With that I am happy to take any questions.

CHAIR FEGLEY: Great, thank you, James. Are there any questions on the presentation? John Clark.

MR. JOHN CLARK: Thanks for the presentation, James. Just curious. I noticed that the shad landings continue to drop, and the stocking though is going up. I know that the states all use marking on the fry they're stocking. Is there any effort to get all the results from the states that are stocking, if they can generate any type of estimate of the impact that the stocking is having, you know to look at in the catch? I know a lot of states are sampling the catch to look for the marking on their stocked shad.

MR. BOYLE: I am not aware of any current effort, at least not in the FMP Review Process, if there is something I can look into and get back to you, maybe it's something we can include.

CHAIR FEGLEY: Interesting question, Ross Self.

MR. ROSS SELF: I just wanted to speak briefly to the missed CPUE targets for the Edisto in South Carolina. Those, you know we're seeing a marked decline in the number of shad fishermen across the state, and particularly in the Edisto. You know we feel like that loss in effort from the fishermen contributed to that, as well as the impact of the social restrictions in '20 and '21 from the pandemic. But measures like was mentioned in the report. We do have some measures being implemented for '23 that should address that, even though we think that that is kind of an artifact of a lack of participation.

CHAIR FEGLEY: Thank you for that clarification, Russell Dize.

MR. RUSSELL DIZE: I was wondering. A few years back Connecticut was, we were at a meeting and they reported they had removed X amount of dams on the rivers. I was wondering if that was showing any progress in the amount of shad or river herring. Justin Davis.

DR. JUSTIN DAVIS: Thanks for the question, Russell. I'm going to have to say that I don't really know. I mean we have certainly got ongoing efforts within our state to do dam removals, fishway installations. That being said, I don't know right now off the top of my head, sort of how many miles of river we've restored in recent years. I don't really have a good answer for you. But I can certainly get some information for you and send it back to you.

MR. DIZE: Thank you. The reason I asked the question was, I don't see any chance for our shad and river herring in Maryland. This is when I was a young man that we had just boatload after boatload of herring caught and processed on Tilghman. But now we've got so many invasive species, with snakehead and the blue cat up around the Conowingo Dam, that I see no hope for them. But I was just wondering, you know I would like to see success somewhere.

CHAIR FEGLEY: Go ahead, Justin.

DR. DAVIS: Yes thanks, and thanks for the follow up. I guess one thing I should mention is that we were seeing some marginal success with alewives. You know some of our runs seemed to be recovering a little bit. Blueback herring had been in tough shape all along and then not been doing any better. Then this last year in 2022, we had pretty much the worst year of river herring returns that we've had, I mean really probably since we've really started counting them.

That wasn't just a Connecticut thing, it was also Rhode Island and Southern Massachusetts as well. I would love to say that we've got some really good signs of success with river herring restoration. We felt like we were kind of getting somewhere, maybe a little bit with alewives, and then this last year was really bad. We're hoping it's sort of a one-year speed bump, and we'll get back to normal next year. But we'll have to wait and see.

CHAIR FEGLEY: Yes, I appreciate the conversation. It's a daunting problem, and between climate change and invasive species, and then the money that we're investing, it would be nice to see some progress. Are there any other questions on the presentation? Anything online, Toni? Okay, so our next step would be to consider approval. John Maniscalco.

MR. JOHN MANISCALCO: I would be happy to make a motion. Move to approve the Fishery Management Plan Review, State Compliance Reports and de *Minimis* requests for Maine, New Hampshire, Massachusetts and Florida for American shad, and New Hampshire, Georgia and Florida for River Herring for the 2021 fishing year.

CHAIR FEGLEY: Second by Erika Burgess. Okay, we have a motion on the board. Move to approve the Fishery Management Plan, review State Compliance Reports and *de Minimis* requests for Maine, New Hampshire, Massachusetts, and Florida for American shad,

and New Hampshire, Georgia and Florida for River Herring for the 2021 fishing year.

Is there any discussion on the motion? **Okay, seeing no discussion, is there any objection to this motion? Okay, good job, motion passes by consent.**

REVIEW AND POPULATE THE ADVISORY PANEL MEMBERSHIP

CHAIR FEGLEY: Moving on, we are going to go to our next agenda item, which is to review and populate the Advisory Panel membership. Tina Burger. Is Tina in the room?

MS. TINA L. BURGER: I'm here, give me one second, sorry about that.

CHAIR FEGLEY: It's all right, Hi, Tina.

MS. BURGER: Sorry, guys. I offer for your consideration and approval, two nominations to the Shad and River Herring Advisory Panel, Stephen Gephard, a recreational angler and retired Connecticut DEEP biologist, with over four decades of experience with diadromous species, and William Lucey, who focuses on dam removal and fish passage issues with Save the Sound, also from Connecticut. Your nominations were provided in the supplemental materials.

CHAIR FEGLEY: Thank you, Tina, are there any questions or discussion on these nominations? Okay, it looks like there is a motion on the board, Dr. Davis, would you care to state your motion for the record?

DR. DAVIS: I move to approve Stephen Gephard and William Lucey of Connecticut to the Shad and River Herring Advisory Panel.

CHAIR FEGLEY: Okay, we have a second by Roy Miller, and the motion on the board is to approve Stephen Gephard and William Lucey of Connecticut to the Shad and River Herring Advisory Panel. **Is there any discussion on this motion? Is there any objection to the motion? Okay, seeing none; the motion passes by consent.** Thank you, very much.

ELECT VICE-CHAIR

CHAIR FEGLEY: next is also going to be an action. We are going to move to, we are going to elect a Vice-Chair, so I will be looking for a motion to nominate some lucky person. Pat Keliher.

MR. PATRICK C. KELIHER: I would like to nominate Phil Edwards from Rhode Island. Sorry, Phil.

CHAIR FEGLEY: Second by Eric Reid. The motion on the board was to nominate Phil Edwards as Vice-Chair of the Shad and River Management Board. Is there any discussion on this motion? Eric Reid.

MR. ERIC REID: Yes, I missed the parliamentary procedure yesterday, but I was really considering making a motion to amend the language to expound on Mr. Edward's qualifications or it's a substitute with a couple of blanks in it, or something like that. I don't really know what happened yesterday.

CHAIR FEGLEY: You can fill in the blanks.

MR. REID: I could amend how you spelled Mr. Keliher's name, but that's fine, and my name as well. Congratulations and condolences, Mr. Edwards, but he's an excellent choice, so thank you.

CHAIR FEGLEY: **Any other discussion on the motion? Is there any objection to the motion? All right that carries by consent, congratulations, Phil.** Thank you for stepping up to do that.

OTHER BUSINESS

GENETIC WORK INVOLVING SHAD AND RIVER HERRING SPECIES

CHAIR FEGLEY: All right, this takes us to our last agenda item. This is Other Business. We do

have an item here. I'm going to turn this one over to John Maniscalco to outline his Other Business.

MR. MANISCALCO: I'll make this quick. There is some really important genetic work being done on shad and river herring species, that we hope will inform stock ID efforts and sources of bycatch mortality. USGS among others is heavily involved, and I would ask that USGS update the TC on the status of current genetic sample collections, identifying data gaps and future needs. The idea is to work together to achieve comprehensive sampling, and identify where additional resources may be needed to accomplish that. Following that TC update, I would ask that the Board be updated next time we meet, on collections this far, and on any recommendation the TC may have, and if necessary, I'm happy to make a motion.

CHAIR FEGLEY: I don't think we need a motion for this, if the Board can sense that we can send this to the TC. Is there any discussion or thought about having the TC updated and getting more information on genetic sampling, and bringing that update forward to the Board. I think this is an excellent idea. Any comments, questions? Okay, with that thank you, John. We'll move that forward for the record.

ADJOURNMENT

CHAIR FEGLEY: The final item is, is there any objection to a motion to adjourn, made by the Chair. Okay, seeing none; we stand adjourned, thank you.

(Whereupon the meeting adjourned at 9:03 a.m. on
Thursday, February 2, 2023)



Atlantic States Marine Fisheries Commission

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Shad & River Herring Technical Committee

Meeting Summary

May 31, 2023

Technical Committee Members: Wes Eakin (Chair, NY), Matthew Jargowsky (Vice-Chair, MD), Ingrid Braun (PRFC), Michael Brown (ME), Kevin Job (CT), Ken Sprankle (USFWS), Patrick McGee (RI), Ruth Haas-Castro (NOAA), Patrick McGrath (VA), Jim Page (GA), Conor O'Donnell (NH), Joe Swann (DC)

ASMFC Staff: James Boyle and Katie Drew

The TC met via conference call on May 31, 2023 to receive an update from USGS about the Alosine Genetic Stock Identification and Tissue Repository to identify current collection efforts and provide guidelines for future sample collections. Additionally, the TC met to review an update to the Potomac River Fisheries Commission (PRFC) Sustainable Fishery Management Plan (SFMP) for American shad and to review planned management actions in South Carolina for the Edisto River in response to recent low fishery-dependent sustainability metrics.

The next SFMP to be reviewed is from Connecticut (Shad).

1. USGS Alosine Genetic Stock Identification and Tissue Repository

Dave Kazyak, Miluska Olivera-Hyde, and Ryan Franckowiak presented the status of the project, including the differing temporal and spatial ranges of samples for American shad, alewife, and blueback herring. The discussion revealed a few main points where the TC can assist:

1. Collect more mixed-stock samples.
2. For river herring, help inform temporal stability by providing samples from missing years.
3. For river herring, fill in spatial gaps as samples are largely concentrated in southern New England and around the Bay of Fundy in Maine.

Several TC members offered to provide samples after receiving kits from the USGS team, especially to fill the spatial gaps in the southern end of the range. The TC also discussed the potential for shad samples to be collected as bycatch in the VA spiny dogfish fishery and concluded to work on that possibility.

2. PRFC SFMP Update for American shad

Ingrid Braun presented the PRFC SFMP for American shad, which proposed continuing their limited commercial bycatch allowance under the same sustainability metrics, which is based on the geometric mean of pound net catch per unit effort (CPUE) and has been above its restoration target since 2011. The TC discussed the finding of the 2020 American Shad Benchmark Stock Assessment that found mortality in the Potomac River to be slightly above the sustainability threshold and showed interest in PRFC developing an additional metric based around the Juvenile Abundance Index for the next update to the SFMP. **The TC recommended the updated plan for approval by consensus.**

3. Edisto River Management Actions for American Shad

Kyle Hoffman updated the TC on actions taken in response to the fishery-dependent CPUE falling below the target from 2020-2022 with no evidence that conditions would improve in 2023. As a preemptive management measure, South Carolina is reducing the permit allowance from two nets to one per licensee. They also noted that due to high attrition in the fishery, there is concern that the metric is unreliable and will propose changing the index to a fishery-independent survey in the future.

MARYLAND - VIRGINIA
"Potomac River Compact of 1958"

Potomac River Fisheries Commission

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Potomac River Fisheries Commission's

American Shad

Sustainable Fishery Management Plan

Submitted to the
Atlantic States Marine Fisheries Commission

Prepared by Ingrid Braun

May 17, 2023

1. Sustainable Fishery Plan

In accordance with the guidelines provided in Amendment 3 to the Interstate Fishery Management Plan (IFMP) for Shad and River Herring, the Potomac River Fisheries Commission's (PRFC) first American Shad Sustainable Fishery Plan (SFP) was accepted by the Atlantic States Marine Fisheries Commission (ASMFC) Shad and River Herring Management Board in 2012 (2012 SFP), and an updated plan was approved by the Board in 2017 (2017 SFP). The Potomac River Fisheries Commission submits the following updated plan for the next five-year term.

1a. Request for Fishery

The PRFC requests that the Shad and River Herring Management Board consider this request to continue a limited commercial by-catch allowance of American shad in the portion of the Potomac River under PRFC jurisdiction (Figure 1). Accordingly, the PRFC justifies this request based on the fact that the Board accepted the 2007 Shad Stock Assessment which established a benchmark goal for American shad recovery in the Potomac River and required the PRFC to continue monitoring the pound net fishery's by-catch allowance of American shad, including discards. The Stock Assessment stated "to continue stock rebuilding, there should be no new expansion of the fishery until the benchmark is reached". The benchmark goal identified in the 2007 Stock Assessment was approved as a restoration target and has been exceeded each year since 2011 (Figure 2).

1b. Definition of Sustainability

Amendment 3 to the IFMP for Shad and River Herring defines a sustainable fishery as one that will not diminish potential future stock reproduction and recruitment. The PRFC proposes to continue with the mandatory daily harvest reporting program with the fishermen on the Potomac River, in which they record daily harvest, effort and discard data. The continuation of this data collection enhances the long-term data set that the PRFC maintains, updates and utilizes to monitor the progress of the American shad stock rebuilding and recovery in the Potomac River. The long-term American shad juvenile abundance index (JAI) for the Potomac River is provided by Maryland Department of Natural Resources (MD DNR) and will continue on an annual basis (Figure 3).

1c. Summary of current stock status

The Potomac River has been closed to the commercial and recreational directed harvest of American shad since March 1, 1982. The only allowable commercial harvest since then has been via a pound net by-catch provision that allowed up to two percent by volume of the total catch in possession to be American shad. Starting in 1996, the pound net by-catch provision was further limited to two percent by volume, but could not exceed one bushel per day per licensee. In 2004, a one-bushel limit of American shad by-catch for the gill net fishery was approved by the ASMFC Shad and River Herring Technical Committee and Board, and established by the PRFC. In 2012, ASMFC approval was obtained to increase the by-catch limits from one bushel to two bushels per day per licensee for pound nets and gill nets. Currently in the Potomac River, all directed commercial, recreational and charter boat fisheries for American shad remain closed.

1d. Benchmark goals and objectives or restoration goals/targets

In the 2007 ASMFC Shad Stock Assessment (SSA), a benchmark for American shad in the Potomac River was defined as the geometric mean (GM) CPUE of pound net landings reported in Walburg and Sykes (1957) for the years 1944 to 1952, or 31.1 pounds per net-day. It was concluded in the assessment that among Chesapeake Bay stocks of American shad, the Potomac River population showed the most promising signs of recovery. The gill net index, the pound net index, and the JAI depicted strongly increasing trends in relative abundance. To continue stock rebuilding in the Potomac River, it was recommended that there should be no new expansion of the fishery until the benchmark goal is reached, and that this requires continued monitoring of the pound net fishery, including discards. However, the 2020 SSA identified a mortality benchmark for American shad stock as 1.07. In the most recent assessment, it was found that the Potomac River American shad stock was found to be experiencing unsustainable female mortality based on the three-year average in 2017 of 1.1. Additionally, the stock's juvenile mortality status and abundance status is unknown. There have been no trends in the young-of-year (YOY) abundance or adult abundance since 2005.

The ASMFC Shad and River Herring Management Board accepted the 2007 Shad Stock Assessment Report, which included the Potomac River benchmark. This benchmark goal of 31.1 became the restoration target for the Potomac River and was approved by the ASMFC Shad and River Herring Technical Committee. The GM was calculated for CPUEs of total pound net data (catch + discards) and the GM exceeded the benchmark goal and restoration target in 2011 with a value of 32.0 pounds per net-day (Figure 2). The GM has increased every year since 2002, so achieving the target in 2011 was not unexpected; however, we have continued to exceed the restoration target each year. The PRFC has reported this information in their annual compliance report.

1e. Proposed time frame for achievement

The benchmark goal identified in the 2007 Stock Assessment and approved as a restoration target was first exceeded in 2011, and continues to be exceeded each following year.

1f. Discussion of management measure(s) to be taken if sustainable target is not achieved within indicated timeframe

The restoration target in the Potomac River was achieved in 2011, and continues to be exceeded during each of the following years. The PRFC will continue monitoring the total pound net CPUE data as well as the MD DNR survey data.

If the GM for CPUEs of the total pound net data (catch + discards) drops below the restoration target for three consecutive years, then the PRFC will consider potential restrictions including: reducing or eliminating the two bushel by-catch allowance for pound nets and gill nets; and limiting or restricting the take of broodstock/egg collections by other agencies for shad restoration projects.

2. Stock Monitoring Programs

2a. Fishery Independent

American shad have been taken from the Potomac River as brood stock for hatchery production by several agencies under special collection permits issued by the PRFC since 1995. The Interstate Commission on the Potomac River Basin (ICPRB) participated in the Potomac Restoration Stocking Program for American shad from 1995 – 2002, at which time recovery was considered sufficient for natural reproduction. In 2003, restoration stocking of the Rappahannock River started using Potomac River origin eggs through a partnership between ICPRB, the Virginia Department of Wildlife Resource (DWR), and the U. S. Fish & Wildlife Service (USFWS) Harrison Lake National Fish Hatchery. Stocking of the Potomac River continues, but now as “replacement stocking” to account for the Potomac shad sacrificed for another river system. Since 1995, the ICPRB has released over 22 million fry into the Potomac. ICPRB continues to collect some American shad each year from the Potomac River for their schools and educational components, and incorporates significant public involvement into this project with a “Schools-in-Schools” partnership. In 2022, volunteers helped over 550 students from 12 Washington metropolitan area schools hatch shad in their classrooms and stock them in the Potomac and Anacostia Rivers. The students’ efforts to help replenish American shad populations are notable, but more important is the link between students, volunteers, the river, watermen, biologists and our shared fishery heritage.

Several agencies, such as the MD DNR (since 2001), DWR (2003 – 2009, and 2017), the USFWS (since 2004) and the District of Columbia’s Fisheries and Wildlife Division of the Department of Energy and Environment (DOEE) (2005-2018) have all collected American shad for brood stock under special collection permits issued by this Commission. The PRFC’s Scientific Collection Permits require data reports and scale/otolith samples of ten percent of the “kept” American shad for analysis, together with their length, weight and sex. In addition, ten to fifteen percent of all shad fry resulting from the use of this permit are to be restocked in the Potomac River as close to the capture site as is feasible.

The MD DNR began replacement stocking in 2007, and has released about 1.4 million fry into the Anacostia River, a tributary of the Potomac River in Washington D.C. and 3.3 million fry into the Potomac River (Table 4). The DOEE has released approximately 7.6 million fry and 50,000 eggs into the Anacostia River (Table 5). The DWR reported a total of 6.2 million fry stocked in the Potomac, and the USFWS reported 902,000 fry stocked in the Potomac River as mitigation for egg collections (Table 2). In addition, the USFWS released approximately 2.25 million viable eggs back into the Potomac River for mitigation (Table 2). The Potomac River has been the egg source for the majority of Maryland’s shad restoration projects, Virginia’s shad restoration program in the Rappahannock River, as well as the Susquehanna River (MD/PA) and some of Delaware’s rivers since 2002.

i. Juvenile abundance indices

Maryland is required to provide an American shad juvenile index for the Potomac River and several other river systems throughout its portion of the Chesapeake Bay. The annual juvenile abundance survey has been conducted since 1954, with American shad data collected from 1959 to present. Fixed stations and some auxiliary stations are used each year for a beach haul seine survey in

which the juveniles of all species encountered are identified and recorded. The American shad juvenile index for the Potomac River is derived from the Maryland DNR state wide annual young of the year survey as geometric mean CPUEs (Figure 3). The 2022 value of 2.45 was significantly lower than the 2015 value of 19.81, which was a record high value (Figure 3).

ii. **Adult stock monitoring**

Durell and Weedon (2022) report that Maryland DNR has conducted a Striped Bass Spawning Stock Survey since 1985, using multi-panel drift gill nets in the Potomac River. Since 1996, adult American shad that were incidentally caught were processed to obtain length, sex and age (scale samples) and repeat spawning determination (Figure 4).

2b. **Fishery Dependent**

i. **Commercial Fishery**

The non-directed Potomac River pound net by-catch harvest in 2021 consisted of 11,331 pounds of American shad (Table 1). The PRFC's mandatory commercial daily harvest reporting system is the source of these data, collecting harvest as well as discards or released fish. The 2021 discards/released by-catch of American shad in excess of the daily landing limit from pound nets was 3,500 pounds. The 2021 pound net harvest data was combined with the 2021 pound net discard data to identify the total CPUE. There were 408 pounds of American shad reported as harvested by gill nets and no gill net discards in 2021.

Pound net effort is expressed as "pound net fishing day" which is one net fished one time. During 2021, one hundred pound nets were licensed in the Potomac River. The pound net fishery is a 'limited entry' fishery capped at 100 licenses (each net is licensed separately). Effort included 202 pound net fishing days for the American shad by-catch harvest.

Regulation effective January 1, 2011 – all pound nets in the Potomac River must have at least six PRFC approved fish cull panels properly installed in each pound net to help release undersize fish. This regulation will have a beneficial impact on the release of river herring, but will not be effective in the release of adult shad. These fish cull panels were being used for by-catch reduction by some pound netters on a voluntary basis prior to 2011; they are now mandatory.

ii. **Recreational Fishery**

The Potomac River, under PRFC jurisdiction, recreational and charter boat fisheries for American shad remained closed in 2023. The American shad fishery has been closed since 1982 in this portion of the Potomac River. We are unaware of any historical or current recreational activity within the PRFC's jurisdiction. A historical recreational fishery existed in the D.C. portion of the Potomac River, but that fishery is now closed.

Literature Cited

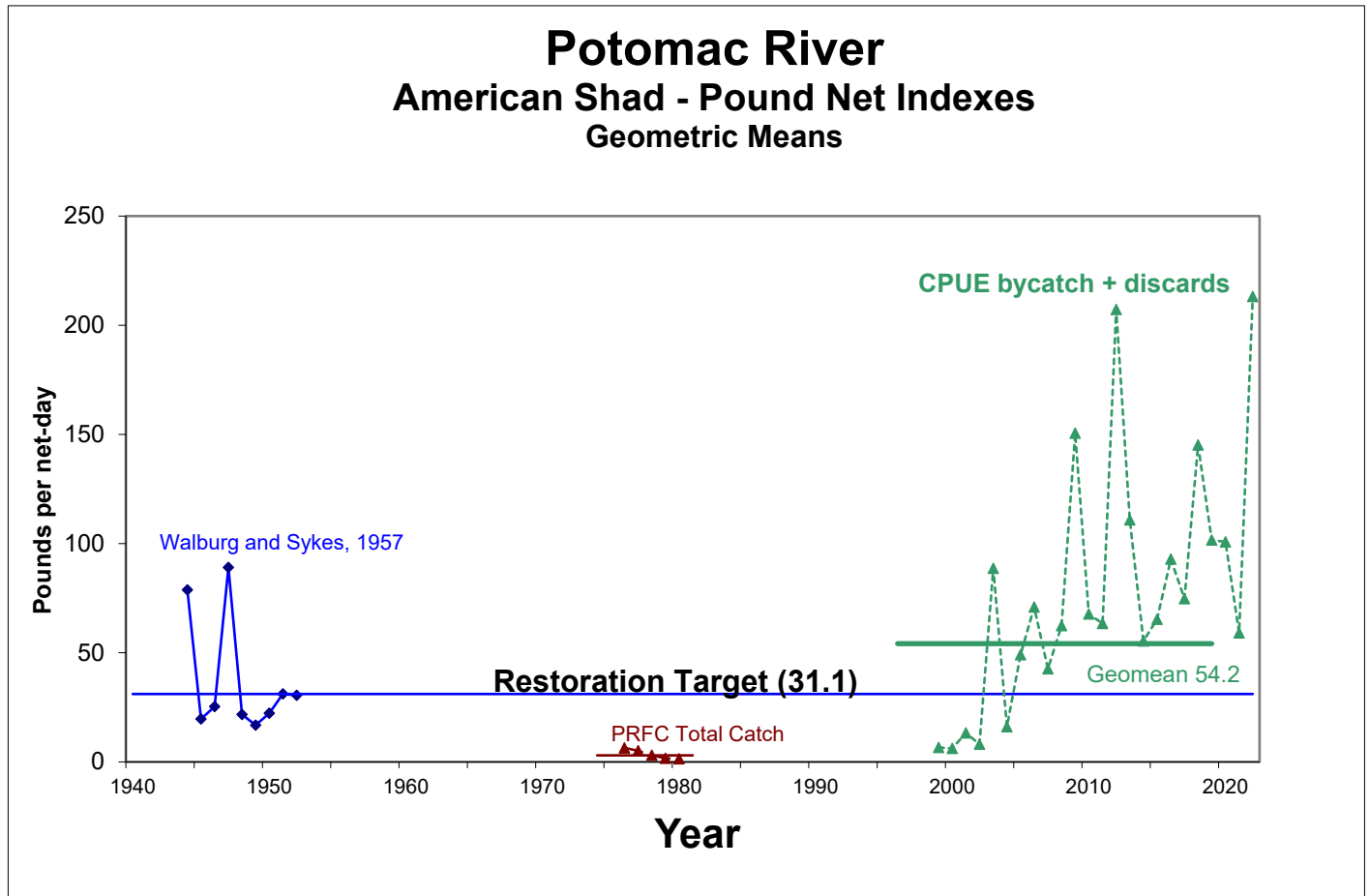
Durell, E. Q. and C. Weedon. 2022. Striped Bass Seine Survey Juvenile Index Web Page. <http://dnr2.maryland.gov/fisheries/Pages/juvenile-index.aspx>. Maryland Department of Natural Resources, Fisheries Service.

Walburg, C. H. and J. E. Sykes. 1957. Shad fishery of Chesapeake Bay with special emphasis on the fishery of Virginia. U.S. Fish Wildlife Service, Research Report 48, 26 p.

Figure 1. Potomac River – PRFC jurisdiction is the main stem of the Potomac River downstream of Washington, DC.



Figure 2. American shad pound net indexes using geometric means from reported bycatch and discards.

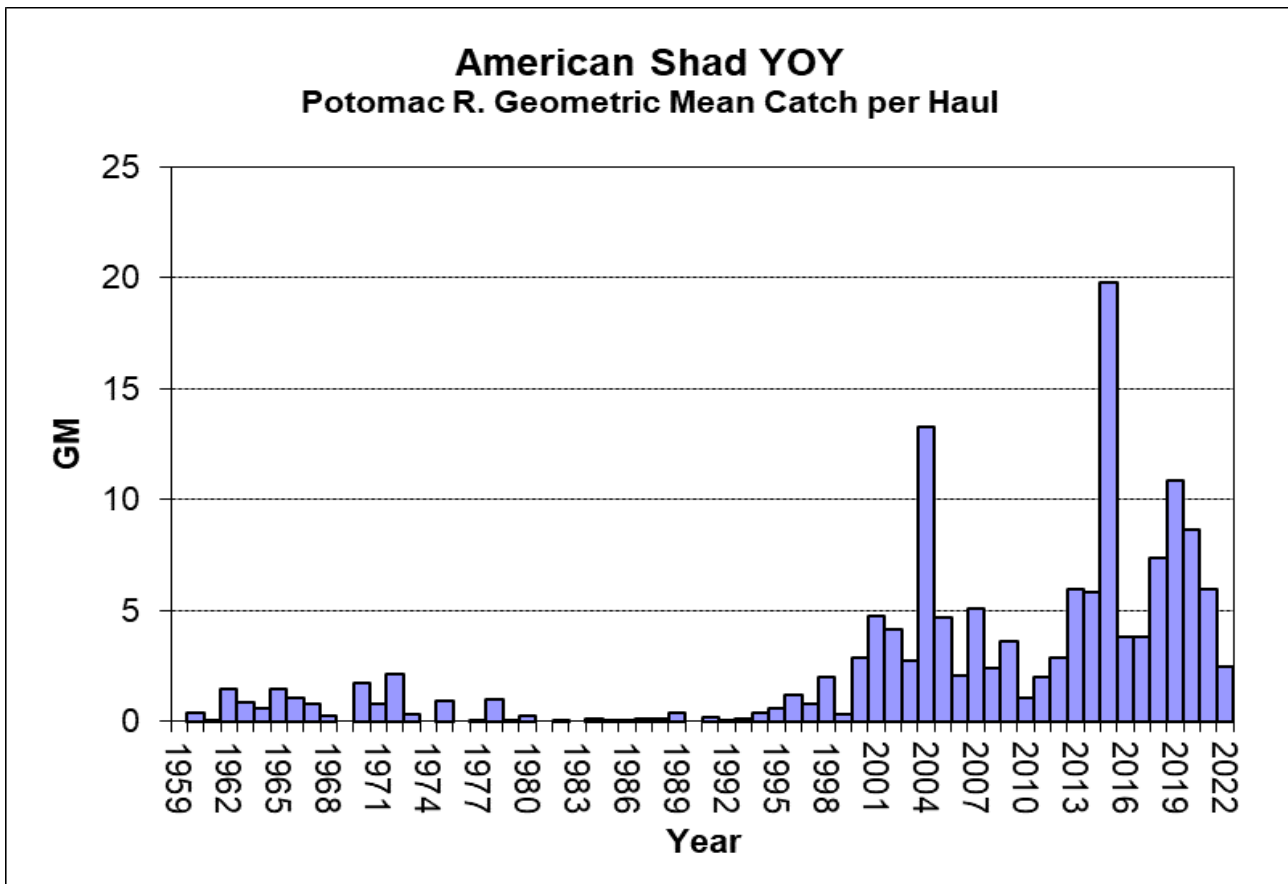


Source: PRFC

Geometric Mean (GM) of Pound Net CPUE Data												
Time Series	1944-1952	1976-1980	1999-2002	1999-2003	1999-2004	1999-2005	1999-2006	1999-2007	1999-2008	1999-2009	1999-2010	1999-2011
GM	31.1	3.0	8.1	13.1	13.6	16.3	19.6	21.3	23.8	28.1	30.2	32.0

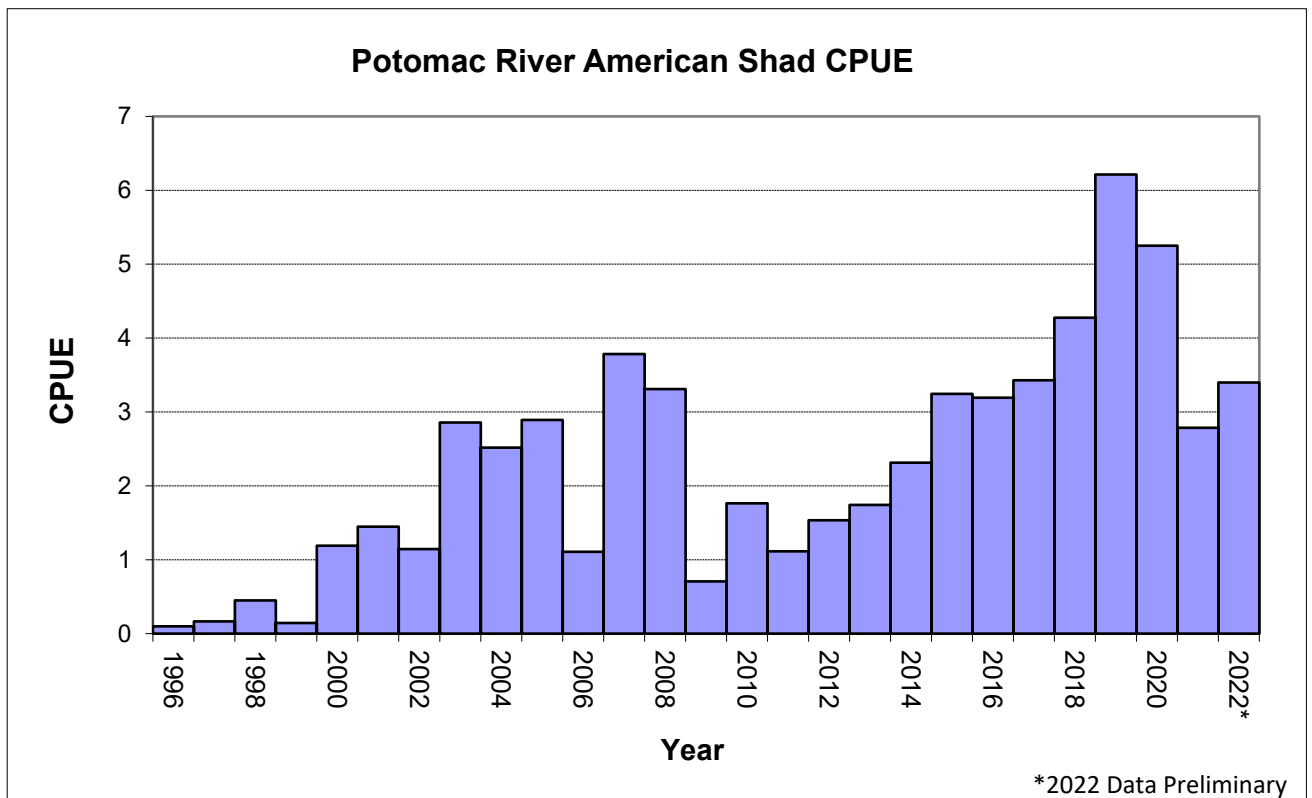
Geometric Mean (GM) of Pound Net CPUE Data												
Time Series	1999-2012	1999-2013	1999-2014	1999-2015	1999-2016	1999-2017	1999-2018	1999-2019	1999-2020	1999-2021	1999-2022	
GM	36.6	39.4	40.3	41.4	43.3	44.6	47.3	49.1	50.7	51.0	54.2	

Figure 3. American shad juvenile index for the Potomac River from Maryland Department of Natural Resources.



Source: <https://dnr.maryland.gov/fisheries/pages/striped-bass/juvenile-index.aspx>

Figure 4. Effort corrected catch of American shad on the Potomac River during the MD DNR striped bass spawning stock survey. CPUE is standardized as the number of fish caught per 1000 square yards of drift gill net per hour.



Source: MD DNR

Table 1. Potomac River Commercial Harvest (lbs) for American Shad by gear type

YEAR	HAUL SEINE	POUND NET	FYKE NET	GILL NET	MISC.	ROE SHAD	BUCK SHAD	LBS. LANDED IN		TOTAL
								MARYLAND	VIRGINIA	
1995*	-	2,638	3	-	-	1,458	1,183	324	2,317	2,641
1996	-	2,292	-	-	-	1,357	935	99	2,193	2,292
1997	120	5,083	3	-	-	2,773	2,433	98	5,108	5,206
1998	121	2,251	-	-	-	1,680	692	623	1,749	2,372
1999	-	1,966	-	-	-	1,049	917	44	1,922	1,966
2000	-	1,508	-	-	-	897	611	124	1,384	1,508
2001	-	4,882	-	-	-	3,390	1,492	794	4,088	4,882
2002	-	2,762	-	-	-	1,727	1,035	-	2,762	2,762
2003	-	8,141	93	-	407	7,229	1,412	2,916	5,725	8,641
2004	-	5,051	-	293	-	4,701	643	1,656	3,688	5,344
2005	-	6,019	-	801	-	6,044	776	2,972	3,848	6,820
2006	-	4,256	-	413	-	4,245	424	1,146	3,523	4,669
2007	-	6,604	-	2310	-	7,929	985	4,532	4,382	8,914
2008	-	6,815	-	160	-	6,470	505	5,115	1,860	6,975
2009	-	5,005	-	209	-	4,601	613	5,210	4	5,214
2010	-	3,885	-	31	6	3,821	101	1,350	2,572	3,922
2011	-	2,419	-	-	-	2,167	252	969	1,450	2,419
2012	-	4,119	-	623	-	3,105	1,641	4,173	569	4,742
2013	-	3,796	-	3	-	2,946	853	3,796	3	3,799
2014	-	4,003	-	10	-	2,832	1,181	4,013	-	4,013
2015	-	1,877	-	12	-	1,135	754	1,877	12	1,889
2016	-	1,145	-	4	-	560	589	1,145	4	1,149
2017	-	10,273	-	-	-	7,904	2,369	2,493	7,780	10,273
2018	-	18,146	-	374	-	15,870	2,650	7,101	11,419	18,520
2019	-	17,546	-	341	-	13,625	4,262	8,730	9,157	17,887
2020	5	12,310	-	4704	-	15,964	1,055	7,599	9,420	17,019
2021	-	10,923	-	408	-	10,332	999	7,338	3,993	11,331
2022	-	7,041	-	85	-	5,002	2,124	2,739	4,387	7,126

* Moratorium adopted 1995 for all fisheries, except pound net by-catch provision

Source: PRFC

Table 2. Summary of American shad collected and eggs produced from the Potomac River by the USFWS and otolith age samples.

	2004	2005	2006*	2007*	2008*	2009*	2010*	2011*	2012*
# Females Caught			673	1,110	1,291	451	1,569	1,021	1,611
# Males Caught			117	272	284	510	1,196	404	475
Ripe Females	50			515	501	451	955	368	712
Ripe Males	39			271	284	510			
# Shad Released	125		395	596	790	787	614	652	899
Total Shad Kept	89		382	786	785	771	2,151	772	1,187
Total Shad Caught	214	296	777	1,382	1,575	1,558	2,765	1,425	2,086
Avg.CPUE (shad/hr/ft ²)			0.001	0.002					
Volume(L) of Eggs			99.3	183.9	194.4	132.2	375.0	137.4	258.0
# of Eggs			4,511,426	7,488,716	8,503,709	6,380,784	17,843,432	6,216,484	11,183,457
Viable Eggs			2,003,222	2,875,455	3,491,069	1,885,500	6,874,612	2,714,435	5,664,920
Viability (%)			44%	42%	41%	30%	39%	44%	51%
# Fry stocked				259,119	188,739		365,000	90,000	
Viable Eggs stocked									670,292
	2013*	2014*	2015*	2016*	2017*	2018*	2019	2022*	Totals
# Females Caught	1,732	2,277	2,456	1,637	3,692	4,273	103	1,741	25,637
# Males Caught	266	758	284	331	1,000	641	1	272	6,811
Ripe Females	539	1090	793	702				673	7,349
Ripe Males									1,104
# Shad Released	1,193	1,187	1,663	935	2,280	2,517	64	1,105	15,802
Total Shad Kept	805	1,848	1,077	1,033	2,412	2,397	40	945	17,480
Total Shad Caught	1,998	3,035	2,740	1,968	4,692	4,914	104	2,013	33,542
Avg.CPUE (shad/hr/ft ²)									
Volume(L) of Eggs	118.1	316.7	170.5	165.6	330.9	342.3	31.8	197.1	3,053
# of Eggs	7,512,761	14,407,614	8,850,523	8,385,914	14,438,781	16,494,265	1,424,675	9,327,441	142,969,982
Viable Eggs	1,603,498	5,671,992	2,044,013	2,138,510	4,264,317	3,301,728	426,130	2,166,773	47,126,174
Viability (%)	21%	39%	23%	25%	30%	20%	30%	23%	
# Fry stocked									902,858
Viable Eggs stocked	277,864	555,650	298,476	155,125	576,839	470,083	53,582	50,867	3,108,778

* Scales & otoliths taken on 5% of fish
 No work was conducted in 2020 or 2021 due to the pandemic

Table 2 (continued). Summary of American shad collected and eggs produced from the Potomac River by the USFWS and otolith age samples.

American Shad Age, Length, and Weight Potomac River - 2022 (USFWS)					
Year Class	2015	2016	2017	2018	Total
Age	7	6	5	4	
Males					
Number		1	2	2	5
% by year class		20%	40%	40%	
Av. TL (mm)		462	489	422	
Av. Wt. (kg)		0.93	0.96	0.79	
Females					
Number	14	9	31	11	65
% by year class	22%	14%	48%	17%	
Av. TL (mm)	505	487	480	460	
Av. Wt. (kg)	1.14	1.08	1.04	0.98	
Sexes Combined					
Number	14	10	33	13	70
% by year class	20%	14%	47%	19%	
Av. TL (mm)	505	485	480	454	
Av. Wt. (kg)	1.14	1.06	1.04	0.95	

American Shad Age, Length, and Weight Potomac River - 2018 (USFWS)					
Year Class	2011	2012	2013	2014	Total
Age	7	6	5	4	
Males					
Number		5	4		9
% by year class		56%	44%		
Av. TL (mm)		478	462		
Av. Wt. (kg)		0.91	0.92		
Females					
Number	3	45	39	3	90
% by year class	3%	50%	43%	3%	
Av. TL (mm)	520	487	486	471	
Av. Wt. (kg)	1.27	1.16	1.1	1.17	
Sexes Combined					
Number	3	50	43	3	99
% by year class	3%	51%	43%	3%	
Av. TL (mm)	520	486	483	471	
Av. Wt. (kg)	1.27	1.14	1.09	1.17	

American Shad Age, Length, and Weight Potomac River - 2017 (USFWS)					
Year Class	2010	2011	2012	2013	Total
Age	7	6	5	4	
Males					
Number		9	17	2	28
% by year class		32%	61%	7%	
Av. TL (mm)		482	457	432	
Av. Wt. (kg)		1.04	0.94	0.77	
Females					
Number	4	29	38	1	72
% by year class	6%	40%	53%	1%	
Av. TL (mm)	524	497	485	457	
Av. Wt. (kg)	1.36	1.23	1.23	1.02	
Sexes Combined					
Number	4	38	55	3	100
% by year class	4%	38%	55%	3%	
Av. TL (mm)	524	493	476	440	
Av. Wt. (kg)	1.36	1.18	1.14	0.85	

American Shad Age, Length, and Weight Potomac River - 2016 (USFWS)						
Year Class	2008	2009	2010	2011	2012	Total
Age	8	7	6	5	4	
Males						
Number		1	1	2	1	5
% by year class		20%	20%	40%	20%	
Av. TL (mm)		514	479	462	382	
Av. Wt. (kg)		1.04	0.88	0.52	0.46	
Females						
Number	1	5	11	17	1	35
% by year class	3%	14%	31%	49%	3%	
Av. TL (mm)	540	532	507	451	470	
Av. Wt. (kg)	1.34	1.23	1.18	1.02	0.96	
Sexes Combined						
Number	1	6	12	19	2	40
% by year class	3%	15%	30%	48%	5%	
Av. TL (mm)	540	529	505	452	426	
Av. Wt. (kg)	1.34	1.2	1.15	0.97	0.71	

Table 3. MD DNR American Shad Mitigation Report – Potomac River

Year	Date	Stocking site	Number	Cultured By:	Stocked For:
2007	5/15/07	Anacostia	200,000	DC Fisheries	MD DNR mitigation
2008	4/24/08	Anacostia	170,000	DC Fisheries	MD DNR mitigation
2008	5/12/08	Anacostia	30,000	DC Fisheries	MD DNR mitigation
2009	5/6/09	Anacostia	200,000	DC Fisheries	MD DNR mitigation
2010	5/5/10	Marshall Hall	100,000	MD DNR	USFWS mitigation
2010	5/12/10	Marshall Hall	100,000	MD DNR	USFWS mitigation
2010	5/18/10	Marshall Hall	100,000	MD DNR	USFWS mitigation
2010	5/25/10	Marshall Hall	60,000	MD DNR	USFWS mitigation
2010	5/25/10	Marshall Hall	5,000	MD DNR	USFWS mitigation
2010	n/a	Anacostia	400,000	DC Fisheries	MD DNR mitigation
2011	4/25/11	Marshall Hall	30,000	MD DNR	USFWS mitigation
2011	5/25/11	Marshall Hall	60,000	MD DNR	USFWS mitigation
2011	n/a	Marshall Hall	263,000	MD DNR	MD DNR mitigation
2012	4/16/12	Marshall Hall	165,000	MD DNR	MD DNR mitigation
2012	4/5/12	Anacostia	200,000	DC Fisheries	MD DNR mitigation
2013	5/1/13	Anacostia	200,000	DC Fisheries	MD DNR mitigation
2013	4/29/13	Marshall Hall	3,000	MD DNR	MD DNR mitigation
2013	5/10/13	Marshall Hall	220,000	MD DNR	MD DNR mitigation
2013	5/21/13	Marshall Hall	57,400	MD DNR	MD DNR mitigation
2014	4/14/14	Marshall Hall	10,300	MD DNR	MD DNR mitigation
2014	4/16/14	Marshall Hall	20,700	MD DNR	MD DNR mitigation
2014	4/23/14	Marshall Hall	10,300	MD DNR	MD DNR mitigation
2014	5/8/14	Marshall Hall	31,000	MD DNR	MD DNR mitigation
2014	5/16/14	Marshall Hall	20,700	MD DNR	MD DNR mitigation
2014	4/29/14	Marshall Hall	166,000	DC Fisheries	MD DNR mitigation
2015	4/24/15	Marshall Hall	10,800	MD DNR	MD DNR mitigation
2015	5/7/15	Marshall Hall	172,700	MD DNR	MD DNR mitigation
2016	4/13/16	Marshall Hall	30,800	MD DNR	MD DNR mitigation
2016	4/26/16	Marshall Hall	30,800	MD DNR	MD DNR mitigation
2017	4/10/17	Marshall Hall	15,800	MD DNR	MD DNR mitigation
2017	4/16/17	Marshall Hall	55,300	MD DNR	MD DNR mitigation
2017	4/20/17	Marshall Hall	47,400	MD DNR	MD DNR mitigation
2017	4/24/17	Marshall Hall	79,000	MD DNR	MD DNR mitigation
2017	4/25/17	Marshall Hall	31,600	MD DNR	MD DNR mitigation
2017	4/26/17	Marshall Hall	94,800	MD DNR	MD DNR mitigation
2017	5/9/17	Marshall Hall	20,000	MD DNR	MD DNR mitigation
2018	4/24/18	Marshall Hall	240,000	MD DNR	MD DNR mitigation
2018	4/27/18	Marshall Hall	16,000	MD DNR	MD DNR mitigation
2018	5/2/18	Marshall Hall	16,000	MD DNR	MD DNR mitigation
2018	5/3/18	Marshall Hall	16,000	MD DNR	MD DNR mitigation

Table 3 (continued). MD DNR American Shad Mitigation Report – Potomac River

Year	Date	Stocking site	Number	Cultured By:	Stocked For:
2018	5/6/18	Marshall Hall	16,000	MD DNR	MD DNR mitigation
2018	5/7/18	Marshall Hall	16,000	MD DNR	MD DNR mitigation
2018	5/21/18	Marshall Hall	32,000	MD DNR	MD DNR mitigation
2019	4/17/19	Marshall Hall	15,500	MD DNR	MD DNR mitigation
2019	4/22/19	Marshall Hall	15,500	MD DNR	MD DNR mitigation
2019	4/23/19	Marshall Hall	15,500	MD DNR	MD DNR mitigation
2019	4/24/19	Marshall Hall	77,500	MD DNR	MD DNR mitigation
2019	4/25/19	Marshall Hall	15,500	MD DNR	MD DNR mitigation
2019	5/1/19	Marshall Hall	15,500	MD DNR	MD DNR mitigation
2019	5/7/19	Marshall Hall	31,000	MD DNR	MD DNR mitigation
2019	5/8/19	Marshall Hall	15,500	MD DNR	MD DNR mitigation
2019	5/13/19	Marshall Hall	31,000	MD DNR	MD DNR mitigation
2019	5/17/19	Marshall Hall	77,500	MD DNR	MD DNR mitigation
2019	5/19/19	Marshall Hall	186,000	MD DNR	MD DNR mitigation
2021	5/3/21	Marshall Hall	41,600	MD DNR	MD DNR mitigation
2021	5/4/21	Marshall Hall	72,000	MD DNR	MD DNR mitigation
2021	5/17/21	Marshall Hall	145,000	MD DNR	MD DNR mitigation
2022	4/11/22	Marshall Hall	9,100	MD DNR	MD DNR mitigation
2022	4/13/22	Marshall Hall	36,500	MD DNR	MD DNR mitigation
2022	4/26/22	Marshall Hall	36,500	MD DNR	MD DNR mitigation
2022	4/28/22	Marshall Hall	82,100	MD DNR	MD DNR mitigation
2022	5/2/22	Marshall Hall	90,000	MD DNR	MD DNR mitigation

Table 4. Summary of American shad collected and eggs obtained from the Potomac River by MD DNR and scale age samples.

	2001	2002	2003	2004	2005	2006	2007	2008
# Ripe Females	298	568	458	231	561	472	567	401
# Green Females		205	351	276	446	314	438	405
# Spent Females		147	60	183	192	98	178	141
# Males	143	1083	490	286	385	223	213	476
Total Shad	441	2,003	1,359	976	1,584	1,107	1,396	1,423
Liters of Eggs	101.8	309.6	222.6	137.5	246	249	294.7	213.5
Total # of Eggs	3,906,375	11,501,975	8,337,225	5,742,950	9,514,400	9,350,900	10,222,090	7,918,150
Total Fertile Eggs	1,687,629	5,898,446	3,260,799	3,268,708	4,466,611	3,207,860	3,508,795	3,921,239
# Re-stocked Fry							200000	200000
	2009	2010	2011	2012	2013	2014*	2015*	2016*
# Ripe Females	425	599	304	1828	1168	579	569	947
# Green Females	277	288	355	1744	1199	1065	1482	907
# Spent Females	144	150	80	223	146	34	126	152
# Males	467	604	417	1250	354	1543	585	340
Total Shad	1,313	1,641	1,156	5,045	2,867	3,221	2,762	2,346
Liters of Eggs	205.5	299	168.5	619.5	441	180	174	372
Total # of Eggs	7,557,855	11,463,350	5,957,600	25,540,150	15,834,815	6,564,000	7,126,200	14,787,550
Total Fertile Eggs	4,554,483	7,882,600	3,964,097	11,294,187	8,306,826	3,346,406	3,199,264	6,502,012
# Re-stocked Fry	200000	400,000	263000	365000	480400	259000	183500	61600
	2017*	2018*	2019*	2021*	2022*	Total		
# Ripe Females	1050	1164	1050	249	463	13951		
# Green Females	2054	833	675	251	390	13,955		
# Spent Females	378	282	69	61	15	2859		
# Males	627	280	118	167	200	10251		
Total Shad	4,109	2,559	1,912	728	1,068	41,016		
Liters of Eggs	480	458	572	114	182	6040.2		
Total # of Eggs	15,924,350	14,494,200	17,444,400	3,866,925	10,483,600	223,539,060		
Total Fertile Eggs	7,546,119	7,829,522	7,254,283	2,556,016	6,547,051	110,002,953		
# Re-stocked Fry	343900	352,000	496,000	258,000	254,200	3,916,600		

* Scales taken for age samples

No work was conducted in 2020 due to the pandemic

Table 4 (continued). Summary of American shad collected and eggs obtained from the Potomac River by MD DNR and scale age samples.

American Shad Age, Length, and Weight Potomac River - 2022 (MD DNR)					
Year Class	2015	2016	2017	2018	Total
Age	7	6	5	4	
Males					
Number	8	4	5	1	18
% by year class	44%	22%	28%	6%	
Av. TL (mm)	483	466	441	409	
Females					
Number	9	33	36	3	81
% by year class	11%	41%	44%	4%	
Av. TL (mm)	500	486	470	470	
Sexes Combined					
Number	17	37	41	4	99
% by year class	17%	37%	41%	4%	
Av. TL (mm)	492	484	467	455	

American Shad Age, Length, and Weight Potomac River - 2021 (MD DNR)				
Year Class	2016	2017	2018	Total
Age	7	6	5	
Males				
Number	11	12	6	29
% by year class	38%	41%	21%	
Av. TL (mm)	480	460	441	
Females				
Number	5	9	7	21
% by year class	24%	43%	33%	
Av. TL (mm)	512	481	471	
Sexes Combined				
Number	16	21	13	50
% by year class	32%	42%	26%	
Av. TL (mm)	490	469	457	

American Shad Age, Length, and Weight Potomac River - 2019 (MD DNR)							
Year Class	2010	2011	2012	2013	2014	2015	Total
Age	9	8	7	6	5	4	
Males							
Number	1		17	26	13	1	58
% by year class	2%		29%	45%	22%	2%	
Av. TL (mm)	519		474	467	448	400	
Av. Wt. (kg)	1.05		0.89	0.83	0.77	0.56	
Females							
Number		2	7	57	24	1	91
% by year class		2%	8%	63%	26%	1%	
Av. TL (mm)		506	499	491	483	471	
Av. Wt. (kg)		1.24	1.06	1	1	1.03	
Sexes Combined							
Number	1	2	24	83	37	2	149
% by year class	1%	1%	16%	56%	25%	1%	
Av. TL (mm)	519	506	481	483	471	436	
Av. Wt. (kg)	1.05	1.24	0.94	0.95	0.92	0.8	

American Shad Age, Length, and Weight Potomac River - 2018 (MD DNR)					
Year Class	2011	2012	2013	2014	Total
Age	7	6	5	4	
Males					
Number		4	2	2	8
% by year class		50%	25%	25%	
Av. TL (mm)		462	430	420	
Av. Wt. (kg)		0.91	0.78	0.66	
Females					
Number	9	59	63	8	139
% by year class	6%	42%	45%	6%	
Av. TL (mm)	509	501	482	486	
Av. Wt. (kg)	1.2	1.1	1.05	0.85	
Sexes Combined					
Number	9	63	65	10	147
% by year class	6%	43%	44%	7%	
Av. TL (mm)	509	499	481	473	
Av. Wt. (kg)	1.2	1.08	1.03	0.76	

Table 5. Summary of American shad collected and eggs produced from the Potomac River by DOEE and otolith age samples.

	2006	2007	2008	2009	2010	2012	2013	2014
# Ripe Females	19	148	65	151	158	177	203	103
# Green Females	8	348	80	158	170	337	189	160
# Spent Females	4	55	28	56	30	21	44	34
# Males	1	43	18	115	128	185	85	218
Total Shad	32	594	191	480	486	720	521	515
Liters of Eggs	4.3	64.75	34.75	81	87.5	102.25	94.5	42.75
Liters of Viable Eggs	3.4	46.2	14.8	41.1	60.3	64.9	59.8	27.4
Viable Eggs/Female	3,831	9,355	8,550	12,334	15,058	13,252	7,143	10,003
# Stocked Fry in Anacostia River	114,920	763,600	261,710	922,650	1,672,411	1,912,947	1,216,443	796,787
# Stocked Eggs in Anacostia River								
	2015*	2016*	2017	2018*	Totals			
# Ripe Females	71	244	0	75	1414			
# Green Females	115	213	0	-	1778			
# Spent Females	27	78	0	-	377			
# Males	51	55	0	104	1003			
Total Shad	213	590	0	179	4521			
Liters of Eggs	0	33	0	40	584.8			
Liters of Viable Eggs	0	0	0	-	317.9			
Viable Eggs/Female	0	0	0	-	79,526			
# Stocked Fry in Anacostia River	0	0	0	0	7,661,468			
# Stocked Eggs in Anacostia River				50,000	50,000			

* Scales & otoliths taken on 5% of fish

No work was conducted in 2015 or 2016 due to filtration system failure

Table 5 (continued). Summary of American shad collected and eggs produced from the Potomac River by DOEE and otolith age samples.

American Shad Age, Length, and Weight Potomac River - 2018 (DOEE)						American Shad Age, Length, and Weight Potomac River - 2016 (DOEE)						
Year Class	2012	2013	2014	2015	Total	Year Class	2009	2010	2011	2012	2013	Total
Age	6	5	4	3		Age	7	6	5	4	3	
Males						Males						
Number	1	9	19	5	34	Number		1	3	5	4	13
% by year class	3%	26%	56%	15%		% by year class		8%	23%	38%	31%	
Av. TL (mm)	491	480	473	464		Av. TL (mm)		495	493	481	428	
Av. Wt. (kg)	0.89	1.01	0.96	0.91		Av. Wt. (kg)		1.00	0.96	0.89	0.70	
Females						Females						
Number		5	7	3	15	Number	2	11	15	15	4	47
% by year class		33%	47%	20%		% by year class	4%	23%	32%	32%	9%	
Av. TL (mm)		500	499	468		Av. TL (mm)	528	511	488	482	461	
Av. Wt. (kg)		0.93	1.24	1.01		Av. Wt. (kg)	1.27	1.18	1.1	0.95	0.96	
Sexes Combined						Sexes Combined						
Number	14	26	8	8	56	Number	2	12	18	20	8	60
% by year class	25%	46%	14%	14%		% by year class	3%	20%	30%	33%	13%	
Av. TL (mm)	491	487	480	465		Av. TL (mm)	528	510	489	482	444	
Av. Wt. (kg)	0.89	0.98	1.03	0.94		Av. Wt. (kg)	1.27	1.17	1.08	0.94	0.83	

American Shad Age, Length, and Weight Potomac River - 2015 (DOEE)						
Year Class	2008	2009	2010	2011	2012	Total
Age	7	6	5	4	3	
Males						
Number	1	7	4	3	1	16
% by year class	6%	44%	25%	19%	6%	
Av. TL (mm)	473	485	480	467	430	
Av. Wt. (kg)	1.05	1.09	1.05	1.03	1.03	
Females						
Number	1		11	6		18
% by year class	6%		61%	33%		
Av. TL (mm)	495		492	499		
Av. Wt. (kg)	1.42		1.33	1.29		
Sexes Combined						
Number	2	7	15	9	1	34
% by year class	6%	21%	44%	26%	3%	
Av. TL (mm)	484	485	489	488	430	
Av. Wt. (kg)	1.24	1.09	1.25	1.2	1.03	

Atlantic States Marine Fisheries Commission

American Eel Management Board

*August 1, 2023
10:15 – 11:45 a.m.
Hybrid Meeting*

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. Edwards*) 10:15 a.m.
2. Board Consent 10:15 a.m.
 - Approval of Agenda
 - Approval of Proceedings from February 2023
3. Public Comment 10:20 a.m.
4. Consider Stock Assessment Subcommittee Report on Alternative Analysis of Index Methods for Setting Management Measures **Action** 10:30 a.m.
 - Presentation of Stock Assessment Subcommittee Report (*S. Eyster*)
 - Consider Acceptance of 2023 Benchmark Stock Assessment and Peer Review Report for Management Use
 - Consider Management Response (*if necessary*)
5. Review Maine Glass Eel Quota Provision of Addendum V (*C. Starks*) **Action** 11:05 a.m.
6. Review Maine Life Cycle Survey Report (*D. Carty*) 11:25 a.m.
7. Consider Approval of 2024 Maine Aquaculture Proposal (*C. Starks*) **Action** 11:35 a.m.
8. Other Business/Adjourn 11:45 a.m.

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details.

MEETING OVERVIEW

American Eel Management Board

August 1, 2023

10:15 – 11:45 a.m.

Hybrid Meeting

Chair: Phil Edwards (RI) Assumed Chairmanship: 10/21	Technical Committee Chair: Danielle Carty (SC)	Law Enforcement Committee Representative: Rob Beal (ME)
Vice Chair: Kris Kuhn (PA)	Advisory Panel Chair: Mari-Beth DeLucia (TNC)	Previous Board Meeting: February 1, 2023
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, D.C, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 2023

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 Stock Assessment Subcommittee Report on Alternative Analysis of Index Methods for Setting Management Measures (10:30-11:05 a.m.) Action

Background

- The 2023 Benchmark Stock Assessment for American Eel was evaluated through the Commission’s external peer review process in late 2022. The peer review panel endorsed the assessment as the latest and best information available on the status of the coastwide American eel stock for use in fisheries management. The Peer Review Panel also requested that additional work be done to establish threshold reference points in the management tool proposed (I_{TARGET}) and that work should be done using a simulation approach with management strategy evaluation (MSE) methods. The Panel also disagreed with the Stock Assessment Subcommittee (SAS) regarding the stock status.
- The Board reviewed the 2023 Benchmark Stock Assessment in February. Consistent with the Commission’s Technical Support Group Guidance and Benchmark Stock Assessment Process, the Board tasked the SAS with providing justification for deviating from the advice from the peer review advice. In addition to providing justification, the Board also asked the SAS to provide additional analyses to show the influence of individual surveys on the resulting coastwide yellow eel index, consider other reference periods and

configurations for I_{TARGET} , and discuss how the habitat model may help assess eel in the future.

- The SAS produced a supplemental report including the work requested by the Board, and the additional simulation work on the Multivariate Auto-Regressive State-Space (MARSS) index and dynamic factor analysis (DFA) recommended by the Peer Review Panel (**Briefing Materials**).

Presentations

- Presentation of Stock Assessment Subcommittee Supplemental Report by S. Eyler

Board Actions for Consideration

- Consider Acceptance of 2023 Benchmark Stock Assessment and Peer Review Report for Management Use
- Consider Management Response (*if necessary*)

5. Review Maine Glass Eel Quota Provision of Addendum V (11:05-11:25 a.m.) Action

Background

- Addendum V to the American Eel FMP specifies that the Maine glass eel quota of 9,688 pounds can be extended through 2024. A new addendum is required to set the Maine glass eel quota for 2025 and beyond.

Presentations

- Addendum V Glass Eel Provision by C. Starks

Board Actions for Consideration

- Initiate management action to address expiring Maine glass eel quota provision

6. Review Maine Life Cycle Survey Report (11:25-11:35 a.m.)

Background

- Addendum IV requires any state or jurisdiction with a commercial glass eel fishery to implement a fishery-independent life cycle survey covering glass/elver, yellow, and silver eels within at least one river system.
- Maine Department of Marine Resources (ME DMR) carries out the life cycle survey to monitor each life stage (glass, yellow, and silver) in West Harbor Pond. Recent data were presented to the Technical Committee in July (**Briefing Materials**).

Presentations

- Maine Life Cycle Survey Report by D. Carty

7. Review and Consider Approval of 2024 Maine Aquaculture Proposal (11:35-11:45 a.m.)

Action

Background

- Maine has submitted a proposal for aquaculture harvest in 2024, pursuant to Addendum IV to the American eel FMP. Maine's plan includes the harvest of 200 pounds of glass eel for use in domestic aquaculture facilities (**Briefing Materials**).
- The TC reviewed the Maine aquaculture plan, and found it is consistent with the requirements of Addendum IV and supports its approval.

Presentations

- 2024 Maine Aquaculture Proposal by C. Starks

Board Actions for Consideration

- Approve Maine's aquaculture plan for 2024

8. Other Business/Adjourn

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
AMERICAN EEL MANAGEMENT BOARD**

**The Westin Crystal City
Arlington, Virginia
Hybrid Meeting**

February 1, 2023

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

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Adjournment..... 27

INDEX OF MOTIONS

1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of October 21, 2021** by Consent (Page 1).
3. **Main Motion**
Move to approve the American Eel FMP Review and state compliance reports for the 2021 Fishing year, and *de minimis* requests from New Hampshire, Massachusetts, Pennsylvania, District of Columbia, and Georgia for their yellow eel fisheries (Page 24). Motion by John Clark; second by Doug Grout. Motion amended.

Motion to Amend
Move to amend to add Florida to the *de minimis* request (Page 25). Motion by Erika Burgess; second by John Maniscalco. (14 in favor, 3 opposed, 1 abstention, 1 null). Motion carried (Page 26).

Main Motion as Amended
Move to approve the American Eel FMP Review and state compliance reports for the 2021 fishing year, and *de minimis* requests from New Hampshire, Massachusetts, Pennsylvania, District of Columbia, Florida, and Georgia for their yellow eel fisheries. Motion carried (18 in favor, 1 opposed) (Page 26).
4. **Move to elect Kris Kuhn as Vice Chair of the American Eel Management Board** (Page 26). Motion by Shanna Madsen; second by John Clark. Motion passes by consent (Page 26).
5. **Move to adjourn** by Consent (Page 26).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	John Clark, DE (AA)
Steve Train, ME (GA)	Roy Miller, DE (GA)
Sen. Cameron Reny, ME, proxy for Rep. Hepler (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Cheri Patterson, NH (AA)	Lynn Fegley, MD (AA, Acting)
Doug Grout, NH (GA)	Russell Dize, MD (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	David Sikorski, MD, proxy for Del. Stein (LA)
Dan McKiernan, MA (AA)	Shanna Madsen, VA, proxy for J. Green (GA)
Raymond Kane, MA (GA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Jerry Mannen, NC (GA)
Phil Edwards, RI, proxy for J. McNamee (AA)	Chad Thomas, NC, proxy for Rep. Wray (LA)
David Borden, RI (GA)	Ross Self, SC, proxy for M. Bell (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Malcolm Rhodes, SC (GA)
Justin Davis, CT (AA)	Chris McDonough, SC, proxy for Sen. Cromer (LA)
Rob LaFrance, CT, proxy for B. Hyatt (GA)	Doug Haymans, GA (AA)
John Maniscalco, NY, proxy for B. Seggos (AA)	Spud Woodward, GA (GA)
Emerson Hasbrouck, NY (GA)	Erika Burgess, FL, proxy for J. McCawley (AA)
Joe Cimino, NJ (AA)	Gary Jennings, FL (GA)
Peter Clarke, NJ, proxy for T. Fote (GA)	Dan Ryan, DC, proxy for R. Cloyd
Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)	Marty Gary, PRFC
Kris Kuhn, PA, proxy for T. Schaeffer (AA)	Chris Wright, NMFS
Loren Lustig, PA (GA)	Rick Jacobson, USFWS

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

Ex-Officio Members

Troy Tuckey, Technical Committee Chair	Rob Beal, Law Enforcement Representative
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Staff

Bob Beal	Kurt Blanchard
Toni Kerns	Tracey Bauer
Madeline Musante	James Boyle
Tina Berger	Jeff Kipp
Kristen Anstead	Caitlin Starks

Guests

Debra Abercrombie, US FWS	Jason Boucher, NOAA	Matt Cieri, ME DMR
Mike Armstrong, MA DMF	Ingrid Braun, PRFC	Margaret Conroy, DE DFW
Travis Atwood	Delayne Brown, NH F&G	Heather Corbett, NJ DEP
Pat Augustine, Coram, NY	Jeff Brust, NJ DEP	Caitlin Craig, NYS DEC
Jessica Best, NYS DEC	Mike Celestino, NJ DEP	Kyle Egan
Alan Bianchi, NC DENR	Benson Chiles	Jacob Espittia, FL FWC

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

Draft Proceedings of the American Eel Management Board Hybrid Meeting
February 2023

Guests (continued)

Sheila Eyler, US FWS
Glen Fernandes
Jared Flowers, GA DNR
Pat Geer, VMRC
Ben German, NOAA
Lewis Gillingham, VMRC
Angela Giuliano, MD DNR
Tyler Grabowski, PA F&B
Melissa Grader, US FWS
Jay Hermsen, NOAA
Emily Hill, US FWS
Peter Himchak
Carol Hoffman
Harry Hornick, MD DNR
Jesse Hornstein, NYS DEC
Jeff Kaelin, Lund's Fisheries
Kiana Kekoa, Ofc. Sen. Reed
Carrie Kennedy, MD DNR
Wilson Laney
Todd Mathes, NC DENR
Genine McClair, MD DNR
William McDavitt, NOAA

Joshua McGillt, VMRC
Meredith Mendelson, ME DMR
Steve Meyers
Kyle Miller, FL FWC
Kirby Rootes-Murdy USGS
Mike Nardolilli, ICPRB
Josh Newhard, US FWS
Thomas Newman
Tamara O'Connell, MD DNR
Scott Olszewski, RI DEM
Derek Orner, NOAA
Stacy Patman, Yamaha Marine
Paul Piavis, MD DNR
Jeffrey Pierce, MEFA
Michael Pierdinock
Nicole Pitts, NOAA
Bill Post, SC DNR
Rebecca Quinones, MA DMF
Jill Ramsey, VMRC
Harry Rickabaugh, MD DNR
Tara Scott, NMFS
Ethan Simpson, VMRC

Somers Smott, VMRC
Ken Sprankle, US FWS
Michael Stangl, DE DFW
Davud Stormer, DE DFW
John Sweka, US FWS
Beth Versak, MD DNR
Walt Vieser
Mike Waine, ASA
Craig Weedon, MD DNR
Keith Whiteford, MD DNR
K. Whitney, RIT
Tim Wildman, CT DEEP
Angela Young
Darrell Young, MEFA
Jordan Zimmerman, DE DFW
Erik Zlokovitz, MD DNR
Renee Zobel, NH F&G

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

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, via hybrid meeting, in-person and webinar; Wednesday, February 1, 2023, and was called to order at 9:45 a.m. by Chair Phillip A. Edwards III.

CALL TO ORDER

CHAIR PHILLIP A. EDWARDS III: Welcome to the American Eel Management Board. I would like to call this meeting to order. My name is Phil Edwards; I am the Administrative Proxy for Rhode Island. With me today up front are Caitlin Starks and Dr. Kristen Anstead with the Commission, and Dr. Sheila Eyster, the Stock Assessment Chair. Later in the meeting Dr. Jared Flowers will join us, so he's the Chair of the Peer Review Panel.

APPROVAL OF AGENDA

CHAIR EDWARDS: I would like to start with the Approval of the Agenda. Are there any proposed modifications to the agenda? Please raise your hand. Is there anything online? Seeing none; the agenda is approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR EDWARDS: Moving on to the approval of the proceedings for October 2021. The proceedings were in your materials.

Are there any corrections or edits? Anything online? Seeing none; I approve the October 2021 proceedings by consent.

PUBLIC COMMENT

CHAIR EDWARDS: Next item on the agenda is Public Comment for those items not on the agenda. At this time, we have one person signed in, Mike Nardolilli from the Interstate Commission on Potomac River Basin. Go ahead, Mike.

MR. MIKE NARDOLILLI: Thank you, Mr. Chairman, thank you members of the American Eel Management Board. I'm Mike Nardolilli; I'm the Executive Director of the Interstate Commission on the Potomac River Basin. In 1940, Congress approved the compact between the five jurisdictions in the Potomac River Basin, Virginia, West Virginia, Maryland, D.C. and Pennsylvania. I'm here today to just introduce myself, and hope that we can work together in the future.

You probably know of ICPRB best from our efforts to restore the shad to the Potomac River with Jim Cummings, our current biologist a few years ago. Some of my aquatic biologists have expressed an interest in helping restore the American eel to the upper reaches of the Potomac River, by working on eel ladders around Dams 4 and 5, which were leftovers from the old C&L Canal Base. We're here just to indicate that we are really hoping that we can work together, and I look forward to hearing about the American eel proceedings today. Thank you very much.

CHAIR EDWARDS: Thank you, Mike, for the introduction. Do we have anyone else online with a comment? Okay, that was the end of the Public Comment. We are now at Item Number 4, Review and Consider 2022 Benchmark Stock Assessment and Peer Review Report for Management Use and Respond if Necessary. Go ahead.

MR. JEFFREY PIERCE: Good morning, Chairman and American Eel Board. My name is Jeff Pierce; I'm with the Maine Elver Fishermen's Association from Maine. Marine Elver Fishermen and a number of NGOs have been working with the state of Maine.

The state of Maine has been working since 2012 to open up more habitat and full fish passage both upstream and downstream migration, which is most important to get the silver eels out. These river systems have been flourishing since we've been doing this work. The decisions you make today affect our

communities and our fishermen. We hope you all take that into consideration, as these are sentinel fisheries. Thank you.

**REVIEW AND CONSIDER THE 2022
BENCHMARK STOCK ASSESSMENT AND PEER
REVIEW REPORT FOR MANAGEMENT USE AND
RESPONSE IF NECESSARY**

CHAIR EDWARDS: Thank you, Jeff for the public comment. Is there any other public comment? Okay, we will move to Item 4, Review and Consider the 2022 Benchmark Stock Assessment and Peer Review Report for Management Use and Response if Necessary. We're going to have a series of three presentations, and a discussion and questions following.

STOCK ASSESSMENT REPORT

CHAIR EDWARDS: I would like to introduce Dr. Sheila Eyler, for the presentation on the stock assessment report.

DR. SHIELA EYLER: Thank you, Mr. Chair. Today I'll be presenting on the stock assessment for the American eel that was completed in late 2022. This is an outline of the material that will be covered into today's presentation. There are a number of challenges that complicate the assessment of the American eel stock that has the geographic distribution within the Atlantic States Marine Fisheries Commission.

It occupies a wide variety of habitats from the ocean to estuaries in fresh water. It's a panmictic species ranging from Brazil to Canada, which means they are a single stock. The stock is managed by several authorities, depending on its location within its geographic range. The life history characteristics vary by sex, location and area within the geographic range.

Other potential impacts to the population are difficult to quantify, including habitat loss from dams, climate change, and the nonnatives swim bladder parasites. These challenges lead to the

inability to model and produce traditional reference points for the species. Previous assessment efforts through the Atlantic States were completed in 2005, '12 and '17. The 2005 assessment was not accepted for management use due to shortcomings in the assessment.

The 2012 Benchmark Assessment evaluated different modeling approaches and trend analyses, but reference points from the models were not accepted for management use. In 2017, there was an update to the benchmark with an extended time series, and supported the depleted status that was found in the 2012 Benchmark.

The current assessment has many of the same issues with the previous assessments that were not resolved. Attempted models and approaches from the previous peer review including the delayed difference model to develop reference points. Further exploration was also done on surplus production models and the traffic light approach. Other methods were considered in this assessment, including a GIS-based habitat analysis. Updating the indices and trend analyses, and evaluating the use of data poor methods for assessment that had been developed and simulation tested by the Northeast Fishery Science Center to provide management advice.

It's important to note that the SAS had issues with assessing the status of American eel stock, and that is not unique to the American eel or to the United States. New Zealand has abandoned analytical stock assessment methods, and is currently proceeding with a habitat orientated assessment approach.

The European eel has been assessed by an ICES working group, and have identified similar challenges to assessing their stock, as what has occurred on the Atlantic Coast of the U.S. The Canadian Department of Fisheries and Oceans have assessed the American eel in Canada, and they were not able to develop reference points for their portion of the stock in their waters.

Now moving to the assessment. We have covered the life history and stock definition. The American eel ranges from Canada and Greenland south to Brazil on the Atlantic Coast. It's a single panmictic stock, with adults from all areas of the range traveling to the Sargasso Sea to spawn.

In this assessment, the only portion of the population that was assessed was from the U.S. Atlantic Coast indicated by the red circle. As a reminder of the eel life history, the life cycle. Adults from the entire range congregate in the Sargasso Sea to spawn. The eggs hatch and the larval eels travel ocean currents to reach the coast where they transform into glass eels, and then migrate inland.

Eels mature for the elver and yellow phases before becoming silver, and then begin their migration back to the Sargasso Sea. Depending on the location, the sex, eels can take between 5 and 20 years or more to reach maturity. As part of the assessment, the U.S. Geological Survey led a pilot effort to assess the eel stock using GIS based habitat models, and that work will be published separately from the assessment report, and a report by U.S. Geological Survey, and the work was led by John Young.

The pilot effort focused on the data-rich areas of the Chesapeake Bay and Delaware Bay watersheds. Eel occurrence records were collected for both watersheds, including fresh water areas, and the eel occurrence and abundance was evaluated against a suite of environmental predictor datasets, including dams, connectiveness to the ocean, temperature, substrate, and watershed use.

USGS was able to develop a spatial model for eels from 1995 into 2019, and they found out fragmentation from dams was a major factor in determining eel distribution within those watersheds. Unfortunately, reliable data only going back to 1995 and the lack of historical data does not allow us to fully understand the

impact in habitat restrictions caused by dams on the population.

Further, the lack of eel data in other portions of its geographic range make assessing the larger eel stock challenging with this particular assessment method. Moving on to landings. This graph depicts the coastwide yellow eel landings in millions of pounds. Landings from 1998 to 2020 were validated through ACCSP.

The red line indicates the coastwide landings cap that is currently in place set at 916,473 pounds. For glass eel landings, the glass eel fishery currently is prohibited in all states except for Maine and South Carolina. Maine has had a quota since 2014, with the adoption of Addendum IV, and that quota is 9,688 pounds.

South Carolina does have some landings, but they are low since 2015, and remain confidential. In this graph that is provided by the Maine Department of Marine Resources, it shows glass eel landings in thousands of pounds in the gray bars, with price per pound shown with the black line. The glass eel quota here is shown in the red line.

Information on recreational catch is derived from the Marine Recreational Information Program, or MRIP. MRIP is designed to provide estimates of marine recreational fisheries catch and effort data. The orange bars in this graph depict the number of individuals that were released alive. The blue bar depicts the number of eels that were removed from recreational harvest.

Generally, the MRIP database has a low number of records for American eel, which is less than half a percent of the trips that are in that database encounter eel. The MRIP doesn't typically cover the geographic areas or gear that may be relevant to eel. There is also low precision associated with the time series with the percent standard error of greater than 50 percent.

The MRIP query tool itself presents a warning for any PSE values that are greater than 30 percent. Although this is the best information the SAS has of knowable for recreational landings, there is not high confidence that the MRIP survey adequately assesses recreational effort and removals.

That said, it is unlikely that there are significant removals from the recreational fishery compared to that of the commercial fishery. Moving on to fishery independent indices. There is a large number of datasets that were evaluated by the SAS, and we used a suite of criteria to each dataset, to determine whether or not it would be included in the assessment. Those criteria are listed on the slide.

In the end, a total of 49 datasets were retained for assessment. The evaluation of the YOY or young of year and yellow eel data are presented in the following slides. The elver data were not used in modeling, but additional information on those 10 indices can be found in the assessment report. We'll start with the YOY indices.

The SAS evaluated 25 different young of year indices. The individual indices listed here are rating from north to south, so on the top of the slide are the northern indices, and the bottom of the slide is the southern indices. The surveys were standardized for environmental variables, and trends in individual surveys were derived using the Mann-Kendall non barometric test for monotonic trend. This is the same method that was used to evaluate trend surveys in the 2012 and 2017 assessments. The right column indicates the trend for the respective survey. Note that NS indicates no significant trend. In the wildlife surveys there are two surveys that have increasing trends, five surveys with decreasing trends, and the remaining 18 surveys have no trend.

This graph depicts the environments of American eel YOY using the MARSS Index. The MARSS is a Multivariate Auto-Regressive State-Space, it's a package in R. This method can determine long term population trends among

multiple time series, assuming each time series represents the same population.

In this case we're representing a single population, it's a panmictic population of American eel. Note that the MARSS scales to the first survey that is inputted into the code, so the Y axis units are not meaningful on these slides. Also note that the survey shows a declining trend part way through the time series, with more stable levels in recent years.

We got two decades worth of data from the state-mandated YOY surveys. Most of those surveys started in 2000 or 2001, and an evaluation was conducted to see if there were latitudinal or temporal patterns in those surveys. We found no patterns on the data on pigment stage, on weights or recruitment over time, but there was an increase in length and latitude with those surveys.

The SAS recommends that the biological sampling of the young of year become optional, so the measuring of length and pigment state for those YOY surveys is optional, although many of the states have indicated that it will continue to voluntarily collect this information. However, all states are required to continue to do their YOY surveys moving forward.

All right, moving on to yellow eels, we're looking at the indices here for yellow eels. The yellow eel surveys were standardized again using the Mann-Kendall Test, and it assessed 14 different eel surveys for this assessment. Two of those surveys had increasing trends, four surveys had decreasing trends, and the remaining eight surveys had no trends.

Again, in this graphic the surveys in the north are at the top of the slide and moving south to the bottom of the slide. The MARSS Index was used to combine the different yellow eel indices to develop a coastwide index. This index indicates the high abundance of yellow eels earlier in the time series, followed by declines in the late 1980s and early 1990s, and then a more recent decline since 2009.

The south considered several assessment methods that were reviewed and attempted during this benchmark assessment. Some are based on the recommendations of the prior peer review in 2012, and some showed potential for being useful to eel. In the end several assessment methods were identified, and those here in italics did not produce meaningful results, and were not useful for determining stock status or giving management advice.

They won't be mentioned further in this presentation, but there is information on these assessment methods in the report. The MARSS and Mann-Kendall Test were used to develop indices and describe trend analyses that we discussed in the previous slides. The Regime Shift Analysis, Delay Difference Model and Index-Based Assessments will be described in the next slides. The first assessment was a Regime Shift Analysis, and this shows the young of year analysis for the Regime Shift. It was used to identify potential change points in the population, and group years together that had similar index values. It was based on the MARSS Index.

For YOY the analysis indicates there are three different regimes, with higher abundance from 1987 to 2002, followed by a reduced abundance from 2003 to 2008, and then another reduction from 2009 to 2020. The index has generally been a low regime since 2003. Moving on to yellow eels for the Regime Shift.

The yellow eel time series also supports three different regimes with an initial high level from 1974 to 1988, followed by a large drop that includes two lower regimes from 1989 to 2020. This yellow eel Regime Shift output was later used in the assessment by assigning the high regime time period from 1974 to 1988 as a reference period for calculating abundance when we use the I/target method that we'll talk about shortly.

The Delay Difference Model was recommended by the 2012 Peer Review, and is a variation of

the Biomass Dynamic Model that includes biological parameters and is fitted directly to the time series, and accounts for changes in growth and recruitment over time. It predicts the biomass of an age-structured population directly from the previous year's biomass, based on parameters for survival, growth, and recruitment.

The SAS developed the model and ran several sensitivity-runs and associated reference points, but we do not recommend this model's use for management at this time. The model was developed using an average eel, which was based on Chesapeake Bay data. We don't have enough data coastwide to adequately describe the large differences observed in sex, growth, size and behavior along the Atlantic Coast, or even between coastal and freshwater habitats.

The model was also developed for combining sexes, because we didn't have enough data to differentiate between the sexes, though we know that growth rates and size at maturity vary greatly between male and female eels. Ultimately, the model's parameterization of growth and length at maturity were unrealistic, so the model and its reference points are not recommended for management use by the SAS at this time.

Index-Based Methods is an approach to assess stocks when traditional stock assessment approaches to set catch limits cannot be used or otherwise fail. These methods have been simulation tested, and are based on the work by the Northeast Fisheries Center in 2020, and Carruthers et. al in 2015.

The SAS evaluated several index-based methods in the assessment, and focused specifically on developing an I/target for the American eel. The SAS was able to choose a reference period, and that was derived from the Regime -Shift Analysis I talked about earlier. It only required input of catch and abundance, which is available for American eel in this assessment.

The I/target used the MARSS yellow eel index and the yellow eel landings information. It worked by comparing the average index value for the past three years to a defined reference period. The I/target is defined by the average index taken during reference period. In this case the reference period was from 1974 to 1988, that was derived during the Regime Shift Analysis that was presented earlier, and then it's multiplied by an I/target multiplier. This multiplier is selected based on a biomass target, compared to the biomass of the reference period.

If you select a multiplier of 1, that means that you're shooting to have a biomass target equivalent to the reference period. If you pick something larger than 1, then you're looking to have a higher biomass than what occurred during the reference period. The NOAA work recommends using a multiplier of 1.5, which means the biomass during the reference period was half of what our target biomass would be.

The SAS settled on something a little bit less than 1.5, we used 1.25 as our multiplier, recognizing that the stock was exploited during the reference period, so it was appropriate to set a biomass target higher than the index during the reference period. The next step of I/target is to develop a threshold.

The threshold is calculated by taking 80 percent of the target value that is developed using the I/target method that we just talked about. That 80 percent value is recommended from the Northeast Fishery Center 2020 document. Then the catch recommendations are based on where the current three-year average of the index falls, relative to the target and threshold values.

I'll show some examples of this in a minute. But if the index falls below the threshold, the recommended catch will be further reduced, compared to what it had been if it had been between the index and the threshold values. This slide depicts the actual coastwide yellow

eel landings in the black line, against the MARSS Yellow Eel Index in the blue line.

The grey box here depicts the reference period based on the Regime Shift Analysis from 1974 to 1988. The grey dash line is the I/target value, which is the average index value from the reference period for the time from 1974 to 1988, and it's multiplied by 1.25. That is the grey dash line that we have here.

Then the threshold value is 80 percent of the target value. That is indicated here by the orange line. Catch advice is developed by comparing the average catch over the reference period, and adjusting it by comparing the current average index of the I/target and I/threshold values. In years where the index was below the I/Threshold, which is the entire time series depicted here on this graph.

The recommended harvest level is further reduced because of low stock abundance. This slide compares actual harvest in the black line to what the recommended harvest levels would have been, assuming different biomass targets based on the average index from the high regime, as indicated in the blue, red and yellow lines.

To maintain a biomass target of the high regime from 1974 to 1988, the blue line indicates a level of harvest that should have occurred. That was that multiplier 1.0. It's the least conservative recommendation for harvest. To offer some higher biomass than what was available during the high regime period, than the 1.25 and 1.5 lines, which are red and yellow, should have been considered for harvest recommendations. Note that the SAS favored the multiplier 1.25, which is the red line, because the stock had a reduced carrying capacity during the reference period. The takeaway we find here is that regardless of the multiplier that is used, which represents the level of biomass we're trying to achieve or maintain.

The actual landings have exceeded the value recommended by I/target for the entire time series depicted here, except for 2020, and 2020 was an anomalous harvest year with COVID. The conclusion here on the Index-Based methods is the three-year average of the MARSS Index in 2020, which is the last year of the assessment, was below the threshold, and indicates that the stock is overfished.

Although the I/target method is not well suited to determine overfishing, the fact that removals or harvest have always been more than the recommended removals of this model, that could be viewed as overfishing is occurring. With the limitations of I/target, we can state that overfishing status is unknown, but likely.

Neither a 2012 or 2017 benchmark and update were able to define stock status. There was a lack of quantitative reference points and data limitations. But a depleted status was assigned to previous assessments, and depleted is defined as low levels of abundance. But it is unclear if fishing mortality is a primary cause of the reduced stock size.

The stock was at historic low levels, but other factors could have contributed to that status, including historical overfishing, habitat loss, food web alterations, predation, terminal mortality, environmental changes, toxins, contaminants and disease. With the current assessment, based on the I/target method, the stock is overfished, and based on the MARSS Index it has been in decline for multiple decades.

The stock is currently at its lowest abundance in the time series. Although other assessment methods were not covered in detail in this presentation, they generally support that the population is currently at low levels, and some methods point to a continued decline in the stock. Overfishing cannot be determined, but is likely given the removals compared to the I/target recommended removals.

Based on this assessment, the SAS recommends that yellow eel removals should be reduced. With respect to the next benchmark and updates, we recommend that we stay on a current schedule for benchmarks and assessment updates. In five years, we would do an update assessment, and then ten years another benchmark assessment for American eel.

While research recommendations are listed both in the 2012 and 2017 benchmark and update that remain important for American eel, but some of those recommendations are pulled out into the new 2022 assessment as highlights that will improve the next assessment. I won't go through those here, but you can reference the document for that.

In conclusion, eels are a difficult species to assess, as their life history strategies and panmictic nature do not conform well to traditional stock assessment methods. That said, the SAS made progress toward providing advice on stock status with this assessment. Young of year abundance has been in a lower regime, essentially since the beginning of the mandated YOY surveys out of states, which has been in place for nearly two decades. The SAS recommends that the biological sampling of the YOY catch, including length and pigment stage, no longer be required to be collected.

The GIS-based habitat models may be an alternative to traditional stock assessment methods, but it will be difficult to assess habitat availability beyond the current habitat use, given the lack of historical data, and more generally the lack of data across the species entire range. Abundance indices are more robust with each assessment iteration as the time series gets longer.

The trends for both YOY and yellow eel indicate that they have been in low abundance for recent years. Our analyses considered in this benchmark assessment suggest that American eel is at a very low population level. Some analyses point to continued decline in recent

years, and the MARSS indicates that the stock is at its lowest point in the time series. The population continues to be in depleted status from historic levels.

The I/target assessment method found that the stock status was overfished, being below all thresholds examined, and is likely experiencing overfishing for the last several decades. Given these persistent results of low abundance, and that the stock is likely overfished, the findings of this assessment would recommend reducing the coastwide quota for yellow eels. That concludes my presentation, thank you.

CHAIR EDWARDS: Thank you, Sheila, that was an excellent presentation and a tremendous amount of work.

PEER REVIEW REPORT

CHAIR EDWARDS: The next presentation will be the Peer Review Report by Jared Flowers.

DR. JARED FLOWERS: Thank you for having me today, we're going to talk about the Eel Stock Assessment Peer Review Panel Report. Just to give you a little overview of the process. The American Eel Stock Assessment Subcommittee and TC developed a new stock assessment, which there was the ASMFC Peer Review Workshop held December, 2022, where results were presented to the Peer Review Panel.

The Stock Assessment Review focused on data input, model results and the overall quality of the assessment. From that we produced the ASMFC Stock Assessment and Peer Review Report, and those are available on the Commission website. The Peer Review Panel consists of the Chair and two additional technical reviewers with expertise in eel biology and population dynamics, stock assessment modeling, and survey index standardization.

I served as Chair, and Dr. Hilaire Drouineau from the National Research Institute in Bordeaux, France, and Dr. Robert Leaf in the University of Southern Mississippi, Gulf Coast

Research Lab were also on the panel. I want to acknowledge their work in this, and also acknowledge Pat and Commission staff for their guidance in this process.

The overall findings of the Review Panel, first the Review Panel endorses and supports the I/target approach for formulation of reference points for the fishery. But we do believe additional work is needed to establish sound reference points. We recommend a formal robustness test and index method using a simulation approach, seeing it is more appropriate to consider the American eel stock to be depleted rather than overfished. The Review Panel is uncomfortable with overfished terminology, because of uncertainty in the assessment methods, and does not believe a reliable status determination can be made at this time. Future assessments should focus on methods directly resulting in catch recommendations, specifically index-based methods, including I/target and stage-based-delay-difference models being the most promising report for management advice.

Therefore, habitat modeling for eel shows promise for understanding changes in carrying capacity and other spatial dynamics of the stock, and has delivered promising results for other eel species internationally; notably, New Zealand, and I believe Europe. Preliminary habitat work during this assessment should be further explored down the road.

We're going to go through the review findings based on each TOR. TOR Number 1, evaluate the definition of stock structure. The Panel concludes that we agree with assessing American eel on a coastwide scale, because of the panmictic nature of the species. The distribution extends beyond the United States Atlantic Coast, so ideally it would be nice to conduct stock assessments at a larger scale, you know beyond the Coast, but for this it's appropriate.

The majority of data originate from coastal areas where most of the commercial fishery

takes place, however, the species occupies many other areas and habitats, including freshwater areas and other ocean areas. Our first recommendation is, continue to expand data collection analysis to the Canadian, Gulf of Mexico and Caribbean Regions, recognizing the jurisdictional responsibilities for managing American eel.

The SAS did use data for fisheries in the Gulf of Mexico and the Canadian Region, although the landings weren't comprehensive, but they definitely were important. Recommendation 2, encourage future data collection analysis of American eel and freshwater habitats, including the habitat modeling.

TOR 2, evaluate thoroughness and treatment of data used in assessment. The Panel concluded that the datasets used were comprehensive and appropriate for the stock assessment, and all potential data sources were requested and used where appropriate. The broad distribution of eel makes it difficult to collect representative relative abundance data. Our first recommendation was to take steps to account for autocorrelation in index standardization efforts.

The results we do think are unlikely to drastically change, and the recommendation is partially addressed by the inclusion of Julian day as a variable here. Recommendation 2, add more information about data standardization, including tables and figures to improve the understanding and digitalization of the standardized framework results. We do think the methods used were appropriate, but it would be nice if there were more detail provided.

TOR 3, evaluate methods and models used to estimate the population parameters and reference points. The Panel concluded that the SAS carried out comprehensive review of biological parameters of the American eel used in the analysis, and the SAS used the best scientific knowledge available for the assessment. The SAS tested several stock

assessment methodologies, both updating formally used tools in previous assessments and testing new approaches that are novel. These efforts were used thoroughly and well executed. The aggregate indices per life stage, using a MARSS Method of currently the best available coast-wide indices, and can be used to indicate stock abundance variations over time. The index-based methods and stage-based-delay-difference modeling were demonstrated to have the most potential for management advice.

We don't have a recommendation especially for this, but they are kind of embedded in some of the other TORs. TOR 4, evaluate the method used to characterizes uncertainty. The Panel found that most of the models evaluated by the SAS to determine fishery and stock reference points. These are surplus production, egg-per-recruit model and delay-difference models.

Each of these approaches for various reasons, given poor or lack of fit, were unable to provide useful or reliable results. Both the Review Panel and the SAS agree that the surplus production model was not suitable for use. The egg-per-recruit model can derive reference points of value on local scales, where yellow and glass eel fisheries co-exist.

But the Review Panel considered that the egg-per-recruit approach was theoretical and caution should be used when interpreting results on a broader scale. The recommendation here is that the delay-difference model is the only non-index-based model with potential. More model development is needed to account for variability and uncertainty in the eel life-history characteristics across its range.

TOR 5, evaluate the diagnostic analyses performed. The SAS performed some useful diagnostic analyses, and the Review Panel concludes the diagnostics are insufficient to produce reliable reference points. The SAS systematically varied the I/target "mult" parameter, representing a relationship with the

reference period on biomass target, from 1.0 to 1.5 and 1.25 in what was used.

The SAS bootstrapped predicted confidence intervals of the MARSS time series, and used the resulting time series of the I/target method. However, the boot strapping approach is not ideal, as it ignores autocorrelation. The Review Panel recommends the development of an MSE style or MSE simulation model to test robustness of the assessment method, the index method and assessment frequency.

Also, the harvest control rule associated, including setting of catch limits based on the assessment. TOR 6, evaluate stock status determination and reference points used by the assessment. The Panel concludes that the term depleted is appropriate, and describes stock biomass for yellow eel, note depleted is only used as a descriptor and not a status determination. It's based on the SAS suite of modeling approaches, derived from the coastwide index of abundance.

The I/target approach does not allow determination of stock or fishery status with respect to traditional MSY-based biological reference points. Given that the catch advice from I/target, an evaluation should be performed to understand the following catch advice will result in stock biomass increasing. That kind of goes back to the modeling mentioned on the last four. For the recommendation, further evaluate the robustness of catch advice developed from I/target in recognition of process error associated with eels' complex life history. A significant portion of the stock is outside of the assessed area, and anthropogenic impacts other than fishery affecting the stock, the focus on yellow eel and the I/target approach versus excluding the other life stages, and also the error associated with landings data.

TOR 7, evaluate the incorporation of new information or attempts at novel approaches to assess the stock. We did conclude that the SAS should be commended for incorporating many

new methods and information into the assessment that weren't available previously. The SAS has done an excellent job developing and updating the indices, and documenting the changes in the individual surveys over time.

Dealing with 80 indices is definitely commendable. The MARSS, delay-difference, and index-based methods incorporate a relatively new or updated methodologies for the updated previous assessment approaches used in view of elementary technology. The recommendation here is continue updating and refining the assessment approaches, and to continue to improve the favored approaches identified by the SAS and Review Panel.

TOR 8, review research recommendations. Research recommendations, the surplus production model and the TOR 8 assessment for traffic light assessment approaches should be discontinued. Based on the findings, these weren't as useful as the other preferred method. The future efforts should focus on the index-based method and stage-based-delay-difference models.

Habitat modeling should be explored in the future assessments to understand changes in the carrying capacity and other spatial dynamics of the stock, and also to promote international collaborations. The Panel agrees with the SAS and TC recommendation to make optional the biological sampling requirement for young of year surveys.

With the observed climate-induced changes in environmental conditions that have been noted in the North Atlantic, this might be influencing population productivity and abundance. Some of the timing of this coincides with what was seen in a regime-shift analysis, and this should be considered in future assessments.

TOR 9, recommend timing of the next benchmark assessment. The Panel concludes that the next benchmark assessment should be conducted after additional data are collected and progress is achieved, to keep addressing

the Panel's analytical recommendations, at a minimum of 5 years, consistent with eel's long generation time. I think relatively the same recommendation was made (muffled).

But we do recommend pursuing international assessments, including Caribbean, Canadian, Gulf of Mexico input. The Panel applauds inclusion of the Canadian and Gulf of Mexico data in this current assessment, but we really think future assessments would benefit from participation from areas at large. I think we're going to pass it on with questions at the end.

CHAIR EDWARDS: Thank you, Jared, excellent presentation. Our next presenter will be Kristen Anstead for the Commission.

DR. KRISTEN ANSTEAD: Thank you, I just have a few slides about potential paths forward for accepting this assessment and moving forward with how to manage this stock. I first want to reiterate that the SAS and the Peer Review Panel agree on a lot of things, and that the Peer Review Workshop was really productive, and we have some really meaningful recommendations with how to continue to assess eels for the next benchmark.

The Peer Review Panel said the MARSS Index was currently the best available coastwide index for eel, and they did endorse the use of I/target for managing eel. But in the report, as you just saw, the Panel concluded that more work is needed to test the robustness of the I/target method, using the MSE approach, before it could be used for management.

The SAS has met a couple times since we received the Peer Review Report a couple weeks ago, to discuss this path forward. Ultimately, this is where we start to differ from the Peer Review Panel. The SAS does not think the MSE simulation work will be a productive or timely exercise for eel for a few reasons.

Part of an MSE will be developing an operating model, and that's going to be challenging and time consuming, and may require outside

expertise to complete. The methods from the research track paper, the Northeast Fishery Science Center paper with index-based methods, were designed as a Plan B approach that can be used when assessment models fail, such as our delay-difference model, or when there are strong retrospective patterns.

We argue that the I/target method was already simulation tested under different life histories. Note those life histories are different from those of eel, but what makes eel different are the very thing the SAS is unsure of, and that we struggled to model in the delay-difference approach. That is not to say there is not some room to test this method.

In the last few weeks, the SAS began work doing some bootstraps around the index, subsampling the indices, and some of the other recommendations that are in that Peer Review Report, to kind of test some of the decisions we made and how that might influence the recommendations coming out of I/target.

We have been working on that, and kind of thinking that through. There are also different formulations of the I/target that could be explored, and likely changing some of the decisions within I/target, like the multiplier, the reference period, the percent to set your threshold, will result in bigger differences than some of this index work.

But they are both potential paths forward to kind of see how sensitive this tool would be for management. The SAS and staff have been discussing possible paths forward. First the Board could choose status quo to maintain the current management under Addendum V, and maintain that 916,473-pound coastwide yellow cap.

Option 2 could be to task the SAS with exploring some simulation work like we've been doing, on the indices and around I/target, and different management strategies, such as the desire to rebuild the stock back to that reference period or maintain the stock where it currently is,

depending on the Board's goals for this fishery. Option 3 would be to do the MSE and simulation work as recommended by the Peer Review Panel. The SAS believes that work is significant enough to be another benchmark. We had said the next benchmark would be in 10 years, or the Board, it's the will of the Board, to ask for an assessment whenever you want one, so depending on the full stock assessment schedule at the Commission, that could be put in place if that is the path that we go.

The last three assessments have continued to find eel at its lowest abundance, and the SAS does not support the status quo option. We have reservations about Option 3, as I discussed previously. Ultimately, there are some disagreements between the SAS and the Peer Review Panel about the path forward.

The Commission's Guidance Document does address this, so I just want to put a slide up about what we say for scenarios like this. In cases where a SAS and Peer Review Panel do not agree, we present both approaches to the Board, as we have done today, and the Board can task the SAS or the Technical Committee with providing justifications for why they don't agree with the advice given, and ask them to provide ultimate analyses at a later date.

Then the SAS or TC would do that work, produce a report or a memo, and we could bring it back to the Board to make a final determination on status and management at a future meeting. If the Board is interested in that tasking in that Option 2 that the staff laid out, where we do some additional work. The staff has discussed that, and we would recommend that we postpone accepting this document until a later date, when we bring that work back.

If the Board accepts the reports today, that would indicate the Board agrees with the path forward proposed by the Peer Review Panel, and wants to pursue the MSE simulation work. Hopefully that will help some of the discussions that we'll probably have now about how to

proceed with the stock assessment and managing the species. Thank you.

CHAIR EDWARDS: Thank you, Kristen. All right, I would like to open it up on some questions for our presenters.

MR. JOHN CLARK: Thanks to the Stock Assessment Committee and the Peer Review for that excellent information. But that is a heck of a lot of information we just got here. I'll try and go back to the presentation that Sheila gave. I noticed that it looked like the regime shift pretty much started around the same time we started state surveys in 2000, so clearly there was a lot more data going forward from that point. How much of an impact did that have on the changes that were seen in the trend, by having the extra data?

DR. ANSTEAD: For the yellow eel index, the Peer Review Panel did ask us to produce some plots, which we have since added to the benchmark that compare each individual index to the overall trend. You can see that for yellow eel, for example, Maine through Delaware are pretty in-step with that long range, you know the long trend, and the different shifts in time.

Then there are a couple indices, and we can see it in Mann-Kendall as well that there are a couple indices that are increasing, and that is not captured as much by that long-term index. It does matter, and that could be part of the simulation work, is kind of showing the Board more how the choice of indices varies. Unfortunately, the time of the indices is what we have, and of course we want all of the indices to go back further in time. But we just don't have that level of data.

MR. CLARK: Just a quick follow up on that. I mean some of those, having done the survey myself for many years with the glass eels. I know that they vary a lot from year to year. Does that have a lot to do with the non-significance in the trends you're seeing, because we would go from close to a million to maybe 100,000 a net, so it's quite a shift.

DR. ANSTEAD: Absolutely. That is what we're seeing, these indices are just wildly variable. There does seem to be an overall trend that we can pull out of putting them all together, but there are very noisy indices, the young of the year.

CHAIR EDWARDS: Thank you, John. Lynn Fegley.

MS. LYNN FEGLEY: Thank you to all of you for all of this work. This is a vexing species and a vexing topic. I really appreciate your work. I'm trying to understand. There are several phrases that I heard during these presentations. There is regime shift, there is carrying capacity, and there is reference period.

It sounded to me like the habitat analyses that were done, may start to point to a little more clarity about what's happening with carrying capacity. I'm wondering if you can help us understand a little bit. We've got this reference period set very early, when abundances were high.

What is the conversation around reconciling a regime shift, a changed carrying capacity, and where your reference period is, to guard against setting a reference period that's just now completely unattainable, but also recognizing the whole shifting baseline idea. I'm just curious, you know you hate to set expectations that are just too high to achieve.

DR. EYLER: With respect to carrying capacity specifically, so the habitat analysis that was done, which was focused on the Chesapeake and Delaware Bay areas, because we have the most data from that geographic area. But it does indicate that the presence of dams is what is restricting eel abundance.

I think that that probably holds true coastwide, even though the analysis did not encompass the entire coast. That said, the regime shift indicates that the high abundance that we have in the time series is from the late seventies to the early eighties. I mean you're talking about

dam construction. Dam construction was done well prior to that time period.

If we're talking about habitat restriction, that occurred many decades before the high reference period. I think from a carrying capacity standpoint, that isn't the issue that we're in a low abundance state at this point, and I would follow that up with, in the last 15 to 20 years there has been a heck of a lot of work by the states and federal government to open up new habitat. There has been a lot of dam removals, water quality improvements, and other work that has been done to improve habitat across the eel range. Because they encompass both fresh water and estuary areas, the work of the habitat that has been done in the last two decades, should theoretically be opening up habitat for eel to increase our carrying capacity. That is not being translated in the MARSS Index.

CHAIR EDWARDS: Craig Pugh.

MR. CRAIG D. PUGH: My question is, I didn't see as we watched these regime changes in the population stages over those time periods. I don't know as if there was any incorporation with the effort involved. I know in our area marketability at this time has decreased significantly over the last 20, 25 years.

Also, eliminating the effort put forward and lowering the catch data. That would have a significant play through the year period. I was active in the fishery myself through the eighties and nineties. I ended in 2000. Not so much anymore, like I say, because marketability has dropped off so much. Where is the relationship here with the production and catch up?

DR. EYLER: With respect to the regime shift analysis, that is based on fishery independent surveys, so it's not based on catch and effort data. It's based on those indices that are conducted by the states and other agencies. That should not be driven by the fishery itself, and the economic drivers of the fishery.

MR. PUGH: I find that odd if the effort has dropped off and the analysis has taken the historical values of that data, then it should be recognized in some kind of incorporation in this. I don't necessarily agree with that analysis. I don't see where we get a clear picture. Unless we have a clear picture of what the true effort is on the east coast, which I know in our area is somewhat analytical.

But it seems as though our eels have increased as a bycatch in our blue crab fishery, but yet we still show these as depleted, even though we're seeing increases on a daily basis in our local areas. But yet we know that the marketability has caused a lack of effort on the part of the eel fishermen. Not only just a lack of effort, but I would say the loss of eel fishermen also in the area has been significant.

DR. ANSTEAD: Yes, we have some fishery dependent indices in the appendix of the assessment that can be viewed, and those were supplied by various states. We don't have an analysis on effort. I will say that there were representatives on the SAS and the TC that discussed this a little bit, that in their waters they are not seeing what we're seeing at a coastwide level.

That is something we should probably address now, which is the SAS has discussed this over and over. We know that Maryland and Delaware aren't seeing decreases in their catches or their indices. We talk about this at the SAS, and kind of the phenomenon of hyper stability, where a stock can collapse to the center of its range, and that is the center of its range.

We can have a depleted stock, where in the middle you are still seeing high catches, you are still seeing high CPUE, and the indices are fine. You can see that in the Maryland Index specifically, not as much in the Delaware, but that that Maryland Index continues to be fine, as well as their reported effort by their fishermen. It is something we've discussed. I guess the argument is, we saw this for example,

with northern shrimp, where their indices and their catch were fine until they weren't. That is kind of the concern. This is all one stock. If it's a depleted stock and it continues to decline and decline, you'll start to see that focus into the center of the range. The fear is that that could be what we're seeing now.

CHAIR EDWARDS: Okay, we have Robert LaFrance online, and when we come back to the room, Russel Dize.

MR. ROBERT LaFRANCE: Thank you very much, excellent presentations, really fantastic information. I just want to follow up a little bit more on this issue of a GIS based or spatially-based analysis. I've heard a lot of discussion back and forth. But I don't know exactly what we would be doing from a recreation's perspective to pursue those types of efforts.

I'm wondering if you might be able to give us some insight as to what you would be looking to do in those areas, and how much time that might take. I know there is some historical problems with historic data, but if we don't start collecting data at some point in time, we'll never really know what's going on. Thanks, appreciate any response.

DR. ANSTEAD: Just clarity on the question. Is that what would the habitat model bring us in the future if we continue to develop it? Is that the question?

MR. LaFRANCE: Exactly.

DR. EYLER: Well, I think firstly it's important to note that developing the habitat model further is going to be very challenging for eel, because we have a lot of data on eel and their distribution in the Mid-Atlantic area. But we don't have that information in other parts of the coast. Because this is a panmictic stock, really, we should be looking at its entire range. We really don't have information from that perspective.

I think it gives us a sense of carrying capacity. Like I said, that assessment based on the Mid-Atlantic at least shows that dams are a driving factor in where eels are distributed in the basin. That's not a surprise. I personally am concerned that that type of habitat assessment isn't going to give us the information we need to manage eel stocks, particularly those that occur in the estuary, because that habitat model is going to focus on a lot of habitat that is not under the jurisdiction of many of the agencies that are at this table today.

MR. LaFRANCE: But I guess, to follow up on that if you don't mind, to the extent that we do have information over coastwide, more than just the Mid-Atlantic, maybe up into New England at least. Shouldn't we be collecting more data, and getting that dataset ready for the future?

DR. EYLER: I think potentially that could be useful as a recommendation by the Peer Review to develop the habitat assessment model further, and we can consider that with the assistance of the U.S. Geological Survey.

MR. LaFRANCE: Thank you very much.

CHAIR EDWARDS: Russel and then John Clark.

MR. RUSSELL DIZE: I appreciate all the work that is being done. But I don't understand one thing. That is, when you did the assessment on yellow eels, you did three assessments in the Hudson River area, and you only did one in the Bay. In the Bay, Chesapeake Bay, you did the assessment in the Sassafras River.

The Sassafras River is all the way up towards the Conowingo Dam, and it's heavily predated by blue catfish. Had you have done assessments, if you had done more assessments in Maryland part of the Bay, in my area, which is Tilghman Island, and I talk with eel fishermen all the time. We've lost all of our eel fishermen in the middle part of the Bay, because we can't sell the eels anymore.

All the crabbers are gone to clams, and the oversea market has dried up for yellow eels. But I don't understand why you would do twice as many tows, or assessments more in the Hudson River area than you did in the Chesapeake Bay, and when you did it in Chesapeake Bay, you did it in an area where probably the predation of blue cat is worse than anywhere else, except maybe the Potomac River.

We have lost our eel fishermen; they can't fish anymore around us. We have so many yellow eels in our area that one of my fellow watermen set an eel pot out to catch some small eels for trawling for rockfish, and the pot filled with yellow eels. We're not catching them, and I don't see why that we don't take all this in. When you just taking four assessments for the whole East Coast for yellow eel, I don't think you're doing justice to the survey, by not doing more in the Chesapeake Bay Area, especially in our area. Thank you, Mr. Chairman.

DR. EYLER: Okay, I think Kristen and I are going to split the response to that. First, I want to speak to the blue catfish issue specifically. In the Chesapeake Bay the blue catfish issue is relatively recent, especially in the upper Bay around the area of the Sassafras River. They've been recently established.

The length of the survey really would have only impacted the survey in the last few years. It's an interesting prospect. We do know that blue catfish do consume American eel. The population explosion in the Chesapeake Bay and potentially into the Delaware Bay is a concern for the species to increase predation. That doesn't speak specifically to where the surveys are located, and why that is located. I'll have Kristen speak to that.

DR. ANSTEAD: As Sheila covered in her presentation, we had about 80 fishery independent datasets that were submitted for consideration, and we dug into each of them to see, can we develop an index from this data. The indices that you see in the assessment were

the ones that we thought were tracking American eel.

We could develop an abundance index out of them, so of course we would like more indices everywhere. The Maryland index was included, as you noted. We also have a couple from VIMS in Virginia. Unfortunately, they have a gear change in the early part of the time series, so while we did use them to also describe the yellow eel population, they don't go as far back as the Hudson River indices. Of course, it would be great to be able to pull that index back, and we have the full time series in the benchmark, and it's a pretty similar trend from those VIMS surveys at that historic time period, but the gear changed so it's not really fair to include it. We would like them all to go back to the seventies so we could do that.

The Hudson River indices, yes, they are historic indices at this point, they go back the farthest in time, and they do have an influence on that overall trend. Although the trends are pretty consistent through the surveys, with the exception of the Maryland one and the end of one of the VIMS surveys. We can also, if the Board tasks us with more work, talk a little bit about the influence of the Hudson River indices they are driving a lot of that change, and they are historic indices. But we can work on that if you would like.

MR. DIZE: The survey in the Hudson River skews the whole problem with the yellow eels. Our problem isn't catching, our problem is selling. I can take you, according to where you do the survey, I can take you where we have an abundance of oysters in the last two years in the Chesapeake Bay.

I can take you in a spot and survey it, and you'll say it's the most oysters you've ever seen in your life. I can go two miles from that and tell you to take a survey, and you say never was an oyster here. It's according to where you take these surveys. I understand what you're saying that it's back over a long period of time.

But we've been catching eels in Chesapeake Bay over a long period of time also. I just think that to excuse the amount of yellow eels by not doing as many reports in the Chesapeake Bay as you do in the Hudson River, which is on a tow decline. Thank you very much. I know you've done a lot of work, but I just think when you're adjusting, how many yellow eels can be caught on the whole East Coast, and you're doing a major part of it in one area, you're skewing the report.

DR. ANSTEAD: Yes, noted. I guess the only final thing I would say is it's a single population, and we don't have information on which of these regions are producing the next generation of American eels. Is it the Hudson River or is it the Chesapeake Bay that is feeding our recruitment? We don't know that, and so that is also a challenge when we're modeling.

CHAIR EDWARDS: John Clark.

MR. CLARK: Thank you for allowing me a second question here. I want to follow up, Kristen, you spoke about the contraction of the range. I've been around this long enough I remember the first assessment in the early 2000s, and that was really instigated by the pretty much total extirpation of eels from the Lake Ontario, and Canada's understandable concern there. Yet at that time I recall in the Canadian Maritimes they were not seeing really any reduction at all in their yellow eel numbers.

Just from my experience with sampling eels in the Delaware, it seems almost like we have two populations. We have an estuarine population that grows quickly. We would rarely age an eel over five or six years old. Most of the females were out migrating, probably, by the time they were five. Yet when you went inland, I remember, and Sheila, I believe you did work on the Shenandoah, where you saw huge reductions in the silver eels coming out of that system, or even eels getting into that system. It just seems, is that still something you're seeing, where you're seeing like less change in the estuaries.

You know given the life history of eels, it seems like it would be very difficult to understand how the leptocephali would distribute only to the Mid-Atlantic, rather than the whole range, since they're just kind of drifting on the Gulf Stream before they turn into glass eels and move in. It's just a very confusing situation, and has that kind of persisted, that same type of pattern?

DR. ANSTEAD: Yes, we are still struggling with that as a Stock Assessment group that eel just behaves so differently depending on where you are. Freshwater, estuary, ocean, Maine to Florida. In fact, what we came up against in the delay difference model, how do you describe growth for eel, if this is one stock? You can't. That's what we struggle with when we're thinking about the MSE simulation.

Yes, we could come up with a bunch of different operating models that are likely representing estuary waters in Delaware, and the coastal waters somewhere else. But which one is correct? We don't know that, and it is a real challenge for eel. I'll just throw in a second plug here, which is we do have an ICES Workgroup for American eel. Sheila and I are both on it, as well as representatives from Maine and North Carolina.

We're partnering with Canada to look at all the data available to eel, and talk about these challenges and propose different stock assessment methods that could be used in the future, so internationally this is a problem. We're trying to collaborate with people to resolve the very issues you're talking about. But it remains a question mark if we can.

CHAIR EDWARDS: Yes, Chris Wright.

MR. CHRIS WRIGHT: Yes, for Option 2, you said that the Subgroup could get a report back to this Board this year. Do you know when, summer, annual?

DR. ANSTEAD: Probably not the next Board meeting, maybe later, the one after that. If you were interested in more simulation work, as

well as evaluating the influence of the Hudson, as well as turning some different knobs within I/target. I guess it really depends on what the Board is interested in seeing.

CHAIR EDWARDS: Shanna.

MS. SHANNA MADSEN: Thank you to the entire staff, as well as the Peer Review Team, Doctors Eyler and Anstead. I really appreciate you guys being here today. This represents an awful lot of work. A lot of time in assessments we don't get to see all of this background work, all of the different models you attempted, and things like that. I really appreciate the time that you spent on all of these approaches. I have a series of questions, so apologies for the time, and you can cut me off whenever you need to, Mr. Chair. My first question is, I'm trying to dig in a little bit between the discrepancies between the Peer Review, as well as the SAS recommendations. My first question is in regards to the delay difference modeling. It sounded like, as we were going through the Peer Review Report, it is one of the models that the Peer Reviewers suggested for further development.

But then, in reading through the stock assessment report, it sounded like the SAS was less enthused, I guess, about that model. Can you talk about some of the differences, and why you all believe that it's probably not the best approach to go through at this time?

DR. ANSTEAD: The delay difference model?

MS. MADSEN: Yes.

DR. ANSTEAD: Yes, so the delay difference model has showed the most promise of any analytical model we have tried for eel. We did develop it, as well as develop reference points for it. But the challenge for us became describing growth, for example, as we were just talking about. Describing growth in one area is very different from describing growth in another area.

We came up against a few walls that way, with a kind of unique life history of eel. I think both the SAS, as well as the Peer Review Panel, think there could be more work done. We didn't manage it for this assessment, but if we were to do another benchmark in ten years, I think that model absolutely is still on the table.

But the additional work it might need is benchmark level. Kind of what we found here was kind of an initial go at it. But there were so many challenges, it just wasn't recommended for making management, because of those uncertainties. But I think there could still be room to improve, and the Peer Review Panel made some recommendations we can look into next time that we definitely would.

MS. MADSEN: If you don't mind a follow up. The other question I had was in regards too, and this is more just a characterization, so that I can kind of get my mind straight on the differences between the Peer Reviewers and again the SAS. It sounds like both of you sort of coincide with this idea that using this I/target methodology from the Northeast Fishery Science Center could be used here for eels.

But the place where you just diverge is the level of simulation testing that you think is appropriate. Is that a correct characterization? Like they want to go full blown MSE, lots and lots of simulation testing, and our SAS is saying, let's take a little bit more of the measured approach, and see what some of our simulation testing leads to in Option 2. Is that a correct characterization?

DR. ANSTEAD: Yes, although we can look to Jared if we need to. But I believe it was thought of more of an MSE light. I just want to make sure, not to misrepresent them. It's still a lot of work, but it might not be as much as other species.

MS. MADSEN: Right, so it's a diet MSE if you will. I guess I kind of equate that a bit to what we did for Atlantic menhaden, not a full blown MSE, but really having some of the

conversations with the management board, the scientists, the technical members, to get an idea of where we wanted to go with that species, and running the simulation testing's that way.

I appreciate that. Then my final question, I think, is in relation to one of the things that Dr. Flowers did bring up. He said that he thought it would be important for us to do an evaluation, essentially, to see, and I don't think we need to get there just yet. I know this is a later step in the future. But to do an evaluation, essentially, to see if our catch advice actually helps to potentially improve our stock biomass.

Do you think that that is possible within, you know, we're aiming for this report to come back to the Board at some point during this year? Obviously, depending on what the Board's advice is to the SAS. Is that something that we could pursue later? Do you foresee that sort of being a part of the package that you present back to us in whatever timeframe?

DR. ANSTEAD: We can certainly try. But there is a point that I think directly speak to that, which is, we don't know if I/target, even if you do the right thing, will necessarily rebuild eel. We don't know if the MSE, what comes out of that, would guarantee to rebuild eel stock. This is what we think is the most appropriate, given this depleted status that something should be done.

We can try to test the relationship between the recommended catch and landings. But that is not what these index-based methods do. They don't guarantee anything, they are just recommending when you need to set a catch limit, and all you have are landings and indexes. You need to do something, and so this is a method for that.

MS. MADSEN: I'm finally done, thank you very much.

CHAIR EDWARDS: Roy Miller.

MR. ROY W. MILLER: Since we are on the step of potential next steps, I would like to explore a little bit the ramifications of depleted status versus overfished. We're not bound to the Magnuson-Stevens Act like the Councils are. If we were to declare this species overfished, like was a recommendation of at least part of what was presented today, as opposed to depleted.

But there is a subtle difference, in terms of how we would proceed. If we declared this species as being overfished, presumably we would be talking about reducing fishing. By depleted there is no imperative that we consider catch reductions. Where are we? I'm a little confused as to what's the best path forward? Which status are we in, since there was a little bit of difference between the SAS and the Peer Review Panel in that regard?

MS. CAITLIN STARKS: I just want to respond to the question of our obligation at the Commission to responding to those two different types of statuses. No, we don't have the same obligation as NOAA Fisheries would to responding to an overfished status and making a rebuilding plan. However, with the other species that we have at the Commission that use the depleted status, for example, shad and river herring. We have in the past acted on those statuses and reduced fishing mortality as a result of those. It is an option, and Toni, I think has something to add.

MS. TONI KERNS: Just a reminder why we have these two statuses. You know we developed these in coordination with the Assessment Science Committee, to recognize that there are times when fishing pressure is not the only thing that is causing a stock to not rebuild. But that doesn't mean if there are other pressures, it doesn't mean that there is nothing that the Board does in response. It's just recognizing these other factors that are part of its inability to rebuild. But it doesn't just give us a pass to not do anything.

CHAIR EDWARDS: Are there any other questions for the presenters? Lynn.

MS. FEGLEY: Just one quick question. Under Option 2, with the simulation work to explore yellow eel indices and sensitivity of I/target . Would the Board get back, would there be some exploration of changing that reference period? You know if you set a reference period halfway between, is that part of it? I just want everyone to be clear that there would be some discussion of what that reference period actually is.

DR. ANSTEAD: Yes, if the Board is interested in that we can certainly kind of do two things. One is, show the result of this index work that we've been working on. That was a recommendation from the Peer Review Panel. We could do that and then you could see the sensitivity of these indices to the final decision.

We can also show some different iterations of I/target if you make different choices, to show how different the answer would be. It is quite different, depending on what you choose. What the SAS formulated in the benchmark was kind of what we thought as the base run, with the intention of the PDT taking that and making various decisions for the Board to consider.

CHAIR EDWARDS: Are there any more questions online? Shanna.

MS. MADSEN: Just a question of process. Do we need a motion to move forward with one of these options, or is kind of a consensus of the Board appropriate here?

MS. STARKS: I believe we could move forward with consensus from the Board. If the desire is to take the SAS recommendation to do some additional work under what's presented here as Option 2. If we can get consensus on that we can go forward with that.

MS. MADSEN: I would at least like to speak in support of Option 2. I think it's the most measured approach, and I would really like to give our SAS more time to respond to the comments of the Peer Reviewers. I think you

have really good ideas moving forward. I think Lynn's question feeds into that.

Getting to see, you know what comes out of the PDT, what some of the options might look like changing the multipliers, modifying the time period, things like that. I think an iterative measured approach is appropriate here. I don't believe that Option 1 is appropriate, and I am uncomfortable pursuing Option 3, until we see what Option 2 kind of provides for us. That is my recommendation without a motion.

CHAIR EDWARDS: Rick Jacobson.

MR. RICK JACOBSON: I want to commend the Panel for the tremendous work they've done to evaluate this very complicated species with a complicated life history, and geographic distribution. I think the information they presented, quite frankly has been outstanding. I understand it is difficult to make decisions in the absence of perfect data and perfect analyses and perfect conclusions.

But we've got some really good information in front of us that indicates that if we were in a place where we could define what harvest quotas should be, we're above those. We've been above them for some time, and the stock has been declining in the wake of all of that. Whether fishing has been the one specific driver or not, is a completely different question. But yet, we're still in a place where we need to make a decision today that will affect what happens with the stock tomorrow.

I can support Option 2, and I appreciate the recommendation coming forward. I would just hope that this is not a measure that just kicks the can down the road, because we do need to make decisions on what levels of harvest are necessary. I can support Option 2. I could also support an option that would pursue Option 2 and include some reduction in harvest opportunity. But I agree, Option 1 is simply not tenable.

MS. STARKS: I just wanted to provide some additional information on this path that we've proposed for moving forward. This is something that is part of our technical guidance with the stock assessment. If there is a disagreement in a particular aspect between a Stock Assessment Subcommittee and the Peer Review Panel, there is this process for moving forward, where the Stock Assessment Subcommittee can be tasked by the Board to put together this type of report that we're suggesting.

That provides the information a Board needs to really make a decision about how to move forward, and what part the SAS has recommended versus what the Peer Review Panel has recommended they would like to move forward with. That's really what we're proposing to put together for the Board, and bring back to the Board at potentially the next meeting, to be able to make those types of decisions that Rick Jacobson just mentioned.

CHAIR EDWARDS: Are there any other questions? John Maniscalco.

MR. JOHN MANISCALCO: Given what Caitlin just outlined, would the Board have new catch advise in place for 2024? I guess that's my concern.

MS. STARKS: I think it would be a pretty tough thing to turn around in that amount of time.

CHAIR EDWARDS: Any other questions? We're going to open it up to the public. Kirby.

MR. KIRBY ROOTES-MURDY: Good morning, this is Kirby Rootes-Murdy with the U.S. Geological Survey. Good to see some friendly faces around the table. I want to join the chorus and commend the Stock Assessment Subcommittee in doing such a thorough and great job introducing the stock assessment.

USGS is at the ready to provide additional analysis support, through both the Technical Committee and the SAS, in addition to John

Young's GIS habitat modeling work. I would just offer a consideration for this Board, as you're reviewing and thinking about, for example, catch reductions, is to take a step back and consider the species range again.

You know as Kristen noted, there is an ICES workgroup. There is current collaboration with Canada DFO, as well as coordination with U.S. Fish and Wildlife Service outside of those that have worked on the assessment, in terms of providing information as part of CITES obligations. For next steps, the U.S. is one of the handful of countries that are harvesting American eel.

I would ask for you all to consider that in moving forward with any tasking of the TC. When it comes to items around harvest that you will also consider how to continue moving forward with communicating with these other countries in our current framework, whether it's through Fish and Wildlife or other agencies, to ensure that those other countries catch systems are being considered with any changes you all are considering as well.

CHAIR EDWARDS: Is there any other public comment on this agenda item? We will turn to Rob LaFrance online.

MR. LaFRANCE: I just wanted to follow up and ask, under Option 2 is where I'm leaning towards as well. When you come back, when they come back either in the annual meeting or when we get back. Will it also include some management recommendations, or is it still like trying to get a better understanding of the assessment? I saw something about maybe an amendment recommendation, so I'm just wondering what that meant.

DR. ANSTEAD: What we would bring back to the Board would be the additional work with some indices, as well as some additional work we can do on I/target. I think before we had gone through Peer Review the idea was with I/target, but then the PDT will take that and make different decisions, possibly, than we

made, depending on Board interest and to put out for public comment.

That is not what this task is. This task would give the Board clarity on how these tools and indices are operating to make decisions, whether to accept this assessment and the Peer Review Report, as well as any future management advice. This is not equivalent to a draft addendum or any other management document, it's just additional work to help you all choose a path forward. I think that's why it's unlikely it would provide 2024 catch advice.

MR. LaFRANCE: Thank you very much.

CHAIR EDWARDS: Are there any more questions? Eric Reid.

MR. ERIC REID: Do you mind if I make a comment, Mr. Chairman? Okay, so at this point I would like to move this on if you don't mind. I support Ms. Madsen's quest for a consensus statement. With that, staff is recommending to us that we recommend to them to do what they are asking us to do, which has happened before. Let's move this along and give the staff what it wants, and we'll talk about this when we get a little better informed. That's where I'm at, thank you.

CHAIR EDWARDS: Is there any disagreement among members of the Board? Okay, we don't have to have a motion, we'll move along with Option 2. Malcolm Rhodes.

DR. MALCOLM RHODES: I agree totally with this. I just want to get an idea of the time table. Are we looking at the ability to get this done by the summer meeting, by the annual meeting? I mean what would be an acceptable time table, so we have kind of a time certain on the table?

DR. ANSTEAD: The TC hasn't discussed this at all, and the SAS has had superficial conversations about it. I think we would aim for summer, annual meeting at the latest.

DR. RHODES: Thank you.

DR. EYLER: There is an unlikely chance that we could bring something back to the May meeting, but we'll aim for summer meeting.

**CONSIDER FISHERY MANAGEMENT PLAN
REVIEW AND STATE COMPLIANCE FOR THE
2021 FISHING YEAR**

CHAIR EDWARDS: Okay, we'll move on to the next item on the agenda, Consider Fishery Management Plan Review and State Compliance for the 2021 Fishing Year, and I'll turn it over to Caitlin Starks.

MS. STARKS: I'll give a brief review of the American eel FMP Review for the 2021 Fishing Year. I'll start off with an overview of the status of the FMP, then I'll skip over the stock status information as we just discussed that. I'll go over the commercial and recreational fishery information for 2021, the state compliance reports, and wrap up with some recommendations from the Plan Review Team.

Eel are currently managed under Addendum V to the FMP, which is what established the coastwide cap for yellow eels of 916,473 pounds. It also maintained the aquaculture provisions that allow the states to harvest up to 200 pounds of glass eels for aquaculture within approved harvest proposals.

Right now, Maine is the only state that has aquaculture harvest, or had in 2021, and they have 138.91 pounds of glass eel harvested for aquaculture. Then per Addendum IV, any state that harvests over 750 pounds of glass eel per year must implement a fishery independent life cycle survey. In that case, Maine did harvest over 750 pounds, and they continued their fishery independent life cycle survey of glass, yellow, and silver eels in 2021.

That is now carried out at West Harbor Pond as of 2019. Fishery landings for 2021 reported in the FMP are from the state compliance reports, and the estimated commercial landings for 2021 for yellow and silver eels were approximately 427,000 pounds. This is a 64

percent increase from the 2020 landings, which were very low as a result of both COVID-19, as well as market changes. But the 2021 landings are still lower than what we saw in 2019. For 2021, Maryland, Virginia and New Jersey combined accounted for 87 percent of the total coastwide 2021 landings.

Then for glass eels, Maine and South Carolina are the only states with landings. Maine harvested 9,106 pounds in 2021, which is below their quota of 9,688 pounds, and South Carolina's landings are confidential, but they do remain under 750 pounds, and therefore they do not have to implement that life cycle survey.

Recreational harvest estimates are no longer provided in state compliance reports as of 2009, and this is as a result of the MRIP survey design being unsuitable for eels, because it does focus on coastal and estuarine fishing sites, and as a result the PSEs for the MRIP results are very high, and unreliable numbers for eel.

For the glass eel fishery, the FMP and its addenda currently require all of the states to implement young of year surveys, to maintain harvest regulations with a limit of 25 pigmented eels per 1 pound of glass eels, and 1/8th of an inch mesh. It also has Maine's glass eel quota, commercial monitoring and reporting, and the life cycle survey for glass eel harvest over 750 pounds.

The PRT found that there haven't been any changes to the state regulations on these issues, and all states are compliant with these requirements. For the yellow eels the FMP addenda require a minimum size limit of 9 inches, a minimum mesh size of 1/2 an inch by 1/2 an inch, and escape panel, a recreational bag limit of 25 eel per day, and up to 50 per day allowed for for-hire crews and Captains for bait.

The coastwide harvest cap, as well as a two-year management trigger of a 10 percent overage of the coastwide cap. Again, the PRT found that there haven't been any changes to state regulations, and all the states are in

compliance with these requirements. Then for silver eels, the FMP requirements are a seasonal closure for the September 1 to December 31, with no take except for from baited pots and traps and spears.

There was a one-year exemption for the weir fishery in the Delaware River and its tributaries in New York, which has been continued since 2014. But it is restricted to 9 permits that may be transferred for the New York weir fishery. The PRT noted one issue regarding silver eels, which is that Florida regulations don't prevent harvest of silver eels from pound nets from September 1st to December 31st, but the state is unaware of any active pound net fisheries in the past 10 to 15 years.

The FMP also requires at least monthly trip level reporting by both harvesters and dealers, as well as sustainable fishery management plans, including fishing mortality plans, transfer plans for quota from the yellow to glass eel fishery, and aquaculture plans for watersheds that contribute minimally to the spawning stock. All these plans must scientifically demonstrate that they'll not increase overall fishing mortality on American eel.

As I mentioned, Maine is the only state currently with an active aquaculture plan, and they submitted a proposal for the 2022 fishing year, and that was approved by the Board in August, 2021. The PRT noted a few other issues in the compliance reports, just to mention. First, many states have been unable to provide information on the percent of the commercial harvest of eel that's sold as food, versus what's sold for bait.

Only Maine, New York, New Jersey, Delaware and Florida were able to provide this information in 2021. New York was also unable to provide data on the commercial CPUE for the 2021 fishing year, and New Jersey was unable to complete the fishery independent monitoring requirements in 2021, due to some continued COVID-19 restrictions.

Several states have requested and qualified for *de minimis* status, and that means that for the life stage for which they're requesting *de minimis*, the state's average commercial landings for the preceding two years have been less than 1 percent of the coastwide commercial landings for that life stage.

For 2022, New Hampshire and Massachusetts, Pennsylvania, D.C., Georgia and Florida all requested *de minimis* status for their yellow eel fisheries. However, Florida's 2021 landings exceeded 1 percent of the coastwide landings, so they do not qualify for *de minimis*. The rest of the states that applied do qualify for *de minimis* status.

Under the FMP, *de minimis* status would exempt a state from having to adopt the commercial and recreational fishery regulations for that particular life stage, and the fishery dependent monitoring requirements for that life stage. If Florida is not granted *de minimis* status, then the state would need to implement those requirements.

These are the recommendations from the PRT to the Board. I'll note that a number of these have been maintained from last year's report. First the PRT recommends the Board consider the notes on state compliance that I've given. Note the drop in recent years yellow eel harvest. They also suggested reevaluating the requirement that states provide estimates of the percent of harvest that's for food versus bait.

In addition to that task the Committee on Economics and Social Science with a market analysis to determine if this information is useful for management, and should be collected or not. They also recommend the states continue to work with law enforcement on including information on illegal harvest of eels in the compliance reports, and also recommend New York separate their yellow and silver eel landings in the report if possible.

They lastly recommended that states should try to quantify their upstream and downstream passage for eel, and provide that information to the TC for evaluation. As we discussed, this would be useful information to have for some habitat analysis. With that the Board's action for consideration today is to approve the FMP Review and State Compliance Reports for the 2021 fishing year, and *de minimis* requests from New Hampshire, Massachusetts, Pennsylvania, D.C. and Georgia for the yellow eel fisheries. I can take any questions.

CHAIR EDWARDS: Are there any questions for Caitlin? Okay, would somebody be willing to put forward a motion? John.

MR. MANISCALCO: More comment. DEC is working with U.S. Fish and Wildlife and Cornell University to assess the proportion of eels from the weir fishery that is silver versus yellow, and we hope that will be completed soon. That's ongoing. Thanks.

CHAIR EDWARDS: Thank you, any other questions? Okay, would somebody be willing to put forward a motion? John Clark.

MR. CLARK: Yes, I would move to approve the Fishery Management Plan Review and State Compliance for the 2021 Fishing Year. Is there a motion already made that has all the *de minimis* in it? Okay. Well now, I'll just read it. Move to approve the American eel FMP Review and State Compliance Reports for the 2021 Fishing Year and *de minimis* request from New Hampshire, Massachusetts, Pennsylvania, District of Columbia, and Georgia for their yellow eel fisheries.

CHAIR EDWARDS: Is there a second? Doug Grout. Would anyone like to discuss around the motion? Okay, I'll read the motion for the record. Move to approve the American eel FMP Review. We have a question from, online? Erika Burgess.

MS. ERIKA BURGESS: Thank you, Mr. Chair. Can we get a clarification on what the actual

percentage Florida was of the coastwide landings?

MS. STARKS: I would have to pull up my Excel Spread Sheet for you.

MS. BURGESS: It would have been helpful to have that in the FMP Review.

MS. STARKS: All right, I can pull that up quickly.

CHAIR EDWARDS: Erika, are you planning to make any changes to the motion over those numbers?

MS. BURGESS: Yes, with the numbers, I have a requested amendment to the motion, or put a second. I need the class this afternoon to tell me what I'm going to do.

MS. STARKS: Sorry, give me one moment.

MS. KERNS: While Caitlin is running numbers, I just wanted to introduce the new ISFMP Staff member. She is sitting in the back of the room; Chelsea Tuohy is back there. She is raising her hand, if she'll stand up. As I said in an e-mail last week, she'll be working on summer flounder, northern shrimp, and scup and bluefish.

Please introduce yourself. We're super excited to have her onboard. In addition, the Legislative Lunch, which I know it's not right now, but just letting everybody know where it is. It's in those two rooms that are straight through those doors, which is called Crystal 5 and 6.

MS. STARKS: Florida's landings for yellow eel in 2021 were 2.2 percent of the coastwide landings.

MS. BURGESS: If I can follow up. It's challenging for Florida; we have not had an expansion of our fishery. That resulting increase in share of coastwide landings is actually a result of overall coastwide landings going down. Our fishery is under half of what it was three

years ago. Rulemaking in this office, as many states know, is challenging. To move forward on any additional requirements for not receiving *de minimis* status would be a challenge.

MS. KERNS: It's the prerogative of the Board whether or not you want to allow another state to have *de minimis*. You can ask the PRT to say what the implications would or would not be. I recommend that we do have this new *de minimis* policy, but we wouldn't change any FMP until the Board directed that FMP to be changed for the new *de minimis* policy.

If we do move forward with an addendum, and that is something that the Board wants to do, then we can do that. I would say hold off until we know if you're going to respond to the landings changes on an FMP change. But the Boards have approved *de minimis* status in the past for states that are above. It's the prerogative of the Board.

CHAIR EDWARDS: Joe.

MR. JOE CIMINO: Sorry if I missed this. This is an annual determination then, so in one year out another? There is a potential that they could just be back in *de minimis* status next year. Then I guess a question maybe for Toni. Was there some recommendation in the *de minimis* overall policy of looking at like three-year averages and stuff like that?

MS. KERNS: They were looking at those either two or three years that we averaged.

MS. STARKS: Eel uses a two-year average.

CHAIR EDWARDS: Are there any other questions?

MS. KERNS: Joe, the threshold in the *de minimis* policy, it is based on the average of three years of landings, and then it's less than 1 percent of the coastwide landings.

CHAIR EDWARDS: Erika.

MS. BURGESS: Mr. Chair, correct me if I'm out of order, but I believe at this point I could offer a substitute motion, which would be to have the motion up there, but to add Florida to the list of states with an approved *de minimis* request.

MS. STARKS: Erika, you can make a motion to amend.

MS. BURGESS: Okay, I would like to make a motion to amend to include Florida in the list of states with *de minimis* status.

CHAIR EDWARDS: Okay, can we have a second? John Maniscalco. Any discussion on this motion? Rick.

MR. JACOBSON: Did I just hear two pieces of information, one that the most recent harvest for Florida was 2 point something percent, and that the policy calls for those that qualify for *de minimis* status are less than 1 percent of the coastwide harvest?

MS. STARKS: Yes. It's less than 1 percent of the coastwide harvest for the last two years, which I'm currently calculating.

MS. KERNS: The policy is the average of the last three years, but this FMPs is two years.

CHAIR EDWARDS: Doug Grout.

MR. DOUGLAS E. GROUT: Would we have to do an addendum to change the average to three years, or does the policy supersede what's in the current management plan?

MS. KERNS: The policy does not supersede the FMP. Changes to the FMP would be made to reflect the policy. But the Board still has the prerogative to do something different if they so choose, in terms of the approval of these requests.

MR. GROUT: Just a follow up, I guess at this point, if we were to support this motion, this amendment was to pass. I would also, I will put

up a motion to try to develop an addendum to change the *de minimis* policy to more reflect the current policy of three years, change the management plan so that it reflects a three-year average.

MS. STARKS: Just a quick follow up question on that. Would it be your intention to move forward with such an addendum before we potentially move forward with an addendum to consider changing the coastwide landings cap for yellow eel?

MR. GROUT: If we were to approve this amendment to allow Florida, could we get a change to, if we were to wait until we had an addendum to change the cap. Could we get that done before the next time we have to approve *de minimis* or not?

MS. STARKS: That is highly unlikely, given the timeline for an addendum to change the TAC would probably take place starting potentially later this year, which is when you would reevaluate *de minimis*. Just I want to make one more clarification on Florida's current status. The landings for 2021 and 2020 combined are 1.4 percent of the total coastwide landings from those two years.

CHAIR EDWARDS: Erika.

MS. BURGESS: I appreciate that clarification, Caitlin. I think it might make others around the table feel more comfortable. I believe it was Delaware that we recently allowed two years to go for spot and croaker, or one of the species, where they were just over. I believe that this would follow a pattern or a practice that other boards have taken. Thank you.

CHAIR EDWARDS: Lynn.

MS. FEGLEY: I just wanted to speak in favor of the amendment. I think we should be careful about splitting hairs here. What is interesting is that this is not the result of Florida's fishery growing, this is the result of the total fishery contracting, and Florida maybe just didn't

contract quite as fast as everybody else. When we do this, you know assuming we're going to set a new cap. Everybody's rules are going to change, and that's going to reshuffle where our landings are proportionally to everyone all over again. I think this is a fair addendum to the motion.

MS. KERNS: Just another point. I don't think that we would be able to move super quickly on an addendum for this, because I think that the TC or the SAS would need to really take some consideration. In addition, in the policy, there are recommendations for sampling requirements and this species does have sampling requirements for non *de minimis* states.

I think it would be important for the TC and SAS to have the time to go through what they would really be recommending states be exempt from and not exempt from if we're going to make a change to the addendum. Erika is correct, spot and croaker have routinely let other states that sort of fluctuate right on the borderline to be *de minimis*.

CHAIR EDWARDS: Okay, are there any other questions? I'll read the motion into the record. Just call the question for the motion to amend. Is there any opposition to this motion? Doug Grout.

MR. GROUT: Just saying that we have opposition to the motion.

CHAIR EDWARDS: Please raise your hand to opposition to the motion. Could I have the votes in favor? Abstentions and null votes. The motion passes 15 approved, 3 oppositions, 1 abstention and 1 null.

I'll read the motion now as amended. Move to approve the American eel FMP Review and State Compliance Reports for the 2021 Fishing Year and *de minimis* request from New Hampshire, Massachusetts, Pennsylvania, District of Columbia, Florida and Georgia for their yellow eel fisheries.

**Please raise your hand in favor of the motion.
Please raise your hand in opposition. Any
abstentions? Any null votes? The motion
passes 18 to 1.**

ELECT VICE-CHAIR

CHAIR EDWARDS: Moving on to the next agenda item, Elect a Vice-Chair. Do we have any nominations? Shanna.

MS. MADSEN: From one Commonwealth to another, I would like to nominate Kris Kuhn as our American Eel Management Board Vice-Chair.

CHAIR EDWARDS: Do we have a second? Seconded John Clark. Is there any discussion around this motion? **Any opposition? Without seeing any opposition, this motion is approved by the Board by consent.**

ADJOURNMENT

CHAIR EDWARDS: Our last agenda item, is there any Other Business to come before this Board? Not seeing any, can I have a motion to adjourn this meeting? Malcolm Rhodes, seconded by Doug Grout. Thank you everyone.

(Whereupon the meeting adjourned at 11:15 p.m. on Wednesday, February 1, 2023)

Atlantic States Marine Fisheries Commission

American Eel Supplemental Report: Responses to Board and Peer Review Requests



Prepared by the
ASMFC American Eel Stock Assessment Subcommittee

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Draft for Board Review



Vision: Sustainably Managing Atlantic Coastal Fisheries

**Reviewed and Approved on June 27, 2023, by the
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EXECUTIVE SUMMARY

This report outlines the follow-up work the Stock Assessment Subcommittee (SAS) was tasked with after the 2023 American Eel Benchmark Stock Assessment and Peer Review Reports were presented to the American Eel Management Board (Board) in February 2023. The Peer Review Panel concluded that additional work is needed to establish threshold reference points in the management tool proposed (I_{TARGET}) and that work should be done using a simulation approach with management strategy evaluation (MSE) methods. The Panel also stated that it is more appropriate to consider American eel depleted rather than overfished and likely experiencing overfishing as the SAS suggested. The SAS disagreed with the Panel on these two points. Consistent with the Commission's Technical Support Group Guidance and Benchmark Stock Assessment Process, the Board tasked the SAS with providing justification for deviating from the advice from the peer review advice. In addition to providing justification, the Board also asked the SAS to provide additional analyses to show the influence of individual surveys on the resulting coastwide yellow eel index, consider other reference periods and configurations for I_{TARGET} , and discuss how the habitat model may help assess eel in the future.

To address this task, the SAS completed additional simulation work on the Multivariate Auto-Regressive State-Space (MARSS) index and explored a dynamic factor analysis (DFA) as recommended by the Peer Review Panel. A leave-one-out analysis was completed to evaluate the influence of single surveys on the coastwide trends and each of the resulting indices were analyzed using a regime shift analysis, the basis for determining a reference period for I_{TARGET} . Several I_{TARGET} configurations explored the threshold value used in that analysis in addition to changing the reference period and the multiplier used within the tool, as well as including a survey from South Carolina that was mistakenly omitted during the benchmark. A response was provided for why the I_{TARGET} method can be used without an MSE and how the habitat model will help assessments in the future. Finally, the SAS defined stock status, gave examples of management responses to each stock status, and ultimately conceded that depleted is likely the most appropriate status for American eel.

The conclusions of this report are:

- The simulated MARSS model fits were very similar to the MARSS model fit in the 2023 stock assessment report.
- Overall, omitting a single survey from the MARSS index had little effect on the general coastwide abundance pattern, resulting regimes identified, or the choice of the reference period for I_{TARGET} .
- Omitting all three Hudson River surveys, which is not recommended, shortens the time series and results in the largest change to the MARSS index and identified regimes.
- The application of DFA on the current suite of indices is not ideal due to their differing time series lengths and missing data, but may be promising in the next benchmark.
- Changing the threshold value in I_{TARGET} results in recommended catches from 202,453 – 518,281 lbs, and the choice of configuration should be determined by a Plan Development Team through a management document to reflect the goals of the fishery.

Other configurations were explored for the multiplier and reference period, but changing those from the base run is not recommended by the SAS.

- If the assessment and I_{TARGET} are accepted for management, the South Carolina Department of Natural Resources Electrofishing Survey should be included in the analysis.
- Population projections are not possible using the index-based method, I_{TARGET} .
- Data limitations restrict the development of a coastwide habitat model, but advances in modeling may help in the future.
- An MSE could be considered during the next benchmark, but in the meantime the I_{TARGET} tool can be used for management because it was designed for when an assessment model fails.
- Based on the definitions of depleted, overfishing, and overfished, the American eel stock is depleted and coastwide yellow eel catch should be decreased. If reference points are established through the use of I_{TARGET} , overfishing and overfished statuses could be determined.

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1 INTRODUCTION

In February 2023, the American Eel Management Board (Board) was presented the 2023 American Eel Benchmark Stock Assessment and Peer Review Reports (ASMFC 2023). As part of the assessment, a management tool was developed for setting the coastwide catch limit for yellow eels and for determining stock status (I_{TARGET}). The Peer Review Panel found that the stock assessment sufficiently addressed all terms of reference, but recommended additional work to test the robustness of the I_{TARGET} method for setting catch limits using a simulation approach within a management strategy evaluation (MSE) framework before it is used for management.

At the Board meeting, the Stock Assessment Subcommittee (SAS) argued that the simulation work within an MSE framework, as recommended by the Peer Review Panel, may not be a productive exercise for eel. The inability to estimate life history parameters throughout the species' range remains a challenge and data limitations would constrain the usefulness of the MSE exercise. Additionally, the SAS believes that a simulation within an MSE to explore the I_{TARGET} approach is unnecessary since I_{TARGET} has already been simulation-tested and peer-reviewed as part of NEFSC 2020. The methods in NEFSC 2020 are specifically designed for when an assessment model fails, as the delay-difference model has for American eel in its current form (ASMFC 2023). In addition to the disagreement about the usefulness of an MSE, the SAS and Peer Review Panel also provided differing advice on stock status. Consistent with the Commission's Technical Support Group Guidance and Benchmark Stock Assessment Process, the Board tasked the SAS with providing justification for deviating from the advice from the Peer Review Panel the peer review advice and completing some follow-up work to address several of the Peer Review Panel and Board comments.

This report responds to the MSE exercise (Section 10) and the difference in stock status between the SAS and Peer Review Panel (Section 9.4). As requested by the Board, this report also defines a stock status of depleted versus overfished (Section 9), describes how the habitat model could assist in future stock assessments (Section 8), and discusses why the management tool proposed will not be able to make predictions on biomass or abundance increases in response to harvest reductions (Section 6.2).

In addition to those responses, the SAS has completed work to address questions and follow-up tasks from the Peer Review Panel and the Board. For example, the Peer Review Panel suggested iteratively deriving the Multivariate Auto-Regressive State-Space (MARSS) index by subsampling the indices, and the Board expressed concerns about the influence of the Hudson River indices on the overall trend of the coastwide yellow eel index. To address these issues, the SAS conducted simulations to determine how uncertainty in annual indices of abundance influence the final MARSS yellow eel index (Section 2). Additionally, a leave-one-out sensitivity analysis was done where each 1 of the 14 yellow eel indices was dropped and the MARSS index was recalculated (Section 3). The same approach was applied to exclude entire regions like the Hudson River or the Chesapeake Bay indices. Together these analyses show if an individual index or group of indices influences the trends seen in the coastwide yellow eel index. The results of those sensitivities around the MARSS index were then inputted into the regime shift

analysis to determine if changes in the indices resulted in changes in the regimes, and thus the choice of reference period in I_{TARGET} (Section 4), which was another concern the Board expressed during the February meeting. The SAS also expanded a dynamic factor analysis that was initiated during the Peer Review workshop (Section 5). Finally, the SAS explored different threshold values for I_{TARGET} to address the Peer Review comment that more work is needed on the threshold and to give the Board more options (Section 6). Different reference periods and multipliers for I_{TARGET} were also provided as sensitivity runs, as was the inclusion of an additional South Carolina abundance index that was mistakenly left out of the benchmark (Section 7 and Appendix A).

2 MARSS RESAMPLING

The yellow eel fishery-independent surveys have uncertainty associated with their annual indices of abundance. This uncertainty was not included in the MARSS model fitting and the MARSS model was fit to annual point estimates. To explore the effects of this uncertainty on the final MARSS model results, simulations were conducted to determine how uncertainty in annual indices of abundance may influence the final fitted MARSS model and how this may then influence recommended harvest by the I_{TARGET} method.

MARSS simulations were conducted by randomly drawing a value for each fishery-independent survey for each year the survey was conducted from a normal distribution. The mean of the distribution was equal to the point estimate of the survey and the standard deviation was equal to the standard deviation of the point estimate. These randomly chosen values were then \ln transformed prior to fitting the MARSS model. In cases where a randomly chosen value was ≤ 0 , a value of $\ln(0.01)$ was substituted. Fitting of the simulated MARSS models was conducted in the same manner as in the 2023 stock assessment report assuming American eels are one panmictic species with a single underlying population growth rate across all surveys (U model = equal) and similar process errors across all surveys (Q model = diagonal and equal), but unequal observation errors (R model = diagonal and unequal).

Each simulated MARSS model fit was used to calculate a recommended catch of American eels according to the same methods used in the 2023 stock assessment report. The reference period for the MARSS index was 1974 – 1987 with reference period average annual landings equal to 2,747,352 pounds of eel. The target index (I_{TARGET}) was set to 1.25 times the average simulated MARSS index value over the reference period. Finally, the $I_{THRESHOLD}$ value was set to 0.8 time the I_{TARGET} value.

The resulting distribution of simulated MARSS model fits was very similar to the MARSS model fit in the 2023 stock assessment report (Figure 1). There was a high period of abundance from 1974 – 1987 followed by a steep decline in abundance through the early-1990s and another decline after 2010 through the terminal year of 2020.

The corresponding recommended catch from the application of the I_{TARGET} method to the simulated MARSS model fits was also similar to that in the 2023 stock assessment report (Figure 2). Throughout the simulated time series, the recommended catch would have been substantially less than the observed catch except in 2020 when observed catches were at their lowest point, likely as a result of the COVID-19 pandemic. The median simulated recommended

catch in the terminal year was 255,285 pounds (95th percentile range: 190,411 – 337,171 pounds).

These simulation results suggest that conclusions about trends in the coastwide population of yellow eels based on the MARSS model and recommended catch of based on the I_{TARGET} method are robust to uncertainty in individual point estimates of relative abundance from fishery-independent surveys.

3 LEAVE-ONE-OUT SENSITIVITY ANALYSIS

It was evident in the 2023 stock assessment report that the trends in the coastwide yellow eel abundance index based on a fitted MARRS model were influenced by the longest time series of fishery-independent surveys. The longest time series came from the Hudson River with the Hudson River Estuary (HRE) monitoring survey being the one that extended furthest back in time (1974). To see plots of the individual yellow eel surveys compared to the resulting MARSS index trend, see ASMFC 2023 Figures 150-163. To further explore the influence of any one survey on the final MARSS model index, a sensitivity analysis was conducted in which each individual survey was omitted from the data one at a time and the MARSS model fit to the remaining surveys. Additional model fits were conducted where the time series was truncated to begin in 1980, omitting all Hudson River surveys, and omitting all Chesapeake Bay surveys. Finally, a MARSS model fit was made to a dataset including only a single survey from each of the geographical regions for American eels defined in the 2012 stock assessment report.

Overall, omitting a single survey had little effect on the general pattern of the MARSS model index (Figure 3 and Figure 4). In all cases except one, the MARSS model index showed the same decline from the mid-1980s through the early 1990s. The exception was the case where all Hudson River surveys were omitted, which showed a dramatic decrease during the 1980s followed by a sharp increase through the 1990s, and then another decrease (Figure 3). With the omission of all Hudson River surveys, the next longest time series was the Delaware River Trawl survey and the early portion of the MARSS model index thus followed patterns in this survey. A commonality among all of these sensitivity analyses was that they all showed a decline near the end of the time period examined (2010 – 2020) with the lowest abundance in the terminal year.

Since there are several indices available in some areas but not others along the Atlantic coast, a sensitivity run was completed where only one index from each region was used. If there were multiple indices in a region, the longest time series was used. The longest time series in each region were: the MA Rainbow Smelt survey (Gulf of Maine), Farmill River Electrofishing survey (Southern New England), HRE Trawl (Hudson), Delaware River Trawl (Delaware Bay/Mid-Atlantic), VIMS Seine (Chesapeake Bay), and SC Rediversion Canal survey (South Atlantic). When a MARSS model was fit to only these six surveys, the large decline in abundance from the mid-1980s through the early-1990s was still evident (Figure 5). However, the lowest abundance occurred in the early 2000s followed by an increase to the late-2000s and a slight decline from 2010 – 2020.

These sensitivity analyses showed that the MARSS model abundance index can be influenced by the suite of surveys included, and the length of their time series. However, no single survey completely drives the trends in the final abundance index time series. There was concern that

the Hudson River surveys were driving the final MARSS model abundance index and the choice of 1974 – 1986 as a reference period with relatively high abundance. The Hudson River is a large system representing a significant portion of the coastwide stock, and to completely exclude the Hudson River from the analysis seems inappropriate. Also, the three independent surveys from the Hudson River showed similar trends in the early portion of the time series suggesting that these trends are not an artifact of observation error in any single survey. The results of this sensitivity analysis suggest that the final MARSS model abundance index is robust to deviations due to any single survey and it appears to be the best index of coastwide abundance of the species along the US Atlantic coast. It is noted in ASMFC 2023 that American eel is regarded as a single, panmictic population and the current assessment is not rangewide, i.e., does not include data from Canada, Gulf of Mexico, Caribbean, or elsewhere. Completing a rangewide assessment remains as a research recommendation and in the meantime, the data used in ASMFC 2023 represent the best data available for US Atlantic coast management.

4 REGIME SHIFT SENSITIVITY ANALYSIS

A regime shift analysis was completed for each of the yellow eel MARSS indices produced as part of the sensitivity runs in Section 3. Sequential t-test Analysis of Regime Shifts (STARS) was used to identify change points in the time series using the same methods as ASMFC 2023. Briefly, a regime cut-off length of ten years was used, although regimes shorter than ten years may still be detected by the analysis. Huber's $h=2$ was used for down-weighting outliers and a significance value of $P=0.05$ was used to determine significance. As a reminder, in ASMFC 2023, this analysis determined that the yellow eel abundance index was in a high regime from 1974-1987 (ASMFC 2023 reports the first regime as 1974-1988, but that is an error and it should be 1974-1987), a low regime in 1988-1999, and an even lower regime in 2000-2020. The reference period for I_{TARGET} was 1974-1987 based on this analysis as well as the fact those years seemed to be a stable, if variable, point for both landings and index.

Overall, omitting a single survey had little effect on the general pattern of the MARSS model index (Section 3; Figure 3-Figure 4) and therefore little effect on the regimes identified by STARS (Table 2). Of the 18 sensitivity runs, 13 resulted in the same regimes as the base or different by only one year. Excluding the VIMS Seine Survey, NY HRE, or all the indices from the Chesapeake Bay resulted in regimes that were different from the base by more than one year around the cutoff points, but generally still had similar patterns in the regimes, i.e., a high regime at the beginning of the time series, a lower regime in the middle, and the lowest regime through the terminal year. The two notable differences in the results were when all the indices from the Hudson River were excluded from the MARSS index and for the sensitivity run "Regional Longest Surveys" where the MARSS index was comprised of the longest survey from each region (Section 3; Figure 5). When all the Hudson River indices were dropped, the time series was shorter (1980-2020) because the indices from that river are the only sources of data before 1980. Without the Hudson River indices, the regimes flipped with 1980-1994 being a low regime and 1995-2020 being a high regime. When the MARSS index is built using only the longest index available from each region, the results indicate four regimes. Like the many of the other sensitivities, the first regime in the beginning of the time series is high and is followed by

a low regime, then an even lower regime, but then the last regime increases but is still considered low.

The intent of the sensitivity runs for MARSS was to show the effects each survey had on the resulting abundance index trend for coastwide yellow eel and thus the choice of reference period in I_{TARGET} based on the regime shift analysis. The Board expressed concern that the Hudson River indices were having an undue influence on the resulting coastwide index and were not representative of trends seen outside of the region (e.g., Maryland and Delaware) and therefore it may not be appropriate to use the 1974-1987 high regime as a reference period. As discussed in the leave-one-out analysis (Section 3), these sensitivity runs show that no one index is driving the trends in the coastwide yellow eel index nor the regimes identified by the STARS analysis. Dropping one Hudson River index does not result in a significantly different answer. Dropping all three Hudson River indices results in the largest difference observed in the sensitivity analyses wherein the first regime is considered a low regime (1980-1994) followed by a high regime (1995-2020; Table 2). The only indices available for American eel before 1980 come from the Hudson River and those indices influence the early part of the time series. And yet, the Hudson River is a large system representing a significant portion of the coastwide stock and it is an important source of historical data for the stock. The SAS reiterates that to completely exclude the Hudson River from the analysis is inappropriate for a panmictic population.

5 DYNAMIC FACTOR ANALYSIS

The Peer Review Panel concluded that the index from MARSS (Figure 1) is currently the best available coastwide aggregated index and can be used to indicate stock abundance variations over time, but they also suggested that Dynamic Factor Analysis (DFA) could be used to explore the potential cause of conflicting trends among indices. Dynamic factor analysis is a multivariate time series analysis that can be used to detect common trends in time series (Zuur et al. 2003).

The SAS explored both the full time series (1974-2020) and an abbreviated time series (2006-2019) in the DFA using the 14 yellow eel indices (Table 1). DFA had convergence issues with the full time series and problems fitting the data. The lack of convergence is likely due to the numerous missing values (Holmes et al. 2021) since most indices do not go back to the start year of 1974. There are only 3 years when all 14 surveys are operating: 2010-2012 and 2014. Therefore, an abbreviated time series without missing years of data is not possible. The years of 2006-2019 were selected for the abbreviated time series because most surveys are operating during this time, although there are still several years of missing data.

Both time series (full and abbreviated) identified one trend in the yellow eel abundance data and for both time series, the DFA model converged for one trend and one trend had the lowest AIC value. Therefore, the DFA model indicates there is one trend in the yellow eel data, or conversely, no trend. With that said, both time series lengths tested had a lot of missing data for several years which is not ideal for applying DFA. Using DFA on the yellow eel indices may not be an appropriate application of this method given the amount of data missing from the various yellow eel surveys. The analysis in its current form does not elucidate the influence of

the Hudson River surveys on the coastwide MARSS index. If future assessments want to develop the DFA, indices should be developed specifically with that in mind (e.g., indices of the same length with no missing data). The indices developed for the current assessment were to support a coastwide index and modeling approaches used in the assessment which can handle missing data and series of varying lengths.

6 I_{TARGET} CONFIGURATIONS

6.1 Sensitivity Runs

Within the I_{TARGET} method (NEFSC 2020), there are a few values that need to be specified such as a reference period, multiplier, and threshold. The I_{TARGET} value is defined as the average index over the reference period times a multiplier which indicates a level of abundance that management is striving for. The threshold is a portion of the I_{TARGET} value that depends on the goals of the fishery. Inputs into the analysis are the time series of yellow eel catch and the MARSS index of yellow eel abundance. The base run of I_{TARGET} in ASMFC 2023 used a reference period of 1974–1987, a multiplier of 1.25, and a threshold of 0.8. The SAS explored several sensitivities for each of the values that are specified in I_{TARGET} which are described in the following sections.

6.1.1 Threshold Sensitivity Runs

The threshold value in the base run of I_{TARGET} was set at 0.8 in ASMFC 2023 based on NEFSC 2020. Within I_{TARGET} , suggested landings are adjusted up or down depending on how far above or below the three-year average index is from the I_{TARGET} value (I_{TARGET} is the average index from the reference period*1.25 in the base run for eel). If the three-year average index is below the threshold value (e.g., $0.8 * I_{TARGET}$), even larger reductions in catch are suggested. The SAS explored threshold values of 0.5–0.8, in 0.1 intervals, since the overfished threshold of half (0.5) of the target is appropriate in many fisheries (Carruthers et al. 2016) and 0.8 is used by NEFSC 2020. Depending on the threshold used and using the base multiplier of 1.25, the catch advice for 2020 would have varied from 202,453 lbs (threshold= $0.8 * I_{TARGET}$) to 518,281 lbs (threshold= $0.5 * I_{TARGET}$; Table 3; Figure 6). Of the three values to be specified in this method (i.e., reference period, threshold, and multiplier), the SAS suggests that the threshold could be set by the Board to reflect the goals of the fishery, where 0.8 would be more conservative and 0.5 would be less conservative, although still consistent with how other fisheries are managed.

6.1.2 Multiplier Sensitivity Runs

NEFSC (2020) used a multiplier equal to 1.5, indicating that the biomass target should be higher than the average index value during the reference period. Another option is to set the multiplier lower, at 1.0 for example, indicating that the average index over the reference period represented the biomass target for the population. Setting the multiplier to 1.5 is more conservative, while setting it at 1.0 would be less conservative. In the ASMFC 2023 base run, the SAS used a value of 1.25 since the reference period covers a time when the carrying capacity of the stock has declined due to habitat loss; however, this was balanced by the knowledge that fishing, exploitation, and stock depletion have been occurring well before the

reference period. Both 1.0 and 1.5 were included as sensitivity runs in ASMFC 2023 and are expanded here to 1.0-1.5 in 0.1 increments. Depending on the multiplier used and using the base threshold value of 0.8, recommended catch in 2020 varied from 140,593 lbs to 316,334 lbs (Table 3; Figure 7). The SAS reiterates that the choice of 1.25 is justified and was supported by the Peer Review Panel.

6.1.3 Reference Period Sensitivity Runs

The reference period should represent a stable or desirable period of abundance within the available time series. The base configuration of I_{TARGET} uses a reference period of 1974-1987, the high abundance period based on the results of the regime analysis. ASMFC 2023 used 1974-1988, which was an error and has been corrected in this report. The SAS and peer review panel both agreed that using the high regime as the reference period is appropriate, although the Board requested sensitivity runs that explored other options. The SAS decided to test the second regime, 1988-1999, as the reference period to eliminate the influence of the Hudson River indices early in the time series and to represent a time when more coastwide surveys were in operation. As a reminder, only indices from the Hudson River are available from 1974-1980 and the region represents three of the four indices available from 1980-1989 (Table 1). Since 1988-1999 is a low regime, the SAS believed that setting the multiplier to 1.5 instead of 1.25 would be justified, so both were tested in addition to setting it the multiplier to 1.0, although that is not recommended. Based on the change in reference period and multiplier, the recommended catch in 2020 ranged from 199,133 lbs to 448,049 lbs (Table 3; Figure 8). When the low regime (1988-1999) is used and the multiplier is adjusted to 1.5, the results are very similar to the base run using the high regime (1974-1987) and a multiplier of 1.25. The reference period should be set at the high regime (1974-1987) since that is the period of more desirable abundance in the time series.

6.1.4 Conclusions

Ultimately, the choice of the I_{TARGET} configuration for the threshold, multiplier, and reference period should be discussed by a Plan Development Team if the Board accepts the 2023 stock assessment for American eel and initiates a management document. The sensitivity analyses included in this report explore several options. The majority of the SAS continue to support a reference period of 1974-1987 and justification has been given for a 1.25 multiplier (ASMFC 2023), but ultimately the choices in configuration should reflect the management goals of the Board for this fishery, particularly for the threshold value (0.5-0.8).

6.2 Can I_{TARGET} make predictions on abundance increases in response to harvest reductions?

Survey or index-based methods have very limited or no ability to provide population-wide projections of either biomass or abundance. Surveys or indices only track a population's abundance and biomass across time, and index-based methods only compare those points in time with historical values. These methods generally do not include important population parameters, such as recruitment, intrinsic growth, mortality, or individual growth. While this allows them to be very useful in data-limited situations, they cannot be generally used to provide forecasts or projections under differing harvest scenarios. In contrast, model-based

approaches can and do often provide such projections and allow for harvest scenario testing but require much more data and information than is currently available for American eels.

7 SOUTH CAROLINA INDEX INCLUSION

After reviewing a draft of the 2023 American Eel Benchmark Stock Assessment and Peer Review Report (ASMFC 2023) in the February 2023 meeting materials, South Carolina Department of Natural Resources (SC DNR) contacted ASMFC staff in April to inquire about the omission of the SC DNR Electrofishing Survey as an index of relative yellow eel abundance. After investigating this issue, it appears that this survey data was provided for consideration to the SAS but got deleted from the state folder on the data sharing site, thus it was not considered by the index group during the assessment. SC DNR noted that it met the criteria developed by the SAS in ASMFC 2023 for fishery-independent indices. Therefore, to correct this error, the SAS evaluated the SC DNR Electrofishing Survey data, calculated a standardized index from the survey, and then re-ran the MARSS index, regime shift analysis, and I_{TARGET} base run to include SC DNR Electrofishing Survey in addition to the 14 yellow eel surveys already used. The recommended harvest when SC DNR Electrofishing Survey was included was similar throughout the time series to the original base run. The sensitivity runs that included SC DNR Electrofishing Survey were reviewed and the TC and SAS agree that if the assessment is accepted for management use and options for I_{TARGET} are developed by a Plan Development Team, the SC DNR Electrofishing Survey should be included as an index of relative abundance.

For details about the SC DNR Electrofishing Survey, the index standardization, and results of the sensitivity runs, see Appendix A.

8 HABITAT MODEL

From the Peer Review Report:

Habitat-based modeling: Habitat modeling consists of using GIS analyses to derive statistical relationships between eel abundance and habitat descriptors of the river network. This type of approach has recently been used in other parts of the world for similar species and delivered promising results (Beentjes et al. 2016; Hoyle 2016; ICES 2021; Briand et al. 2022; Mateo et al. 2022). The American eel work supported by the SAS is still in progress and currently consists of a pilot study in the data-rich Chesapeake region. Therefore, it is not possible to draw definitive conclusions on the relevance of results and on transferability of the approach to data-poor regions. It will likely depend on the availability and interoperability of both fish data and habitat data. The Review Panel considers habitat modeling an interesting option to explore in future assessments.

The peer reviewers reference a desire to see more exploration of a habitat-based approach for informing the American eel stock assessment, and rightly cite work that has been conducted on eel congeners in other parts of the world (New Zealand: Beentjes et al. 2016, Hoyle 2016; France and Europe: Briand et al. 2022, Mateo 2022). In the US, several studies have been conducted on American eel habitat relationships (Smogor 1995; Geer 2003; Wiley et al. 2004; Woods and McGarvey 2018), and while local-scale factors are yet to be definitive on habitat requirements for eel, restrictions on access to habitats, particularly fragmentation of river

systems by dams is well established as is the re-occupation of habitats after dam removal (Hitt et al. 2012). Ocean connectivity was also seen to be of primary importance for predicting occupancy in US river systems in a pilot analysis conducted by Young in parallel to the 2023 American eel benchmark stock assessment in the Chesapeake Bay region (*unpublished*). Recent efforts on American shad (Zydlewski et al. 2021) point the way for coupling habitat area and habitat fragmentation to a population model to estimate current and historic stocks by river system. While this analysis is promising, estimating habitat size and availability in the much larger area occupied by American eel, as well as the difficulty in estimating population parameters for all life phases of this panmictic catadromous species, is daunting and is highly reliant on the availability of georeferenced fishery-independent and -dependent biological response data in inland rivers, lakes, estuaries, and oceanic habitats. However, recent advances in geospatial predictor datasets may allow better quantification of river, stream, and lake habitat area, volume, and connectivity over broad areas using national-scale hydrography data sets (McManamay et al. 2018; McManamay and DeRolph 2019; King et al. 2021). Application of egg-per-recruit models as in Sweka et al. (2014) may allow for successfully linking escapement of inland habitats past dams to reproductive output. Continued development of these approaches is of interest to research and management partners in Canada and is being further developed as part of the ICES Workgroup on American eel (ICES 2023).

9 STOCK STATUS

9.1 Stock Status Definitions

The ASMFC uses the following definitions for stock status determinations:

Depleted - Reflects low levels of biomass or abundance, though it is uncertain if fishing mortality or other factors such as habitat loss or environmental changes are the primary cause for reduced stock size.

Overfished - Occurs when stock biomass or abundance falls below the threshold established by the Fishery Management Plan (FMP), impacting the stock's reproductive capacity to replace fish removed through harvest, and that decline is driven primarily by fishing mortality.

Overfishing – Occurs when the rate of fishing (i.e., exploitation or fishing mortality) exceeds the threshold established in the FMP, negatively impacting the stock's reproductive capacity to replace fish removed through harvest.

Determining stock status means estimating one or more biological characteristics of a fishery (e.g., abundance or biomass) and comparing the estimated values to reference values that reflect a desirable condition. To do so typically requires the development of a statistical model or method to estimate biomass, fishing mortality, and biologically-based indicators or reference values. When a stock is found to be overfished or experiencing overfishing, action should be taken to reduce fishing pressure and/or increase biomass. A “depleted” stock status is often used by the ASMFC when a statistical model and reference points cannot be developed due to data limitations but trend analyses or other data-poor methods indicate that the stock is below historic levels. Within the ASMFC framework, the response to a stock status determination is

typically outlined in the species' FMP and action is subsequently taken by the Board. The ASMFC is not subject to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), which governs marine fisheries management in US *federal* waters and requires a rebuilding plan when a fishery is found to be overfished.

9.2 Examples of ASMFC Management Response to an Overfished and/or Overfishing Status

The 2018 benchmark stock assessment for striped bass indicated the stock was overfished and experiencing overfishing relative to the reference points defined in the assessment. To address the overfished status, the Management Board approved an Amendment to the striped bass FMP to rebuild the spawning stock biomass to the target level in a timeframe not to exceed 10 years, no later than 2029 (ASMFC 2022b). Based on the 2021 management track stock assessment for bluefish conducted by the Northeast Fisheries Science Center, the stock was overfished, but not experiencing overfishing. In response, the Management Board approved an Amendment to the bluefish FMP that initiated a seven-year rebuilding plan while revising its allocation and other FMP objectives (ASMFC 2021a). The 2017 assessment for tautog found that three of the four regional stocks were overfished and overfishing was occurring in two of the four regions. In response, an Amendment to the tautog FMP required the two regions that were overfished and experiencing overfishing to reduce catch by a specific percentage (which varied by region) and adjusted regulations in the remaining two regions (ASMFC 2017a).

9.3 Examples of ASMFC Management Responses to a Depleted Status

Unlike the clear definitions and expected response to an overfished or overfishing determination, a depleted stock status determination does not come with a clear path forward for managing the stock. The ASMFC has responded differently to depleted stock statuses in the past. For example, the northern shrimp stock is considered depleted relative to a stable period and a moratorium has been in place since the 2014 season (ASMFC 2021b). Similarly, Atlantic sturgeon was found to be depleted compared to historical levels when it was assessed in 2017 (ASMFC 2017b) and the moratorium implemented in 1998 was maintained. Recognizing the depleted status of river herring in many rivers along the Atlantic coast, management responded by requiring states with fisheries to develop sustainable fishery management plans (SFMPs), which are reviewed by the Technical Committee and approved by the Board, in order to maintain commercial and recreational fisheries (ASMFC 2009). States or jurisdictions without SFMPs are required to prohibit commercial and recreational harvest. The same management response was implemented for American shad when the 2007 stock assessment found many populations along the coast to be near all-time lows (ASMFC 2010).

American eel was found to be depleted and at or near historically low levels in 2012. In response, management established stricter measures for the commercial and recreational fisheries, implemented monitoring requirements, and set a coastwide yellow eel quota, which was an average of 1998-2010 landings (907,671 lbs; ASMFC 2013). At that time, the American Eel TC recommended a coastwide cap on yellow eel landings with a 12% reduction in the catch (798,750 lbs; ASMFC 2013). In 2018, the Board increased the cap to 916,473 lbs to account for revised landings values during the 1998-2010 years (ASMFC 2018) even as the 2017 stock

assessment update found the stock to be at lower levels than the 2012 benchmark and the TC recommended no increases in landings at any stage.

9.4 SAS Justification of Stock Status

In the assessment report (ASMFC 2023), the SAS determined that the American eel stock was overfished and has likely been experiencing overfishing in the last few decades based on the results of the index-based method used. While this method does not lend itself well to defining exploitation-based reference points, the results of I_{TARGET} and other analyses in the assessment indicated a decline in the stock. Therefore, the SAS was comfortable with a determination of overfished and made the recommendation that yellow eel catch should be lower.

The Peer Review Panel stated in their report (ASFMC 2023) that while the modeling approaches used in the assessment were appropriate, they were uncomfortable using the overfished terminology because of the uncertainty in the methods. The Panel stated that the analyses in the assessment all showed a decline in the stock and concluded that the qualitative term 'depleted' is more appropriate.

Recognizing that the SAS did not use a traditional method to determine an overfished status and that factors other than fishing likely contribute to the decline in the stock, the SAS acknowledges that a stock status of depleted is appropriate. And yet, with each stock assessment (ASMFC 2012, 2017, 2023), the methods used indicate lower and lower coastwide yellow eel abundance despite the coastwide catch having been maintained at roughly the same level, on average, since the mid-1990s with the exception of the COVID years. Therefore, the SAS believes fishing is having an effect on the trends and that yellow eel fishing should be decreased coastwide, but concedes that the status of the stock is likely influenced by a myriad of factors other than fishing. If the Board accepts the 2023 stock assessment and management tool and initiates a management document using I_{TARGET} , reference points would be established and the stock could be considered using overfished and overfishing definitions in the future.

10 RESPONSE TO MSE

During the review, several Panel members expressed interest in using management strategy evaluation (MSE) to help provide insights and to test the robustness of the I_{TARGET} methods for eels. As outlined by the Panel, a simulation could be constructed as was done for the European eel (Lambert 2011) using plausible virtual population trajectories. Simulation testing could then be conducted to examine sensitivities around assumptions of removals outside the US, the relative importance of coastal versus freshwater fractions of populations, stock-recruitment relationship, catch levels, and other factors. While such an examination is possible, it is likely unfeasible, given the timeframe and resources available currently.

Building a plausible simulation requires underlying knowledge of important population parameters such as recruitment, natural mortality, or intrinsic growth. While rough approximations could be made based on the assumed life history of the American eel, experience has shown that simulations and their results tend to be very sensitive to those assumed parameters. A model-based rather than index-based approach would have been more fruitful if the SAS had this level of information. Building such a simulation, choosing the

appropriate parameters and sensitivities, and examining the output would require extensive analysis and vetting through a new peer review. Additionally, stakeholder involvement could both enhance and slow this process considerably. While the suggestion to conduct an MSE may be appropriate as a long-term research and modeling objective, such an endeavor would require years of work and more resources than the SAS currently has available.

It should also be noted that extensive simulation testing across various life-history strategies has already been conducted for the I_{TARGET} and other index-based methods; both worldwide (Carruthers 2015) and in the Northeast (NEFSC 2020). While eels may have a different life history from the small pelagic or groundfish species tested in NEFSC 2020, those differences are the very same issues that make building a plausible simulation so challenging.

Given the above reasons, the SAS recommends that a full or partial MSE be considered as a future research objective, perhaps during the next benchmark peer review. In the intermediate time frame, the SAS will incorporate some of the Panel's suggestions to help illustrate the potential uncertainties inherent in the I_{TARGET} approach.

11 CONCLUSIONS

At the February 2023 meeting, the Board tasked the SAS with completing some additional sensitivity analyses and simulation work around the yellow eel indices, providing more options within the proposed management tool, determining stock status in response to the Peer Review Panel's report, and explaining why an MSE is not necessary for using I_{TARGET} for management and how the habitat model could help assessments in the future. The follow-up work exploring the yellow eel indices indicated that no single survey was driving the trends in the final yellow eel abundance index (Section 3 and 4). The three indices from the Hudson River did influence the beginning of the time series since those surveys are the longest time series available for eel and are the only surveys available prior to 1980 and represent three of the four surveys available prior to 1989 (Table 1). The SAS does not think it is appropriate to drop the entire region from the analysis since the Hudson River is a large system representing a significant portion of the coastwide stock, and likely a large portion of the available biomass. The results of the index simulations (Section 2) and leave-one-out sensitivity analyses (Section 3) show that the coastwide yellow eel MARSS index is robust to deviations due to any single survey and is the best index of coastwide abundance currently.

Several additional options were explored in this report for the proposed management tool, I_{TARGET} (Section 6.1). The resulting recommended harvest varies depending on the specifications made to three values in the tool: the reference period, threshold, and multiplier. The decisions made for each of these values should be based on the goals of the fishery. Throughout the sensitivity runs, the SAS reiterates the choice of 1974-1987 as the reference period and 1.25 as the multiplier, although other options were presented in Section 6.1. The choice of the threshold value between 0.5 and 0.8 should be chosen to reflect the goals of the fishery where 0.8 is more conservative and 0.5 is less conservative but still justifiable for managing fisheries. And finally, in Section 6.2, the SAS provided a discussion on why the index-based method cannot make predictions on abundance in response to harvest reductions.

In ASMFC 2023, the SAS concluded that the American eel stock is overfished, likely experiencing overfishing. The Peer Review Panel stated that a stock status of depleted is more appropriate for eel. To address this disagreement, the SAS provided definitions of each of those statuses in Section 9.1. Given that American eel is likely in a depleted state due to factors such as habitat loss, low water quality in many river systems, the swim bladder parasite, limited upstream and downstream passage, and other environmental factors, the SAS agrees with the Peer Review Panel that the stock is depleted. The majority of the SAS thinks that continued fishing pressure on a depleted stock is likely contributing to the continued decline in abundance seen over several assessments (ASMFC 2012, 2017, 2023). Additionally, the management response to a depleted status for American eel was compared to other depleted species such as northern shrimp, Atlantic sturgeon, and river herring in Section 9.3.

The SAS recommends that a full or partial MSE be considered as a future research objective, but it is not necessary at this time for using I_{TARGET} to manage the fishery (Section 10). I_{TARGET} has already been simulation tested for various life-history strategies (Carruthers 2015; NEFSC 2020) and it is currently a tool for managing a fishery when the stock assessment model has failed, as it has for American eel. To address some of the Peer Review comments, some simulation work was done for the yellow eel index in Section 2. To develop a plausible full simulation model for American eel, knowledge of parameters such as recruitment, natural mortality, or growth would be needed and those are not available for coastwide American eel at this time. While the suggestion to conduct an MSE may be appropriate as a long-term research and modeling objective, such an endeavor would require years of work and more resources than the SAS has available currently.

In Section 7 (and Appendix A), the SAS noted that a survey from South Carolina was mistakenly not considered during the benchmark. Once this error was pointed out in April, the SAS reconsidered the data, developed an index of relative yellow eel abundance, and re-ran the MARSS, regime shift analysis, and I_{TARGET} to include it. The SAS and TC are recommending that if the assessment and I_{TARGET} are used for management, the additional South Carolina index should be included since it represents the best available data.

In Section 8, the SAS described the application of habitat models in other parts of the world and a similar application in the US for American shad. At this time, the data is limited for developing a comprehensive habitat model to couple with a population model for American eel but modeling advances in the future may make it possible.

In conclusion, the simulation and sensitivity analyses show that the coastwide yellow eel index is robust to the inclusion or exclusion of individual indices. Future research should consider both habitat models and an MSE. In the meantime, the Board can consider using I_{TARGET} to set a coastwide catch. The choice of the I_{TARGET} configuration for the threshold, multiplier, and reference period should be discussed by a Plan Development Team if the Board accepts the 2023 stock assessment for American eel and initiates a management document. The sensitivity analyses done in this report explore several options. The majority of the SAS continues to support a reference period of 1974-1987 and justification has been given for a 1.25 multiplier (ASMFC 2023), but ultimately the choices in configuration should reflect the management goals of the Board for this fishery, particularly for the threshold value (0.5-0.8). It is this threshold

value which is most uncertain in the opinion of the SAS, and thus the best parameter to vary when examining trade-offs and risk. The stock is at or near historically low levels due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins and contaminants, disease, and potentially continued fishing pressure. American eel's stock status was depleted in the 2012 benchmark stock assessment and each subsequent re-assessment (ASMFC 2017, 2023) has found yellow eel abundance levels to be lower than the previous assessment. The American eel stock remains depleted and in need of management action.

DRAFT

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13 TABLES

Table 1. The 14 yellow eel indices used in the coastwide MARSS index. Trends are the results from the Mann-Kendall test indicating the direction of the trend (P -value $< \alpha$; $\alpha = 0.05$). NS = not significant.

State	Site	Gear	Model	Years of Survey	Trend
NH	Rainbow Smelt Fyke Net Survey	Fyke Net	NB GLM year+temp+river	2010-2020	NS
MA	Rainbow Smelt Fyke Net Survey	Fyke Net	NB GLM year+temp+offset(effort)	2004-2019	NS
CT	Farmill River	Electrofishing	Population estimate	2001-2012, 2014	NS
CT	Eightmile River	Electrofishing	Population estimate	2001-2003, 2005-2017, 2019	NS
NY	HRE Monitoring	Epibenthic sled & tucker trawl	Quasi-poisson GLM year+temp+river mile+water volume	1974-2017	↓
NY	Hudson Juvenile Alosine	Beach Seine	NB GLM year+station+temp	1985-2019	↓
NY	Hudson Juv Striped Bass	Beach Seine	NB GLM year+station+temp	1980-2019	↓
NJ	Delaware River Seine	Seine	NB GLM year+station+temp	1998-2019	NS
DE	Delaware Juvenile Trawl	Trawl	Nominal index with delta distribution	1980-2019	NS
PA	Delaware River Area 6	Electrofishing	Nominal	2005-2020	↓
MD	Sassafras River	Pot	Nominal	2006-2019	↑
VA	VIMS Trawl Survey	Trawl	NB GLM year+salinity+offset(effort)	1996-2019	NS
VA	VIMS Seine Survey	Seine	NB GLM year+salinity	1989-2019	↑
SC	Rediversion canal	Aluminum ladder	Quasi-poisson GLM year+temp+gear condition	2003, 2005-2007, 2009-2020	NS

Table 2. Regimes identified from the leave-one-out sensitivity analysis on the MARSS yellow eel index. Regimes were identified as high (green), middle (yellow), low (red), or very low (dark red) by the analysis. Sensitivity runs with the same regimes as the base run are indicated in the table, as are sensitivity runs with regimes similar to the base run (plus or minus one year).

Sensitivity Run	Regimes	Same as Base	Same or Similar to Base +/- one year
Base	1974-1987, 1988-1999, 2000-2020	X	X
1980 Cutoff	1980-1986, 1987-1998, 1999-2020		X
Drop MD Sassafras	1974-1987, 1988-1999, 2000-2020	X	X
Drop VIMS Seine	1974-1987, 1988-1996, 1997-2020		
Drop VIMS Trawl	1974-1987, 1988-1999, 2000-2020	X	X
Drop PA Area 6	1974-1987, 1988-1999, 2000-2020	X	X
Drop NJ Delaware River Seine	1974-1987, 1988-1999, 2000-2020	X	X
Drop DE Trawl	1974-1988, 1989-2020		X*
Drop MA Rainbow Smelt	1974-1987, 1988-1999, 2000-2020	X	X
Drop NH Rainbow Smelt	1974-1987, 1988-1999, 2000-2020	X	X
Drop HRE	1980-1985, 1986-2000, 2001-2020		
Drop Hudson River Alosine	1974-1986, 1987-1998, 1999-2020		X
Drop Hudson Striped Bass Seine	1974-1986, 1987-1998, 1999-2020		X
Drop CT Eightmile	1974-1987, 1988-2000, 2001-2020		X
Drop CT Farmill	1974-1986, 1987-1998, 1999-2020		X
Drop SC Redivision	1974-1987, 1988-1999, 2000-2020	X	X
Drop All Hudson Indices	1980-1994, 1995-2020		
Drop All CB Indices	1974-1987, 1988-1996, 1997-2020		
Include Longest Survey from Each Region	1974-1985, 1986-1997, 1998-2007, 2008-2020		

*collapses last two regimes into one

Table 3. Resulting recommended catch for 2020 based on the sensitivity analysis around the threshold and multiplier values for the I_{TARGET} method as well as the reference period. Values used in the base run of I_{TARGET} in ASMFC 2022a are indicated in the table.

Reference Period	Multiplier Value	Threshold Value	Recommended 2020 Catch (lbs)
1974-1987 (Base)	1.25 (Base)	0.5	518,281
1974-1987 (Base)	1.25 (Base)	0.6	359,917
1974-1987 (Base)	1.25 (Base)	0.7	264,429
1974-1987 (Base)	1.25 (Base)	0.8 (Base)	202,453
1974-1987 (Base)	1.00	0.8 (Base)	316,334
1974-1987 (Base)	1.10	0.8 (Base)	261,433
1974-1987 (Base)	1.20	0.8 (Base)	219,676
1974-1987 (Base)	1.30	0.8 (Base)	187,180
1974-1987 (Base)	1.40	0.8 (Base)	161,395
1974-1987 (Base)	1.50	0.8 (Base)	140,593
1988-1999	1.00	0.8 (Base)	448,049
1988-1999	1.25 (Base)	0.8 (Base)	286,751
1988-1999	1.50	0.8 (Base)	199,133

14 FIGURES

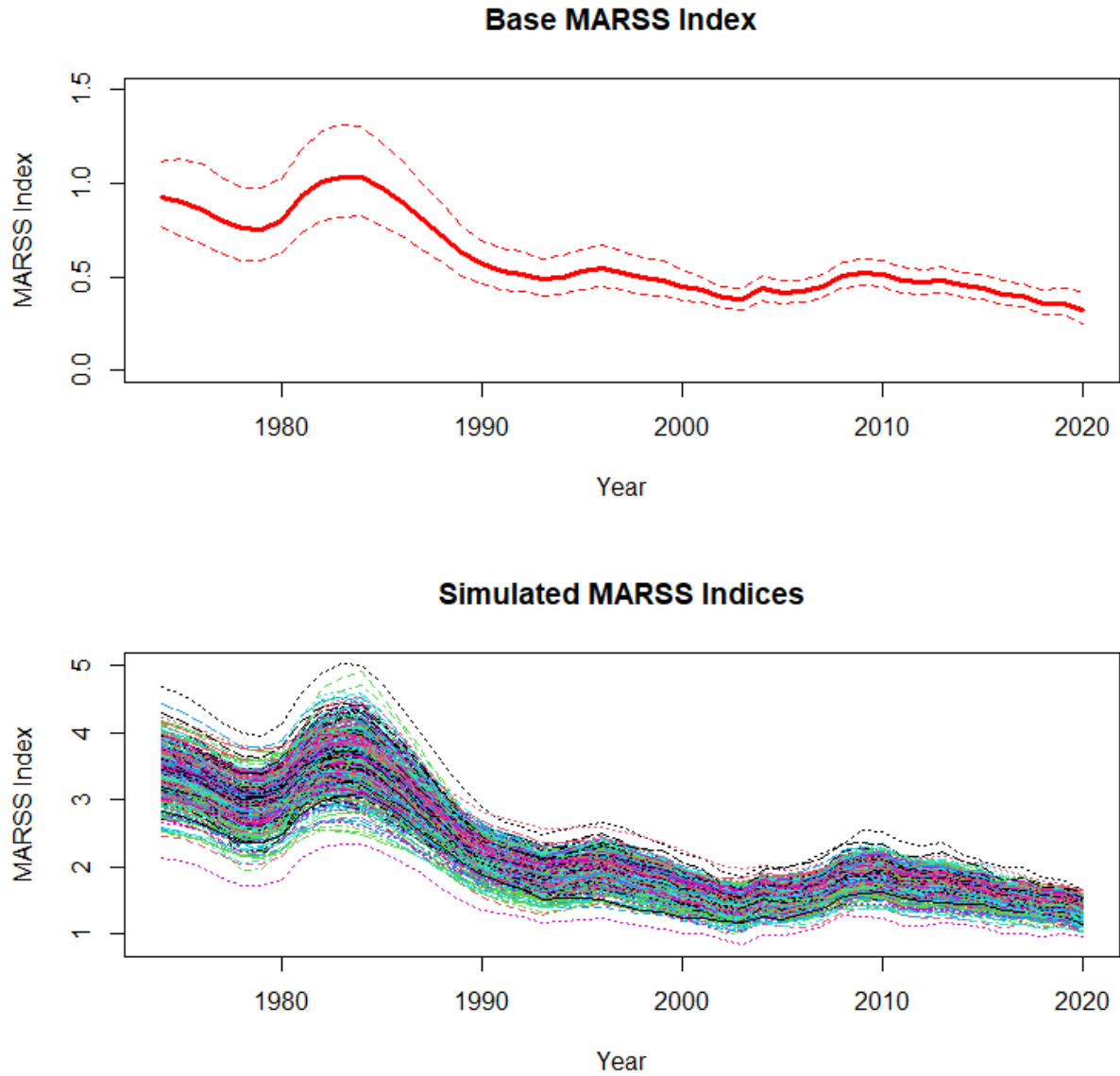


Figure 1. Base MARSS model abundance index (top) and simulated MARSS model abundance index (bottom) showing the results of 500 simulations. Scales on the y-axis differ simply because of the order of individual surveys input to the MARSS model fit. (The MARSS package scales the resulting index to the first survey entered into the model.)

Observed catch versus Recommended Catch

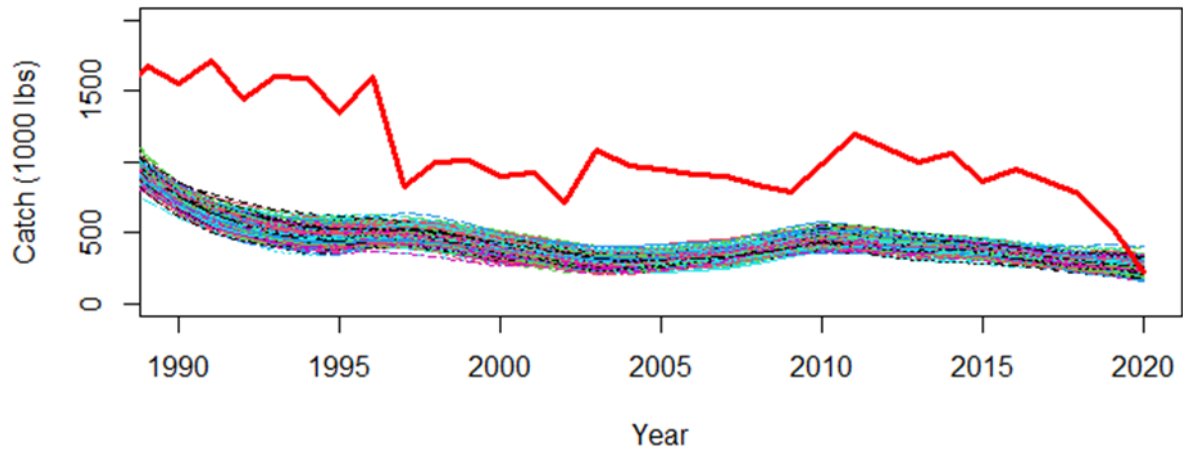


Figure 2. Comparison of 500 simulations of the recommended catch of American eels from the base run of the I_{TARGET} method to the observed landings. The median recommended catch in 2020 was 255,285 lbs (95th percentile range: 190,411 – 337,171 lbs).

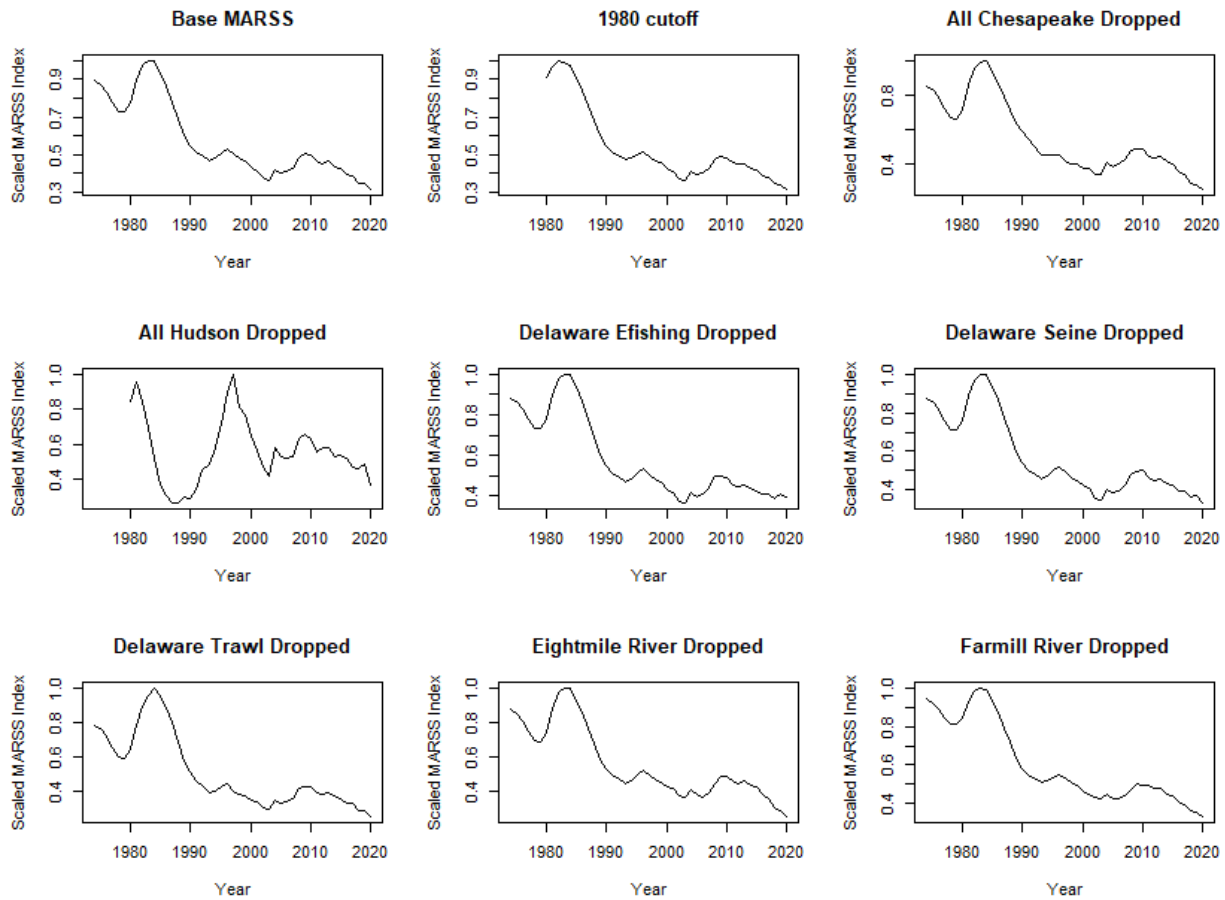


Figure 3. Results of the leave-one-out sensitivity analysis. The upper left panel shows the base MARSS model abundance index with all 14 yellow eel surveys included. Other panels indicate which survey was omitted from the model fit. Indices have been scaled to a maximum of 1.0 to facilitate comparisons.

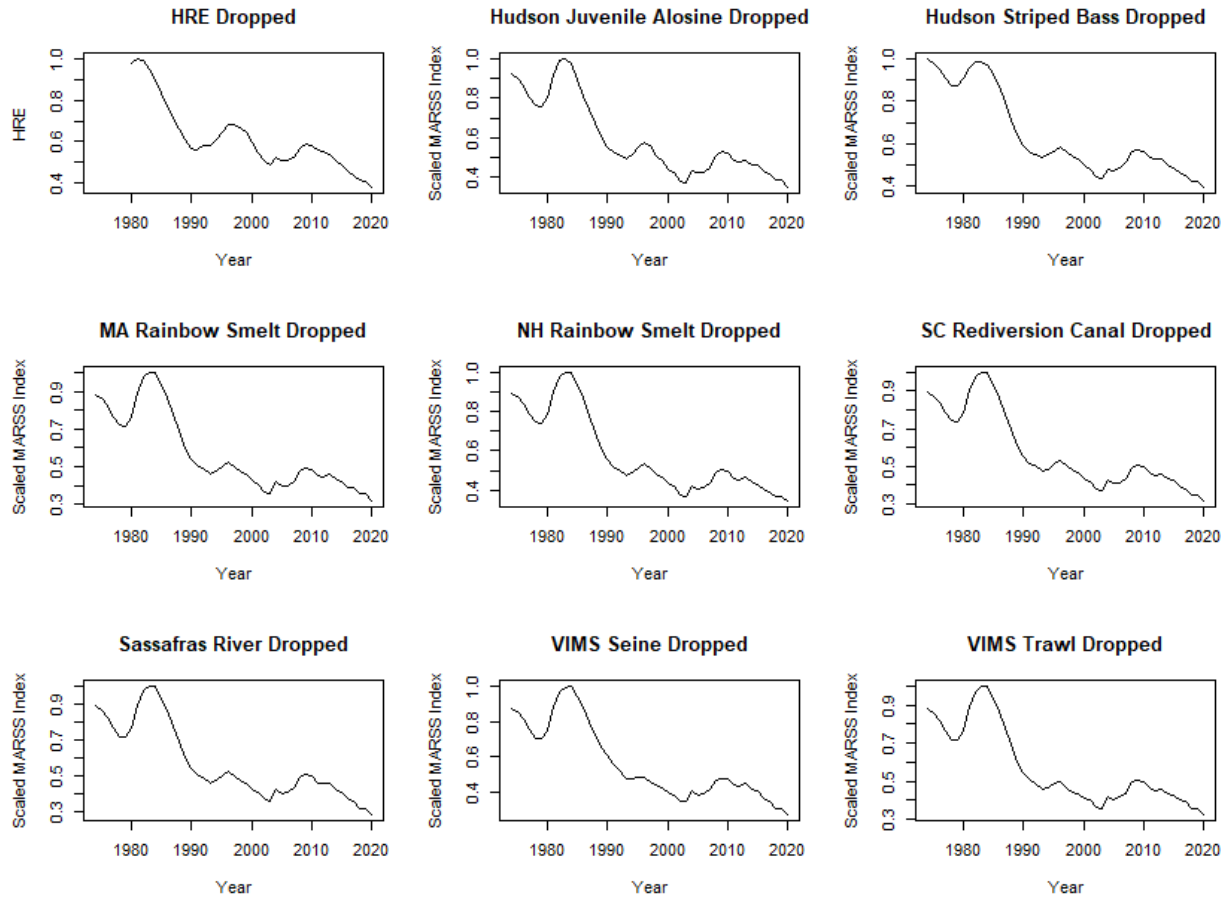


Figure 4. Results of the leave-one-out sensitivity analysis. Panels indicate which survey was omitted from the model fit. These can be compared to the upper left panel in Figure 3 showing the base MARSS model abundance index with all 14 yellow eel surveys included. Indices have been scaled to a maximum of 1.0 to facilitate comparisons.

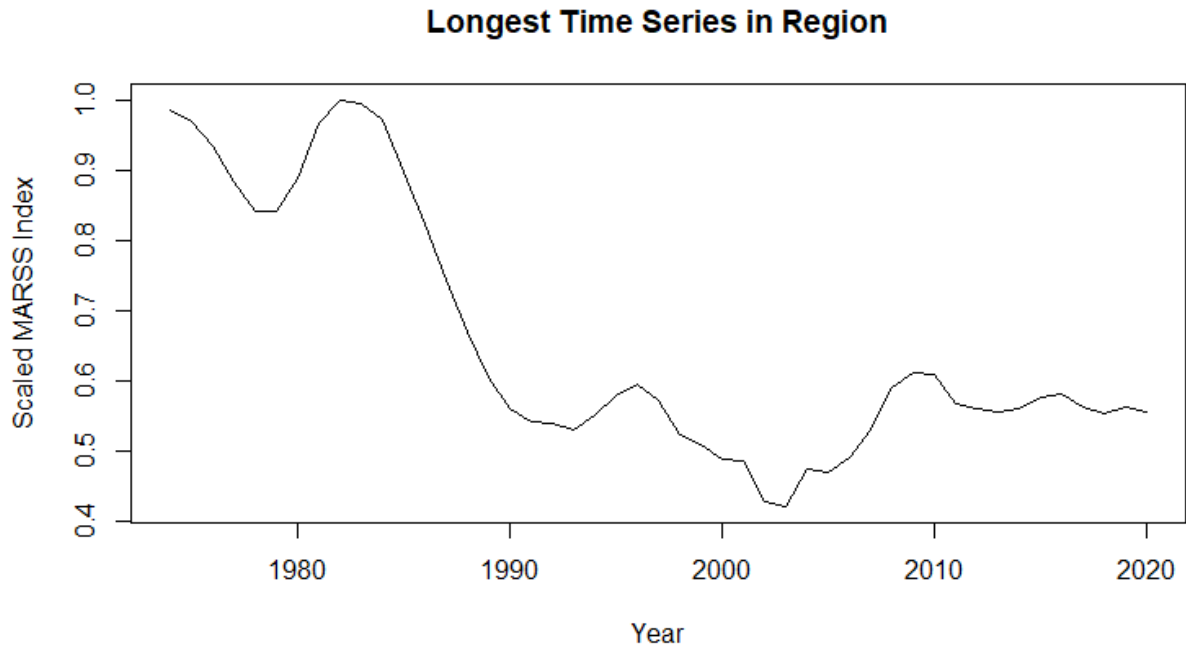


Figure 5. MARSS model abundance index when including the longest time series from each geographical region of the Atlantic coast as defined in the 2012 American eel stock assessment report. These surveys included: MA Rainbow Smelt survey (Gulf of Maine), Farmill River Electrofishing survey (Southern New England), HRE Trawl (Hudson), Delaware River Trawl (Delaware Bay/Mid-Atlantic), VIMS Seine (Chesapeake Bay), and SC Rediversion Canal survey (South Atlantic). The index was scaled to a maximum of 1.0 to facilitate comparisons with other scenarios.

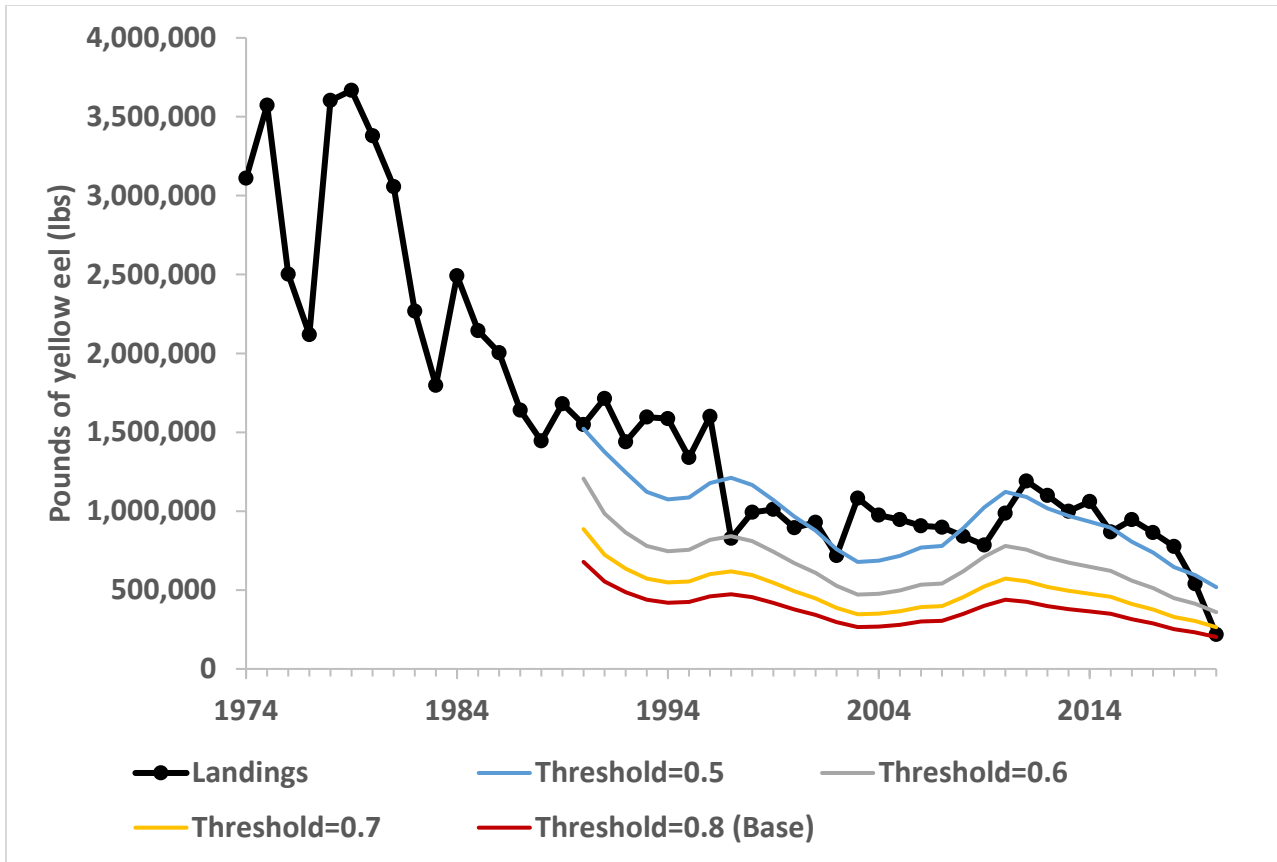


Figure 6. Coastwide landings (black line) and recommended removals (colored lines) from I_{TARGET} when the threshold value is varied. The threshold sensitivities tested were $0.5 \cdot I_{TARGET}$ through $0.8 \cdot I_{TARGET}$ in 0.1 increments. For these sensitivity runs, the reference period was 1974-1987 and the multiplier was held constant at 1.25.

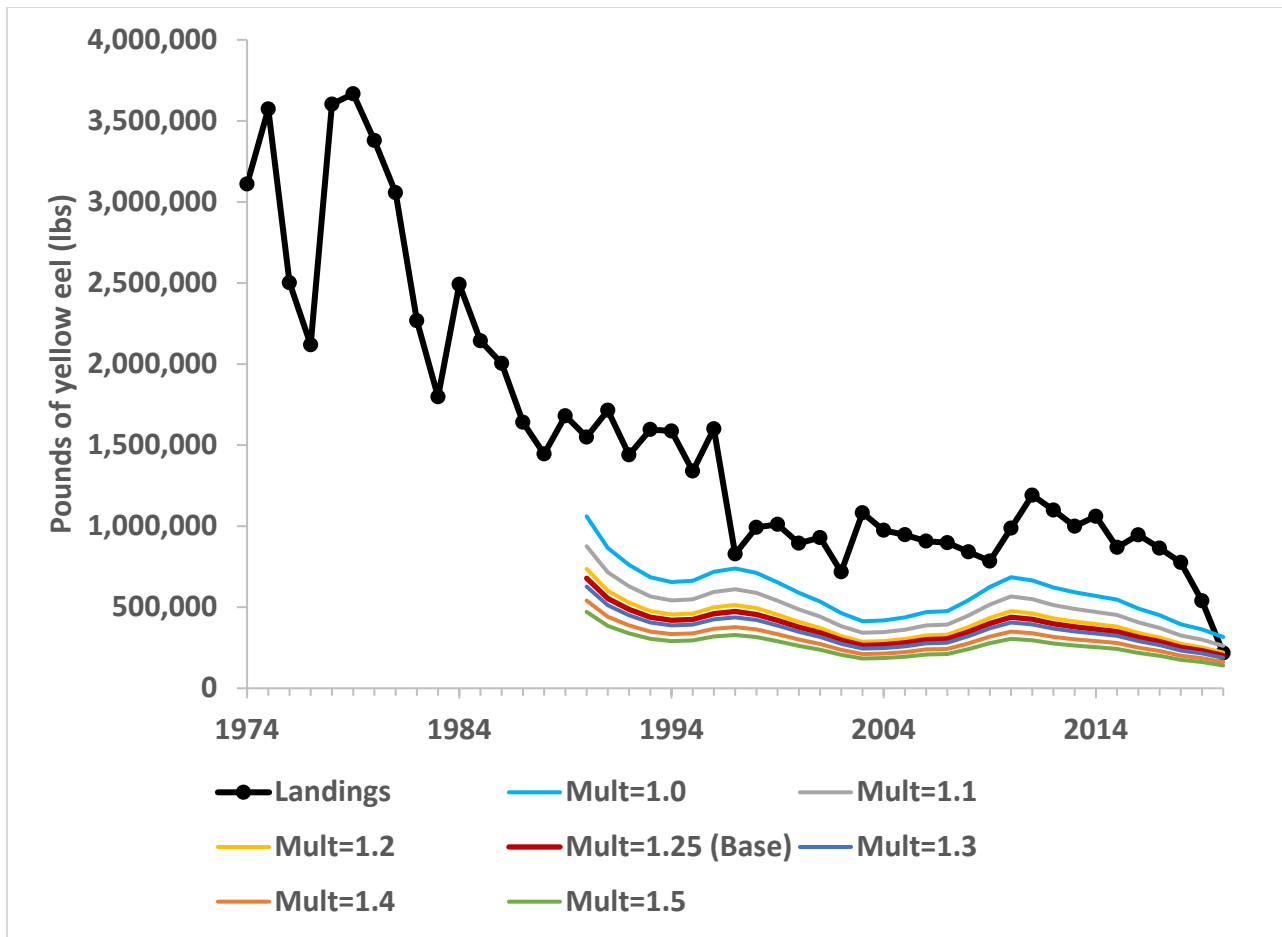


Figure 7. Coastwide landings (black line) and recommended removals (colored lines) from I_{TARGET} when the multiplier value is varied from 1.0-1.5 in 0.1 increments. The base run used a multiplier of 1.25 as indicated in the figure. For these sensitivity runs, the reference period was 1974-1987 and the threshold value was held constant at $0.8 * I_{TARGET}$.

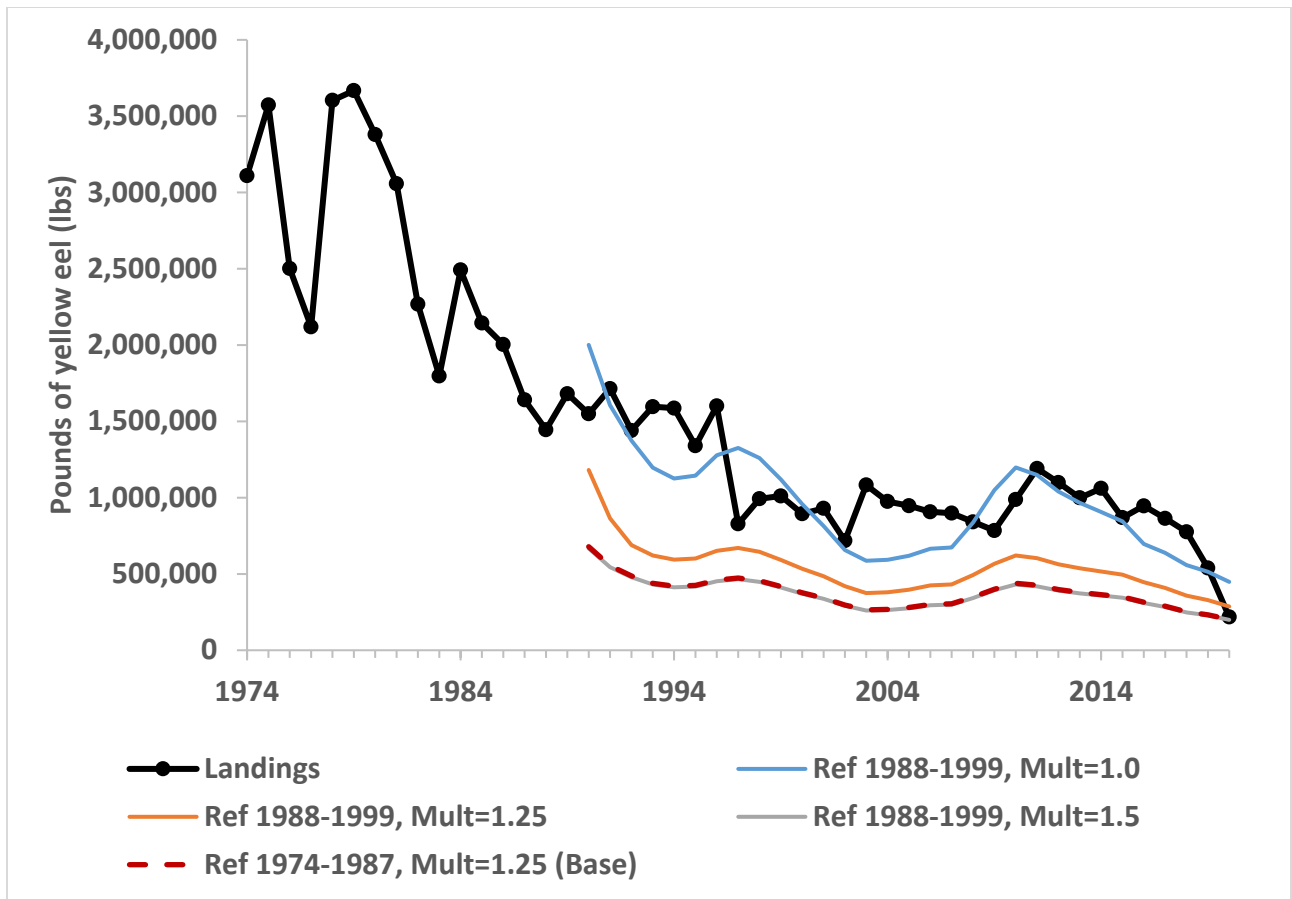


Figure 8. Coastwide landings (black line) and recommended removals (colored lines) from I_{TARGET} when the reference period is changed to 1988-1999 and the multiplier was varied from 1.0 to 1.5. The base run used a 1974-1987 reference period and a 1.25 multiplier as indicated in the figure. For these sensitivity runs, the threshold value was held constant at $0.8 * I_{TARGET}$.

15 APPENDIX A: SC DNR ELECTROFISHING SURVEY

Survey Design and Methods

The SC DNR Electrofishing Survey operates within the oligohaline portions of the Combahee, South Edisto, Ashley, Cooper, and Waccamaw/Sampit/Winyah Bay Rivers (Figure A1). The survey has a stratified random design where five strata are identified (one for each river) with fixed station locations identified for each river system. The survey has been in operation since 2001 and occurs monthly where five to six stations per strata per month are sampled. Catch is identified by species and a subsample is collected for biological sampling, including age and length. Due to COVID, the survey did not operate from the end of March through May in 2020.

Biological and Environmental Sampling

Depth, salinity, dissolved oxygen, temperature, tidal stage, sampling duration, and location are recorded during this survey. Lengths are consistently recorded throughout the time series and some age, weight, sex, and maturity data is also available.

Evaluation of Survey Data

Mean length was consistent across years (Figure A2) and averaged 376.0 mm \pm 138.5 mm (\pm SD). The data was subset to the areas that most reliably encountered eel which were the ACE Basin, Charleston Harbor, and Winyah Bay. While the survey encountered eel in all months, the index was subset to April – November when catches were the highest. Available covariates for the GLM framework included year, depth, salinity, dissolved oxygen, temperature, tidal stage, sampling duration, stratum, and location. Duration was used as an offset in the GLM. The best-fitting model assumed a negative binomial distribution and included year, stratum, and the offset for effort. While the SC DNR staff advised that 2020 data could be used, the index was calculated with and without it. Ultimately, 2020 was dropped from the index to be consistent with how missing data due to COVID was handled in other data sets used the 2022 assessment.

Abundance Index Trends

While the index for 2001-2020 was calculated and provided (Figure A3), the index was recalculated to omit 2020 data since it represented a year with decreased sampling during some of the months in the index. For 2001-2019, the index increased from 2001 to a peak in 2003 followed by a steady decline through the terminal year (Figure A4). While there was a slight increase in abundance in 2016-2017, 2019 was the lowest value in the time series. The 2001-2019 time series was used in the sensitivity runs for MARSS, the regime shift analysis, and I_{TARGET} in the following sections.

MARSS Index

Two sensitivity runs were done to test the choice of SC indices on the resulting MARSS coastwide yellow eel index. First, the MARSS index was recalculated by dropping the SC Rediversion Survey and including the SC DNR Electrofishing Survey. Second, a MARSS index was calculated that included both SC indices, in addition to the other 12 yellow eel indices previously used. In both cases, the resulting index and confidence intervals were similar to the original MARSS index, although both sensitivity runs were more similar to each other than to the original MARSS (Figure A5).

Regime Shift Analysis

The two recalculated MARSS indices (MARSS with SC DNR Electrofishing Survey substituted for SC Rediversion and MARSS including both SC indices) were analyzed to identify regimes in the time series using the same methods as ASMFC 2022. The regimes were slightly different from the previous regime shift analysis. Using the original MARSS index, the regimes were 1974-1987 (high), 1988-1999 (low), and 2000-2020 (lower). Using either of the recalculated MARSS indices, the regimes identified were 1974-1986 (high), 1987-1997 (low), and 1998-2020 (lower; Figure A6). While the overall pattern was very similar, the change points identified were slightly different by 1-2 years. This would change the reference period in I_{TARGET} from 1974-1987 to 1974-1986.

I_{TARGET}

The proposed management tool, I_{TARGET} , was rerun with the revised reference period of 1974-1986 and the two recalculated MARSS indices (MARSS with SC DNR Electrofishing Survey substituted for SC Rediversion and MARSS including both SC indices). All other configurations in I_{TARGET} remained the same as the base run (e.g., multiplier=1.25, threshold=0.8). With the revised MARSS indices, the recommended harvest in the terminal year was 187,729 lbs (for MARSS with SC DNR Electrofishing) or 187,920 lbs (for MARSS with both SC indices) compared to the 202,453 lbs from the original base run. While the point values are marginally different, the recommended harvest between the revised and original base run are fairly consistent (Figure 7A).

Conclusions

The SC DNR Electrofishing Survey reliably encounters American eel and would have been included as an abundance index had it been considered during the assessment. Due to miscommunication, this data was not included and the TC and SAS agree that this error should be corrected if the assessment is used for management since it represents the best available science. The substitution of the SC DNR Electrofishing Survey for the SC Rediversion Survey or the inclusion of both SC yellow eel indices resulted in slightly different management advice but overall the results are consistent with the previous trends and conclusions. The TC and SAS recommend including both SC indices. Additionally, the SAS and TC recommend that the Assessment Science Committee (ASC) develop guidelines for how to handle survey issues like this in stock assessments since similar questions have arisen in other assessments.

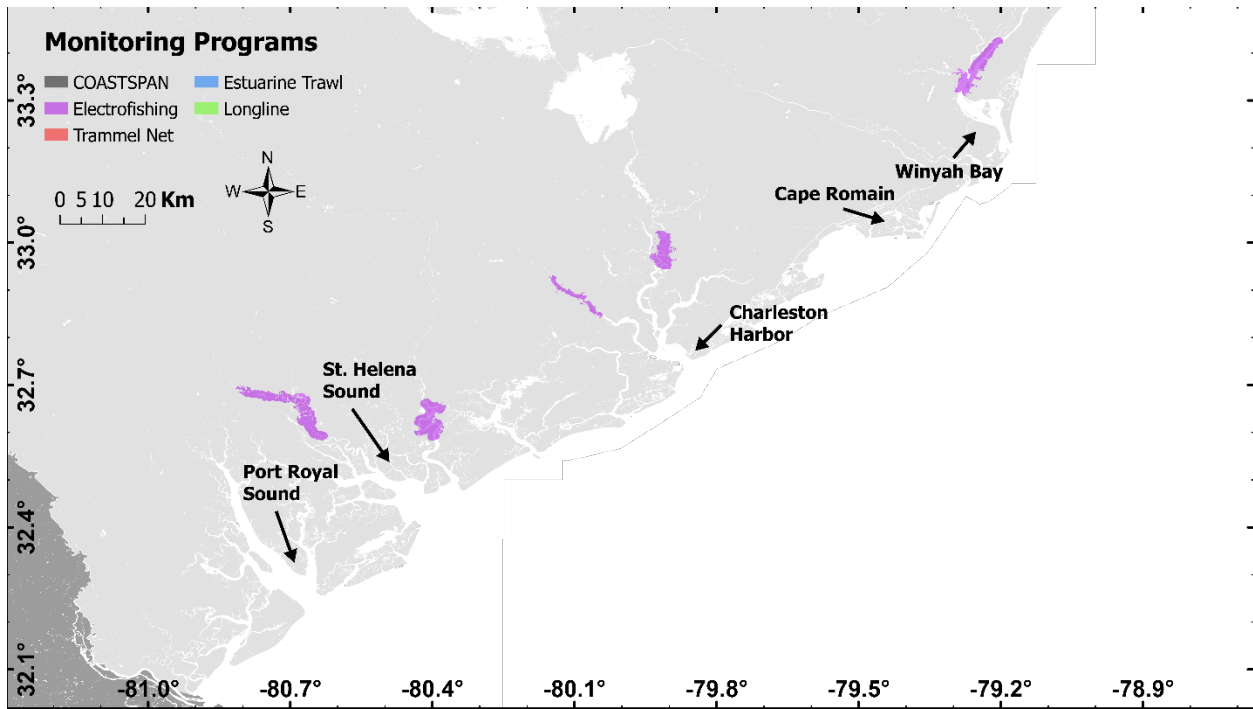


Figure A1. Map of the South Carolina Department of Natural Resources Electrofishing Survey.

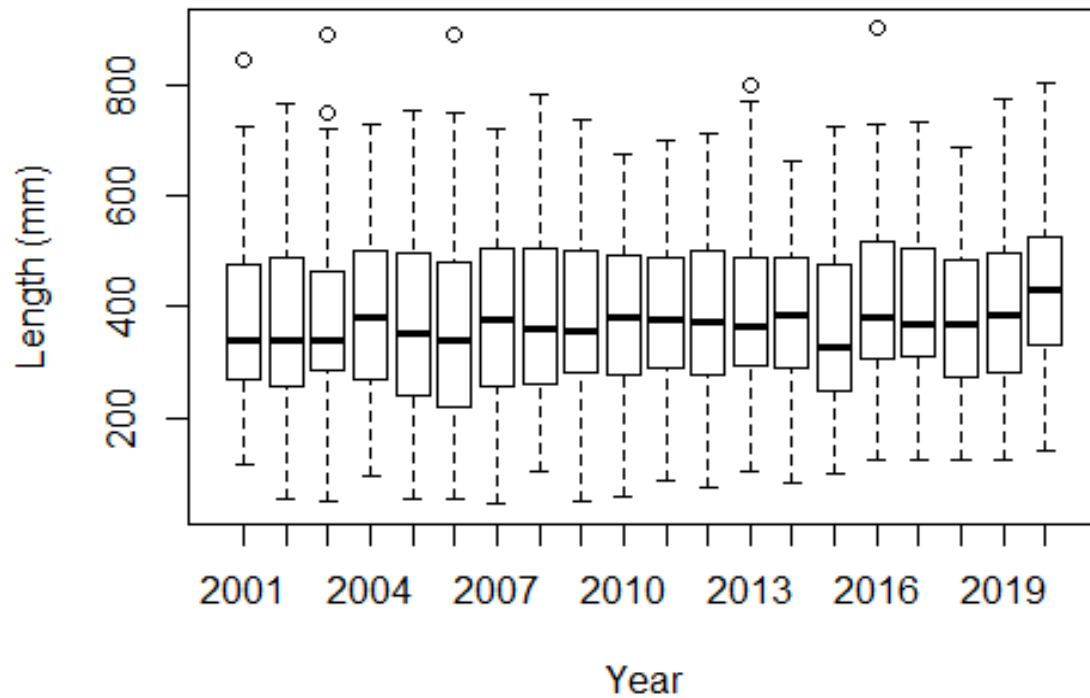


Figure A2. Boxplot of American eel lengths recorded in the South Carolina Electrofishing Survey.

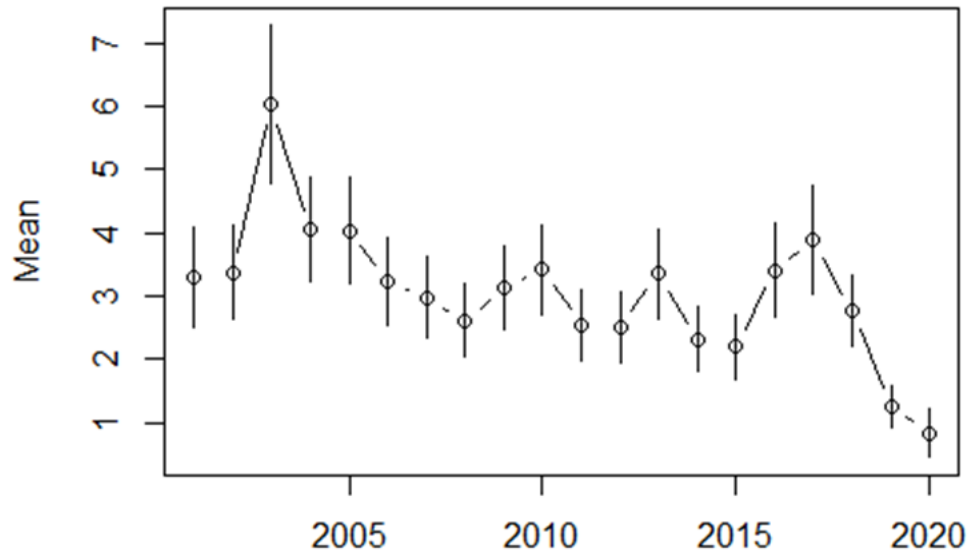


Figure A3. Standardized index of relative yellow eel abundance developed from the South Carolina Department of Natural Resources Electrofishing Survey, 2001-2020. The survey did not operate in March-May in 2020 due to COVID.

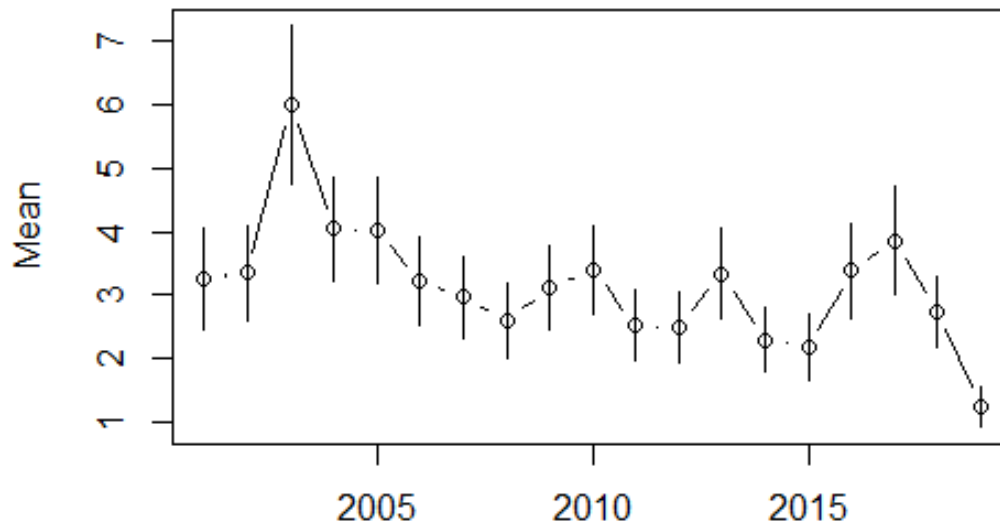


Figure A4. Standardized index of relative yellow eel abundance developed from the South Carolina Department of Natural Resources Electrofishing Survey, 2001-2019.

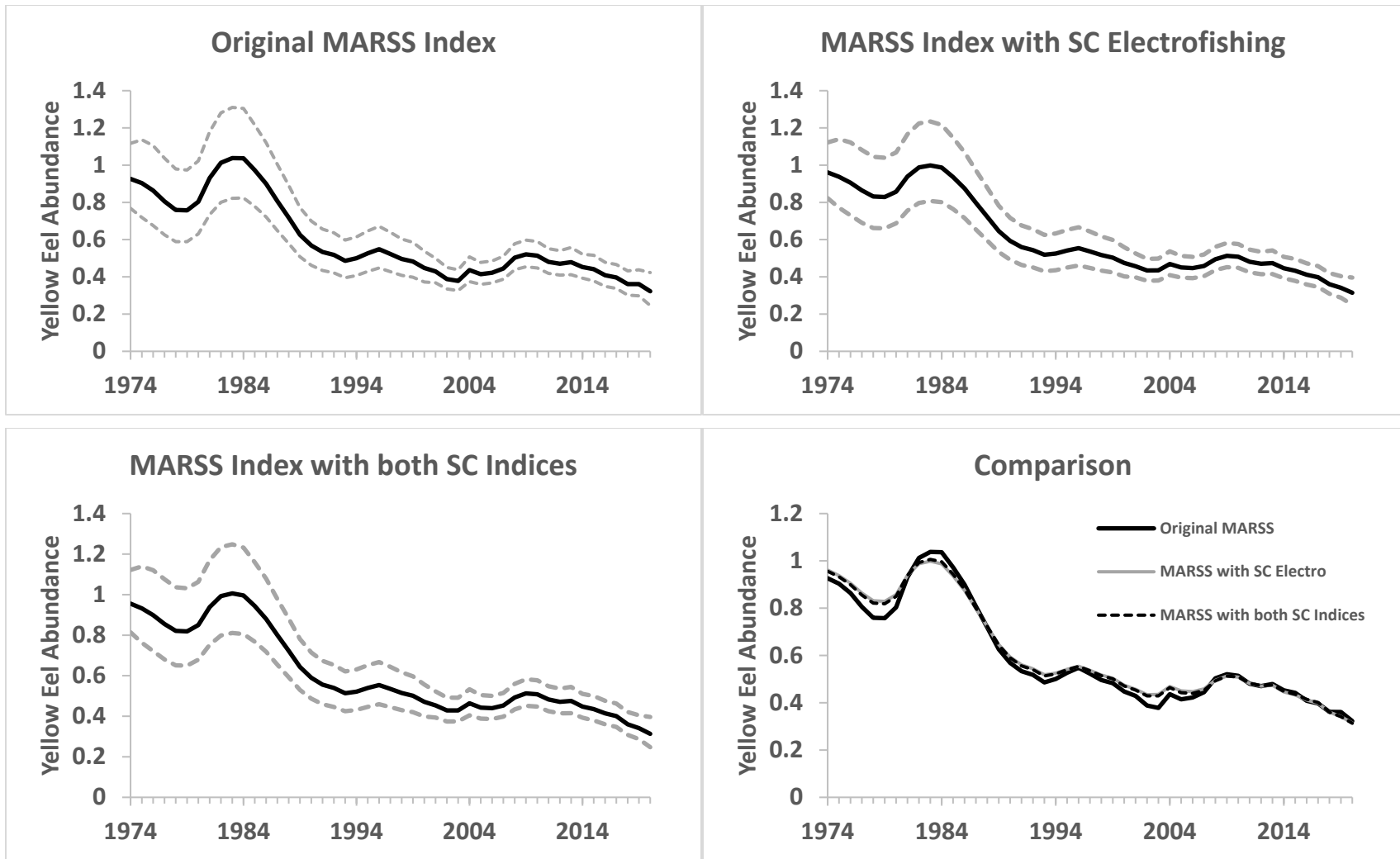


Figure A5. Comparison between the original MARSS index and the recalculated MARSS indices where SC DNR Electrofishing was substituted for SC Rediversion or where both SC indices were included.

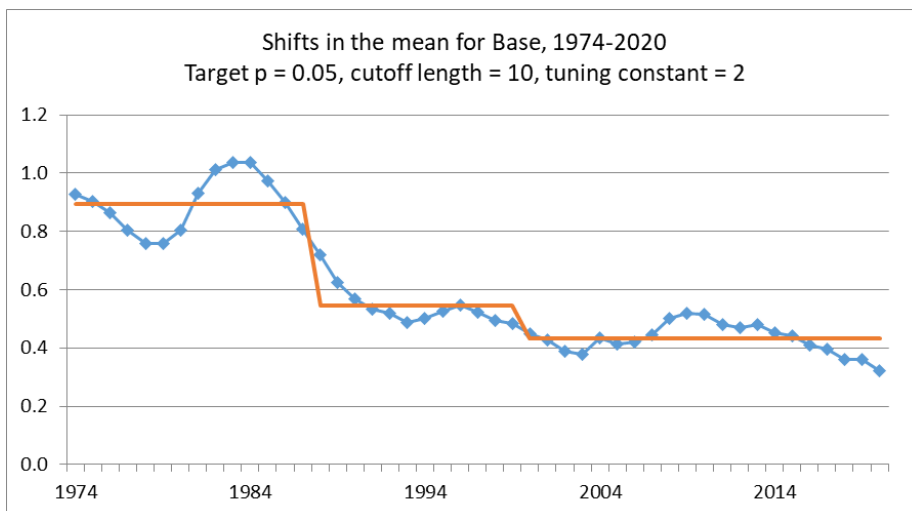
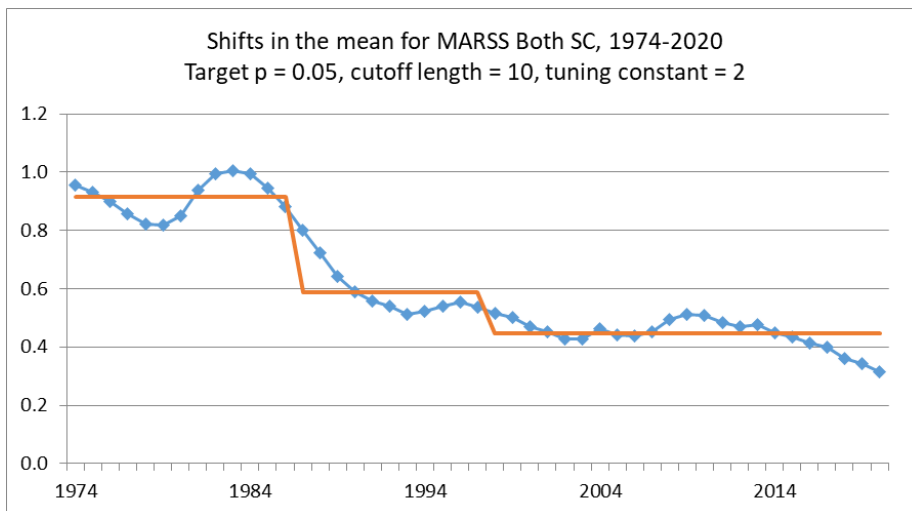
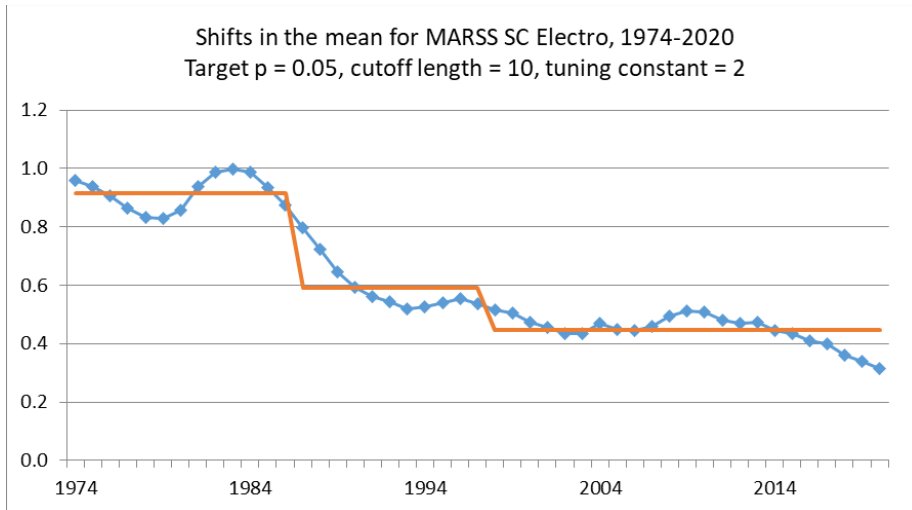


Figure A6. Comparison between the regimes for the recalculated (top, middle) and original MARSS indices (bottom).

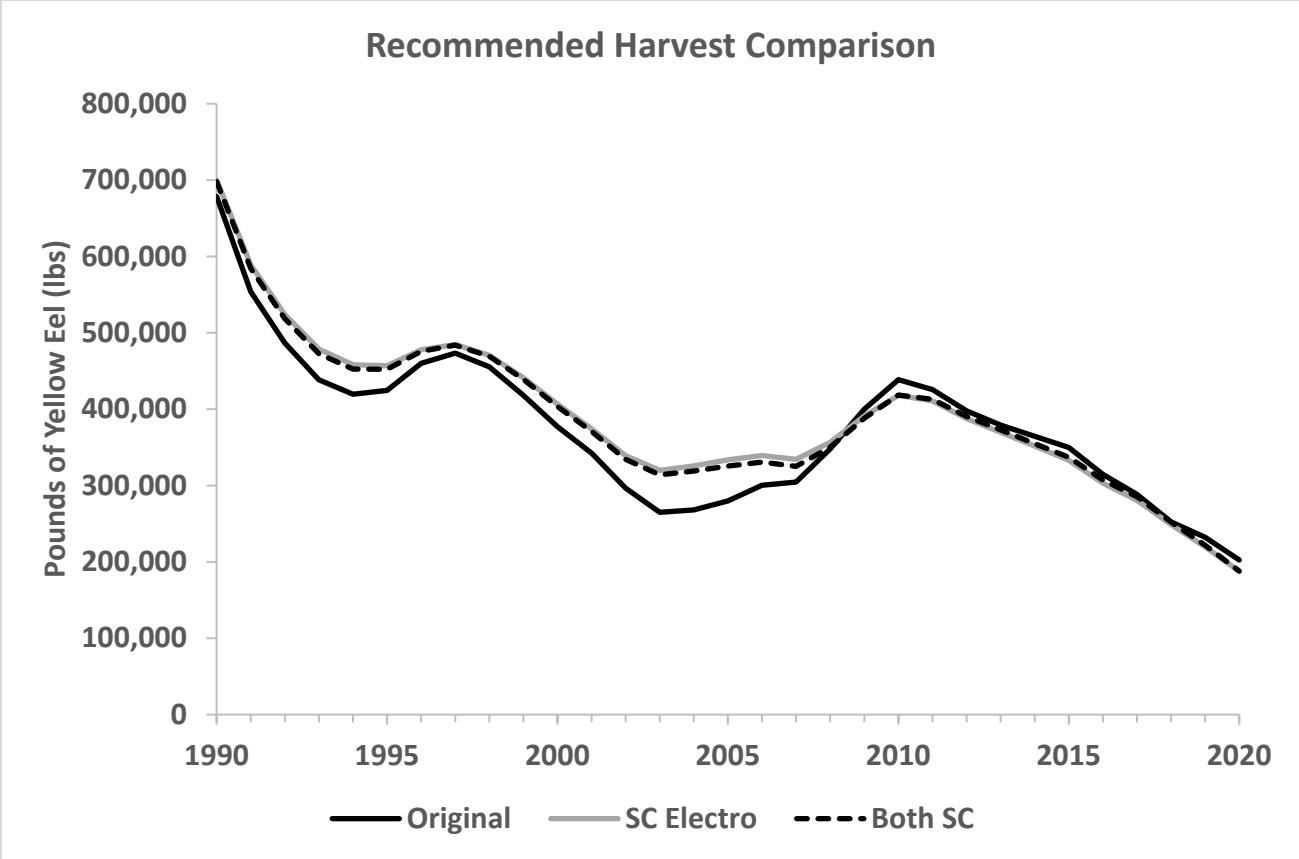


Figure A7. Comparison between the original and revised recommended catch from the I_{TARGET} method.



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American Eel Technical Committee & Stock Assessment Subcommittee Meeting Summary

Webinar
June 27, 2023

Technical Committee Members: Danielle Carty (TC Chair, SC), Casey Clark (ME), Chris Adriance (DC), Chris Wright (NOAA), Ingrid Braun (PRFC), Jen Pyle (NJ), Jim Page (GA), Jordy Zimmerman (DE), Keith Whiteford (MD), Kim Bonvechio (FL), Pat McGee (RI), Robert Atwood (NH), Tim Wildman (CT), Todd Mathes (NC), Troy Tuckey (VA), Zach Schuller (NY), Wendy Morrison (NOAA)

Stock Assessment Subcommittee Members: Sheila Eyler (SAS Chair, FWS), Matt Cieri (ME), Jason Boucher (NOAA), John Sweka (FWS), John Young (USGS), Troy Tuckey (VA), Keith Whiteford (MD), Margaret Conroy (DE), Laura Lee (NC)

ASMFC Staff: Kristen Anstead, Caitlin Starks

Additional Attendees/Public: Alan Bianchi, Emily Tekelenburg, Martin Gary, Raymond Kane, Philip Gwinnell, Jason Bartlett, Trey Mace

The American Eel Technical Committee (TC) and Stock Assessment Subcommittee (SAS) met via webinar to consider several items: (1) the Supplemental Report to the American Eel Benchmark Stock Assessment; (2) inclusion of an omitted survey index from South Carolina (SC) in the assessment; (3) updates on Maine's life cycle survey; and (4) Maine's aquaculture proposal for 2024.

1. American Eel Supplemental Report

The SAS was tasked with additional work following the peer review and Board review of the 2023 benchmark stock assessment. The tasks from the Board included providing justification for deviating from the peer review advice, providing additional analyses to show the influence of individual surveys on the resulting coastwide yellow eel index, considering other reference periods and configurations for I_{TARGET} , and discussing how the habitat model may help assess eel in the future.

The SAS Chair presented the report and its conclusions to the TC. The TC discussed the report and requested some minor edits. First, the TC requested the report clarify that the continued decline in the abundance trend in each assessment is specific to yellow eel, rather than all life stages. It also requested the addition of language acknowledging the lack of eel population data outside of the US Atlantic states range. Lastly the TC asked for the report to add more description of sensitivity run that included only the longest survey in each region.

With these changes, the TC approved the report for Board consideration at the August meeting.

2. South Carolina Electrofishing Survey Index

After reviewing a draft of the 2022 American Eel Benchmark Stock Assessment and Peer Review Report in the February 2023 meeting materials, South Carolina Department of Natural Resources (SC DNR) contacted ASMFC staff in April to inquire about the omission of the SC DNR Electrofishing Survey as an

index of relative yellow eel abundance. After investigating this issue, it appears that the survey data were provided for consideration to the SAS and meet the criteria developed for fishery-independent indices. However, the dataset was accidentally deleted from the data sharing site, and thus was not considered by the index group during the assessment.

To correct this error, the SAS evaluated the SC DNR Electrofishing Survey data, calculated a standardized index from the survey, and then re-ran the MARSS index, regime shift analysis, and I_{TARGET} base run to include SC DNR Electrofishing Survey in addition to the 14 yellow eel surveys already used. The recommended harvest when SC DNR Electrofishing Survey was included was similar throughout the time series to the original base run. The TC and SAS agree that if the assessment is accepted for management use and options for I_{TARGET} are developed by a Plan Development Team, the SC DNR Electrofishing Survey should be included as an index of relative abundance since its omission was an error. A section will be added to the supplemental report to address this issue.

3. Maine Life Cycle Survey

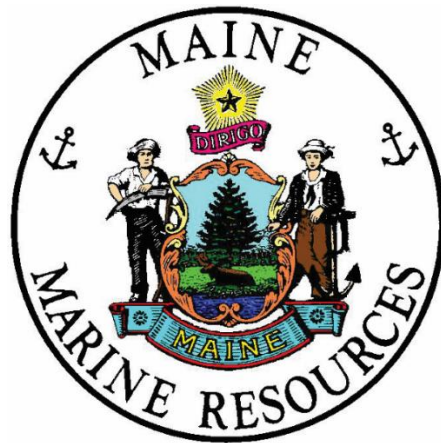
Maine Department of Marine Resources (ME DMR) staff presented recent data from the state's life cycle survey for American eel. The survey monitors each life stage (glass, yellow, and silver) using various methods in West Harbor Pond. The glass eel survey began in 2001, while the surveys for the yellow and silver eel stages began in 2018. The number of glass eel caught per year has varied, with 2022 resulting in the largest catch since the study began. All yellow eels are measured for length and weight and tagged with PIT tags. Silver eels are measured and weighed individually unless catches are large (typically > 50 individual eels), in which case a subsample is taken and the remaining eels are counted and weighed collectively. The number of silver eel captured peaked in 2021 and declined again in 2022. Maine also collects samples for otolith aging, sex determination, and presence of the swim bladder parasites from both yellow and silver eels.

4. Maine Aquaculture Plan for 2024

ME DMR staff presented Maine's proposal for aquaculture harvest in 2024, pursuant to Addendum IV to the American eel FMP. As in the previous three years, Maine's plan includes the harvest of 200 pounds of glass eel for use in domestic aquaculture facilities. Maine has again selected to work with American Unagi, which uses recirculating aquaculture system (RAS) technology. As in previous years, American Unagi is planning to source the glass eels from several regions in Maine's watersheds to limit the impacts to individual river systems and be consistent with the statewide approach of the existing fishery. The fishermen, volume, and harvest location will be identified for all eels entering the facility.

The Maine aquaculture plan is consistent with the requirements of Addendum IV. The TC has no concerns with the proposal and supports its approval.

**State of Maine Aquaculture Plan for American Eel Pursuant to
Addendum IV to the ASMFC Interstate Fishery Management Plan**



Maine Department of Marine Resources
32 Blossom Lane
Augusta, ME 04330

May 31, 2023



Photo By American Unagi, LLC

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Background

The Maine Department of Marine Resources (MDMR) supports the development of domestic aquaculture in Maine. With Maine’s existing fishery management measures and eel management infrastructure the State is in a good place to implement a domestic aquaculture quota into its current management plan. Connecting Maine’s fishery to domestic aquaculture provides year-round jobs directly in eel grow-out, supports indirect jobs throughout the local seafood and marine-related industries, and produces an eel product grown under the high standards of US aquaculture production.

ME DMR solicited interested parties to participate in this quota request and has selected to work with American Unagi for FY2024. Over the course of the last nine years, American Unagi has utilized recirculating aquaculture system (RAS) technology, specifically using designs developed and successfully utilized for eels in Europe. This has allowed the company to grow high-value American eels in a controlled environment, certify sustainability and source, and provide a level of product supply to growing customer segments that prefer locally grown/sourced and fully traceable seafood products. Given the success of seven years of pilot production, American Unagi scaled production to 240 MT with the construction of a site in Mid-Coast Maine; the company started operating out of this facility in 2022.

In October 2014, the ASMFC adopted Addendum IV to the Interstate Fishery Management Plan for American Eel. Addendum IV implemented a provision allowing states and jurisdictions to submit an Aquaculture Plan to allow for the limited harvest of American eel glass eels (hereinafter “glass eels”) for use in domestic aquaculture facilities. Specifically, Addendum IV states: *“Under an approved Aquaculture Plan, states and jurisdictions may harvest a maximum of 200 pounds of glass eel annually from within their waters for use in domestic aquaculture facilities provided the state can objectively show the harvest will occur from a watershed that minimally contributes to the spawning stock of American eel. The request shall include: pounds requested; location, method, and dates of harvest; duration of requested harvest; prior approval of any applicable permits; description of the facility, including the capacity of the facility the glass eels will be held, and husbandry methods; description of the markets the eels will be distributed to; monitoring program to ensure harvest is not exceeded; and adequate enforcement capabilities and penalties for violations.”* Pursuant to Addendum IV to the Interstate Fishery Management Plan for American Eel, ME DMR is submitting the following Aquaculture Plan for approval. ME DMR received one application for FY2024 and has elected to work with American Unagi. American Unagi is requesting a domestic aquaculture quota for its commercial facility.

Previous Years Harvests

In 2019, the first year of fishing the Maine aquaculture quota, American Unagi obtained glass eels from the Medomak River, Pemaquid River, Megunticook Stream, and Somes Pond outlet. The four sites listed are commonly fished for glass eels and are routinely monitored by Marine Patrol Officers. These sites also have obstacles for passage, including several impassible dams for eels. In particular, Megunticook Stream has a steep gradient and multiple dams without upstream or downstream passage and Somes Pond is small. As a result, these locations would likely not produce a large number of adult eels. The company chose to only harvest 130.5 lbs for 2019.

In 2020, due to issues around COVID-19 American Unagi did not fish its aquaculture quota.

In 2021, American Unagi harvested 138.91 lbs under the aquaculture quota. Locations of harvest in 2021 include the same sites as in 2019 (see Table 1). In addition, American Unagi obtained glass eels from the Orland River in 2021. The Orland River has several impassible dams, including the Orland Dam at the head-of-tide. Given the dam's placement, upstream passage is only effective during part of the tidal cycle and there is no dedicated downstream passage. Therefore, it is unlikely that this river contributes significantly to the adult population of eels. Glass eel harvest in the Orland River is also routinely monitored by Marine Patrol Officers.

In 2022, American Unagi harvested 200 lbs under the aquaculture quota. This is the maximum amount of quota allowed under an ASMFC approved Aquaculture Plan and the first time American Unagi harvested the full amount. As in 2019 and 2021, harvesters in 2022 obtained glass eels from Medomak River, Pemaquid River, Mequenticook Stream, Orland River, and Somes Pond outlet. In addition, American Unagi worked with several new harvesters fishing in the Mousam River, Presumpscot River, Ames Pond Outlet, and Flanders Stream. The Mousam River is a heavily dammed river in Maine, with 13 dams between Kennebunk and Mousam Lake, all which lack fish passage. The Presumpscot River includes 7 dams between Sebago Lake and the ocean; the first of these dams is the Cumberland Mills Dam which includes a denil fishway which is not appropriate for eels. Both Flanders Stream and Ames Pond are small waterways which are not expected to significantly contribute to the adult population of eels. Ames Pond is the smallest waterway harvested from in 2022 as it is only 6 acres in size and Flanders Stream has a watershed of 11.5 square miles. There is no upstream habitat from Ames Pond and there is a culvert barrier at its outlet to the ocean. These additional four harvest locations in 2022 are routinely monitored by Maine Marine Patrol.

In 2023, American Unagi again harvested 200 lbs under the aquaculture quota. As in previous years, harvesters obtained glass eels from Medomak River, Pemaquid River, Mequenticook Stream, Orland River, and Somes Pond outlet. Three new waterways were used for harvest in 2023 (Union River, Passagassawakeag River, St. Croix River), all of which contain multiple dams that significantly limit, or prevent, passage. The Union River has two impassible dams between Union River Bay and Graham Lake, including the Ellsworth Dam which is an operational hydroelectric power facility in Maine. The Passagassawakeag River similarly has two impassible dams between the Passagassawakeag Lake and Belfast Bay, including Holmes Mill Dam in Belfast, Maine. The St. Croix River forms the border between eastern Maine and Canada and has a history of being heavily dammed for hydropower. There are four main dams on the St. Croix River including the Milltown Power Station Dam which sits half a mile upstream of head of tide. The four dams have varying degrees of fish passage infrastructure, including no fishway, a vertical slot fishway, a pool-weir fishway, and a denil dam in very poor condition which significantly limits passage. There have been ongoing efforts to decommission the Milltown Power Station Dam; however, the dam was still in place during the 2023 elver season. The additional three harvest sites in 2023 are all used during Maine's elver season and are therefore routinely monitored by Marine Patrol. Harvest in 2023 under the elver aquaculture quota did not occur in the Mousam River, Presumpscot River, Ames Pond Outlet, or Flanders Stream.

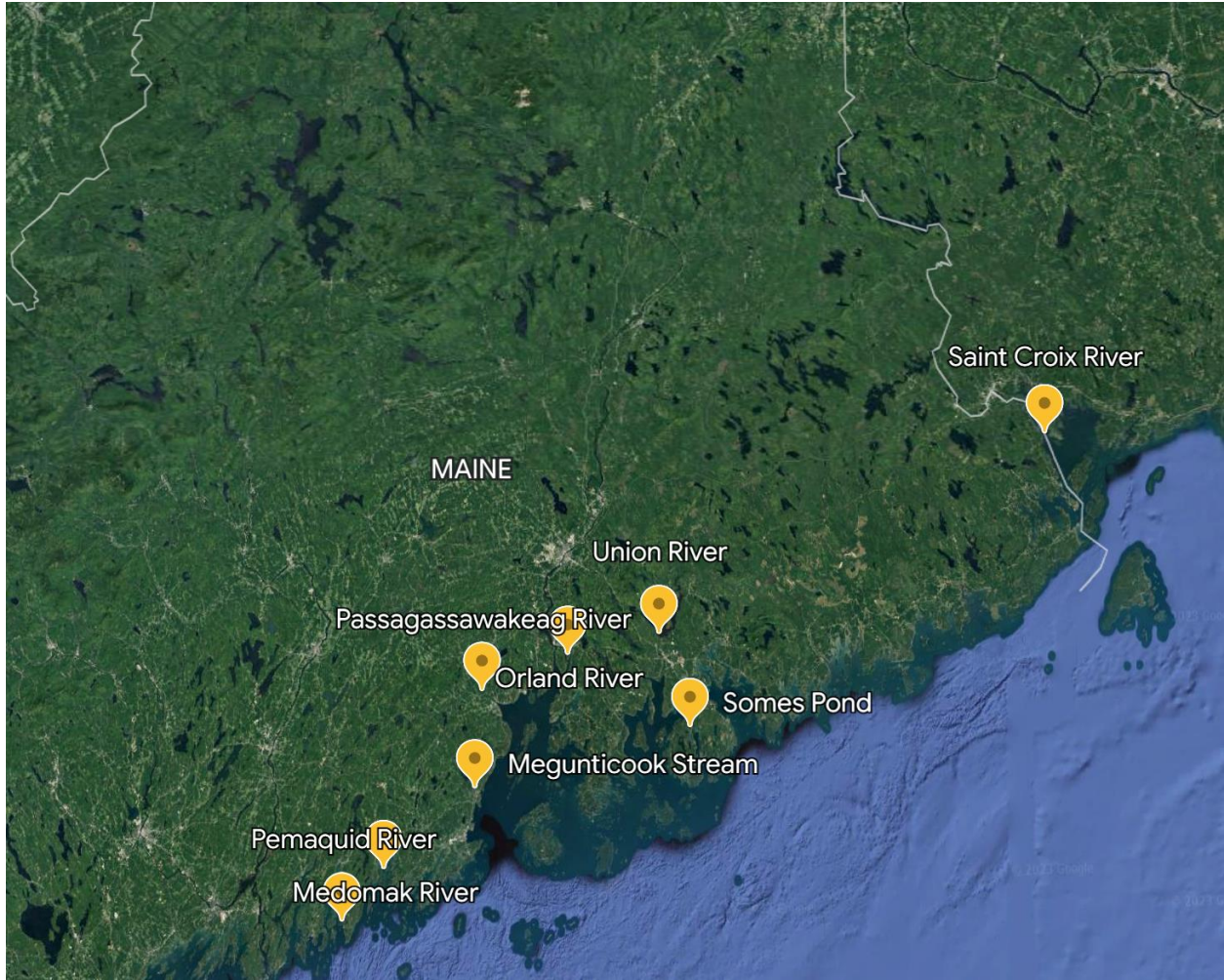


Figure 1: Locations of glass eel harvest under the aquaculture quota in FY2023. Source: Google Earth.

Table 1: Characteristics of the rivers/watersheds of glass eel harvest under the aquaculture quota.

River/watershed	Tributary Name ¹	Drainage Area	River Mile ¹	Years Harvested	Presence of Hydro	Number of Impassible dams ⁴	Number of Passible Dams
Pemaquid River	n/a	46.9 sq mi	n/a	2019/2021/2022/2023	no	2	0
Medomak River	n/a	74 sq mi	n/a	2019/2021/2022/2023	no	3	0
Megunticook River	n/a	30.82 sq mi	n/a	2019/2021/2022/2023	yes	7	0
Somes Pond Outlet ⁵	n/a	pond is 104 acres	n/a	2019/2021/2022/2023	no	3	2
Orland River	n/a	112.7sq mi	n/a	2021/2022/2023	no	4	0
Union River	n/a	545.48 sq. mi	n/a	2023	yes	2	0
Passagassawakeag River	n/a	90.49 sq mi	n/a	2023	no	2	0
St. Croix River	n/a	1500 sq mi	n/a	2023	yes	2	2
Mousam River	n/a	117 sq mi	n/a	2022	yes	13	0
Presumpscot River	n/a	648 sq mi	n/a	2022	yes	3	4
Flanders Stream	n/a	11.5 sq mi	n/a	2022	no	0	0
Ames Pond outlet	n/a	pond is 6 acres	n/a	2022	no	0	0

*

Notes

- 1 -Tributary name and river mile- do not pertain as elvers as are harvested at the head of tide of the river system noted.
- 2 - The only river system with a USGS gauge station is Mousam River [station number 10169500; West Kennebunk, Maine]
- 3 -Tidal amplitude for all sites is 10-12 feet.
- 4 -Number of dams from Maine Stream Habitat Viewer, dams either have no fish passage or passage for alewife (Alaskan steeppass or Denil) that is not appropriate for eels.
- 5 - First fishway on Somes Pond outlet is a Denil.

Table 2 presents CPUE for glass eel harvest in 2019, 2021, 2022, and 2023. There is no CPUE available for the 2020 season because no glass eels were harvested under the aquaculture quota that year. CPUE is calculated by assessing the number of pounds harvested from each waterway, the number of fishermen who harvested aquaculture quota at each waterway, and the estimated hours of tides they fished. The higher

CPUEs in 2022 and 2023 follow trends in the broader Maine elver fishery where quotas were quickly caught by early May, roughly a month ahead of the end of the elver season on June 7¹.

Table 2: CPUE (average pounds per hour) under the Maine aquaculture quota.

River	2019 Average lbs per hour	2021 Average lbs per hour	2022 Average lbs per hour	2023 Average lbs per hour
Pemaquid River	0.54	0.07	0.87	0.76
Medomak River	0.56	0.03	0.52	0.83
Megunticook River	0.41	0.09	1.67	0.50
Somes Pond Outlet	1.12	0	1.67	1.67
Orland	n/a	0.15	0.83	0.83
Presumpscot	n/a	n/a	0.83	n/a
Mousam	n/a	n/a	0.83	n/a
Ames Outlet	n/a	n/a	0.83	n/a
Flanders Stream	n/a	n/a	0.83	n/a
Union River	n/a	n/a	n/a	0.95
Passagassawakeag	n/a	n/a	n/a	0.56
St. Croix	n/a	n/a	n/a	0.67

Pound Requested

American Unagi is requesting 200 pounds for the 2024 fishing year.

Location of Harvest

The Aquaculture Plan proposal requirements were modified based on the following criteria (as recommended by the Technical Committee):

States and jurisdictions may develop a Plan for aquaculture purposes. Under an approved Aquaculture Plan, states and jurisdictions may harvest a maximum of 200 pounds of glass eels annually from within their waters for use in domestic aquaculture facilities. Site selection for harvest

¹ Maine's elver season runs from noon on March 22 to noon on June 7 (12 M.R.S. §6575)

will be an important consideration for applicants and reviewers. Suitable harvest locations will be evaluated with a preference to locations that have:

- (1) established or proposed glass eel monitoring,*
- (2) are favorable to law enforcement and*
- (3) watershed characteristics that are prone to relatively high mortality rates.*

Watersheds known to have features (ex. impassible dams, limited area of upstream habitat, limited water quality of upstream habitat, and hydropower mortality) that would be expected to cause lower eel productivity and/or higher glass eel mortality will be preferred targets for glass eel harvest. This is not an exclusive requirement, because there will be coastal regions with interest in eel aquaculture where preferred watershed features do not occur or are not easily demonstrated. In all cases, the applicant should demonstrate the above three interests were prioritized and considered.

In Maine glass eel monitoring currently occurs at West Harbor Pond, where the eel life cycle study is occurring. Removing glass eels from that site would compromise Maine's required study.

As in previous years, Unagi is planning to source the glass eels from several regions in Maine's watersheds to limit the impacts to individual river systems and be consistent with the statewide approach of the existing fishery. In addition to data for regulatory measures, having full traceability and accountability of the facility's eels is important to the company's end market so the fishermen, volume, and harvest location will be identified for all eels entering the facility.

As previously mentioned, the sites of harvest used in previous years are commonly fished for glass eels and are all routinely monitored by Marine Patrol Officers. Many of these waterways also have features which make them unlikely to produce a large number of adult eels. Megunticook Stream has a steep gradient and multiple dams without upstream or downstream passage; Sones Pond is small; Orland River has the Orland Dam at head-of-tide which significantly limits upstream passage to parts of the tidal cycle; and the Union River has a hydroelectric dam in Ellsworth, Maine.

Dates of Harvest

Aquaculture harvest will be limited to the current glass eel fishing season per State of Maine. By law, the elver season occurs between March 22 and June 7 (Appendix A; 12 M.R.S.A. §6575).

Methods of Harvest

A licensed harvester will be required to fish for all eels used for domestic aquaculture. Licenses are issued by the Department of Marine Resources (Appendix A; 12 M.R.S.A. §6505-A, and §6302-A). For the aquaculture quota, one or more individuals will be issued a specialty aquaculture fishing allowance by the ME DMR Commissioner which permits the harvester to harvest glass eels for aquaculture purposes beyond the limits of their personal harvest quotas.

Glass eels shall be harvested only by dip net or elver fyke net, with the size and construction in compliance with current Maine law (Appendix A; 12 M.R.S.A. §6001). A license issued under this section must identify the number and types of nets that the license holder may use (Appendix A; 12 M.R.S.A. §6505-A). Elver

fyke nets must display a tag issued by the Department when they are submerged (Appendix A; 12 M.R.S.A. §6505-B).

Additional harvest measures include a prohibition on fishing in the middle third of any waterway, within 150 feet of a fishway or a dam with a fishway, and specific area closures where fishing for elvers is prohibited (12 M.R.S.A. §6575-B; §6575-C; §6575-F; §6575-G). As adopted via rulemaking in 2021, there is now a tending requirement so that the contents of fyke nets and Sheldon box traps are removed at least once every 16 hours ([Chapter 32](#)). The tending requirement is intended to reduce by-catch and elver mortality by requiring harvesters to check nets and box traps on a regular basis.

Finally, no person may fish for, take, possess or transport pigmented eels. All catches shall be screened and graded immediately upon harvest, whereas all eels failing to pass through 1/8" bar mesh net, as well as all bycatch will be returned to the water.

Monitoring Program

The Maine glass eel fishery has been managed under a Total Allowable Catch (TAC) established by the Atlantic States Marine Fisheries Commission (ASMFC) since 2014. In 2014, the TAC was 11,749 lbs, which was determined by calculating a 35% reduction from the 2013 Maine landings of elvers. The TAC was subsequently dropped to 9,688 lbs in Addendum IV and maintained at this level in Addendum V. This TAC was based on the Maine landings achieved during the 2014 season. In October 2021, the American Eel Management Board voted to extend Maine's glass eel quota at its current level of 9,688 lbs for an additional three years (2022-2024). Landings have typically approached the TAC, except for the 2015 season, when poor weather prevented fishermen from filling their quotas. By law, 21.9% of the annual TAC is allocated to the four federally recognized Indian Tribes in the state.

Concurrent with the implementation of the TAC, Maine implemented an individual quota system for state license holders, calculated based on harvester reported landings during the 2011, 2012, and 2013 seasons. The individual quota system is monitored using a "swipe" card.

The swipe card system was created in 2013 to enable Maine to monitor the elver quota. The system was designed to allow dealers to enter data daily and allow ME DMR staff to quickly analyze that data within 24 hours of receipt. Additionally, the swipe card system was developed as the mechanism to monitor the individual fishing quota of harvesters.

Swipe cards are issued annually to each elver license by a Marine Patrol Officer. At that time, the license holder signs an acknowledgement form that indicates their understanding of their individual quota and the penalties associated with exceeding their quota. Harvester sales are checked daily against their quota, and when the harvester's quota is reached or exceeded, the swipe card is deactivated by ME DMR Landings Program staff.

Each elver dealer has a swipe card reader for the permanent facility, as well as all vehicles used to transport elvers. Dealers are required to submit swipe card transaction reports (including negative reports) by 2 p.m. for each day of the elver season (March 22nd to June 7th). If dealers are delinquent with two days' worth of reports the swipe card system will not allow dealers to purchase elvers from harvesters until they submit all

outstanding reports or create a negative report for the missing days. A dealer-to-dealer program was added in 2015. The dealer-to-dealer program requires a card swipe each time dealers moved elvers to another location or dealer. The dealer-to-dealer program uses the same hardware and software as the harvester to dealer system and is also subject to daily reporting including negative reports.

For the aquaculture quota, ME DMR will issue separate aquaculture amounts to the assigned harvesters for a total allocation of 200 pounds. When the facility is assigned its quota, it will designate the licensed harvesters that will be collecting the 200lbs. The aquaculture facility will be required to hold an elver dealer permit and license its buying station, transport vehicles, and facility. The permitted aquaculture facility will be the only dealer allowed to swipe aquaculture quota cards in addition to regular individual harvester cards. The data collection on these transactions from harvester to facility will include the harvester's name, harvest site, harvest method, date, and pounds. When the 200-pound quota is achieved, cards will be deactivated.

Due to the nature of the production, the facility will also be able to provide a status report to ME DMR on glass eel survival when eels are moved from glass eel intake system into production facility at approximately four months from arrival (see facility description for more details).

Penalties for Violation

Since 2012, Maine has made numerous law changes to close any remaining loopholes and create the proper penalties for elver violations. The majority of elver violations were criminalized in 2014, changing from a civil violation, to a Class D crime with a \$2000 fine. At the same time, mandatory license revocations were imposed for the second violation of several elver offenses, including untagged gear, fishing out of season, or exceeding the individual fishing quota. In addition to the \$2000 fine, individuals who exceed their quota are subject to a "pecuniary gain" fine, where they must pay back to the State the value of any elvers that were taken in excess of their quota. The Department is authorized to deny the renewal of the license of an individual who has failed to pay their pecuniary gain fine in its entirety prior to the following elver season. Prior to the 2020 season, ME DMR submitted a bill that was passed into legislation that made the penalty for buying or selling elvers without using the swipe card system permanent revocation of the license for the first offense.

Harvester, dealers, and aquaculture facilities may have random inspection of the facility and places of harvest conducted to ensure all rules and regulations under conditions of permit(s) are being adhered to. An aquaculture facility permit would hold to these same penalties and loss of license for violations.

Regardless of specific penalties that may be provided in law, the Commissioner also has the authority to suspend any licenses or certificates issued by the Department if a person is convicted or adjudicated in court of violating any marine resources law or regulation. In addition, the Commissioner may pursue license suspension without criminal conviction or civil adjudication through an administrative process.

Prior Approval of Permits

American Unagi was first approved to hold and grow eels by ME DMR in 2014. During the course of operating the pilot facility, American Unagi worked closely with the State regulators on permitting for its operations. The company holds the necessary permits to buy, culture, and sell American eels.

For purchasing elvers from licensed Maine harvesters, American Unagi holds a ME DMR Elver dealer license that is renewed annually. Under this permit, the company has permitted a buying station, transport vehicle, and facility. For sale of grown product, the company holds a ME DMR Wholesale Dealer Permit that is renewed annually. Starting in 2021, American Unagi was issued a Land-Based Aquaculture permit by ME DMR for its facility in Mid-Coast Maine. All permits have been renewed for 2023.

Description of Market (s)

American Unagi has already been supplying domestic outlets for the eel produced in its facility. The company successfully launched processed eel products in 2020, including butterflied and smoked eels, and is planning to expand its sale of live and further develop processed products for domestic consumption. For propriety reasons, specific details are not being provided.

Description of facilities (design, capabilities, and technical facts)

American Unagi operates at a 240MT commercial scale land-based recirculating aquaculture plant in Mid-Coast Maine which was completed ahead of the 2022 season. There were no changes to the facility between 2022 and 2023.

Following the formula for success of eels and RAS, American Unagi engaged a worldwide leader in RAS design in eels to assist in assessing the feasibility of its commercial plant, develop a schematic design, provide detailed operations and equipment costs to develop the plant. The farm consists of two separate systems: a glass eel system and a grow-out system. When glass eels are brought in, they will go into the glass eel system which also serves as quarantine area. This recirculated system includes 18 round tanks of 2.25 meter diameter and 100 cm deep. Every 12 minutes the water is filtered and then recycled. The outlet of the fish tank is equipped with a brushing machine, basically a cylindrical screen that is constantly brushed to prevent clogging. The brushing machine is fed with water from the bottom center of the tank, pulling up dead and dying fish and feces. Glass eels are held in this system for 1-4 months as they are acclimated to commercial aquaculture diet. Once the glass eels reach a weight of 3-5 grams, they are size graded and moved into the grow-out system. This system has two series of tanks split into “nursery” and “grow-out”. The first series of nursery tanks hold the eels from 3-5 grams until around 20 grams. The eels are then moved to the largest series of tanks within the same systems, where they are grown to market size.

Each system has its own filtration equipment. The wastewater leaving the tanks is first sieved with a drumfilter; a rotating sieve that is equipped with a sieve cloth with 36-40 micron openings. Once the screen gets clogged with solids it automatically starts a rinsing cycle, spraying the waste into a gutter that is collected and processed. From the drumfilter the water is pumped into a biofilter for the stripping of carbon dioxide and for conversion of ammonia (NH₃) into the relatively harmless nitrate (NO₃). The biofilter is a moving bed biological reactors (MBBR’s). These are energy efficient, compact, and are more efficient in

maintaining heat than other biofilters. From the biofilter the water flows by gravity through an MHO oxygen reactor to add pure oxygen and then by gravity back to the fish tanks.

A monitoring/control system is used for guarding pH, temperature, and oxygen. All fish tanks are equipped with water level sensors. Together with some pressure sensors these are connected to an alarm system that dials out to cell phones. Additionally, the facility is equipped with video surveillance for both security and monitoring purposes.

During the course of the aquaculture process there are some expected mortalities and the losses are anticipated in the production planning. In American Unagi's experience, the largest period of mortality occurs during weaning process after glass eels first arrive. While the company has seen as little as 1% loss, it anticipates as high as 10% loss into its production planning to accommodate for this expected mortality. Therefore, to produce 240 MT annually the company will stock up to 620 lbs of glass eels, with up to 200 lbs of this being secured under the domestic aquaculture permit and the remaining 420 lbs thru the standard quota system. Each year when the glass eels are stocked into the facility, the first one to four months they are kept separate from previous year classes. During this intake period the company tracks growth, survival, and numbers for the years glass eels that would be available to MDMR for review and tracking.

During the production process the eels are size graded every 6-8 weeks. Given eel is a non-domesticated species there is a very big variance between the performance of different individuals. A fast grower may reach market weight in just 6 months but other fish may still weigh a few grams after one year. As a result of the growth variation, the farm population in the grow-out tanks will comprise of 2-3 year classes of eel. As part of operating a successful aquaculture facility, meticulous records of growth, survival, and biomass are a necessary part of the business so during the course of the grow-out the farm maintains records of current eels onsite. In addition to supporting the successful operation of the business, these records are also used to support that best management practices are being followed.

References

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Oliveira, K. and J.D. McCleave. 2000. Variation in population and life history traits of the American eel, *Anguilla rostrata*, in four rivers in Maine. *Environmental Biology of Fishes* 59: 141-151.

Maine Revised Statutes Title 12: Conservation

§6001. DEFINITIONS

13-F. Elver. "Elver" means a member of the species *Anguilla rostrata* in that stage of its life cycle when it is less than 6 inches in length.

[1995, c. 536, Pt. A, §1 (NEW) .]

13-G. Elver fyke net. "Elver fyke net" means a fyke net that is 30 feet or less in length from cod end to either wing tip, is fitted with netting that measures 1/8-inch bar mesh or less, contains a 1/2-inch or less bar mesh excluder panel that covers the entrance of the net, and consists of not more than one funnel end, one cod end and 2 wings.

[1997, c. 575, §1 (AMD) .]

13-H. Elver dip net. "Elver dip net" means a dip net with a hoop of not more than 30 inches in diameter and fitted with netting that measures 1/8 inch bar mesh or less.

[1999, c. 7, §1 (AMD) .]

40-A. Sheldon eel trap. "Sheldon eel trap" means a box trap with a netted wing 10 feet or less in length used to intercept and direct elvers into the trap.

§6302-A. TAKING OF MARINE ORGANISMS BY FEDERALLY RECOGNIZED INDIAN TRIBES

1. Tribal exemption; commercial harvesting licenses. A member of the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians who is a resident of the State is not required to hold a state license or permit issued under section 6421, 6501, 6502-A, 6505-A, 6505-C, 6535, 6601, 6602, 6701, 6702, 6703, 6731, 6745, 6746, 6748, 6748-A, 6748-D, 6751, 6803, 6804 or 6808 to conduct activities authorized under the state license or permit if that member holds a valid license issued by the tribe, nation or band or the agent of the band to conduct the activities authorized under the state license or permit. A member of the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians issued a tribal license pursuant to this subsection to conduct activities is subject to all laws and rules applicable to a person who holds a state license or permit to conduct those activities and to all the provisions of chapter 625, except that the member of the tribe, nation or band:

A. May utilize lobster traps tagged with trap tags issued by the tribe, nation or band or the agent of the band in a manner consistent with trap tags issued pursuant to section 6431-B. A member of the tribe, nation or band is not required to pay trap tag fees under section 6431-B if the tribe, nation or band or the agent of the band issues that member trap tags; [2011, c. 598, §17 (AMD) .]

B. May utilize elver fishing gear tagged with elver gear tags issued by the tribe, nation or band or the agent of the band in a manner consistent with tags issued pursuant to section 6505-B. A member of the tribe, nation or band is not required to pay elver fishing gear fees under section 6505-B if the tribe, nation or band or the agent of the band issues that member elver fishing gear tags; and [2011, c. 598, §17 (AMD) .]

C. Is not required to hold a state shellfish license issued under section 6601 to obtain a municipal shellfish license pursuant to section 6671. [1997, c. 708, §1 (NEW); 1997, c. 708, §3 (AFF) .]

[2013, c. 254, §1 (AMD) .]

2. Tribal exemption; sustenance or ceremonial tribal use. Notwithstanding any other provision of law, a member of the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians who is a resident of the State may at any time take, possess, transport and distribute:

A. Any marine organism, except lobster, for sustenance use if the tribal member holds a valid sustenance fishing license issued by the tribe, nation or band or the agent of the band. A sustenance fishing license holder who fishes for sea urchins may not harvest sea urchins out of season; [2011, c. 598, §17 (AMD).]

B. Lobsters for sustenance use, if the tribal member holds a valid sustenance lobster license issued by the tribe, nation or band or the agent of the band. The sustenance lobster license holder's traps must be tagged with sustenance use trap tags issued by the tribe, nation or band or the agent of the band in a manner consistent with trap tags issued pursuant to section 6431-B; however, a sustenance lobster license holder may not harvest lobsters for sustenance use with more than 25 traps; and [2011, c. 598, §17 (AMD).]

C. Any marine organism for noncommercial use in a tribal ceremony within the State, if the member holds a valid ceremonial tribal permit issued to the tribal member by the Joint Tribal Council of the Passamaquoddy Tribe or the governor and council at either Passamaquoddy reservation, by the Penobscot Reservation Tribal Council, by the Aroostook Band of Micmacs Tribal Council or its agent or by the Houlton Band of Maliseet Indians Tribal Council or its agent. [2013, c. 254, §2 (AMD).]

For purposes of this subsection, "sustenance use" means all noncommercial consumption or noncommercial use by any person within Passamaquoddy Indian territory, as defined in Title 30, section 6205, subsection 1, Penobscot Indian territory, as defined in Title 30, section 6205, subsection 2, Aroostook Band Trust Land, as defined in Title 30, section 7202, subsection 2, or Houlton Band Trust Land, as defined in Title 30, section 6203, subsection 2-A, or at any location within the State by a tribal member, by a tribal member's immediate family or within a tribal member's household. The term "sustenance use" does not include the sale of marine organisms.

A member of the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians who takes a marine organism under a license or permit issued pursuant to this subsection must comply with all laws and rules applicable to a person who holds a state license or permit that authorizes the taking of that organism, except that a state law or rule that sets a season for the harvesting of a marine organism does not apply to a member of the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians who takes a marine organism for sustenance use or for noncommercial use in a tribal ceremony.

A member of the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians issued a license or permit under this subsection is exempt from paying elver gear fees under section 6505-B or trap tag fees under section 6431-B and is not required to hold a state shellfish license issued under section 6601 to obtain a municipal shellfish license pursuant to section 6671. A member of the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians who fishes for or takes lobster under a license or permit issued pursuant to this subsection must comply with the closed periods under section 6440.

[2013, c. 254, §2 (AMD) .]

3. Lobster, sea urchin, scallop and elver licenses; limitations. Pursuant to subsection 1:

A. The Passamaquoddy Tribe and Penobscot Nation may each issue to members of its tribe or nation, as the case may be, up to 24 commercial lobster and crab fishing licenses in any calendar year, including all licenses equivalent to Class I, Class II or Class III licenses and student licenses, but not including apprentice licenses. Licenses issued under this paragraph are subject to the eligibility requirements of section 6421, subsection 5; [2011, c. 598, §17 (AMD).]

A-1. The Aroostook Band of Micmacs or its agent may issue to members of the band up to 10 commercial lobster and crab fishing licenses in any calendar year, including all licenses equivalent to Class I, Class II or Class III licenses and student licenses, but not including apprentice licenses. Licenses issued under this paragraph are subject to the eligibility requirements of section 6421, subsection 5; [2011, c. 598, §17 (NEW) .]

A-2. The Houlton Band of Maliseet Indians or its agent may issue to members of the band up to 10 commercial lobster and crab fishing licenses in any calendar year, including all licenses equivalent to Class I, Class II or Class III licenses and student licenses, but not including apprentice licenses. Licenses issued under this

paragraph are subject to the eligibility requirements of section 6421, subsection 5; [2013, c. 254, §3 (NEW) .]

B. The Passamaquoddy Tribe may not issue to members of the tribe more than 24 commercial licenses for the taking of sea urchins in any calendar year. Sea urchin licenses must be issued by zone in accordance with section 6749-P; [2011, c. 598, §17 (AMD) .]

C. The commissioner shall adopt rules authorizing the Penobscot Nation to issue to members of the nation commercial sea urchin licenses if the commissioner determines that sea urchin resources are sufficient to permit the issuance of new licenses. The commissioner may not authorize the Penobscot Nation to issue more than 24 commercial sea urchin licenses to members of the nation in any calendar year; [2011, c. 598, §17 (AMD) .]

C-1. The commissioner shall adopt rules authorizing the Aroostook Band of Micmacs or its agent to issue to members of the band commercial sea urchin licenses if the commissioner determines that sea urchin resources are sufficient to permit the issuance of new licenses. The commissioner may not authorize the Aroostook Band of Micmacs or its agent to issue more than 24 commercial sea urchin licenses to members of the band in any calendar year; [2011, c. 598, §17 (NEW) .]

C-2. The commissioner shall adopt rules authorizing the Houlton Band of Maliseet Indians or its agent to issue to members of the band commercial sea urchin licenses if the commissioner determines that sea urchin resources are sufficient to permit the issuance of new licenses. The commissioner may not authorize the Houlton Band of Maliseet Indians or its agent to issue more than 24 commercial sea urchin licenses to members of the band in any calendar year; [2013, c. 254, §3 (NEW) .]

D. The Penobscot Nation may not issue to members of the nation more than 20 commercial licenses for the taking of scallops in any calendar year, except that the commissioner shall by rule allow the Penobscot Nation to issue additional commercial licenses to members of the nation for the taking of scallops if the commissioner determines that scallop resources are sufficient to permit the issuance of new licenses; [2011, c. 598, §17 (AMD) .]

D-1. The Aroostook Band of Micmacs or its agent may not issue to members of the band more than 10 commercial licenses for the taking of scallops in any calendar year, except that the commissioner shall by rule allow the Aroostook Band of Micmacs or its agent to issue additional commercial licenses to members of the band for the taking of scallops if the commissioner determines that scallop resources are sufficient to permit the issuance of new licenses; [2011, c. 598, §17 (NEW) .]

D-2. The Passamaquoddy Tribe may not issue to members of the tribe more than 20 commercial licenses for the taking of scallops in any calendar year, except that the commissioner shall by rule allow the Passamaquoddy Tribe to issue additional commercial licenses to members of the tribe for the taking of scallops if the commissioner determines that scallop resources are sufficient to permit the issuance of new licenses; [2013, c. 8, §1 (NEW) .]

D-3. The Houlton Band of Maliseet Indians or its agent may not issue to members of the band more than 10 commercial licenses for the taking of scallops in any calendar year, except that the commissioner shall by rule allow the Houlton Band of Maliseet Indians or its agent to issue additional commercial licenses to members of the band for the taking of scallops if the commissioner determines that scallop resources are sufficient to permit the issuance of new licenses; [2013, c. 254, §3 (NEW) .]

E. The Penobscot Nation may not issue to members of the nation commercial licenses for the taking of elvers in any calendar year that exceed the following limits:

- (1) Eight licenses that allow the taking of elvers with 2 pieces of gear; and
- (2) Forty licenses that allow the taking of elvers with one piece of gear.

The commissioner shall by rule allow the Penobscot Nation to issue additional commercial licenses to members of the nation for the taking of elvers if the commissioner and the Penobscot Nation determine that elver resources are sufficient to permit the issuance of new licenses; [2015, c. 391, §3 (AMD) .]

E-1. The Passamaquoddy Tribe may issue to members of the tribe commercial licenses for the taking of elvers with one piece of gear; [2015, c. 391, §4 (AMD) .]

F. The Aroostook Band of Micmacs or its agent may not issue to members of the band more than 8 commercial licenses for the taking of elvers in any calendar year, except that the commissioner shall by rule allow the Aroostook Band of Micmacs or its agent to issue additional commercial licenses for the taking of elvers to members of the band if the commissioner determines that elver resources are sufficient to permit the issuance of new licenses; and [2013, c. 8, §1 (AMD) .]

G. The Houlton Band of Maliseet Indians or its agent may not issue to members of the band more than 16 commercial licenses for the taking of elvers in any calendar year except that the commissioner shall by rule allow the Houlton Band of Maliseet Indians or its agent to issue additional commercial licenses for the taking of elvers to members of the band if the commissioner determines that elver resources are sufficient to permit the issuance of new licenses. [2015, c. 391, §5 (RPR) .]

The Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs, Houlton Band of Maliseet Indians and Department of Marine Resources shall report on the status of the sea urchin, scallop and elver fisheries to the joint standing committee of the Legislature having jurisdiction over marine resources matters by January 15th of each even-numbered year.

Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

§6302-B. ELVER QUOTA FOR FEDERALLY RECOGNIZED INDIAN TRIBES IN THE STATE

If the commissioner adopts an elver individual fishing quota system pursuant to section 6505-A, subsection 3-A, this section governs the allocation of the elver quota to federally recognized Indian tribes in the State. [2013, c. 485, §3 (NEW) .]

1. Annual allocation. In accordance with section 6505-A, the commissioner shall annually allocate 21.9% of the overall annual quota of elver fishery annual landings to the federally recognized Indian tribes in the State. If the Passamaquoddy Tribe, the Penobscot Nation, the Aroostook Band of Micmacs and the Houlton Band of Maliseet Indians reach an agreement regarding the division of this 21.9% portion of the overall annual quota among them and communicate in writing that agreement to the commissioner prior to March 1st of the year in which the quota is allocated, the commissioner shall allocate that portion of the quota in accordance with that agreement. If no agreement is reached, the commissioner shall allocate that portion of the quota in accordance with the following:

- A. To the Passamaquoddy Tribe, 14% of the overall annual quota; [2013, c. 485, §3 (NEW) .]
- B. To the Penobscot Nation, 6.4% of the overall annual quota; [2013, c. 485, §3 (NEW) .]
- C. To the Houlton Band of Maliseet Indians, 1.1% of the overall annual quota; and [2013, c. 485, §3 (NEW) .]
- D. To the Aroostook Band of Micmacs, 0.4% of the overall annual quota. [2013, c. 485, §3 (NEW) .]

In making any allocations under this subsection, the commissioner shall reserve a portion no greater than 10% of each allocation in order to ensure that the quota is not exceeded.

[2013, c. 485, §3 (NEW) .]

2. Individual allocations. The following provisions govern the allocation of the quotas established under subsection 1 to members of each of the federally recognized Indian tribes.

- A. The commissioner may enter into an agreement with a federally recognized Indian tribe in the State that does not provide for individual allocations of the quota established under subsection 1 to members of that tribe, nation or band. If the commissioner enters into an agreement pursuant to this paragraph, the following provisions apply.

- (1) An elver transaction card under section 6305 must be issued to each person to whom the tribe, nation or band issues a license under section 6302-A, subsection 3.
- (2) The holder of a license issued under section 6302-A, subsection 3 must meet the reporting requirements established by rule pursuant to section 6173.
- (3) The quota established under subsection 1 applies to all elvers taken under licenses issued by the tribe, nation or band under section 6302-A, subsection 3.
- (4) When the quota established under subsection 1 is reached, the department shall notify the tribe, nation or band. When the quota established under subsection 1 is reached, the holder of a license issued by the tribe, nation or band under section 6302-A, subsection 3 may not thereafter take, possess or sell elvers. Taking, possessing or selling elvers after the quota established under subsection 1 is reached is deemed a violation by the license holder of the prohibition on fishing in excess of the person's individual quota in section 6505-A, subsection 3-A. [2015, c. 391, §6 (NEW).]

B. This paragraph governs the allocation of the quotas established in subsection 1 to members of a federally recognized Indian tribe in the State when the commissioner has not entered into an agreement with members of the tribe, nation or band under paragraph A that applies to members of that tribe, nation or band.

- (1) If there is no agreement under paragraph A between the commissioner and the Passamaquoddy Tribe, the Passamaquoddy Tribe shall allocate to each person to whom it issues a license under section 6302-A, subsection 3, paragraph E-1 a specific amount of the quota allocated to the Passamaquoddy Tribe under subsection 1, paragraph A and shall provide documentation to the department of that allocation for each individual license holder. The Passamaquoddy Tribe shall allocate all of the quota that it has been allocated and may not alter any individual allocations once documentation has been provided to the department.
- (2) If there is no agreement under paragraph A between the commissioner and the Penobscot Nation, the Penobscot Nation shall allocate to each person to whom it issues a license under section 6302-A, subsection 3, paragraph E a specific amount of the quota allocated to the Penobscot Nation under subsection 1, paragraph B and shall provide documentation to the department of that allocation for each individual license holder. The Penobscot Nation shall allocate all of the quota that it has been allocated and may not alter any individual allocations once documentation has been provided to the department.
- (3) If there is no agreement under paragraph A between the commissioner and the Houlton Band of Maliseet Indians, the Houlton Band of Maliseet Indians shall allocate to each person to whom it issues a license under section 6302-A, subsection 3, paragraph G a specific amount of the quota allocated to the Houlton Band of Maliseet Indians under subsection 1, paragraph C and shall provide documentation to the department of that allocation for each individual license holder. The Houlton Band of Maliseet Indians shall allocate all of the quota that it has been allocated and may not alter any individual allocations once documentation has been provided to the department.
- (4) If there is no agreement under paragraph A between the commissioner and the Aroostook Band of Micmacs, the Aroostook Band of Micmacs shall allocate to each person to whom it issues a license under section 6302-A, subsection 3, paragraph F a specific amount of the quota allocated to the Aroostook Band of Micmacs under subsection 1, paragraph D and shall provide documentation to the department of that allocation for each individual license holder. The Aroostook Band of Micmacs shall allocate all of the quota that it has been allocated and may not alter any individual allocations once documentation has been provided to the department. [2015, c. 391, §6 (NEW).]

The department shall issue an elver transaction card under section 6305 to a person licensed by the Passamaquoddy Tribe under section 6302-A, subsection 3, paragraph E-1, the Penobscot Nation under section 6302-A, subsection 3, paragraph E, the Houlton Band of Maliseet Indians under section 6302-A, subsection 3, paragraph G or the Aroostook Band of Micmacs under section 6302-A, subsection 3, paragraph F only upon receipt of adequate documentation specifying the individual quota allocated to that person by the tribe, nation or band under this subsection.

[2015, c. 391, §6 (RPR) .]

3. Overage. If the total weight of elvers sold by persons licensed by the Passamaquoddy Tribe, Penobscot Nation, Aroostook Band of Micmacs or Houlton Band of Maliseet Indians exceeds the quota allocated under subsection 1 to that tribe, nation or band, the commissioner shall deduct the amount of the overage from any future allocation to that tribe, nation or band. If the overage exceeds the overall annual quota allocated to that tribe, nation or band for the following year, the overage must be deducted from the overall annual quota allocations to that tribe, nation or band in subsequent years until the entire overage has been accounted for.

[2013, c. 485, §3 (NEW) .]

4. Emergency prohibition. The commissioner may adopt emergency rules to prohibit the Passamaquoddy Tribe, the Penobscot Nation, the Aroostook Band of Micmacs or the Houlton Band of Maliseet Indians from fishing for elvers under a license issued under this Title if the commissioner finds that the tribe, nation or band has authorized fishing for elvers in a way that the commissioner determines will cause the tribe, nation or band to exceed the annual allocation set forth in subsection 1.

[2015, c. 391, §7 (NEW) .]

SECTION HISTORY

2013, c. 485, §3 (NEW). 2015, c. 391, §§6, 7 (AMD).

§6404-N. Revocation based on conviction of failing to record the sale of elvers with an elver transaction card

The commissioner shall permanently revoke the elver fishing license, elver dealer's license or elver exporter's license of any license holder convicted of violating section 6505-A, subsection 1-D. [PL 2019, c. 163, §4 (NEW) .]

§6505-A. ELVER FISHING LICENSE

(CONTAINS TEXT WITH VARYING EFFECTIVE DATES)

1. License required. Except as provided in section 6302-A and section 6302-B, a person may not engage in the activities authorized under subsection 1-A unless the person is issued one of the following elver fishing licenses under this section:

- A. A resident elver fishing license for one device; [2003, c. 452, Pt. F, §11 (NEW); 2003, c. 452, Pt. X, §2 (AFF) .]
- B. A resident elver fishing license for 2 devices; [2003, c. 452, Pt. F, §11 (NEW); 2003, c. 452, Pt. X, §2 (AFF) .]
- C. A nonresident elver fishing license for one device; [2013, c. 468, §23 (AMD) .]
- D. A nonresident elver fishing license for 2 devices; [2013, c. 468, §23 (AMD) .]
- E. A resident elver fishing license with crew for one device; [2013, c. 468, §23 (NEW) .]
- F. A resident elver fishing license with crew for 2 devices; [2013, c. 468, §23 (NEW) .]
- G. A nonresident elver fishing license with crew for one device; or [2013, c. 468, §23 (NEW) .]
- H. A nonresident elver fishing license with crew for 2 devices. [2013, c. 468, §23 (NEW) .]

The department may not issue a license under paragraph E, F, G or H until January 1, 2015.

[2013, c. 485, §5 (AMD) .]

1-A. Licensed activity. The holder of an elver fishing license or elver fishing license with crew may fish for, take or possess elvers. The holder of an elver fishing license or elver fishing license with crew may transport and sell within state limits elvers that the license holder has taken. The holder of an elver fishing license with crew is liable for the licensed activities under this subsection of an unlicensed crew member assisting that license holder pursuant to subsection 1-B. Only the license holder to whom a tag is issued may empty an elver fyke net.

[2013, c. 468, §24 (NEW) .]

1-B. License limitations. An elver fishing license with crew authorizes the license holder to engage in the licensed activities under subsection 1-A. The holder of an elver fishing license with crew may engage one unlicensed crew member to assist the license holder only in certain activities as authorized by rule, and the unlicensed crew member may assist only under the direct supervision of the license holder.

[2013, c. 468, §24 (NEW) .]

1-C. Elver transaction card issued. The department may issue an elver transaction card to each license holder under this section and to each license holder under section 6302-A, subsection 3, paragraphs E, E-1, F and G in accordance with section 6302-B. The department may charge each license holder an annual fee for the elver transaction card that may not exceed \$35. Fees collected under this subsection must be deposited in the Eel and Elver Management Fund under section 6505-D. The license holder shall use the elver transaction card to meet electronic reporting requirements established by rule pursuant to section 6173. The elver transaction card must include the license holder's name and license number.

[2017, c. 250, §2 (AMD) .]

1-D. Use of elver transaction card required. The holder of an elver fishing license issued under this section or section 6302-A, subsection 3, paragraph E, E-1, F or G may not sell or transfer elvers the license holder has taken to an elver dealer licensed under section 6864 unless the holder of the elver fishing license presents to the elver dealer the elver transaction card issued to that person under subsection 1-C and that card is used to record the transaction between the license holder and the dealer so that the amount of elvers transferred or sold is deducted from the license holder's quota.

[PL 2019, c. 163, §5 (AMD) .]

1-E. Elver transaction card limited. A person may not possess an elver transaction card unless that person holds a license issued under this section or section 6302-A, subsection 3, paragraph E, E-1, F or G and the elver transaction card was issued to that person pursuant to subsection 1-C.

[2013, c. 468, §24 (NEW) .]

1-F. Licenses issued. The commissioner may issue up to 425 elver fishing licenses each year under this section.

[2017, c. 250, §3 (NEW) .]

2. Eligibility. An elver fishing license may be issued only to an individual who:

A. [1999, c. 534, §1 (RP) .]

B. [1999, c. 534, §1 (RP) .]

C. Possessed an elver fishing license in the previous calendar year; [2011, c. 549, §3 (AMD) .]

D. [2005, c. 533, §1 (RP) .]

E. Did not possess an elver fishing license in the previous calendar year because the commissioner had suspended the person's license privileges for a length of time that included the previous calendar year; [2011, c. 549, §3 (AMD) .]

F. Becomes eligible to obtain an elver fishing license pursuant to the elver lottery under subsection 2-C. [2017, c. 250, §4 (AMD) .]

[2017, c. 250, §4 (AMD) .]

2-A. Elver license lottery.

[2005, c. 533, §2 (RP) .]

2-B. Elver lotteries.

[2017, c. 250, §5 (RP) .]

2-C. Elver license lottery. The commissioner shall establish an elver fishing license lottery under which a person may become eligible for that license under subsection 2, paragraph F. An applicant to the lottery must submit a lottery application together with a \$35 nonrefundable application fee no later than January 15th of the same calendar year as the lottery. An applicant may not submit more than 5 elver fishing license lottery applications per lottery year. In any year in which a lottery is held, the lottery must be held on or before February 15th.

The commissioner may adopt rules to implement the elver fishing license lottery, including provisions for the method and administration of the lottery. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

Twenty-five dollars of the application fee collected under this subsection must be deposited in the Eel and Elver Management Fund established in section 6505-D and used to fund a life-cycle study of the elver fishery. Ten dollars of the application fee may be used by the department to fund the costs of administering the elver fishing license lottery.

[2017, c. 250, §6 (NEW) .]

3. Limits on issuance.

[2013, c. 8, §3 (RP) .]

3-A. Elver fishing quotas. The commissioner may adopt rules to establish, implement and administer an elver individual fishing quota system in order to ensure that the elver fishery annual landings do not exceed the overall annual quota established by the Atlantic States Marine Fisheries Commission. Except as provided in section 6575-L, a person issued a license under this section or section 6302-A, subsection 3, paragraph E, E-1, F or G may not take, possess or sell elvers in excess of the weight quota allocated to that person under the quota system. The rules must:

A. Establish an overall annual quota for the State; [2013, c. 485, §7 (NEW) .]

B. Establish the amount of the overall annual quota under paragraph A that is allocated to persons licensed under this section and specify a formula to establish individual quotas for persons licensed under this section. The formula may take into account the amount of elvers a person licensed under this section lawfully harvested in previous seasons based on final harvesting reports. The rules must specify the date by which harvester reports are considered final for the purpose of determining individual quotas; and [2013, c. 485, §7 (NEW) .]

C. Provide, in accordance with section 6302-B, that 21.9% of the overall annual quota under paragraph A is allocated to the federally recognized Indian tribes in the State and establish the amount of that portion of the overall annual quota allocated to the Passamaquoddy Tribe, the Penobscot Nation, the Houlton Band of Maliseet Indians and the Aroostook Band of Micmacs. [2013, c. 485, §7 (NEW) .]

If persons issued licenses under this section collectively exceed the overall annual quota allocated to those persons pursuant to paragraph B, the number of pounds by which the license holders exceeded that overall annual quota must be deducted from the following year's overall annual quota allocated to persons licensed under this section. If the overage exceeds the overall annual quota allocated to persons licensed under this section for the following year, the overage must be deducted from the overall annual quota allocated to persons licensed under this section in subsequent years until the entire overage has been accounted for.

The commissioner may adopt or amend rules on an emergency basis if immediate action is necessary to establish and implement the elver individual fishing quota in advance of the beginning of the elver fishing season.

Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

[2015, c. 131, §1 (AMD) .]

4-A. License fee. Fees for elver fishing licenses are:

- A. For a resident elver fishing license for one device, \$55; [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- B. For a resident elver fishing license for 2 devices, \$63; [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- C. For a nonresident elver fishing license for one device, \$392; [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- D. For a nonresident elver fishing license for 2 devices, \$400; [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- E. For a resident elver fishing license with crew for one device, \$105; [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- F. For a resident elver fishing license with crew for 2 devices, \$113; [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- G. For a nonresident elver fishing license with crew for one device, \$1,126; and [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- H. For a nonresident elver fishing license with crew for 2 devices, \$1,134. [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]

[2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF) .]

4-B. License surcharge. In addition to the license fee established in subsection 4-A, the commissioner shall assess a surcharge on each license issued under this section as follows:

- A. For an elver fishing license issued under subsection 4-A, paragraphs A to D, \$150; and [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]
- B. For an elver fishing license issued under subsection 4-A, paragraphs E to H, \$300. [2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF).]

The surcharge fees collected under this subsection must be deposited in the Eel and Elver Management Fund established under section 6505-D.

[2017, c. 284, Pt. EEEEE, §8 (NEW); 2017, c. 284, Pt. EEEEE, §31 (AFF) .]

5. Gear. A person issued a license under this section may utilize one elver fyke net, one Sheldon eel trap or one dip net to fish for or take elvers without paying the fee required for a first net or trap pursuant to section 6505-B. A license issued under this section must identify the number and types of nets that the license holder may use pursuant to this section, section 6505-B and section 6575-B.

[2015, c. 391, §8 (AMD) .]

5-A. Possession of elvers. The holder of an elver fishing license may possess elvers only during the open season established in section 6575 and for up to 6 hours beyond the end of the open season.

[2013, c. 301, §10 (NEW) .]

6. Minimum age. A person who is under 15 years of age may not fish for or take elvers.

[2001, c. 421, Pt. B, §28 (AMD); 2001, c. 421, Pt. C, §1 (AFF) .]

7. Nonresident licenses; reciprocity with other states. A nonresident is eligible to purchase an elver fishing license only if the nonresident documents to the commissioner that the nonresident's state of residence allows Maine residents to purchase an elver license and fish for elvers in that state.

[1999, c. 7, §5 (NEW) .]

8. Violation.

[2013, c. 49, §8 (RP) .]

8-A. Violation. A person who violates this section commits a Class D crime for which a fine of \$2,000 must be imposed, none of which may be suspended. Violation of this section is a strict liability crime as defined in Title 17-A, section 34, subsection 4-A.

[2013, c. 49, §9 (NEW) .]

SECTION HISTORY

1995, c. 536, §A8 (NEW). 1997, c. 297, §§1,2 (AMD). 1999, c. 7, §§2-5 (AMD). 1999, c. 534, §§1-3 (AMD). 2001, c. 421, §§B27-29 (AMD). 2001, c. 421, §C1 (AFF). 2003, c. 20, §WW7 (AMD). 2003, c. 452, §F11 (AMD). 2003, c. 452, §X2 (AFF). 2005, c. 533, §§1,2 (AMD). 2007, c. 615, §15 (AMD). 2009, c. 213, Pt. G, §6 (AMD). 2011, c. 549, §§3-5 (AMD). 2013, c. 8, §§2, 3 (AMD). 2013, c. 49, §§8, 9 (AMD). 2013, c. 301, §§9, 10 (AMD). 2013, c. 468, §§23-25 (AMD). 2013, c. 485, §§5-7 (AMD). 2015, c. 131, §1 (AMD). 2015, c. 391, §8 (AMD). 2017, c. 250, §§2-7 (AMD). 2017, c. 284, Pt. EEEEE, §§7, 8 (AMD). 2017, c. 284, Pt. EEEEE, §31 (AFF).

§6505-B. ELVER GEAR FEES

1. Elver fyke net and Sheldon eel trap fee. A person may not submerge an elver fyke net or a Sheldon eel trap in the waters of the State to fish for or take elvers unless the net or trap owner pays annually the following fees:

A. Fifty dollars per net or trap for the use of an elver fyke net or Sheldon eel trap, except that the fee under this paragraph does not apply to an elver fyke net or Sheldon eel trap a person utilizes pursuant to section 6505-A, subsection 5. [2017, c. 284, Pt. EEEEE, §9 (AMD) .]

B. [1999, c. 7, §6 (RP) .]

C. [1999, c. 7, §6 (RP) .]

[2017, c. 284, Pt. EEEEE, §9 (AMD) .]

2. Tags for elver fyke net and Sheldon eel trap. A person may not submerge an elver fyke net or Sheldon eel trap in the coastal waters of the State to fish for or take elvers unless a tag issued by the department is affixed to the shoreside wing of the net or trap and is clearly visible. The department may issue a replacement tag when an owner issued a tag documents that a net or trap has been damaged or lost.

[2001, c. 421, Pt. B, §30 (AMD); 2001, c. 421, Pt. C, §1 (AFF) .]

3. Dip net fee. A person may not utilize a dip net to fish for or take elvers without paying a fee of \$50 per dip net annually.

This subsection does not apply to a dip net a person utilizes pursuant to section 6505-A, subsection 5.

[2017, c. 284, Pt. EEEEE, §10 (AMD) .]

4. Payment with license. The fees required under subsections 1 and 3 must be paid upon application for an elver fishing license under section 6505-A.

[1995, c. 536, Pt. A, §8 (NEW) .]

5. Disposition of fees. Fees collected under this section accrue to the Eel and Elver Management Fund established in section 6505-D.

A. [2017, c. 284, Pt. EEEEE, §11 (RP) .]

B. [2017, c. 284, Pt. EEEEE, §11 (RP) .]

[2017, c. 284, Pt. EEEEE, §11 (AMD) .]

6. Violation. A person who violates this section commits a Class D crime for which a fine of \$2,000 must be imposed, none of which may be suspended. Violation of this section is a strict liability crime as defined in Title 17-A, section 34, subsection 4-A.

[2013, c. 49, §10 (AMD) .]

SECTION HISTORY

1995, c. 536, §A8 (NEW). 1997, c. 297, §§3-5 (AMD). 1997, c. 575, §2 (AMD). 1999, c. 7, §6 (AMD). 2001, c. 421, §B30 (AMD). 2001, c. 421, §C1 (AFF). 2009, c. 213, Pt. G, §§7-9 (AMD). 2011, c. 549, §6 (AMD). 2013, c. 49, §10 (AMD). 2017, c. 284, Pt. EEEEE, §§9-11 (AMD).

§6505-D. EEL AND ELVER MANAGEMENT FUND

1. Fund established. The Eel and Elver Management Fund, referred to in this section as the "fund," is established as a dedicated, nonlapsing fund.

[1995, c. 536, Pt. A, §8 (NEW) .]

2. Permissible uses. The commissioner may use the fund to research and manage the State's eel and elver resources, to enforce the laws related to eels and elvers and to cover the costs associated with determining eligibility for elver fishing licenses.

[2011, c. 266, Pt. A, §17 (AMD) .]

3. Plan required.

[2011, c. 266, Pt. A, §18 (RP) .]

SECTION HISTORY

1995, c. 536, §A8 (NEW). 1999, c. 309, §2 (AMD). 2011, c. 266, Pt. A, §§17, 18 (AMD).

Article 5: ELVER AND EEL LIMITATIONS

§6575. OPEN SEASON; ELVER HARVESTING

1. Open season. It is unlawful for a person to fish for or take elvers within the waters of the State except during the open season from noon on March 22nd to noon on June 7th.

[2015, c. 391, §9 (AMD) .]

1-A. Federally recognized Indian tribes; violation. It is unlawful for a person to fish for or take elvers in violation of rules adopted by the commissioner under section 6302-B, subsection 4.

[2015, c. 391, §10 (NEW) .]

2. Setting nets and traps. It is unlawful for a person to immerse or leave immersed an elver fyke net or a Sheldon eel trap in any river, stream or brook of the waters of the State at any time other than the open season for elver fishing.

[1999, c. 7, §7 (AMD) .]

3. Locating nets. It is unlawful for a person to designate or claim by any means a location in which to set an elver fyke net or a Sheldon eel trap at any time other than the open season for elver fishing.

[1999, c. 7, §7 (AMD) .]

4. Nets of certain sizes.

[1999, c. 7, §7 (RP) .]

5. Violation. A person who violates this section commits a Class D crime for which a fine of \$2,000 must be imposed, none of which may be suspended. Violation of this section is a strict liability crime as defined in Title 17-A, section 34, subsection 4-A.

[2013, c. 49, §11 (NEW) .]

SECTION HISTORY

1995, c. 536, §A9 (NEW). 1995, c. 536, §A13 (AFF). 1997, c. 91, §4 (AMD). 1999, c. 7, §7 (AMD). 2013, c. 49, §11 (AMD). 2015, c. 391, §§9, 10 (AMD).

§6575-A. CLOSED PERIOD; ELVER HARVESTING

(REPEALED)

SECTION HISTORY

1995, c. 536, §A9 (NEW). 1995, c. 536, §A13 (AFF). 1997, c. 575, §3 (AMD). 1999, c. 7, §8 (AMD). 2011, c. 549, §7 (AMD). 2013, c. 49, §12 (RPR). 2013, c. 468, §26 (AMD). 2015, c. 391, §11 (RP).

§6575-B. METHOD OF ELVER FISHING; LIMITS ON GEAR

1. Gear. It is unlawful for a person to fish for or take elvers by any method other than by dip net, elver fyke net or Sheldon eel trap.

[1995, c. 536, Pt. A, §9 (NEW) .]

2. Number of elver fyke nets and Sheldon eel traps.

[1999, c. 7, §9 (RP) .]

2-A. Number of nets and Sheldon eel traps.

[1999, c. 534, §4 (RP) .]

2-B. Type and amount of gear. It is unlawful for a person to immerse elver fishing gear other than the types and amounts listed on the person's license pursuant to section 6505-A, subsection 5. A person may not immerse an amount of elver fishing gear that exceeds the amount of elver fishing gear listed on the person's license for the previous elver fishing season. A person may elect which types of gear are listed on the person's license prior to the issuance of the license for that elver fishing season. The commissioner may adopt rules to implement this subsection. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

A. [2015, c. 391, §12 (RP) .]

B. [2005, c. 533, §3 (RP) .]

C. [2005, c. 533, §3 (RP) .]

[2015, c. 391, §12 (AMD) .]

3. Rebuttable presumption. It is a rebuttable presumption that an elver fyke net, Sheldon eel trap or elver dip net immersed in any waters of the State at any time of the year is immersed for the purpose of fishing for or taking elvers.

[1999, c. 7, §11 (AMD) .]

4. Prohibition on fishing from boats. It is unlawful for a person to set or tend an elver fyke net or a Sheldon eel trap from a boat or to fish for or take elvers from a boat. A person may transport an elver fyke net, a Sheldon eel trap or a dip net by boat.

[1995, c. 536, Pt. A, §9 (NEW) .]

5. Use of dip nets. It is unlawful for a person to use a dip net to fish for or take elvers while standing in the coastal waters of the State.

[1997, c. 575, §4 (AMD) .]

6. Prohibition on fishing from artificial platforms. A person may not build or use an artificial platform to fish for elvers. This subsection does not prohibit fishing for elvers from piers or floats established for purposes other than elver fishing.

[1999, c. 7, §12 (NEW) .]

7. Bycatch release. A person immediately shall return alive into the waters of the State any species other than elver that is caught in an elver fyke net.

[1999, c. 7, §12 (NEW) .]

8. St. Croix River; use of fyke nets prohibited.

[2015, c. 391, §13 (RP) .]

SECTION HISTORY

1995, c. 536, §A9 (NEW). 1997, c. 91, §5 (AMD). 1997, c. 575, §4 (AMD). 1999, c. 7, §§9-12 (AMD). 1999, c. 534, §§4,5 (AMD). 2005, c. 533, §3 (AMD). 2013, c. 468, §27 (AMD). 2015, c. 391, §§12, 13 (AMD).

§6575-C. CLOSED AREAS; ELVER FISHING

1. Dams with fishways.

[2013, c. 49, §13 (RP) .]

2. River herring traps. A person may not fish for or take elvers within 50 feet of a licensed river herring trap.

[2011, c. 598, §25 (AMD) .]

3. Portion of rivers, streams and brooks. A person may not:

A. Fish for or take elvers at any time within the middle 1/3 of a river, stream, brook or other watercourse, as measured at mean high tide, within the coastal waters of the State; or [2003, c. 452, Pt. F, §14 (NEW); 2003, c. 452, Pt. X, §2 (AFF).]

B. Obstruct the middle 1/3 of any river, stream, brook or other watercourse, as measured at mean low tide, within the coastal waters of the State. [2003, c. 452, Pt. F, §14 (NEW); 2003, c. 452, Pt. X, §2 (AFF).]

[2003, c. 452, Pt. F, §14 (RPR); 2003, c. 452, Pt. X, §2 (AFF) .]

4. Dip nets near elver fyke nets. A person may not fish for or take elvers with a dip net in the mouth of an elver fyke net. For the purposes of this subsection, "mouth of an elver fyke net" means that area within an elver fyke net that is net-side of a straight line that runs from one meshed wing tip of the net to the other meshed wing tip.

[2003, c. 452, Pt. F, §15 (AMD); 2003, c. 452, Pt. X, §2 (AFF) .]

5. Fyke net placement. A person may not place or set an elver fyke net or take elvers from an elver fyke net when any portion of the net, including any anchoring device, is located within an imaginary line between the wing ends of another elver fyke net. Cod end anchoring devices may not exceed 10 feet in length and wing end anchoring devices may not interfere with or create a hazard to navigation within the middle 1/3 of a navigable watercourse. A marine patrol officer may open the cod end of a net that is located in violation of this subsection.

[1999, c. 7, §13 (NEW) .]

6. Obstructing elver fyke nets. A person may not set an elver fyke net or place an obstruction near an elver fyke net in a manner that interferes with the operation of an elver fyke net.

[1999, c. 7, §13 (NEW) .]

7. Rulemaking; gear placement. If necessary to conserve the elver resource, the commissioner may adopt rules pursuant to section 6171 relating to placement of elver fishing gear based on the configuration of specific rivers, streams, brooks or other watercourses. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter II-A.

[1999, c. 7, §13 (NEW) .]

SECTION HISTORY

1995, c. 536, §A9 (NEW). 1997, c. 91, §6 (AMD). 1997, c. 575, §5 (AMD). 1999, c. 7, §13 (AMD). 2003, c. 452, §§F13-15 (AMD). 2003, c. 452, §X2 (AFF). 2011, c. 598, §25 (AMD). 2013, c. 49, §13 (AMD).

§6575-D. MOLESTING ELVER FISHING GEAR

1. Prohibition. Except as provided in subsection 1-A, a person other than a marine patrol officer or the license holder issued a tag for an elver fyke net may not utilize, transfer, alter, possess or in any manner handle the net unless that person has been issued a license to fish for elvers with an elver fyke net under section 6302-A, subsection 3, paragraph E, E-1, F or G or section 6505-A or a license to fish for elvers with crew with an elver fyke net under

section 6505-A and the license holder issued the tag for the elver fyke net is present and assisting in setting, tending or removing the net.

A. [1999, c. 7, §14 (RP) .]

B. [2013, c. 468, §28 (RP) .]

[2013, c. 468, §28 (AMD) .]

1-A. Restriction on emptying net or trap; exception. A person other than the license holder identified on the tag for an elver fyke net or a Sheldon eel trap may not empty that net or trap unless that person has been issued an elver fishing license for the same gear type and has been issued written permission by a marine patrol officer to tend that net or trap. A marine patrol officer may issue a person written permission for the person to tend the license holder's net or trap only for the purpose of releasing captured elvers into the waters of the State if the license holder is temporarily unable to tend that net or trap because of a disability or personal or family medical condition. If the license holder is unable to tend that net or trap for more than 2 consecutive weeks, the net or trap must be removed from the water.

[2013, c. 468, §28 (NEW) .]

2. Violation. A person who violates this section commits a Class D crime for which a fine of \$2,000 must be imposed, none of which may be suspended. Violation of this section is a strict liability crime as defined in Title 17-A, section 34, subsection 4-A.

[2013, c. 49, §14 (AMD) .]

SECTION HISTORY

1995, c. 536, §A9 (NEW). 1999, c. 7, §14 (AMD). 2001, c. 421, §B34 (AMD).
2001, c. 421, §C1 (AFF). 2011, c. 549, §8 (AMD). 2013, c. 49, §14 (AMD).
2013, c. 468, §28 (AMD).

§6575-F. WEST SIDE OF ORLAND RIVER CLOSED TO ELVER FISHING

A person may not fish for or take elvers within the portion of the Orland River between the west bank and the center of the river from the southernmost point of land on Fish Point to the dam in Orland. [1999, c. 18, §1 (NEW) .]

SECTION HISTORY

1999, c. 18, §1 (NEW) .

§6575-G. DAMS WITH FISHWAYS; ELVER FISHING

1. Dams with fishways. A person may not fish for or take elvers within 150 feet of any part of a dam with a fishway or within 150 feet of a fishway.

[2013, c. 49, §15 (NEW) .]

2. Violation. A person who violates this section commits a Class D crime for which a fine of \$2,000 must be imposed, none of which may be suspended. Violation of this section is a strict liability crime as defined in Title 17-A, section 34, subsection 4-A.

[2013, c. 49, §15 (NEW) .]

SECTION HISTORY

2013, c. 49, §15 (NEW) .

§6575-H. SALE AND PURCHASE OF ELVERS

1. Sale of elvers. A person may not sell elvers except as follows.

A. A person may not sell elvers except to a person who holds a valid elver dealer's license under section 6864 or a person who, pursuant to section 6864, subsection 9, is an authorized representative of a person holding a license issued under section 6864. [2013, c. 301, §12 (NEW) .]

B. A person may not accept payment for elvers in any form other than a check or cashier's check that identifies both the buyer, by whom the landings will be reported, and the seller, each of whom must be a person holding a license issued under section 6864, a person who, pursuant to section 6864, subsection 9, is an authorized representative of a person holding a license issued under section 6864 or a person holding a license issued under section 6302-A, subsection 3, paragraph E, E-1, F or G or section 6505-A. [2013, c. 468, §29 (AMD) .]

[2013, c. 468, §29 (AMD) .]

1-A. Purchase of elvers. A person who holds a valid elver dealer's license under section 6864 or a person who, pursuant to section 6864, subsection 9, is an authorized representative of a person holding a license issued under section 6864 shall post at the point of sale the price that that buyer will pay.

[2013, c. 485, §8 (NEW) .]

2. Violation. A person who violates this section commits a Class D crime for which a fine of \$2,000 must be imposed, none of which may be suspended. Violation of this section is a strict liability crime as defined in Title 17-A, section 34, subsection 4-A.

[2013, c. 49, §15 (NEW) .]

SECTION HISTORY

2013, c. 49, §15 (NEW). 2013, c. 301, §12 (AMD). 2013, c. 468, §29 (AMD).
2013, c. 485, §8 (AMD).

§6575-I. ASSISTING IN ILLEGAL HARVEST OF ELVERS

(REPEALED)

SECTION HISTORY

2013, c. 301, §13 (NEW). 2013, c. 468, §30 (RP).

§6575-J. Seizure of illegal elvers

In addition to any other penalty imposed, elvers that are taken, sold, purchased or possessed in violation of any law or rule pertaining to elvers are subject to seizure by any officer authorized to enforce this Part. The entire bulk pile containing illegal elvers may be seized. For the purposes of this section, "bulk pile" means all elvers in the possession of a person who fished for, took, possesses or bought elvers in violation of any law or rule regulating elvers under this Part. [PL 2019, c. 163, §6 (AMD).]

§6575-K. ELVER INDIVIDUAL FISHING QUOTA

1. Prohibition on possession or sale of elvers in excess of elver individual fishing quota. A person may not possess or sell a weight of elvers that exceeds the elver individual fishing quota that person has been allocated for the fishing season pursuant to section 6505-A, subsection 3-A, plus any additional quota the person may be authorized to take under section 6575-L.

[2015, c. 131, §2 (AMD) .]

2. Prohibition on fishing after elver individual fishing quota has been reached. Except as provided in section 6575-L, this section applies to fishing after a person's elver individual fishing quota has been reached. A person who has sold a weight of elvers that meets or exceeds that person's elver individual fishing quota may not fish for or possess elvers for the remainder of the season, except that such a person who has been issued a license to fish for elvers may in accordance with section 6575-D assist another person who has been issued a license to fish for elvers who has not met or exceeded that person's elver individual fishing quota as provided in section 6505-A, subsection 3-A. All gear tagged by a license holder who has met or exceeded that person's elver individual fishing quota must be removed. A marine patrol officer may seize the elver transaction card of a license holder who has met or exceeded that person's elver individual fishing quota.

[2015, c. 131, §2 (AMD) .]

3. Violation. An individual who in fact violates this section commits a crime in accordance with section 6204 for which a fine of \$2,000 must be imposed, none of which may be suspended.

[2013, c. 485, §9 (NEW) .]

SECTION HISTORY

2013, c. 485, §9 (NEW). 2015, c. 131, §2 (AMD).

§6575-L. TEMPORARY MEDICAL TRANSFER

The commissioner may authorize a temporary medical transfer of the elver individual fishing quota allocated to a person under section 6505-A in accordance with this section. The holder of an elver fishing license who requests a temporary medical transfer under this section must maintain a valid elver fishing license during the duration of the temporary medical transfer. [2015, c. 131, §3 (NEW) .]

1. Temporary medical transfer requested prior to March 1st. Notwithstanding section 6505-A, subsection 3-A, the commissioner may authorize a temporary medical transfer that permits the holder of an elver fishing license issued under section 6505-A to transfer the entire annual quota allocated to that person to another person holding an elver fishing license issued under section 6505-A if the following criteria are met:

- A. The transferor reported elver landings in the prior fishing year; [2015, c. 131, §3 (NEW) .]
- B. The transferor is unable to fish the quota allocated to the transferor because the transferor has experienced a substantial illness or medical condition. The transferor shall provide the commissioner with documentation from a physician describing the substantial illness or medical condition; and [2015, c. 131, §3 (NEW) .]
- C. The transferor requests a temporary medical transfer in writing before March 1st of the fishing year for which it is being requested, except that the commissioner may adopt rules that provide a method for authorizing a temporary medical transfer requested after March 1st to address emergency medical conditions. [2015, c. 131, §3 (NEW) .]

Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

[2015, c. 1, §5 (COR) .]

SECTION HISTORY

RR 2015, c. 1, §5 (COR). 2015, c. 131, §3 (NEW).

Atlantic States Marine Fisheries Commission

Coastal Sharks Management Board

*August 1, 2023
12:30 – 1:30 p.m.
Hybrid Meeting*

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 (<i>E. Burgess</i>) | 12:30 p.m. |
| 2. Board Consent <ul style="list-style-type: none">• Approval of Agenda• Approval of Proceedings from May 2023 | 12:30 p.m. |
| 3. Public Comment | 12:35 p.m. |
| 4. Presentation on Scoping for Draft Amendment 16 to the Highly Migratory Species Fishery Management Plan (<i>K. Brewster-Geisz</i>) | 12:45 p.m. |
| 5. Consider Approval of Fishery Management Plan Review and State Compliance for the 2021 Fishing Year (<i>C. Starks</i>) Action | 1:20 p.m. |
| 6. Other Business/Adjourn | 1:30 p.m. |

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details.

MEETING OVERVIEW

Coastal Sharks Management Board

August 1, 2023

12:30 – 1:30 p.m.

Hybrid Meeting

Chair: Erika Burgess (FL) Assumed Chairmanship: 05/21	Technical Committee Chair: Angel Willey (MD)	Law Enforcement Committee Representative: Greg Garner (SC)
Vice Chair: Vacant	Advisory Panel Chair: Vacant	Previous Board Meeting: May 2, 2023
Voting Members: MA, RI, CT, NY, NJ, DE, MD, VA, NC, SC, GA, FL, NMFS (13 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2023

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. Presentation on Scoping for Draft Amendment 16 to the Highly Migratory Species Fishery Management Plan (12:45-1:20 p.m.)

Background

- NOAA released a scoping document for [Amendment 16 to the 2006 Consolidated Atlantic Highly Migratory Species \(HMS\) Fishery Management Plan \(FMP\)](#) in May 2023.
- Amendment 16 could result in large changes to the entire commercial and recreational shark fishery including changes to commercial and recreational shark quotas, shark management groups, shark retention or bag limits, and shark minimum size limits.
- NOAA Fisheries will accept public comment on this scoping document through August 18, 2023.

Presentations

- Scoping for Amendment 16 to the HMS FMP by K. Brewster-Geisz

Board actions for consideration at this meeting

- Consider providing public comment on Scoping for Amendment 16

5. Fishery Management Plan Review of the 2021 Fishing Year (1:20-1:30 p.m.) Action

Background

- State Compliance Reports are due annually on August 1st.

- | |
|---|
| <ul style="list-style-type: none">• The Plan Review Team reviewed state reports and compiled the annual FMP Review for the 2021 fishing year (Supplemental Materials).• Massachusetts has requested <i>de minimis</i> status. |
| Presentations |
| <ul style="list-style-type: none">• Overview of the FMP Review Report by C. Starks |
| Board actions for consideration at this meeting |
| <ul style="list-style-type: none">• Accept 2021 FMP Review and State Compliance Report.• Approve <i>de minimis</i> requests from Massachusetts. |

6. Other Business/Adjourn

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
COASTAL SHARKS MANAGEMENT BOARD**

**The Westin Crystal City
Arlington, Virginia**

May 2, 2023

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

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1. **Approval of Agenda** by consent (Page 1).
2. **Approval of Proceedings of November 9, 2023** by consent (Page 1).
3. **Motion to adjourn** by consent (Page 17).

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

ATTENDANCE

Board Members

Dan McKiernan, MA (AA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Raymond Kane, MA (GA)	Mike Luisi, MD, proxy for L. Fegley (AA) (Acting)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Russell Dize, MD (GA)
Jason McNamee, RI (AA)	Lewis Gillingham, VA, proxy for J. Green (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Justin Davis, CT (AA)	Chad Thomas, NC, proxy for Rep. Wray (LA)
Bill Hyatt, CT (GA)	Mel Bell, SC (AA)
Jim Gilmore, NY, proxy for B. Seggos (AA)	Malcolm Rhodes, SC (GA)
Emerson Hasbrouck, NY (GA)	Chris McDonough, SC, proxy for Sen. Cromer (LA)
Jeff Brust, NJ, proxy for J. Cimino (AA)	Spud Woodward, GA (GA)
Tom Fote, NJ (GA)	Erika Burgess, FL, proxy for J. McCawley (AA)
John Clark, DE (AA)	Gary Jennings, FL (GA)
Roy Miller, DE (GA)	Karyl Brewster-Geisz, NMFS

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

Ex-Officio Members

Angel Willey, Technical Committee Chair

Staff

Bob Beal	Madeline Musante	Joe Myers
Toni Kerns	Kristen Anstead	Caitlin Starks
Tina Berger	Emilie Franke	

Guests

Debra Abercrombie, US FWS	Wilson Laney	Carrie Solteneft, NOAA
Pat Augustine, Coram, NY	Shanna Madsen, VMRC	Alexei Sharov, MD DNR
Alan Bianchi, NC DENR	Tara McClintock, Cornell	Renee St. Amand, CT DEEP
Haley Clinton, NC DENR	Joshua McGilly, VMRC	David Stormer, DE DFW
Lisa Crawford, NOAA	Steve Meyers	Craig Weedon, MD DNR
Guy DuBeck, NOAA	Brandon Muffley, MAFMC	Ann Williamson, NOAA
Julie Evans	Thomas Newman	Greg Wojcik, CT DEEP
Thomas Farrell	Daniel Parma	Chris Wright, NOAA
Glen Fernandes	Paul Risi, City Univ of NY	Erik Zlockovitz, MD DNR
Sonja Fordham, Sharks Advocates	Michael Roy	Renee Zobel, NH FGD
Frianna Hammond, NOAA	Tara Scott, NOAA	
Jesse Hornstein, NYS DEC	Chris Scott, NYS DEC	

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

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, a hybrid meeting, in-person and via webinar; Tuesday, May 2, 2023, and was called to order at 3:45 p.m. by Chair Mel Bell.

CALL TO ORDER

CHAIR MEL BELL: Welcome to the Coastal Sharks Management Board meeting. I'm Mel Bell; the Chair. We'll get us going here, we're actually a little bit early, which is good. We do have a hard stop for the awards ceremony. We'll get us going here.

APPROVAL OF AGENDA

CHAIR BELL: First item on the agenda is Approval of the Agenda. Are there any additions to the agenda? I will say, I know of two items right now I have people contacted me about, things under Other Business.

But are there any other modifications of the agenda required? Oh yes, and I'll mention right now. Item 5 we're not going to deal with that today. We're not ready for that. We're going to either postpone to e-mail, or we will deal with it at the summer meeting. We're not going to deal with the acting on the Plan Review today. Other than that, any modifications to the agenda? Yes, Eric. No, would you like to be third? Okay. All right, got you. I have got three items for Other Business then. Yes, Jim.

MR. JAMES J. GILMORE: Just a reservation. I think the issue that we're concerned about in New York with thresher shark may come up during some of the discussion. If it doesn't, I may bring it up in Other Business. Thanks.

CHAIR BELL: Great, thank you. No other adjustments to the agenda, then is there any objection to approval of the agenda? I don't see any objection, so the agenda stands approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR BELL: Next is Approval of the Proceedings from the November 2022 Meeting. Any edits required for the proceedings? I don't see any hands. Any objections to approval? I don't see any hands, so the November 2022 proceedings stand approved by consent.

PUBLIC COMMENT

CHAIR BELL: That takes us to public comment. This would be public comment on anything not on the agenda. To anyone here in the public. I don't see any hands. Do we have anybody online? No hands there either, okay.

REVIEW NOAA FISHERIES' FINAL ACTIONS AND CONSIDER COMMENT ON PROPOSED ACTIONS FOR COASTAL SHARKS

CHAIR BELL: We'll move right into our first and main and primary item, which will be a presentation from Karyl Brewster-Geisz from NOAA Fisheries HMS. She's got a, I call it a congealed salad of HMS things to bring up here. There are a few different things going on there that she will brief us on. We'll run through that. We can take questions as you are ready and that sort of thing.

MS. KARYL BREWSTER-GEISZ: Thank you, Mr. Chair. Hello everyone, it's good to see everybody here around the table, and I'm sure there are people virtually as well. For those of you who don't know me, I'm Karyl Brewster-Geisz. I work for the Highly Migratory Species Management Division of NOAA Fisheries. I am joined today by a number of colleagues who are sitting in the back, and I think there are a few online as well. We don't often have a lot to share with all of you. I know we've been working on a number of items for a number of years, but as our Chair had told you, I have a lot to go through today.

We have several completed items that I wanted to just give you updates on, and explain what they are. Then a number of proposed or upcoming actions as well. Some of these actions have not yet been published, so you are seeing in the early version of

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what I hope might be. Starting with the completed actions.

FINAL AMENDMENT 14 TO THE 2006 CONSOLIDATED ATLANTIC HMS

MS. BREWSTER-GEISZ: Our first one is Amendment 14 to our Federal Highly Migratory Species Fishery Management Plan. This is an Amendment that we've been working on for a number of years. We finally published it in January, and it establishes a framework first and foremost for coming up with Acceptable Biological Catch for all of our shark species.

It is based on a tiered approach, which is something a lot of our fishery management councils have also followed. It also allows for a phase-in of those acceptable biological catches. It will allow us to actively manage not just the commercial fishery, like we've been doing for years, but also the recreational fishery. In other words, we will be setting commercial and recreational quotas.

It will be changing how we deal with the commercial quotas, in that there will no longer be quota linkages. If you'll remember right now when our large coastal fishery closes, the hammerhead fishery closes as well, because those quotas are linked. In Amendment 14 we're removing those quota linkages.

We're also changing how we're going to handle carryovers, and we are changing how we'll deal with overfishing status in between stock assessments. Nothing in Amendment 14 is actually in place yet. Amendment 14 didn't have any regulations attached to it. Instead, we're going to be working on Amendment 16, to implement all of these changes. I'll be talking about Amendment 16 in just a few minutes.

FINAL ATLANTIC SHARK FISHERY REVIEW (SHARE)

MS. BREWSTER-GEISZ: The other document that we finalized is what we like to call our SHARE

document, or the Shark Fishery Review. We finalized this in March, and it is a very large document with a lot of data in it, where we are looking at the entire shark fishery as a whole. We are not looking at the stock statuses, we are looking at the fishery.

How is the commercial aspect going, how is the recreational aspect? What are the dealers doing? Are the permits, okay? Just the whole kit and kaboodle to see how things are going. Overall, it came up with a number of suggestions and ways for us to move forward, including things like changing our permit structure.

Right now, we have directed limited access permits and incidental limited access permits, possibly changing those incidental permits to open access permits to allow more access into the fishery. Changing commercial retention limits, perhaps changing regional or subregional quotas, or the recreational size and retention limits. In addition to looking inward at our fisheries, we also looked at some of the external factors that within HMS we can't control, but we do weigh in on things like the CITES listings, things like all of the state fin bans, or more recently the national fin ban, and how all of that impacted it.

The result of some of that, we are planning on improving our communication even more than we have in the past. If you remember with things like dusky sharks, we really tried to increase how much communication and outreach we had out there regarding sharks. We are trying to improve that even more.

Some of you may have been aware that we just had a shark art contest, in celebration of 30 years of the Federal Shark Fishery Management Plan. You will see more and more coming out this summer, in regard to that 30-year celebration, and that is one of our first steps in increasing communication.

But a lot of these potential ways forward for sharks, you will see echoed in Amendment 16, which again is something I'm coming to soon. I just realized, I keep forgetting to say next, so I apologize.

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PROPOSED AND UPCOMING ACTIONS

MS. BREWSTER-GEISZ: Proposed and Upcoming Actions. This is getting into the meat of where I'm really looking forward to what kind of comments and suggestions all of you have.

PROPOSED RULE TO PROHIBIT THE HARVEST OF OCEANIC WHITETIP SHARKS

Our next slide is regarding our proposed action for oceanic whitetip and hammerhead sharks. This is a proposed rule. The comment period is open until May 22. We did this proposed rule as a result of two biological opinions that we had on our fisheries. Biological opinions are something that is required under Section 7 of the Endangered Species Act.

Both oceanic whitetip and a portion of the hammerhead shark, scalloped hammerhead shark population, are listed as threatened. It is threatened, not endangered, but threatened under the Endangered Species Act. Oceanic whitetip is listed as threatened throughout its range, and scalloped hammerhead is listed as threatened in the Central and Southwest Atlantic State population segment.

That segment overlaps U.S. waters around Puerto Rico and the U.S. Virgin Islands. That distinct population segment is not really something that this body is concerned about, but we did put forward an alternative of prohibiting the retention of scalloped hammerheads across its range within our waters. I did want to raise that to all of you, that that is an option we looked at.

MS. BREWSTER-GEISZ: Because of these biological opinions, we are proposing to add oceanic whitetip sharks to the prohibited shark species group. That would mean no more retention or anything regarding oceanic whitetip. For the most part, well one, we haven't had landings in years. But two, most of our

fishermen can't keep them anyway. This would just formalize that aspect of it.

Regarding scalloped hammerhead, because of the difficulty in telling the difference between scalloped, great and smooth, we are proposing to prohibit the retention, commercial and recreational, of great, smooth and scalloped in the U.S. Caribbean. As I said, we do have an alternative, looking at prohibiting the retention throughout the range. We are in the middle of public comment right now, and we have received a number of comments requesting that we go forward with that alternative, but that is not what we proposed. We proposed just the U.S. Caribbean.

SCOPING FOR AMENDMENT 16 TO THE 2006 CONSOLIDATED ATLANTIC HMS FMP

MS. BREWSTER-GEISZ: Moving on to the next item, and that is Amendment 16. Amendment 16 is going to be a large rulemaking, and we are starting with scoping.

Scoping means that we are looking forward to comments on where people would like to see us go. We are not proposing anything at this time, and in fact this is not yet out publicly, but we are expecting the notice to publish very soon, hopefully this week or early next week. When that happens, we are expecting the comment period to end in mid-August.

I would very much like comments from this Board regarding Amendment 16, and where we could go from here. In short, Amendment 16 would implement Amendment 14. That means it would establish the acceptable biological catch and annual catch limits for all non-prohibited shark species.

It would optimize the ability, at least we hope it would optimize the ability for the commercial and recreational fisheries to harvest their full quota to the extent that we can. Right now, as all of you know, we are not landing our shark quotas commercially. It would also increase our management flexibility to react to any additional factors that come through, whether that is switching the proportion between commercial and recreational quotas.

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Whether that's because climate change is shifting where the species are going, and we need to allow for more quota to be farther north than south, or anything else that comes up. We're hoping to really improve our management flexibility to react. I think it's fair to say that Amendment 16 looks at everything, and I mean everything.

We are planning on looking at how to establish annual catch limits for all shark species, using the tiered system we set up in Amendment 14. As part of that we are also looking at the management groups. Right now, we have large coastals, we have small coastals, we have smoothhounds, blacknose is pulled out.

We have pelagic sharks, but some species are pulled out. Hammerheads is its own management group. Do we want to keep those management groups? Do we want to combine them by what gears species could be landed with? Do we want to combine them by all of these stocks we were pretty good on what we think the quota is, because they've been assessed, versus all of these stocks have not yet been assessed, so we're going to work and come up with a combined.

This is opening the door for changing that entire structure. We are considering regional and subregional splits right now for some of our stocks, like blacktip. We have a split between the Atlantic and Gulf, because the scientists tell us there are two different stocks. But hammerhead sharks we have the split between Atlantic and Gulf for management purposes.

Blacknose sharks, we actually have a management split in the Atlantic. Anyone north of 34 degrees are not supposed to be landing blacknose sharks commercially. Maybe that split isn't appropriate anymore, given more and more blacknose are heading further north. We're opening the door for that. We're looking at the exempted fishing permit quotas. For the most part we have a 60 metric ton quota for almost all of the species. That hasn't changed since 1999.

Maybe that should be looked at. We have pulled out quotas for sandbar and dusky, we've done some things for, and we had a separate smoothhound quota. But we're looking at that. We're looking at changes for sandbar sharks, and therefore we are also looking at changes for the shark research fishery, and how that might work in the future.

Commercial retention limits, once we start playing with the quotas, that retention limit we have, of the maximum of 55 large coastal and hammerhead sharks may not be appropriate. Maybe we need to change those. Then recreational retention limits and size limits also might be open for changing.

Again, this is scoping. We are opening the door wide open. It doesn't mean that in the proposed rule we'll take on all of this, but as with so many things with sharks, once you start pulling on one thread the whole thing tends to unravel. We need to look at it as a whole. I do want to provide one example of what I'm talking about, when I'm talking about the annual catch limits and the acceptable biological catch.

If you all remember a few years ago we did an Atlantic blacktip stock assessment. That stock assessment is a gold star of all stock assessments. It has all the bells and whistles, it's a really good example of a stock assessment. It gave us an overfishing limit of over 400 metric tons, using the tier structure in Amendment 14, it comes out to be a Tier 1 stock assessment, so then we apply the numbers there for an ABC Control Rule.

If we look at using an HMS risk policy of 70 percent, meaning we are 70 percent sure that we will not be overfished or overfishing within a certain timeframe. That reduces the OFL to an ABC of just over 300 metric tons. We include a management buffer, comes up with an ACL, which would then be split between the commercial side and the recreational side.

At the moment, for commercially, we are landings approximately 38 percent of that potential quota, and 89 percent of the potential recreational quota. Where do we go from here once we set it up? We have not yet proposed anything. We have not yet

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used the stock assessment. But that is just one of the examples that we're looking at in Amendment 16.

SCOPING FOR ELECTRONIC REPORTING

MS. BREWSTER-GEISZ: Moving on to another rulemaking, Electronic Reporting. I know many of you are aware of electronic reporting through the fishery management councils, ASMFC. There is eTRIPS and HMS for commercial fishery we have eDealer. We are looking at implementing electronic reporting throughout our HMS fisheries, and trying our best to make it consistent, in terms of how and timing and all of that, with all the Councils and the different states.

This rulemaking again, the notice isn't quite out, but I hope it will be out within a week or two. Comment period would end in mid-August. The main purpose of this rulemaking is to streamline and modernize our logbook reporting. But it may include requiring reporting of people who do not or have not traditionally had to report their HMS.

That might include, for example, charter headboat fishermen fishing for sharks. They might need to start reporting. It could affect this body, and when I come back later and ask.

PROPOSED RULE FOR AMENDMENT 15 TO THE 2006 CONSOLIDATED ATLANTIC HMS FMP

MS. BREWSTER-GEISZ: Last rulemaking that I'll be talking about is Amendment 15. This is a proposed rule that we actually just released yesterday. The rule will publish in the Federal Register on Friday, but an early version of the rule is available on our webpage, along with the Draft Environmental Impact Statement. It is a very large document, it is very complex, and it does a lot of things.

I'm going to focus primarily on what it does that could affect this body, but recognizing it will affect probably fishermen in all of your states as well for other things. The two things this rule

does, is it looks at our spatial management areas. We have four of them. One is the Bottom Longline Shark Closure off of North Carolina, and then we have three Pelagic Longline Areas along the east coast and in the Gulf of Mexico.

We are looking at whether or not these areas need to be modified in order to collect data, and how would we collect data, while continuing to watch out for bycatch and bycatch mortality. Then the other thing this rule does is it proposes shifting the cost of our pelagic longline electronic monitoring system from the Agency to the vessels.

To be clear, this is the sampling cost not the administrative cost of running the program. We had looked at a number of issues. We looked at evaluating the areas for the "A" alternatives, we looked at how to collect data within those areas, and then we looked at how often do we need to reevaluate the areas for the "C" Alternatives.

For this particular body, I decided to focus on our Mid-Atlantic Shark Area. This is an area that is currently closed off the state of North Carolina from January through July of every year. It was designed to protect sandbar sharks and dusky sharks. If you look at this red area, the hatched part of it is the current closed area.

In Amendment 15 we are looking to extend that eastern boundary, and we are also looking to shift the timing from January through July to November through May. Some of you may be wondering, well how did we come up with that? We actually worked with a model we designed specifically for HMS that we call PRISM. All of the details of that are on our web page.

But in short, it takes a look at all of the observer data we have, and it compares that observer data to environmental data that has been collected, such as sea surface temperature, pH, chlorophyll-a, all of that to predict interactions between the fishing gear and the environment, and what the environment is showing.

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We are proposing that based on the results of that spatial model. We are looking, for a lot of these areas we have split them into high bycatch risk areas and low bycatch risk areas, and we have different monitoring within them. For this particular area we are not proposing any split between high and low bycatch risk areas.

This entire area is a high bycatch risk, because it is very likely you will catch sandbar and dusky in it during those timeframes. We are maintaining the current data collection program for which is primarily the shark research fishery. Then we are proposing to evaluate this area every three years, unless there is some other trigger that comes up that requires us to take a look sooner. As I said, we also proposed a number of other changes for our other closed areas. You can see for the Charleston Bump and the East Florida Coast closures there are both red areas and yellow areas. Those yellow areas are low bycatch areas, where we are proposing different ways of monitoring and allowing fishermen to go in and fish in those areas. I mentioned the EM sampling cost, switching that from the Agency to the industry. We are proposing to do that over a phased three years.

Lastly, we are proposing changes to our regulatory text to make it clear that if we implement other spatial management areas, we would be following a similar approach that we are proposing for all of these alternatives. That is Amendment 15 in a nutshell. There is a lot more detail. That is pretty much all of what I had to share. I've provided the webpages, or what will be the expected webpages for Amendment 16 and our electronic reporting. If there are questions that's what I'm here for.

CHAIR BELL: Thank you, Karyl. To say that is a lot is kind of an understatement. That is a lot. She went through quite a bit there. Obviously, there are some pretty significant things coming, some changes, and some of it's early. Like you said, we're not really technically into scoping, but I know you are looking for any feedback you might be able to get from us at this point, particularly

related to maybe 16. But that is still kind of early. When is our next meeting scheduled, just a date, Bob?

EXECUTIVE DIRECTOR ROBERT E. BEAL: First week of August.

CHAIR BELL: You had mentioned wanting something again from us by mid-August. I mean we can get another swing at it, I guess, in August as well. Okay. Any questions? That is an awful lot. Yes, John Clark and then Chris and Mike.

MR. JOHN CLARK: Thank you for the presentation, Karyl. Could you just say a little more about the sandbar sharks? We've seen them coming back in Delaware Bay, and just curious as to, their status is going to change from research, kind of prohibited to a more open fishery?

MS. BREWSTER-GEISZ: Thanks for that. Sandbar sharks, we also have a stock assessment that we've been waiting for Amendment 14 in order to implement. That stock assessment showed that sandbar sharks continue to be overfished, but they are slightly ahead of schedule, in terms of rebuilding, which is great news.

There is a possibility of looking through and following that tree, if you would, to come up with different quota levels. Small possibility we might be able to possibly allow some sandbar sharks outside the shark research fishery, and so that is what we are looking for and looking for comments on. It would probably be a small amount; it wouldn't be a huge quota like the others.

CHAIR BELL: Okay, I've got a line here. Next Chris Batsavage and then Mike Luisi and Jim Gilmore.

MR. CHRIS BATSAVAGE: Thank you for the presentation, Karyl. Two questions. I think I heard earlier, and it might have been regarding Amendment 16, looking at management flexibility. You mentioned commercial and recreational allocation. Did I understand it correctly that you are considering being able to kind of dynamically change those as conditions change, or are you looking at

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maybe just changing the allocations in the amendment? Just wanted some clarification on that one, then I have an unrelated question.

MS. BREWSTER-GEISZ: We're looking for possibly any of those ideas. I think in my head it was, how do we change the allocations if it looks like recreational needs a lot more than what they have, whereas commercial isn't catching what they already have. But it could be changing ocean conditions causing that need.

MR. BATSAVAGE: We address allocations quite a bit here, and at the Council level. It can be pretty controversial. I don't know if perhaps having more options for the public to consider, as far as allocations that are set forth in the amendment with maybe options to transfer surplus quota from one sector to another, once we've done with other fisheries. Again, just kind of drawing on experiences we've had here at ASMFC and the Councils when it comes to allocations.

The second question I had was on oceanic whitetip sharks, where you're considering prohibited harvester catch. It's listed as threatened, and it just seems odd that it wasn't prohibited in the first place. Can you explain why, as soon as they were listed as threatened or the ESA that the prohibited didn't take place at that point?

MS. BREWSTER-GEISZ: Kind of. I'm not an ESA expert, but my understanding is under ESA, if they wanted to prohibit it directly, they could have, doing something, I think it's called the 70 Rule, but I could be wrong on that number. They did not do such a rule for oceanic whitetip, so it was not prohibited specifically through listing under the ESA.

CHAIR BELL: Okay, Mike Luisi.

MR. MICHAEL LUISI: To the point you made about this is quite an undertaking, my first question is, Karyl, and thanks for the presentation. Whose lunch did you steal out of the refrigerator in your office to be tasked with

something like this? This is something! I mean there is a lot here, there is a lot to it, and I hope that this Board will be able to offer guidance as it develops. Secondly, and I don't expect an answer to that first question. But secondly, I would like to just get your feedback on the reporting element, the electronic reporting piece to this.

You know at the Mid-Atlantic Council we speak often about permit holders and the reports that they need to fill out upon completion of trips, and whether or not they have northeast permits, southeast permits, HMS permits. There is always some frustration about having to do multiple permits, and I'm going to screw up the acronym and mess up the project that is currently being worked upon, which synchronizes the different areas and groups.

I assume, but you can correct me if I'm wrong. I'm assuming that HMS is in sync with those projects, so that a fisherman that comes back to the dock and reports his or her catch, can do it in a one-stop-shop fashion, rather than to have multiple inputs that go different places. If you have any comments on that that would be great. I see Carrie is your lead person on that. I could always work with her as well. Thank you.

MS. BREWSTER-GEISZ: Yes, Carrie is our lead person on that, and actually is sitting in the back of the room, if you wanted to grab her after the fact. But yes, we are in sync with that whole process, and trying very hard to implement, eventually, a one-stop reporting for all HMS with everything else. That's the goal.

CHAIR BELL: Jim Gilmore.

MR. GILMORE: I bought the same system, because I thought this worked so good for back home, now I'm starting to think maybe I should return it. Actually, it's two questions now. I've got one in terms of an immediate concern on management, and then a second one on outreach and education. Let me take the first one.

With the Large Pelagic Survey, in the case of New York, that we're harvesting large pelagics and with the restrictions on the mako fishery and all the

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coastal sharks. It appears most of the guys fishing for shark now are going for common thresher, which is now raising a concern, because the data we reviewed, the size limit right now is 54 inches, which seems to be well below the maturity level of 85 inches.

We need to start looking at, do we need to put some size limits on common thresher, if we're suddenly not going to have a problem. At this point it's a procedural thing, is this a joint effort we would do with the Commission, for NOAA and the Commission or how do we go about that? At this point we're just raising it because we're seeing a concern, and I think we need to start getting some data on what we should be doing with maybe a size limit. If you want to respond to that, and then I'll talk about the other issue.

MS. BREWSTER-GEISZ: I would agree, we have seen some concern about threshers over the years, and now the thresher sharks are really the only pelagic shark that can be landed. That is also concerning. I am hoping through Amendment 16 we might be able to do something, but thresher shark is also managed through ICCAT, so we're limited on all of that as well.

MR. GILMORE: Secondly, for the last two years, but particularly this past year, we have had unprecedented issues with interactions between sharks and humans in New York. We actually thought we were ahead of the curve, because we did a coordination with all the counties and the towns and Park Service, whatever to be prepared for the bathing season.

The week after we had that coordination meeting, we got a couple of shark bites, mostly sand tigers. But we assured the public that we had only had 8 in the last hundred years, so it was not really a big need for concern. Then three days later we had 10 bites from sand tiger sharks. I still said, well, we don't really have much of a concern, and then the following day a 7-foot juvenile great white washed up in the Hamptons.

The media became all over this, and eventually I ended up doing a press conference with 7 or 8 media outlets. After I tried to spin the good news about well, part of our management is maybe being successful. We have large menhaden populations that they're feeding on, and all this good news. Really, they are a simple bite. We're not really having fatal interactions. One of the reporters asked me, you mean you did this on purpose? I didn't know how to answer that question, and it just underscored the issue of the education about this and what we're doing. The public doesn't understand, and it became a bit of a circus, because now our enforcement guys are having a lot of difficulty, because everybody is grabbing sharks out of the surf, thinking they are saving attacks from their kids or whatever, when they are actually breaking the law.

We really need to improve on that outreach. We're trying to do things in the state, but if we keep succeeding, I think other states are going to be having the same problem. Again, some of the states have much more difficult problems than we have in fatalities. But the frequency of interactions is definitely going up, as we improve on our management for both the predators and the forage base, so we really need to start looking into that.

CHAIR BELL: Thanks, Jim, sounds like a scary movie. Okay, Erika Burgess.

MS. ERIKA BURGESS: Karyl, I don't think anyone can get away with commenting or asking questions right now without saying, how the heck are you all going to do all of this work at once? It is a lot. I am encouraged by Amendment 14 and 16. I'm looking forward to seeing what opportunities that creates for our fishermen.

The electronic reporting slide went by too fast for me to capture all of it. I'm hoping we can get a copy of the presentation, because I think there are so many things in here that touched for Florida, the Gulf and the Atlantic Coast, and we're going to be getting lots of questions, I'm sure. I did want to ask about Amendment 15.

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Given the timing that it came out, I haven't had the opportunity to dig into it, and I know with this body the North Carolina area might be more relevant, but for Florida, the East Florida closed areas, the area of interest for myself. What information are you hoping to gather through that, and then for what purpose?

MS. BREWSTER-GEISZ: You are asking what information we hope to gather out of that area. Those areas, Charleston Bump, East Florida Coast and Desoto Canyon were closed right around the year 2000, and they were closed to reduce bycatch and bycatch mortality from the pelagic longline fishery.

Since the year 2000, that fishery has changed dramatically. Back then they were primarily a J-hook fishery, now they are required to use circle hooks. Back then swordfish was severely overfished, and now it is completely rebuilt, and we are only landing about 20 percent of our potential quota.

There have been other changes, changes in shark status, changing how the longline fishery fishes. But those areas were closed primarily for bycatch purposes within our pelagic longline fishery. With all of those changes, we no longer know if those areas are the appropriate areas to be closed for the bycatch species of concern that we have now.

Because they've been closed, and because particularly as you know, the East Florida Coast one, it's been difficult to get anybody to go in and do research, to find out what happens if people use the pelagic longline they are using now in those areas. We are proposing to keep the areas that we think are still high bycatch risk, based on that spatial management closed, while allowing for some ability to fish with the pelagic longline gear as a fisherman in there, and collect fishery dependent data, to find out are the bycatch species we're concerned about impacted, and if they are, we would evaluate that, figure that out, and close that area again.

If they aren't, we would evaluate it, find that out, and maybe we would possibly in the future reopen it, or relax some of the restrictions to that monitoring area. But at the moment we are just proposing to allow some limited fishing going in, to see what happens, because we don't know. With the changes in how the fishery is done, what will happen when they go in there?

MS. BURGESS: Thank you, Karyl, and we'll be looking at this further. I'm sure it comes as no surprise to you, considering the number of letters FWC has written in opposition to any research activities within this area that we strongly support this area to remain closed to pelagic longline fishing. We have in the past, and we'll look into this further, but I don't feel that our position is likely to change.

CHAIR BELL: Gary Jennings.

MR. GARY JENNINGS: Karyl, thank you for your presentation. I'm going to kind of echo what you just heard from Erika regarding Amendment 15. Multiple Florida Governors, the Billfish Foundation, CCA, ASA, IGFA, FWC, have all made it very clear that they don't want a longline fishery off the East Coast of Florida.

It's a known nursery area for marlin, sailfish and swordfish. It's also home to the best sailfish fishery in the U.S. After the issues with the last proposed EFP, I suspect that there is going to be very robust opposition to Amendment 15 from the state of Florida.

CHAIR BELL: Any other questions for Karyl? Yes, Chris.

MR. CHRIS McDONOUGH: I have a question related, the example you used with the Mid-Atlantic Area with the closure area off of North Carolina. That's based on the model that you're using, the probability model for just intercepts with the species and the potential gear in the area?

MS. BREWSTER-GEISZ: The observer data with environmental data.

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MR. McDONOUGH: Okay, and I was just curious, has that model been peer reviewed?

MS. BREWSTER-GEISZ: Yes, we had the model peer reviewed a year ago. It published and we have the article available on our webpage, along with explanation of it. We also had our approach for using the model, to come up with the proposed changes to the areas peer reviewed as well, and those peer reviews are also available on the webpage.

CHAIR BELL: Any other questions? Emerson.

MR. EMERSON HASBROUCK: Thank you, Karyl, for your presentation. I have a general question, not related to the presentation. I'll get started, and Mr. Chairman, if you think it's out of order, I can take this up with Karyl at another time. I'm just trying to understand HMS requirements and ESA and MMPA interactions. Am I correct in the understanding that any commercial or recreational vessel that wants to harvest any HMS species, has to have an HMS permit, whether they're fishing in state waters or federal waters, and whether or not they have any other federal permits. Is that correct, or is that incorrect?

MS. BREWSTER-GEISZ: That is incorrect. It depends upon the species. If you are fishing for tunas, you are correct, you need an HMS permit wherever you fish, except for two states, Mississippi and I'm going to say Connecticut, but I might be wrong on that. Everywhere else we manage tunas to the shore.

But for sharks, we do not manage to the shore. All of you manage to the shore. We only manage in federal waters. If you want to go fishing for sharks in federal waters, you need an HMS permit. If you have that HMS permit and you are fishing in state waters, you have to follow federal regulations, unless the state is more restrictive.

MR. HASBROUCK: Thank you for that clarification, and I have a couple of questions relative to that. Again, Mr. Chairman, if you think

I'm getting far afield here, let me know. Thank you for that clarification. If a state or federal vessel is fishing in state waters for tunas, they have to have an HMS permit.

Those fishermen then, are they covered by a designated, I'm going to say designated, maybe that's not the correct term. The designated takes of ESA and MMPA species relative to the tuna fisheries? If you want, I can give you the reason why I'm asking this, or I can do a follow on.

MS. BREWSTER-GEISZ: Yes, if they have a federal HMS permit, they are covered under ESA and MMPA because of those permits.

MR. HASBROUCK: Even if they are in state waters? Okay, the reason I am asking this is because recently the bi-op, at least for northeast species was just recently changed or rewritten. I don't know if there is anybody else here from the regional office. For fisheries that used to be covered under the bi-op and the designated takes for ESA and MMPA species.

Those takes are no longer, takes meaning just even interaction, right, are no longer covered in state waters. What I'm being told from the Regional Office is that some of the experimental gear work that we're doing in state waters, where those takes used to be covered, by the general bi-op for the fisheries are no longer covered.

But now you're telling me that for tunas those takes are covered. Is that a different bi-op? I'm just trying to straighten this out in my mind, in terms of why things used to be covered, why things aren't. I kind of understand that the new bi-op, at least for the Northeast Region excludes state waters now. But how is it then that the federal HMS permit for tunas covers takes in state waters?

MS. BREWSTER-GEISZ: I'm not familiar with the Northeast Biological Opinion, so I can't respond to that. For HMS, we have two biological opinions, one for our pelagic longline fishery and one for all of our fisheries outside of the pelagic longline fishery, and that includes all of our tuna fisheries, all of our recreational fisheries, all of our commercial fisheries.

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I'm happy to talk more with you about that, but as I said, I don't know anything about the other biological opinion that you are discussing.

CHAIR BELL: Yes, let's take that offline maybe, Emerson, but thanks for the questions and thanks for being willing to take them on. Anything related specifically to the presentation that Karyl has given? We'll get another shot at this in August. I would also, in the briefing material there are links to websites to provide additional information as well.

Thanks for the links to staff and Karyl. Anything else related to anything you've heard? I'm personally, I think 16 is going to be, I'll echo that good luck with that. It sounds like there is a good opportunity to make some changes in the fishery, and look at it in a more holistic approach, maybe, and maybe some of the things that we hear about issues with the shark fishery can be addressed. I'm not sure, what's the time table on that?

MS. BREWSTER-GEISZ: We are hoping for the comment period to end mid to end of August, and then it will probably take us about a year before the proposed rule comes out. Yes, I now know I shouldn't steal anyone else's lunch from the refrigerator.

CHAIR BELL: Toni.

MS. TONI KERNS: There are, well two things. August 18 will come very quickly after the summer meeting. It would be good if the Board perhaps started thinking about things they wanted to comment on, provide that information to Caitlin ahead of the meeting, so that we could have a list to discuss at the meeting.

Then that way it will make it much easier for us to draft a letter quickly and get it back. We can follow up with that. But there are some deadlines that are sooner than August, so the whitetip is due on May 22, so we need to know if

the Board would like to comment on the whitetip.

CHAIR BELL: Well, good point, while we're here now any comments specifically about the whitetip? I think it was the first thing we talked about. I don't see any hands. Again, it is a lot quicker between our meeting and their time deadline, so giving some thought to this ahead of time before we get to the meeting in August would be good. Any comments about any of it? Yes, Chris.

MR. BATSAVAGE: Probably more of a question for Toni regarding oceanic whitetips. If the final rule comes out and prohibits the take of oceanic whitetip, I guess it's then the Coastal Shark Board's decision on whether or not to apply that in state waters, correct, or do we automatically adopt that through this complementary management? I can't remember all the nuances of Addendum V to the Coastal Sharks FMP.

MS. CAITLIN STARKS: Yes, I can answer that. I believe you would have to initiate an addendum to adopt that same rule. Toni is not sure if that is correct.

MS. KERNS: We would have to look. The Board did allow us to move to do Board action for some things, I just can't remember if prohibited is one of those actions or not, so we'll look that up.

CHAIR BELL: Okay, good question, Chris. We'll get back to you. Anything else for Karyl right now while we have her here? Yes, Roy Miller.

MR. ROY W. MILLER: Mr. Chair, when we adopted regulations to close fisheries from Mako, we didn't go through an addendum, did we? Wasn't that an administrative action? Wouldn't it be the same for whitetips?

CHAIR BELL: We're giving that some thought here right now.

MS. BREWSTER-GEISZ: I think, if I may jump in, with the Mako sharks it was changing the retention limit to 0, which is I think, a way the Board could move. What we were actually proposing is moving it onto

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the prohibited species list, which is a slightly different thing, it's more than just a retention limit.

CHAIR BELL: There may be some nuance to how you do it. It allows you to do it without an addendum, okay. We'll give that some thought. Yes, Caitlin.

MS. STARKS: If that proposed rule goes through to a final rule, then we will prepare the information for the Board to discuss it at the following Board meeting.

CHAIR BELL: Yes, Eric.

MR. ERIC REID: I have a question about permitting. Which one of these comment periods should I consider making that comment? You probably know what it is, I've asked it a dozen times. It's about the fishermen can get their shark permit online, dealers have to go in person every three years. At what point can dealers be provided the same luxury as fishermen in getting that permit?

MS. BREWSTER-GEISZ: That is actually in place now. Any new dealers still need to go in person for the first time, but once you have the dealer permit and have attended one workshop, every three years you take it online.

MR. REID: Okay, sorry I missed that, but I won't have to ask it ever again, so thank you.

MS. BREWSTER-GEISZ: It happened during the pandemic, so it's understandable.

CHAIR BELL: Yes, lots of things happened during the pandemic, okay thanks, Eric. Anything else for Karyl right now? Okay, thank you very much for the presentation, and again good luck. We'll be communicating with you, I'm sure quite a bit.

OTHER BUSINESS

CHAIR BELL: Let's go ahead to Other Business. Jim, did that cover you for thresher, so you're

good? Then I've got John Clark who had an item he wanted to discuss, and then Eric, you had one.

COLLECTING PERMITS

MR. CLARK: Karyl, you are aware of this one. I wanted to bring up the collecting permit situation. As I mentioned at the last meeting, we've seen a big uptick in our request for collecting permits, especially for sand tigers. Madeline, could you put up that slide. I guess that has to be blown up quite a bit, but I think you can see that we've gone from very few sand tigers, to a situation where for this year we've been requested to issue permits that would allow 38 sand tigers. I spoke to Karyl and her team about a month and a half ago, and I think I'm correct, Karyl in saying that everybody, they have to have a display permit right, from NOAA.

You're keeping tabs on the overall number of sharks being requested for display, but my question was more for how states should coordinate this, and what is the number of sharks that we should permit for these displays? If I could just, you know knowing the collecting permits that we're getting in Delaware have gone from individual aquariums to a business that gets sharks for aquariums, and brings up another issue that displaying them anywhere is for education purposes, of course.

In recent years when we get the reports, we see Delaware Bay sharks are in Sea World Abu Dhabi. They are in Korea; they are in Vegas at a Casino. I mean they are doing a lot more traveling than I am. I just was curious as to, again, if there is a way, we can coordinate between NOAA Fisheries and the states, and I know in Delaware when we brought this up with some shark researchers in our state, they were concerned about this.

I know the last assessment for sand tigers was in the early 2000s. Some of these researchers were wondering whether we should allow this level of take, and also a point they brought up was that a lot of these sand tigers, there have been efforts that are putting transmitter tags in sand tigers in particular, and saying that as part of the permit can we make sure that those collecting these are scanning for

those tags, to make sure that those tagged sharks aren't going to Sea World Abu Dhabi.

I just wanted to bring it up, and I think the graph there, as you can see, we've had a big increase, not just in requests, but in the number of sand tigers collected. If I'm not mistaken, Karyl, you said that NOAA Fisheries has received a request for 40 sand tigers for this year. Delaware's request this year has not exceeded that. But I'm just curious as to whether other states have issued any collecting permits for sand tigers for aquarium use, and if there is a way, maybe at least informally, we can coordinate our permits so we know what's going on with that.

CHAIR BELL: Anything to comment on?

MS. BREWSTER-GEISZ: Thank you, John. We issue display permits from all of our states, so Maine through Texas and the Caribbean. Display permits generally tend to go to aquariums, though we do have a few people, as John mentioned, who collect sharks for aquariums to use, and those aquariums are not always United States based aquariums, or even Atlantic Coast based aquariums. But sometimes they are.

We tend to issue and authorize collection of a lot more sharks than are typically collected, although one of the things we noticed when John showed us his numbers up on the screen, that they do not necessarily match. Sometimes his numbers are larger than the numbers we have from all of our collectors. After having our discussion, we've changed the wording on some of our permits, and trying to make it clearer for the collectors that our number is the total number, and that they need to report not just federal collections, but also collections that they make in the states, so we can have a sense of those total overall numbers that are being collected. I echo John's thoughts, in terms of coordination and better coordination.

CHAIR BELL: John, were you kind of looking at some thoughts about coordinating between the

states, or were you just kind of talking state/federal? What were you looking at?

MR. CLARK: Well, I think both. You know as Karyl said, they get the permit. Anybody that wants to collect sharks for display have to get the NOAA Fisheries permit. But then just as I've learned more since our conversation, I know that the group that has requested the most sand tigers from Delaware, for example, they are not anticipating they are going to be collecting that number, because they don't have that number of requests so far.

But at the same time, they could be requesting in different places. Then as I said, one thing I hadn't thought of but the researchers brought up to me is that sand tigers have been pretty heavily researched, and there is a lot of effort going into tagging them. If a shark does get collected and set overseas that turned out to have a tag in it, that would be a big loss, in terms of the research value. I don't know, can NOAA Fisheries require scanning for those tags, and prohibit the taking of a tagged shark, or is that something that should be done at a state level?

MS. BREWSTER-GEISZ: We have not requested that. But generally, my understanding, if one of them found a shark with a tag on it they would report that. The display collectors are actually required by us to put in pit tags. Display aquariums do not generally like spaghetti tags showing up on their sharks, so they wouldn't keep a spaghetti or a pop up or any of those tags on the shark if they are trying to sell it. I think it also would show on the shark, so I'm not sure they would actually keep those sharks for display.

MR. CLARK: I thought the same thing, but I was told that a lot of these transmitter tags are put in internally, they don't have external tags on them, and that sharks heal up so quickly that there is no scar left. The only way you can tell that you've got a tagged sand tiger is to actually use one of these scanners. I was told the scanners can be fairly expensive, maybe a couple thousand dollars, but considering the numbers that are being requested, I don't think it would be a huge imposition on this one collector in particular, to scan for these tags.

MS. BREWSTER-GEISZ: Yes, as I said, we already require that they put pit tags in, so many of those collectors already have scanners to scan for the pit tags.

MR. CLARK: This is a different type. You know again, this is secondhand from what I was told. But I was told that no, it's not a pit tag scanner, it's almost more like a telemetry tag. You would almost need a receiver to run it over the shark and see if it's pinging the receiver.

CHAIR BELL: Okay, Mike Luisi, did you want to weigh in here?

MR. LUISI: Yes, just really quickly regarding coordination. We get requests from time to time, but I would recommend to the other states to do what we do, and just send it to John. Just forward a request to John and let him handle it. That's all I had.

CHAIR BELL: We've appointed John as the Coastal Coordinator for it, okay, good deal. John, we coordinate closely with HMS when we get a request for a permit. We don't get any numbers like you see, but what we require is that they have the HMS permit and then whatever they are allowed, there is the number they are allowed by us. We don't have any huge numbers, and it's not quite as big a demand, it looks like, as maybe in your waters. Thanks for bringing it up.

MR. CLARK: Actually, all kidding aside, Mike. For the time being, you know I'm sure this is a fairly small-scale situation right now. I would just be curious if your state has gotten request for sand tigers, yes, please do send them to me, and I can tell Karyl, because I doubt it's more than a few states that have gotten these requests. It sounds like in Delaware now, with the sand tigers, it's a situation of availability.

From what I was told there is effort going into making a better, like collection transport facility dockside in this one place. We may be where the effort is concentrated right now, so it would be

more just for my own personal curiosity, and I can pass the information on at this point. But if any other state has gotten requests for sand tiger permits or sandbars, if you wouldn't mind letting me know, I would be glad to put it together.

CHAIR BELL: I can't see your name tag, because it's a glare. Oh yes, Mr. Gillingham, I got you.

MR. LEWIS GILLINGHAM: Now I'm a little bit confused. Unless I'm mistaken, in our management plan each state has the authority, through their commissioner to issue a collection permit, for some of the prohibited sharks. You're not required to, but they can't possess them unless they have this collection permit.

Usually, it's a gear thing. They are using a type of gear that they can't legally do in state waters. Once they collect that fish, wherever it goes, we're responsible to track that fish for its life. When it dies, they are supposed to let us know. We require they submit annual reports on the status of the shark.

A lot of them will keep them for a couple years, they get too big, and we send them off to New York, where it seems like the feeding is better. I don't understand the problem, and yes, it's been a couple years since I got, it sounds like that typical request that you got, John. It's an enormous number of fish that are going overseas.

We couldn't possibly track. We couldn't comply with the plan we're supposed to comply with. It's pretty simple. Probably it was a fishing operation and fishing was good in Delaware. I don't think if they are only fishing in state waters, they wouldn't need any HMS permit. Please, tell me I'm incorrect or correct, and we'll change how we're handling these things. We haven't gotten many requests recently. There are a couple of state aquariums that have, in fact there is only one this year that has got a collection permit. I do know other aquariums within the state. They are getting sharks through a federal permit. Oftentimes VIMS has one to fish outside state waters, and they've probably prearranged that. But that doesn't require our monitoring. I'll stop here.

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CHAIR BELL: Any other questions on this? I want to make sure we get Eric Reid's Other Business. Erika, do you want to weigh in on this real quick?

MS. BURGESS: John, I remember you bringing this up before, and I think one of your concerns was you might approve one collection and then more would come to you, more would come to you. In Florida we have a robust special activity license program that includes collections for display and educational purposes.

Our strategy that we use is we issue those permits twice a year, and there is a deadline by which everyone must submit their request. Then we prioritize the request based on whether they are going to remain in state, then by the U.S. and then internationally. That might be a process that addresses some of your concerns, if you're interested in talking to me more about it. I can get you connected with the folks who run that program.

CHAIR BELL: All right, thanks, Erika. In interest of time, we can talk afterwards or whatever, if you want to have more discussions with John or any ideas. I think it's a good discussion, we got it on the record. Eric Reid had something he wanted to discuss. We've got about 15 minutes, and then we have a hard stop. I don't want to get something thrown at me by the Chairman. Eric, if you want to go ahead and start us off.

SMOOTH DOGFISH QUALITY IMPROVEMENT

MR. REID: Yes, thank you, Mr. Chair. You mentioned some kind of gelled shark salad, and I don't want to add to your aspic at this point in the day. It's about smooth dogfish, whatever you call them, *Mustelus Canis*. There are some handling prohibitions for small amounts of sharks, that particular shark. I can't remember exactly what they were, which is another reason I want to address this.

If you get smooth dogfish, my cooler (well my former cooler) is about half the size of this building. If there were five sharks in a carton that

weren't handled properly by Chris Batsavage, I could smell them from here. But, if those fish are handled properly at sea, meaning H and G, leave fins off of course, H and G and put in a slush tote, they are worth pretty good money now.

The last vessel price I saw, which wasn't too long ago, a week or so ago, they were worth \$2.00, \$2.50 a pound. But with the restriction, I would like to revisit that at some point. It's all about producing a quality product to improve the marketability of that particular fish in reasonably small quantities, so that's my request.

I don't know if anybody else in southern New England has that same issue. But if they are handled properly, they can be worth something. I think the way things are now for the fishermen, every pound of fish that they catch is valuable to them. That is my request, thank you, Mr. Chair.

CHAIR BELL: Thanks, Eric, any comments or observations similar? Dan.

MR. DANIEL McKIERNAN: Yes, we had a public hearing last week up in Massachusetts on summer flounder, and I got a similar request from a participating vessel owner that they would like to see the trip limits increase, you know just a few more hundred pounds, because there is an increased value.

CHAIR BELL: I wonder if that is a New England thing or that is actually even beyond, because I've heard, particularly with issues with fins, not being able to deal with fins, that those larger sharks are not as popular and there is more interest in the smaller shark products. Maybe some effort in general is shifting over to that. I don't know, or demand for product. Thanks for bringing that up. It's good observations. Any other comments? I don't see any. Any other business to come before the Shark Board this afternoon? Toni.

MS. KERNS: Back to, so smoothhound sharks or smooth dogfish. The states have quotas. I do not believe the Commission sets any trip limits for them. It's the state that manages their own quota.

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CHAIR BELL: Does that make sense, Eric?

MR. REID: Oh yes, it makes perfect sense. I think that's Dan's issue. My issue is I want to improve the quality so you can get money for them, and I'm pretty sure we had a conversation about how many. There was a threshold, X amount of pounds versus what you had onboard, in order to dress those sharks at sea.

I would like to address that particular issue, because I think it's anti-productive. I mean like I said, if you don't take care of them, they have a very unique smell from a very long way away. I'll just leave it at that, but you can make something out of nothing if you can take care of them.

MS. KERNS: Are you asking to make a change to the Commission's provision? Do you want staff to pull together a white paper? It has to be 25 percent by weight at the time of landing to dress, I believe.

MR. REID: If I could make a motion right now and change it in the next three minutes, I would be a total winner. But I don't think that is appropriate. I don't really want a white paper. I don't need a white paper. I need to sell fish for money. If it takes a white paper, so be it. But I just think that I think it's important. Like I said, every pound counts now. However, you want to handle it, Ms. Kerns, that is fine with me. But easier is better for me.

MS. KERNS: I'm just trying to figure out what you want staff to do. You would need to change the provision of the addendum, so we would need to do another addendum. In order to, are you initiating a new addendum, are you asking staff to come back with some review of something of that dressed weight?

MR. REID: Let's talk about it over cocktails, because I don't want to talk about it now. It shouldn't be that complicated to improve the marketability of anything. But if that is what it's

going to take then well, let me think about it. But that is my intent is to get something done.

CHAIR BELL: Yes, and I think from a staff perspective, they are just trying to make sure we're responsive to what your request is. Maybe that would be a good idea to just kind of talk it over a little bit more and work through some details or something, at this point.

MR. REID: It turns out I already have some offers to work with me on how we're going to make this happen.

CHAIR BELL: Okay, way to go.

MS. BREWSTER-GEISZ: Thanks for that. If I remember correctly, this Board matched our federal regulations, and we implemented those percentages based on the Shark Conservation Act. That Shark Conservation Act requires fins be naturally attached, but then had a very specific exception for smooth dogfish. The percentages this Board have matches our Amendment 9, in terms of the federal and the state percentages for the fins. We would have to go through a whole rulemaking to change that, and we would have to find some way of making sure. I'm sorry, I'll stop.

CHAIR BELL: No, it's a legitimate point you brought up. It's just a little bit, perhaps more complex than we might have imagined. I think we can have some offline conversation about maybe where to go.

ADJOURNMENT

CHAIR BELL: Okay, anything else to come before the Shark Board today? Thank you, Eric, for that. Seeing no hands; is there a motion to adjourn? Yes, John Clark, second from Jim Gilmore. Any objection? No, we're adjourned then, thank you very much.

(Whereupon the meeting adjourned at 5:05 p.m. on Tuesday, May 2, 2023)

Atlantic States Marine Fisheries Commission

Atlantic Striped Bass Management Board

August 1, 2023

1:45 – 5:45 p.m.

Hybrid Meeting

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.

This meeting will include a 10-minute break.

1. Welcome/Call to Order (*M. Gary*) 1:45 p.m.
2. Board Consent 1:45 p.m.
 - Approval of Agenda
 - Approval of Proceedings from May 2023
3. Public Comment 1:50 p.m.
4. Consider Approval of Fishery Management Plan Review and State Compliance for the 2022 Fishing Year (*T. Kerns*) **Action** 2:00 p.m.
5. Review Status of 2023 Emergency Action **Possible Action** 2:30 p.m.
 - Public Hearing Summary (*T. Kerns*)
 - Discuss Timeline for and Possible Extension of Emergency Action
6. Consider Approval of Draft Addendum II on 2024 Management Measures for Public Comment (*T. Kerns*) **Action** 3:00 p.m.
7. Other Business/Adjourn 5:45 p.m.

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details

MEETING OVERVIEW

Atlantic Striped Bass Management Board

August 1, 2023

1:45 – 5:45 p.m.

Hybrid

Chair: Marty Gary (PRFC) Assumed Chairmanship: 01/22	Technical Committee Chair: Nicole Lengyel Costa (RI)	Law Enforcement Committee Rep: Sgt. Jeff Mercer (RI)
Vice Chair: Megan Ware (ME)	Advisory Panel Chair: Louis Bassano (NJ)	Previous Board Meeting: May 2, 2023
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 May 2023

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. Fishery Management Plan Review (2:00-2:30 p.m.) Action

Background

- State Compliance Reports were due on June 15, 2023.
- The Plan Review Team reviewed each state report and compiled the annual FMP Review (Supplemental Materials).

Presentations

- Overview of the FMP Review Report by T. Kerns.

Board actions for consideration at this meeting

- Accept 2023 FMP Review Report for the 2022 Fishing Year and State Compliance Reports.

5. Status and Possible Extension of 2023 Emergency Action (2:30-3:00 p.m.) Possible Action

Background

- On May 2, 2023, the Board approved an emergency action to implement a 31-inch maximum size limit for striped bass recreational fisheries, effective immediately for 180 days through October 28, 2023.
- The emergency action responded to the near-doubling of recreational harvest in 2022 and new rebuilding projections indicating a 15% probability of stock rebuilding by 2029 if the higher 2022 fishing mortality rate continues each year. The action is intended to reduce harvest of the strong 2015-year class.
- As of the July 2 implementation deadline, all states have implemented regulations consistent with the required 31-inch maximum size limit.
- If it deems necessary, the Board may extend the emergency action for two additional periods of up to one year each.
- Following Board approval of the emergency action, four public hearings were conducted via webinar from May 17-31, 2023 to inform the public about this action and identify next steps for management (**Briefing Materials**).

Presentations

- Public hearing summary by T. Kerns
- Overview of Emergency Action timeline by T. Kerns

Board actions for consideration at this meeting

- Consider extending implementation of the emergency action.

6. Draft Addendum II (3:00-5:45 p.m.) Action

Background

- In May 2023, the Board initiated Addendum II to Amendment 7 to address stock rebuilding beyond 2023. The Draft Addendum considers 2024 management measures projected to achieve the fishing mortality target in 2024.
- During June and July 2023, the Plan Development Team (PDT) met to develop options and the draft addendum document for Board review (**Briefing Materials**).
- As specified by the Board, the draft addendum includes options to modify the ocean recreational slot limit paired with harvest season closures, options to implement a maximum size limit (and potentially modify minimum size/bag limits) for Chesapeake Bay recreational fisheries, and options to implement a maximum size limit for commercial fisheries.
- The PDT also discussed other potential options, which could be added to the draft addendum document by the Board (**Briefing Materials**).

Presentations

- Overview of Draft Addendum II for public comment by T. Kerns

Board actions for consideration at this meeting

- Approve Draft Addendum II for public comment.

7. Other Business/Adjourn (5:45 p.m.)

Atlantic Striped Bass

Activity level: High

Committee Overlap Score: Medium (TC/SAS/TSC overlaps with BERP, Atlantic menhaden, American eel, horseshoe crab, shad/river herring)

Committee Task List

- TC – June 15th: Annual compliance reports due
- TC – Estimate 2023 removals to account for emergency action; provide guidance on Draft Addendum II option methodology
- TC-SAS – Prepare for 2024 stock assessment update

TC Members: Michael Brown (ME), Kevin Sullivan (NH), Gary Nelson (MA), Nicole Lengyel Costa (RI), Kurt Gottschall (CT), Caitlin Craig (NY), Brendan Harrison (NJ), Tyler Grabowski (PA), Margaret Conroy (DE), Alexei Sharov (MD), Luke Lyon (DC), Ingrid Braun (PRFC), Joshua McGilly (VA), Charlton Godwin (NC), Jeremy McCargo (NC), Peter Schuhmann (UNCW), Tony Wood (NMFS), Steve Minkinen (USFWS), John Ellis (USFWS), Katie Drew (ASMFC)

SAS Members: Michael Celestino (NJ, Chair), Gary Nelson (MA), Alexei Sharov (MD), Brooke Lowman (VMRC), John Sweka (USFWS), Margaret Conroy (DE), Katie Drew (ASMFC)

Tagging Subcommittee (TSC) Members: Angela Giuliano (MD), Beth Versak (MD), Brendan Harrison (NJ), Chris Bonzek (VIMS), Gary Nelson (MA), Ian Park (DE), Jessica Best (NY), Josh Newhard (USFWS), Julien Martin (USGS), Katie Drew (ASMFC)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC STRIPED BASS MANAGEMENT BOARD**

**The Westin Crystal City
Arlington, Virginia
Hybrid Meeting**

May 2, 2023

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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INDEX OF MOTIONS

1. **Approval of Agenda** by consent (Page 1).
2. **Approval of Proceedings of January 31, 2023** by consent (Page 1).
3. **Main Motion**
Move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fisheries in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update (F = 0.17). Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28-35" with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits (Page 16). Motion by Justin Davis; second by Emerson Hasbrouck. Motion amended.

Motion to Amend

Move to add "The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g., currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%" (Page 19). Motion by Mike Armstrong; second by Dave Borden. Motion passes unanimously (Page 23).

Main Motion as Amended

Move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fisheries in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update (F = 0.17). Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28-35" with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits. The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g. currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%." Motion passes unanimously (Page 28).

4. **Main Motion**
Move that the Striped Bass Board, by emergency action as outlined in the Commission's ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place. Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023 (Page 28). Motion by Mike Armstrong; second by Dave. Borden.

Motion to Amend

Move to amend to add "Measures for the for-hire sector will remain status quo. In the event the Board extends the emergency action past the initial 180-day effective period, the for-hire sector exemption from emergency measures cannot be extended" (Page 31). Motion by Justin Davis; second by Eric Reid. Motion fails (Roll Call: In Favor – RI, CT, NY, NJ; Opposed – MA, PRFC, PA, NC, VA, DC, MD, DE, ME, NH; Abstentions – NOAA, USFWS; Null – None) (Page 36).

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Main Motion

Move that the Striped Bass Board, by emergency action as outlined in the Commission’s ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place. Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023.

Motion to Postpone

Motion to postpone until the Summer Meeting (Page 38). Motion by Adam Nowalsky; second by Craig Pugh. Motion fails (2 in favor, 14 opposed) (Page 40).

Main Motion

Move that the Striped Bass Board, by emergency action as outlined in the Commission’s ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place. Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023. Motion carries (15 in favor, 1 opposed) (Page 41).

January 2023 Board Motion

Move to postpone action on Addendum I and task the Technical Committee with running two population projections:

- **One which assumes harvest of the entire ocean commercial quota from all states**
- **One which assumes harvest of the ocean commercial quota from all states except New Jersey (since their quota is reallocated out of the commercial fishery)**

The Technical Committee may use their expert judgement on other needed assumptions for the projections (i.e., selectivity) to produce the most realistic output for consideration by the Board.

5. **Move to approve Option E (Board discretion of commercial quota transfer provision except no transfers if stock is overfished)** (Page 47). Motion made by John Clark and seconded by Justin Davis. Motion passes (10 in favor, 1 opposed, 2 abstentions, 3 null) (Page 50).
6. **Move to approve Addendum I as modified today with an implementation date effective today** (Page 50). Motion made by John Clark and seconded by Ray Kane. Motion passes unanimously (Page 50).
7. **Move to adjourn** by consent (Page 51).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	Jeff Brust, NJ, proxy for J. Cimino (AA)
Steve Train, ME (GA)	Tom Fote, NJ (GA)
Rep. Allison Hepler, ME (LA)	Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)
Cheri Patterson, NH (AA)	Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Renee Zobel, NH, proxy for C. Patterson (attended latter half of meeting)	Loren Lustig, PA (GA)
Doug Grout, NH (GA)	John Clark, DE (AA)
Ritchie White, NH, proxy for D. Grout (attended latter half of meeting)	Roy Miller, DE (GA)
Sen. David Watters, NH (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Armstrong, MA, proxy for D. McKiernan (AA)	Mike Luisi, MD, proxy for L. Fegley (AA Acting)
Raymond Kane, MA (GA)	Russell Dize, MD (GA)
Rep. Sarah Peake, MA (LA)	David Sikorski, MD, proxy for Del. Stein (LA)
Jason McNamee, RI (AA)	Pat Geer, VA, proxy for J. Green (AA)
David Borden, RI (GA)	Bryan Plumlee, VA (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Justin Davis, CT (AA)	Chad Thomas, NC, proxy for Rep. Wray (LA)
Bill Hyatt, CT (GA)	Marty Gary, PRFC
Jesse Hornstein, NY, proxy for B. Seggos (AA)	Dan Ryan, DC, proxy for R. Cloyd
Emerson Hasbrouck, NY (GA)	Max Appelman, NMFS
	Rick Jacobson, US FWS

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

Ex-Officio Members

Nicole Lengyel Costa, Technical Committee Chair	Mike Celestino, Stk. Assmnt. Subcommittee Chair
Jeffrey Mercer, Law Enforcement Representative	

Staff

Bob Beal	Kristen Anstead	Jeff Kipp
Toni Kerns	Alex DiJohnson	Adam Lee
Madeline Musante	Emily Franke	Joe Myers
Tina Berger	Chris Jacobs	Trevor Scheffel

Guests

Jason Avila	Rick Bellavance	Steve Cannizzo
Matt Ayer, MA DMF	John Bello	Craig Cantelmo
Tyler Bailey	Marc Berger	Mike Celestino, NJ DEP
Meredith Bartron, US FWS	Alan Bianchi, NC DENR	Blane Chocklett
Quint Bartush	Michael Bias	Luyen Chou
Alan Battista	Kevin Blinkoff	Sasha Clark Danylchuk
Gerry Beers	Delayne Brown, NH F&G	Haley Clinton, NC DENR
Mel Bell, SC (AA)	Jack Buchanan, VIMS	Allison Colden, CBF

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Guests (continued)

Margaret Conroy, DE DFW	Blaise Jenner, ME DMR	Nicole Pitts, NOAA
Michael Cool	Peter Kaizer	Jim Polando
Heather Corbett, NJ DEP	TJ Karbowski	Marisa Ponte, NC DENR
Derek Cox, FL FWC	Greg Kenney, NYS DEC	Will Poston, SGA
Caitlin Craig NYS DEC	Carrie Kennedy, MD DNR	Jill Ramsey, VMRC
Jack Creighton	Michael Kosinski	Story Reed, MA DMF
Scott Curatolo-Wagemann, Cornell	Jared Lamy, NH F&G	Harry Rickabaugh, MD DNR
Sarah Cvach, MD DNR	Ben Landry, Omega Protein	Michael Roy
Bob Danielson	Wilson Laney	Cody Rubner
Josh Davidsburg	Toby Lapinski	Patrick Rudman
Robert DeCosta	Jonathan Larrabee	Lenny Rudow
Monty Deihl Ocean Fleet Svcs	Brooke Lowman, VMRC	Zachary Schuller, NYS DEC
John DePersenaire	Shanna Madsen, VMRC	Chris Scott, NYS DEC
Olivia Dinkelacker, UMASS	John Maniscalco NYS DEC	Tom Scott, NMFS
Steve Doctor, MD DNR	Genine Mc Clair, MD DNR	McLean Seward, NC DENR
Gerard Doyle	Tara McClintock, Cornell	Alexei Sharov, MD DNR
Paul Eidman	Neil McCoy, UMASS	Greg Shute
Mark Eustis	Alex McCrickard, VA DWR	Andrew Sinchuk
Julie Evans	John McDonough	Amanda Small, MD DNR
Peter Fallon, Maine Stripers	Joshua McGilly, VMRC	Somers Smott, VMRC
Catherine Fede, NYS DEC	Dan McKiernan, MA (AA)	Ross Squire
Lynn Fegley, MD DNR	Conor McManus, RI DEM	Renee St. Amand, CT DEEP
Glen Fernandes	Kevin McMenamin, Annapolis	Michael Stangl, DE DFW
Tony Friedrich, SGA	John McMurray	Lauren Staples, NH Wildlife
Tom Fuda	Seth Megargle	David Stormer, DE DFW
Ben Gahagan, MA DMF	Nichola Meserve, MA DMF	Kevin Sullivan NH Wildlife
Jim Gilmore, NYS DEC	Chris Moore, CBF	John Sweka, US FWS
Angela Giuliano, MD DNR	Clint Morgan, VA DWR	Colin Temple
Rick Golden	Steve Meyers	David Tolbert
Kurt Gottschall, CT DEEP	Alex Michaud, ME DMR	Michael Toole
Tyler Grabowski, PA F&B	Steve Minkinen, US FWS	Sam Truesdell, MA DMF
Rob Grieve	Pete Mohlin	Edward Tully
Melanie Griffin, MA DMR	Nick Montefusco	Jim Uphoff, MD DNR
Lars Hammer, ME DMR	Brandon Muffley, MAFMC	Taylor Vavra
Brendan Harrison, NJ DEP	Allison Murphy, NOAA	Beth Versak, MD DNR
Jaclyn Higgins, TRCP	Gary Nelson, MA DMF	Ralph Vigmostad
Peter Himchak, Cooke Aqua	Josh Newhard, US FWS	Mike Waine, ASA
Alexandria Hoffman, DE DFW	Thomas Newman	Jason Walsh, NC DENR
William Hoffman, MA DMF	George Noleff, WFXR TV	Esther Wang
Carol Hoffman	Alex Obregon	Carl Ward
Jeffrey Horne, MD DNR	Scott Olszewski, RI DEM	Craig Weedon, MD DNR
Harry Hornick, MD DNR	Ian Park, DE DFW	Ben Whalley
Bob Humphrey	Daniel Parma	Peter Whelan
Taylor Ingraham	Rachel Peabody, VMRC	Angel Willey, MD DNR
Mike Jarbeau	Michael Pierdinock	Al Williams
	Michael Pirri	Charles Witek

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Guests (continued)

Steven Witthuhn
Greg Wojcik, CT DEEP

Michael Woods
Chris Wright, NOAA

Jordan Zimmerman, DE DFW
Erik Zlokovitz, MD DNR

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, a hybrid meeting, in-person and webinar; Tuesday, May 2, 2023, and was called to order at 8:30 a.m. by Chair Martin Gary.

CALL TO ORDER

CHAIR MARTIN GARY: I would like to welcome everybody to the Atlantic States Marine Fisheries Commission's Striped Bass Management Board. My name is Marty Gary; I'm with Potomac River Fisheries Commission, I'll be your Board Chair. Our Vice-Chair is Megan Ware from the state of Maine.

I'm joined at the front table by our Fishery Management Plan Coordinator, Emilie Franke, and also our ASMFC Science Lead, Dr. Katie Drew. Also to my left is our Law Enforcement liaison, Jeff Mercer from Rhode Island. Nicole Lengyel-Costa is our Technical Committee Chair, and Lou Bassano is our AP Chair.

I just want to acknowledge one, not new Board member, although it is listed here, not new to all the folks in the room. But in Joe Cimino's stead from New Jersey, Jeff Brust is the Administrative Proxy. Welcome to the Board, Jeff. Our first order of business is Approval of the Agenda, so I would ask.

APPROVAL OF AGENDA

CHAIR GARY: Are there any additions or modifications to the agenda? Seeing none; the agenda is approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR GARY: Next up are the Approval of the Proceedings from January, 2023. Are there any edits to the proceedings from January, '23? Seeing none; the proceedings are approved by consent. Next up is public comment.

PUBLIC COMMENT

CHAIR GARY: I'm looking for items that the public would like to comment that are not on the agenda.

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We'll look for raised hands in the room, and also ask staff to look on the webinar if anybody has their hand raised, so items not on the agenda the public would like to make comment on. Not seeing any hands in the room, any on the webinar?

I would ask one more time, if anyone on the webinar would like to make comment on items that are not on the agenda. Okay, no hands up, so we're going to move on to Item Number 4 on our agenda.

[Lost audio temporarily due to technical issue; Board Chair paused proceedings until audio was restored]

MS. TONI KERNS: Josh, raise your hand for me. Okay, you're just self-muted, Josh.

CHAIR GARY: All right, Josh, thank you. You're back and we hear you, so take it away.

MR. JOSH NEWHARD: Do you guys have a presentation up? I'm only seeing the webinar slide.

MS. KERNS: Yes, we're working on it, Josh. If you want to start it's okay.

UPDATE ON STRIPED BASS COOPERATIVE TAGGING PROGRAM

MR. NEWHARD: Thanks everybody. Yes, I'm Josh Newhard; I work for the U.S. Fish and Wildlife Service, and I actually maintain our Cooperative Tagging Program database. I'll be giving a brief overview of the overall tagging program. I'll talk about our offshore winter tagging, and get into some of the things that we face, some of the history of it, some of the challenges that we dealt with, and just give you all an update.

The tagging program began, actually, in 1985 as part of striped bass management, and that was in response to the passing of the Atlantic Striped Bass Conservation Act. As I mentioned, the U.S. Fish and Wildlife Service maintains the database. We distribute all the tags to state agencies, and then we receive all those tag returns that come in from the public, who catch and either harvest the fish, or let it go, all that stuff.

The state agencies tag the fish along the Atlantic Coast, typically as part of their routine monitoring, usually for adults. We currently have nine agency programs that are actively tagging. Those are further broken down into what I'll refer to as producer areas, and coastal areas. Producer areas are those programs that tag fish during the spawning migrations within specific reaches of striped bass spawning habitat.

Then coastal area programs tag what are assumed to be mixed stock fish during the fall, winter or early spring, before they make their spawning migration. The current producer area tagging programs are New York's Department of Environmental Conservation that tag in the Hudson River. We have three that tag in the Delaware Bay or Delaware River population.

There is a Delaware/Pennsylvania fishing boat, and New Jersey DEP. Then there are three programs that tag in the Chesapeake Bay, so it's Maryland DNR, Virginia. Virginia Institute of Marine Science actually does their tagging, and D.C. Fisheries. Then coastal tagging programs we actually have four.

Massachusetts tags in the fall, in the offshore waters off Massachusetts. New Jersey DEP is also considered a coastal tagging program, they have some sites that are lower in the Delaware Bay, and they tag in early spring. That is still considered some mixed-stock fisheries. New York DEC does fall tagging off the Long Island Coast, and then for the bulk of this talk I'll be talking about the NCCOOP or that's the North Carolina Cooperative Tagging Program.

That is our offshore Mid-Atlantic tagging of striped bass in the winter, where we're presumably targeting all the mixed coastal stock fish. That has been a longtime partnership between North Carolina Division of Marine Fisheries, U.S. Fish and Wildlife Service, Maryland DNR and NMFS, and ASMFC.

Overall, all tagging programs through 2021 have tagged just over 558,000 fish. We've had a little bit over 89,000 tag returns. That gives us an overall recapture rate of about 16 percent. If you look at just individual unique fish that have been recaptured that

is about 15.5 percent. You can see that there are a handful of fish in the database that have been recaptured multiple times. The way these tags work, just as a brief refresher, there is a number on the outside of the fish. They are inserted through a small incision in the belly.

An angler could actually cut that tag off, report it to us, let that fish go, and if it gets reported again and it gets harvested, then the button that sits under the skin of the fish has all the same tag information, so then we can again get that information. Just a brief overview of how the data has historically been used in stock assessments.

It is part of the stock assessment process. There is even a Tagging Subcommittee. The main thing the tagging data has been used for is to estimate fishing and natural mortality, in order to compare those estimates with the statistical catch-at-age assessment model. It is also part of current efforts to develop a more spatially explicit multi-stock model.

In the last benchmark stock assessment, it was looked at, the tagging data was used to estimate relative stock composition. It ended up only being I think used for fish that were over 28 inches or 711 millimeters. You'll see that come up again later. That is typically the cutoff for what we'll call large coastal migratory fish.

It also can be looked at for migration rates and residence time as well. If we just look at the history of the North Carolina Cooperative Tagging Program, it was designed to target overwintering striped bass offshore of North Carolina. The Trawl Survey actually began in 1988. Initially it was really designed to hopefully be an index of abundance, offshore index of abundance for striped bass.

Now that did change over time, but the Trawl Survey did continue through 2016. However, there were no Trawls in 2011, '12, or 2014. At that time those were mainly related to funding. I don't remember exactly, but anyway, the funding started to become difficult to acquire. Beginning in 2011, hook and line fishing surveys were sought as a potential option, one to be explored, and really with the idea of being that they

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would be done alongside the trawl. There was really no intent to end the trawl, it just became that funding was difficult.

As you can see here, one of the reasons for that is it's about \$100,000 to \$160,000 for a trawl vessel used for a ten-day cruise. That doesn't even include all the agency personnel time that is essentially donated in kind. For hook and line, for ten plus hook and line charter trips, we're usually in the ballpark of \$20,000 to \$30,000.

You know we've seen that increase in recent years as fuel has gotten more expensive. The other benefit or advantage of hook and line fishing is that we can be really efficient with our trip. You know if it's bad weather we don't have to go out. With the trawl, you usually pick in a ten-day block of time and you're out there, you're out there. You still have to pay for that vessel time, even if you have to run the quota for something like that.

Here's the distribution. Don't get too caught up in all the points. Hook and line points are triangles, and trawl points are just circles. They are both color-coded with the oldest year of the survey being green, going to the most recent survey in orange and red. Really, I just want to show you how the survey has kind of changed over time. The trawl surveys were historically done right offshore of North Carolina, typically within the three-mile limit, almost always within sight of shore.

You can see there are even some points there south of Cape Hatteras on the Outer Bank. In the later years of the trawl, even 2016 they actually had to enter Maryland waters for the first time. Hook and line survey has historically always been based out of Virginia Beach, so you can see all the distribution of points out there.

You can see with the Trawl Survey there are some points off the mouth of the Bay, as well as the Hook and Line Survey. You now those points are significantly farther offshore than some of the historic trawl survey data. Fish have kind of been further offshore and a little bit further north, to the

point where we don't even really fish in North Carolina waters much anymore.

In fact, if you look at this year 2023 Hook and Line Survey was actually right off the mouth of the Delaware Bay, and almost exclusively off of Delaware. That was the first year for that. In 2021, all the surveys were conducted out of Ocean City, Maryland, as well, just like this year. But we mostly stayed off of Maryland waters that year.

We just look at a number of tagged fish just by NCCOOP, boat trawl and hook and line over time. You can see that in the early 2000s it was kind of what we called a hay day of the trawl, and there was a lot of fish tagged. You know you could see the peak of over 6,000 fish in the year 2000. But really in that timeframe was between 2 and 6,000 fish.

I know that kind of corresponds well to kind of the peak in the stock assessment, if I'm correct there. If you look in some of these later years with hook and line, we've been around the average of about a thousand. I'll get more into that data in a second. But if you look at the years where we did both the trawl and hook and line, now hook and line did tag more fish, so 2013 there was about 2000 fish tagged, and a little bit more than a thousand were tagged using hook and line.

Then in '15 and '16, hook and line significantly outperformed the Trawl Survey as well, without getting into all the details of what happened on those trawls. You can see it fluctuates, 2011 and '12 again, remember there was no trawl surveys done that year, and we only conducted one hook and line trip that year. That was kind of just the first go at it.

In these next few slides, you'll see kind of some similar draft, and this is just to show the relative contribution of NCCOOP Tagging Program versus kind of all other tagging programs. If we look at all tagged fish, and then we just look at the last ten-year average, which is all hook and line, the NCCOOP Program has been around 17 percent of all of the tags that are in our database, so all tagging programs coastal and producer.

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You can see obviously that fluctuates all over the place, especially those years 2011 and '12, where we don't have much sample size there. That is what those asterisks are for, just to remind you that those are the years with just one hook and line survey and no trawl survey. If you want to go to the next slide, we'll break it down a little bit more. If we look at all large fish, all tagged fish that are greater than 711 millimeters or 28 inches, then we can see the contribution of the NCCOOP fish raises up to a ten-year average of about 39 percent. I will say that 2022 point, that is just a hair over 50 percent. That will come down a little bit.

I'm still waiting on a couple coastal tagging programs data. But I can see that it is providing a fairly robust sample size of all the tagged fish of these large, presumably migratory fish. If we break it down even further on the next slide, that if we look at all coastal tagged fish that are greater than 711 millimeters, then it's a really large contribution. Most of these tags in our database are coming from the NCCOOP Tagging Program.

With that, I took off the 2022 here. If we look at the nine-year hook and line average, it's two-thirds of all the large coastal tagged fish in the database. Here are just the raw numbers. You can look at a number of trips, number of fish caught, and number of fish tagged. We're really conservative on these cruises about if there is any kind of bleeding, or the fish doesn't look healthy, we're not going to tag it.

We're tagging probably 99 percent of everything that comes onboard, but we just like to be really conservative with what does come onboard. If you look at the overall history of the hook and line survey, we've averaged about 650 fish tagged per year. Now if you exclude those first two years where we only did one trip a year, it's about 750-average.

Really that is kind of the ballpark that at least in my head when we're coordinating these. If we can average about 100 fish a day, then that is great, and we can kind of reach that longer term average. Really, it has been proven, I think, to be a nice viable, cheaper option than the trawl survey, and as I said, we can be more efficient with our time.

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It might be a little bit of a headache in scheduling and cancellations and things like that, but at least we can go out on good days, and try to set ourselves up to have success. It does still provide a majority of the tagging data on coastal fish, especially the large, migratory fish. Again, the bulk of that data in our database is coming from this tagging program.

We do have sampling challenges as these fish have moved further and further offshore and further and further north. You know we're just one boat out there in a lot of water. It can be tough to find them. Then of course, the furthest I will go is 30, 35 miles offshore, so again pretty far out there, but we're not going to go much further than that, because these are just day trips.

We still have to make it back in decent time anyway. We are facing some funding challenges. There is no long-term funding source. North Carolina paid for it for a number of years. I believe they stopped in '16 or '17, I'm not positive on that end. But since they stopped paying for it, it's been a cobbling of some Fish and Wildlife Service funds and the ASMFC funds.

Currently we don't have secured funding to get dock sampling in 2024. We are having some internal discussions, you know in-house, and I think there is also some going on elsewhere. We're looking for it, but we don't have anything secured officially right now. Apart from that, that it is kind of the challenges that we've been facing. I just want to take a brief second to acknowledge the fishing vessel Midnight Sun. Captain Ryan Rogers and the crew for conducting this for a number of years, keeping all our crew safe. The hundreds, if not thousands of volunteer anglers. This is all volunteer anglers. We sign people up to go fishing, help us reel in the fish. Crew brings them onboard, biologists tag them, and off they go. I will say it is really efficient. I've clocked it at sometimes a fish comes onboard, and 30 seconds later it's over the side back in the water.

We'll hold fish in the live well if we have to, but when things are going smoothly at a nice comfortable pace, it is really efficient in that as well. Also, all the Agency personnel for their staff time. This is all again; this is

a big partnership. Biologists from all different agencies are helping out, so I just want to thank all them. With that I can take any questions.

CHAIR GARY: Thank you, Josh, and great presentation. We've obviously learned a lot over the years since the late eighties with the Trawl Survey in the winter off North Carolina, and seeing these fish move further north offshore. We talked before at previous meetings about the value of this data. I know I had questions about the funding, and hope we have a little bit of a discussion about that. I would like to see, hopefully we have continuity here with this survey. But I'll open it up for questions for Josh for now. Eric Reid.

MR. ERIC REID: Yes, I like to talk about funding too. I mean it sounds like this is a really valuable program, and it would be a shame to have a shortfall on funding this. I see that ASMFC and somebody else is doing a financing. What is the holdup to get funding for 2024? I know it's money, Bob, so I thought it's a great way to start the conversation this morning. Let's talk about money, just for fun. Anyway, what do we have to do to secure this for one year or longer?

CHAIR GARY: Thanks, Eric. Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: The survey has been funded through a variety of sources over the years, directly from NOAA Fisheries for a while, then U.S. Fish and Wildlife Service has done it for the last few years. There is a question whether U.S. Fish and Wildlife Service will have the money for the next year, is where we are.

You know as you saw up there, it's only \$20,000 to \$30,000. It's not a lot of money. The Commission might have that money available in a contingency fund. However, the money that we might be able to tap into doesn't have the NEPA clearance to do on-the-water research activities. It's money that we get through the Atlantic Coastal Act to do meetings and buy equipment, and that sort of thing, so things with no environmental impact.

We would have to do some paperwork and see if we could get that cleared to fund the survey. We're willing to do that, but if Fish and Wildlife Service

comes up with a funding source that would be great as well. There are some options here, we just have to work through them. But it's again, not a lot of money, but it may be more work than money. Maybe a workload and a clearance issue more than a money issue. But I agree with what you said, Mr. Reid, that it's an important survey and we don't want a lapse in that survey.

CHAIR GARY: All right, we have two members of the Board, Pat Geer and Tom Fote. We'll go to Pat first.

MR. PAT GEER: It doesn't seem like it's a lot of money, but I understand the work behind the NEPA process. Would anyone consider putting in a multiyear grant project for this, instead of just doing it one year at a time? It's not a lot. It's not a lot of money and then the NEPA process would only have to be done once instead of every single year.

You could probably put in a three-year project for this so we're not going through this every year. Wilson Laney had to go through this for years, every year coming looking for money. It seems like if it's important, and this is not very much money, try to identify a source of funding for three years at a time.

CHAIR GARY: Tom.

MR. THOMAS P. FOTE: Since we're going to have a heavy day out, suggest that we have a virtual meeting on the water as they're fishing so it's covered under meetings.

CHAIR GARY: I like your suggestion, Pat. Maybe I can talk to staff, and we can see what we can do on the side. There is one member of the public that I think has a question for you, Josh. This would be Mike Abdow. Mike.

MS. EMILIE FRANKE: Go ahead, Mike Abdow, it looks like you are just muted on your end. Mike, if you just click that microphone button, you should be able to unmute yourself if you have a question. All right, Mike, looks like we can't hear you, so I'll turn it back to the Chair.

CHAIR GARY: All right, Eric.

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MR. REID: The boat that does this survey, what is that like a 12-pack? I counted more than 6 people, so I'm thinking maybe it's more than a 6-pack. But that's a for-hire vessel?

MR. NEWHARD: Correct, yes. Whoever the funding agency is puts out the bid and it's about a 52-foot boat.

MR. REID: All right, so they can carry passengers for-hire. Since you have hundreds or thousands of people that are willing to go fishing, would they be willing to pay to go fishing to augment the survey?

MR. NEWHARD: That might not be a question for me. I always ask people, you know people want to help out, but in terms of us taking money, I don't think that's going to happen on the Fish and Wildlife Service end. But you know, taking money from the public.

CHAIR GARY: The only thing I would say there is, it's my experience going out with the Midnight Sun, it's been a good opportunity for the fishery managers, biologists, to mix with some of our stakeholders and other folks. It's great to have conversations out there. That is just an added benefit to it. But I think this has been a good conversation, and I appreciate the Board's interest in continuing this. I'll try to work with staff, to see what we can come up with to help keep this going. Josh, thank you so much for your presentation today, and appreciate all your hard work, and all the folks at U.S. Fish and Wildlife Service that work on the survey. Thank you. All right, we're going to move on to Item Number 5 in our agenda, it's a Technical Committee Report.

TECHNICAL COMMITTEE REPORT

CHAIR GARY: The Technical Committee Report will be provided by our Stock Assessment Subcommittee Chair, Mike Celestino, who is on the webinar. The TC report covers two issues; the 2022 removals and commercial quota utilization related to Draft Addendum I on quota transfers. Following Mike's presentation we'll take questions first, please only

questions. Mike, you're on the webinar, are you ready to go?

MR. MIKE CELESTINO: Yes, thank you. I guess I would like to just start by acknowledging Gary Nelson, who put together hundreds of lines of code for us to be able to complete these tasks. I also want to acknowledge Commission staff, Katie and Emilie. They always bring a ton of support to help with these tasks as well, and with this presentation.

I also want to acknowledge the TC and SAS for some really thoughtful discussion as we worked our way through these tasks as well.

PROJECTIONS USING 2022 PRELIMINARY DATA AND QUOTA UTILIZATION SCENARIOS

MR. CELESTINO: The Striped Bass TC and SAS met in March of 2023 to talk about two things that the Chair just mentioned. One of the things we talked about was to review some corrections to rebuilding probabilities that appeared in the Stock Assessment Update Report that we showed last year.

The other was to address some updated stock rebuilding projections, as tasked by the management board over the last one or two meetings. In terms of the correction to the 2022 assessment update. In that assessment document we provided some short-term projections with probabilities of rebuilding SSB to various levels, thresholds and targets under several different constant F scenarios.

We looked at F status quo, F threshold and F target. It turned out that standard error was inadvertently used in the error calculations, where we had intended to use the coefficient of variation. That inadvertent swab didn't affect the median projection, so if you think back to the projections, you saw there was sort of a solid line with some error bars around it.

It wouldn't have affected that median projection, but did affect the width of the error bars. Those error bars actually became a little narrower, and so we've provided those in the updated table in the memo. We have the table appended to this presentation if

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folks would like to see that again as well. We'll update that information in the assessment document as well.

For the rebuilding projections, we had two specific tasks. One was to evaluate whether the 2022 removals remained at a level consistent with our expectation from the previous round of projections. Task 2 was to conduct stock projections to determine how the ocean commercial quota utilization scenarios could impact the stock rebuilding timeline.

Just as a reminder, the Board had requested projections in time for today's meeting, and had also requested inclusion of the 2022 preliminary removals, in order to meet this deadline. To talk a little bit about some of the data inputs. The projections use the 2022 assessment model configuration, including the low recruitment assumptions. Just as a reminder, that low recruitment assumption means that we're restricting draws of recruitment in between the years of 2008 and 2021. We had some information; some exploratory analyses show a really strong relationship between the Maryland YOY index and the model-based estimates of recruitment.

Since we had estimates of the Maryland YOY index for 2021 and 2022, we could use those to inform our estimates of recruitment in 2022 and 2023 respectively. The TC and the SAS thought that those would provide better predictions of recruitment, rather than just random draws for those first early years of the projection. Some additional information on data inputs. All the scenarios, again they are using preliminary 2022 removals in numbers of fish. We're using 2022 commercial landings from each state.

We're using estimated commercial dead discards using the ratio of discard to landings ratios from the previous year. Just as a reminder, those dead commercial discards account for a very small fraction of the total removals. This is a source of uncertainty, but a very small source of uncertainty. We're also using the 2022 MRIP estimates for recreational harvest and dead releases as well.

To talk a little bit about some of the MRIP results, the estimates indicated a 40 percent increase in total

removals relative to the previous year. We saw it almost doubling in recreational harvest, and a much more modest increase in our live releases, about a 3 percent increase in live releases. Combining both sectors, the commercial and the recreational sectors, we saw a 33 percent increase in total removals relative to the previous year.

Some of you may have seen that the final MRIP estimates were released just last Wednesday. We saw very minor differences between the preliminary estimates and the final estimates. The final recreational removals estimate is 1 percent lower than the preliminary estimates. Those results haven't been incorporated into this presentation and slides and so forth, there wasn't time to incorporate those changes.

The point we wanted to make is just that it's a very modest change relative to the exercise we worked through. A little more detail on some of the data inputs. For the ocean quota utilization scenarios, we had to make some assumptions. We assumed that there would be the additional harvest starting in 2023, to reflect using either all or most of the ocean quota.

This is in direct response to the Board task, and to wade into some of the details of Scenario 2, this is the scenario where we're assuming full ocean quota is used. The unused 2022 ocean quota is converted from pounds to number of fish, and then added to the total removals. The next two bullets just go through some detail that I can comment on if there are questions.

Then the last scenario, Scenario 3. This is assuming that the full ocean quota is used, except for New Jersey starting in 2023. We follow the same procedure as the previous bullet, except we're now subtracting New Jersey's quota from that additional harvest. The idea here is that this reflects the idea that New Jersey's commercial quota is unavailable for a transfer, since it has historically been reallocated to the recreational fishery. To talk through some of the projection scenarios. The TC and Assessment Committee's focused on three scenarios, assuming a constant three-year average

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fishing mortality through 2029. This three-year average fishing mortality acknowledged that catch and fishing mortality can vary from year to year, even under the same regulations. The three-year average F was very similar to fishing mortality in 2022.

But we did work through a set of exploratory runs, just to evaluate projecting F 2022, and the results were almost identical to the results we're showing in the memo. In Scenario 1, this is essentially the status quo scenario. It's based entirely on just 2022 removals only. We're using, like I mentioned, a three-year average F, and in this case, we're using an average F from 2019, '21 and '22. We are specifically excluding 2020 due to some COVID-19 uncertainty.

Then for Scenarios 2 and 3, we have a different set of assumptions. One, we're applying ocean commercial quota, starting in 2023. We're also assuming a constant, or at least fixed removals between 2022 and 2023, and then constant F from 2023 through 2029. I'll talk about the implication of that in some subsequent slides.

In this case, Scenarios 2 and 3, the average F is now 2019, 2021 and 2023. This next slide largely reiterates the information I just mentioned, so I won't repeat everything. But it is a good reminder for me to draw just a few additional points. Scenario 1 again, is essentially status quo. The additional commercial quota is not available for harvest.

Scenario 2, this is the full ocean quota utilization. This is bringing an extra 41,000 fish. This is an extra 41,000 fish on top of 6.9 removals, so it is a very small fraction of fish. It is a very small fraction relative to total removals, and there is some double counting because of New Jersey's bonus program.

In the interest of time, I'll just say that that double counting is probably around 5,000 fish or so, and I can answer questions on that at the end if there are any. Finally, for Scenario 3, we're now adding just an additional 27,000 fish on top of roughly 6.9 million removals, so again a very small, modest amount of additional fish. On to the results.

For all the scenarios the projected F rates were between the current fishing mortality target, 0.17 and the fishing mortality threshold of 0.2. This contrasts with the fishing mortality rates that were projected as part of the update assessment last year, which were at 0.14. It follows intuitively that if fishing mortality stays in between the target and threshold, rather than the levels more closely associated with fishing mortality in 2021, we would see a substantial decrease in rebuilding SSB to the target by 2029.

This table up here is in the memo, and I'll just sort of orient you to this table. We've highlighted two columns in particular, the first column, which is sort of a thumbnail description of the projection methods, and the fifth column. This is the probability of SSB being greater than or equal to the target by 2029.

The first row, these are the results you would have saw late last year as part of the assessment update. The probabilities have been updated to reflect the change I mentioned in the first or second slide. It showed, when you saw these results last year, that the probability of rebuilding was about 98 percent. The next three rows are the scenarios we worked through to address that most recent Board task. Scenario 1 again is sort of the status quo scenario; no additional commercial quota being incorporated. The probability of rebuilding to the target is about 15 percent.

Scenarios 2 and 3, this is now the different usages of the additional commercial quota. In Scenario 2 this is the full ocean quota being used, Scenario 3, full ocean quota minus New Jersey. Those results are identical. In both cases there is an 11 percent probability of rebuilding to the target. Then to just maybe quickly highlight the last column in this table. This is the probability of SSB reaching the threshold by 2029.

You can see in all cases that probability is over 90 percent. In terms of the impacts of removals, we'll show a slide next that graphically illustrates the results, but by way of introducing the results. The increased recreational removals in 2022 are driving

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the increase in fishing mortality rates, and the lower rebuilding probabilities in all the scenarios, as opposed to, for example, the additional commercial quota.

We'll see in the next slide the projections indicate spawning stock biomass increases over time from below the threshold to in between the target and threshold, where it stabilizes over time. This aligns with our expectation that if we're projecting an F in between the target and threshold, spawning stock biomass will remain between the target and threshold, all things being equal.

In order to rebuild SSB to the target by 2029, fishing mortality will need to be at or below its target. Yes, the graphical depiction of the results. Again, just to maybe orient you to the plots. The top row shows the SSB trajectory under various projection scenarios indicated by the sort of gray headers at the top of each column, and I'll just sort of skip through those column headers.

The far-left column, this is the kind of status quo, no additional commercial quota, so projecting the average fishing mortality from 2019, 2021, and 2022. The next column over is the scenario where we're incorporating the full ocean quota. Next column over, the third column is the full ocean quota minus New Jersey, and the fourth column we've included, again the projections you saw last year projecting F2021 forward.

The bottom row shows the trajectory of probabilities of reaching either the SSB target, that is the red line, or the probability of reaching the threshold, that's the black line. You'll notice that bottom row of plots is scaled from 0 to 1, so a probability of 0 to 100 percent probability of achieving those goals.

Then finally, maybe just to mention the X axis in each of these plot's ranges from 2022 through 2029. Revisiting that top row of plots. Again, you can see that SSB starts out below the threshold in all the scenarios. Under the updated projections, SSB stabilizes between the target and threshold, not reaching the target.

Whereas, our expectation from last years projections were more optimistic. Maybe in the interest of time, looking at the bottom row of plots. If we focus just on the red line, so this again is the probability of SSB reaching the SSB target. For each of the first three plots, you can see there is a very low 0 percent probability of reaching the target. Then by the end of the time series, 2029, each of those first three scenarios end up between about 10 and 15 percent probability of reaching the target, and ideally, we would have wanted that to have been at least 50 percent. A little more discussion on the 2022 removals. Here are some points that the TC and SAS wanted to make.

The groups noted that angler effort behavior is an important factor, and an important source of uncertainty. Another thing the TC and SAS wanted to note was that as the stock recovers, and/or if strong year classes become available, effort may increase and that may contribute to increased harvest and live releases as well.

The projections assume a constant fishing mortality or constant catch. Those are not necessarily representative of future years, since I mentioned earlier striped bass catch and fishing mortality can vary from year to year, even under a constant regulation. Then lastly, I guess we'll just note that the projections based on the 2022 removals represent a higher catch outlook.

The projections that we showed at the end of last year as part of the update assessment represent a lower catch outlook. If the future catch is in between that sort of low outlook and the high outlook, it stands to reason that the probabilities of rebuilding are likely to be between the 15 percent at the low end, and 97 percent at the high end. We have a figure that we'll show next, but again just to maybe kind of talk through some of the results in preparation of that result.

First the projections suggest that the impact of additional quota utilization on the fishing mortality and rebuilding probability is negligible. We have essentially calculated the highest possible fishing mortality that could result from 2022 removals and

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increase quota utilization, and the results are still almost the same as Scenario 1, the no extra quota utilization scenario.

The next slide will make that a little more clear. The fishing mortality is only about 2 percent higher in Scenarios 2 and 3 versus Scenario 1, so we've got 2 percent higher incorporating the additional quota, versus not including it, resulting in a slightly lower rebuilding probability, about 4 percent lower.

But we think this has more to do with our projection assumptions than the additional quota use. I mentioned in one of the earlier slides that in Scenario 1, the scenario where we're not incorporating the additional commercial quota, we're taking an average F from 2019, '21, and '22. But I also mentioned that in Scenarios 2 and 3, these are the scenarios where we're incorporating the additional commercial quota.

We're taking an average F from 2019, '21, and '23. What we're seeing is the effect of some population dynamics between 2022 and 2023 contributing to that difference. We don't show this in the memo, but there is actually a decline in abundance between 2022 and 2023, and over that span we're holding catch constant, or in fact increasing it a little bit.

That actually has the effect of slightly increasing F. Scenario 1 we have sort of a true constant F approach, and Scenarios 2 and 3 we have kind of a mixture of constant catch and constant F, so it's not a direct apples-to-apples comparison. But again, another one of the big points we wanted to make is that the quota utilization scenarios add about 42,000 extra fish. That is 42,000 extra fish on 6.9 total removals, so a really small number of additional fish. To graphically depict some of the things I just talked through, again to orient you to the plot. This is a plot of SSB over time from 2022 through 2029. We have some horizontal lines plotted. The top line is the SSB target, the bottom dotted line is the SSB threshold. I'll draw your attention first to the pink shaded region in this plot.

These are the projections that you would have seen last year as part of the update assessment. This is

kind of our lower catch outlook that has the SSB trajectory exceeding the SSB target. For the other scenarios, if we look at the legend in the bottom portion of the plot, you'll see some sort of tan or yellow region. That is Scenario 1, the scenario where we're not incorporating the additional commercial quota.

You'll see there is a blue box and a green box. Those are Scenarios 2 and 3, where we're incorporating the additional commercial quota, either with or without New Jersey. The first things I'll say is that the blue and green shaded region in the plot above are completely indistinguishable, so accounting for New Jersey or subtracting New Jersey has had no impact.

We do see a modest difference between the yellow shaded region and the blue-green shaded regions, and as I mentioned in the previous slide, again, we think this has more to do with some of our assumptions. We think the more direct apples-to-apples comparison, those regions would align even more closely.

To finish with some final TC and SAS thoughts on the interim projections, the group discussed the benefits and challenges, kind of the pros and cons of conducting stock projections between stock assessments. In this case the benefit of the interim projections was a timely update to the Board, in light of a couple of things.

One, a significant increase in 2022 recreational removals, following two low catch years, which also included COVID-19 uncertainty. There was also the emergence of the strong 2015-year class, the fourth largest year class in the time series. That likely played some role in the 2022 increase in removals. Additionally, the TC and SAS noted that the interim projections are not the same thing as a full stock assessment.

We didn't create a catch-at-age matrix, we didn't incorporate fishery independent or dependent indices, we didn't generate estimates of SSB and fishing mortality from which we could update stock status. The TC and SAS also felt that annual projections would not be particularly useful, given

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interannual variability in removals, I talked about that earlier. We see variability in removals, even under constant regulations.

We also thought that striped bass life history would have a role to play here as well, as this is kind of a long-lived slow to mature species, as opposed to a very short-lived species, where annual projections could be more useful. Then finally, the TC and SAS talked about the potential benefits of aligning projections and assessments with planned management changes. With that I would be happy to try to take any questions.

CHAIR GARY: Thank you, Mike, and thank you and Gary and all the members of the Technical Committee and the Stock Assessment Subcommittee for all your hard work, appreciate it. It's not the news we were hoping for, but here we are. At this point I would like to open it up to questions only. Chair and staff have received a motion, so we'll save that for discussion. This is for any questions they have for Mike. We'll start with Loren Lustig.

MR. LOREN W. LUSTIG: Thanks to Mike for a very good presentation to us. I did take note. In the presentation the issue that we saw of any (cut out) requested or further explanation of that, and also recommendation that you might have (cut out) for this Board, in order to reduce that uncertainty (cut out).

MR. CELESTINO: I'm not sure if anyone can hear me. I wasn't able to hear most of that question. The relevant parts of the question, the audio is cut out. I'm sorry. If someone can repeat that.

MS. FRANKE: Sure, so the question from Mr. Lustig (cut out) further on the uncertainty around angler effort and behavior, and if you had any recommendation or thoughts on how to address that uncertainty going forward.

MR. CELESTINO: Great question. It's humbling that I don't have a great answer. That, I think, continues to plague and perplex the TC and the SAS. There is the issue of availability that can influence effort. I guess the short answer is, I don't have a great answer, rather than sort of speculate or spin my wheels, I'll

just say that I don't have a great answer. I think it's something that the TC and SAS has struggled with, and it's a humbling realization.

CONSIDER MANAGEMENT RESPONSE TO THE TECHNICAL COMMITTEE PROJECTIONS

CHAIR GARY: Thank you, Loren, and thank you Mike. We have a number of Board members in cue here, so we'll go with John Clark, Tom Fote, Jason McNamee and Bill Hyatt, so go ahead, John.

MR. JOHN CLARK: Thank you for the presentation, Mike. Just curious looking at those MRIP numbers for 2022, and then '21. I looked back for some of the states that had the largest jumps, and 2022 was actually quite a bit higher in the harvest estimates than it was before Addendum VI went into place.

Was there skepticism on the TC about the MRIP? I mean it seems with other species, like if this was black sea bass, we would be pretty much saying, here's another steaming pile of MRIP data. Whereas, with striped bass it looks like we're acting like these are carved in stone and handed down from on high.

I'm just curious. The MRIP data, especially was 2021 the anomalous year? Was 2022? It seemed to be a blip. It is just really odd how the harvest increased so much, and for some of these states as I said, the harvest was a lot higher than it was before Addendum VI went into place. Thanks.

MR. CELESTINO: Thanks for that question. I wonder if we can bring up Slide 24, I showed Slide 24 on the presentation, that is just shows sort of the time series of removals. I don't know if anyone can hear me.

DR. KATIE DREW: Yes, we're working on it, Mike.

MR. CELESTINO: Okay, thank you. Oh, perfect. Yes, just a time series of removals that kind of cast that 7 million removals in context. Yes, really good question. You can see we haven't hit that level of removals, as John indicated, since probably it looks like maybe 2016, '17 or so. Maybe to answer the more direct answer to the question. It's not

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something that the TC or SAS really spent any time talking about.

We didn't pour into the raw intercept data to see if there were suspicious anomalies. We sort of take these values as the best estimate. We don't have a competing estimate, and so yes, I again don't have a great answer, except to say that it wasn't something that the TC and SAS spent, my recollection is that we didn't spend really any time talking about that value, other than okay, let's incorporate this into our work.

CHAIR GARY: I know John has a follow, but Katie would like to add some comment.

DR. DREW: Yes, so I think while the TC didn't formally discuss that, I don't think anybody was very shocked at this, because of the fact that we knew we had that strong year class moving into the fishery, becoming legally available. We also saw much higher quota utilization in several states on the commercial side coinciding with this.

It really did seem to, well I think to me and I think to staff, maybe not to the full TC, but I think it did seem sort of not an MRIP problem, but really more an issue of a strong year class becoming available to an ocean fishery that has not had a strong year class in a while move through.

MR. CLARK: Well, I can understand that to a degree, but it doesn't explain why 2021 was so low. You get down to the part of the range where we are, where the recreational fishery used to take place, mostly in the fall. We rarely see striped bass in state waters in the fall, I would say what now, Roy, maybe five years, six years since we've seen?

We're looking at, I'd say a moderate level to a decreasing level of recreational harvest in our area. Our commercial catch has just been steady. I haven't seen, really, any change in the spring runs, based on our effort and landings. You know as I said, it just seems to me that with other species we're much more skeptical when we see a year that is, as I said, one of those years seems to be to be an anomaly, maybe it's '21, but it just seems like a huge jump.

CHAIR GARY: We'll go to Tom Fote.

MR. FOTE: I think I have a little different interpretation of what happened in 2022. If you look at 2021 and you look at the previous years before that, and I've been looking at this history of striped bass when the years that these big blizzes occur. It always is about four or five years after these beach replenishment projects stopped along the coast. Because when the beach replenishes next year, following year, when the beach replenishment programs, when they disturb the lumps, when they basically put all this, like we did in New Jersey, put a peak from Ice Age Forrest that was three miles offshore and pumped it on the beach. That water comes out and fish stay away from the water.

The other thing we looked at this year, and you can't get away from it. We never went to an ocean water temperature below 42 degrees, which means we don't have, I don't expect a big sand eel spawn off New Jersey, because you need cold water like 36 degrees. Are we looking at those factors that basically apply, with the warm water menhaden came in.

Well, when menhaden comes in and the other bait comes in and they stay for long periods of time, that is when we have this huge number of catches. The same thing happened 10 or 15 years ago when the Atlantic Sea Herring came in, and basically stayed along the beach, and all of a sudden New Jersey catch and New York's catch jumped up dramatically.

A lot of this is opportunity. This year we're doing beach replenishment again, because there have been storms and everything else, and so it will affect the water for the next couple years. I live in Toms River, and usually we have snow. We usually shovel. I didn't have an inch of snow this year in Toms River.

Basically, my lagoon, which when I moved in my house, used to have 10 inches of ice, where I had to hire a guy in the spring to put my pilings down. I haven't had to do that in 20 years. We've changed the ecology, and the same thing with Delaware Bay and the Chesapeake Bay, and how is that affecting us?

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We can't use just catch figures to look at that, because catch figures a lot of time, depends if the bait moves inshore, because again, we're a three-mile limit. If we had the EEZ open, we might have been seeing these catches all the time, because people would be fishing with the tagging boat, basically at 35 miles off shore.

Really, we need to look at what that is playing into the role, and look at where water temperature does not stay at 42 degrees. I remember when in November we used to be waiting for the bluefish to migrate out, because it was 44 degrees, and that was November, and we were gone by December. We stopped fishing striped bass, most of the times after Thanksgiving.

Now, you never stop, it's there all year round, even in the bad years when they're not in, because they come in the bays and estuaries with the warm water. We're not taking any of that into consideration. I mean, we had the best year in New Jersey, of course (cut out) stayed out to December, so I never fished for any of those fish this year.

I sat there and died, because it's ten years before we have a blitz like that on the beach. But let's look at all the factors involved, not just the catch numbers, because the catch numbers are not isolated, they depend on water temperature and water quality, and we should be looking at, we know in the spring heavy rains affect the spawning of striped bass, and we basically don't know those rules yet either, and we've been arguing that thing for 30 years. (Cut out) If it factors at all when you're basically doing these estimates.

CHAIR GARY: That's a question to Mike you're asking? Mike, did you get that?

MR. CELESTINO: I lost the tail end of what Tom had said, but I guess I would just say, I guess my response would be, those are really good research questions, but all beyond the scope of what we were able to consider as part of this current task. I imagine a more sort of thorough evaluation would happen as part of the next benchmark, but yet beyond the scope of what we're able to look at for this task.

CHAIR GARY: Okay thank you, we'll go to Jason McNamee and then Bill Hyatt.

DR. JASON McNAMEE: Hey, Mike. Thank you very much, just my complements to the Technical Committee and the Stock Assessment Committee for a really well done, thoughtful memo, so appreciate that. My question, I'm going to cram two questions in here, but I'm going to pretend they're one with a follow up.

Harvest went up, discards also went up, but not nearly at the same rate. I'm curious as to whether, in your mind, or if the Technical Committee talked about this. Does that corroborate this idea that what we're witnessing is a year class affect, so it's that 2015-year class moving into the slot. Therefore, there was a pretty high success rate, so there wasn't as much discarding going on.

I'm wondering if those things are connected, and then my follow up is, is that 2015-year class fully recruited into that slot, or are they still moving into the range of that slot? In other words, I'm trying to get a sense of if we believe it's a year class affect that is influencing harvest, if we can presume that harvest will be as high if not higher next year. Thanks for that, Mike, if you missed any of that happy to quickly repeat it.

MR. CELESTINO: No, thank you, Jay, I did get that. Thanks for your comment earlier too. I appreciate that. Yes, I guess to the two questions. The short answer is yes, that I think the TC, I Had forgotten about this, I'm just glad Katie mentioned that. We did spend a little bit of time talking about that sort of emergence of the 2015-year class becoming sort of fully available, really available to the slot limit.

I think that does sort of play into that, sort of lends some credibility to the increase in harvest, but maybe not discards. Though to be honest, at least I didn't look into surrounding year classes, where we've seen the 2018-year class, which is another. It's not nearly as large, but that is a reasonably large year class.

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It is really difficult to kind of tease that, but as Katie mentioned, we did sort of acknowledge that 2015-year class being within the slot limit, which is a nice lead in to your following question. I actually haven't looked at it in a little while, but the TC does have a tool that we used last year to sort of help us with some of our regulation questions, some of the questions the Board had tasked us. If memory serves, that 2015-year class is still in kind of the meaty part of the curve. The meaty part of the distribution of that year class is still available to that slot limit, if memory serves. I'm guessing a little bit on that, but maybe Commission staff have some helpful slides here. Oh, great, so yes. Mean size as a function of feed, and you can see where the year classes are, so this is sort of the information we were using to make those judgments earlier, and they've been updated to reflect where they are for 2023. You can kind of see where the mean length is, so thank you, staff, for being so quick on the draw on that.

DR. DREW: This was from the memo that we put together. I think it was presented to the Board in January of last year for 2022.

CHAIR GARY: Bill Hyatt.

MR. BILL HYATT: My question tied in very closely to the question that John asked, and what Jay asked. I was simply curious to know whether the increase in '22 harvest was due primarily to the 2015-year class, or due to an increase in angler effort. I think it's been partially answered, but if there is anything more to add it would be appreciated.

MR. CELESTINO: Yes, I thank you for that follow up. I don't have a memory of looking specifically at effort. I think maybe Commission staff did, so I can't comment on that. Yes, sort of getting at the exact causes for the increase, it's a bit speculative. But I think there was definitely some discussion at the TC level that that 2015-year class being available to the slot limit played some role. I think it was general agreement on that. The additional factors of effort, I just don't recall if we actually did see an increase in effort. Maybe someone else can chime in on that if they recall.

DR. DREW: Yes, we looked sort of behind the scenes at this, and there definitely was an increase in effort on the Atlantic Coast, sort of from Maine down through the Virginia region. Overall total trips did increase in 2020, and directed trips for striped bass also increased, I think more than total trips did.

I think there was a combination of, there are more fish available, and that there were more people taking trips and directing on striped bass. Are those two things related? Probably. But it is a combination of increased availability, but also it looked like increased effort in 2022 compared to 2021 as well.

CHAIR GARY: Any final questions for Mike? Okay, we'll go John Clark and Tom Fote, and then we're going to transition to discussion.

MR. CLARK: Mine is quick. I just was wondering, since we're going to be discussing the 2022 harvest, and our response to that first. Will Mike be available to ask questions when we get to the discussion of Addendum I, because I think it would probably be better to ask questions about that discussion later on in the morning.

MS. FRANKE: Mike, will you be able to stay on for the rest of the morning?

MR. CELESTINO: Yes, that was my plan for sure, happy to help with any questions if I can.

MS. FRANKE: Great, thank you.

CHAIR GARY: Thank you, Mike, we'll go to Tom Fote for the last question.

MR. FOTE: Yes, bringing up the questions they were asking, I was wondering if we really knew the size limit of a lot of the fisheries. I heard there was a lot of big fish that were released in that period of time, in September, October, November and December, because they were basically being there. Again, that was from the surf.

We usually would survey, and even MRIP has a poor record of actually doing surf fishing in numbers. We saw a dramatic, dramatic increase in what went on surf, because you're catching fish, you're catching

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fish up to 40 inches, 50 inches, and they were releasing them from the surf, not only from the boats.

I was wondering how that played and how New Jersey's numbers looked on that, because I would assume that we were one of the parts for the real increase in catch. The other things when we look at the numbers, do we know the kept fish and the released fish, what year classes they belong to, because we do a poor estimate of those numbers also. We don't know whether it was all big fish being released or small fish being released.

MR. CELESTINO: Yes, those are really good questions, and I guess I'll just say, I don't have any information on that at the ready. It's not something that the TC or SAS looked at on a sort of state-by-state level. Perhaps Commission staff did something behind the scenes. But I don't have any information to bring to the table of that from the TC or SAS discussions.

DR. DREW: Just to add to that. I think we do have some numbers by mode but not by state. But I think the larger question of like what age classes are being kept, versus being released. Obviously, MRIP only has length information on the retained or the harvested fish. We did not look at the age composition of that yet. We did not have easy data et cetera, that will be part of the compliance reports.

Similarly, the information that we have on the composition of the released alive fish comes from a number of different sources, mostly volunteer angler logbook programs, and so those data were not available to us for 2022 when we did this component of it. We may be able to look at that later on this year, once we actually request those data from the states. But that is not part of the MRIP data, so that was not available at the time that we did this analysis.

CHAIR GARY: All right, thank you Tom, thank you, Katie on clarification. Before we transition to discussion, we do have one member of the public who was interested in asking a question, and his name is Steve Atkinson. You can unmute yourself, and please questions only at this point.

MS. FRANKE: Steve, it looks like you're just self-muted on your end. If you click on the microphone button if you would like to ask a question.

MR. STEVE ATKINSON: I'm sorry, I hit that question by mistake, my apologies.

MS. FRANKE: No problem, thank you.

CHAIR GARY: No worries, Steve. We're going to transition into discussion. Before we do so, I just wanted to take a moment to acknowledge that weighed in. Oh, Mike, you haven't asked a question so go ahead.

DR. MICHAEL ARMSTRONG: I'm sorry, it's not really a question, but I think it will be helpful for questions that Jay asked. This isn't vetted through the TC, so take it with a grain of salt. But it's all crafted by Gary Nelson, who you know has done all the projections. We have a very robust recreational sampling program, and we aged all that.

A lot of the questions, probably 55 percent of the year class was in the slot, and when you grow it up two inches, 100 percent will be in the slot. For ages, there is about two-thirds 2015s, maybe a third 2014s and a little bit of 2016s. I wanted to throw that in, because so many people have not seen these data, and I'll be making a motion later that will be germane to this.

I'm lucky, I get to sit 30 feet from Gary Nelson, so I'm privy to things that not everyone gets to see until later on. I wanted to throw that out, so I hope that is helpful to people who have had the questions. This year class will be fully in the slot this year, and wasn't last year. Thank you for your forbearance.

CHAIR GARY: Thank you, Mike. That is very, very helpful for our discussion which we're about to start. But before we do so, just an acknowledgement for all the folks in the public who took the time to write into the Board. If you looked in your supplemental materials, there were a huge number of comments.

Comments from individuals, from businesses, from charter boat associations, Connecticut, Rhode Island,

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light tackle guide's association, the ASGA, conservation organizations. In one case I think there were hundreds, if not well over a thousand individuals and businesses that signed on to submit their concerns to us.

I just want, on behalf of the Board to the public, we really value that highly, and we appreciate the time that you took, and we will absolutely consider it. Thank you. Next, we're going to transition into discussion. What I would like to do, since we received a number of motions, in the sake of efficiency, I would like to frame our discussion. I'm going to look to the Board for any motions, and Dr. Davis, could you get us started?

DR. JUSTIN DAVIS: I have a motion that I provided to staff this morning, so I'll just wait to see if we get it up on the board. There it is. **Move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fisheries in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update (F= 0.17).**

Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28-35" with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits.

CHAIR GARY: Thank you, we have a second, we'll go with Emerson Hasbrouck. Back to you, Dr. Davis, if you would like to speak to your motion.

DR. DAVIS: We find ourselves about halfway through our ten-year rebuilding timeline for the stock, and I think the Board is facing another decision point here on how to act. I think since the stock was declared overfished in 2018, this Board has got an excellent track record of taking conservative action to rebuild this stock.

You know in Addendum VI we implemented a slot limit, which was really a new coastwide management

strategy for striped bass, because there was good science to suggest protecting older, larger fish would be beneficial to the stock. We implemented a circle hook requirement, even though it wasn't entirely clear how we would quantify the benefits of that, and there were enforcement concerns.

But we knew it would help with conservation, so we implemented it. Then in the Amendment 7 process, we chose to retain really a conservative reference points, and aimed to build the high biomass, and also incorporated a low recruitment assumption to our rebuilding plan. I think this Board has got a great track record of taking conservative action. This addendum, the motion to initiate this addendum is hopefully in the service of the Board again making a conservative decision here, when faced with information about what's going on with the stock.

The presentation we just hear, we have clear indication that removals in 2022 were very high, and there is good reason to believe that we are now off track to rebuilding. The Board is not compelled to act. We have not tripped a management trigger, as was mentioned in the presentation.

We're not dealing right now with a new stock assessment update, or true updated estimates of F, so the Board doesn't have to act. But I think the Board should. I think we should take some precautionary decisive action to get ourselves back on track for rebuilding. That is the goal of this motion, is to start a management process for 2024 to accomplish that.

In fact, there has been a lot of discussion around the table about potential need for action this year, to get us back on track for rebuilding. I don't want to short circuit that discussion, but I do just want to explain why I'm sort of putting forward the motion for the Addendum for 2024, before we talk about what we might do for this year.

My rationale there is, you know my understanding is if we do something for this year it's going to be using a process that is not our normal management process, not going to include the normal type of deliberation we do, and is not going to include public

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input. I'm not saying I'm not comfortable doing that, but I'm not comfortable with extending that for two years.

Before we consider what we're going to do for this year, I think it's important to signal to the public that we'll do a process for next year that is more in keeping with our normal management process. The goal here with this Addendum is to establish new measures for 2024 for all sectors, so all sectors are contributing to conservation. We have to set some goal to sort of engineer measures to, so I chose F target from the last assessment year, because I think that's an appropriate goal, given that out of the last assessment that was an F rate that was projected to achieve rebuilding. I'll acknowledge that this is sort of a departure from our normal process. We usually don't engineer measures for one year for F in one year, and sort of key in on one year. But I think we're sort of in a tricky spot here, because we have a new assessment coming in 2024 that can inform 2025.

I think what we do beyond 2024 should be informed by that new assessment, so that is why I'm sort of suggesting that we do something here that is geared towards one year in 2024. I'm not looking to start sort of a new management regime for striped bass, where we get into a model of assessing what happens every year, and then making a decision for next year and doing it on an annual basis.

I don't think that's a good approach, but I think it's kind of what is necessary in this instance. I think the Addendum is going to have to be kind of lean, in acknowledgement of the timeline we're on to get something done for 2024, and also the ongoing workload of the Technical Committee with the assessment coming. I've attempted to sort of draw some boundaries here around what types of options could be considered in the addendum. For the ocean fishery, modifications to the slot limit of 28-35 inches.

Harvest season closures is a secondary non-preferred option. I think that is in keeping with the discussions we had during the Amendment 7 process, when we were considering potential Board action coming out of the last assessment. We thought modifications to

the slot and then harvest season closures, if we need them, if the potential slot limits are just so conservative that we really can't live with them. That is the approach I'm suggesting for the ocean fishery.

For the Chesapeake Bay fishery, taking a look at maximum size limits, either a consistent slot for the Bay or just imposing a maximum size limit where it currently doesn't exist. For commercial fisheries, taking a look at maximum size limits, a common complaint I hear from recreational anglers is that we've adopted the slot limit, we're preventing recreational anglers from taking large fish.

We're still allowing the commercial sector to take those larger fish. I get that there are market considerations there. The market wants the larger fish. But I think it's worth exploring imposing a maximum size limit in the commercial fishery to provide additional protection for those larger fish. Thank you, Mr. Chairman.

CHAIR GARY: Emerson, would you like to speak as the seconder?

MR. EMERSON C. HASBROUCK: Yes, thank you, Mr. Chairman. I agree with everything that Dr. Davis just mentioned, and he's given a good reason to support his motion. I can't really add too much more to that. However, we do need to start an addendum now, to address the high recreational and the increased fishing mortality to rebuild on schedule.

Mr. Chairman, (cut out) public comment that we've received, and much of that public comment encourages us to start an addendum. Again, this does not exclude the Board from taking some action for 2023, once we've decided what we're going to do with the addendum.

CHAIR GARY: Go to Mike Luisi.

MR. MICHAEL LUISI: I want to thank Dr. Davis and Emerson for putting this motion before the Board at this time. I think there has been a lot of work that has gone into this motion behind the scenes, and I absolutely agree with everything here, as far as moving forward for 2024. I like the concepts that are

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proposed here, including modifications to the slot limit.

The one thing that I do think is something we haven't talked about here is like the idea of the Chesapeake Bay commercial fisheries, as well as the ocean fisheries considering maximum size limits, rather than (cut out) for Justin. But I'm assuming that based on what you've outlined here that quota reduction isn't something on the table.

It would be focused mostly or entirely on maximum size limits there. I just think that is something good to understand for all of us that have commercial fisheries. Lastly, I will say that in Mike Celestino's presentation of the Technical Committee report, there was a lot of talk when it came to the recreational fisheries.

There was a lot of discussion about removals, and removals as we all know (cut out) is a combination of both harvest and dead discards, yet I don't see anything in here that would refer to any type of consideration or action for any dead discard consideration in moving forward in 2024. It is something that I certainly feel pretty strongly about.

It's not that I can't support the motion, but I would like to see some acknowledgement of discards being considered, because it does play a critical role in the overall mortality of the fishery. With the understanding that yes, discards will happen, dead fish will happen as a result of this extremely important recreational and commercial fishery on our coast.

I just would like there to be some consideration of that. I just have to say, Mr. Chairman, I may be inclined to provide some simple language for an amendment to the motion, but I would like to hear what others have to say first. But thanks, Justin, for putting this together.

CHAIR GARY: Justin, would you like to respond?

DR. DAVIS: Thank you, Mr. Chairman, and thanks for those questions, Mike. I did mean to say that and I forgot. My intent with this motion is that any types of measures that I haven't mentioned here in the motion would not be considered in this addendum,

so to your point, commercial quota adjustments is not something I'm contemplating with this motion.

I agree that this does not propose measures that directly address release mortality and discards. I agree with you that that has got to be part of the picture going forward. My intent was to try to keep this addendum fairly constrained, and so I thought maybe it would be better to deal with that question in the next management action that we take out of the '24 assessment. But that is just my thought.

CHAIR GARY: Okay, we have John Clark, Senator Watters and then Mike Armstrong.

MR. CLARK: Thank you for the motion, Justin. I have a question for Dr. Davis also, especially the last sentence there about the maximum size limits for commercial fisheries. While we might want to take actions on the commercial fisheries, maximum size limits for allotted fisheries, for example ours, which is a gillnet fishery.

We have ITQs, I mean you really can't control, even if you're using a smaller mesh net, you could still end up catching fish that based on a maximum size limit would be discarded dead. There is not much point in that, especially when it is, as I said ITQ. I would not object to seeing, back when we did Addendum III, there was a lot of push to have mandatory tagging by both the fisherman and a dealer or a weigh station, and that was watered down to just mandatory tagging as a dealer.

I mean there are options we can do to get a better handle on what is actually being caught in the commercial fishery, and a lot of states like our own state are doing that. But I'm just a little concerned about putting the only type of control up there for commercial fisheries is maximum size limits, so just wondering if, you know I don't know if Mike was planning to address that with his amendment, but it just seems a little that if it's in the motion that is what we're going to be looking at an addendum rather than other measures on the commercial side.

CHAIR GARY: Senator Watters.

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SENATOR DAVID WATTERS: This is a question for Dr. Davis about the wording of the amendment. I think in the sentence that you have potential measures for the ocean recreational fishery, should include modifications to the Addendum VI standard stock limit of 25 to 30 inches and harvest season closures as a secondary nonpreferred option. Unless you want both of those to be secondary nonpreferred options, I think that you want to change it to with harvest season closures, isn't that your intent? I just thought that maybe is a wording issue.

DR. DAVIS: Thank you for that, Senator, that is my intent. I would look to staff if they feel like that clarification is necessary and helpful, and the seconder is okay with it, I'm good with it.

MR. HASBROUCK: Yes, I'm good with that, it just clarifies things.

CHAIR GARY: Okay, we'll just wait a moment until we get that modified. Mike Armstrong, you're next.

DR. ARMSTRONG: I completely support this motion, but I do want to amend it by adding some language, and this actually works out well, because I don't want to derail this potential motion, but I do have language that I would like to be considered. Are you ready? Unfortunately, I don't think you have the language anywhere.

Go slow. You may. Why yes, you do have it. Would you like me to read it into the record? **I move to add "The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g., currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%."**

CHAIR GARY: All right, we have an amendment, second David Borden. Mike, would you like to speak to this?

DR. ARMSTRONG: Yes, please. I made a similar motion on the last amendment, and that retired. My concern here is the proposed addendum will not

have the 2023 harvest in it, and that will have to be projected. When the new stock assessment comes in, we will surely have to look at new measures for 2025, in order to accomplish our goals. Without this language we are going to have to start another addendum, and we won't get that in until 2026.

Anyway, we'll have a lag here if we don't have this process here. Anyway, for the same reasons I had it on the amendment that we needed to act quick, you know the complaint is always we don't act quickly enough. The cost is we will have to do this without a lot of public comment, but the benefit is we are approaching some fairly dire straits here with this stock. I think we need to react quickly from the assessment. I'll leave it at that.

CHAIR GARY: Thank you, Mike, David, any comments you want to add?

MR. DAVID V. BORDEN: Nothing to add, Mike just made the point.

CHAIR GARY: Okay, we have an amended motion. Tom, you had raised your hand, do you want to maintain your place in the queue to comment, or relinquish?

MR. FOTE: Yes, I'll comment on the new motion and I'll comment when we get back to the original motion.

CHAIR GARY: All right.

MR. FOTE: My concern about putting that date on this, we will not have the 2023, so we do not know if the 2022 was an abnormal year, because of certain conditions and bringing all these fish, and allowing because of the access of the anglers to basically see. This year it could be cold, we could have 14, 18" of snow in Toms River, and the ocean could be back down to where it is supposed to be in water temperature, which I hope that is what happens.

But we don't know, and if we act before we know what 2023 looks like, or at least we have an estimate of what the catch for 2023 looks like, then we're moving ahead. I'm concerned over that. I mean, I

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understand what we're doing and I support the original motion. I was going to say I support, it's an unusual situation. I support the first four speakers, and I get to Mike and I have to deliberate a little bit on how I support this. Again, I've seen this over the years, some of you know how long I've been sitting around this table.

But they also know that I was sitting in 1986 at the Striped Bass Board, and until the nineties we didn't do kneejerk reactions. We did a couple. That is how come New Jersey wound up with a 24 to 28" slot limit, and then you decided two-years old, that wasn't what we should do, we should go back to another. Then you also basically took away the producing area status to the Delaware Bay, which would allow us to manage fisheries different and set our quotas differently than we do now. We should be putting that back in. We've talked about this a number of times, but the Delaware Bay and the Hudson River both. Because New York waited until New Jersey left the meeting, and slipped this thing in, in Amendment 5, and by the time we came back we couldn't get a two-thirds vote to override that. I understand, I've been around this table a long time, and I understand nuances that happen here. I have concerns where we go to this is that really, we need to incorporate the 2023 to see what's going on, and see if this was an abnormal year in 2022, and basically look at it.

As we move into any kneejerk reaction, you know, people talking about emergency action, well that's a kneejerk reaction, plus you have no public comment nor public hearing. I will say, I will have a problem with that. They ought to at least bring it out to the public, because I know the economic impact of doing something like that, and also the states problem to try to enforce that and get it in in 180 days, because it may be the 180th day when we put it in place. I'll leave it at that at this time, thought the original motion weak.

CHAIR GARY: I'm going to go to Doug Grout and then Megan Ware.

MR. DOUGLAS E. GROUT: I certainly support the underlying motion, and I definitely like the concept

here of, if we're not going to have a 50 percent or greater probability of rebuilding that that be something that we would trigger some further action. One of the concerns I had with the current stock assessment schedule was if, let's say we go through the addendum process.

We put in some measures that go into effect in 2024. We're going to have an assessment in 2024 that is not going to take into account the effects of the changes we make in the addendum. We could be chasing our own tail with that, because we could look at it and say, well, based on 20223 data and previous data we still have a huge jump, you know we need to make some action.

But we've already taken action that is not included in that. While I wasn't going to bring this up at this point, because of this I was going to suggest at a future meeting that maybe we postpone our next bench or next full assessment to 2025, so that we could take into account the effect of whatever our addendum is. Just a thought for people here, and you know we could still vote this up or down, but if we change the assessment date it might be more valuable information for us.

CHAIR GARY: Thank you, Doug. Megan Ware.

MS. MEGAN WARE: To the motion to amend, I'm going to support this. Thinking back on what we heard from the TC this morning about trying to align management action and the stock assessment schedule. This gives us an opportunity to do that, so that if we need to take action after that 2024 assessment, we could do that in 2025. That would give us a year of data through 2025 in that 2026 stock assessment.

I think that is worth having as an option in the addendum that (cut off). I see this as an option for the Board, so for some reason if the Board chooses to not pursue this and go through the traditional addendum route, that is always available to us. But I think it's worth having this option in the document.

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CHAIR GARY: Thank you, Megan. Any other comments? Katie wanted to jump in for a moment, and then we'll go to John Clark.

DR. DREW: I think this related to the question of what kind of information is going to be available from the 2024 assessment. We will have 2023 data in the assessment, and the emergency action is taken that goes into place in 2023. That will be captured within the assessment for that terminal year of 2023. The question is, if we put something in place for 2024, what are the effects of that going to be?

That is something we can incorporate in the projections of these actions, and the final option that will be chosen will have sort of a reduction in harvest that we're predicting, based on year class availability, things like that. The projections would include for 2024, kind of our projected management completely from (cut out) projections to say, we would take 2024 the management measures we put into place (cut out) what is actually, but we will be able to incorporate the fact that there will be changes in 2024 relative to 2023, when we do those projections.

CHAIR GARY: Before I go to John. We have an amendment to the motion, and I would like to get some public input, but we're going to do this in a very balance and measured manner. When John finishes his comment, we will go to the public and take two comments from the public in favor of this and two against it, if there are in either camp. We'll do those in a concise manner and allow the public, for anyone who wishes to one minute each. John, we'll go to you first.

MR. CLARK: Just a question for Dr. Armstrong. I assume when you say rebuilt, you mean rebuilt to the target and I've been very clear that I think the SSB target is pretty unrealistic. Just looking at those last projections we saw, Mike, it looked like we have a real good possibility of being above the threshold, which by definition is 100 percent of the fully restored stock, based on 1995, but obviously a much lower probability of reaching the target.

I mean this target reminds me of every year I go for my physical, my doctor gives me a target weight that

I last hit in 1975, and I don't expect I'm every going to hit that target. My question here is, I mean based on each assessment update it seems like we have a change in what the target will be. This seems very definitive that if we're not at 50 (cut out). I'm just curious, you know the way it ties into this very high SSB target.

DR. ARMSTRONG: It's problematic. But I would say rebuilt is the target, so that is how I'm viewing it. I mean that is something we're going to have to look at carefully, especially with the low productivity we're getting. If I could add one more comment. Does that answer you, John? Yes.

I just want to make it clear; this is an option this is not mandatory. You know if it comes in at 49 percent, we don't have to go this route. It just gives us flexibility, and again, I think we're approaching some difficult days ahead. I would like to have an option to move very fast if we need be.

CHAIR GARY: Now we're going to try to go to public here, again do this in a concise and measured manner. I don't know if staff found it's Madeline or who will help with the timer. But I look for a show of hands here in the room and online, and first thing we would look for is two in favor. Anyone who is in favor of the amendment, and I see one hand raised, that would be Mike Waine. Mike, if you would come up to the public microphone that would be great.

MR. MIKE WAINE: Thank you, Mr. Chairman, Mike Waine with American Sport Fishing Association. It's hard to indicate preference from the back of the room, so I'm not going to speak for or against this motion to amend. But if the Board moves forward with this, in the addendum.

I highly recommend that they plan out the timeline in which these actions would occur. What year is the Board going to consider taking action, what information are they going to use to do that action, so that the public can get some sort of an understanding about how they are going to participate in this Board action process.

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CHAIR GARY: Thank you, Mike, we'll look for one more person from the public who is in favor of this amendment. Okay, so we have Mike Abdow online, so Mike if you can unmute yourself, go ahead and speak. One minute please.

MS. FRANKE: Mike Abdow online, it looks like your hand is raised. You should be able to unmute yourself by clicking on that.

MR. MIKE ABDOW: How is that? Is that better?

MS. FRANKE: Yes, thank you.

MR. ABDOW: That's what happens when you get old, this new technology stuff. I am in favor of making sure that you guys do the right thing. We have a lot of people that are getting into this fishery now, and lots more coming. The internet plays a big part in this. Lots of people like to talk, lots of people like to go fishing. There is going to be more coming.

I was talking to a marine place yesterday that sells boats, and they are sold out for two years in advance. That means I couldn't even go there and buy a boat. I'm a charterboat here in Chatham, Massachusetts, and I've been fishing for striped bass since 1959. I've been around a little bit. But I just want you to understand that there are more people coming.

There is going to be more people working on these fish, so just keep that in mind when you make these rules and regulations to save the fish, because I was taught without the fish there is no meat, and I would prefer to see the fish. Unfortunately, I have no control over how many people are involved. These people move a lot around.

They move from fishery to fishery, from sea bass and fluke to striped bass to tuna. In the last 25 years it's gone crazy, but in the last five years it's gotten completely outrageous, so keep in mind, two years down the line from now it's probably going to be double what it is right now. Thank you very much.

CHAIR GARY: All right, thank you, Mike. Appreciate your comments. We will now look to the public for anyone who is in opposition of this and take up to two comments. I'll look to the room first. Is anybody

in the room with the public in opposition to this motion and you would like to speak to it? There is none in the room, now looking to online. Anyone online, raise your hand and let us know if you are in opposition to this amendment. We have Julie Evans, so Julie, go ahead and unmute yourself and you have one minute, Julie.

MS. JULIE EVANS: Thank you, Mr. Chair, for recognizing me. My name is Captain Julie Evans. I represent the East End Fishermen in East Hampton for the Fisheries Advisory Committee. I would like you to know that we recognize here how important striped bass is to our local economy, and not just our local fishermen.

You might say that striped bass is the fish that built our economy here in Montauk. I would hope that with all the scientific evidence and all the comments that I've heard, that you would also recognize that you can't go from what I've seen, allowing a generous slot size to going to no slot size to going to no fish, perhaps, but maybe, depending on whatever happens in 2023.

I am not a person that is in favor of the amendment that says that this Board could move on their own without any public input. I think that public input is very important to our fisheries, and especially on behalf of the local for-hire industry, which is now lumped in with the recreational fishery.

This could be devastating to the lives of many people out here, many, many people out here, not just the fishermen. You know I as a former commercial striped bass fisherman, who lived through the striped bass problems of the eighties. I would like to see that you take all of this into consideration, and do your best to maintain the fishery, and allow fishermen to fish. Thank you.

CHAIR GARY: All right, thank you, Julie. We have one other person who would like to speak in opposition online, and his name is TJ Karbowski, so Mr. Karbowski if you could unmute your microphone.

MR. TJ KARBOWSKI: This is all with good intention, don't get me wrong. But there is just so much

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uncertainty, specifically in regards to the MRIP data. It's been brought up earlier, but we have zero confidence in MRIP data for every other species, and I don't know why we're taking this as gospel for this species. Also, with the gentleman, Mike there, the mathematician guy who did the presentation earlier.

I believe all of his math for the percentage of the rebuilding was based on the higher MRIP numbers. I understand if it's based on higher for one example, but it either should be also included for the lower end of the spread, or maybe split the difference, just like everything else, you know whenever you're negotiating anything.

Then finally, I spent half my life fighting for black sea bass regulations. You are two hundred and something percent over the target, and you guys are still trying to take the fish away. Even if we hit this magical number, which we're never going to hit of the 1995 whatever, biomass level or the SSB. We're never going to hit it anyway, but even if we did, you're still going to be taking stuff away. I mean, it's just restriction after restriction. That's why I don't support it, not because it's not with good intent. But any time you guys ever do anything it's take, take, take and you never give it back.

CHAIR GARY: All right, thank you, Mr. Karbowski, I appreciate your time with the microphone. We're back to the discussion of this amendment, and hopefully we'll entertain a couple of more comments. After that we'll put it out to a vote. Tom, I think you hand. You did have your hand up, but you still interested in talking about this one? You wanted to go back to the original motion.

MR. FOTE: Yes, I already talked about this one that I didn't support it, I'm waiting to go back to the original.

CHAIR GARY: Okay, anybody else? Dave Sikorski.

MR. DAVE SIKORSKI: I would have more to say once we dispense with this, but in regard to the opportunity for public engagement. I just want to say from my perspective. We have 365 days a year to

engage in fisheries, and that is unlike ever before in history, and I want everybody to recognize that.

Remember that not just to the public, you have an opportunity in every state capital, which is represented around this table, to engage with the managers, to engage with leadership, and to try to craft that future for your fisheries. What I see this is a proactive tool, not to cut out public involvement, because I fully support it. I mean I work for a fisheries nonprofit, where my job is to get the public engaged in this process.

I fully support the public process, and again, my point is, get involved yesterday, get involved tomorrow, get involved every single day, not just when this Board meets, because if you're simply just providing us input when this Board meets, you're too late. I do have faith that the folks around this table can handle this responsibility and act quickly with TC guidance, so that is why I'm supportive of this motion to amend. Thank you.

CHAIR GARY: All right, thank you, Dave. I'll look one last time, especially if somebody has not commented yet. Does anybody else have any other comments before we take this to a vote? All right, then I would ask, do we need a couple of minutes for a quorum? Okay, is two minutes sufficient? Okay, two minutes. All right, we'll go ahead and call the question. All in favor of the motion, please raise your hands, and please keep them up.

MS. KERNS: Rhode Island, Massachusetts, Connecticut, New York, New Jersey, Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, North Carolina, Maryland, Virginia, Delaware, Maine, New Hampshire, and Potomac River Fisheries Commission and D.C.

CHAIR GARY: All right, all opposed raise your hands. There are none. The motion passes. Are there any abstentions? The motion passes unanimously. Now we'll have the amended version of the motion. Do we need to get staff to incorporate that so we're back to that? Thank you, staff, we're back to the motion. I do want to acknowledge; we did see one member of the public who had his hand raised. I just

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want to clarify that we were only taking up to two comments for and against. But there will be another opportunity before we vote on this motion. I'll go back to the Board, is there any additional discussion on this main motion? Tom Fote.

MR. FOTE: When we started going down this path a couple of years ago, I basically talked about the fact of how we rebuilt the stocks during the eighties. What we did was protect the '82-year class by raising the size limit every year to make sure they were protected until they spawned at least once, 95 percent of the population spawned once, because I knew I had to go before the legislature to get those bills passed so New Jersey stayed in compliance every year.

Because that was the goal. When we first started doing this, you implemented a slot, and some of us sitting around the table said this is not what we should be doing. If you want to really protect it you should be protecting the 2015, maybe the 2018-year class. I've always felt that those fish show up every year, unlike the big fish that show maybe once every two or once every three years.

They all are feisty females and feisty males that really attack each other and have a lot of sex, and they produce a lot of babies. I'll be kind of blunt about this. But we basically did not do that, we put a slot limit that would eventually move us in and put us in this predicament. I knew it was going to happen, because there were too many fish moving forward.

I would like as an option, and I'm not going to ask for an amendment, but as an option as we're doing discussion on what we should send out to the public, looking at doing that, instead of going the opposite way, because I think the bigger fish also, when you target them and you basically release them. You basically get them on the line.

The 28 to 35 will basically survive better than the bigger fish. It takes longer time; they build up more. The water is warm, they will basically die faster and the smaller fish basically will survive, especially the 34, 32, 33-inch fish. We should be having that as an option when we go out to public hearing. As I said, I support all the speakers what they said.

As long as the last motion, I did support it because it was an option, and that's why I'm looking at this as an option to go into the public hearing document that we turn out to the public. Again, as I said before, I don't want to do any kneejerk reaction, because I've gotten slapped across the face over the years, by having to go to my legislature, because that is when we used to have to do by legislation. It changed the bill the next two years.

As a matter of fact, it got so bad that Maureen, part of the committee, and she wouldn't hear the bill. I said we're going to be on it twice. She said I don't care; we're not hearing the bill. I had to go to the Veterans Committee, because I knew the head of the Veterans heard it in the assembly, and the Veterans Committee had a striped bass hearing. The first and only time that ever happened.

Also, my concern is if we start doing anything else but this, we're going to wind up a lot of people going out of compliance just because of timelines and everything involved. Because like New Jersey Marine Fisheries Council is so upset about scup and I come in with this thing, they're going to look at us like we're crazy. I'll leave it at that at this time.

CHAIR GARY: All right, thank you, Tom. Over to Mike Luisi.

MR. LUISI: I made comments earlier regarding the previously underlying motion about the possibility of considering adding some language here which speaks to what has been brought up many times before, and was highlighted through Mr. Celestino's presentation regarding discard mortality, and where we might go with that.

Understanding that this Board has made comments over the years about the importance of discards and the degree for which discards play a role in the overall mortality on this fishery. However, given the comments that I've heard around the table, and the understanding that in order for this Board and the Commission to put forth the effort to get rules in place by 2024, which I believe is critical at this point.

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I've decided that I think at this point right now moving forward, based on the comments that I've heard, that I will fully support this motion as before us, but I do want to highlight and reiterate the fact that any follow up motion, as it was mentioned earlier, follow up actions as a result of an assessment update.

I would hope that this Board would consider exploring the concept of reducing dead discards. You know the one thing that I've mentioned before we've implemented in our state, is a nontargeting style rule. I know that there is difficulty with enforcement on that rule. There are challenges.

However, I would say that if you know that based on quality and water quality, air temperatures and whatever else may be a factor in the fishery that you're managing. If you know that there is a time of the year when these large fish, which we're now likely to be protecting through adjustments to the slot.

By protecting those fish by reducing the slot limit, in my opinion we're just going to see more fish caught and released. Whether or not those offset one another, hopefully not. Hopefully we're making the right decision by adjusting on harvest at this point only. I just think that states should start looking into when they know that conditions are not ideal, and whether, maybe not even to get credit for the reduction.

But if you know the conditions are not ideal, maybe a regulation or a rule in place to try to limit that amount of dead throwbacks would be something to consider moving forward. I hope that with my comments and others that have spoken regarding this, that there is a commitment by the Board exploring that in a future action. But I'm going to leave that off the table for right now, Mr. Chairman, thank you.

CHAIR GARY: All very good points, well taken. I know we're getting close. Are there any other additional comments? Hey, John, I'll go to you in a second, but I'm trying to balance to give everybody a fair chance here. Has anybody who has not provided comments,

you would like to make a comment at the Board. I'm also going to go back to the public as I mentioned before we vote. Any others? Go ahead, John, you've got it.

MR. CLARK: I'm sorry, it's just more from being a fisheries regulatory bureaucrat, that word in the potential measures should include maximum size limits. Would it take an amendment to change should to may? As I said, just one of those things where if it says should include maximum size limits for the commercial fishery.

There is going to be a push to have those, and as I said, I just think that is very problematic, especially for a lot of our ITQ fisheries where they're using gillnets. I think it would actually increase discarding, rather than serve the purpose that we want. I think there are other ways to manage the commercial fishery to get better reporting. Just a suggestion.

CHAIR GARY: Bob, can you help us with this?

EXECUTIVE DIRECTOR BEAL: I'm not sure I can help, but to answer one question. Yes, if you wanted to change a word in there at this point it would take a motion to amend. You know I think, keep in mind what this motion really is. It's a direction to initiate an addendum, then a series of things that the Plan Development Team is going to weave into a document that will come back to this Board before public comment happens.

I think there are a lot of steps in this process before anything actually becomes reality. The Board can pull things out and modify them, when they see this draft addendum another time. In sort of the idea of moving things along today, you know just keep in mind there are multiple chances at revisions as this moves forward.

CHAIR GARY: Thank you, Bob. John, if you feel so compelled.

MR. CLARK: Based on what Bob just said, I'll just leave it alone then. I just wanted to get it on the record though, thank you.

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CHAIR GARY: All right, thank you, and Dave Sikorski, you have the last word.

MR. SIKORSKI: You know the more (cut out) with Mike. You know I still have some concerns, but I'm not going to attempt to amend this in any way, shape or form. I want to move forward and vote as we should. I think it's important to notice that as John's comments about the commercial fishery. We're really just limiting the portion of the stock available to the commercial gear.

From a Chesapeake perspective that does not provide any conservation, really, and that is a challenge for me. I think I have continued heartburn with the idea that Maryland, the Potomac, are fishing on Addendum IV quota levels, so we didn't even attempt to reduce quota, sorry 1.8 percent is what it was reduced on paper for Addendum VI.

There is still a fishing mortality being persecuted against the fish in the Chesapeake is at Addendum IV levels. You just think of the commercial component of fishing mortality in the Chesapeake. Now you add four years in a row poor recruitment, and unfortunately, we think maybe a fifth coming. We still have work to be done in the Chesapeake. I continue to look at the projections that the TC has provided us, and I see that downturn. It's starting to happen, and that is where my perspective is I'm very concerned about that. I don't want to open this up and attempt to reduce quota at this point, but this challenge still remains for all of us to rebuild this fishery well into the future. Thank you, and all sources of F should be considered.

CHAIR GARY: Max, did you have your hand up? I might have missed you.

MR. MAX APPELMAN: Yes, just quickly, a couple of comments that I heard. I want to comment in support of the motion, but also the initial intent I think I heard from the maker to keep this simple. I think that's really important with the 2024 assessment right around the corner. I think the complexity of an addendum is critical to allowing the Board to act quickly, and get new measures in place

for 2024. I just want to speak in support of that intent.

CHAIR GARY: Before we call the question, I would like to go ahead and go to the public to comment. Two in favor again, two opposed, and we'll start with in favor. We'll look to the audience first here in the room, to see if anybody would like to speak in favor of this motion. Seeing none; we're now asking on the webinar if you would like to comment in favor of this motion, please raise your hand. All right, Michael Woods, would you like to speak to the motion? Unmute your microphone, and please keep your comments to one minute if you could, please.

MS. FRANKE: Michael Woods, it looks like your microphone is unmuted, but we cannot hear you.

MR. MICHAEL WOODS: I apologize, can you hear me now?

MS. FRANKE: Yes, we can. Thank you.

MR. WOODS: My name is Michael Woods; I am commenting on behalf of Back Country Hunters and Anglers, and specifically the New England, New York, New Jersey, Capital Region, Pennsylvania and North Carolina Chapters. Our members from those regions, really all across the striped bass's range.

I wanted to comment in support and mention a couple things. The first of them is that back when we considered Amendment 7, all of our members advocated, basically to recover the fishery by 2029. I know there was a lot of discussion about abundance metrics and things of that nature, different ways that we can address this.

But ultimately, what the Board opted to do was to rebuild by 2029 to that target level. This motion really would put that recovery into action. We think that it's needed. The data clearly indicates that additional measures are necessary. We would urge the Board to put this forward and take those measures, and uphold this obligation to recover by 2029. Thank you.

CHAIR GARY: Thank you, Michael, and we have one other person in the public, Michael Abdow. Go ahead and unmute yourself, and again, one minute, Michael.

MR. ABDOW: Mike Abdow, I live up here in Cape Cod and Chatham, and the commercial aspect of it I've been doing my whole life, and I've been fighting for it for 40 or 50 years now to keep it running. People want to eat fish. Not everybody goes fishing. I would see a problem if you were to put a slot limit in, let's just say, I'm just using this example, on a 35-to-45-inch fish. People here still use gaffs, and maybe in the water a 46 or a 47-inch fish might look like a 45.

Once you start doing that, we now have a discard rate bigger than what it is from just letting them go on purpose. I just want you to think of that when you go and do this. I know somebody else brought this up too about discards. I would rather not see the fish get wasted. I don't know how you're going to do that, how you would do it. As a commercial fisherman it would be pretty tough for me, especially when you're fishing at night in a boat in the ocean, a mile or two offshore in a rip.

CHAIR GARY: If you could finish up, that's okay just really quick, finish up. But you're in favor of this motion?

MR. ABDOW: I am.

CHAIR GARY: Okay, thank you, sir, appreciate it. We'll now look for two members of the public who are in opposition to this motion. I'll look to the room first to see if anyone is in opposition to this motion. Seeing none; we'll go to the webinar. If you are in opposition to this motion, please raise your hands. Michael Pirri, if you could unmute yourself, and you have one minute. Go ahead, Michael.

MR. MICHAEL PIRRI: I don't think we proved an emergency today. I don't think we should be taking action today. I think that I'm very disappointed that I found about this meeting through back channels, and nothing was published on websites, the ASMFC website anywhere. It was by chance that I found this,

and this is a very big action to take without public comment.

I don't believe in MRIP, which is producing the 2022 harvest level. It could be a one-year outlier, and this is a lot of action to take with uncertainty. That being said, the monster in the room in catch and release mortality. Instead of limiting harvest we should be focusing on that. It is more than 50 percent of the fish death. Please consider fish mortality over reducing harvest. Thank you.

CHAIR GARY: Thank you, sir. We have no others, so we're going to go ahead and call the question. Before we do that, I'm assuming we need a couple minutes to caucus, three minutes, two minutes, one minute. Let's go two minutes for a caucus. All right, **the motion is, move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fishery in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update (F= 0.17).**

Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28"-35" with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits.

The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g., currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%. All right, we'll look to the Board. **All those in favor of this motion, please raise your hand.**

MS. KERNS: Potomac River Fisheries Commission, Rhode Island, Massachusetts, Connecticut, New York, New Jersey, Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, North Carolina, Virginia, D.C., Maryland, Delaware, Maine, and New Hampshire.

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CHAIR GARY: It's unanimous, the motion passes. What I would like to do now is take a well-deserved five-minute break. Set the timer, please come back.

(Whereupon a recess was taken.)

MS. KERNS: If Board members can please come back to the table and discontinue your conversations, or if you want to continue having a conversation, please take it outside. Thank you very much.

CHAIR GARY: Welcome back Board members. Before we depart Item Number 5 on the agenda, I think we have some additional business that some of the Board members would like to advance for consideration. I'm going to look for motions from any of the Board members. Mike Armstrong.

DR. ARMSTRONG: I would like to make a motion concerning an emergency action. I believe you have the language, and there it is. **Move that the Striped Bass Board by emergency action as outline in the Commission's ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries.**

All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protection remain in place. Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023.

CHAIR GARY: Thank you, Mike, do we have a second? David Borden. Mike, would you like to speak to this motion?

DR. ARMSTRONG: I sure would. I guess the challenge here is convincing you that this is an emergency. We have a backstop; we have an Addendum going. The problem is, we have an entire year of fishing on a very, very strong year class. Emergency measures haven't been used much, maybe half a dozen times or so. The definition is circumstances under which conservation or coastal fishery resource or attainment of fishery management objectives, that's the key, has been

placed substantially at risk by unanticipated changes in the ecosystem for stock, or the fishery. Let me address the unanticipated first. We doubled harvest almost. I went back in the time series for MRIP, all the way back to '81, and that has only happened a couple of times, the last time being almost 30 years ago.

Although I think we all sat around saying, this is a big year class, you know harvest will go up. We could not have anticipated that it was going to go up by double. It's never had that. Now, that being said, I have faith that MRIP is right. We do 6,000 intercepts a year in Massachusetts, about 5,000 are for striped bass.

That is a lot of data. You can complain about MRIP for other species. I think they got it right, especially on a coastal, without breaking it up into modes and waves and everything else. What we saw was the '22 harvest completely derailed the rebuilding down to 11 or 15 percent chance of getting there. I told you a little about what we looked at our recreational fishery, and really great graphics of the 2015 was about 55 percent into the slot, and we doubled the harvest.

There is no question in my mind that there is zero percent chance of the harvest going down. I mean the PSEs on this estimate are fine, they are as good as they've always been. I mean there is always biased things that can change, but I have faith that the harvest this year will be the same, or I would say greater, because the entire year class is in the slot.

What really worries me is the further we get behind the eight ball the more draconian the rules become, and 2026 SSB is going to start including the weakest year classes we've seen in 40 years. We have never seen four- or five-year classes as weak as they are since the 1980s, in the middle of a stock collapse.

We're going to have to deal with that, and it's going to get more and more difficult if harvest is huge again this year. I guess, and actually it was interesting, Mike Abdow on the webinar brought up the fact that he thinks effort is increasing. We had anglers say last year was the best fishing they've ever had, and a lot

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of it was environmental conditions and the presence of menhaden.

But also, the presence of a really big year class. I mean there is just no question that they are more available this year. How could harvest go down? There is also, I think we've all seen this, I would call it irrational exuberance by the fishing community. When fishing gets good, fishing effort goes up, and probably not in a linear fashion.

People coming off a great year, I'm guessing that effort will go up much more. We'll get the casual anglers will be going out more. We have no output controls, and that makes it very difficult managing the striper fishery. I proposed this because I don't want to be further behind the eight ball. I don't want to see another projection again that includes 11 percent probability of restoration, and any, I'll leave it at that.

CHAIR GARY: David, as seconder, would you like to comment?

MR. BORDEN: Yes, just briefly. Mike pretty much hit all the points that I would make. One of my biggest concerns here is this issue that if we don't take action we end up in a situation where we have to take much more draconian action in the future, and frankly, I don't want to be in that position, so I would rather have a discussion about this type of activity.

The other point I would make, in a kind of response to some of the issues that have come up, is that I think the state agencies at this point are really doing an outstanding job of going out to the recreational leadership on these issues, and almost every agency that I know of has outreach programs.

Although I'm concerned about the public, circumventing of public process, I think we've got to weigh that against the necessity to protect the resource of one of our premiere species, and we've got to take action. Failure to take action should not be an option.

CHAIR GARY: Before I turn to the Board for discussion, I would like to go to Bob, just to make sure

everybody is on the same page clarity with the emergency action definition, and the ISFMP Charter, so Bob.

EXECUTIVE DIRECTOR BEAL: Great, thank you, Mr. Chair. The good news is it's been quite a while since the Commission has taken an emergency action, which probably means folks aren't really familiar with the process anymore. But just not speaking obviously in favor or in opposition to this.

Just process wise what it means to do an emergency is, it takes a two-thirds vote of all voting members of the Board, there are 16 members here today, so it would take 11 votes in favor to pass this motion. There are some strange provisions if either of the federal agencies abstain, and that would change the math a little bit. We can get to that should that occur.

The way it works is an emergency would be in effect for up to 180 days, so if this motion were to pass, it would be in effect for 180 days beginning today. It would be, which I think carries you to October 28 or 29, something along those lines. If the Board wants to extend this, there can be two extensions of emergency up to one-year each.

Ultimately, an emergency can be in effect for two and a half years, if that's what the Board chose to do. The one stipulation is that the Board needs to initiate an addendum to implement similar changes, which the Board has already done. If the Board got to October and wanted to extend this into early next year, to allow the addendum that was discussed in the previous motion.

You know, if they wanted to extend this for a certain period of time, to extend it until that addendum takes effect, they would have that flexibility at the annual meeting. That would just take a simple majority. Extensions of emergencies don't take the two-thirds provision. I think those are the basic process pieces of an emergency, happy to answer any questions.

You know there are some provisions on what constitutes an emergency. Some of it relates back to unexpected changes, and unexpected events

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occurring, and those unexpected events or changes, in this instance I think it is, you know impacted the achievement of the fishery management plan goals. One of the major goals here, obviously, is to rebuild the stock. You know there probably is some discussion that may happen, whether this is or isn't justified as an emergency. I think Mike commented a lot on that in his opening statements about the motion. Happy to answer any questions, but just so everybody is on kind of the same page process-wise. I just wanted to make sure everybody knew the basics.

CHAIR GARY: Is there any question specifically on process for Bob, just before we get into discussion? Any questions? Jeff.

MR. JEFF BRUST: Just a question to, Bob, I think the term you used, that the Board would need to initiate an addendum that investigates similar measures to the emergency action. Does the addendum that we just voted for, is that similar enough? Does it give us the opportunity to explore other options besides this one that is on the table in front of us?

EXECUTIVE DIRECTOR BEAL: Yes, the action that was talked about in the previous motion is in line with what is needed to extend this. You know really, this motion is potentially dealing with what we learned today about the projections and rebuilding by 2029, and so is that Addendum. Those two are consistent and sort of tackling the same problem.

CHAIR GARY: Emilie.

MS. FRANKE: Just one other thing to add for process. If this emergency action were to pass today, the other requirement is within 30 days of taking emergency action, so this month, the Commission would have to hold at least four public hearings, so this would be to gather some initial public input on this action, so just FYI.

CHAIR GARY: Thank you, Emilie. Last call for questions on process. I just want to make sure we get that clear. Everybody's good on that? Okay, we will open it up for discussion, and Steve, I saw your

hand up there early, so we're going to start with Steve.

MR. STEPHEN TRAIN: I'm going to speak in favor of this, and it's kind of reluctantly. I think emergency action is something we really shouldn't do. It seems like we only do something like this if we have failed, we haven't done our job and we need to correct it. The environment has changed, the ecosystem has changed.

We haven't got the ability to correct that, so we need to work on what we have, or we've had an increase in effort that we couldn't foresee and can't control. I think that is where our problem is. It seems like, I said this once before and I hate repeating myself. Everybody wants us to do something so they can keep fishing, but they don't want it to affect them, and it has to. This is something I see that is going to at least attempt to rectify the problem we're in.

CHAIR GARY: Mike, I have you, right?

MR. LUISI: You tell me if you have me on your list. Yes, I had my hand up. When Dr. Armstrong and I spoke a couple weeks ago regarding this action, my initial gut reaction was, this sounds crazy. You know, an emergency action, really? Based on an MRIP preliminary datapoint that is affecting our projections years from now. However, in discussions with other Board members and with Mike as well, and colleagues within Maryland. I certainly understand the desire of the public, and the need for this given the information that was presented in the Technical Committee report, and the understanding that this 2015-year class will be fully recruited into the fishery this year. If we wait another year, we are likely to be looking down the barrel at something much worse than if we take swift action at this time.

I did question originally whether or not this fit the criteria within the Commission's charter on what an emergency action is. But I think what Bob said earlier, and some of the points that were just made, I can agree that we've met the criteria for an emergency action. The one thing, so what I'm saying, I do support this action at this time. I do have one question though for the maker, and this was

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something that we have discussed, but I would like to hear it either from staff or Bob or Toni, regarding the points here.

Mike, you state here that all other recreational size limits, possession limits, seasons, gear restrictions and so forth will remain in place. I assume that you could bracket that and consider that states that are using conservation equivalency currently is not affected by these changes, because in Amendment 7, when modifications to the limits are made within a state, I believe there was some language in there that spoke to that.

You no longer have the ability when the stock is still overfished to use conservation equivalency. I would like to clarify that for the record in moving forward. First, your intent, and then secondly if we can get something from staff regarding conservation equivalency, that would be helpful, since we have implemented conservation equivalency plans in the Bay.

DR. ARMSTRONG: The intent would be yes, not to mess with the CEs now, this is just overlay. It's an emergency action, doesn't change the FMP, and I believe that's how it works. I'll let these folks comment about that.

MS. FRANKE: To clarify, this emergency action outlines what the measures would be for the next 180 days, and if it were extended. Basically, this sets the measures until this emergency action expires, or until the Board takes a new action, for example, the Addendum. How this reads is this would simply implement the 31 inch maximum size on top of what is currently implemented as of January 1st, 2023.

The new measures are essentially 2023 measures with a 31 inch (cut out) maximum size. Right, so the new measures are just what is currently implemented in 2023 with this 31-max overlay. That doesn't impact seasons, it doesn't impact bag limits, anything like that, and that is in place until this expires or a new action is taken. Hopefully that helps clarify.

CHAIR GARY: Mike, are you all set on that answer, all good, okay. We have a few people in queue, so we're

going to go next to Dr. Davis, and then we're going to go to Emerson, Jason McNamee and Tom Fote. Go ahead, Justin.

DR. DAVIS: I'm going to move to amend this motion, and I think staff has some language for that, so I'll wait and see if we can get that up on the board. This is a motion to amend. **Move to amend to add measures for the for-hire sector will remain status quo. In the event the Board extends the emergency action past the initial 180-day effective period, the for-hire sector exemption from emergency measures cannot be extended.**

CHAIR GARY: Second by Eric Reid. All right, back to you, Dr. Davis and you can go ahead and comment to your motion.

DR. DAVIS: I'll start off by saying I support the underlying motion. I think it's a good precautionary action by the Board to take action this year to reduce removals, based on what we now know happened in 2022. From my standpoint what was unanticipated, you know we met in November. There was discussion, we knew that removals in 2022 were likely going to be high.

I had been hearing from constituents how good the fishing was. We knew that that 2015-year class had aged into the slot. What was unanticipated from my perspective was the impact on the rebuilding probabilities, that they were going to drop that dramatically from what we got out of the 2022 stock assessment.

I can support the emergency action, but I do think we have to acknowledge that it's a substantial departure from our normal management process. We are going to take a vote today, potentially to change regulations, without having noticed that to the public, without any public input process, in an unexpected manner.

I don't think we should take that lightly, and I think where that dynamic is most pronounced is with the for-hire sector. I think we do have an obligation to the for-hire sector to provide them timely notification of what the regulations are going to be in

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a given year, so they can plan their businesses and book business accordingly.

What this motion would do is essentially hold the for-hire sector status quo for this initial 180-day effective period of the emergency action, but then not provide any opportunity for an extension of that exemption. I've heard one of the concerns about this is this is opening the door to a mode split on striped bass, and that is not my intent at all.

I would not support any options for 2024 with a mode split for striped bass. I wouldn't support any options for a mode split while this stock is in rebuilding. I just want to be really clear about that, especially if any members of the Connecticut for-hire sector who might be listening in today, I'm not willing to contemplate that past this emergency measure.

But I do think this is in keeping with our obligation to the for-hire sector to give them timely and accurate notification of rules for the coming year. I stood up at public meetings in Connecticut in February and March and told the for-hire sector that striped bass would be status quo this year, and it really bothers me to at the 11th hour, when the season has already started.

These guys have booked all their business, to come back and say actually, guess what. We're using this emergency provision that most people didn't really know existed, to change the rules unilaterally without any input and any public notice. That really bothers me, so I'm hoping that members of the Board can see their way to support this. Thanks.

CHAIR GARY: Eric, would you like to comment as seconder?

MR. REID: I agree with Dr. Davis's rationale, and I also want to point out that the for-hire sector is a minimal participant in this fishery, relatively speaking, and they do provide data through their EVTRs, which I don't want to miss that point as well. We talk a lot about whether MRIP is good, bad or indifferent, but the VTR data we get from the for-hire fleet is accurate, and I think that is a component we should not lose. Thank you.

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CHAIR GARY: We had two in the queue if you want to maintain your spot, so it would be Jason McNamee and then Tom Fote. Jason, do you want to speak still? Oh, Emerson. Jay, if you would be so kind, I've got a number next to Emerson that precedes yours, so it would be Emerson, Jason and then Tom Fote. Thank you, sorry Emerson.

MR. HASBROUCK: Sorry to just butt in like that. My hand was up to make a similar motion to amend, but Dr. Davis beat me to it here. But my motion to amend was going to continue the exemption for the for-hire sector to the end of 2023, based on Bob Beal's clarification earlier, that this emergency action would end at the end of October.

I think it's going to be very disadvantageous to the for-hire fleet, to be able to fish on the current slot limit through the end of October, and then change to a different slot limit for November and December. In New York we have a robust fishery in November through the close of the season, mid-December.

I know at the beginning of this, Mr. Chairman, you said you didn't want to go two motions deep. I don't know if the maker and the seconder would consider a friendly to extend this through the end of the year. If they don't then I'm going to look to make a motion to amend, thank you.

DR. DAVIS: Thank you, Mr. Chairman. Completely understand the concerns that Emerson has raised. Unfortunately, the way I see it is that we are voting up an emergency action. That emergency action can only last 180 days, unless the Board takes subsequent action to extend it. Really, we can only make a decision right now what's going to happen for the next 180 days.

I understand that what we're going to end up doing is potentially ending up in a situation where we're going to get to late October and the rules would change for the for-hire sector. But personally, I'm not willing to open up the possibility of another extension past 180 days for this mode split, because again, I'm looking to be really conservative here with this.

Only provide this exemption for the 180 days, and provide no potential opportunity for it to be extended. That is why I have that clause in here, and I think because of that. You know with this motion we can't really contemplate extending it past the 180 days. I'm not willing to open the door to that whatsoever.

I also think by late October the majority of the fishing year is over. Certainly, there are some jurisdictions that are still fishing into November. It's unfortunate, but I think the for-hire sector would probably prefer to have the exemption for 180 days and have to deal with that in late October versus not having the exemption at all. I would not be open to that amendment to this motion.

CHAIR GARY: Eric, as a seconder did you just want to add a comment to that?

MR. REID: Yes, I do, thank you, Mr. Chair. My question is about the process. If the emergency action goes in place by July 2nd, is it 180 days from July 2nd, or is it 180 days from today?

EXECUTIVE DIRECTOR BEAL: The microphone system is having a little quirk, where only one can be on at a time and you've got to restart every time, so be patient. We'll try to get it fixed. Eric, to answer your question, the clock starts today on 180 days. Whenever the Board passes the emergency is when the clock starts.

Then also while I'm speaking, if you don't mind, Mr. Chair, all these motions to amend or changes to the main motion will take a simple majority to approve those, they don't take the two-thirds vote. It's once you get the final emergency motion perfected, and the group is going to vote on that. That is when the two-thirds vote comes in.

CHAIR GARY: Okay, we're back to the original queue, so I have Jason and then Tom Fote, and Bill Hyatt next.

DR. McNAMEE: Actually, I don't have anything to add for the current amendment. If you could keep me in

the queue when we get back to the main motion, I would appreciate that, but nothing to add here.

CHAIR GARY: All right, Tom.

MR. FOTE: Yes, I want to keep in queue for the main motion, but I want to talk about this motion also. New Jersey passed a law this year that was finally implemented this year on environmental justice. When I look at this regulation, we have a lot of shore-based anglers that basically, I look at one of the reasons we're up in this mess.

If you remember when we first started overfishing was because MRIP said they got a better deal for the shore-based angler, and that is when we were pushed out to overfishing. It's in the shore-based angler. You're basically telling the people that can't afford to go on party and charter boats, that basically want to just go to the beach and throw in a rod, and basically have that.

You put them out of the fishery most of the time, because a lot of the areas you don't see fish larger than 18 inches or 22 inches, or 24 inches in the city, along the Hudson River and those areas most of the year. You shut those people out, and I've been complaining out this for years. It ain't the first time I brought it up.

But now you adding really fuel to the fire that we're basically telling them, you're just screwed, we're going to leave you screwed. Now we're going to let the party and charter boats. I understand that and I'll talk to the original motion that I'm not going to support the original motion, but this is even worse, more complicated than that. You basically affect all the shore-based anglers in New Jersey, and those that can't afford, so you basically shut them out of a fishery. Now you force them into all catch and release, because they'll sit there and catch fish all day. Most of the time when the shore-based angler catches a fish he kind of takes it off, because he has to get it into ice once he gets it clean and everything else, not sit in the cooler all day long.

But they'll stand on the beach, you basically have to get that little fishing net, that little slot you're going

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to put in place. I find that the catch and release mortality is going to go through the roof. The only people who are going to be happy about this regulation is the catch and release fishermen, because then they can do away with competition of anybody else, even the party and charter boat.

You are going to basically see the private boats not go out fishing, so it's going to affect the marinas, gas stocks and everything else. You are also going to see tackle stores affected when you do this on a shore-based angler, because the guy is going to travel to Pennsylvania and to New Jersey like they do all the time in Ohio, be able to catch a fish with a 3-inch, 4-inch slot limit on emergency action.

I will get back to the original motion when you come in, but you can't do it separately, you've got to do it all. As a matter of fact, what I would suggest, because I have a long history and a long memory, that when we had the moratorium in place that most states had a moratorium. There were only two states that didn't have a moratorium, was New Jersey, and interestingly Massachusetts.

While we had the moratorium in New York, Maryland, Virginia, they were still shipping 100,000 pounds to market, because they were hook and line fishermen. But they had to follow the regulations as we basically put the same in. The same slot limit, or actually back then was maximum size limit, basically did it for the commercial fishery as well.

We should be talking about, if you're going to do this, the hook and line commercial fishery, which is different than the net fishery, should have the same regulation also, because they can stay in the hook and release the same, we can. Massachusetts did implement this in their hook and line commercial fishery, because it doesn't affect them down the road for this, and Maryland, because it's all under conservation equivalency. At this time, I'll leave it at that, with another bite at the apple when we vote down this motion.

CHAIR GARY: Chair is starting to feel a little squeeze on the time management, but there is luncheon coming up, so I'm going to ask everybody to be kind

of concise as they can be. I've got Bill Hyatt followed by Megan Ware, followed by Chris Batsavage, followed by Mike Armstrong. I think that captures it, so go ahead, Bill.

MR. HYATT: Yes, I just want to speak briefly in support of this motion to amend, maybe add a few additional thoughts along those lines. But we heard earlier the Technical Committee report, and if I'm remembering it correctly and remembering what I read correctly, it doesn't matter whether you use the three-year average of F or the F for 2022 that resulted in the exceptionally high harvest. It doesn't matter either way. The population if we do nothing will level off somewhere north of 50 percent between the threshold and the target. What that tells me is that the crisis that we're dealing with today, relative to these emergency regulations, is more of a crisis of process than a crisis of conservation. Looking at it in that light, it seems to me unreasonable to go out to a group of individuals, who in good faith have booked business for a period of time, the first two-thirds of the 2023 fishing season. It seems unreasonable to encumber them, given that this is again more of a crisis of process than of conservation.

It seems unreasonable to encumber them when they are such a small component of the fishery. I would strongly speak in favor of this motion to amend. With regard to the discussion that we've had about extending it beyond that. I just think it's unnecessary, because by the time you get to October, the industry will have had enough of a heads up and be back on a level playing field with everybody else in the recreational sector. Thank you.

CHAIR GARY: We're going to have Megan, Chris, and Mike Armstrong, and then we're going to go to the public.

MS. WARE: While I am very supportive of the underlying emergency action, I'm going to oppose the motion to amend. I'm pretty uncomfortable with instituting the mode split, even if it's for 180 days within the striped bass fishery at this point. That is a very contentious topic that this Commission has not grappled with in any formal way, and so to do it via

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emergency action, I think is just adding fuel to the fire, and it's a discussion that warrants much more thorough public comment and a discussion by this Board that is not afforded in an emergency action.

I'm also a little concerned that in Amendment 7, some of the decisions that the Board made focused on more consistent measures, especially when the stock is overfished. I think instituting a mode split at this time would be counter to some of the intent that was in Amendment 7 for more consistent measures, particularly in the recreational sector, when the stock is overfished.

I'll point that the underlying motion right now has action happening both in the ocean and the Chesapeake Bay recreational fisheries. In the spirit of preserving that equity that everyone is participating in this, I cannot support carving out the exemption for one portion of the recreational sector at this point.

CHAIR GARY: We'll go to Chris Batsavage.

MR. CHRIS BATSAVAGE: I am also speaking in opposition to the motion to amend. We support mode splits in other recreational fisheries, and can sympathize with the justification given for the exemption for the for-hire fishery for this 180-day period. But I think Mike Armstrong really laid out the reasons why we're taking an emergency action, and I think the more we can do in that action, and not have exemptions, the better off we're going to be, until we put something more permanent in place through an addendum. Thanks.

CHAIR GARY: Mike, you have the last say, and then we're going to go to the public and call the question.

DR. ARMSTRONG: I don't support this, because I don't think there will be a really negative affect on the for-hire fleet. This isn't a bag limit; this isn't a season. I don't see people canceling. I'm trying to wrap my head around people who pay for a fishing trip, being told you have to take a 30-inch fish instead of 33-inch fish, and they go oh that's it, I'm canceling.

Yes, so I don't see it being a big impact. This is a big year class, all the way from 28 to 35, and any charter captain worth his salt can get you a 30-inch fish if you can't get a 34-inch fish. I don't think it will have a negative impact on the charter fleet.

CHAIR GARY: What I'll do now is go to staff, and see if we can set up a one and one. In the interest of time, because we're starting to run short, although we'll take the time we need, but we want to be sensitive to the luncheon that is coming up. Take one comment for and one against this amendment. I would look to the room first, see if anybody is in favor of this amendment in the room. Not seeing any, is anybody online that would like to raise their hand that is in favor of this amendment? All right, Taylor Vavra, go ahead and unmute. One minute please, Taylor.

MR. TAYLOR VAVRA: Mr. Luisi just really summed up. I'm Taylor Vavra representing Stripers Forever. Just basically summed up exactly what I was going to say, which is that we certainly support this emergency action and the original amendment. This amendment though we would not support.

This should be an equitable thing that should apply to all parties as well, and so it just doesn't make any sense. As Mr. Luisi stated, I don't think it would affect any charters, you know this is not saying you cannot harvest fish, it's just reducing the size of what you can take, and I think that is only fair to all parties involved in the recreational sector, so that would be it, thank you.

CHAIR GARY: Taylor, could you clarify. You're in favor of the amendment? It wasn't clear to me.

MR. VAVRA: We're in favor of the emergency action, not in favor of this amendment to that.

CHAIR GARY: Thank you, Taylor, we'll go for a second person in favor of this amendment. Looking online, if there is anyone who is in favor. Robert DeCosta, if you could unmute your microphone, and one minute, Robert.

MR. ROBERT DeCOSTA: I thank you. I would like to speak in favor of this amendment. The main reason that this whole issue is being based on MRIP data, which we in the for-hire sector, we don't have a lot of faith in the MRIP data, but yet all of us who fish in the for-hire sector do e-Trip reports.

We give you detailed catches of what we catch, what we release every day. This would allow you to really track what the percentage of fish that are caught and the percentage of fish that are released, by going through the eTickets data, versus just dockside interviews in the MRIP data. Thank you.

CHAIR GARY: Thank you. I do want to note we had two other folks that raised their hands that are in favor of this amendment that were online, so in the interest of time we won't be able to take those, but we're going to shift to those who are against the amendment. I'm looking in the room, and Mike Waine, if you would like to come up to the public speaker.

MR. WAINE: Just on the motion to amend, correct? I'm going to speak in opposition of this. You know if we're going to rebuild striped bass, we're not going to be able to hand out conservation passes. All I see that this motion does is it gives a conservation pass to the for-hire industry. You know the for-hire is a huge part of the sportfishing industry.

They introduce a lot of anglers to our sport. I feel the conservation ethics should start with them; we shouldn't be giving them a pass. The same comments that Justin made about businesses needing to plan, that applies to all of the tackle shops. They had some of the best fishing in business that they had last year.

They are planning on that picking up again, and if we're going to carve out for the for-hires, then what about the tackle businesses? What do we tell them? They are not worthy of a carve out? This is what I mean, it just spirals from there. If we're going to rebuild this, everyone has got to participate. Anybody that fishes for striped bass contributes to F, and we're going to need everyone to play a role in that. Thanks.

CHAIR GARY: Thanks, Mike, we'll look for one last person to weigh in on public comment against the amendment, oh we had two, okay, so we had two against it. All right, so ready to call the question? Two-minute caucus. Roy, did you need clarification?

MR. ROY W. MILLER: Marty, I would just like to point out before we vote that based on my many, many years of experience in striped bass management with the Commission. I believe this is the first time with contemplating sector-specific measures. I just want to point that out, everybody, that it is kind of unprecedented and it makes me a little uncomfortable. Thank you.

CHAIR GARY: Let's go for a one-minute caucus and we'll call the question. Okay. We'll go ahead and call the question. **All those in favor of the amended motion, please raise your hand.** We have a request for a roll call. Oh, we automatically have one, so it's going to happen anyway, Emerson. **Everybody, go ahead, if you're in favor of the motion, please raise your hand. Toni is going to read those off.**

MS. KERNS: Rhode Island, Connecticut, New York, New Jersey.

CHAIR GARY: All those opposed to the motion, please raise their hands.

MS. KERNS: Massachusetts, Potomac River Fisheries Commission, Pennsylvania, North Carolina, Virginia, District of Columbia, Maryland, Delaware, Maine and New Hampshire.

CHAIR GARY: Are there any null votes? Are there any abstentions? National Marine Fisheries Service and U.S. Fish and Wildlife Service. The motion fails, 4, 10, 2. We're back to the main motion. I'll look for any additional Board discussion on the main motion. Mike Luisi.

MR. LUISI: Given the comments that were made, I believe it was by Emerson earlier about the timing, the 180-day timing on this. I think we should have some clarification as a Board if this were to be supported, how the timing plays into states

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implementing these measures, so that we don't have to go through.

Let's say 180 days expires, and we want to reinstate another 180 days. Do we have to go through all of the same process that we did the first time, or is that simple? Just looking for some clarification, so that states can at least start to plan for if this passes, how we're going to deal with the end of October into November, and carrying out through the rest of the year.

It would be our intent, as well as some of my other colleagues here sitting close to me, that we would prefer to put this in place and leave it in place for the remainder of the year, until Addendum II would be worked on for implementation of new measures in 2024, if that ends up being the case. Any clarification will be helpful, thanks, Mr. Chairman.

CHAIR GARY: I'll look to Bob.

EXECUTIVE DIRECTOR BEAL: Yes, the only authority the Board has today under emergency action is to implement 180-day provision. We can't extend anything beyond that through emergency. If the Board wanted to extend this beyond that they could do that at say the annual meeting, and it could be through a simple majority. It could just be a simple motion that says, we move to extend the emergency action that was approved on May 2nd. That extension can be up to one, for 365 days. Simple Board action, doesn't (cut out)

CHAIR GARY: Does that help, Mike? Pat Geer.

MR. GEER: Just to add on to what Mike was saying. Primarily in Virginia, our season is October through December. This will be right in the middle of our season. Probably what we would end up doing is, as Mike said, continue our (cut out) to the entire year and keeping it that way.

It would be too chaotic for our fishermen to basically have the season start at one size limit and change it midstream. The other question I had was about adopting those measures. We're willing to do it. We may not have it completed by July 2nd, but we can

certainly have it completed before our season opens in October.

Would that be a problem? We would be in the regulatory process, but because of a new regulatory procedure that we've gone through, we get some delays, and we've got a lot of other things on our plate right now. But we will definitely have it in place before our season starts in October.

CHAIR GARY: Okay, thanks, Pat. We've got three other folks, we've got Jeff Brust, Ray Kane and then Tom, I'll give you one more. Please be as concise as you can.

MR. BRUST: I wanted to speak in opposition of this motion. I think notwithstanding the red flags that we're seeing from the 2022 harvest, I'm a little concerned that we don't know what this proposed measure is going to do, what savings it will have. I do not have the benefit of sitting next to Gary Nelson to look at those numbers. I would like to be able to have the Technical Committee review these and vet these. I believe that the amendment that we proposed that we've taken action on for 2024, will give the TC the opportunity to look at this option and several others. I do think there are possibly some other factors that are affecting as we discussed around the table this morning.

I do want to speak in opposition. I also do want to clarify, perhaps from staff. For the maker of the motion, this motion affects recreational fisheries. New Jersey's commercial fishery has been allocated to the recreational fishery, our bonus program. I just wanted to clarify, is that a commercial quota, or is that covered under this motion as well?

MS. FRANKE: I think that would perhaps go back to the maker of the motion, as to his intent of whether or not this would cover the New Jersey Bonus Fishery. I guess as written, this would implement a 31-inch maximum size, and I know the Bonus Fishery right now is 24 to 28, so in effect, I guess if you change the bonus size limits, the question is would it apply? I would go back to the maker of the motion there, and just while I have the floor.

I just want to again clarify that this 31-inch maximum size applies to all states, no matter if you did CE or if you didn't do CE. This 31-inch maximum would apply to your size limit. Again, everything else, seasons, possession limits, et cetera, would stay the same, but this 31-inch maximum applies to all states, no matter if you did CE or not. I will go back to the maker of the motion, as to whether or not he intended this to apply as well to the Bonus Fishery in New Jersey.

DR. ARMSTRONG: No, it was not our intent. I believe the Bonus Fishery, sorry, what's the size? I just lost it, 28 inches, so that is out of the slot and pretty much out of the 2015, so it was not our intent to change the Bonus Fishery.

CHAIR GARY: Jeff, does that answer your question?

MR. BRUST: It does, thank you.

CHAIR GARY: Okay, we've got Ray Kane, Tom Fote, and we're going to go to the public

MR. KANE: This would go to process, Bob. We just heard from Virginia. Could we come back at the August meeting, the summer meeting, and this could be brought up again by Virginia or Maryland, after they've had a chance to talk to their recreational industry between now and then, and (cut out) 180-day closure. That is a question of process.

EXECUTIVE DIRECTOR BEAL: The short answer is yes, Ray. You know at the August meeting I think this Board will be better informed on the progress for the Addendum, because the schedule for that really wasn't talked about, but I assume that the idea is Plan Development Team develops something between now and the August meeting. Emilie has a family obligation somewhere in the middle of that time period that we're going to have to work around. Then final action on that addendum at the annual meeting. The extension of this emergency rule will be set at the August meeting, and that extension can be up to 365 days. The clock on that extension would not start until the end of this 180-day period, if that makes sense.

CHAIR GARY: Tom, you have the last word before we go to the public, and if you could make it brief.

MR. FOTE: It will be brief. From what I last heard, that means Maryland, Virginia and the Potomac River will have to change their regulations, except for the trophy tag program, down to a 31-inch maximum recreational. I just want to make sure that I'm clear on that. The other thing I said again is that I do not support this, because it basically has left the public out of the process.

They had no idea that this was going to be on the agenda for this meeting. New Jersey did not. I didn't find out about it until Thursday or Friday, I think it was Friday, yes Friday we had a meeting, and it was put in front of me, so I was completely in the dark. I really cannot support this motion at this time. Maybe if we're going to do this we do in August, which would actually cover the November fishery, if you're really worried, and we see where we are with the new amendment to the plan. I'll leave it at that, Marty, because I know.

MS. FRANKE: Thanks, Tom, and yes to your question, this 31-inch maximum would indeed apply to Chesapeake Bay recreational fisheries, except for the trophy fishery.

CHAIR GARY: Thanks, Tom, thanks Emilie, and we do have one Board member that is online, Adam Nowalsky. Sorry Adam, I didn't mean to cut you off and make sure you get a chance to comment on this. Go ahead, Adam.

MR. ADAM NOWALSKY: Hearing all the comments with regards to concerns about end of the year. Hearing comments about the implications for not making this decision with no public comment, little advanced notice, no knowledge of the technical implications, Mr. Chairman. **I'm inclined to move to postpone this until the summer meeting.**

CHAIR GARY: Adam, you are making a motion to postpone.

MR. NOWALSKY: Yes. Time certain until the Summer Meeting, and with the intent if I got a second, it

would be to do the things that I described before making a motion.

CHAIR GARY: All right, is there a second to Adam's motion? Craig Pugh. Adam, would you like to go ahead and speak to the motion a little more, or are you satisfied with your introduction?

MR. NOWALSKY: Again, I think it just needs to be on the record that the information we would expect as part of this postponement would be to get some technical feedback from the TC about what this reduction would look like, clear up some of the questions we've had with regards to how it might affect all of the states and their regulatory processes, how fast can everyone actually implement this?

You know we're looking at asking states to implement this in basically 60 days. Can all the states move that fast? We would be taking ourselves out of the box of having to have to potentially change measures again this year, and not having that open. Everybody would basically know if we implemented this later in the year that that is what it would carry through, through the end of the year. It's really, we would expect, you know those harvest numbers again, particularly along the ocean states, to increase significantly in the fall.

It would seem like if we're truly interested in conserving the resource at the time it needs conservation, that would be the timeframe to go ahead and do this. It would address our public concerns, and make sure that we're making a right decision here that balances our need for conservation with our commitment to stakeholders.

CHAIR GARY: Craig, do you want to add anything as a second?

MR. CRAIG PUGH: Yes. The warrants of the emergency action, in my mind, needs a little more definition to exact that. I feel as though we are regulating to a super abundant supply of this species of fish, and not necessarily looking at the character of the species as it exists in our stores today. Fote struck home with me.

There are a lot of factors involved here that don't warrant an emergency crisis, so to speak. I'm kind of wondering why at one point, when we're not catching any fish, the ground is trembling, and then suddenly we are catching a lot of fish and the sky is falling. It seems as though we're setting ourselves up for a crisis. The definition of that does not seem to be met at this time. My hope would be if we postpone this, maybe that reasoning could be brought to bear.

CHAIR GARY: We'll have questions or comment from the Board relating only to the timing, only to the timing that's involved in this motion. Representative Peake.

REPRESENTATIVE SARAH PEAKE: I'm in opposition to this motion. You know an emergency action is called that for a specific reason, an emergency action. As far as needing more data, it's the data that we have over how many fish? More fish than we thought we were going to catch has driven this action. My colleague here from Massachusetts, the maker of the underlying motion, brought it exactly because of what the data shows.

As far as public input, I received numerous e-mails and comments from constituents of all of ours, not just Massachusetts fishermen, who were imploring us to take swift and immediate action to save the stock and to reach our rebuilding goals. Did they specifically say take an emergency action? No, they didn't. But I think it's because this is somewhat of an arcane provision that exists.

My sense from the urgency I read in those e-mails is that this emergency action would be applauded, because it's a swifter action than the addendum action. Let's not kick the can down the road, let's not be wringing our hands at future meetings, wishing we had taken this action. There is a high threshold, it's a two-thirds vote that is going to be required.

The lawyer and the legislator in me will tell you, there are certain things that require two-thirds votes, like to change zoning provisions, if you're looking at land use. That is because a two-thirds vote is required in effect when you are taking away, in the case of

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zoning, somebody's property rights potentially through zoning guidelines. Well here the two-thirds vote is designed exactly, because you could say there are stakeholders who, to use the vernacular, will get a haircut as a result of this action today. But there are times when that haircut is appropriate. I think that haircut is appropriate right now, and I ask that we defeat the further motion to postpone, and take up with all due haste the motion, and support the emergency action. Thank you.

CHAIR GARY: Thank you, Representative Peake, any other comments or questions related to timing only. Megan.

MS. WARE: I'll just be very brief, say I'm opposed to the motion to postpone, because this will basically miss Maine's striped bass fishery in 2023. I don't know if we're the only state that way, but it looks like maybe New Hampshire is the same way. But I think we're starting to defeat the purpose if we postpone this.

CHAIR GARY: Final call for any comments or questions on timing. We'll call the question. Let's go ahead and call the question. All those in favor of the motion to postpone, please raise your hands.

MS. KERNS: New Jersey, Delaware.

CHAIR GARY: All those opposed to the motion, please raise your hand.

MS. KERNS: Potomac River Fisheries Commission, Rhode Island, Massachusetts, Connecticut, New York, Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, North Carolina, Virginia, D.C., Maryland, Maine and New Hampshire.

CHAIR GARY: That's all the votes, final tally. The motion fails 2 to 14. All right, so we are back to our main motion. Steve, I see you have your hand raised, but I'm going to go to the public now and then we'll come back, one more bite at the apple by the Board. I would like to go ahead and go to the public. We'll do two for, two against again, for the motion on the board. I would ask for anyone from the public who is in favor of this motion. I would look to the

room first, anybody who has his hand raised. We have two online, so we'll go to both of those in succession. Michael Pirri, go ahead and unmute yourself. Go ahead, Michael, one minute, please.

MR. PIRRI: Looking at the spawning stock biomass of the 1980s, the females in pounds were less than 30 million pounds. Today at 2022, we're well greater than that, maybe 4 or 5 times greater than that. This does not constitute an emergency. We shouldn't be taking any action at all right now, and I think taking action against harvest is the easy way out.

When we come back here in the fall, you take action against harvest, catch and release mortality will be more than 75 percent, and the harvest will be 25 percent. You are not accomplishing anything. Finally, you know there is a lot of distrust here. This was a secret meeting that came up, but more importantly, we referenced MRIP all the time, and that series query has completely changed, and we could no longer query historical data the way we used to. We can't prove or disprove; we can't find outliers. That's probably it, thank you.

CHAIR GARY: Thank you very much, appreciate that. Michael's comment was opposed, so we're looking for two public members in favor of the motion, and we'll get one more against. In favor of the motion, the next commenter is Tony Friedrich. Tony, go ahead and unmute your microphone, and one minute, please.

MR. TONY FRIEDRICH: Tony Friedrich, Policy Director for the American Saltwater Guides Association. I would like to thank the Chairman for the opportunity to comment, keep this very short. I would also like to thank all the conservation minded Commissioners who are letting science lead the way for striped bass management. I'm sure you all saw our letter in the supplemental material, supplemental is 54 pages long.

Our letter represented 44 pages of that. Some of the largest fishing brands, guides, businesses, and private rec anglers showed up in numbers that we've never seen before to support striped bass conservation. We are 100 percent positive that they

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would support this emergency measure. The letter was originally for Addendum II, but the public desperately wants conservation, and as quickly as possible for striped bass.

Abundant populations of striped bass are what drive participation in the fishing economy. Our members and the businesses cannot afford to lose another fish, especially one as important as striped bass. I thank the makers of this motion and the Commission for considering this. Thanks, Marty.

CHAIR GARY: Thank you, Tony. We have one more for, Michael Toole, if you could unmute your microphone, Michael, you have one minute.

MR. MICHAEL TOOLE: Mike Toole; I'm the Legislative Representative for the Plumb Island Surfcasters, a 500-member recreational fishing club in North Shore, Massachusetts. We strongly support this amendment. Basically, the public has commented constantly that we need to take more action to reduce the catch, and to show stronger conservation measures. I hear people asking about public comment that we need it, but I think we've given it for years now, and it's always been more conservative than the Board. We strongly support this measure. Thank you.

CHAIR GARY: Thank you, Michael, so we have one comment left in opposition to this motion, so the Board can be informed by both sides of the equation, and that is going to be Robert DeCosta. Mr. DeCosta, you can unmute your microphone, and please clarify you are in opposition to this motion.

MR. DeCOSTA: Yes, I am in opposition. My concern is this, based on the chart that you put up earlier, the 28–31-inch size fish is going to basically, it's going to be one year class, it's going to be the 2016-year class. The entire recreational and charter boat fishery is going to be chasing one year class, and the mortality rate from released fish to find that one 3-inch slot fish is going to put an undue burden on that next year class, not to mention how many of the 2015-year class that you're trying to save are going to be potentially killed by just not being released properly.

CHAIR GARY: Thank you, Rob, we appreciate that. That will end our public comment input, so we're going to come back to the Board for one last round of discussion on this motion, before we call the question. I'll open it up to the Board members, anyone who wants to add any additional comments. We've had our fill, okay. I will go ahead and do a two-minute caucus. All right Board members, ready to call the question. **All those in favor of the motion, please raise your hand.**

MS. KERNS: Potomac River Fisheries Commission, Rhode Island, Massachusetts, Connecticut, New York, Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, North Carolina, Virginia, District of Columbia, Maryland, Delaware, Maine and New Hampshire.

CHAIR GARY: **All those opposed to the motion, please raise your hand.**

MS. KERNS: New Jersey.

CHAIR GARY: We're close to lunch, right? **Any null votes? Any abstentions? Motion carries 15 to 1.** What I would like to do next, well I'm going to turn to Bob. I think we may need to take a little break here.

EXECUTIVE DIRECTOR BEAL: I think it would be best if we broke for lunch now, came back and took up the agenda item on the transfers, or the addendum to consider transfers, and then we'll break for about an hour and 15 minutes. Lunch was originally scheduled for an hour and a half, so the LGA Luncheon will be truncated by 15 minutes, just because we're running short on time.

We do have a hard stop this evening for the awards banquet, so we can't go too late with our other meetings that have to happen this afternoon. We'll come back and try to move through the rest of this agenda, then we'll go to ACCSP and Coastal Sharks. Anybody participating in the LGAs Luncheon, it's in the Crystal Room Number 3, which is back that way. Please let the LGA folks grab their lunch first, so they can head down to that meeting, and then everybody else can hop in line and grab lunch.

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CHAIR GARY: Thanks, Bob, so be back here at 1:25 everyone, mark your watches.

(Whereupon a lunch break was taken.)

CHAIR GARY: All right, members of the Striped Bass Board, if you could take your seats, I would appreciate it. We would like to reconvene this meeting of the Atlantic States Marine Fisheries Commission Striped Bass Management Board. We'll be going into Item Number 6 on the agenda. Before we do that, I'm going to turn the microphone over to Emilie for some clarification following the emergency action.

MS. FRANKE: To clarify, for the emergency action we are required to hold four public hearings within the next 30 days, and the intent of those public hearings is to help inform the development of the associated action, which is this upcoming addendum. It is our intent as Commission staff to hold four virtual hearings during this month of May, likely towards the second half of the month. We will announce those virtual public hearings via press release, at least one week before the first hearing. We may reach out to Board members to get some volunteers to be hearing officers, but I will keep you all posted on that. Are there any questions on that as a process item? Yes, John.

MR. CLARK: I take it these four will be open to everybody, so they won't be like state-specific at all.

MS. FRANKE: Good question, yes, exactly. The hearings will be open to everyone, and we will be asking each commenter to provide, you know what state they're from and which sector they are a part of, so we can try to categorize their comments as best we can, both to give to the Plan Development Team and also to bring back to the Board in August. Mike.

MR. LUISI: Because we don't do this often, I'm wondering if it would be okay, well, you tell me whether or not we need to wait for the public hearings before we implement measures. I know it said as soon as possible. But would it be best to wait, or should we start to work towards that now?

MS. KERNS: You do not need to wait. The Charter identifies, well sort of, the purpose of the hearings is to inform the public that the action took place. It's not getting comments, you've already taken the action, so you can go ahead and move forward.

MR. LUISI: Okay, that makes sense, thank you.

CHAIR GARY: Adam Nowalsky, you are on the webinar, you have a question?

MR. NOWALSKY: Can a state request an in-person hearing if they feel it best meets the needs of their constituents?

MS. KERNS: We can, Adam. A state can request it, we are just trying to keep workload as light as possible. We'll be losing Emilie in July, and so it will be tight for Commission staff, and we want to try to get as much done on that addendum before she leaves.

MR. NOWALSKY: At what point would you need to know then? How soon, like do you need to know before we leave today, before we leave this week? What would you need timeframe-wise?

MS. FRANKE: Thanks, Adam, yes. I think if you had a request by next Monday, which is May 8, that would be great.

CHAIR GARY: Tom Fote.

MR. FOTE: I think if we're going to do public hearings, and the comments have no effect on what we're going to do, you have to make that clear at the beginning, before they show up. I mean they were so mad about the scup thing, showing up at the public hearings at the Marine Fisheries Council. I don't think, they're not going to vote for anything like that. We really need to be careful this is just an information meeting only, and answer questions on that, because if you tell the people, they're going to expect that you are going to do action from what they testify to. I'm basically, let's make it clear what you are doing. I was surprised, because I didn't know that, and I've been sitting here for 35 years.

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CONSIDER APPROVAL OF ADDENDUM I ON OCEAN COMMERCIAL QUOTA TRANSFERS

CHAIR GARY: Are there any other questions for Emilie? All right. Let's go ahead and go into Item Number 6 on our agenda. Consider Approval of Addendum I on Ocean Commercial Quota Transfers. As a reminder, at the January Board meeting the Board postponed final action on this Addendum until today.

We already heard the Technical Committee report on quota utilization projections, and Emilie will now review the options in Draft Addendum I and a brief summary of the public comments and the Advisory Panel report. After her presentation we can take questions before the Board considers final action, so Emilie, off to you.

REVIEW OPTIONS AND PUBLIC COMMENT SUMMARY

MS. FRANKE: As Mr. Chair mentioned, I will today review the statement of the problem, the timeline and the proposed management options. I'll also give an overview of the public comments and Advisory Panel report that was received, and I'll also just do a brief recap of the Technical Committee report that was presented by our Stock Assessment Subcommittee Chair a couple of hours ago now.

Again, the Board action for consideration today is selecting a management option and considering final approval of Addendum I. Starting with the Statement of the Problem. Again, there have been several questions and concerns raised about the striped bass commercial quota system, with particular concern about the use of 1970 as a reference period.

The Board decided not to address these commercial quota system concerns as part of Amendment 7. There was some support for addressing this issue in a separate management action. That brought us to this draft addendum. In August, 2021, the Board initiated this draft addendum to consider allowing for the voluntary transfer of striped bass commercial quota in the ocean region.

This action was considered as an option to provide some more immediate relief to states that were seeking a change to their commercial quota. Again, as a note, there are several other Commission managed species that do allow for the voluntary transfer of commercial quota between states. Here is the timeline of the draft addendum.

The Plan Development Team developed an initial draft for consideration back in October of 2021. At that point the Board postponed consideration of the draft addendum until May of 2022, and then again until August of 2022. Then in November, 2022 the Board approved this draft addendum for public comment.

We went out for public comment between November, 2022, and January, 2023. Then at the January Board meeting, just a couple months ago, the Board postponed final action on this Addendum until this meeting today, and also tasked the TC with doing some projections for quota utilization scenarios. Here we are today, the Board is again considering selecting measures and final approval of this Addendum. I'll get into the proposed management options at this point. The proposed management options here consider allowing for the voluntary transfer of striped bass commercial quota in the ocean region between states that have ocean quota. Again, these options do not address the Chesapeake Bay commercial quota and they do not consider transfers between the Chesapeake Bay and the ocean region or vice versa.

Also note that any commercial quota that has been reallocated to a state's recreational fishery, for example New Jersey's quota that is currently reallocated to their recreational bonus program is not eligible for commercial quota transfers. Then if transfers are permitted, quota would be transferred pound for pound between the states.

There would be some uncertainty associated with transfers between states that harvest different size striped bass. We know states catch different size fish due to several factors, and we also know that through conservation equivalency over time, states have adjusted their commercial size limits, and this

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has resulted to changes in some quotas over time. A pound of striped bass quota is not equal across all states.

Some of the proposed options do incorporate a provision to try to address this discrepancy. Moving into the specific options here. Option A is the status quo, in which commercial quota transfers are not permitted. Then the alternative options would allow voluntary transfers, and those options range from Option B, which would be the least restrictive option to allow transfers down through Option E, which would be the most restrictive option to allow transfers.

Again, this range of options would allow transfers with certain conditions, based on stock status, and also based on the discretion of the Board. Starting with the alternative Option B, this would be the general transfer provision. For this option voluntary transfers would be permitted with no restrictions, but there would be a conservation tax if the stock is overfished.

There is no limit on how much quota could be transferred, but if transfers occur when the stock is overfished, a 5 percent conservation tax would apply to address that issue that a pound of quota is not equal across all states. For example, you have a state that transfers 10,000 pounds to another state. The receiving state would receive 9,500 pounds, and that remaining 500 pounds would be that conservation tax, and that would no longer be available for harvest that year.

Moving on to Option C. Option C would limit commercial quota transfers based on stock status. Voluntary transfers would be permitted, but no transfers would be allowed at all when the stock was overfished. Again, this is similar to the previous option. There is no limit on how much quota can be transferred. But for this option, no transfers could occur at all when the stock is overfished.

It is important to note that because the stock is currently overfished, this option would not provide near-term relief to states that are currently seeking additional quota. Moving on to Option D. Option D

is the Board discretion option. For this option the Board would decide whether voluntary transfers are permitted, and the Board could set criteria on those transfers. The Board each year or every two years would decide by their final meeting whether or not to allow transfers for the next one or two years, and could take into account information on stock status, and on fisheries performance. Then if the Board does decide to allow transfers when the stock is overfished, that same type of conservation tax would apply to those transfers. The other aspect of Option D is that the Board may set certain criteria for transfers. The Board could set a limit on how much total quota could be transferred in a given year. The Board could set a seasonal limitation on transfers, so for example the Board could say, only X percent of the allowable quota amount that year could be transferred during the first half of the year.

The Board could also determine a state's eligibility to receive a transfer. For example, the Board could say that a state couldn't request a transfer until they've landed X percent of their quota. Then finally for this Option D, as far as timeline. You know if the Board does select Option D, and approves the Addendum, this year the Board could decide today whether or not to allow transfers for this current fishing year 2023.

Then we would start this regular process of by the last meeting of the year discussing transfers for the following year. Then finally, the last option is Option E. This would be the most restrictive option. This would limit transfers based on both stock status and Board discretion. Again, the Board discretion, the Board would decide whether or not to allow transfers. The Board could set criteria for the next one to two years, except no transfers could occur at all if the stock is overfished.

You have both the Board discretion, but you also have this provision that would not allow any transfers when the stock is overfished. Just a couple of general process notes. You know if transfers are permitted with these alternatives B through E, there is the general voluntary transfer process, you know transfers require a donor state and a receiving state.

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They can occur at any time during the year at the agreement of those two states. Transfers may occur up to 45 days after the last day of the calendar year. The Board may specify any number from 0 to 45 days around that provision. The Administrative Commissioner of the states would submit a signed letter to the Commission, and a transfer would be final when those states receive written confirmation from Commission staff.

Quota transfers do not permanently impact a state's quota share, and then once a state receives a transfer, that state is responsible for any overage of that quota they have received. As far as the compliance schedule for this addendum, any measures approved by the Board would be effective immediately on the date of approval, and if transfers are permitted, states would have to account for any of that extra quota when they are determining how many commercial tags they would need for the year.

Just a note here that if the Board does select Option A, which is status quo, no transfers. That would mean that there is no change to current management. There would be no final Addendum I document posted. In this scenario we would add some information in the FMP review acknowledging and summarizing that this process took place.

I will now move into the public comment summary, and again we collected comments between November and January. We held several public hearings and we got a couple thousand comments. Here at the comment count table, the vast majority of comments favor the status quo Option A, no transfers permitted. Then of those who favored any of the alternatives, Option B through E, Option B had the most support. For the majority of those comments favoring Option A, status quo, the most common rationale provided by the commenters was concern about expanding harvest and increasing fishing mortality while the stock is still rebuilding, overfished and experiencing poor recruitment.

Comments noted that management should focus on stock rebuilding, and referred to the Board's past decisions to not allow quota transfers. Some comments noted that these transfers would be in

conflict with our stakeholder input during the Amendment 7 process, and some comments noted that if states aren't harvesting their full quotas, they should not be able to transfer that quota to other parts of the coast. Of those who supported Option B, this would be the least restrictive option.

Many commenters noted that they were commercial fishermen, and they noted that quota transfers allow for the efficient use of commercial quota, and that the commercial fishery has a relatively small impact on the overall fishery as compared to the recreational sector. They also noted that the commercial fishery already has accountability measures in place with payback for any quota overages.

Those in favor of Option D, that would be the Board discretion option, noted that some Board discretion would be beneficial, but cautioned against overly restrictive criteria for any transfers, and then those in favor of Option E, which would be that most restrictive option to allow transfers, noted that this would provide maximum oversight by the Board, but would still provide some benefit to states that were seeking transfers.

ADVISORY PANEL REPORT

MS. FRANKE: I'll now provide the Advisory Panel Report. The AP met in January, and the AP Chair asked that I provide the report in his stead. A majority of AP members similar to the public supported Option A, again citing the public comments in support of Option A, and noted that transfers aren't appropriate when the stock is overfished.

Also noted that transfers would not benefit the striped bass stock in any way, and also noted some concern about behind the scenes horse trading and discussions, in terms of quota transfers. There was also concern about transferring striped bass from states that harvest smaller fish to states that harvested larger fish.

Then as far as there were four AP members who supported Option B, again noting that quotas were

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originally developed by the science, and the commercial fishery is already constrained with those accountability measures, and again the fishery is primarily recreational, so the commercial fishery has a relatively small impact.

Some AP members had some additional recommendations. First, if the Board does allow transfers, there was a recommendation that the Board eliminate that 45-day provision, which allows transfers to occur after the year ends. A couple other AP members recommended that transfers be permitted only for states that have active commercial fisheries. If the Board doesn't allow transfers at this time, the AP was split on whether or not to consider transfers in the future. Some supported considering it again once the stock is recovered, others didn't support considering transfers at all in the future again. Then a couple AP members had some recommendations about taking a look at the quota system more holistically, and potentially updating the reference data for that. Before I wrap up, I just want to give a brief reminder of the Technical Committee report we heard a couple of hours ago. The Board again tasked the TC with running specific projections for quota utilization scenarios, and I'll just pull up here on the next slide the TCs final conclusions and discussion on this issue.

The TC noted that the impact of additional quota utilization on fishing mortality and rebuilding is negligible, and the projected scenarios were sort of the worst-case scenarios, and that small change that we saw was largely due to population dynamics between 2022 and 2023, and really the scale of the commercial fishery removals is very small, compared to the overall removals. With that I am happy to take questions.

CHAIR GARY: Thank you, Emilie, for your presentation. We'll go to the Board for questions for Emilie. John Clark.

CONSIDER FINAL APPROVAL OF ADDENDUM I

MR. CLARK: As I mentioned earlier, I just wanted to clarify that on those projections we're talking about pretty much the worst of the worst-case scenarios,

because they operated with an estimated fishing mortality that first of all used 2019 before Addendum VI went into effect, and then to estimate the fishing mortality for 2023, I know Mike Celestino said it would be a small change in the F, but was that quantified as to how much of a change it was to the F? I mean was it over 5 percent?

MS. FRANKE: For the quota utilization scenarios that projected F was at worst-case scenario, and it was only about 2 percent higher than the scenario without the additional quota. Was that your question?

MR. CLARK: Okay, so you're saying that with, well I meant that just using these into 2023, adding that in, you know it's no longer a constant F, right? It was more of a constant catch formula, so it increased the estimated F, and then as you carry that out to 2029, of course that accumulated, did it not? Even with that, it was still a very negligible change. Just wanted to clarify.

MS. FRANKE: Exactly, so there were a slightly different set of assumptions used for those quota utilization projections, and so those different assumptions the TC noted that it was those different assumptions that largely led to that small increase that we saw.

CHAIR GARY: Any other questions for Emilie? Jason.

DR. McNAMEE: It just kind of popped into my head as you were going through, and thank you, Emilie, for the review and the information on the options. A couple times during the presentation there is a statement about, you know a pound is not a pound, you know they are not equal. I think I know what that means, but I just wanted to check. I mean is it, you know if you're talking about 9 pounds, it could be 3, 3-pound fish, or one 9-pound fish, and the spawning potential is sort of different between those two scenarios. Is that what that means?

MS. FRANKE: Exactly right, so with states harvesting different size striped bass, you know 100 pounds of quota is a much different number of fish in some states than others, depending on the size of the

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striped bass, and all that comes along with it, like spawning potential.

CHAIR GARY: Other questions for Emilie? Seeing none; we'll turn to Board discussion, and I would encourage Board members, whenever they have opportunity to make a motion, and John Clark you start.

MR. CLARK: Yes, I would like to amend the motion, the postponed motion, and I would like to amend it to change it from Option D to Option E, and if I can get a second, I will speak to that.

CHAIR GARY: Thanks, John, is there a second to John's motion? Justin. Go ahead, John the floor is yours.

MR CLARK: Clearly, we've heard through this whole process about all the concern about this, and with that it is a very small amount of change in removals we're talking about here. Changing from Option D to Option E introduces two safeguards for the stock. First of all, there won't be any transfers if the stock status is overfished, and then the Board has full discretion over transfers beyond that.

I would say that we have it very well covered there that the Board would have to be comfortable with any transfers before they could go forward. Once again, the reason that Delaware has been pushing this, and I think some of the other states are also interested, is in our case it's a fairness issue based on this very outdated quota set up, where it's going back to the 1970s, which fades further and further into the past.

We knew that to go back, or at this point to do a full reallocation amendment, would probably be a very, very lengthy process. We figured this would get some relief sooner. I just wanted to put it into perspective that with the scale of our fishery, even if we were to bring ourselves back to where the quota was before Addendum IV.

We would only be looking at about another 3,900 to 4,000 striped bass, which is based on 2022 removals. That is well less than 1 percent of total removals. As

I said, between the fact that we have all the safeguards in place with this option, and the scale of the request from certain states, such as ours, and the Board's discretion over granting any transfers. I think this is something that I hope the Board can approve, because I think it will help some of these small-scale fisheries, and it will not harm the stock.

CHAIR GARY: Justin, would you like to comment, as the seconder?

MS. KERNS: Marty, before Justin comments, there actually wasn't a postponed motion that you had made, so John, could you just read this motion in?

MR. CLARK: Okay, I'm sorry, so in other words, the motion I had made was substituted, right? Sorry, and we just had that whole course of Roberts Rules of Order. Messing up already. **Okay, move to approve Option E (Board discretion of commercial quota transfer provision, except no transfers if stock is overfished).**

CHAIR GARY: Justin, you've already seconded it, okay. All right, so we finished with a comment, we've corrected the motion, and Justin would you like to comment?

DR. DAVIS: I think this is a reasonable option, it is very conservative. We had some projections we saw earlier today that show this as a very small amount of removals that is not going to put rebuilding at risk. Certainly, Connecticut is sensitive to the fact we were recently challenged by quota allocations for some of our species, and we took action around this table to correct that.

I think whenever any one of our members around the table is sort of feeling like they are disadvantaged by their quota, we should try to take reasonable action to adjust quota allocations. I just think it is time to dispense with this management action, it's been hanging for a while. We started Addendum II this morning, we should wrap up Addendum I before we get going on Addendum II. I think there are a lot of controls in place with this.

The Board is going to have discretion to allow quota transfers to happen or not. You know certainly my

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intent, or what I see as the intent of this is to essentially provide some more commercial quota to Delaware. If this program starts to grow beyond that, I think the Board has got to consider whether they want to reauthorize this program in subsequent years. I just think this is a really reasonable, conservative option, and I would hope the rest of the Board sees it that way too. Thanks.

CHAIR GARY: I might turn to staff. I just got a message that Doug Grout is not here, but he has a proxy. Do I have it wrong?

MS. KERNS: Ritchie White is Doug's proxy, sorry.

CHAIR GARY: All right, Jason.

DR. McNAMEE: Just to first thank the Technical Committee. We had asked for that extra work to be done. You know the point of doing the extra work was to just really verify, you know this notion that allowing the transfers might have significant impacts to a whole host of things in the population.

I think what we've seen, at least from the work that they've done is, you know this is a small proportion of a small proportion. The impacts of allowing this on the population are very small. Just to speak for a minute about, this maybe seems a little incongruent for folks, given what we just did before lunch.

I'm not ignoring a lot of the public comment that ended up in my inbox, and the meeting materials supported status quo. But a lot of the reasoning behind that, the status quo meaning no transfers. A lot of the reasoning behind that was fear about rebuilding and the current state of the population, which you know I think those are well founded. But this option in the motion that is up before us, there would be no transfers. Now, while the stock is not doing well, both because there is Board discretion to not allow it, and stock status that wouldn't allow it. For me that kind of assuages those fears, and I think we could put this infrastructure in place. We'll work hard to get the stock back into good shape, and then we have this mechanism in place for allowing some flexibility within the commercial fishery. I think it's a good idea. It's nothing that's going to happen

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immediately, but it's something we can put into place that could have benefit for the very small commercial component in the future, so I support the motion.

CHAIR GARY: Megan Ware.

MS. WARE: I appreciate Delaware putting up a motion that is considering stock status, in terms of when quota transfers may be permitted. I wanted to think about this a few years out and be honest about what I think my reaction may be. I'm thinking in the 2024 stock assessment, I'm hopeful we will have a result that says we are no longer overfished.

That is at least what the projections indicate we may get. But I'm also expecting that assessment to tell us we need more work to hit rebuilding by 2029. I think we could have a situation where we are asking the fishery for more reductions in F, and at the same time considering quota transfers.

I'm personally going to struggle in that situation with approving quota transfers, because I think it's kind of doing two different types of actions at the same time, or two different outcomes at the same time. I'm not sure how I'm going to vote on this, but I just wanted to be up front, particularly to the Delaware stakeholders about what my thoughts on this may be while we're rebuilding the stock.

CHAIR GARY: We'll go to Chris Batsavage and then Max Appelman.

MR. BATSAVAGE: While I appreciate the safeguards and limited scope of transfers that could occur under Option E, I cannot support it at this time, and just quickly explain why. You know although the stakeholder input in North Carolina was largely opposed to transfers, the commercial industry in North Carolina generally supported the concepts of transfers.

My opposition isn't from reluctance to transfer quota, we do that with other species. If we found through the projections through 2022 that F was still in that range where it was in 2020 and 2021, and we had a high chance of rebuilding the stock by 2029, I could probably support this motion.

But even with the actions that we took earlier today to address stock rebuilding, I think it's still going to be a major challenge over the next several years to actually constrain F enough. Even though the increase in catch would be very small compared to the overall catch, I think we should really focus on whatever we can do to keep F low enough to rebuild the stock, especially when we consider the low recruitment that we're currently seeing in the population.

CHAIR GARY: We have Max Appelman and then Tom Fote.

MR. APPELMAN: I'm going to abstain on this motion for state-to-state transfers today, but I want to just comment for a minute on commercial quota transfers as a general policy. We support quota transfers to address a number of different challenges and issues that can arise with quota management, especially with what might come down the pike with climate change and shifting stocks, and providing that flexibility. We supported developing this Addendum through the public process, but we also recognize that this is a somewhat unique situation, considering the actions that we just took to reduce F, and so we're going to abstain today.

CHAIR GARY: Tom Fote.

MR. FOTE: It looks like we're going to wind up with a three-inch opportunity to catch fish recreationally in New Jersey, if we get this in place by 180 days. Under that veil and under all the things that went on this morning, I can't vote for this. I had no support for it in any of the people I heard from in New Jersey. It's just a difficult situation.

What I would support, and what I've said for the last, I don't know 10 years, since we got actually longer, about 15 to 20 years since we are no longer considered producing areas in the Delaware River and the Hudson River, that we revisit this issue, because the Chesapeake Bay seems to have more problems than the Delaware River does and the Hudson River.

For what I've been told that some of the tagging studies over the years that said that 40 percent of the coastal migratory stock is coming out of the Delaware River and the Hudson River now in certain years. We should be looking at the role those contribute into the whole system, and should allow us to do what Maryland, Virginia, and Potomac River can do in the Chesapeake Bay, and look at it, would Delaware be able to do some things differently than what we do?

It's not going to change New Jersey, because we're pretty much set with our regulations, the same thing in New York in the harbor. New York was really shut down because of PCBs commercially, anyway in the Hudson River. That is why I can't support this motion at this time. I don't know what New Jersey will vote, but I know I can't support it.

CHAIR GARY: Next in the queue is Eric Reid.

MR. REID: I do appreciate the fact that Delaware put up Option E, with all the sideboards on it. Just to remind everybody that it is highly unlikely that a limited access fishery like the commercial fishery will exceed its allotted quota in any given year by let's say 40 percent, it's highly unlikely.

Commercial fishery is well regulated, we carry observers, we get a lot of data from that fishery, and the notion that we would not adopt the ability to consider having that particular segment of the industry catch 100 percent of their allocated quota is mind numbing to me why we wouldn't do it. Being mind-numbed, Mr. Chairman, that's all I have to say at the moment.

CHAIR GARY: Renee Zobel.

MS. RENEE ZOBEL: I wasn't going to ask this question unless this was proposed in interest of time, but this is a clarifying question that Doug Grout had, and I thought it was a good one. When can the Board consider their discretion to do this, is it after a stock assessment specifically has a status of no longer being in that stock status, or is it projection? Say the stock assessment comes out and says the stock is overfished but projects in the subsequent year it will

no longer be overfished. Can the Board consider it based on the projection?

MS. FRANKE: Thanks for that question. It would be the results of a stock assessment, so the stock status would have to change to not overfished.

CHAIR GARY: Mike.

DR. ARMSTRONG: Just a clarifying question, then a comment. I think this is true, the Board will have discretion to not do transfers, even if we're not overfished, correct? I hate to go against all the public opinion, but I think there is enough restrictions on E that at many times it's going to approach A. I can see scenarios where we are not overfishing, but we're heading to an overfished condition, and I would vote not to do transfers. I think there are enough safeguards on this one, so we can support it.

CHAIR GARY: Before we ask for any final comments in this discussion. I just want to remind everyone, this has already gone out to public comment, so I wasn't planning on taking any at this time. I will ask if there are any final comments or any additional discussion by the Board members before we put this to a vote. Jason.

DR. McNAMEE: Actually, so I'm not going to make a comment now. If this were to pass, I would like to make a comment, so I just wanted to get that in front of you. Thank you.

CHAIR GARY: All right, final call, any last words from anyone before we take a vote? Let's do a one-minute caucus. Okay, Board members, let's get ready to call the question. Everyone in favor of the motion, please raise your hand.

MS. KERNS: Potomac River Fisheries Commission, Rhode Island, Massachusetts, Connecticut, New York, New Jersey, Virginia, District of Columbia, Maryland, Delaware.

CHAIR GARY: All those opposed raise your hands.

MS. KERNS: New Hampshire.

CHAIR GARY: Any null votes?

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MS. KERNS: Maine, North Carolina, Pennsylvania.

CHAIR GARY: Any abstentions?

MS. KERNS: Fish and Wildlife Service and NOAA Fisheries.

CHAIR GARY: The motion passes 10 to 1 to 3 to 2. Do we need to read the motion in? Jason, to your comment.

DR. McNAMEE: Just a comment. As has been mentioned, we do quota transfers in other species. I think back in the day everybody was sort of racing to get out first for things like bluefish, I'll use as an example. It wasn't very collegial; it was kind of competitive. I think we've developed a nice rapport amongst the states that participate in trying to get transfers. I know folks have been focused on Delaware as the kind of keystone transfer state, but Rhode Island would also potentially be interested in transfers, and so I hope that we can develop a same sort of process where we sort of consult ahead of time, and make our requests in a collegial way.

CHAIR GARY: Thank you, Jason, well put. That takes care of Item Number 6 so far. We need a motion to approve the Addendum. John Clark. Do we have a second? Ray Kane. John, could you read it into the record?

MR. CLARK: **Move to approve Addendum I as modified today with an implementation date effective today.**

CHAIR GARY: Any discussion on the motion? None. Any objections to the motion? Seeing none; it passes unanimously. A long meeting. That takes care of Item Number 6.

OTHER BUSINESS

CHAIR GARY: Item Number 7, Other Business. Is there any other business to bring before this Board? Tom.

MR. FOTE: I brought up before what I was talking about is the contribution of the Hudson River and Delaware River to the overall coastal migratory stock, I've been asking this question for about 15 years and still haven't gotten an answer. I know the Technical Committee has looked at it a couple times, and didn't have the necessary information to pull out.

But some of the tagging studies that I've seen over the year proved that we're a lot bigger than we were with the 15 or the 25 percent that we started, and it's a bigger percentage of the fisheries right now. I also want the Technical Committee to look at what would be needed for the Delaware River to be considered again what it rightly should be, a spawning area, and the same thing with the Hudson River.

MS. FRANKE: Thanks, Tom, this is Emilie, I'll just respond. I'll say, I think maybe during the next benchmark assessment the TC will probably look at, you know any new studies on the contribution of each spawning area to the stock, and provide any updated information on that.

CHAIR GARY: All right, thanks, Tom, for that question. Any other new business to bring before the Commission. Toni.

MS. KERNS. Not new business, but just to set up some expectations for the Addendum that was approved earlier. As Bob said, we didn't really talk about timing. It's our intention to bring a draft document to the Board in August, and depending on if the Board makes any changes to that document or not. Whether or not we feel we can actually get the document out, comment and summarized in time for the annual meeting, or we may need to hold a special meeting of the Board, probably early in November to finalize that document, in order to have states implement those measures for 2024. I just wanted to put that on folks' radar now, and then Emilie will reach out, probably either today or tomorrow, looking for nominations for a Plan Development Team.

CHAIR GARY: All right, thank you, Toni, any other business? Seeing none; I would seek a motion to adjourn. Dave Sikorski, seconded by Ray Kane. We are adjourned, folks.

(Whereupon the meeting adjourned at 2:15 p.m. on Tuesday, May 2, 2023)

ADJOURNMENT

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Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Atlantic Striped Bass Management Board
FROM: Emilie Franke, FMP Coordinator
DATE: July 17, 2023
SUBJECT: Emergency Action Implementation Update and Public Hearing Summaries

This memorandum provides an update on implementation of the striped bass emergency action and summarizes the four public hearings on the emergency action.

Approved Board Motion May 2, 2023

Move that the Striped Bass Board, by emergency action as outlined in the Commission's ISFMP Charter, implement a 31" maximum size to all existing recreational fishery regulations where a higher (or no) maximum size applies, excluding the Chesapeake Bay trophy fisheries. All other recreational size limits, possession limits, seasons, gear restrictions, and spawning protections remain in place. Jurisdictions are required to implement compliant measures as soon as possible and no later than July 2, 2023.

Emergency Action Implementation Update

As of the July 2 implementation deadline, all states have implemented regulations consistent with the required 31-inch maximum size limit for striped bass recreational fisheries. The effective date and recreational maximum size limit implemented by each state is summarized in Table 1. As clarified following the May 2023 Board meeting, the approved Board motion language should be interpreted as a 31.0" maximum harvestable fish. However, nothing precludes a state from implementing a less than 31" upper bound if they so choose.

The emergency action is effective for 180 days from May 2, 2023 through October 28, 2023. If it deems necessary, the Board may extend the emergency action for two additional periods of up to one year each at a future Board meeting. The Commission's Summer 2023 Meeting (early August) and 2023 Annual Meeting (mid-October) will occur prior to the current October 28 expiration date of the action.

Table 1. Implementation of 2023 Emergency Action for striped bass.

State	Effective Date	Recreational Maximum Size Limit
ME	May 18	31.0" max size limit
NH	May 26	<31.0" max size limit
MA	May 26	<31.0" max size limit
RI	May 27	<31.0" max size limit

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State	Effective Date	Recreational Maximum Size Limit
CT	May 26	<31.0" max size limit
NY	June 20	31.0" max size limit
NJ	July 2	31.0" max size limit
PA	June 3	<31.0" max size limit
DE	May 21	31.0" max size limit
MD	May 16	31.0" max size limit
PRFC	May 16	31.0" max size limit
DC	May 16	31.0" max size limit
VA	July 1	31.0" max size limit
NC	June 1	31.0" max size limit

Public Hearings on the Emergency Action

Following Board approval of the emergency action, four public hearings were held from May 17 to May 31, 2023 to inform the public about the action and identify next steps for management. All hearings were conducted via webinar and all hearings were open to anyone from any state.

Each public hearing summary is enclosed in the following pages, and each hearing summary lists the total number of attendees as well as the number of people who provided comments. Full attendance lists are provided following the summaries. 224 members of the public (not including state staff, ASMFC staff, or Board Members/Proxies) attended the hearings, and some of these individuals attended multiple hearings. 94 of those public attendees provided comments.

Below is a brief summary of common comment themes. Each enclosed hearing summary provides more detail on comments provided at each hearing.

62 people, including representatives from 11 organizations, commented in support of the emergency action. Comments noted support for taking proactive, swift action to protect the strong 2015-year class so those fish can contribute to the spawning stock biomass and rebuild the stock. Comments noted the importance of the 2015-year class and the need to get those fish out of the slot limit, especially considering recent low recruitment and the lack of strong younger year classes. Some comments noted the importance of all sectors contributing equally to stock rebuilding, and some noted concern about the potential for states to be out of compliance.

24 people, primarily charter captains, and including representatives from 3 organizations, commented in opposition to the emergency action. Comments noted the narrow slot limit will increase recreational releases and mortality due to fishing longer to find a fish within the slot. Comments noted this action only targets those who harvest striped bass, and that there should be measures to address the catch-and-release fishery. Comments noted the negative economic

impacts of the narrow slot limit on for-hire businesses, and expressed support for managing the for-hire sector separately from private recreational anglers. Some noted concern about the accuracy and use of MRIP data.

Some comments addressed other striped bass management topics, including the need for increased outreach/education on best handling and release practices, and better understanding the contribution of spawning grounds north of the Chesapeake Bay to the population.

ASMFC Virtual Public Hearing – May 17, 2023
Striped Bass 2023 Emergency Action

Total Attendees: 83 (see enclosed attendee list)

ASMFC Staff: Emilie Franke, Toni Kerns, Madeline Musante

17 attendees provided comments, including comments from the New York Coalition for Recreational Fishing (NYCRF).

Commenters from:

MA	1	NY	3
VT	1	NJ	5
CT	5	MD	2

11 commenters (NYCRF, 9 recreational anglers, 1 charter captain) support the emergency action with the following comments:

- Every state must implement the emergency action for it to be effective.
- Concern that New Jersey would not comply with the emergency action.
- Concern about how long the process of addressing a non-compliant state would be.
- Action was necessary to rebuild the fishery, and support for more conservation through Addendum II process to protect large breeding fish.
- Fish are worth more in the water than harvested, and management should focus on abundance.
- Support more protection for all year classes, including juveniles and large breeding fish.
- Concern the Chesapeake Bay trophy fishery is exempt from the action.
- Frustration that the fishery went from being on track to rebuild to needing an emergency action within a short period of time; concern the 2022 assessment did not highlight that a large year class becoming exploitable would lead to an increase in harvest and fishing mortality. The Technical Committee should be tasked with improving methods to forecast the impact of large year classes, and this should be factored into future decisions.

4 commenters (4 charter captains) oppose the emergency action with the following comments:

- Emergency action only affects those who harvest striped bass, and does not address catch/release mortality. Catch/release mortality is still high and has been higher than harvest in recent years, and this should be highlighted.
- Catch/release mortality needs to be reduced, for example by prohibiting treble hooks or setting a catch/release limit (e.g., catch/release 5 fish then move on). Catch/release anglers are killing fish by using treble hooks and holding fish out of the water for long periods of time.
- For-hire sector should be managed separate from private recreational anglers. This emergency action is negatively affecting people's livelihoods.

- There was no process for public comment and no public notification of this action before it happened. Public comment should have been used as a forum to discuss 2022 removals before the Board took action.
- Harvest shouldn't be focused in such a narrow slot removing one particular year class. Harvest should be distributed across multiple year classes. For example, options could be considered to exclude a year class slot and allow harvest around it (e.g., allow harvest from 28-31" and 33-36").
- Charter captains only target striped bass for a few hours before switching to other species.
- Concern about discard mortality with the emergency action. On charter trips, several fish are caught before catching keeper sizes. This action doesn't make sense since this would require even more releases. Trips may have to change target species to find fish for customers, and this may lead to overharvesting another species if all charter businesses start doing the same (e.g., overharvesting black sea bass).

Other comments:

- Concern that menhaden harvest was allowed to increase when menhaden should be protected as prey for striped bass.
- Concern that people are too quickly assuming New Jersey will be out of compliance before the process is complete on July 2.
- Catch/release is underrepresented in the data.
- Data access should be more transparent and readily available.
- Need to work harder to educate the public on best catch/release fishing practices, like not using treble hooks. It is up to recreational anglers to be responsible when releasing fish back in the water.
- A recreational fisherman fishes a few times a month, whereas charter boats fish more often and catch many more fish. Something should be done to restrict the catching of those big fish.
- Concern about changes to MRIP data availability in the online query tool (e.g., cannot query data by wave).
- Support for coastwide regulations, and against the use of CE and special programs.

ASMFC Virtual Public Hearing – May 22, 2023
Striped Bass 2023 Emergency Action

Total Attendees: 76 (see enclosed attendee list)
ASMFC Staff: Emilie Franke, Toni Kerns, Chelsea Tuohy

20 attendees provided comments, including comments from Plum Island Surfcasters (PIS), New Jersey Council of Divers and Clubs, Backcountry Hunters and Anglers Massachusetts Chapter (BHA-MA).

Commenters from:

NH	1	CT	2
MA	10	NY	1
RI	1	NJ	5

11 commenters (PIS, BHA-MA, 8 recreational anglers, and 1 charter captain) support the emergency action with the following comments:

- Previous action to rebuild striped bass was delayed, so now we have to catch up.
- This decision is supported by science and proactive action should be taken to protect the resource.
- Important to protect the 2015 year-class to rebuild the stock.
- Proactive action needs to continue to reduce harvest, and states need to implement and enforce those actions.
- Concern about New Jersey being out of compliance.
- All sectors should contribute equally to rebuild the resource.
- Charter industry should be under a moratorium.
- Noticed a long-term decrease in the number of fish and concern for the health of the fishery, including concern about low recruitment.
- MRIP data is correct in showing an increase in the 2022 recreational fishery; there are a lot of fish in the slot right now and people are going to fish more when there is a large year class available.

6 commenters (6 charter captains) oppose the emergency action with the following comments:

- Management needs to balance addressing slot limit and decreasing catch/release mortality in order to rebuild the stock; catch/release mortality must be addressed.
- Action disregards the science, and the stock is healthy.
- A narrow slot means more, large breeding fish will have to be released to find one in the slot limit; slot limits are causing more mortality as the season progresses, and there will be more pressure on the stock catching more fish to keep one in the narrow slot.
- Charter industry should have different regulations; charter and private/shore anglers are very different modes.
- VTR data should be considered instead of just MRIP data.

- Only limiting which fish can be taken home creates a social and economic injustice.
- Concern about charter industry and not seeing as many trip bookings as we should see.
- All sectors (charter, recreational, and commercial) should contribute.
- Concern about taking action based on one year of data.

Other comments:

- Need more outreach and education on best practices for handling and releasing fish.
- Support for consistent size limits for the commercial fisheries should be considered to protect large breeding fish.
- Opposition to maximum size limits for commercial fisheries, as this will increase dead discards.
- Consider a lower slot of 20-28" instead of allowing harvest of larger fish.
- Need to educate anglers on where striped bass breeding grounds are.
- Spearfishing and narrow slots don't align, and the Board should consider something other than such a narrow slot.
- Fish are moving north as water temperatures increase, and there should be more studies following the fish outside the Chesapeake Bay.
- Slot limits are not a sustainable approach for the long-term, as the fishery needs multiple size classes available.
- Management needs to focus on the larger problem of a fishery with too much effort; gear restrictions and mode splits won't solve this bigger issue.
- Split modes should not be discussed at an addendum level but rather an Amendment discussion; the first question to address would be allocation to each mode and funding since recreational license fees pay for most services.

ASMFC Virtual Public Hearing – May 23, 2023
Striped Bass 2023 Emergency Action

Total Attendees: 52 (see enclosed attendee list)

ASMFC Staff: Emilie Franke, Toni Kerns, Madeline Musante

17 attendees provided comments, including comments from the Rhode Island Party & Charter Boat Association (RIPCBA), Connecticut Surfcasters Association (CSA), Stellwagen Bank Charter Boat Association (SBCBA), Plum Island Surfcasters (PIS), Connecticut Catch and Release Fly Fishing Group (CCRFF), and Backcountry Hunters and Anglers New England Chapter (BHA-NE).

Commenters from:

ME	1	CT	3
NH	1	NY	2
VT	1	NJ	2
MA	1	DE	1
RI	4	MD	1

14 commenters (CSA, PIS, CCRFF, BHA-NE, 8 recreational anglers, and 2 charter captains) support the emergency action with the following comments:

- Support for swift action by the Board to rebuild the stock and address long-term downward trend.
- Support for moving the 2015 year class out of the slot, and generally protecting abundant year classes so they can contribute to the population.
- The striped bass populations is not dispersed evenly across their range; fishermen fishing in sub-optimal habitat areas see more of the population decrease.
- All sectors should participate equally.
- Shore anglers are the first to see a decline. Shore anglers tend to be the least financially secure so it's not equitable to limit access for shore anglers and not others.
- It can be difficult to separate local/seasonal conditions from the long-term trends and overall health of the stock.
- The striped bass population needs a boost to survive all direct and indirect factors contributing to population size (invasive species, overharvest of prey species, climate change, ocean acidification, etc.) to keep them around for future generations.
- Concern that New Jersey stakeholders supporting the action are not being heard.
- Concern about potential New Jersey non-compliance, and the need to address that issue quickly.
- Concern about the use of slot limits until the fishery is rebuilt to a healthy abundance.
- Support for stronger action like a moratorium or catch/release only fishery.
- Concern about some anglers being more inclined to harvest striped bass now (instead of release) due to less prevalence in certain areas.
- Everyone benefits from more fish in the water.
- Action should be extended for the entire year.

2 commenters (RIPCBA, SBCBA) oppose the emergency action with the following comments:

- Public comments were not part of the decision, and would have provided the Board with perspective on the impacts of these measures. The emergency action process was not transparent.
- The for-hire sector should have been exempt, especially considering the decrease in coastwide for-hire harvest vs. increase in private/shore sector. There is a negative impact on for-hire businesses, both in the short- and long-term, especially with the last-minute regulatory change.
- The action occurred mid-season, which has an inequitable impact along the coast since it impacts the entire season for northern states while only affecting part of the season for southern states.
- Concern about the precision/accuracy of MRIP data driving this action.
- MRIP data should be averaged across multiple years instead of using one year of data.
- Action does not reflect the abundance of striped bass seen on the water.
- Charter businesses have already seen trip cancellations due to the emergency action, and there are cuts to regulations for other species as well.
- For-hire sector should be managed separate from private/shore sector.
- Changing the size limit only impacts those who harvest striped bass, and the catch/release sector should not be ignored. Addendum II should take action to address the catch/release sector. Could implement a daily catch limit (catch/release included) instead of a harvest limit so all modes are participating in the measures.

Other comments:

- There should be additional research into spawning areas outside the Chesapeake Bay (i.e., there may be more spawning in other areas along the coast than are currently accounted for). The impact of dams block spawning areas should also be considered.
- Concern about Canadian management not properly managing a potentially high number of striped bass migrating into Canadian waters during salmon runs.
- Concern that climate change is moving the striped bass population more into the EEZ, and that may not be captured in the stock assessment.
- Concern about seal predation and temperature affecting striped bass movement patterns.
- Concerned the Maryland trophy season (1 fish min. size of 35") is against the interest of Board and should be eliminated.
- Private anglers should be required to complete mandatory reporting (same as charter and commercial).
- Concerned about poaching and fish not being accounted for, which could lead to population numbers being lower than they seem.
- Concern about MRIP survey methods.
- Need for better outreach/communication to new, younger anglers about proper catch/release methods.

ASMFC Virtual Public Hearing – May 31, 2023
Striped Bass 2023 Emergency Action

Total Attendees: 123 (see enclosed attendee list)

ASMFC Staff: Emilie Franke, Toni Kerns, James Boyle

40 attendees provided comments, including comments from Montauk Boatmen and Captains Association (MBCA), Stripers Forever (SF), American Saltwater Guides Association (ASGA), Chesapeake Bay Foundation (CBF), and Maine Association of Charterboat Captains (MACC)

Commenters from:

ME	5	NY	7
MA	8	NJ	7
RI	6	MD	2
CT	3	VA	1
		NC	1

26 commenters (including SF, ASGA, CBF, MACC, 18 recreational anglers, and 4 charter captains/guides) support the emergency action with the following comments:

- This action protects the strong 2015-year class so those fish can become spawners and contribute to rebuilding. If we don't protect this year class, in 3-5 years the year class will be dramatically reduced.
- Support implementing proactive measures to protect the stock.
- While big fish are around, there still aren't as many small fish as there should be. There is good fishing now with the 2015-year class, but there are no strong year-classes coming behind the 2015s.
- This type of early action was necessary to save the stock and protect the important 2015 year-class, which makes up a lot of the striped bass biomass.
- The previous slot targeted the 2015 year-class, so the change was needed.
- Management in the 1980s showed how effective it was to protect a strong year class to rebuild the stock.
- There are many industries and fisheries that are based on catch-and-release fishing, and there should shift away from the mindset that fish need to be killed.
- The stock should be managed to abundance.
- Support taking swift action in response to future stock assessment updates as well to rebuild the stock and prevent the need for more extreme measures later.
- While there is a short-term impact on businesses, this action will protect livelihoods in the long-term.
- This action is a result of management decisions over the past decade and not taking enough action to support stock rebuilding and address overfishing.
- The emergency action should be extended beyond the 180-day period.

12 commenters (MBCA and 11 additional charter captains) oppose the emergency action with the following comments:

- The narrow slot limit is too drastic for the for-hire sector to be able to operate; business is being driven away by these changes because people don't want to just catch and release.
- The narrow slot limit will increase recreational release mortality and discards to find a fish in the slot limit, and there has not been enough time to determine the effects of this measure.
- For-hire modes should be separated from other recreational anglers because for-hire modes make their primary income from striped bass. Either different slot limits for the for-hire sector should be considered, or a different possession limit.
- MRIP data are not reliable and are incomplete; VTRs and industry-collected data should be used to inform these decisions and stock assessments.
- These trends and issues need to be identified earlier so management changes are not so drastic.
- Charter sector is being targeted by these regulations, and the impacts on small businesses should be considered.
- Conservation should be reasonable and based on reliable data, and this action is neither.
- Spring spawning runs indicate the stock is recovering.

Other comments:

- This action was not required by the management triggers in the FMP. If the Board is taking action outside the management triggers, then the management triggers should be changed.
- Increased education is needed on best handling and release practices (e.g., not holding the fish out of water for longer than necessary).
- Frustrated that public hearings are occurring after action was taken, instead of before.
- Better research on contribution of spawning grounds, especially considering climate change and migration.
- The commercial sector, particularly the Chesapeake Bay which has not taken a reduction, should also take a reduction to rebuild the stock.

Striped Bass Emergency Action Public Hearing

May 17, 2023

Webinar – 83 attendees

Last Name	First Name	State
Abeles	Ken	New Jersey
Abbott	Dennis	New Hampshire
Andresino	Mike	Massachusetts
Appleseed	John	Massachusetts
Augustine	Pat	New York
Bailor	Ed	Maryland
Bartush	Quint	Connecticut
Batsavage	Chris	North Carolina
Beato	Frank	New Jersey
Bellavance	Rick	Rhode Island
Bentley	Capt Kevin	Connecticut
Blanchard	Kurt	Rhode Island
Bowen	Eric	Maryland
Celestino	Michael	New Jersey
Christopher	Anthony	New Jersey
Clark	John	Delaware
Creighton	Jack	Massachusetts
Cvach	Sarah	Maryland
Davis	Justin	Connecticut
Denno	Patrick	Massachusetts
Dentler	Ashley	New Jersey
Devine	Thomas	New Jersey
Dillon	Dennis	Rhode Island
Drago	Randy	Massachusetts
Emerson	Clay	New Jersey
Friedman	Justin	New York
Friedrich	Tony	Maryland
Fuda	Tom	Connecticut
Gary	Marty	Virginia
Gillingham	Lewis	Virginia
Giuliano	Angela	Maryland
Godon	Jesse	New York
Hardy	John	New York
Harrison	Brendan	New Jersey
Hasbrouck	Emerson	New York
Herrick	Daniel	Maryland
Higgins	Jaclyn	Virginia

Last Name	First Name	State
Hornick	Harry	Maryland
Houde	Edward	Maryland
Humphrey	Thomas	Massachusetts
Jewkes	James	Massachusetts
Kaelin	Jeff	New Jersey
Kane	Raymond	Massachusetts
Karbowski	TJ	Connecticut
Kosinski	Thomas	New Jersey
Leo	Benjamin	Delaware
Maganza-Ruiz	Jill	New York
Maniscalco	John	New York
McDonnell	Laura	Florida
McGilly	Joshua	Virginia
McKinnon	Claire	Connecticut
Meserve	Nichola	Massachusetts
Meyers	S	Virginia
Miko	Andrew	Connecticut
Molton	Kyle	Massachusetts
Moore	Chris	Virginia
Moore	Capt. Jason	New Jersey
Mugherini	Tim	Massachusetts
Munro	Bob	Maryland
Newman	Thomas	North Carolina
Pirri	Michael	Connecticut
Patterson	Cheri	New Hampshire
Patterson	Ryan	Maryland
Ramsey	Jill	Virginia
Reading	Benjamin	North Carolina
Rudman	Patrick	Maine
S	Renee	Connecticut
Sandvoss	Mitch	Connecticut
Sarcona	Tony	Maine
Sikorski	David	Maryland
Smith	Bob	Massachusetts
Squire	Ross	New York
Staunton	Norm	Vermont (fish RI, NH, ME, others)
Stoehr	Joel	New York
Tiska	Carl	Rhode Island
Tolbert	David	Maryland
Travers	Scott	Rhode Island

Last Name	First Name	State
Watt	Dan	Pennsylvania
Williams	Al	Massachusetts
Wilson	Sean	NJ
Wright	Chris	MD
Yuschak	John	New Jersey
Zlokovitz	Erik	MD

ASMFC Staff: Emilie Franke, Toni Kerns, Madeline Musante

Striped Bass Emergency Action Public Hearing

May 22, 2023

Webinar – 76 attendees

Last Name	First Name	State
Abbott	Dennis	New Hampshire
Aguiar	Adam	New Jersey
Amtower	Heather	Massachusetts
Borgatti	Christopher	MA, NH, ME, RI, CT, NY, NJ
Berger	Marc	Connecticut
Borden	David	Rhode Island
Brightman	Tom	New Hampshire
Brust	Jeffrey	New Jersey
Conroy	Margaret	Delaware
Chou	Luyen	New York
Collins	Matt	Massachusetts
Corbett	Heather	New Jersey
Corbett	Heather	New Jersey
Cudnik	Greg	New Jersey
Davis	Justin	Connecticut
Deangelis	Mark	New Jersey
Deanzeris	Michael	Massachusetts
Delzingo	Mike	Massachusetts
Duane	John	Massachusetts
Dubrulle	Greg	Connecticut
Dudus	Roman	Connecticut
Friedrich	Tony	Maryland
Fullmer	Jack	New Jersey
Gary	Marty	Virginia
Golden	Rick	Massachusetts
Gordon	Jesse	New York
Hardy	John	New York
Harrison	Brendan	New Jersey
Henrich	Georgette	Massachusetts
Higgins	Jaclyn	Virginia
Hornick	Harry	Maryland
Kane	Raymond	Massachusetts
Karbowski	TJ	Connecticut
King	Ashley	Virginia
Kull	Laura	New Jersey
Laflamme	Gregory	Massachusetts
Maganza-Ruiz	Jill	New York

Last Name	First Name	State
Manning	Zach	New Jersey
Masse	Benjamin	Rhode Island
Miko	Andrew	Connecticut
Molinaro	James	New Jersey
Moore	Capt. Jason	New Jersey
Morgan	Jerry	Connecticut
Needham-Wood	John	Massachusetts
Nelson	Eric	Massachusetts
Nesius	Theodore	Massachusetts
Newman	Thomas	North Carolina
Noonan	Chris	New Hampshire
Notaro	Anthony	Connecticut
Oliver	Zane	Virginia
Pirri	Michael	Connecticut
Papciak	John	New York
Paquette	Patrick	Massachusetts
Parker	Doug	Connecticut
Patterson	Cheri	New Hampshire
Poosikian	Craig	Massachusetts
Poston	Will	Maryland
Robichaud	Steven	Massachusetts
Roller	Christopher	Massachusetts
Roy	Marshall	Massachusetts
Scheule	Randall	New Jersey
Schofield	Austin	Massachusetts
Shanley	James	New Hampshire
Simeoli	Nick	New Jersey
Smith	Kelly	Rhode Island
Treped	Scott	Connecticut
Tu	Edward	Massachusetts
Waine	Mike	North Carolina
Witthuhn	Steven	New York
Walsifer	Peter	New Jersey
Williams	Al	Massachusetts
Wood	Rich	Massachusetts
Woods	Michael	Rhode Island
Wright	Chris	Maryland
Yenkinson	Harvey	New Jersey
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Toni Kerns, Madeline Musante

Striped Bass Emergency Action Public Hearing

May 23, 2023

Webinar – 52 attendees

Last Name	First Name	State
Armstrong	Mike	Massachusetts
Baldwin	George	Connecticut
Batsavage	Chris	North Carolina
Bellavance	Capt. Rick	Rhode Island
Blinken	David	New York
Boghdan	Kalil	Massachusetts
Borden	David	Rhode Island
Borgatti	Christopher	Massachusetts
Conroy	Margaret	Delaware
Carpenter	John	Rhode Island
Chou	Luyen	New York
Cimino	Joe	New Jersey
Conroy	Peter	Massachusetts
Craig	Caitlin	New York
Delzingo	Mike	Massachusetts
Etzel	Richard	New York
Ferri	Paul	Connecticut
Fleming	Rick	New Hampshire
Friedrich	Tony	Maryland
Gary	Marty	Virginia
Hamilton	Patrick	Massachusetts
Hardy	John	New York
Ingraham	Taylor	Connecticut
Jenkins	Peter	Rhode Island
Kane	Raymond	Massachusetts
Lindsey	Chris	New Jersey
M	Nick	New Jersey
Maganza-Ruiz	Jill	New York
Mcmenamin	Kevin	Maryland
Meserve	Nichola	Massachusetts
Meyers	S	Virginia
Molton	Kyle	Massachusetts
Moore	Chris	Virginia
Oneill	Tyler	Delaware
Olsen	Bob	Vermont
Patterson	Cheri	New Hampshire
Pierdinock	Michael	Massachusetts

Last Name	First Name	State
Poosikian	Craig	Massachusetts
Prockop	David	Rhode Island
Schaefer	Kyle	Maine
Seigel	Buddy	Maryland
Shea	Matthew	New Hampshire
Sheffield	Phillip	Connecticut
Small	Amanda	Maryland
Smith	Kelly	Rhode Island
Toole	Michael	New Hampshire
White	Merritt	New York
Williams	Al	Massachusetts
Williams	Capt Brian	New Jersey
Woods	Michael	Rhode Island
Wright	Chris	Maryland
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Toni Kerns, Madeline Musante

Striped Bass Emergency Action Public Hearing

May 31, 2023

Webinar – 123 attendees

Last Name	First Name	State
Aaronson	Robert	New York
Abbott	Dennis	New Hampshire
Ames	Z	Massachusetts
Amorello	Jeff	Connecticut
Armstrong	Mike	Massachusetts
Baumgardner	Robert	Pennsylvania
Bean	Ned	Massachusetts
Bellavance	Rick	Rhode Island
Bello	John	Virginia
Berger	Alan	New York
Blanchard	Kurt	Rhode Island
Blank	Russell	Rhode Island
Boghdan	Kalil	Massachusetts
Bravo	Peter	Connecticut
Brust	Jeffrey	New Jersey
Conroy	Margaret	Delaware
Cassidy	Patrick	Massachusetts
Chocklett	Blane	Virginia
Church	Wayne	Connecticut
Cohn	Josh	DC
Colden	Allison	Maryland
Corbett	Heather	New Jersey
Coutu	Jasper	Rhode Island
Corayer	Todd	Rhode Island
Cusimano	Thomas	New York
Daley	Bob	New Jersey
Darrigo	Anthony	New York
Davidson	Maureen	New York
Deflumeri	Dominic	New York
Dinardo	Gregg	Massachusetts
Dicostanzo	Donald	New York
Dougherty-Johnson	Bran	New York
Douma	Peter	New Jersey
Drew	Rick	New York
Dudus	Roman	Connecticut
Erickson	Max	Connecticut

Last Name	First Name	State
Etzel	Richard	New York
Eustis	Mark	Maryland
Fallon	Peter	Maine
Fiore	Jim	New York
Ford	Alex	New Jersey
Forrester	Darryl	Rhode Island
Frank	Julien	New York
Friedrich	Tony	Maryland
Gaff	Jerry	Maryland
Gary	Marty	Virginia
Geer	Pat	Virginia
Geilfuss	Jim	Massachusetts
Giangreco	Paul	New York
Gilmore	James	New York
Griswold	Alec	Massachusetts
Hardy	John	New York
Harrison	Brendan	New Jersey
Hassan	Bill	Massachusetts
Hejducek	Ken	New York
Herz	Christopher	Rhode Island
Hornick	Harry	Maryland
Hornstein	Jesse	New York
Howard	Stephen	Maine
Howell	Jason	Rhode Island
Jackson	Jocelyn	Massachusetts
Jewkes	James	Massachusetts
Kane	Raymond	Massachusetts
Kaye	Alexander	Maine
King	Ashley	Virginia
Koch	Greg	New Jersey
Lacroix	Kevin	Massachusetts
Landry	Aaron	Maine
Larrabee	Jonathan	Maine
Leggett	Doreen	Massachusetts
Letourneau	Rene	Rhode Island
Lewis	Lloyd	Maryland
Louie	Michael	New York
Maganza-Ruiz	Capt Jill	New York
Mauck	Parker	Massachusetts
Mayer	Andrew	Maine
Mcdermott	Sean	Massachusetts

Last Name	First Name	State
Mcmenamin	Kevin	Maryland
Mcgowan	Bret	New York
Meserve	Nichola	Massachusetts
Messina	Ed	New York
Michael	Ed	Massachusetts
Molton	Kyle	Massachusetts
Mustari	Joseph	New Jersey
Omrod	Dick	New Jersey
Opsatnic	Levi	New York
Pantaleon	Carlos	New York
Papciak	John	New York
Parker	Joshua	Massachusetts
Passie	John	new york
Perrotto	Patrick	New Jersey
Pesce	Matt	Connecticut
Pheifer	Joe	New Jersey
Phinney	Timothy	Massachusetts
Piatek	Chris	Maine
Platt	Michael	Connecticut
Poston	Will	Maryland
Rainone	John C	Rhode Island
Rubner	Cody	Massachusetts/Florida
Ruggiero	Nick	New York
Ruiz	Capt Steve	New York
Slinger	Zento	Oregon
Smith	Kelly	Rhode Island
Smith	Sean	Massachusetts
Smith	Cheri	Rhode Island
Soldati	Gary R.	Massachusetts
Spinney	Mike	Massachusetts
Stormer	David	Delaware
Straus	Rob	Massachusetts
Susca	Peter	Connecticut
Temple	Colin	Massachusetts
Thompson	Nat	Maine
Townsley	Aaron	Massachusetts
Vavra	Taylor	Massachusetts
Vieira	Paul	Rhode Island
Waine	Mike	North Carolina
Whalley	Capt Ben	Maine
Williams	Al	Massachusetts

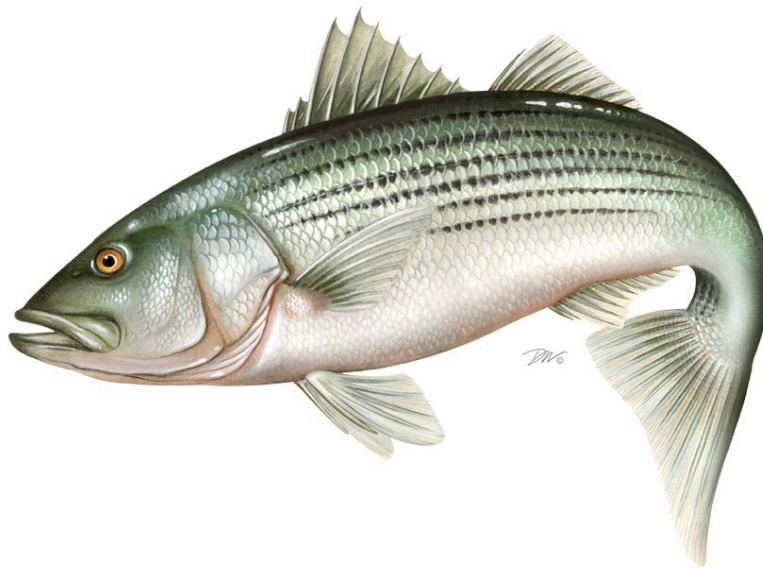
Last Name	First Name	State
Williams	Logan	Connecticut
Woods	Michael	Rhode Island
Wright	Chris	Maryland
Yenkinson	Harvey	New Jersey
Zlokovitz	Erik	Maryland

ASMFC Staff: Emilie Franke, Toni Kerns, James Boyle

Atlantic States Marine Fisheries Commission

**DRAFT ADDENDUM II TO AMENDMENT 7
TO THE ATLANTIC STRIPED BASS
INTERSTATE FISHERY MANAGEMENT PLAN**

2024 Management Measures



This draft document was developed for Management Board review and discussion. This document is not intended to solicit public comment as part of the Commission/State formal public input process. Comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. If approved, a public comment period will be established to solicit input on the issues contained in the document.

**Draft for Board Review
07.17.2023**



Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Draft for Board Review. Not for Public Comment

Public Comment Process and Proposed Timeline

In May 2023, the Atlantic Striped Bass Management Board initiated the development of Draft Addendum II to Amendment 7 to the Interstate Fishery Management Plan for Atlantic Striped Bass to consider 2024 management measures designed to reduce fishing mortality to the target, and consider allowing the Board to respond more quickly to upcoming stock assessment updates. 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 the proposed management options in this document at any time during the public comment period. The final date comments will be accepted is **XX Month, XX Day, 2023 at 11:59 p.m. (EST)**. Comments may be submitted at state public hearings or by mail or email. 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 Toni Kerns, Fisheries Policy Director, at tkerns@asmfc.org or 703.842.0740.

Mail: Toni Kerns
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N
Arlington VA. 22201

Email: comments@asmfc.org
(Subject: Striped Bass Draft
Addendum II)

Date	Action
May 2023	Board initiated the Draft Addendum
May – July 2023	Plan Development Team (PDT) develops Draft Addendum document
August 2023	Board reviews and approves Draft Addendum II for public comment
August – September 2023	Public comment period, including public hearings
October – November 2023	Board reviews public comment, selects management measures, final approval of Addendum II

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1.0 INTRODUCTION

Atlantic striped bass (*Morone saxatilis*) are managed through the Atlantic States Marine Fisheries Commission (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 from Maine through North Carolina. State waters fisheries for Atlantic striped bass are currently managed under Amendment 7 to the Interstate Fishery Management Plan (FMP), Addendum I to Amendment 7, and a temporary Emergency Action (effective May 2, 2023 through October 28, 2023). Harvesting or targeting striped bass in federal waters has been prohibited by NOAA Fisheries since 1990.

In May 2023, the Management Board initiated Addendum II to Amendment 7 to address stock rebuilding beyond 2023. The Board initiated the draft addendum via the following approved motion:

“Move to initiate an Addendum to implement commercial and recreational measures for the ocean and Chesapeake Bay fisheries in 2024 that in aggregate are projected to achieve F-target from the 2022 stock assessment update ($F = 0.17$). Potential measures for the ocean recreational fishery should include modifications to the Addendum VI standard slot limit of 28-35” with harvest season closures as a secondary non-preferred option. Potential measures for Chesapeake Bay recreational fisheries, as well as ocean and Bay commercial fisheries should include maximum size limits. The addendum will include an option for a provision enabling the Board to respond via Board action to the results of the upcoming stock assessment updates (e.g., currently scheduled for 2024, 2026) if the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%.”

For measures beyond 2024, the Management Board intends to consider the results of the upcoming 2024 stock assessment update to inform subsequent management action.

2.0 OVERVIEW

2.1 Statement of the Problem

Atlantic striped bass were declared overfished in 2019 and are subject to a rebuilding plan that requires the stock to be rebuilt to its spawning stock biomass target by 2029. The most recent rebuilding projections indicate a low probability of meeting that deadline if the fishing mortality rate associated with the level of catch in 2022 continues. There is concern that the recreational and commercial management measures in Amendment 7 in combination with the availability of the strong 2015 year-class to the fisheries, will lead to a similarly high level of catch in 2024. In response, this draft addendum considers measures to reduce removals from the 2022 level to achieve the target fishing mortality rate in 2024 and support stock rebuilding.

Stock assessments will be completed during the rebuilding period and used to gauge the success of the measures in achieving the target fishing mortality rate and to estimate the probability of rebuilding the stock by 2029. These assessments are typically completed during the second half of the calendar year, so if a management response is needed to reduce fishing mortality, the typical addendum development and implementation schedule results in new

measures not being implemented until two years later. There is concern that such delays may impede rebuilding, especially as the deadline to achieve a rebuilt stock nears. Accordingly, this draft addendum also considers a mechanism that would allow the Board to adjust management measures in response to upcoming stock assessment updates (i.e., 2024 and 2026) via Board action, which would be faster than a typical addendum process, if deemed necessary to achieve stock rebuilding by 2029.

2.2 Background

2.2.1 Stock Status

Female spawning stock biomass (SSB) and the fishing mortality (F) are estimated on a regular basis and compared to target and threshold levels (i.e., biological reference points) to assess the status of the striped bass stock. The 1995 estimate of female SSB is used as the SSB threshold because many stock characteristics, such as an expanded age structure, were reached by this year, and this is also the year the stock was declared recovered. The female SSB target is equal to 125% of the female SSB threshold. The associated F threshold and F target are calculated to achieve the respective SSB reference points in the long term.

The most recent assessment for striped bass was an update completed in 2022 with data through 2021¹. Prior to this, the 2018 Benchmark Stock Assessment had determined that striped bass were overfished and experiencing overfishing in the terminal year (2017)². Following the implementation of new management measures in 2020, the 2022 Stock Assessment Update found that the stock was no longer experiencing overfishing in 2021 ($F = 0.14$, below the threshold of 0.20 and the target of 0.17) but remained overfished (Female SSB = 143 million pounds, below both the target of 235 million pounds and the threshold of 188 million pounds) (Figures 1 and 2). These reference points were calculated using the “low recruitment assumption” (per Amendment 7’s requirement under a tripped recruitment trigger), which resulted in a lower, more conservative F target and threshold compared to the 2018 benchmark assessment. Although below the threshold and considered overfished, female SSB in 2021 was still estimated to be more than three-times of that during the early 1980s, when the stock was considered collapsed (Figure 1).

The assessment also indicated a period of strong recruitment (numbers of age-1 fish entering the population) from 1994–2004, followed by a period of low recruitment from 2005–2011 (although not as low as the period of stock collapse in the early 1980s) (Figure 1). This period of low recruitment contributed to the decline in SSB that the stock has experienced since 2010. Recruitment of age-1 fish was high in 2012, 2015, 2016, and 2019 (corresponding to strong 2011, 2014, 2015, and 2018 year classes, respectively); however, estimates of age-1 striped

¹ ASMFC. 2022. Atlantic Striped Bass Stock Assessment Update, Atlantic States Marine Fisheries Commission, Arlington, VA. 191p.

² NEFSC. 2019. Summary Report of the 66th Northeast Regional Stock Assessment Review Committee (SARC 66), Northeast Fisheries Science Center, Woods Hole, MA. 40p.

bass were below the long-term average in 2018, 2020, and 2021. Recruitment in 2021 was estimated at 116 million age-1 fish, which is below the time series average of 136 million fish.

The 2022 assessment also included short-term projections to determine the probability of SSB being at or above the SSB target by 2029. These projections used the “low recruitment assumption”, which restricts the estimates of age-1 recruitment to those occurring during 2008–2021, rather than the longer time series of 1993–2021. These projections indicated that under the 2021 fishing mortality rate, there was a 97% probability the stock will be rebuilt by 2029 (Figure 3).

However, concerns over high recreational removals in 2022 compared to 2021, the terminal year of the most recent assessment update, prompted the Board to request updated stock projections using 2022 preliminary removals. These estimates of preliminary 2022 removals and updated stock projections were presented to the Board in May 2023. Removals data showed that while commercial removals in 2022 were similar to 2021, recreational harvest had increased 88% and recreational live releases by 3%, resulting in an overall 38% increase in recreational removals (relative to 2021). These 2022 removals were used to estimate F in 2022. Since striped bass catch and F rates vary from year-to-year (even under the same regulations), the average F from 2019–2022 (excluding 2020 due to uncertainty associated with COVID-19 impacts) was applied to 2023–2029 in the new projections. Under this F rate, the new projections estimate the probability of rebuilding SSB to its target by 2029 drops from 97% to 15% (Figure 3).

It should be noted that these projections are not the same as a full stock assessment update where the model would be re-run to include the 2022 catch-at-age and index data. Accordingly, the status of the stock remains overfished but no longer experiencing overfishing as per the 2022 stock assessment update. The next stock assessments for striped bass are currently scheduled for 2024 (an update with data through 2023), 2026 (an update with data through 2025), and 2027 (a benchmark—in which the inputs and methods are fully re-evaluated—likely with data through 2026).

2.2.2 Management Status

Striped bass are currently managed under Amendment 7 to the Interstate Fishery Management Plan (FMP), Addendum I to Amendment 7, and a temporary Emergency Action (effective May 2, 2023 through October 28, 2023).

Amendment 7: Amendment 7 consolidated and replaced Amendment 6 and its addenda in 2022; in so doing, several aspects of the management program, including the management triggers, stock rebuilding plan, recreational gear requirements, and conservation equivalency restrictions, were updated to better align with current fishery needs and priorities. Importantly, Amendment 7 maintained the Addendum VI to Amendment 6 recreational and commercial fishery measures (the implications of which are described in more detail below). Separate management measures are in place for the Ocean and Chesapeake Bay fisheries due to distinct size availabilities of fish between the areas.

Amendment 7's FMP standard for managing the recreational fisheries is a one-fish bag limit with a 28 to less than 35" slot limit for the Ocean area, a one-fish bag limit with an 18" minimum size limit for the Chesapeake Bay area, and for both areas the seasons which were in place in 2017. Amendment 7's FMP standard for managing both the Ocean and Chesapeake Bay commercial fisheries is a state and/or area specific commercial quota (reduced 18% from 2017), and the size limit(s) in place in 2017. This suite of measures was first implemented under Addendum VI to Amendment 6 in 2020 to achieve an overall 18% reduction in removals relative to 2017 (shared in equivalent commercial and recreational reduction), in response to the 2018 benchmark stock assessment determining the stock as overfished and experiencing overfishing.³ However, when implementing Addendum VI, numerous states adopted alternative recreational size limits, recreational bag limits, recreational seasons, commercial size limits, and/or commercial quotas through conservation equivalency (CE).⁴ Because Amendment 7 did not revise the FMP standard commercial and recreational fishery measures from those of Addendum VI, the CE programs implemented under Addendum VI were also allowed to be carried forward by states in 2022 under the framework of Amendment 7. See Tables 1–2 for the recreational and commercial measures in place in 2022 and Table 3 for a description of the CE programs implemented. Amendment 7's revision to when and how CE may be employed by states is reviewed below.

Part of the rationale for not changing any commercial and recreational management measures under Amendment 7 was that final action on the amendment preceded the completion of the 2022 stock assessment by several months. The 2022 stock assessment was expected to provide management advice as to whether the existing measures implemented under Addendum VI had successfully reduced fishing mortality to the target level and put the stock on track to rebuild by 2029. In other words, when Amendment 7 was adopted, it was unknown whether additional conservation measures were needed. Because of this timing issue, Amendment 7 instead included a provision allowing the Board to respond quickly to the results of the 2022 stock assessment update with additional management measures if needed for rebuilding success. Specifically, rather than responding via an addendum (which typically requires three Board meetings from addendum initiation to adoption), the Board could specify state measures by a Board vote at a single meeting. Ultimately, the 2022 stock assessment indicated that F in 2021 was below target, providing a very high probability of achieving a rebuilt stock by 2029; consequently, this provision of Amendment 7, which was specific to responding to the results of the 2022 stock assessment, was not utilized.

The use of CE is subject to additional restrictions and requirements under Amendment 7 *when the FMP standard for a fishery is revised*. First and foremost, CE programs will not be approved

³ Addendum VI also established the mandatory use of circle hooks when recreationally fishing for striped bass with bait (except as part of an artificial lure); however, this measure was not credited towards the needed 18% reduction in removals to end overfishing. Amendment 7 added two additional gear requirements when recreationally fishing for striped bass: a prohibition on gaffing and the immediate release of striped bass caught on any unapproved method of take.

⁴ Conservation equivalency refers to actions taken by a state which differ from the specific requirements of the FMP, but which achieve the same quantified level of conservation for the resource under management. It is the responsibility of the state to demonstrate the proposed management program is equivalent to the FMP standards and consistent with the restrictions and requirements for CE determined by the Board. Board approval of a CE proposal is required prior to state implementation.

for non-quota managed recreational fisheries (with the exception of the Hudson River, Delaware River, and Delaware Bay recreational fisheries) when the stock is at or below the biomass threshold (i.e., overfished). In the context of this draft addendum and current stock status, this means that if the FMP standard for the Ocean or Chesapeake Bay recreational fisheries (as described above) is changed, the existing Addendum VI CE programs affecting those fisheries are invalidated and a state cannot request a new CE program for non-quota managed recreational fisheries (with the exception of the Hudson River, Delaware River, and Delaware Bay recreational fisheries) until the stock is no longer considered overfished by a future stock assessment. For states that combined Addendum VI CE programs across fishery sectors (e.g., took a less than 18% commercial reduction based on achieving more than an 18% recreational reduction), this has implications beyond the recreational fishery.

Additionally, if future CE is requested, CE proposals will be subject to new recreational catch estimate precision standards, uncertainty buffer requirements, and an established definition of “equivalency”. Specifically, CE proposals will not be allowed to use Marine Recreational Information Program (MRIP) estimates associated with a percent standard error (PSE) exceeding 40%. PSE is a measure of precision, and higher PSEs indicate the data are less precise. Proposed CE programs for non-quota managed fisheries will be required to include an uncertainty buffer of 10%; this is intended to increase the proposed CE program’s probability of achieving equivalency with the FMP standard. However, if a CE proposal uses MRIP estimates with a PSE exceeding 30%, but less than or equal to 40%, then a larger 25% uncertainty buffer is required. Lastly, CE programs for non-quota managed fisheries are required to demonstrate equivalency to the percent reduction/liberalization projected for the FMP standard at the state-specific level (rather than the coastwide level).⁵

Addendum I to Amendment 7: Addendum I was approved and implemented in May 2023 to allow for voluntary ocean commercial quota transfers contingent on stock status. When the stock is overfished, no quota transfers will be allowed. When the stock is not overfished, the Management Board can decide every one to two years whether it will allow voluntary transfers of unused ocean commercial quota. The Management Board can also set criteria for allowable transfers, including a limit on how much and when quota can be transferred in a given year, and the eligibility of a state to request a transfer based on its landings. Given the overfished stock status for striped bass, quota transfers will not be authorized in 2024.

2023 Emergency Action: At its May 2023 meeting, the Management Board was presented with updated stock rebuilding projections that included preliminary removals estimates for 2022. Prior projections with data through 2021 had indicated a very high chance (97%) of rebuilding the overfished striped bass resource to its SSB target by the 2029 rebuilding deadline. Due to a

⁵ To better explain this stipulation, consider some of the CEs adopted under Addendum VI. Addendum VI’s 28” to <35” Ocean recreational slot limit was estimated to reduce Ocean recreational removals by 18% when applied coastwide, but had variable impacts at the state-by-state level. States projected to achieve a greater than 18% reduction at the state-level were able to liberalize their regulations to target an 18% reduction rather than the higher amount achieved by the FMP standard. Under Amendment 7, CE proposals would have to achieve the higher reduction rate associated with the FMP standard applied at the state level.

near doubling of recreational harvest in 2022, the new projections estimated that the probability of rebuilding by 2029 drops to 15% if the higher fishing mortality rate associated with the 2022 removals continues each year.

In addition to initiating this draft addendum to consider coastwide changes to the commercial and recreational regulations for 2024 to bring *F* back to the target level of 0.17, the Management Board approved an Emergency Action to more immediately address the source of the increase in fishing mortality. Specifically, the Management Board's May 2, 2023 emergency action required all states to implement a 31-inch maximum size limit for their striped bass recreational fisheries⁶ as soon as possible and no later than July 2, 2023, while maintaining all other measures. In effect, the emergency action reduced the Ocean recreational slot from 28 to <35" to 28 – 31", and layered a 31" maximum size to the Chesapeake Bay's recreational measures. Emergency actions are effective for 180 days from the time of their declaration, meaning the expiration date of the 31" recreational maximum size limit is October 28, 2023, unless sooner rescinded or extended by the Management Board. If it deems necessary, the Management Board may extend the emergency action for two additional periods of up to one year each at a future Board meeting.

The emergency action's 31" recreational maximum size limit is intended to reduce recreational harvest from the level seen in 2022 by providing additional protection to the abundant 2015-year class. The strong 2015 year-class is a primary reason for the increase in harvest in 2022, as many of the fish born that year had begun to exceed 28" in length, the lower bound of the ocean slot limit (Figure 4). In 2023, as 8-year-olds, these fish are expected to average 31 ½" in length (Table 4). By implementing the 31" maximum size limit, over 50% of the 2015-year class should be protected from recreational harvest. Without this change, a high majority of the 2015 year-class would have been within the 28" to <35" ocean slot and susceptible to recreational harvest, raising concern that fishing mortality in 2023 would be even greater than 2022 and further erode the probability for rebuilding by 2029. As of July 2, all states implemented the emergency action's 31" maximum size limit (Table 5).

2.2.2.1 Social and Economic Impacts

For more detailed discussion of recent research into striped bass anglers' preferences and behavior and how it could be applied, see Amendment 7 to the Striped Bass FMP Section 1.5.2.

For the recreational sector, changes in gear restrictions, in spatial or seasonal closures, bag and size limits, and other effort controls affect important attributes of a recreational fishing trip, such as the number of fish of each species that anglers catch and are allowed to keep. In turn, these changes in trip attributes will modify the utility (i.e., level of satisfaction) an angler

⁶ The emergency action excluded the Chesapeake Bay spring trophy fishery from the 31" maximum size limit in 2023 because this fishery occurs for two weeks in May prior to the emergency action's implementation deadline and the fishery's current 35" minimum size limit provides a high level of protection to the 2015-year class in the short-term.

expects to obtain from the fishing trip (McConnell et al. 1995, Haab and McConnell 2003)⁷. As a result, the angler may shift target species, modify trip duration or location, or decide not to take the trip and do something else instead. These behavioral responses lead to changes in directed fishing effort, resulting in changes in harvest, fishing mortality, and angler welfare. This is, however, only a short-term response and stock dynamics will dictate any longer-term effects on the resource, which may subsequently feedback and affect future management decisions and angling behavior.

Narrow slot limits, like the 2023 emergency action and the options being considered for 2024 measures, will lead to fish in the larger size range being released in the short-term. For example, a 28" to 31" recreational slot limit in the ocean will lead to fish in the 31" to 35" size range being released in the short-term. Recent research into striped bass anglers' preferences and behavior found the typical striped bass angler prefers to keep larger fish (Carr-Harris and Steinback 2020)⁸. Applying this to a 28 to 31" slot limit, anglers would likely prefer to keep a fish on the size range 31"-35" rather than having to release it, which means that in the short-term, a narrow slot limit like 28 to 31" may reduce effort (i.e., reduce trips) from those anglers seeking to bring fish home in the cooler. Thus, the overall anticipated effect on the number of releases in the short-term is unclear; larger fish are required to be released, but any reduction in effort may reduce the overall number of releases. A reduction in effort could translate into a short-term negative impact on the regional economy and businesses associated with the fishing industry for this species. Importantly, this is likely only a short-term response, and stock dynamics will dictate any longer-term effects on the resource and the angling community. Assuming the narrow slot limit implemented through the 2023 emergency action and the narrow slot options considered for 2024 will support the rebuilding of the striped bass population, it will likely ensure the quality of the recreational fishing experience for the sector in the long-term.

Implementing seasonal no-harvest closures (i.e., catch and release fishing is allowed) is intended to reduce the number of fish harvested; however, angler behavior may shift to catch-and-release fishing, thereby increasing the number of recreational releases. It is important to note that fishing trips targeting other species that incidentally catch and release striped bass would also still occur during a closure. Additionally, seasonal closures for striped bass may shift effort to targeting other species and/or shift effort to other times of year when the striped bass fishery is open.

For the commercial sector, implementing commercial maximum size limits could impact the size of fish brought to market. In states where a new maximum size limit significantly changes the size of commercially harvested fish, dealers, processors, and consumers will have to adjust

⁷ McConnell, K.E. and Strand, I.E. and Blake-Hedges, L. 1995. Random Utility Models of Recreational Fishing: Catching Fish Using a Poisson Process. *Marine Resource Economics* 10, p.247-261.

Haab, T.C. and McConnell, K.E. 2003. *Valuating Environmental and Natural Resources: The Econometrics of Non-Market Valuation*, Edward Elgar Publishing.

⁸ Carr-Harris, A. and S. Steinback. 2020. Expected economic and biological impacts of recreational Atlantic striped bass fishing policy. *Front. Mar. Sci.* 6: 814, p.1-20.

to the new smaller fish size, potentially requiring changes in the supply chain and marketing. In the short-term harvesters may also be more limited to adjusting to market demand if they are operating within a narrow slot limit. Additionally, the harvest of smaller fish by the commercial sector will likely result in longer effort and an increased number of fish being removed, although the total poundage will not change as that is governed by state-specific commercial quotas.

2.2.3 Status of the Fishery

In 2022, total Atlantic striped bass removals (commercial and recreational, including harvest, commercial dead discards and recreational release mortality) were estimated at 6.8 million fish, which is a 32% increase from 2021 total removals. This 2022 increase was driven by an increase in recreational removals, as commercial removals slightly decreased. In 2022, the commercial sector accounted for about 10% of total removals in numbers of fish (9% harvest and 1% dead discards), and the recreational sector accounted for 90% of removals in numbers of fish (51% harvest and 39% release mortality) (Figure 5). Removals for each sector by year are listed in Table 6.

Recreational Fishery

The recreational fishery is managed by bag limits, minimum size or slot size limits, and closed seasons (in some states) to restrict harvest (Table 2). Gear restrictions are also in place to increase the chance of survival after a striped bass is released alive in the recreational fishery. Total recreational catch (harvest and live releases) coastwide was estimated at 33.1 million fish in 2022, which is an 38% increase from 2021. This overall coastwide increase was a combination of a large increase in harvest and a marginal increase in live releases.

From 2004 to 2014, recreational harvest averaged 4.6 million fish per year. From 2015-2019, annual harvest decreased to an estimated 2.8 million fish due to the implementation of more restrictive regulations via Addendum IV, changes in effort and changes in size and distribution of the population through time. Total recreational harvest decreased to 1.71 million fish in 2020 and 1.82 million fish in 2021, likely due to a combination of factors including more restrictive regulations via Addendum VI, fish availability, and impacts of COVID-19. It is important to recognize that impacts from COVID-19 were likely not uniform across states, sectors, or modes.

Under the same management measures as 2020-2021, total recreational harvest in 2022 increased to 3.4 million fish (35.8 million pounds), which is an 88% increase by number relative to 2021 (127% increase by weight). This increase was likely due to the increased availability of the strong 2015-year class in the ocean slot in 2022. New Jersey landed the largest proportion of recreational harvest in number of fish⁹ (33%), followed by New York (26%), Maryland (19%), and Massachusetts (14%). The proportion of coastwide recreational harvest in numbers from Chesapeake Bay was estimated at 20% in 2022, compared to 35% in 2021. By weight, the

⁹ By weight, New Jersey had the largest proportion of recreational harvest (38%), followed by New York (30%), Massachusetts (15%), and Maryland (9%).

proportion of recreational harvest from the Chesapeake Bay was estimated at 9% in 2022, compared to 20% in 2021.

The vast majority of recreational striped bass catch (over 90%) is released alive either due to angler preference or regulation (i.e., closed season, undersized, or already caught the bag limit). The stock assessment assumes, based on previous studies, that 9% of fish that are released alive die as a result of being caught. In 2022, recreational anglers caught and released an estimated 29.6 million fish, of which 2.7 million are assumed to have died. This represents a 3% increase in live releases coastwide from 2021.

In 2022, combined private vessel/shore modes of the recreational striped bass fishery accounted for 95% of recreational removals, and the for-hire components (charter and head boats) accounted for 5%. Coastwide in 2022, private vessel/shore mode recreational removals increased by 42% relative to 2021, while for-hire recreational removals decreased by 7%. However, this trend differs by region and by mode. In the ocean, private vessel/shore mode removals increased by 52% and for-hire removals increased by 22% in 2022. In the Chesapeake Bay, private vessel/shore mode removals increased by only 3%, and for-hire removals decreased by 27%.

The ocean and Chesapeake Bay regions experienced different changes in recreational catch in 2022 relative to 2021. The ocean region saw an increase in both recreational harvest (132% increase in numbers of fish) and live releases (7% increase) relative to 2021. On the other hand, the Chesapeake Bay saw a much smaller increase in recreational harvest (7% increase) and a decrease in live releases (18% decrease) relative to 2021. Again, the large increase in ocean recreational harvest is likely due to the availability of the strong 2015-year class in the ocean slot in 2022, when many of those age-8 fish were above the legal minimum size of 28 inches.

The number of trips directed at striped bass (primary and secondary target) also shows a differing trend between the ocean and the Chesapeake Bay. In 2022, the number of ocean directed trips increased by 31% relative to 2021, while the number of Chesapeake Bay directed trips decreased slightly by about 2%.

Commercial Fishery

The commercial fishery is managed by a quota system resulting in relatively stable landings since 2004. There are two regional quotas; one for the Chesapeake Bay area and one for the ocean area, which includes other bays, inland rivers, and estuaries. In 2022, the ocean commercial striped bass quota was 2,411,154 pounds, and 1,904,852 pounds were harvested in the ocean region. In the Chesapeake Bay region, the 2022 commercial striped bass quota was 3,001,648 pounds, and 2,374,988 pounds were harvested. Neither quota was exceeded in 2022. Refer to Table 1 for 2022 commercial fishery regulations by state, including size limits, trip limits, and seasons, where applicable.

From 2004 to 2014, coastwide commercial landings averaged 6.8 million pounds per year. From 2015-2019, commercial landings decreased to an average of 4.7 million pounds due to

implementation of reduced quotas through Addendum IV. From 2020-2022, coastwide commercial landings decreased again to an average 4.1 million pounds due to further reduced quotas through Addendum VI.

Since 1990, commercial landings from the ocean fishery have accounted for an average 40% of total coastwide commercial landings by weight, with the other 60% coming from the Chesapeake Bay. The proportion of commercial harvest coming from Chesapeake Bay is much higher in numbers of fish (roughly 80%) because fish harvested in Chesapeake Bay have a lower average weight than fish harvested in ocean fisheries.

Of the total 2022 commercial harvest (combined ocean and Chesapeake Bay) by weight, Maryland landed 31%, Virginia landed 20%, and Massachusetts landed 18%. Additional harvest came from New York (15%), the Potomac River (10%), Rhode Island (4%), and Delaware (3%).

Ocean commercial size limits, seasons, and gear types vary by state. Along the Atlantic coast, current legal minimum size ranges from 20" to 35". In general, lower minimum sizes exist in the Mid-Atlantic (where fish are primarily harvested by a combination of drift and anchor gill nets), while New England states have larger minimum sizes and harvest is predominantly hook and line. In the ocean region, only New York has a commercial size slot with lower and upper bounds (26" – 38") at this current time.

Chesapeake Bay commercial size limits and gear types are more uniform with an 18" minimum size for Bay states, although Maryland has a year-round maximum size (36") while PRFC and Virginia have seasonal maximum size limits of 36" and 28", respectively. All three Bay states employ a combination of pound net, drift net, and hook and line gear types.

Commercial striped bass fisheries operate differently in each state with a wide range of varying gears, seasons, and a range of current size limits, which results in different size fish being harvested in each state. State commercial sampling programs indicate the mean length, weight, and age of commercially harvested striped bass are higher for the ocean fishery (Table 7). Sub-sampling of commercial striped bass harvest occurs for about 1-5% of all harvested fish in each state, and these values are assumed to be representative of each state's landings. In the ocean, mean length of harvested fish ranged from 30.2" total length (NY) to 41.1" total length (MD ocean) based on 2022 samples, with corresponding mean weights ranging from 9.9 lbs. to 25.9 lbs. In the Chesapeake Bay, mean length of harvested fish ranged from 22.2" total length (MD Bay) to 36.2" total length (VA Bay hook & line) based on 2022 samples, with corresponding mean weights ranging from 4.6 lbs. to 26.6 lbs.

3.0 PROPOSED MANAGEMENT OPTIONS

This document proposes management changes for the ocean and Chesapeake Bay fisheries. The striped bass ocean fishery (also referred to as "ocean region") 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, except for the Chesapeake Bay spring trophy fishery. The Chesapeake Bay spring trophy fishery is part of the ocean fishery for management purposes because it targets coastal migratory striped bass. This document does not propose changes to the A-R fisheries, which are managed separately by the State of North Carolina.

Projecting 2024 Reduction to Achieve the Fishing Mortality Target and Option Development

The same forward projecting methodology as used in striped bass stock assessments was used to estimate the removals needed to achieve F target in 2024 with a 50% probability.

The projections were made using 2022 removals data (6.8 million fish total), and estimated 2023 removals accounting for implementation of the 2023 emergency action (an estimated 4.8 million fish total). The TC conducted sensitivity runs to explore different assumptions of the methods used to estimate 2023 removals and the effect on the projections, and found that although the estimates of 2023 removals varied from 4.8 to 5.7 million fish, the necessary percent reduction to achieve the F target in 2024 only varied by approximately 1.5%. The June 2023 Technical Committee summaries provide additional details on these methods and results¹⁰.

A new selectivity curve for the 2023 emergency action was also developed to account for the lower selectivity of ages 7-9 fish in 2023 due to the narrower recreational slot limit. Because the calculation of F target accounts for selectivity, the F target value was re-calculated to incorporate this new 2023 selectivity (F target=0.176). Projection results indicate a 14.5% reduction from 2022 total removals is needed to achieve F target in 2024.

The proposed commercial fishery options consider maximum size limits. Depending on the option selected by the Board, quota reductions may or may not be implemented with these size limit changes. If such quota reductions were to occur, those reduction calculations would be state-specific and would vary depending on the option selected. For these reasons, a reduction in commercial removals could not be assumed, and so is assumed to be 0%. Consequently, to achieve the required overall reduction, the recreational sector must take a 16.1% reduction.

The proposed recreational management options were developed using MRIP harvest and live release estimates. A mortality rate of 9% was applied to all live release estimates to estimate release mortality in the recreational fishery. To account for year-class strength in the ocean, catch-at-length data from 2020 were used to characterize ocean fish availability for 2024 and develop ocean slot limit options. 2020 was used as a proxy for 2024 ocean fish availability because the strong 2011-year class was available in the ocean at age-9 in 2020, just as the strong 2015 year-class catch will be available in the ocean at age-9 in 2024. To develop ocean harvest closure options, 2022 harvest data were used to characterize what percent of harvest would occur during each two-month Wave during the year (i.e., Jan/Feb, Mar/Apr, etc.). For the

¹⁰ June 5 and June 28, 2023 Technical Committee Meeting Summaries: <http://www.asmf.org/species/atlantic-stripped-bass#meetingsummaries>

Chesapeake Bay, catch-at-length data from 2021 were used to characterize Bay fish availability in 2024 because that year is assumed to more accurately represent the younger year-classes expected to be present in the Bay in 2024. Specifically, in 2024, the 2018 year-class will be age-6, the same age the 2015 year-class was in 2021. Similar to the ocean region, the 2022 harvest data were used to develop the Chesapeake Bay harvest closure options. When changes in the bag limit were assumed, the average reduction in removals was estimated using data from a period when there was a two-fish bag limit in Chesapeake Bay. For both regions, the same level of non-compliance with size limits as observed in 2021-2022 is assumed to occur in 2024. In the ocean, all harvest below the slot is assumed to continue, as it is a mix of non-compliance and compliance with different, regional size limits in established CE programs and difficult to separate.

3.1 Recreational Fishery Management: Size Limits, Bag Limits, and Seasons

Proposed options for the ocean and Chesapeake Bay recreational fisheries are presented below. The recreational options presented herein are designed to achieve at least a 16.1% reduction in the ocean and at least a 16.1% reduction in the Chesapeake Bay. All size limits are in total length. Bag limits are per person per day. The Board will choose one option for each region.

Note on Conservation Equivalency: Since the stock is currently overfished, CE programs will not be approved for non-quota managed recreational fisheries, with the exception of the Hudson River, Delaware River, and Delaware Bay recreational fisheries.

In the criteria for CE proposals for Addendum VI, the TC noted season closures less than two weeks duration are unlikely to be effective. However, there are options for 10-day closures included for consideration. If a 10-day closure option is selected, the closure must include two consecutive weekends from a Friday to the following Sunday.

3.1.1 OCEAN OPTIONS

All ocean options besides the status quo are a combination of a slot limit and seasonal closure. The seasonal closures are no-harvest closures (i.e., catch and release fishing is allowed). Most of the ocean slot options continue the use of the 28" minimum size limit given the long-standing nature of this measure (with benefits to compliance) and in consideration of environmental justice issues (e.g., providing access to shore-based anglers to legal-sized fish). To continue providing some protection to the strong 2015-year class, none of the ocean slot options exceed a 34" maximum size since the age-9 2015 year-class in 2024 has an estimated average length of about 34".

Regarding seasonal closures, a coastwide closure with the same closure dates for each state would ensure consistency in the timing of closures across all states, but would present an equitability challenge. Recreational fisheries operate very differently along the coast based on timing (availability of fish), among other biological, environmental, and socioeconomic considerations, so coastwide closures would result in different levels of harvest reduction for each state. 2022 harvest data by Wave were used to calculate what level of harvest reduction would be expected for the seasonal closure options presented below. For broader reference, Figure 6 shows state harvest by Wave combined for 2018-2022, which shows the varied timing of each state's harvest throughout

the year. To partly address this equitability issue, some options include regional closures, which intend to implement closures in Waves with relatively high harvest in each region, to the extent possible. However, regional closures may mean that states sharing a waterbody may have different closure dates (e.g., NY and CT), which is problematic for enforcement and may lead to effort being shifted to the neighboring state during the other state's closure. Overall, no closure option is completely equitable.

For all ocean options, New York, Pennsylvania, and Delaware would be required to submit area-specific measures as part of their state implementation plans for the following areas. All state implementation plans are subject to review by the Board, Technical Committee, and Plan Review Team, and should incorporate the best available data for each area (MRIP data are not available for all areas).

- New York is required to submit an implementation plan with measures to achieve the 16.1% reduction relative to 2022 levels for the Hudson River management area.*
- Pennsylvania is required to submit an implementation plan with measures to achieve the 16.1% reduction relative to 2022 levels in its state waters.*
- Delaware is required to submit an implementation plan with measures to achieve the 16.1% reduction relative to 2022 levels for their July-August 20"-25" slot fishery.*

Option A. Status Quo: 1 fish at 28" to less than 35" with 2017 season dates for all ocean recreational fisheries. This option allows for the continuation of the existing Addendum VI CE plans. Status quo does not achieve the objective of this addendum to achieve *F* target in 2024.

Options B through D. All ocean options besides the status quo are a combination of slot limit and seasonal closure options summarized in the following table. NOTE:

- Any new size limit also applies to the Chesapeake Bay trophy fisheries with 2022 trophy season dates.
- All closure dates will be specified by the Board during final adoption of this addendum (or shortly thereafter). For coastwide closures, all states will have the same closure dates. For regional closures, all states within a region will have the same closure dates.
- *The public is encouraged to provide comments on which period during certain Waves they would prefer the closure to occur (e.g., if Wave 4 closure, note preference for early or late July or August).*

Draft for Board Review. Not for Public Comment

Ocean Options	Overall Reduction	Harvest Change	Rec. Release Mortality Change
Option B. 1 fish at 28" – 31" with 2022 seasons plus harvest closure, as follows:			
B1. 14 days Wave 6 for all states	-16.8%	-53.1%	+2.7%
B2. 10 days Wave 4 for ME-CT and 10 days Wave 6 for NY-NC	-17.0%	-53.3%	+2.7%
B3. 14 days Wave 4 for ME-MA, and 14 days Wave 3 for RI-NC	-16.6%	-52.8%	+2.6%
B4. 10 days Wave 4 for ME-MA, and 10 days Wave 6 for RI-NC	-16.8%	-53.1%	+2.7%
B5. 15 days Wave 4 ME-NH, and 15 days Wave 3 MA-NJ, and 15 days Wave 6 DE-NC	-16.2%	-52.4%	+2.5%
B6. 21 days Wave 4 ME-NH, and 21 days Wave 5 MA-NJ, and 21 days Wave 6 DE-NC	-16.7%	-52.9%	+2.7%
Option C. 1 fish at 28" – 32" with 2022 seasons plus harvest closure, as follows:			
C1. 14 days Wave 3, plus 14 days Wave 4, plus 14 days Wave 6 for all states <i>(6 weeks total for all states)</i>	-17.7%	-48.4%	+3.2%
C2. 21 days Wave 4 for ME-CT, and 21 days Wave 6 for NY-NC	-17.4%	-48.0%	+3.1%
C3. 21 days Wave 4 for ME-MA, and 21 days Wave 6 for RI-NC	-17.0%	-47.4%	+3.0%
Option D. 1 fish at 30" – 33" with 2022 seasons plus harvest closure, as follows:			
D1. 14 days Wave 4, plus 14 days Wave 6 for all states <i>(4 weeks total for all states)</i>	-17.4%	-51.2%	+3.0%
D2. 14 days Wave 4 for ME-CT, and 14 days Wave 6 NY-NC	-16.9%	-50.5%	+2.8%
D3. 21 days Wave 4 for ME-MA, and 21 days Wave 3 for RI-NC	-16.6%	-50.1%	+2.8%
D4. 14 days Wave 4 for ME-MA, and 14 days Wave 6 for RI-NC	-16.6%	-50.2%	+2.8%

3.1.2 CHESAPEAKE BAY OPTIONS

All Chesapeake Bay options propose a maximum recreational size limit. Maximum size limits range from 23" to 28"; the higher maximum size of 28" would allow harvest of a portion of the above average 2018 year-class, which will be age-6 with an average estimate length of just over 26" in 2024. Some options also change the minimum size limit and/or bag limit, and some options propose additional seasonal closures. Although the Board did not specifically request additional seasonal closures for the Chesapeake Bay options, they were included to allow for a range of options that include both narrow and wider slot sizes.

While differences in striped bass seasons have long differed between the Chesapeake Bay jurisdictions, in 2020 those seasons were further differentiated via approved CE plans (i.e., new summer no-targeting closures in some Bay jurisdictions). Due to the complexity of Addendum VI CE plans and associated uncertainty with estimating increased harvest from removing a closure, all options maintain 2022 seasonal closures. It should be noted that recreational closures implemented in some Bay jurisdictions from 2020-2022 were part of approved CE plans to account for taking a lower reduction in the commercial sector, to overall achieve the previous Addendum VI reduction. By maintaining these shorter 2022 recreational seasons, those previous CE programs cannot be entirely 'wiped clean', so that may be considered when addressing the starting point for commercial quotas (see next section).

Some options propose additional closures on top of those existing closures. The additional seasonal closures proposed in the options are no-harvest closures (i.e., catch and release fishing is allowed). The additional closures consider when current harvest occurs throughout the year in each Bay jurisdiction. 2022 Wave-specific harvest data were used to calculate the level of harvest reduction expected for the seasonal closure options presented below. For broader reference, Figure 7 shows state harvest by Wave combined for 2018-2022, which shows the varied timing of Maryland and Virginia's harvest throughout the year based on their current closures. MRIP data are not available for DC, and while MRIP collects data from locations along the Potomac River, these intercepts are designated as part of Chesapeake Bay and included in the estimates for the state (MD or VA) the fish were landed in. While catch can be estimated by sub-setting sample sites to those along the river, wave-specific intercept sample sizes for the Potomac River are very small and uncertain.

Option A. Status Quo: 1 fish at 18" minimum size with 2017 season dates for all Chesapeake Bay recreational fisheries. This option allows for the continuation of the existing Addendum VI CE plans. Status quo does not achieve the objective of this addendum to achieve *F* target in 2024.

Options B through I. All Chesapeake Bay options are summarized in the following table. NOTE:

- All closure dates will be specified by the Board during final adoption of this addendum (or shortly thereafter). The Board should work to align Chesapeake Bay jurisdiction closures as much as possible, acknowledging that perfect alignment may not be possible given existing, differing closure dates.
- *The public is encouraged to provide comments on which period during certain Waves they would prefer the closure to occur (e.g., if Wave 4 closure, note preference for early or late July or August).*

Chesapeake Bay Options with Consistent Maximum Size							
	Min. Size	Max. Size	Bag Limit	Season	Overall Reduction	Harvest Change	Rec. Release Mortality (RRM) Change
Option B	Same as 2022: 18" DC, 19" MD, 20" VA & PRFC	23"	same as 2022*	same as 2022 ⁺	-17.8%	-31.6%	+4.9%
Option C	Same as 2022: 18" DC, 19" MD, 20" VA & PRFC	24"	same as 2022*	16 day harvest closure in Wave 4 for MD, and Wave 6 for PRFC/DC [^] /VA (on top of 2022 ⁺ seasons)	-16.2%	-27.0%	+4.8%
Chesapeake Bay Options with Consistent Minimum and Maximum Size							
	Min. Size	Max. Size	Bag Limit	Season	Overall Reduction	Harvest Change	RRM Change
Option D	20" (all jurisdictions)	24"	same as 2022*	same as 2022 ⁺	-17.2%	-30.5%	+4.7%
Option E	20" (all jurisdictions)	25"	same as 2022*	20 day harvest closure in Wave 6 for all jurisdictions (on top of 2022 ⁺ seasons)	-16.1%	-27.6%	+4.6%
Option F	20" (all jurisdictions)	26"	same as 2022*	16 day harvest closure in Wave 4 for MD, and Wave 6 for PRFC/DC [^] /VA (on top of 2022 ⁺ seasons)	-16.5%	-27.5%	+4.9%
Option G	20" (all jurisdictions)	28"	same as 2022*	22 day harvest closure in Wave 4 for MD, and Wave 6 for PRFC/DC [^] /VA (on top of 2022 ⁺ seasons)	-16.4%	-26.9%	+4.9%
Chesapeake Bay Options with Consistent Minimum Size, Maximum Size, and Bag Limit							
	Min. Size	Max. Size	Bag Limit	Season	Overall Reduction	Harvest Change	RRM Change
Option H	19" (all jurisdictions)	23"	1 fish (all modes)	same as 2022 ⁺	-22.4%	-38.4%	+6.7%
Option I	20" (all jurisdictions)	26"	1 fish (all modes)	same as 2022 ⁺	-17.0%	-29.1%	+4.8%

[^]Note: DC can choose either Wave 4 or Wave 6 for their closure for Options C, F, and G.

***2022 Chesapeake Bay Bag Limits**

MD 1 fish-private vessel/shore, 2 fish-For-Hire	PRFC 2 fish for all modes
DC 1 fish for all modes	VA 1 fish for all modes

***2022 Chesapeake Bay Seasons**

MD: C&R only 1.1-3.31, 12.11-12.31 No targeting 4.1-4.30 Trophy: 5.1.-5.15 (part of ocean fishery) Open: 5.16-7.15, 8.1-12.10 No Targeting: 7.16-7.31	PRFC: No Harvest 1.1-4.30 Trophy: 5.1-5.15 (part of ocean fishery) Open: 5.16-7.6, 8.21-12.31 No Targeting 7.7-8.20
DC: No Harvest 1.1-5.16 Open: 5.16-12.31	VA: No Harvest 1.1-5.15 Open 5.16-6.15, 10.4-12.31 No Harvest: 6.16-10.3

3.2 Commercial Fishery Management: Size Limits

The following options propose implementing a maximum size limit for striped bass commercial fisheries in the ocean and Chesapeake Bay. The intent of the size limit options is to protect the largest, mature female striped bass contributing to the spawning stock biomass.

Commercial striped bass fisheries operate differently in each state with varying gears, seasons, and size limits. Consequently, implementing a standard maximum size limit across all commercial striped bass fisheries would result in a range of impacts that differ by state and by gear type. Current commercial size limits vary by state, particularly in the ocean where they range from a 20" minimum to 35" minimum, with only one fishery having a maximum size limit (38"). In the Chesapeake Bay, the minimum size is uniform across jurisdictions (18") but the use of a maximum size varies in length (28" or 36") and duration (year-round or seasonal).

In the past, when individual states have changed their commercial size limits through CE, states simultaneously adjusted their quotas up or down to account for maintaining the same spawning potential under new size limits as compared to their previous size limits. This process of adjusting commercial quotas to maintain the same spawning potential under new commercial size limits has been standard practice for approved CE programs under the FMP. If a commercial maximum size limit is implemented and there are corresponding quota adjustments to account for spawning potential, many state quotas will likely decrease to account for lost spawning potential due to harvesting smaller fish (e.g., implementing a maximum size where there was none).

As maximum size limits decrease (i.e., become more restrictive), harvested fish size will also decrease along with the degree of corresponding quota reductions, as illustrated in the following table. Additionally, a new maximum size limit may lead to states requesting a lower minimum size limit through CE to expand their harvest slot, which would further contribute to changes in quota and changes to the size of commercially harvested fish. States that already

harvest smaller fish (e.g., Chesapeake Bay, Delaware Bay) would likely see less of a quota reduction from a new maximum size limit since their fisheries already select for smaller fish.

If a commercial maximum size limit is implemented without corresponding quota adjustments, the number of fish harvested may increase since the average size of commercially harvested fish may decrease in some states, along with potential increased discards.

If a maximum size limit is implemented, there is also significant concern about the potential for increased dead discards from anchored gill nets. The concern is any intended benefit of releasing larger striped bass caught in anchored gill nets will be offset by the high mortality rate of discarded fish from these gill nets and the resulting need to continue fishing, possibly with a greater amount of gear, to meet the quota.

Example Quota Reductions Associated with Changing Size Limits

State	Describe Change	Example Starting Size Limit	Example New Size Limit	Percent Quota Change to Maintain Same Spawning Potential
MA	Apply new maximum size and lower minimum size <i>(change to slot almost entirely below prior size)</i>	34" min.	28 – 35" slot	36% quota reduction
MA	Apply new maximum size and maintain same minimum size <i>(add upper bound where none existed before)</i>	28" min.	28 – 35" slot	28% quota reduction
RI		34" min. for H&L 26" min. for FFT	34 – 38" slot HL 26 – 38" slot FFT	25% quota reduction
RI		28" min.	28 – 35" slot	27% quota reduction
RI		28" min.	28 – 38" slot	24% quota reduction
RI		28" min.	28 – 40" slot	19% quota reduction
RI		28" min	28 – 42" slot	12% quota reduction
DE		20" min	20 – 42" slot	0.3% quota reduction
Ches Bay	Apply year-round maximum size to all three Bay jurisdictions	Combined Ches Bay: MD 18-36" slot; PRFC 18" min/ seasonal 36" max; VA 18" min/ seasonal 28" max	MD, PRFC, VA at 18 – 36" slot	3% quota reduction
Ches Bay			MD, PRFC, VA at 18 – 28" slot	3.5% quota reduction
MD Bay	Lower maximum size limit	18 – 36" slot	18 – 34" slot	5% quota reduction

Note: Example calculations from 2019 Add VI CE analysis (MA, MD) and 2023 PDT example analysis (RI, DE, Ches Bay). H&L is RI's general category fishery, which is primarily hook & line. FFT is RI's floating fish trap fishery.

3.2.1 OPTIONS for Implementing a Commercial Maximum Size Limit

If no maximum size limit is implemented, Option A (status quo) would be selected. If a commercial maximum size limit is implemented, there are four sets of options that must be considered. Option Set B considers whether commercial quotas should be adjusted to maintain equivalent spawning potential under a new maximum size limit. Option Set C considers whether the maximum size limit is applied to 2022 commercial quotas and minimum sizes (accounting for past CE adjustments) or to FMP standard quotas and standard minimum size limits. Option Sets D and E consider what the commercial maximum size limit would be for the ocean and Chesapeake Bay, respectively. All size limits are in total length. One sub-option from each Option Set B, C, D, and E must be selected in order to implement a commercial maximum size.

States are allowed to submit CE proposals to transfer commercial quota to quota-managed recreational fisheries (i.e., recreational bonus programs), but would not be allowed to exceed the selected maximum commercial size limit. The Board continues to have discretion to decide whether or not to approve a CE proposal if it proposes size limits the Board considers to be inconsistent with the intent of this addendum.

Option A. Status Quo: No commercial maximum size limit is established within the plan; all commercial fisheries maintain 2017 size limits (or Addendum VI approved CE plans). Amendment 7 quotas (and Addendum VI approved CE-adjusted quotas) remain unchanged.

Option Set B: Spawning Potential Quota Adjustments (*select one sub-option*)

Option B1. No Quota Adjustment: Quotas would not be adjusted using spawning potential analysis to account for implementing a new maximum size limit. This would not account for change in spawning potential resulting from harvesting different size fish.

Option B2. With Quota Adjustment: Quotas would be adjusted using spawning potential analysis to account for implementing a new maximum size limit. State-specific analysis would be required to maintain the same spawning potential under the new size limit. Most state quotas would likely decrease as a result of implementing a maximum size limit where there was none previously.

Option Set C: Starting Point for Applying Maximum Size to Quota (*select one sub-option*)

C1. 2022 as Starting Point. Apply new maximum size limit to 2022 commercial quotas (including quotas adjusted through approved Addendum VI CE plans) and 2022 size limits. States could submit CE proposals to change their size limits using spawning potential analysis to adjust their quotas accordingly. Under no circumstances will states be allowed to institute minimum sizes below 18 inches or maximum sizes above the selected maximum size.

C2. FMP Standard as Starting Point. Align quotas with FMP historical standard size limits and then implement selected maximum size limit for each region, resulting in a standard commercial slot limit for each region. This option is intended to put the states on more equal footing for the application of a commercial maximum size limit. States could still submit CE proposals to change their size limits using spawning potential analysis and adjust their quotas accordingly. Under no circumstances will states be allowed to institute minimum size limits below 18 inches or maximum sizes above the selected maximum size.

For the ocean, use Amendment 6 28" minimum standard quotas as starting point and determine what quotas would be if no CE had occurred since then. Apply the new size maximum size limit as a standard ocean slot from 28" up to the selected maximum size limit. Consistent with Amendment 6, Delaware Bay gill net fisheries would have a slot from a 20" minimum up to the selected maximum size limit.

For the Chesapeake Bay, use the Addendum IV base Chesapeake Bay quota with an 18" minimum as a starting point¹¹, and determine what quotas would be if no CE had occurred. Apply the new size limit as a standard Chesapeake Bay slot from an 18" minimum up to the selected maximum size limit.

NOTE: This option 'wipes the slate clean' of both Add IV and Add VI CEs (e.g., states that took a less than 18% quota reduction in 2020 would now be subject to that full 18% reduction plus potentially additional reduction from spawning potential analysis). For the Chesapeake Bay, since the recreational options do not completely 'wipe the slate clean' to the FMP standard, this commercial FMP standard approach may not be consistent. For the ocean, the implications of the FMP standard approach for states that took a less than 18% quota reduction in 2020 should be considered.

Option Set D. Ocean Commercial Maximum Size Limits (select one sub-option)

D1. 38-inch maximum size limit for all ocean commercial fisheries. A 38-inch maximum size limit is currently implemented by New York.

D2. 40-inch maximum size limit for all ocean commercial fisheries.

D3. 42-inch maximum size limit for all ocean commercial fisheries.

Option Set E. Chesapeake Bay Commercial Maximum Size Limits (select one sub-option)

E1. 36-inch maximum size limit for all Chesapeake Bay commercial fisheries, except from January 1 to May 31 when the maximum size limit is reduced to 28 inches to provide extra protection for spawning fish and pre-spawn fish entering the Bay. This option expands Virginia's current 28-inch seasonal size limit and combines it with Maryland's year-round 36-inch size limit.

E2. 36-inch maximum size limit for all Chesapeake Bay commercial fisheries.

¹¹ Addendum IV was first management document to specify a Chesapeake Bay quota.

Summary of Commercial Size Limit Implementation Options

***Starting Quotas may be adjusted per Option B to account for maintaining the same spawning potential under a new maximum size limit. For most states, this would likely result in a reduction from the selected starting quota.*

	C1. 2022 Size Limit and Quotas as Starting Point <i>Incorporates commercial CE programs (e.g., some states took less than 18% Add VI reduction)</i>			C2. Quotas under Uniform FMP Standard Size Limits as Starting Point <i>Assumes no commercial CE occurred (i.e., quotas are full 18% reduction from Add IV base quotas)</i>		
		Starting Size Limit	Starting Quota**		Starting Size Limit	Starting Quota**
B. Would quotas be adjusted for new maximum size limit via spawning potential analysis?	ME	N/A (28" min)	154	ME	N/A (28" min)	154
	NH	N/A (28" min)	3,537	NH	N/A (28" min)	3,537
	MA	35" min	735,240	MA	28"	713,247
	RI	26" min FFT; 34" min GC	148,889	RI	28"	149,830
	CT	N/A (28" min)	14,607	CT	N/A (28" min)	14,607
	NY	26 - 38"	640,718	NY	28"	652,552
	NJ	bonus program 24 - <28"	215,912	NJ	28"	197,877
	DE	28", except 20" for gill nets in DE Bay/River 2.15-5.31	142,474	DE	28", except 20" for gill nets in DE Bay/River	118,970
	MD	24" min	89,094	MD	28"	80,909
	VA	28" min	125,034	VA	28"	113,685
NC	28" min	295,495	NC	28"	295,495	
B1. No B2. Yes	MD Ches Bay	18 - 36"	3,001,648	Ches Bay	18" min	2,558,603
	PRFC	18" min, 36" max during 2.15-3.25				
	VA Ches Bay	18" min, 28" max during 3.15-6.15				
Option D. Apply Ocean Maximum Size Limit D1. 38-inch maximum; D2. 40-inch maximum; D3. 42-inch maximum						
Option E. Apply Chesapeake Bay Maximum Size Limit E1. 28-inch max. Jan-May/36-inch max. Jun-Dec; E2. 36-inch maximum						

3.3 Response to Stock Assessment Updates

If an upcoming stock assessment update (e.g., currently scheduled for 2024, 2026) indicates the stock is not projected to rebuild by 2029 with a probability greater than or equal to 50%:

Option A. Status Quo: the Board would initiate and develop an addendum to consider adjusting management measures.

- An addendum process includes a public comment period with public hearings and an opportunity to submit written comments on the draft addendum document.
- Based on assessment timing and the typical addendum development and implementation process, new measures would likely not be implemented until two years following the assessment. For example, the 2024 stock assessment is expected in October 2024. If the Board initiates an addendum in October 2024, approves it for public comment in February 2025, and then selects final measures in May 2025, the earliest implementation would likely be late 2025 or early 2026.

Option B. The Board could respond via Board action where the Board could change management measures by voting to pass a motion at a Board meeting instead of developing an addendum.

- Public comment could be provided during Board meetings per the Commission's guidelines for public comment at Board meetings, and/or public comment could be provided in writing to the Board per the Commission's timeline for submission of written public comments prior to Board meetings.
- This option would allow a more expedited response to assessment updates. For example, when the 2024 stock assessment update is complete in October 2024, the Board could change management measures at that October 2024 meeting or a meeting shortly thereafter, which would enable new measures to be implemented for at least part of the 2025 season.

4.0 COMPLIANCE SCHEDULE

If approved, states must implement Addendum II according to the following schedule to be in compliance with the Atlantic Striped Bass Interstate FMP:

[Month, Day, Year]: States submit implementation plans to meet Addendum II requirements.

[Month, Day, Year]: Management Board reviews and considers approving state implementation plans.

[Month Day, Year]: States implement regulations.

FIGURES

Figure 1. Atlantic striped bass female spawning stock biomass and recruitment, 1982-2021. Source: 2022 Stock Assessment Update.

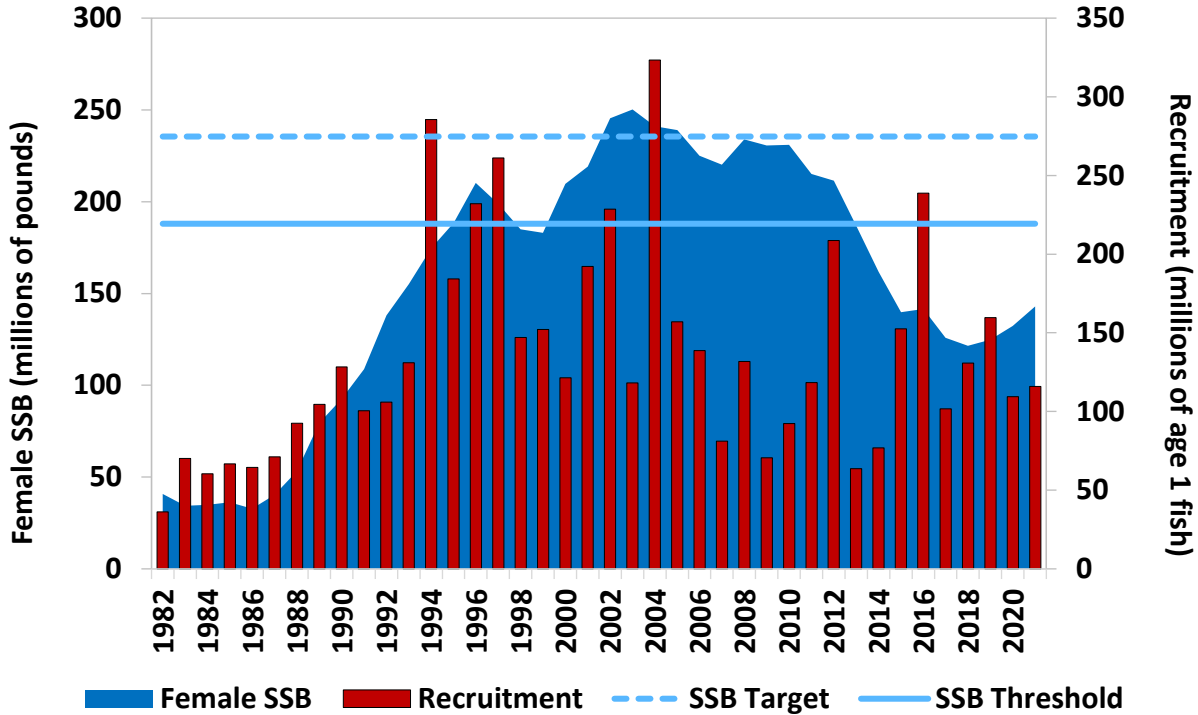


Figure 2. Atlantic striped bass fishing mortality, 1982-2021. Source: 2022 Stock Assessment Update.

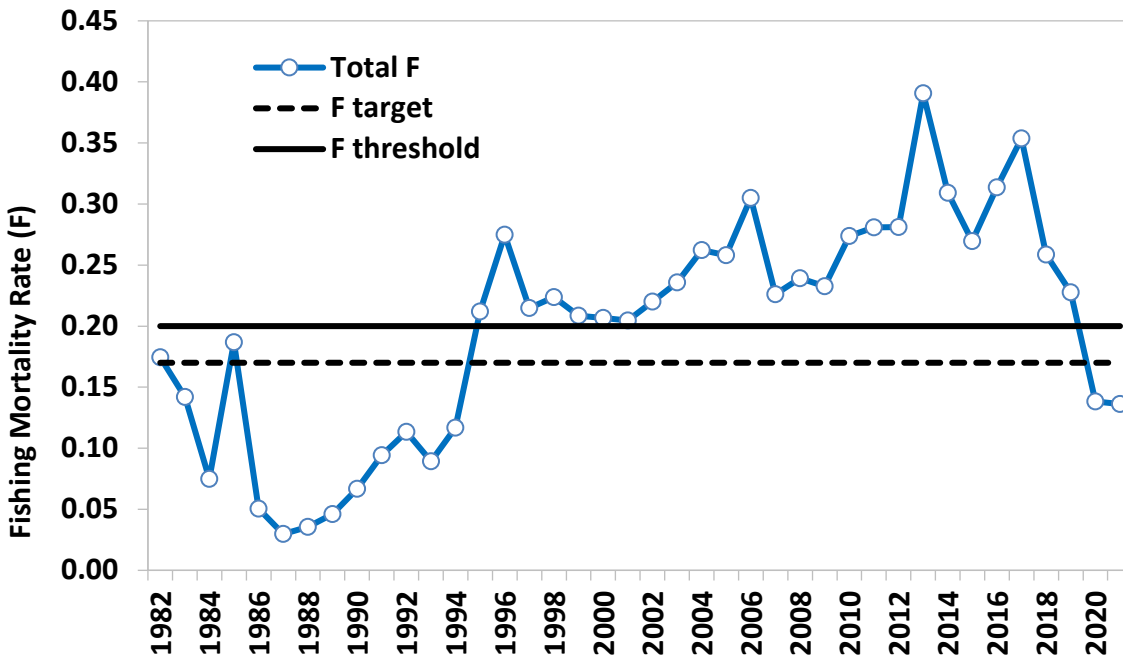


Figure 3. Stock rebuilding projections using 2021 data (from 2022 assessment update) and 2022 data.

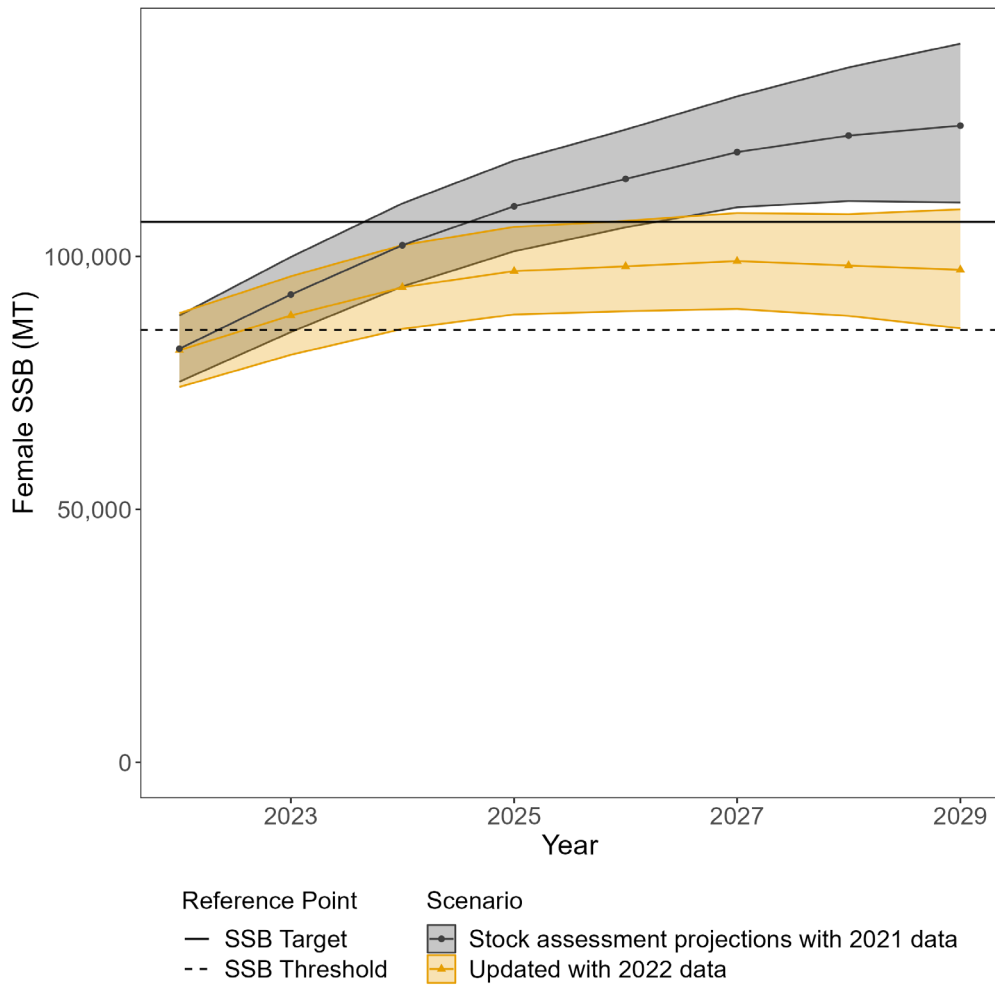


Figure 4. Average size-at-age of the 2015 year-class (not scaled to abundance) from 2022 (top panel), 2023 (middle panel), and 2024 (bottom panel) relative to the Addendum VI/Amendment 7 ocean standard 28”-<35” slot (solid lines) and the emergency action 31” maximum size (dashed line).

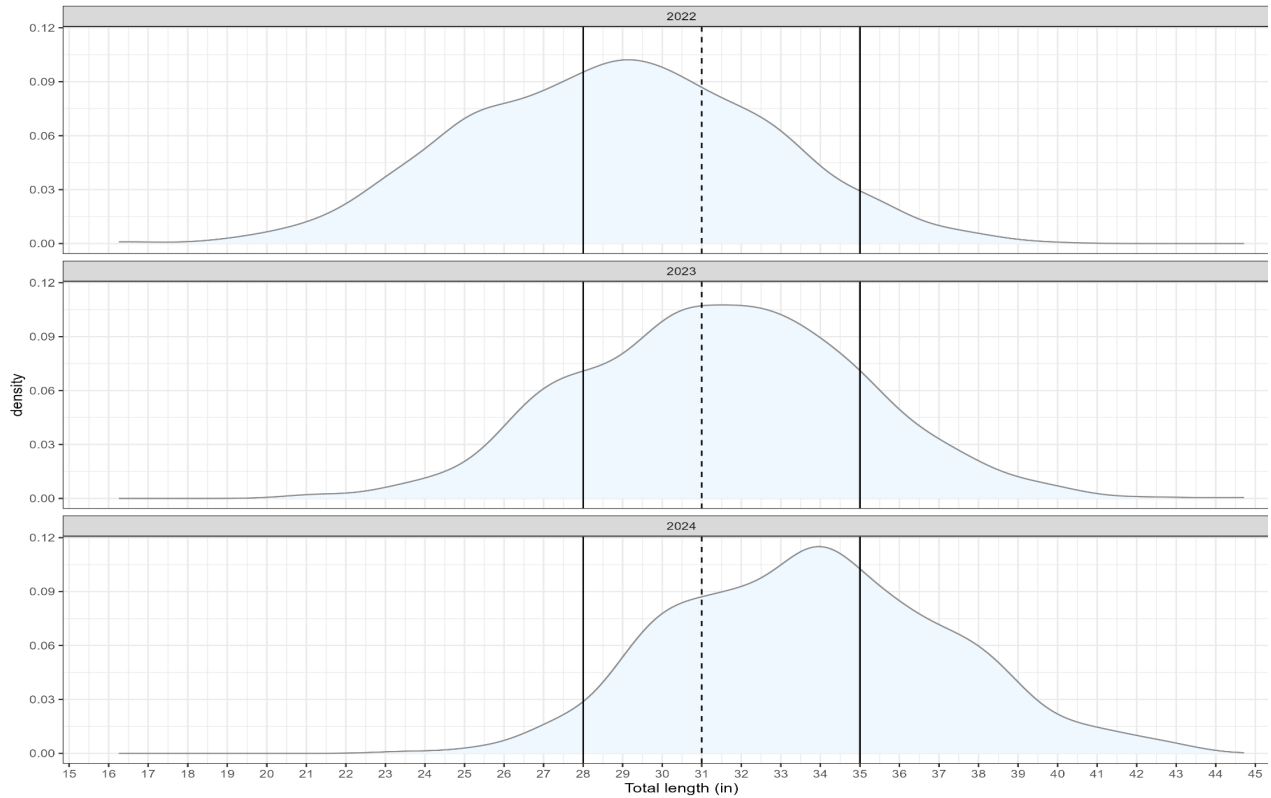


Figure 5. Total Atlantic striped bass removals by sector in numbers of fish, 1982-2022. Note: Harvest is from state compliance reports/MRIP, discards/release mortality is from ASMFC.

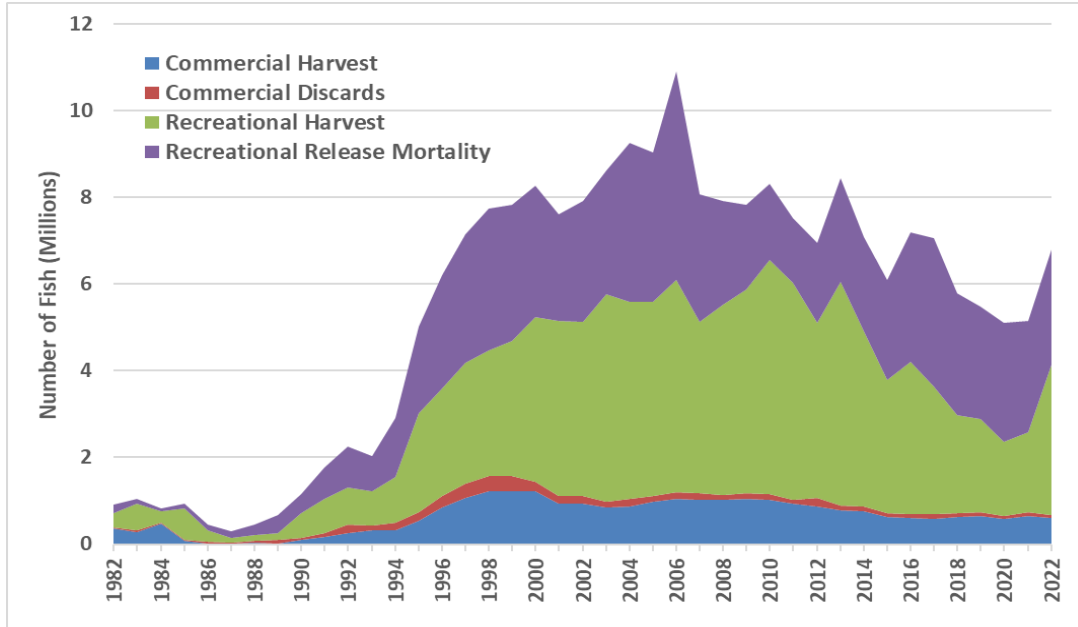


Figure 6. 2018-2022 harvest by state and by wave in the OCEAN. The bottom panel is scaled to the same y-axis (number of fish) to show relative difference in harvest levels among states.

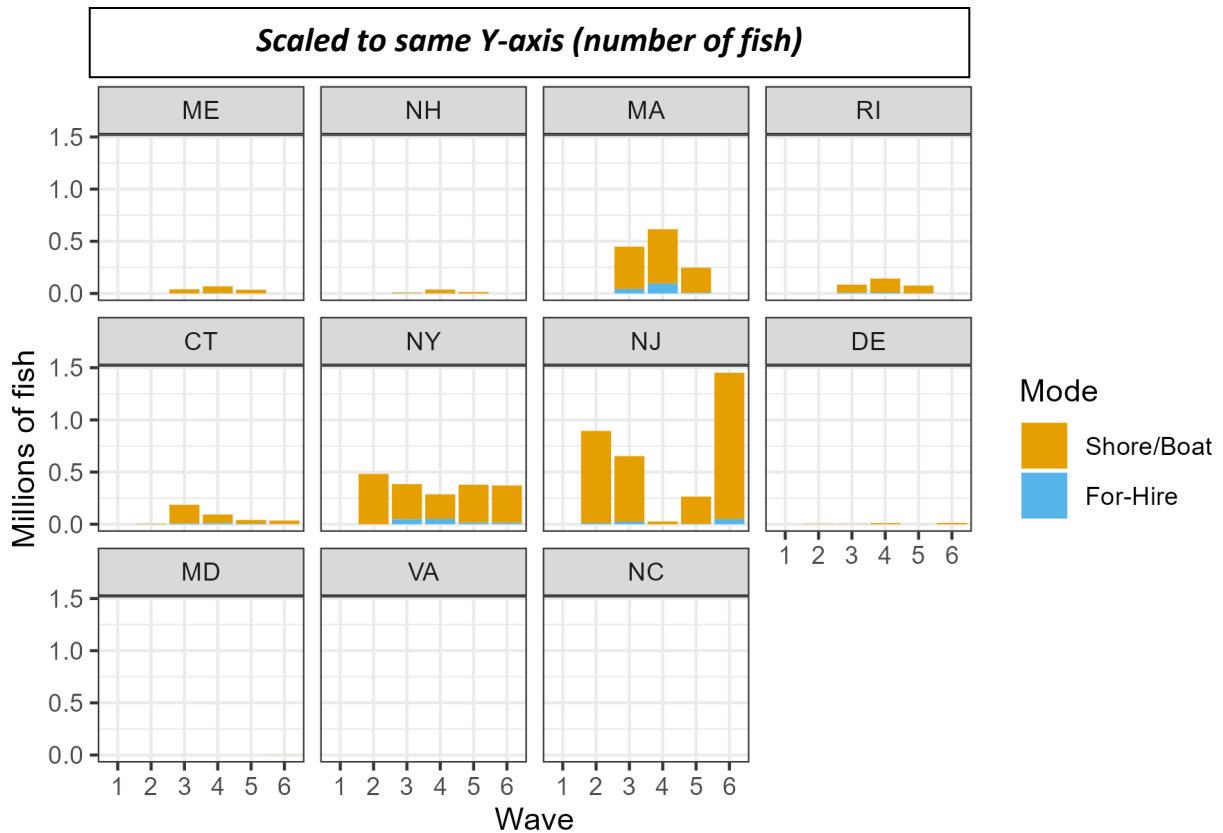
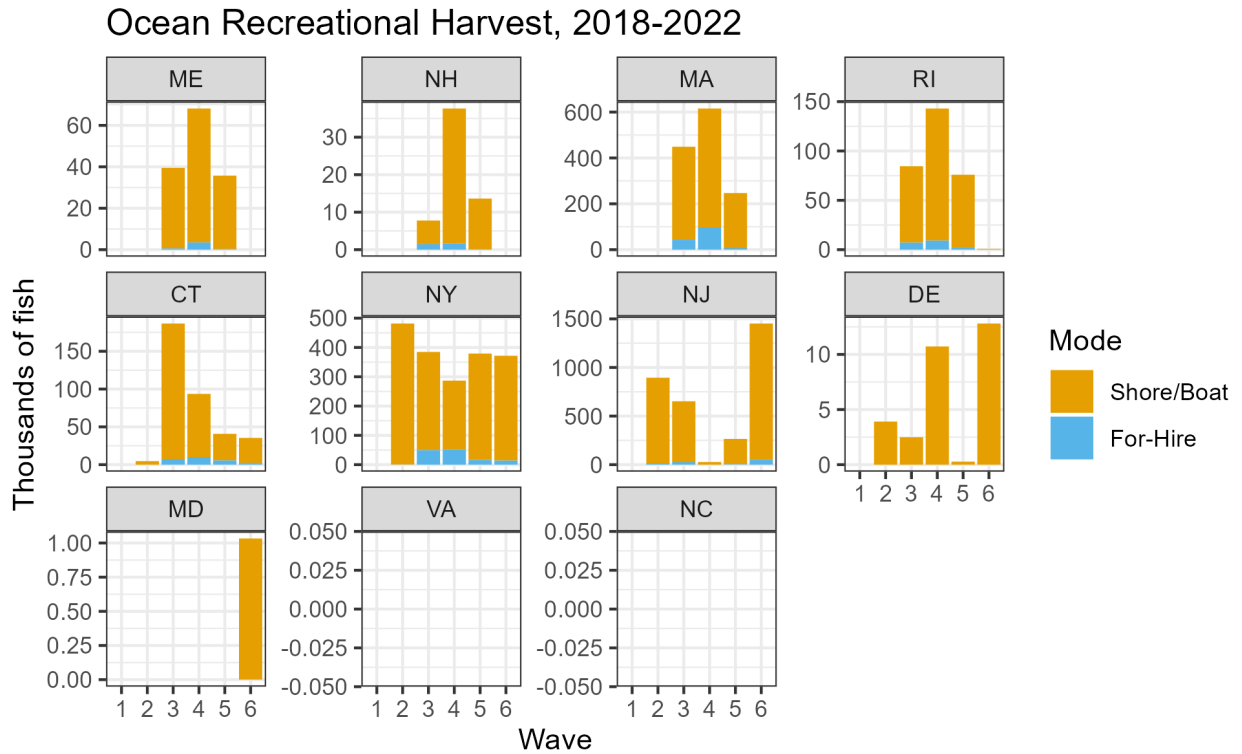
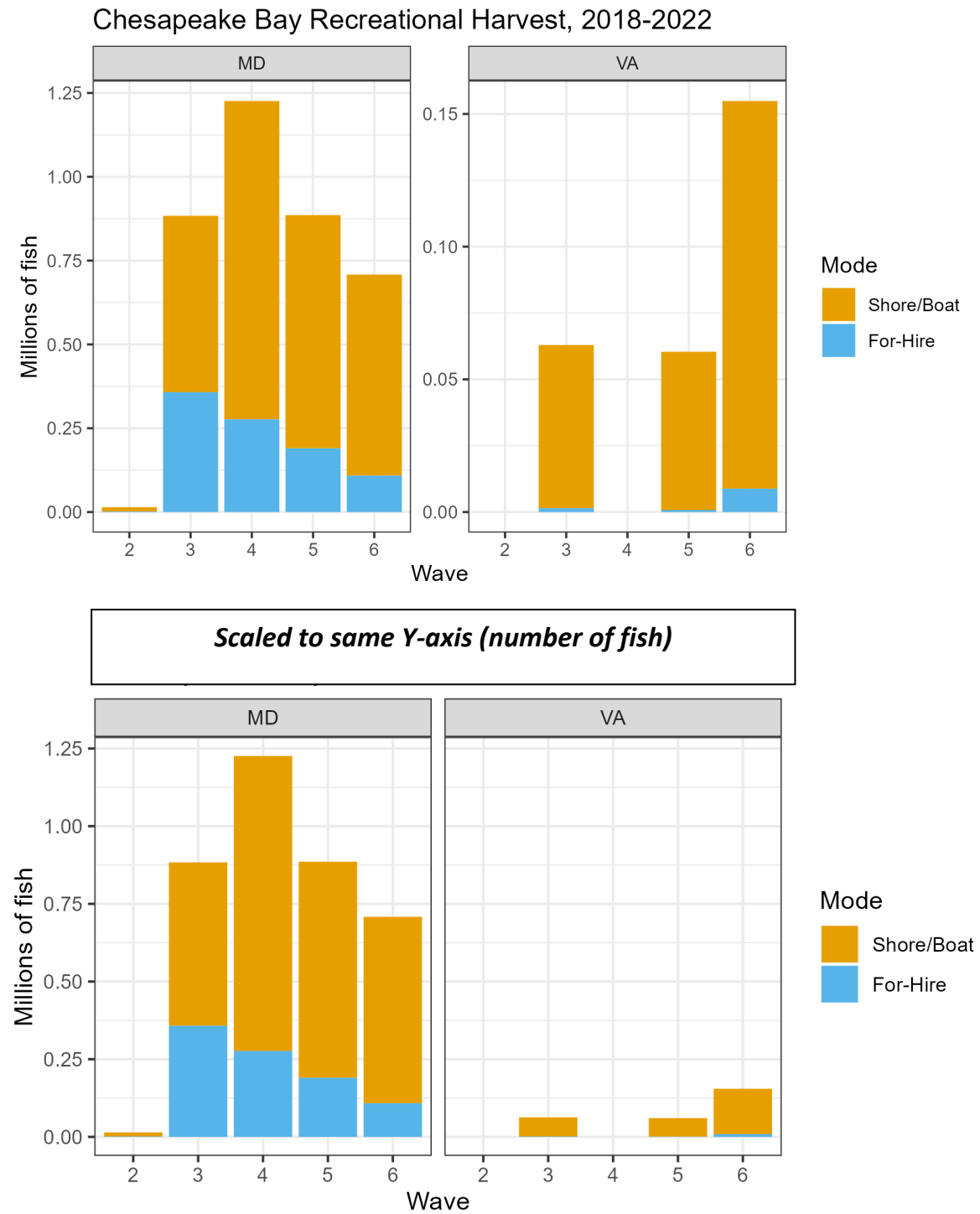


Figure 7. 2018-2022 harvest by state and by wave in the CHESAPEAKE BAY. The bottom panel is scaled to the same y-axis to show relative difference in harvest levels among states.



TABLES

Table 1. Summary of Atlantic striped bass commercial regulations in 2022. Source: 2023 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL). *Commercial quota reallocated to recreational bonus fish program.

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
ME	Commercial fishing prohibited		
NH	Commercial fishing prohibited		
MA	≥35" minimum size; no gaffing undersized fish. 15 fish/day with commercial boat permit; 2 fish/day with rod and reel permit.	735,240 lbs. Hook & Line only.	6.16-11.15 (or when quota reached); open fishing days of Monday, Tuesday and Wednesday, with Thursday and Friday added on October 1 (if quota remains). Cape Cod Canal closed to commercial striped bass fishing.
RI	Floating fish trap: 26" minimum size unlimited possession limit until 70% of quota reached, then 500 lbs. per licensee per day	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	4.1 – 12.31
	General category (mostly rod & reel): 34" min. 5 fish/vessel/day limit.		5.20-6.30; 7.1-12.31, or until quota reached. Closed Fridays, Saturdays, and Sundays during Jul-Dec.
CT	Commercial fishing prohibited; bonus program in CT suspended indefinitely in 2020.		
NY	26"-38" size; (Hudson River closed to commercial harvest)	640,718 lbs. Pound Nets, Gill Nets (6-8" stretched mesh), Hook & Line.	5.15 – 12.15, or until quota reached. Limited entry permit only.
NJ*	Commercial fishing prohibited; bonus program: 1 fish/permit at 24" to <28"	215,912 lbs.	5.15 – 12.31 (permit required)
PA	Commercial fishing prohibited		
DE	Gill Net: 20" min in DE Bay/River during spring season. 28" in all other waters/seasons.	Gillnet: 135,350 lbs. No fixed nets in DE River.	Gillnet: 2.15-5.31 (2.15-3.30 for Nanticoke River) & 11.15-12.31; drift nets only 2.15-28 & 5.1-31; no trip limit.
	Hook and Line: 28" min	Hook and line: 7,124 lbs.	Hook and Line: 4.1–12.31, 200 lbs./day trip limit

(Table 1 continued – Summary of commercial regulations in 2022).

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
MD	Chesapeake Bay and Rivers: 18–36” Common pool trip limits: Hook and Line - 250 lbs./license/week Gill Net - 300 lbs./license/week	1,445,394 lbs. (part of Bay-wide quota)	Bay Pound Net: 6.1-12.31 Bay Haul Seine: 1.1-2.28; 6.1-12.31 Bay Hook & Line: 6.1-12.31 Bay Drift Gill Net: 1.1-2.28, 12.1-12.31
	Ocean: 24” minimum	Ocean: 89,094 lbs.	1.1-5.31, 10.1-12.31
PRFC	18” min all year; 36” max 2.15–3.25	572,861 lbs. (split between gear types; part of Bay-wide quota)	Hook & Line: 1.1-3.25, 6.1-12.31 Pound Net & Other: 2.15-3.25, 6.1-12.15 <u>Gill Net</u> : 11.9.2021-3.25.2022 Misc. Gear: 2.15-3.25, 6.1-12.15
VA	Chesapeake Bay and Rivers: 18” min; 28” max size limit 3.15–6.15	983,393 lbs. (part of Bay-wide quota)	1.16-12.31
	Ocean: 28” min	125,034 lbs.	
NC	Ocean: 28” min	295,495 lbs. (split between gear types)	Seine fishery was not opened Gill net fishery was not opened Trawl fishery was not opened

Table 2. Summary of Atlantic striped bass recreational regulations in 2022. Source: 2023 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL).

STATE	SIZE LIMITS (TL)/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
ME	≥ 28" and <35"	1 fish/day	Hook and line only and no gaffing of striped bass. Regulations define bait as it pertains to the required use of circle hooks; immediate release w/o unnecessary injury if incidentally caught on unapproved hook type; maintains the circle hook exemption for rubber and latex tube rigs.	All year, except spawning areas are closed 12.1-4.30 and C&R only 5.1-6.30
NH	≥ 28" and <35"	1 fish/day	Gaffing and culling prohibited; Use of corrodible non-offset circle hooks required if angling with bait. If taken contrary to restrictions, return fish to water immediately w/o unnecessary injury.	All year
MA	≥ 28" and <35"	1 fish/day	Hook & line only; no high-grading; gaffs and other injurious removal devices prohibited. Inline circle hook requirement when fishing with bait, except with artificial lures; mandatory release of catch on any unapproved method of take. No filleting at-sea except aboard for-hire vessels provided skin remains and ratio of 2 filets/fish.	All year
RI	≥ 28" and <35"	1 fish/day	Circle required while fishing recreationally with bait for striped bass (except for artificial lures with bait attached); must release if caught on unapproved method of take	All year
CT	≥ 28" and <35"	1 fish/day	Inline circle hooks only when using whole, cut or live natural bait. Exemption of artificial lures/ release of incidental noncircle hook provision. Spearing and gaffing prohibited. If taken contrary to the provisions, shall, without avoidable injury, be returned immediately to the waters.	All year
NY	Ocean and DE River: 28 -35"	1 fish/day	Angling only. Spearing permitted in ocean waters. C&R only during closed season, except no targeting in Hudson River during closed season. Circle hook requirements. No gaffing. Mandatory release of catch on any unapproved method of take.	Ocean: 4.15-12.15 Delaware River: All year
	HR: 18 -28"	1 fish/day		Hudson River: 4.1-11.30

(Table 2 continued – Summary of recreational regulations in 2022).

STATE	SIZE LIMITS/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
NJ	≥ 28 to < 38"	1 fish/day	Circle hooks required when fishing with bait; must release if caught on unapproved method of take	Closed 1.1 – Feb 28 in all waters except in the Atlantic Ocean, and closed 4.1-5.31 in the lower DE River and tribs
PA	Upstream from Calhoun St Bridge: 1 fish/day at ≥ 28" to <35"		Unlawful to take or attempt to take fish unless the method is specifically authorized. Circle hooks required when fishing with bait downstream from Calhoun St. Bridge.	All year
	Downstream from Calhoun St Bridge: 1 fish/day at ≥ 28" to <35 (except 4.1-5.31)			All year. 21"-<24" slot from 4.1 – 5.31
DE	≥ 28" and <35"	1 fish/day	Hook & line, spear (for divers) only. Inline circle hooks required when fishing for striped bass using cut or whole natural baits	All year. C&R only 4.1-5.31 in spawning grounds. 20"-25" slot from 7.1-8.31 in DE River, Bay & tributaries
MD	Ocean: ≥ 28" and <35"	1 fish/day	Circle hooks if chumming, live-lining, or bait fishing and targeting striped bass; no gaffing	All year
	Chesapeake Bay and tribs^	C&R only	Circle hook requirement with bait; no eels; no stinger hooks; barbless hooks when trolling; max 6 lines when trolling; no gaffing	1.1-2.28, 3.1-3.31, 12.11-12.31
	Chesapeake Bay: 35" min	1 fish/day	Geographic restrictions apply; Circle hook requirement with bait; no eels bait; no gaffs	5.1-5.15
	Chesapeake Bay: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish >28"		Geographic restrictions apply; circle hooks if chumming, livelining, or bait fishing and targeting striped bass; no gaffing	5.16-5.31
	Chesapeake Bay and tribs: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish >28"		All Bay and tribs open; circle hooks if chumming, livelining, or bait fishing and targeting striped bass; no gaffing	6.1-7.15, 8.1-12.10

^ Susquehanna Flats: C&R only Jan 1 – March 31 (circle hooks when bait fishing); 1 fish at 19"-26" slot May 16 – May 31 (circle hooks if chumming, livelining, or bait fishing and targeting striped bass).

(Table 2 continued – Summary of recreational regulations in 2022).

STATE	SIZE LIMITS/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
PRFC	Spring Trophy: 35" minimum size	1 fish/day	No more than two hooks or sets of hooks for each rod or line; no live eel; no high-grading; non-offset Circle Hooks are required when fishing for striped bass using cut or whole natural bait; no spearing or gaffing	5.1-5.15
	Summer and Fall: 20" min	2 fish/day	No more than two hooks or sets of hooks for each rod or line; non-offset Circle Hooks are required when fishing for striped bass using cut or whole natural bait; no spearing or gaffing; any fish caught other than lawful fishing activities immediately released	5.16-7.6 and 8.21-12.31; closed 7.7-8.20 (No Direct Targeting)
DC	18" minimum size	1 fish/day	Hook and line only; unlawful to take fish except as specified	5.16-12.31
VA	Ocean: 28"-36" slot limit	1 fish/day	Hook & line, rod & reel, hand line, spearing only. No gaffing. Circle hooks required if/when using live bait. Unlawful to take/attempt take by any other gear/method	1.1-3.31, 5.16-12.31
	Ocean Spring Trophy: NO SPRING TROPHY SEASON			
	Chesapeake Bay Spring Trophy: NO SPRING TROPHY SEASON			
	Bay Spring/Summer: 20"-28" slot limit	1 fish/day	Hook & line, rod & reel, hand line, spearing only. No gaffing. Circle hooks required if/when using live bait. Unlawful to take/attempt take by any other gear/method	5.16-6.15
Bay Fall: 20 - 36" slot limit	1 fish/day	10.4-12.31		
NC	≥ 28" and <35"	1 fish/day	No gaffing allowed. Circle hooks required when fishing with natural bait	All year

Table 3. CE programs implemented for Addendum VI

State	Recreational Fisheries	Commercial Fisheries
MA	N/A	Changed size limit (35" minimum) with equivalent quota change
NY	Hudson River: Alternative size limit (18" to 28") to achieve 18% removals reduction in combination with standard Ocean slot	Changed size limit (26" to 38") with equivalent quota reduction
NJ	Alternative size limit (28 to < 38") to achieve 25% removals reduction	Decreased commercial quota reduction (to 0%) with surplus recreational fishery reduction and transferred commercial quota to recreational bonus program fishery (24 to < 28", 1 fish/day)
PA	DE River and Estuary downstream Calhoun St Bridge: Alternative size and bag limit on limited seasonal basis (2 fish/day at 21 to <24" during 4.1–5.31) to achieve 18% removals reduction	N/A
DE	DE River/Bay/tributaries: Alternative slot on limited seasonal basis (20" to <25" during 7.1–8.31) to achieve 20.4% removals reduction in combination with standard Ocean slot	Decreased commercial quota reduction (to -1.8%) with surplus recreational fishery reduction
MD	Chesapeake Bay: Alternative Summer/Fall for-hire bag limit with restrictions (2 fish, only 1 >28", no captain retention) through increased minimum size (19"), April and two-week Wave 4 targeting closures, and shorter spring trophy season (May 1–15) to achieve 20.6% removals reduction; Ocean: FMP standard slot	Decreased Ocean and Chesapeake Bay commercial quota reduction (to -1.8%) with surplus Chesapeake Bay recreational fishery reduction
PRFC	Alternative Summer/Fall minimum size and bag limit (20" min, 2 fish/day) with a no targeting closure (7.7–8.20) and shorter spring trophy season (May 1–15) to achieve a 20.5% removals reduction	Decreased Chesapeake Bay commercial quota (to -1.8%) with surplus recreational fishery reduction
VA	Chesapeake Bay: Alternative slot limits during 5.16–6.15 (20" to 28") and 10.4–12.31 (20" to 36") and no spring trophy season to achieve a 23.4% removals reduction (reduction was the result of lowering prior bag limit from 2 to 1-fish per angler); Ocean: Alternative slot limit (28" to 36")	Decreased Ocean commercial quota (to -7.7%) and Chesapeake Bay commercial quota (to -9.8%) with surplus recreational fishery reduction

Table 4. Estimated mean striped bass size-at-age based on the 2012-2016 state age data (weighted by state recreational catch) compiled for the 2018 benchmark stock assessment. Note: Size-at-age is highly variable along the coast and there is overlap among age classes.

Age	Estimated Mean Total Length (in)	
0	3.8	
1	6.4	
2	12.7	
3	17.0	
4	20.9	
5	24.1	2018 year class in 2023
6	26.4	2017 year class in 2023
7	28.7	
8	31.6	2015 year class in 2023
9	33.8	
10	35.5	
11	37.2	
12	39.1	
13	41.0	
14	42.2	
15+	44.0	

Table 5. Implementation of 2023 Emergency Action for striped bass (31.0" maximum size limit).

State	Effective Date	Maximum Size Limit
ME	May 18	31.0" max size limit
NH	May 26	<31.0" max size limit
MA	May 26	<31.0" max size limit
RI	May 27	<31.0" max size limit
CT	May 26	<31.0" max size limit
NY	June 20	31.0" max size limit
NJ	July 2	31.0" max size limit
PA	June 3	<31.0" max size limit
DE	May 21	31.0" max size limit
MD	May 16	31.0" max size limit
PRFC	May 16	31.0" max size limit
DC	May 16	31.0" max size limit
VA	July 1	31.0" max size limit
NC	June 1	31.0" max size limit

Table 6. Total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1993-2022 calendar years. Note: Harvest is from state compliance reports/MRIP (June 2023), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from NC.

Year	Commercial		Recreational		Total Removals
	Harvest	Dead Discards*	Harvest	Release Mortality	
1993	314,526	114,317	789,037	812,404	2,030,284
1994	325,401	165,700	1,055,523	1,360,872	2,907,496
1995	537,412	192,368	2,287,578	2,010,689	5,028,047
1996	854,102	257,506	2,487,422	2,600,526	6,199,556
1997	1,076,561	324,445	2,774,981	2,969,781	7,145,769
1998	1,215,219	346,537	2,915,390	3,259,133	7,736,278
1999	1,223,572	347,186	3,123,496	3,140,905	7,835,158
2000	1,216,812	213,863	3,802,477	3,044,203	8,277,354
2001	931,412	175,815	4,052,474	2,449,599	7,609,300
2002	928,085	187,084	4,005,084	2,792,200	7,912,453
2003	854,326	126,274	4,781,402	2,848,445	8,610,447
2004	879,768	156,026	4,553,027	3,665,234	9,254,055
2005	970,403	142,385	4,480,802	3,441,928	9,035,518
2006	1,047,648	152,308	4,883,961	4,812,332	10,896,250
2007	1,015,114	158,078	3,944,679	2,944,253	8,062,124
2008	1,027,824	108,830	4,381,186	2,391,200	7,909,039
2009	1,050,055	133,317	4,700,222	1,942,061	7,825,654
2010	1,031,448	132,373	5,388,440	1,760,759	8,313,020
2011	944,777	82,015	5,006,358	1,482,029	7,515,180
2012	870,684	192,190	4,046,299	1,847,880	6,957,053
2013	784,379	112,620	5,157,760	2,393,425	8,448,184
2014	750,263	114,065	4,033,746	2,172,342	7,070,415
2015	621,952	88,614	3,085,725	2,307,133	6,103,425
2016	609,028	91,186	3,500,434	2,981,430	7,182,077
2017	592,670	98,801	2,937,911	3,421,110	7,050,492
2018	621,123	101,264	2,244,765	2,826,667	5,793,819
2019	653,807	85,262	2,150,936	2,589,045	5,479,050
2020	583,070	58,641	1,709,973	2,760,231	5,111,915
2021	644,207	85,676	1,841,902	2,583,788	5,155,573
2022	599,615	81,200	3,454,021	2,667,846	6,802,681

* Commercial dead discard estimate for 2022 was estimated using the harvest-to-discard ratio from 2021. The entire time series for commercial dead discards will be re-estimated during the 2024 stock assessment using a generalized additive model (GAM).

Table 7. 2022 Commercial Fishery Size Limits, Gear Types, and Commercial Sampling Results (Source: 2023 Compliance Reports). Note: Sub-sampling of commercial striped bass harvest occurs for about 1-5% of all commercially harvested fish in each state, and these values are assumed to be representative of each state’s landings.

State	Size Limits	2022 Percent Landings by Gear Type	Mean Length and Range of Length Samples (TL in)	Mean Weight (lbs)	Mean Scale Age (years)
MA	35" min	100% hook & line	39.9 <i>Range: 35 - 48</i>	24.1	10
RI	General: 34" min FFT: 26" min	Conf % hook & line Conf % floating fish trap	34.8 <i>H&L Range 34 – 52</i> <i>FFT Range: 26 - 52</i>	18.2	8
NY	26-38" slot	62.2% gill nets (mostly sink) 18.3% hook & line 6.7% fixed gear 4.4% trawls	30.2 <i>Range: 24.1 – 38.7</i>	9.9	ageing ongoing
DE	GN: 28" min, 20" min DE Bay/River 2.15-5.31 H&L: 28" min	88.4% anchored gill net 11.6% drift gill net 0% hook & line	35.0 <i>Range: 20 - 45</i>	17.0	10
MD ocean	24" min	100% drift gill net	41.1 <i>Range: 32.6 – 47.6</i>	25.9	12
VA ocean	28" min	100% drift/anchored gill net	40.0 <i>Range 29 – 51</i>	24.8	14
NC	28" min	Beach seine, gill net, trawl	NA	NA	NA
MD Ches Bay	18-36" slot	53% pound net 42% drift gill net 5% hook & line	22.2 <i>GN Range: 17.7 - 35</i> <i>PN/H&L Range: 17.7 – 33.5</i>	4.6	5
PRFC	18" min; 36" max 2.15-3.25	67% anchored gill net 23% pound net 9% hook & line	23.8 <i>Range: 18.3 – 48.0</i>	6.3	5.7
VA Ches Bay	18" min; 28" max 3.15-6.15	84% drift/anchor gill net 12% pound net 4% hook & line	24.9 GN <i>GN Range: 18-49</i> 23.3 PN <i>PN Range: 17-36</i> 36.2 H&L <i>H&L Range: 18-28 and 41-49</i>	7.5 GN 5.6 PN 26.6 H&L	7.7 GN 5 PN 17 H&L

H&L=hook & line; GN=gill nets, FFT=floating fish traps; PN=pound net



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MEMORANDUM

TO: Atlantic Striped Bass Management Board
FROM: Atlantic Striped Bass Plan Development Team
DATE: July 17, 2023
SUBJECT: Draft Addendum II Board Discussion and Additional Topics

In May 2023, the Atlantic Striped Bass Management Board (Board) initiated an addendum to bring fishing mortality to the target in 2024 with options to include modifications to the ocean slot limit, ocean harvest closures if needed, maximum size limits for all commercial fisheries and Chesapeake Bay recreational fisheries, and a Board action provision for future stock assessment response. The Plan Development Team (PDT) developed those types of options which are included in Draft Addendum II in the Board's meeting materials for the Summer 2023 Meeting.

This memorandum highlights two discussion points for the Board's deliberations on these options: 1) potential quota adjustments associated with commercial size limit changes, and 2) addressing existing conservation equivalency (CE) measures in the new options. Depending on the Board's intent, the number of currently drafted options could be reduced prior to approving the document for public comment.

This memorandum also outlines additional topics raised by the PDT throughout the addendum development process: recreational mode-split, recreational no-targeting seasonal closures, commercial mesh size for anchored gill nets, commercial tagging, and at-sea filleting. If these additional topics align with the Board's intent for this draft addendum, the Board could add the potential options herein to the draft addendum via Board motion before the document is approved for public comment.

Board Discussion Point: Commercial Size Limit Changes and Quota Adjustments

As noted in the draft addendum, past changes to commercial size limits (allowed via approved state CE plans) have been accompanied by corresponding changes to that state's commercial quota to account for maintaining the same spawning potential under new size limits as compared to previous size limits. This process has been standard practice for approved commercial size CE programs under the FMP, and this was noted by the Technical Committee (TC) at their [June 5](#) meeting.

If a commercial maximum size is implemented and there is a corresponding quota adjustment to account for spawning potential, many state quotas will likely decrease to account for lost spawning potential due to harvesting smaller fish (i.e., implementing a maximum size where there previously was none). If a commercial maximum size limit is implemented without a

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corresponding quota adjustment, the number of fish harvested may increase since the average size of harvested fish will decrease.

The PDT recognizes that during the May 2023 Board meeting, it was noted that Addendum II was not intended to consider a quota reduction. So, it is unclear how the Board would like to proceed with commercial size limits and corresponding quota adjustments. As such, the current draft addendum includes options that would not require spawning potential quota adjustments (Option B1) and options that would require spawning potential quota adjustments (Option B2).

The PDT recommends the Board discuss their intent and make a decision at the August meeting regarding how to move forward with commercial size limits and quota adjustments before approving Draft Addendum II for public comment (i.e., choose one approach and eliminate commercial option set B).

If the Board decides to require spawning potential analysis and quota adjustments for any commercial size limit change, that analysis would require state-specific calculations based on state-specific selectivity curves. Each state's calculation would be unique, even for states that have the same size limit, and most states have different commercial size limits to begin with. So, resulting quota adjustments (e.g., percent reduction) will likely vary by state. The draft addendum includes a table of example spawning potential calculations for different states/size limits on page 18.

The Board should also consider *when* this analysis would be conducted. States could conduct the analysis after the final Addendum II is approved with the selected commercial size limit as part of their state implementation plan; the drawback of this approach is the public will not know the amount by which their state quota would change for each proposed size limit option during the public comment process. An alternative approach could be to add the spawning potential calculations for each proposed option for each state to the draft addendum before approving the document for public comment, but that would delay the document by one meeting cycle. Another approach would not include the analysis in the draft addendum, but each state could prepare draft analyses to have on hand during the public hearings. In this case, a Technical Committee meeting in August would be helpful to review spawning potential analysis methodology.

If the Board decides not to require quota adjustments for maximum size limits based on spawning potential analysis, those options requiring such analysis would be removed from the draft addendum before the public comment period.

Board Discussion Point: Starting Point for Options Development

The PDT discussed two approaches for developing options: using the 2022 measures as the starting point (i.e., incorporating the Addendum VI CE programs) or using the Amendment 7 FMP standards as the starting point (i.e., "wiping the slate clean" of the Addendum VI CE programs). The distinction is most relevant to the Chesapeake Bay recreational options and the commercial size limit options given the breadth of CE programs in place that distance the

current measures from the FMP standards. This issue was not significant for the ocean recreational fishery since the only CE measures in the ocean were alternative size limits, and size limits are already being modified by the ocean options.

For Chesapeake Bay recreational options, using 2022 measures as a starting point manifests as maintaining state-specific 2022 bag limits, minimum size limits, and/or seasons, which were adjusted via Addendum VI CE, and that these *become part of the new FMP standard* (e.g., under Option B, the FMP specifies that PRFC's bag limit is 2-fish at a 20–23" slot with their existing 6-week summer targeting closure, while Maryland's bag limit is 1-fish private/2-fish charter at a 19–23" slot with their existing 2-week summer targeting closure). The Chesapeake Bay recreational options in the draft addendum range in the number of 2022 measures they maintain versus the number of measures which are standardized across the Bay jurisdictions. No Chesapeake Bay recreational option in the draft addendum creates a truly consistent set of measures across the Bay. Seasons among Chesapeake Bay jurisdictions have differed, even prior to Addendum VI, since the fisheries reopened in the late 1990s, and "wiping the slate clean" to arrive at a common set of measures with consistent seasons across jurisdictions was not feasible due to the complexity of current measures and associated uncertainty. However, Options H and I, in which the size limits and bag limits are standardized and the 2022 seasons maintained, are most consistent with the approach of modifying the Amendment 7 FMP standard (i.e., 1-fish at 18" minimum with the 2017 seasons). Options that maintain aspects of the current CEs, particularly the current bag limits, reduce uncertainty in the calculations, for example, by not requiring development of catch estimates for the Potomac River by extracting Potomac River data from the Maryland and Virginia MRIP data.

The Board should consider to what extent formalizing the CE measures as part of the FMP is consistent with the intent of Amendment 7's restrictions and requirements for CE. The PDT notes one possible consequence of working off the 2022 seasons for all Chesapeake Bay recreational options; some recreational season closures implemented in 2020 (and still in place in 2022) were intended to account for a smaller reduction in the commercial sector at that time. Since those closures will be maintained, "wiping the slate clean" for Chesapeake Bay commercial quotas may not be consistent, as described next.

For the commercial fishery, the PDT included one option where a maximum size limit would be applied to 2022 quotas and 2022 size limits (Option C1), and one option where a maximum size limit would be applied to theoretical FMP standard quotas based on an Amendment 6 starting point, since Amendment 6 was associated with uniform FMP standard minimum size limits of 28" in the Ocean and 18" in the Chesapeake Bay (Option C2). The latter option applies the Addendum IV and VI commercial quota reductions but assumes no CE programs occurred, and thus puts the states on more equal footing (i.e., a consistent minimum size limit) for the application of a commercial maximum size limit. One of the implications of wiping the slate clean of past commercial CE programs is states that took a less than 18% quota reduction in 2020 would now be subject to that full 18% reduction (plus potential additional reduction from any required spawning potential analysis, as discussed above).

If the Board's intent is to proceed one way or the other in adopting past CE programs as part of the new FMP standard (2022 starting point) or not (original FMP standard 'wipe the slate clean'), the Board can eliminate options as such before approving the draft addendum for public comment (i.e., choose one approach and eliminate commercial option set C). For the Chesapeake Bay, since the recreational options do not completely 'wipe the slate clean' to the FMP standard, the commercial FMP standard 'wipe the slate clean' approach may not be consistent. For the ocean, the Board should consider the implications of the FMP standard approach on states that originally took a less than 18% quota reduction for their commercial fisheries in Addendum VI.

Additional Topic: Recreational Mode-split

The PDT discussed the topic of separate recreational measures for for-hire modes vs. private vessel/shore modes. During the May 2023 Board meeting, the Board discussed a potential exemption for for-hire modes from the 2023 emergency action due to the lateness of the rule-change, but that motion failed due to lack of majority. Some Board members also noted they have overarching concerns about even considering separate for-hire measures as part of the striped bass management program. The PDT acknowledges these comments by the Board, but also recognizes that some members of the public expressed support for considering separate for-hire measures during the May 2023 emergency action public hearings. Considering these public comments and the Board's initial discussion, the PDT explored potential recreational options with different size limits or bag limits for private vessel/shore anglers and for-hire modes (options below). The PDT recognizes there are several issues the Board would likely consider, including concerns about equity and enforcement of different regulations, and developed these possible options to not delay the addendum's schedule should it be the Board's desire to consider a recreational mode-split at this time.

For ocean recreational measures, potential options could propose a wider slot limit for the for-hire modes for some of the draft addendum options (see below). Mathematically, wider slot options for the for-hire sector are feasible in the ocean because for-hire removals are a small proportion of total ocean removals (average 6% of ocean recreational harvest and 3% of total ocean recreational removals over the past three years), and therefore do not impact each option's achievement of the reduction. For the ocean recreational mode split options below, allowing the for-hire modes to harvest a wider slot only decreases each option's reduction by 0.1% compared to if the for-hire modes were under the same slot as private vessels/shore anglers. All ocean recreational options include a harvest closure component, and for-hire modes would still be subject to the same harvest closure as private vessel/shore anglers.

For Chesapeake Bay recreational measures, potential options could propose an increased bag limit of 2-fish for for-hire modes across all jurisdictions, instead of 1-fish (see below). In the Chesapeake Bay, for-hire removals are about one-fifth of total Bay removals (average 27% of Bay recreational harvest and 18% of total Bay recreational removals over the past three years). To account for the for-hire 2-fish bag limit, some of these mode split slot options propose a narrower slot limit as compared to the existing options where all modes have a 1-fish bag limit.

For example, to have a 2-fish for-hire bag limit, the slot limit would 20"-24" instead of 20"-26" for the same scenario.

The PDT recognizes the type of mode split options differs between the ocean (wider slots for the for-hire sector) and the Chesapeake Bay (increased bag limit the for sector), but this difference reflects how each fishery operates considering fish availability. In the ocean, the wider slot addresses concerns heard from for-hire operators about the potential for increased discards with narrow slots and the general desire for anglers on for-hire trips to harvest a fish. While in the Chesapeake Bay, the increased bag limit makes up for only accessing smaller fish.

Example Ocean Recreational Options (for Section 3.1.1)

Option B alternative. Private vessel/shore modes would have a size limit of 28" to 31.0" and for-hire modes would have a size limit of 28" to 33.0". All modes subject to the same corresponding seasonal closure. – 16.2%-16.9% reduction depending on closure

Note: For sub-option B5, the for-hire wider slot option would add one day to the harvest closure for each region, increasing from 15 to 16 days.

Option C alternative. Private vessel/shore modes would have a size limit of 28" to 32.0" and for-hire modes would have a size limit of 28" to 34.0". All modes subject to the same corresponding seasonal closure. – 16.9%-17.3% reduction depending on closure

Option D alternative. Private vessel/shore modes would have a size limit of 30" to 33.0" and for-hire modes would have a size limit of 30" to 34.0". All modes subject to the same corresponding seasonal closure. – 16.5%-17.3% reduction depending on closure

Example Chesapeake Bay Recreational Options (for Section 3.1.2)

Option H alternative. All modes would have a size limit of 19" to 23". Private vessel/shore modes would have a 1-fish bag limit, and for-hire modes would have a 2-fish bag limit. All modes subject to the 2022 seasons. – 17.9% reduction

Option I alternative. All modes would have a size limit of 20" to 24". Private vessel/shore modes would have a 1-fish bag limit, and for-hire modes would have a 2-fish bag limit. All modes subject to the 2022 seasons. – 18.1% reduction

Additional Topic: Recreational No-Targeting Seasonal Closures

During the May 2023 Board meeting, the Board specified considering no-harvest seasonal closures, and it was noted that Addendum II was not proposing to address recreational releases. As such, the PDT only included options for no-harvest seasonal closures in the draft addendum. However, the PDT noted that recreational release mortality is still an issue which was also raised by the TC at their [June 5](#) meeting.

To address releases, the Board could consider presenting an option to set any proposed recreational seasonal closures as either no-harvest or no-targeting. Because the TC has not

established a standardized method for estimating the reduction in removals from a no-targeting closure, considering no-targeting closures in this draft addendum would not add any additional reduction from the no-harvest closures. If no-targeting closure reduction methods are standardized in the future, for example reviewing Maryland's no-targeting calculation methodology from Addendum VI, subsequent management documents could consider reductions from no-targeting closures. The PDT also recognizes there are continuing questions and concerns about enforcement of no-targeting closures and changes in angler behavior and effort.

Example Options (additional option set for Sections 3.1.1 and 3.1.2)

Option A. Any recreational seasonal closure implemented through Addendum II would be a no-harvest closure.

Option B. Any recreational seasonal closure implemented through Addendum II would be a no-targeting closure.

Additional Topic: Commercial Mesh Size for Anchored Gill Nets

The PDT discussed concerns about the potential for increased dead discards, particularly for anchored gill nets, if a commercial maximum size limit is implemented. The concern is any intended benefit of releasing larger striped bass caught in anchored gill nets will be offset by the high mortality rate of discarded fish (e.g., 45% discard mortality rate assumed in stock assessment) and the resulting need to continue fishing to meet the quota. To address this concern, the draft addendum could consider provisions specific to anchored gill nets that would implement maximum mesh size requirements instead of maximum fish size limit requirements for that gear.

Changing mesh size will change the selectivity of fish captured in anchored gill nets; larger mesh sizes are intended to capture larger fish. A maximum mesh size requirement (i.e., no mesh larger than x") could be implemented to protect fish above a certain size. A maximum mesh size would not fully guarantee that large fish wouldn't be captured (e.g., a large fish could still be incidentally lip-snagged in smaller mesh), but it would greatly reduce how many large fish are captured by the gear (Hager 2005)¹. If a maximum mesh size were implemented instead of a maximum fish size limit for anchored gill nets, the number of large fish captured would be greatly reduced, and harvesters would be allowed to keep the occasional incidental catch of large fish so as to prevent new dead discards. If a maximum fish size limit were in place, any large fish would have to be discarded with a relatively high mortality rate (Clark and Kahn 2009,

¹ Hager, C. 2005. Mesh-Specific Catch Compositions and Size Distributions Occurring in Virginia's 2005 Winter-Spring Striped Bass Gill Net Fishery. Submitted to Virginia Marine Resources Commission. VIMS Marine Resource Report No. 2005-7, VSG 05-06.

Shepherd 2004)², and additional fish would be captured to meet the quota potentially causing longer soak times and/or placement of more gear.

This type of provision could be added as a specific exemption in the FMP or as a CE provision (example options below). In either case, additional Board review and approval of any maximum mesh size in lieu of a maximum fish size would be required prior to state implementation. It would likely take some time to determine what size mesh would be appropriate; information needs to be compiled, and new data potentially collected, to review information on mesh size selectivity and striped bass. There are some past studies on this topic, but additional information from observer data may be necessary.

Example Options (additional option set for Section 3.2.1, select one sub-option)

Option F1. Anchored gill net fisheries are subject to the same maximum size limits as all other commercial striped bass gears.

Option F2. Anchored Gill Net Exemption

Anchored gill net fisheries are not subject to a maximum size limit, but instead are subject to maximum mesh size requirements. Mesh size requirements will be designed to protect the same size fish as specified in the addendum as other commercial gears. Until such time the appropriate mesh size requirement is determined and reviewed by the TC and Board, anchored gill nets will be subject to the selected maximum fish size limit. Commercial tagging must occur at the point of harvest for states with an exempted fishery, and tags for the exempted anchored gill net fishery must be discernible from other fisheries (e.g., tags are of gear-specific colors or are inscribed with gear-specific size limits).

Option F3. States may submit CE proposals requesting an exemption to maximum fish size limits for anchored gill nets with the addition of maximum mesh size requirements. CE proposals should include sufficient data documenting mesh size selectivity for striped bass, and are subject to review and approval by the TC, PRT, and the Board. Commercial tagging must occur at the point of harvest for states with an exempted fishery, and tags for the exempted anchored gill net fishery must be discernible from other fisheries (e.g., tags are of gear-specific colors or are inscribed with gear-specific size limits).

² Clark, J.H. and D.M. Kahn. 2009. Amount and Disposition of Striped Bass Discarded in Delaware's Spring Striped Bass Gill-Net Fishery during 2002 and 2003: Effects of Regulations and Fishing Strategies. *North American Journal of Fisheries Management*, 29:3, 576-585.

Shepherd, G. 2004. Estimation of Striped Bass Discards in the Multispecies Groundfish Fishery during 2002 Fishing Year (May 2002-April 2003). U.S. Dept. of Commerce, NOAA National Marine Fisheries Service Northeast Fisheries Science Center Reference Document 04-09.

Additional Topic: Commercial Tagging Programs

During commercial option discussions, one PDT member raised concerns about commercial tagging programs that tag striped bass at the point of sale (vs. at the point of harvest). Striped bass commercial tagging programs were first required through Addendum III to Amendment 6 and provide states the option to implement tagging at the point of harvest or point of sale. Currently, three states implement tagging at the point of sale only. One PDT member noted that point-of-sale tagging may not be as effective from an accountability/enforcement perspective, as compared to point-of-harvest tagging, especially if states have overlapping commercial and recreational size limits. There was a difference of opinion among PDT members on this issue. Another PDT member noted that point-of-harvest tagging has the same potential accountability/enforcement issues, and states with point-of-sale tagging have effectively addressed overlapping sector size limits by requiring recreational fin clipping provisions.

If the Board is concerned about enforcement issues or would like to initiate a review of state striped bass commercial tagging programs, the Board could task the Law Enforcement Committee and/or Plan Review Team with conducting such a review. At their annual FMP review meeting in July, the Plan Review Team recommended a holistic review of the commercial tagging program since it has now been 10 years since these programs were implemented coastwide.

If the Board wanted to add an option to the Draft Addendum to require that commercial tagging be at point-of-harvest, the Board should consider a delayed implementation schedule to account for the extensive administrative and regulatory changes required for those states that currently implement point-of-sale tagging.

Additional Topic: At-sea Filleting

During recreational size limit option discussions, one PDT member raised concerns about state allowances for at-sea filleting of recreationally-caught striped bass, especially where racks are not required to be retained for enforcement with size limits or there are not corresponding minimum/maximum fillet lengths. With the expected narrowing of legal-sized fish, incentive to exploit this loophole for keeping non-conforming sized fish is heightened. Enforcement with *maximum* size limits in particular may be more challenging with at-sea filleting allowances (i.e., fillets can be trimmed to correspond to maximum fish size). The PDT compiled relevant state regulations as best as possible in the time available, and found that across the management unit, states vary in whether they allow at-sea (and shore-side) filleting, for which recreational fishing modes, and with what stipulations to aid enforcement, such as racks retained, skin intact, fillet:fish ratio, fillet size limits, receipts required, etc. (see the table below).

Summary Table for Filleting Allowances for Striped Bass; Refer to Regulations for Exact Language and More Detailⁱ

ME	No filleting
NH	Filleting allowed (all modes) with rack retained, skin intact, only 2 fillets per 1 fish
MA	For-hire filleting allowed for customers with skin intact, only 2 fillets per 1 fish
RI	Unspecified, although racks cannot be disposed at sea
CT	Filleting allowed (all modes) with rack retained*
NY	For-hire filleting allowed for customers with rack retained, receipt required
NJ	For-hire filleting allowed with Special Fillet Permit, rack retained, fillet size limits
PA	For-hire filleting with rack retained, receipt required; or if for immediate consumption
DE	No filleting
MD	For-hire filleting allowed with rack retained
PRFC	Regulatory interpretation unclear
DC	No filleting
VA	Filleting allowed if rack retained and skin intact
NC	Filleting allowed if rack retained*

** State interpretation of regulation for enforcement purposes; refer to notes in regulatory language*

If the Board is concerned about enforcement issues or the variation in state regulations, the Board could task the Law Enforcement Committee and/or Plan Review Team with furthering this review for future consideration by the Board. If the Board wanted to add options to Draft Addendum II to address this issue, such options could establish requirements for allowing at-sea/shore-side filleting. The PDT acknowledges there are likely additional considerations for establishing such provisions and how states would implement them, which may require additional time for consideration and development. However, including options in Draft Addendum II would provide public feedback on this topic.

Example Options (new section 3.1.3 under Recreational Fishery Management)

Option A. Status quo. No requirement in the Interstate FMP for Atlantic Striped Bass related to at-sea/shoreside filleting.

Option B. Establish minimum requirements for states that authorize at-sea/shore-side filleting of striped bass, including requirements for: racks to be retained; skin is left intact; and no more than two fillets per legal fish are in possession. States should include language about when and where racks may be disposed of, specific to each mode allowed to fillet at-sea/shore.

ⁱ State regulatory language pertaining to striped bass filleting at sea and/or shore-side

Maine: “It is unlawful to possess striped bass unless the fish are whole with head on, and are between 28 inches and 31 inches, inclusive.”

New Hampshire: “Striped bass shall have head and tail intact while on or leaving the waters or shores of the state except as follows: (1) A person may possess up to 2 striped bass fillets so long as they also possess the fish rack that the fillets came from with the head and tail intact and the rack measures at least 28 inches in total length; (2) Any striped bass fillet shall have the skin still attached for the purpose of identification of the fillet as striped bass.”

Massachusetts: “Recreational fishermen shall not mutilate any striped bass in a manner that prevents the accurate measurement of the fish...Operators and crew onboard for-hire vessels permitted under the authority of 322 CMR 7.10(5): Permit Requirements Applicable to For-hire Vessels may fillet or process legal sized striped bass for their recreational customers at sea provided that: 1. The skin is left on the fillet; and 2. Not more than two fillets taken from legal striped bass are in the possession of each customer of that trip, representing the equivalent of one fish per angler.”

Rhode Island: “There shall be no disposal of fish and fish parts on the bulkhead or in the waters of the State.” “It shall be unlawful for any person to place any pollutant in a location where it is likely to enter the waters or to place or cause to be placed any solid waste materials, junk, or debris of any kind whatsoever, organic or non organic, in any waters.”

Connecticut: “No person shall land or possess on the waters of this state or on any parcel of land, structure, or portion of a roadway abutting tidal waters of this state any striped bass from which the head or tail has been removed or which has otherwise been rendered unidentifiable as a striped bass or unable to be measured.” *Enforced as filleting allowed with rack retained (pers.com. CT DEEP).*

New York: “Except as provided in paragraphs (4) of this subdivision, it is unlawful for any person to possess striped bass from which the head or tail has been removed or that have been otherwise cleaned, cut, filleted or skinned so that the total length or identity cannot be determined; except that it is not unlawful if such fish is being prepared for immediate consumption or storage at a domicile or place of residence. (4) Any person who holds a valid Marine and Coastal District Party and Charter Boat License issued pursuant to Environmental Conservation Law section 13-0336 may fillet striped bass taken on the permitted party or charter vessel identified on his or her license under the following conditions: (i) fish may be filleted for customers only; (ii) only fish which are legally possessed may be filleted; (iii) striped bass may only be filleted prior to customers leaving the vessel or the dock area prior to customers departing the area; (iv) it is unlawful to mutilate any striped bass carcass to the extent that the total length or species of fish cannot be determined; (v) all striped bass carcasses must be retained (unmixed with any other material) in a separate container readily available for inspection until such time as the vessel has docked and all passengers from that trip have left the vessel and the dock area. Any such carcasses are included in the possession limit; (vi) all striped bass carcasses from any previous trip must be disposed of prior to any person beginning to fish on a subsequent trip; and (vii) all Marine and Coastal District Party and Charter Boat License holders must provide each customer who possesses striped bass fillets with a commercially printed, dated original fare receipt, bearing the boat’s name and the owner or operator’s Party and Charter Boat License number. Any customer of a party or charter boat operated by a Marine and Coastal District Party and Charter Boat License holder who is in possession of striped bass fillets must possess an original dated receipt from that party or charter vessel.

New Jersey: “Except as provided in (e)2 and (f) below, a person shall not remove the head, tail or skin, or otherwise mutilate to the extent that its length or species cannot be determined, any species with a

minimum size limit specified at (b) or (c) above or any other species of flatfish, or possess such mutilated fish, except after fishing has ceased and such species have been landed to any ramp, pier, wharf or dock or other shore feature where it may be inspected for compliance with the appropriate size limit.

(f) Special provisions applicable to a Special Fillet Permit are as follows: 1. A party boat owner may apply to the Commissioner for a permit for a specific vessel, known as a Special Fillet Permit to fillet species specified at (c) above at sea; 2. For purposes of this section, party boats are defined as vessels that can accommodate 15 or more passengers as indicated on the Certificate of Inspection issued by the United States Coast Guard for daily hire for the purpose of recreational fishing; 3. The Special Fillet Permit shall be subject to the following conditions: i. Once fishing commences, no parts or carcasses of any species specified in (c) above and no flatfish parts or carcasses shall be discarded overboard; of the species specified at (c) above, only whole live fish may be returned to the water; ii. No carcasses of any flatfish or species listed at (c) above shall be mutilated to the extent that its length or species cannot be determined; iii. All fish carcasses of species specified at (c) above shall be retained until such time as the vessel has docked and been secured at the end of the fishing trip adequate to provide a law enforcement officer access to inspect the vessel and catch; iv. No fillet of any flounder or other flatfish shall be less than eight inches in length during the period of May 1 through October 31 or less than five inches in length during the period of November 1 through April 30; v. No fish of any species less than the minimum size limit specified in (c) above shall be filleted and no fillet of any species listed below shall have the skin removed and no fillet shall be less than the minimum length in inches specified below.

Species	Minimum Fillet or Part Length
Striped bass (24 to less than 28 inches)	11 to 20 inches
(28 to 31 inches)	15 to 22 inches

vi. Spanish mackerel shall be landed with head, tail and fins attached. vii. Fish carcasses from the previous trip shall be disposed of prior to commencing fishing on a subsequent trip; viii. Violation of any of the provisions of the Special Fillet Permit shall subject the captain and permit holder to the penalties established pursuant to N.J.S.A. 23:2B-14 and shall result in a suspension or revocation, applicable to both the vessel and the owner of the Special Fillet Permit according to the following schedule: (1) First offense: 60 days suspension; (2) Second offense: 120 days suspension; and (3) Third offense: Revocation of permit, rendering the vessel and the owner not eligible for permit renewal regardless of vessel ownership.

ix. In calculating the period of suspension or revocation applicable under (f)3viii above, the number of previous suspensions shall be reduced by one for each three-year period in which the permit holder does not commit any other violation subject to this subsection, provided, however, that if more than one suspension is imposed within a three-year period, only one of those suspensions may be forgiven under this subparagraph; therefore, a permit holder who incurs more than one suspension in a three-year period shall not be considered a first offender under this subsection regardless of the length of any subsequent period without violation. The reduction in suspensions provided in this subparagraph applies only to determination of suspension periods; all prior suspensions shall be taken into account in calculating monetary penalties in accordance with N.J.S.A. 23:2B-14. x. Upon receipt of the notice of suspension but prior to the suspension or revocation of the Special Fillet Permit, the permittee has 20 days to request a hearing from the Department. The hearing shall be conducted pursuant to the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq. and 52:14F-1 et seq., and the Uniform Administrative Procedure Rules, N.J.A.C. 1.1. If a request for a hearing is not received by the Department within 20 days of the permittee's receipt of the notice of suspension, the permit suspension or revocation will be effective on the date indicated in such notice.

Pennsylvania: “(a) Except as otherwise provided in this section, it is unlawful to possess a fish in any form or condition other than in the whole or having the entrails removed while on shore, along the waters of this Commonwealth, onboard a boat or on a dock, pier, launch area or a parking lot adjacent thereto. (b) Fish may be processed fully if they are being prepared for immediate consumption. (d) Provided that the requirements of this subsection are met, this section does not apply to fish processed by a permitted charter boat/fishing guide operation. The charter boat operator or fishing guide may fully process the fish at any time provided the charter boat operator or fishing guide retains the carcass until possession of the fish is transferred to the customer on shore. The charter boat operator or fishing guide shall give the customer who receives the processed fish a signed, dated receipt on the form prescribed by the Commission.”

Delaware: “Unless otherwise authorized, it is unlawful to possess any striped bass for which the total length has been altered in any way for the purpose of retaining said striped bass in accordance with §3504.”

Maryland: “Filleting Striped Bass. (1) Except as provided in §C(2) of this regulation, a person may only land striped bass dockside as a whole fish. (2) A licensed charter boat captain or mate may fillet striped bass taken on a vessel displaying a current commercial charter boat decal under the following conditions: (a) A striped bass carcass may not be mutilated to the extent that the total length or species of fish cannot be determined; (b) All striped bass carcasses: (i) Shall be retained, unmixed with any other material, in a separate container readily available for inspection until the vessel has docked and all passengers from that trip have left the vessel and the dock area; and (ii) Are included in the possession limit; and (c) All striped bass carcasses from any previous trip shall be disposed of before any person begins to fish on a subsequent trip.”

PRFC: “Measurement shall be the greatest distance in a straight line from the tip of the snout to the end of the caudal fin or tail in a natural state, excluding the tail filament of a black sea bass. No person shall alter the natural state of any species of fish listed in (a) above such that its length cannot be measured.” *Unclear as to enforcement of filleting at-sea/shore (pers.com. PRFC).*

DC: “It shall be unlawful to... possess aboard any boat, while fishing or while in possession of fishing equipment, any fish for which a size or weight limit is prescribed in § 1504 from which the head or tail has been removed.”

Virginia: “Alteration of finfish to obscure species identification or size prohibited. A. It shall be unlawful for any person to alter any finfish, or to possess altered finfish, aboard any boat or vessel, or on a public fishing pier (except at the fish cleaning station of the pier), such that the species of the fish cannot be determined. B. It shall be unlawful for any person to alter any finfish regulated by a minimum or maximum size limit, or to possess such altered finfish, aboard any boat or vessel, or on a public fishing pier (except at the fish cleaning station of the pier), such that its total length cannot be measured.

Allowances for filleting or cleaning. A. For finfish regulated by a minimum or maximum size limit, filleting at sea will be allowed if the carcass is retained to ensure proper species identification and compliance with size limitations. B. For finfish regulated by a minimum size, cleaning and/or filleting at sea will be allowed if the fillet or cleaned fish exceeds the minimum length for the species and at least one square inch of skin is left intact to assist in identification of the species. C. For finfish not regulated by a size limit, filleting at sea will be allowed if a minimum of one square inch of skin is left on the fillet to assist in identification of the species.”

North Carolina: “It shall be unlawful to possess aboard a vessel or while engaged in fishing any species of finfish that is subject to a size or harvest restriction without having head and tail attached.” *Enforced as filleting allowed with rack retained (pers.com. NC DMF).*

From: [info](#)
To: [Emilie Franke](#)
Subject: FW: [External] Atlantic fisheries, stripped bass
Date: Thursday, May 18, 2023 10:05:31 AM

-----Original Message-----

From: Ed Bailor <bailor@comcast.net>
Sent: Wednesday, May 17, 2023 5:41 PM
To: info <info@asmfc.org>
Subject: [External] Atlantic fisheries, stripped bass

Charter boats catch second most stripped bass after pound netting.

A charter boat goes out 30 times a month, usually having a six pack (6 fishermen) and does it mostly twice a day.

That's $30 \times 6 \times 2 = 360$ fish a month

A recreational guy possibly goes out 2 or three times a month if they are lucky with two guys on board = 12 possible fish Big difference

Simple problem solver

Stop pound netting and limit charter numbers.

Inspector Ed Bailor
USCP retired

From: [Comments](#)
To: [Emilie Franke](#)
Subject: FW: [External] Why don't you just close the whole damn thing down you idiots won't be happy till you do that any way fuck you the mor laws you make the more outlaws you make these decisions are being made because of politics not science there are plenty
Date: Monday, May 22, 2023 9:25:14 AM

[External] Why don't you just close the whole damn thing down you idiots won't be happy till you do that any way fuck you the mor laws you make the more outlaws you make these decisions are being made because of politics not science there are plenty ...

From: bobfestacabinetmaker <bobfestacabinetmaker@gmail.com>
Sent: Saturday, May 20, 2023 7:38 PM
To: Comments <comments@asmfc.org>
Subject: [External] Why don't you just close the whole damn thing down you idiots won't be happy till you do that any way fuck you the mor laws you make the more outlaws you make these decisions are being made because of politics not science there are plenty ...

Sent from my Verizon, Samsung Galaxy smartphone

From: [George Buck](#)
To: [Comments](#)
Subject: [External] New striper regulations
Date: Friday, May 19, 2023 10:33:13 AM

I sent the following note into the Ct. DEEP's Marine Fisheries unit. Your over 90% increase in striped bass mortality due to possession of legal/illegal kept stripers plus mortality of released stripers is bogus or at the very least a poor application of statistical analysis. There has been no observed increase in the striper fishing community nor an increase of any statistical significance in the number of hours of striper fishing from one year over the next in the recent past.

"The new striper regulations are being based off of an analysis that indicated a over 90% increase in the recreational catch of striped bass. That would have to mean an increase in the possession catch and/or an increase in the mortality of released stripers. Statistically, this would also mean either an increase in striper fisher-people and/or in their hours of striper fishing, since the size and possession limits did not change from one year to another in this assessment. A near doubling of the number of people fishing for stripers and the mortality rates for released stripers simply did not happen and therefore, the over 90% increase that was used to now lower the band width for possession to 28" to 31" is a false flag indicator. Fishing Blogs have been discussing this at length and no one believes the over 90% number. For the DEEP's fisheries unit to not challenge the Feds on this issue is to blindly follow the blind. That does not shed light on the issue at all."

George R Buck
203-746-2389

From: [M](#)
To: [info; Emilie Franke](#)
Subject: [External] Fwd: Critical support for Addendum 2
Date: Saturday, May 27, 2023 3:05:02 PM

I wish my concerns to be read by the Commissioner before or during the meeting for May 31. I apologize as I am having technical difficulties with a connection to participate in the online event.

I hope this finds you all well!

Tight lines,

Kindly,
Mr. Caggiano

----- Forwarded message -----
From: M <mcagg1@gmail.com>
Date: Sat, May 27, 2023 at 2:52 PM
Subject: Critical support for Addendum 2
To: <jamie.green@mrc.virginia.gov>

Dear Commissioner Green,

My name is Michael Caggiano and I help bring veterans, young adults to the sport of fishing. This Memorial Day it is even more omni-present to sustain this fishery not just for being good stewards to the species that delivers us enjoyment, but respecting future generations to come. It is my hope that you find the urgency from outspoken conservationists and examine their concerns with due diligence.

My good will and conservatism is reliant on healthy striped bass stocks, and I support the Emergency Action and Addendum 2. Striped bass is indeed “every man's fish” in that you can catch it in bait, lures, and flies, from the surf or a boat and from April to November in Southern New England.

It is critical we get the 2015's out of the slot.

This is especially true given the poor spawns in the Chesapeake the last few years.

I would also point out that the public is overwhelmingly supportive of Addendum 2 and that over 3000 letters were submitted in support.

Again I support this Emergency Action and Addendum 2

And I'd like to thank Mike Armstrong and David Borden for the motion and the second. Peter Jenkins for his advocacy.

I'd ask ASMFC to take more substantive and effective actions in the future earlier so as to avoid Emergency Actions.

I thank you Commissioner for taking the time to read my overwhelming concern.

respectfully,

Mr. Michael R. Caggiano

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Thank you for considering this question.
Date: Tuesday, May 23, 2023 11:02:12 AM

From: Bob Campbell <bobcampbell2010@gmail.com>
Sent: Tuesday, May 23, 2023 9:47 AM
To: G2W2
Subject: [External] Thank you for considering this question.

In a recent email to you as our key decision-makers about the future of striped bass, I wrote that leadership of corporations and government agencies clearly proves, "*Proactive action* on an issue benefits all stakeholders, no matter their divergent interests, far more than reactive remediation."

My specific question to our New Jersey representatives here is this: In the face of data telling us that delay on proactive action means a 14.6% probability of rebuilding to target biomass by 2029, as the Commission must do for protection of these fish and for the greatest overall economic benefit for states' residents, what scientific or economic data causes your reluctance to now do what other states have committed to do?

Again, thank you for your efforts for this Atlantic states treasure,
Robert Campbell
Holmdel, New Jersey

From: [Cantelmo, Craig](#)
To: [Emilie Franke](#)
Subject: [External] Capt. Craig Cantelmo Van Staal Striped Bass Emergency Action
Date: Thursday, June 1, 2023 6:04:43 AM

Emilie,

I was unable to attend the public meetings on the emergency action on striped bass but would like to write in my support of this action.

I support the EA to reduce the slot limit that many people appose and unfortunately I don't think it will do enough to reduce the effort and mortality. The ASMFC has been slow to act since the striped bass was determined to be overfished and has avoided enacting tougher/tighter regulations we find ourselves in a position that will only get tougher as we approach 2029.

As the Sales Manager for Van Staal, a fishing brand that is synonymous with striped bass I've had the opportunity to see how important this species is to the fishing tackle industry and the opportunity for anglers to participate is directly related to the number of fish we have in the water. From 2000-2013 80% of most fishing tackle retailers walls were stocked with lures and gear to catch striped bass but since 2014 that has changed dramatically and that it has dropped to about 50%. Without taking immediate action tackle shops and manufacturers are at risk for more serious action taken as we get closer to 2029. The underestimations on the 2022 harvest was not a surprise to anyone that fishes or is in the fishing tackle industry because of the increase in participation due to COVID 19 and was shocked and disappointed that this wasn't captured through MRIP and the increase in fishing licenses.

If the groups opposing the action to reduce the slot limit 4" to help protect one of few successful year classes, what will they be happy with when we "REALLY" have to start taking action to reduce effort and F to reach the target? We need to start implementing meaningful measures to curb removals.

Thank You,

Capt. Craig Cantelmo

Sent from [Mail](#) for Windows

From: [Emilie Franke](#)
To: [Emilie Franke](#)
Subject: FW: Striped bass
Date: Friday, May 26, 2023 9:30:15 AM

From: mark cartona <cartona21@hotmail.com>
Sent: Friday, May 26, 2023 9:20 AM
To: Emilie Franke <EFranke@asmfc.org>
Subject: [External] Re: Striped bass

Thanks for responding. I appreciate the information and will look more into how they determined 9% I feel they are overestimating the kill rate, by a lot, from recreational fishing. When is your organization going to recognize the real reason striped bass and other fish populations are declining? The over population of seals. With next to no predators to natural control their population, it's just going to get worse. Just on cape cod alone there's a population of 50,000 seals. With an average weight of 500lbs, knowing they eat about 6 percent of their body weight in fish A DAY, that's about 1.5 MILLION pounds of fish A DAY they are consuming. Blaming it on recreational fishing is wrong and will do more harm than anything.

Sent from my Verizon, Samsung Galaxy smartphone
Get [Outlook for Android](#)

From: [Toni Kerns](#)
To: [Emilie Franke](#)
Subject: FW: [External] forwarding request
Date: Tuesday, June 20, 2023 11:02:21 AM

Toni Kerns | Fisheries Policy Director
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22201
Phone: 703.842.0718 | Fax: 703.842.0741
tkerns@asmfc.org | www.asmfc.org

From: Dean Clark <seaflycapecod@gmail.com>
Sent: Monday, June 19, 2023 2:17 PM
To: Toni Kerns <Tkerns@asmfc.org>
Subject: [External] forwarding request

Re: striped bass (rockfish) Time sensitive

Attention: Toni Kerns, Fisheries Policy Director, (tkerns@asmfc.org)

Request: Toni, I hope that you will be able to forward this to all members of the Commission. Thank you. dc

To the members of the ASMFC,

Personal background: I write as an independent angler that has chased, caught and been involved in attempting to conserve wild Atlantic coast striped bass from New England to N. Carolina.... And have been doing so for the past 70 plus years.

Every ASMFC member State and District has agreed to follow and comply with all ASMFC regulatory directives. For many years a few States/Districts have been allowed to flaunt these regulations via the Conservation Equivalency (CE) Clause. ***CEs are an ASMFC sanctioned policy that, in truth, results in over-harvesting***.... like it or not!

Current ASMFC focused efforts have been to prioritize the conservation of large breeder females. Why then allow the harvesting of ANY bass over 31 inches? In Massachusetts the 35-inch ***minimum*** length regulation for commercial harvest (currently approx. 750,000 lbs.) ensures that each one of these large, commercially harvested stripers

are fecund females.... The “would have been” future of the species!

Stripers are running out of time. If they are to recover, the ASMFC must bite the bullet, put aside petty bickering and join together in any and all efforts to protect our breeders and the future of our fishery.

1 of 2

The ASMFC falls under the Department of Commerce and should be prioritizing the economic value of these fish. ***According to NOAA data***, a recreationally caught (kept or not) striper is approximately 100 times more valuable to our economy than the same fish if harvested and sold commercially. Or, to put it another way, ***the greatest economic value to be derived from striped bass is as a game – not commercial – species***.

Suggestions: This should be a no-brainer: 1) eliminate CEs and impose sanctions for not complying; 2) eliminate all commercial harvesting for striped bass (the economic argument is irrefutable and each day becomes less deniable); and 3) shorten the ***maximum*** length for recreational harvesting to 30 inches for everyone.

There are other steps that you could take that could help but first let's stop encouraging the killing off of the female breeders. And, do not continue to allow New Jersey special compensation that would further exacerbate the spiraling downward trend of the welfare of the Atlantic Coast Striped Bass.

Thank you for your attention and hopefully for taking a strong stand in favor of conservation instead of “kicking the can down the road.”

Folks we are running out of road (choices/opportunities).

Dean Clark

Franklin Street

Duxbury, MA 02332

508 769-9765

seaflycapecod@gmail.com

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Comment: Striped Bass Emergency Action Public Hearings
Date: Wednesday, May 24, 2023 10:04:37 AM

From: Mike DeAnzeris, III <miked@embraceherace.com>
Sent: Tuesday, May 23, 2023 8:52 PM
To: G2W2
Subject: [External] Comment: Striped Bass Emergency Action Public Hearings

Hi

Thank you for the call yesterday.

I'd like to see a survey of:

who supports
Who is against

Categorized by type / technique of fisherman

- Recreational
- Commercial
- Charter Boat Captain/Crew
- Head Boat Captain / Crew

Technique

- Light tackle/ Fly
- Standard tackle

On water or off

- Shore
- Boat
- Kayak

If on water

- Private
- Charter Boat

- Head boat

Where do you fish

- SE Mass
- Cape south - buzzards bay and vineyard sound
- Nantucket
- Outer Cape backside and Monomoy
- Cape Cod Canal
- Cape Cod Bay
- south shore
- Boston
- North shore

Then also cross reference that data with amount of fish caught aka population success in each of those areas absorb

I also believe there is a massive needs/ and an opportunity exists to serve that need - on proper techniques for fishing- aka light tackle and fly can over tax fish, standard but harsh release tactics can as well,

And make more readily available tagging programs. In all tackle shops - distribute with your mass fishing regulations -

Thank you.

Best,

Mike DeAnzeris

From: [T. DEVINE](#)
To: [Emilie Franke](#)
Subject: [External] Re: recreational data for striped bass
Date: Wednesday, May 24, 2023 9:40:41 PM

Dear Emilie,

Thank you very much for the follow-up on my question of where to find the data. Looking at all the data that is compiled, I can understand the enormity of your and your co-workers' job, and I thank you for your work.

I have some observations and comments below. I do not need direct answers to them. I would hope that you will consider them in future analysis. (I may ask them in future webinars!)

I freely admit that I am disappointed in the further restrictions on striped bass for recreational anglers. I understand the reasoning behind it, but I wonder if the model used to estimate the data has some weak assumptions.

I saw some "oddities" when I compared the data for 2021 and 2022 overall and by state. Here are some of what I would take as "red flags" indicating suspect changes

1. New York Private/Rental Boat (2021 - 2022) 0.9 kklbs - 9.1 kklbs How could there be a 10 fold increase? The data collection and modelling must have some issue. I just cannot believe a 10 fold increase. Something is very wrong here.
2. In 2021 of the coast wide private/rental harvest of 11.3 kklbs, New Jersey (my state) had 7.0 kklbs or 62% of the total harvest. Do we have 62% of all the boats? Are we just better fishermen? Are anglers just not catching stripers in the Chesapeake anymore? Are the Hudson, Raritan, Passaic and other rivers, Long island Sound, Raritan Bay, and Barnegat Bay much more important breeding grounds than anyone has considered? Do you understand why NJ has such a big harvest?
3. The Private/Rental increase in harvest was 160% in 2022 over 2021. This was the largest % increase of the Shore, Charter, Party and Private categories. Why?
4. Although NJ "only" increased its private harvest by 75%, when you begin with 7 kklbs the 2022 take is 12.4 kklbs. Can this large a share be explained?

Sometimes it is useful to identify data that "sticks out" and ask "why". That is what I have tried to do above.

I have three other comments below. They are opinions not backed up by data. However, I think they are logical questions/theories.

1. Release mortality. The hook mortality basis is primarily the study done in a large salt water pond in MA, was it 1996? Although NOAA references other studies, the MA study estimated 9% and that is still the estimate. If that estimate is too high, we really harvest fewer stripers and have a larger biomass.

The salt water pond averaged 3 m deep with a max depth of 5 m. I struggle to

remember the temperature but I think it said the temperature was always or almost always below 25C (75F)

I think translating data from a salt pond to ocean and deep bay (raritan and new york lower harbor) is a source of error. Ocean depths are much greater and temperatures are much lower in the Spring and Fall when most stripers are caught in New Jersey. Lower temperatures usually mean higher oxygen. I expect that survivability would be higher.

If NJ catches so many fish and the large majority are caught before mid-June and after October 1, the release mortality should be lower than a saltwater pond. (I do not remember what months the study was conducted.)

I am glad MA is conducting another study. Hopefully it will quantify the credit for circle hooks. We really need an open ocean study where fish are caught and kept in a very large holding tank with circulating ocean water to see if they live for 2, 4, 8 hours.

2. NOAA currently only does trolls near/in the Delaware River/Bay. The Hudson River and Raritan Bay and adjoining rivers are alive with stripers. If new Jersey catches so many fish, is it because we are a fertile breeding area? Fishermen catch egg laden stripers each spring in the Raritan Bay, so they must be laying eggs. So they are not all laying their eggs in the Chesapeake Bay. We need surveys in the area where so many fish are estimated to be caught.

3. As I stated in the webinar, all commercial menhaden catch for reduction is banned in NJ waters. Commercial catch for bait sales must be 0.6 mi from shore. Lots of bunker and stripers with eggs in Raritan Bay and the Hudson, equals a vibrant striper population regardless of the young of the year in Chesapeake Bay.. (PS - That is why anglers shake their heads and NOAA's decision to increase bunker harvest by 20%. Bait = Fish = Baby Fish

On Tuesday, May 23, 2023 at 02:26:55 PM EDT, Emilie Franke <efranke@asmfc.org> wrote:

Hello Mr. Devine,

I'm following up on your question during last week's striped bass hearing about available recreational data. The source of recreational data for striped bass and most other recreational species is the NOAA Marine Recreational Information Program (MRIP). The MRIP website has a query tool where you can look up recreational catch, including separated by harvest and live releases, by species and state.

You can access the query tool here: <https://www.fisheries.noaa.gov/data-tools/recreational-fisheries-statistics-queries>

Under the first box "Catch Data", click on the GoTo Query button and you can select your search parameters.

From: [Savannah Doss](#)
To: [Comments](#)
Subject: [External] Raritan Bay
Date: Friday, May 5, 2023 7:35:54 PM

Hello. I'm reaching out as a fisher woman who fishes in the Raritan Bay, New Jersey. I disagree with the decision to change the slot from 28-38 to 28-31. The bay is more than plentiful and there is no reason for this drastic change. This will make it so that the small guys get screwed over and the commercial guys make out better. There are a lot of disgruntled people in this area over this decision. It's going to deter people from coming to this area and will affect small businesses in a major way. Please reconsider this decision. Thank you.

Savannah Doss
570-616-2102

Sent from my iPhone

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Emergency Striper Regulations
Date: Monday, May 22, 2023 7:42:49 PM

From: RomanAround5246 <romanaround5246@gmail.com>
Sent: Monday, May 22, 2023 7:41 PM
To: G2W2
Subject: [External] Emergency Striper Regulations

Hi,

I have a few questions and comments from the webinar presentation.

The first is how many more striped bass will be killed by anglers trying to get a fish between 28 inches to 31 inches? The numbers given to us from 2022 was with 28 inches to 35 inches gave us a huge overage that took us from 97 % from the 2021 year to 15 % probability in 2022.

During the meeting, it was mentioned that the breeding size is around 31 inches and 8 years old. Why is the commercial fishery given the opportunity to take those important breeding fish? According to some of the organizations, when the commercial fishery doesn't catch it's quota, you taken more steps for them to try and deplete the stocks. Just like the ridiculous quota sharing, you are just trying to eliminate this stock. That is going against everything that we are trying to accomplish. Your telling us that the stock is going in the wrong direction and then you go allow quota sharing. That makes no sense whatsoever!

I also heard alot about proper release techniques being taught to all anglers. You can teach people all that you want but how does that work on a boat with high sides? How do you properly release a fish from a jetty? There are some situations that you can't safely release a fish no matter how much you want to.

I am happy that the board is taking proactive steps to preserve this fishery. But I think that focusing on a slot limit of 28 inches to 31 inches, that is the next spawning group and we are heading for the same problem in the near future.

We need a better way to account for the fish being caught. I am a Volunteer Angler for the state of Connecticut and I am honored to be doing it. Somehow, we need to get the Marinas involved by handing out survey books and make people aware of the digital units available online.

Thank you for giving us the opportunity to voice our opinions and concerns. I am glad to see steps are being taken to preserve this fishery. I have been to some of the hearings on lobsters and Cod. No one wanted to do anything for these species except push the can down the street and now look at them? Lobsters are scarce in Long Island Sound and Cod has a slot limit below Cape Cod and has limited fishing north of Cape Cod. Do we want to make the Striped Bass disappear? I hope not. I would like to see Striped Bass with a closed season from January 1st until April 30th to protect the spawning stock everywhere. Thank You.

Sincerely,

Roman Dudus

Sent via the Samsung Galaxy Z Flip3 5G, an AT&T 5G smartphone

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Emergency Striped Bass Regulations
Date: Monday, June 5, 2023 8:32:18 AM

From: RomanAround5246 <romanaround5246@gmail.com>
Sent: Friday, June 2, 2023 11:03 AM
To: G2W2
Subject: [External] Emergency Striped Bass Regulations

Hi,

My name is Roman Dudus and I attended the meeting concerning the Striped Bass Regulations. I was listening to people say that it is a good thing and people are all for helping the stock get better.

I was doing some number crunching and I was on a cellphone and unable to speak. Here is my concern, the regular mortality rate is 9%(no it's or buts about it). People are still going to be catch and releasing those fish. And of course, anglers are going to still try for the big ones, use light gear because it's sporting and fish are still going to be snag hooked in the winter (Housatonic River). There is a video of someone snagging a fish so it could be tagged. Unfortunately, if we want to see the numbers come back, not only do we need a closure but to stop fishing for them all together for a year or two. We are still going to fish for them and how many more will die with this small slot limit? Nothing that has been suggested by the board has worked so far? No one believes or trusts the board for that reason. Has anyone come up with a figure as to how many more fish will die from this new Emergency Action?

Even when we had a slot limit, people were still fishing for the big spawners. Just because they were only taking them out of the water for a picture, 9% of them still died. Catching those spawners before they have a chances to free their eggs still takes those numbers out of the population. There at least needs to be a closure from January 1st thru May 1st for the spawners to be able to do their job stress free. Anyone who is telling you that they are properly releasing fish in the winter time is lying. No one is sticking their hands in the freezing water to properly aerate a fish. Most of those fish are being snag hooked.

Thank you for giving me the opportunity to voice my opinion.

Sincerely,

Roman Dudus

Sent via the Samsung Galaxy Z Flip3 5G, an AT&T 5G smartphone

From: [info](#)
To: [Emilie Franke](#)
Subject: FW: [External] The new striped bass emergency regulations
Date: Friday, May 26, 2023 8:46:45 AM

-----Original Message-----

From: dan feeney <wapitiwop@gmail.com>
Sent: Thursday, May 25, 2023 7:53 PM
To: info <info@asmfc.org>
Subject: [External] The new striped bass emergency regulations

I do not believe you folks anymore. You mention that bass can reproduce for up to twenty years and that larger bass can produce more eggs. I agree

But then you cut the limits for recreational fishermen in half then in half again.

All the while you let the commercial fishermen catch all the large breeders, fail to make them use circle hooks, and extend their seasons to allow for "Filling the quota"

I took wildlife biology in college and i am sure you are a corrupt Bunch of liars.

I surely hope we can get the word out and have you all fired Marine fisheries has a great track record of destroying the cod, scup, bass, fluke, tuna, mako shark, and other fisheries In favor of Commercial interests.

I surely will do what i can to get the word out to those of us who truly care about sustainability.

Sent from my iPhone

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Comments from NH
Date: Tuesday, May 23, 2023 11:01:54 AM

From: Richard Fleming <rfleming4@gmail.com>
Sent: Monday, May 22, 2023 9:01 PM
To: G2W2
Subject: [External] Comments from NH

Our states share in the enjoyment of striped bass fishing, and our economies benefit from this resource. Collectively we need to do everything we can to rebuild the population. We are all responsible. I am strongly in favor of Addendum II. It's a very reasonable set of steps, and the time to act is now.

Rick Fleming

Richard K. Fleming, PhD
Freedom, NH

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Striped Bass fishing
Date: Wednesday, May 31, 2023 7:20:30 PM

From: Darryl <darrylforrester@gmail.com>
Sent: Wednesday, May 31, 2023 6:00 PM
To: G2W2
Subject: [External] Striped Bass fishing

My name is Darryl Forrester, and I live in RI. I do not have any financial ties with fishing for striped bass, but I do think that I represent a huge segment of our local and regional population who are for the most part unheard, but are out for recreational fishing every possible chance that they get.

As you know, there are enormous financial considerations for the bait and tackle shops, lodging, restaurants, etc. , but underlying that are the mainstays- the men and women out there in good, bad, or ugly weather, doing what they love, and supporting many other tangential families and businesses. It is critical that we get the 2015 class out of the slot. I supported Addendum 2, and I hope that we get this right so that we can avoid emergency action in the future.

Thank you.

Sent from my iPhone

From: [Jules](#)
To: [Emilie Franke](#)
Cc: [Comments](#)
Subject: [External] Public Hearing: Striped Bass Emergency Action
Date: Wednesday, May 31, 2023 6:01:56 PM

Hello Emile and/or administrators,

My name is Julien Frank and I'm a avid recreational fisherman and member of the Hill Hill Striper Club

I writing today to express my support for the emergency action and the initiation of Addendum II.

Stripers are our flagship species - anglers travel from near and far and spend countless amounts of money chasing these fish, but their value goes way beyond economics. For generations families and friends have forged lifelong bonds around these fish. In addition I've met veterans and other people who have suffered trauma find healing; and I've seen addicts recover from their afflictions through Striper fishing - these fish have an incalculable value to the community and this emergency action is the first step on the road to recovering this iconic species.

Thank you.

From: [upfrontbaitandtackle](#)
To: [Comments](#)
Subject: [External] Fluke and striper
Date: Monday, June 5, 2023 1:27:31 PM

Why are ny water fluke regulations different from nj regulations when we share the same water in raritan bay and sandy hook. If nj is conserving with 2 fish 17 to under 18in and 1 fish above and ny is 4 at 18.5in how is that conserving anything.

The striper regulations make no sense 1 fish at 28 to 31in when the population of fish has grown in the last 5 years.i haven't seen this many striper around in over 40years the population of them have been since in was 2 at 28 and above.now the fish are eating all of our other game fish from.winter flounder ,fluke,schoolie blues,weakfish and more I think you need to rethink this

Sent via the Samsung Galaxy S10e, an AT&T 5G Evolution capable smartphone

From: [Hunter Hamilton](#)
To: [Comments](#)
Subject: [External] Striped Bass
Date: Thursday, May 18, 2023 7:59:02 PM

I welcome the new striped bass regulations. I do however believe that commercial regulation also need to be updated accordingly.

Hunter Hamilton

From: [Wallie Hammer](#)
To: [Comments](#)
Subject: [External] 28-31
Date: Friday, May 19, 2023 8:04:02 AM

It's a good idea
Wallie

From: [Costas Karam](#)
To: [Comments](#)
Subject: [External] Striped bass
Date: Saturday, May 20, 2023 4:56:06 PM

Hi that law is bullshit law because the season is already opened and to do it 28-31 is unfair Either close for the year and that would mean for everyone even for commercial if there is a shortage but I really don't think there's a shortage everyone should obey the same law throughout the state that fish the stripe bass ... For me I would close the stripe bass at August 1 2023 for everyone !! That would make more sense then to shorten the size limit that fast there is so many bass out there ..

Sent from my iPhone

From: [Capt. TJ Karbowski](#)
To: [Comments; Justin Davis](#)
Subject: [External] Striped Bass
Date: Thursday, May 11, 2023 12:07:24 PM

I don't even know where to begin but this entire process was done in the dark. Last minute mrip data. More fish out there than we've had in 10 years. 1 fish bag and the current slot were working just fine. No public hearings, no warnings, no options to the slot. Mrip data no longer accessible from their website. A bogus emergency. A spring meeting in which only select people were allowed to comment and only able to speak for 60 seconds. Your own website currently states that with the 2022 stock assessment that there is a 78.6% chance of rebuilding the stock by 2029. Then you go ahead and RAISE the menhaden quota 20% , the majority of which is going to come out of the Chesapeake, the very epicenter of striped bass reproduction. Then to top it off you are doing ZOOM meetings! Those meetings are a joke! Have public meetings at 7:00 at night IN PERSON, IN EACH STATE like you used to. Covid is over. You are severely screwing with people's livelihoods. ESPECIALLY MINE. THE WAY THIS ENTIRE PROCESS HAS BEEN HANDLED HAS BEEN NOTHING SHORT OF DISGUSTING.

Thank you,
Capt. TJ Karbowski
Rock & Roll Charters
Clinton, CT
203.314.3765
<https://rockandrollcharters.com/>

From: [Capt. TJ Karbowski](#)
To: [Emilie Franke](#)
Subject: [External] Striped Bass meetings
Date: Monday, June 26, 2023 4:26:39 AM

Good morning. I heard there are more some striped bass meetings coming up. As a for-hire operator this is just not fair. This is our busiest time of year. WE NEED SEPERATE FOR-HIRE REGS. There is NO SHORTAGE OF STRIPERS. The 28 -35 slot was working just fine. It left every year class from 35" all the way to 50 + inches free to live and spawn. I have never thrown so many stripers back in my life. 28 - 31 is totally ridiculous. Instead of catching 4 -6 for the table to satisfy the customers and then moving on to bottom fish, now we are spending hours driving around from spot to spot to find fish small enough to keep. These light tackle clowns or "guides" pushing for this slot DO NOT DO THIS FOR A LIVING. It's their hobby and literally play catch and release with the fish like playing fetch with a dog. THIS IS NOT HOW TRUE 6-PACK FULL TIME CHARTER BOATS OPERATE. As I'm typing this at 4:15am before heading to the boat, I guarantee you these "guides" are fast asleep with their alarm set to make it to the office for 9am. You are invited to ride along on a trip with me any day and see how a charter boat really works and you'll realize how asinine this 28 -31 slot is. You would realize why the ASMFC has lost it's credibility and you would likely be embarrassed. - TJ

Thank you,
Capt. TJ Karbowski
Rock & Roll Charters
Clinton, CT
203.314.3765
<https://rockandrollcharters.com/>

From: [Bill LeConey](#)
To: [Emilie Franke](#); [info](#)
Subject: [External] NJ striped bass concerns
Date: Wednesday, May 31, 2023 4:47:04 PM

Good afternoon, I will not be able to attend the webinar tonight, however I wanted to at least reach out and express my views about the recent changes to the striped bass slot limit. I am a recreational angler, born and raised in NJ, own my own boat and primarily target striped bass in shallow water. My son is 6. He is quickly becoming enamored with them, and I am teaching him as much as he can tolerate. That being said, I want the striped bass to be around so he can enjoy them in 10/20/30 years.

The fishing has been excellent the past few years, I won't pretend it hasn't. Every year, I fish up and down the coast of NJ from Cape May, to Point Pleasant, to the Raritan Bay. The sheer number of 35" + fish I've seen caught the last few years is amazing. From the sod banks to the inlets... it's been consistent. Once considered back bay monsters are becoming normal. The slot limits have worked to this point. But I also know conservation is fluid. Weather patterns, availability of food, temperatures, and pressure all change from year to year. We need to be able to adapt and make changes when necessary and protect the stock we have.

Thanks for your time

Bill LeConey

Sent from my iPhone

From: [David Licks](#)
To: [Comments](#)
Subject: [External] Striper Regulation Changes
Date: Thursday, May 18, 2023 7:54:39 PM

I support the updates to the striper regulations. I believe that we should be proactive in preserving the striped bass fishery and this is a good step in that direction.

David Licks

From: [Comments](#)
To: [Emilie Franke](#)
Subject: FW: [External] Striper Regulations
Date: Friday, May 26, 2023 8:44:52 AM

-----Original Message-----

From: David Licks <davidlicks@gmail.com>
Sent: Thursday, May 25, 2023 1:30 PM
To: Comments <comments@asmfc.org>
Subject: [External] Striper Regulations

I support the new registration changes to help protect our Striper population in the northeast. I also believe commercial striper fishing should be ended.

Thank you for your consideration.

David Licks

Sent from my iPhone

From: [M.T](#)
To: [Emilie Franke](#)
Subject: [External] Emergency Action
Date: Wednesday, May 3, 2023 1:30:49 PM

If this is such an Emergency why don't you shut down commercial fishing of the Atlantic Striped Bass? I watched over the years the commercial fisherman rape the waters of Cape Cod!

Sent from my iPhone

From: [Parker Mauck](#)
To: [Comments](#)
Subject: [External] Emergency Action and Amendment 2
Date: Thursday, June 1, 2023 7:22:54 AM

To the ASMFC and Striped Bass Advisory Board,

My name is Parker Mauck. I am co-owner of Westport Fly a saltwater fly-fishing and light tackle charter/guide service based in Westport, Massachusetts. I am also a member of the American Saltwater Guides Association. Our business relies on catching, not keeping, fish. We operate catch and release vessels for Striped Bass anglers who understand and support the need to protect the species. There are *hundreds* of guides with *thousands* of angler clients along the Atlantic seaboard, and these guiding/charter businesses will thrive if we have abundant Striped Bass and Bluefish populations.

I recently participated in the May 31, 2023 webinar to listen, learn, and comment on the recent Emergency Action to modify the Striped Bass slot sizes. Thank you for providing this opportunity to comment. I would also like to compliment the moderators who did a good job trying to manage the questions and comments. Not everyone followed the clear direction given by the moderators and it was frustrating how many people chose to force their opinions into the question segment of the program.

Emergency Action to change the slot to 28'-31"

I fully support this action. The spawning successes in the years before and after 2015 have been frighteningly poor. The 2015 year class emerged as very strong and I applaud your action to do what you can to protect this group of fish. If we do not try to help some of them survive I believe we will be facing a future of very poor fishing – *for all sectors*.

Amendment II

I support the ASMFC's commitment to science based conservation measures as proposed in Amendment II.

Fisheries Sector Impacts

There were lots of comments that party boat, for-hire, businesses should have different regulations from the recreational sector. The regulations for the recreational, for-hire, and commercial sectors should be based on impacts. It is probably a good idea to do a comprehensive study to quantify the mortality impacts from each sector in order to create fair and equitable regulations...*that ensure abundance*. If the ASMFC needs better data sources, please state what you need and ask the individual states to provide the data you need.

Striped Bass Conservation

I fully recognize the challenges facing the ASMFC as you work to fulfill your obligation to manage Striped Bass. There are many different viewpoints that are being voiced by very

passionate, if not desperate people.

If we are going to successfully manage fish populations along our coast we need to change our thought process. We cannot manage populations based on what we WANT or what helps our businesses this year. We need to manage based on what is needed to improve or maintain the species populations – period. It will not be easy, in fact it may be painful at times, but ABUNDANCE must be the overriding driver for all decisions, not who will like the management actions.

Thank you for providing an opportunity to comment.

Respectfully,
Parker Mauck

Capt. Parker G. Mauck
pgmauck@gmail.com
(508) 496-8682
www.westportfly.com



From: captmcbride@optimum.net
To: [Emilie Franke](#)
Subject: [External] Montauk Boatmen and Captains Association re: For Hire Industry
Date: Friday, June 30, 2023 3:37:51 PM

Dear Ms Franke,

Please be advised that the for hire industry is the medium that services all the recreational fishermen who are not affluent enough to own a boat.

The annual activities of the ASMFC, unfortunately, appear to be an attempt to remove the for hire industry from servicing the public.

You appear, to us, to gradually reduce the bag limits and increase the size limits on an annual basis. These regulations will cause the fishing public to become concerned that their ability to take home some fish to eat will be curtailed. These regulations are based on poor science and are indefensible. You are destroying a respected industry along the coast of the Eastern United States.

Respectfully,

Capt. Rick Etzel, MBCA President

Capt. Joe McBride, MBCA Legislative Representative

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Comments for webinar 5/31/23
Date: Wednesday, May 31, 2023 11:19:57 AM

From: Charles Mello <cwmello165@gmail.com>
Sent: Wednesday, May 31, 2023 9:33 AM
To: G2W2
Subject: [External] Comments for webinar 5/31/23

Dear ASMFC,

I apologize that I can't make the webinar. I will be fishing for striped bass with my father. I really appreciate the measures taken to help conserve this hyper important species. My biggest concerns remain release mortality, and the commercial license.

1. The Canadians are doing it right with single barbless hooks. Multiple hooks, especially multiple trebles really mess the fish up. Unhooking and release is way cleaner with single barbless.
2. Live bait / chunking for striped bass should be for commercial guys only. Everyone knows that if you want to catch bass, throwing live eels and bunker is the way. Make us recreational guys get creative for a few years, or encourage the states to create Sport/ hardware only licenses for the same price. Measure and analyze the number who opt in. I bet the people who are catching fish to save money at the grocery store are largely throwing scup and eels in the cooler.
3. Lottery for commercial striped bass license. Several people in my circle are just buying commercial licenses in mass so they can keep more striped bass. Excercise the MA commercial control date.

Thank you for all you have done for this important species. I'd really like my kids to catch them with my father too.

V/r,

Charles Mello
South Coast MA

From: [dennis mitchell](#)
To: [Comments](#)
Subject: [External] Emergency Striped Bass regulation
Date: Monday, May 22, 2023 1:17:44 PM

Hi,

I'm writing in support of the recently enacted emergency striped bass regulations providing for a 28-31" slot. I only pray it isn't too little, too late. Thank you.

Dennis Mitchell

From: [Mark Molinsky](#)
To: [Comments](#)
Subject: [External] Proposed NJ Striper Regulations
Date: Monday, May 8, 2023 7:31:28 PM

Dear Commissioner, I as a recreational angler fishing out of Keyport NJ am opposed to the new proposal - This will hurt the small time angler like myself and many others Do Not Change The Current Regulations - Mark Molinsky - 54 Bickel Road , Washington ,NJ 07882

Sent from my iPhone

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Emergency Action
Date: Wednesday, May 24, 2023 10:04:27 AM

From: Teddy Nesius <nesius40@gmail.com>
Sent: Tuesday, May 23, 2023 8:35 PM
To: G2W2
Subject: [External] Emergency Action

My name is Ted Nesius, I live and work in Boston. I'm a recreational catch and release fisherman. I believe in the science and support the emergency action taken. I'm happy to see conservation action being taken now to prevent more drastic measures having to be implemented later. I have noticed more podcasts, blogs, newsletters, social media posts and from meeting other angler's on various beaches an increase in catch and release education. Some of the steps I have personally taken are, I don't measure or weigh any of the fish I catch. I am either in waders or a wetsuit so I rarely need to remove fish from the water. The most recent improvement I've made is for the entire 2022 and so far the 2023 season I have removed the rear hooks from all of my lures. This actually minimizes unnecessary damage to the fish and increases my probability of catching and landing the fish. I also wanted to say thank you for having options at different times for the webinar, that was really helpful. Thanks for taking the time to send emails, hold webinars, and explaining what the emergency action is and why it was taken. You always speak very clear and keep the same tone no matter how rude some people can be. I understand it's a difficult task to manage an east coast fishery and not everyone will support the same ideas. I just hope that everyone can eventually except making sacrifices now for a better future. Thank you, Ted Nesius

From: bluedragonnick@aol.com
To: [Comments](#)
Subject: [External] 2023 Atlantic Striped Bass Emergency Action
Date: Thursday, May 11, 2023 9:03:20 PM

You do what you need to do to preserve the Stripped bass population. I love fishing for these fish and I am willing to catch fewer or none as long as it makes fishing for them in the future possible.

Cheers
Nick

From: [Amy Padro](#)
To: [Comments](#)
Subject: [External] Bass limit
Date: Saturday, May 20, 2023 12:17:42 PM

There needs to be monitoring along the housatonic River. Many fish the banks and are not adhering the size limits.
(shelton side / Milford industrial side.

Cheers.

Sent from my iPhone

From: [Craig Poosikian](#)
To: [Emilie Franke](#)
Subject: [External] Webinars
Date: Wednesday, May 24, 2023 8:16:57 AM

Hi Emilie,

I just wanted to reach out to you to say thanks for hosting the SB webinars. You are a very good diplomat, maybe you should consider running for political office someday, haha! I missed the first one but Ray implored me to tune in to the remaking events. It was totally worth it. I had to tune out early last night to make a board meeting and can't tune in tonight because of another board meeting (where we will be talking about the new regs) even though I would rather be tuned into the webinars. I didn't comment because I get a bit passionate sometimes which can be misconstrued as anger or frustration. I do have one comment though which I will share with you in hopes that you pass it along to the policy makers: Establishing a maximum size limit for commercial harvest is a HUGE mistake!!! Just like when the daily limit in Massachusetts went from 30 to 15 fish it will turn honest fishermen into law breakers when some of them decide to top grade their catch. 15 thirty pounders are worth way more money than 15 twenty pounders. If a maximum size is put in place some people will most definitely keep fishing past their daily limit to try and catch larger fish at which point they will dump the smaller ones or even hand them off to other fishermen. Both practices are unethical and probably illegal. I realize there is a push for this, I really hope it doesn't happen. That's all I have for now except to say thank you all at the ASMFC for trying your best to enact quality fisheries regulations for today and tomorrow.

Sincerely,

Craig Poosikian

Chief Cook and Bottle Washer at
Utility Oyster Research Kitchen

Sent from my iPhone

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] Further Comment
Date: Thursday, May 25, 2023 11:14:37 AM

From: Dave Prockop <dprockop@groton.org>
Sent: Thursday, May 25, 2023 8:46 AM
To: G2W2
Subject: [External] Further Comment

Thanks very much for soliciting further comments by email. I was able to listen to the hearing on May 23 but for some reason I was not able to get my computer settings right to speak.

I urge you to continue to make decisions based on the best information available and with the long term in mind. At this point, that approach clearly means holding onto the tighter slot limits in order to leverage one good recruitment year to rebuild the striper population as quickly and completely as possible. Please do not be swayed by anecdotes of good fishing in one year when we all know that the striper population as a whole is still far from fully rebuilt.

Many thanks for the thoughtful work you are doing on behalf of so many of us whose lives are greatly enhanced by a robust striper population on the east coast.

Sincerely,

Dave Prockop
Providence, RI

From: [G2W2](#)
To: [Emilie Franke](#)
Subject: Fw: [External] New Striped Bass Regulations
Date: Thursday, May 25, 2023 6:33:57 PM

From: Salty Fly <saltyflycapecod@comcast.net>
Sent: Thursday, May 25, 2023 2:49 PM
To: G2W2
Subject: [External] New Striped Bass Regulations

I wholly support the new slot limit. Preserving the larger breeding fish is so important to keeping the fishery strong.

Also, may I suggest a move to measuring fish in centimeters, perhaps as an awareness campaign for the new slot. Two reasons, it's kind of fun to say I caught a 71.3 cm fish and secondly, we can be more accurate in our fish sizes when bragging about our fish.

Just a thought!

avery

Capt. Avery Revere
www.saltyflycapecod.com

508-362-5482



From: [Patrick @ Old Maine Outfitters](mailto:Patrick@OldMaineOutfitters)
To: [Patrick Keliher](#); [Stephen Train](#); [ALLISON HEPLER](#); Cameron.reny@maine.legislature.gov; [Megan Ware](#); [Cheri Patterson](#); [Renee Zobel](#); [DOUG GROUT](#); [RITCHIE WHITE](#); dhw@cisunix.unh.edu; [Dennis Abbott](#); [Dan Mckiernan](#); [Raymond Kane](#); Sarah.Peake@mahouse.gov; [Sarah Ferrara](#); [Jason E. Mcnamee](#); [DAVID BORDEN](#); [Susan Sosnowski](#); [Eric Reid](#); [Justin Davis](#); [Matthew Gates](#); [WILLIAM HYATT](#); [ROBERT LAFRANCE](#); [BASIL SEGGOS](#); [Emerson Hasbrouck](#); [Joe Cimino](#); [HEATHER CORBETT](#); [TOM FOTE](#); [Peter J. Clarke](#); [VIN GOPAL](#); [Adam S. Nowalsky](#); [TIM SCHAEFFER](#); [LOREN W.LUSTIG](#); john.clark@state.de.us; [Roy Miller](#); william.carson@state.de.us; [LYNN FEGLEY](#); [Russell Dize](#); [Dana Stein](#); davidsikorski@ccamd.org; robert.t.brown@shopcove.net; [MICHAEL LUISTI](#); jamie.green@mrc.virginia.gov; [Bryan Plumlee](#); [Monty Mason](#); [Patrick Geer](#); [KATHY RAWLS](#); [Jerry Mannen Jr.](#); [Mel Bell](#); [CHAD THOMAS](#); [Chris Batsavage](#); [MALCOLM RHODES](#); [Ronnie Cromer](#); [Doug Haymans](#); [TREY RHODES](#); [JESSICA MCCAULEY](#); [GARY JENNINGS](#); [Thad Altman](#); [info](#); [Emilie Franke](#)
Subject: [External] Striped Bass Emergency Action Comments
Date: Wednesday, May 31, 2023 1:58:50 PM

Hi,

I am unable to attend today's meeting so I just wanted to say how much I support this action. Thank you very much for understanding the situation striped bass are in and putting measures in place to help give them a fighting chance. Everyone at the ASMFC should be proud they were able to work quickly and make a decision that supports striped bass. Striped bass are our only real saltwater fishery in Maine and losing them would be a real hit to our economy and countless guides, tackle shops, and businesses that need them around in abundance.

Please do not let states like New Jersey undermine, and flat-out insult the ASMFC by ignoring this action. If so, they should be dealt with with harsh penalties as it completely undermines the goal and effects states that actually have striped bass best interest in mind.

Thank you again! I fully support this.

--

Patrick Rudman
26 Bellevue Ave, South Portland Maine, 04106
www.oldmaineoutfitters.com

From: [Richard samaloni](#)
To: [Emilie Franke](#)
Subject: [External]
Date: Thursday, May 11, 2023 8:39:13 AM

Bass REGS. Where do you get your numbers from? REAL TIME CATCH OR GUESSING?



39 Industrial Park Road, Unit C
Plymouth, MA 02360
www.stellwagenbank.org

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Capt. Robert Savino

Capt. John Richardson

June 23, 2023

Mr. Daniel J. McKiernan, Director
Commonwealth of Massachusetts
Division of Marine Fisheries
251 Causeway St., Suite 400
Boston, Massachusetts 02114

RE: Recreational Slot Limit for Striped Bass & Draft Addendum II

Dear Mr. McKiernan:

On behalf of the Stellwagen Bank Charter Boat Association (SBCBA), representing charter/party boat captains and recreational anglers that fish state and federal waters of Massachusetts, comments concerning the recreational slot limit for striped bass and Draft Addendum II is set forth below.

- As a result of the recent change to the striped bass slot limit there are many SBCBA members and clientele that are disturbed by the recent emergency measure (“EM”) as a result of lack of transparency, details and public participation the date it was approved by ASMFC. This is unfortunately part of an EM process that has resulted in many disappointed SBCBA members and members from the public specifically those that catch and retain a fish for food on the table. Ultimately after all the dust has settled and additional public outreach was conducted after the EM, SBCBA understands why the EM was necessary and why such needs to be implemented.
- What added to disappointment in the process is that the for hire bag limit was not considered as part of the EM and was not approved the day of the EM. SBCBA recommends that for hire seasons and bag limits be assessed by the PDT as part of Addendum II, especially since the for hire striped bass catch was down last year while the private angler catch more than doubled that resulted in a significant increase to the catch and/or mortality.



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- SBCBA assumes that for hire measures as well as shore side angler and private boater measures will be evaluated by the PDT as part of Addendum II that are fair and equitable to all three user types. Each user type have different goals and objectives (catch & release, catch & eat), financial constraints and access limitations to the fishery resulting from increased temperatures and/or climate change. For example the shore side angler may not have access to the fishery during certain times of the year as a result of climate change/increased temperatures moving the fish to deeper and cooler waters, cannot afford buying a private vessel and as a result look to the for hire fleet for access to the fishery to put food on the table. Seasons and bag limits need to correspond to charter booking cost in order for it to make economic sense for clientele to book a trip. Seasons and bag limits need to consider equity and environmental justice (EEJ) to the different user types that is fair and equitable and not one sided to benefit one user type over another.
- We are sad to report that bookings are down 50 percent by SBCBA Captains especially those that rely on multi species trips that include striped bass, black sea bass and scup May 20 to June 30. Clientele are cancelling trips and indicating they are booking charters in New Jersey that have a favorable black sea bass bag limit of 10 per person (May 17 to June 19) in comparison to the Massachusetts, 4 fish black sea bass bag limit. Our typical clientele catch and eat the fish.
- There are for hire seasons and bag limits in other states for black sea bass but not Massachusetts, as well as for hire measures for bluefish, scup (all three modes), bluefin (6 pack and party boat), etc. The historical and recent reductions and cumulative cuts to black sea bass, scup, cod, haddock striper slot, and other species seasons and bag limits and zero retention of wolfish and mako impacting Massachusetts anglers and Captains north and south of Cape Cod and/or the latitude 42 line has caught up to the Massachusetts for hire fleet with clientele that retain fish for food on the plate, resulting in cancellations and reduction in bookings. The for hire seasons and bag limits in Massachusetts in comparison to other states speaks for itself of the need for a change with seasons and bag limits for the for hire fleet and all user types that are fair and equitable, consider climate change and EEJ that



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considers the need for seasons and bag limits necessary for the for hire fleet to operate a viable business.

- Our for hire members are typically targeting multiple species and hook into striped bass quickly then move on to target other species. As a result of the slot change, in general they are catching and releasing more fish over a longer period of time until they catch the slot fish. In the past “quick catch” and move on to the next species. Naturally light tackle catch and release captains that fish for striped bass only, do this all day but that’s not the operating model of our typical SBCBA member targeting multiple species as well as clientele that retain fish to put food on the plate.

As detailed above, the SBCBA request that Addendum II assess seasons and bag limits for the for hire fleet and other modes detailed above in order to operate a viable business that provides the public fair and equitable access to the fishery. Such is long overdue in Massachusetts for other species such as black sea bass noted above that are not part of Addendum II.

The cumulative historical and recent cuts to multiple species noted above is to the detriment of the for hire fleet as well as the public that relies on the for hire fleet to provide cost effective and reasonable access to the fishery. Reasonable seasons and bag limits to provide the public access the fishery to put food on the plate for those anglers that cannot afford a private vessel nor have access to the fishery due increased temperatures and climate change that are subject to financial constraints and EEJ factors need to be considered in the decision making process.

Thank you for your consideration and attention to this matter. If you have any questions, please reach out to the emails below.

Very truly yours,

Capt Timothy Brady

Capt. Timothy Brady
SBCBA, Vice President
tcbship874@gmail.com

Capt Rick Golden

Capt. Rick Golden
SBCBA, Secretary
captrick@1620anglers.com



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Capt Mike Delzingo

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Capt Rob Savino

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Capt. Tom Depersia

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Cc: Mr. Robert Beal, ASMFC
Mr. Michael Pentony, GARFO
Ms. Nichola Miserve, MassDMF Striped Bass PDT
Mr. Ben Gahagen, MassDMF

Capt. Eric Morrow

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Capt. William Hatch

Capt. William Hatch
SBCBA, Board of Directors
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Capt Paul Diggins

Capt. Paul Diggins
SBCBA, Trustee
captain_paul@bostonfishing.com

From: [Devin Schibi](#)
To: [Comments](#)
Subject: [External] Emergency bass regulations
Date: Saturday, May 20, 2023 6:55:07 PM

My name Devin Schibi I fish long island sounds for most of my life. My question is if this is an emergency why is there no regulations set on commercial fishing for a straight bass? Also why is the slot limit different from Chesapeake and Delaware fishing?
If this is an emergency why don't we all follow the same slot limit.

Devin schibi
Sent from my iPhone

From: [john winder](#)
To: [Comments](#)
Subject: [External] Striped bass regulation
Date: Sunday, May 21, 2023 10:39:54 AM

I am all for preserving our natural resources on land and at sea. What I would like to know is why commercial fishing is almost never affected by these “emergency” changes? One would think that the goals you are trying to achieve would happen much quicker if everyone was held to the same standards. Commercial boats take far greater numbers of fish that are detrimental to preserving our striper population. Why dont we have a level playing field here? Also, continuing to tighten regs on recreational guys is, in my opinion, possibly going to lead to the increased taking of illegal sized fish. Its a slippery slope. Thank you.

Sent from my iPhone

From: [Steve Winters](#)
To: [Comments](#)
Subject: [External] Striped Bass
Date: Sunday, May 21, 2023 6:28:57 AM

Thank you for trying to help our wonderful resource. I would say take the next step please to game fish status. Been fishing here for 48 years and has it changed.

Sent from my iPad

Atlantic States Marine Fisheries Commission

Executive Committee

Wednesday, August 2, 2023

8:00 – 10:00 am

Hybrid Meeting

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. A portion of this meeting may be closed for Committee members and Commissioners only.

1. Welcome/Introductions (*S. Woodward*)
2. Committee Consent
 - Approval of Agenda
 - Approval of Meeting Summary from May 2023
3. Public Comment
4. Consolidated Appropriations Act Update
5. Review Findings of the Legislative and Governor Appointee Commissioner Survey Regarding Stipends
6. Legislative Update
7. Discussion on Per Diem Rates
8. Other Business/Adjourn

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details.

Atlantic States Marine Fisheries Commission

Coastal Pelagics Management Board

August 2, 2023
10:15 a.m. – 12:45 p.m.
Hybrid Meeting

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 (<i>J. Cimino</i>) | 10:15 a.m. |
| 2. Board Consent | 10:15 a.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from November 2022 | |
| 3. Public Comment | 10:20 a.m. |
| 4. Consider Approval of Fishery Management Plan Review and State Compliance for Atlantic Cobia for the 2022 Fishing Year (<i>C. Tuohy</i>) Action | 10:30 a.m. |
| 5. Consider Total Harvest Quota for Atlantic Cobia for the 2024-2026 Fishing Years Final Action | 10:50 a.m. |
| • Technical Committee Report (<i>A. Giuliano</i>) | |
| • Consider Setting Total Harvest Quota for 2024-2026 | |
| 6. Consider Timeline for Potential Review of State Recreational Allocation for Atlantic Cobia Possible Action | 11:20 a.m. |
| 7. Consider 2022 Spanish Mackerel Stock Assessment Update | 11:40 a.m. |
| • Presentation of Stock Assessment Report | |
| • Presentation of Peer Review Report and Response from South Atlantic Fishery Management Council (<i>J. Carmichael</i>) | |
| 8. Update from the South Atlantic Fishery Management Council on Spanish Mackerel Port Meetings (<i>J. Carmichael</i>) | 12:30 p.m. |
| 9. Other Business/Adjourn | 12:45 p.m. |

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details

MEETING OVERVIEW

Coastal Pelagics Management Board

August 2, 2023

10:15 a.m. – 12:45 p.m.

Hybrid

Chair: Joe Cimino (NJ) Assumed Chairmanship: 11/21	Technical Committee Chair: Cobia: Angela Giuliano (MD)	Law Enforcement Committee Rep: Capt. N. Scott Pearce (FL)
Vice Chair: Erika Burgess (FL)	Advisory Panel Chair: Craig Freeman (VA)	Previous Board Meeting: November 8, 2022
Voting Members: RI, NY, NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, SAFMC, NMFS (13 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from November 2022

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. Fishery Management Plan Review for Atlantic Cobia (10:30-10:50 a.m.) Action

Background

- State Compliance Reports for Atlantic cobia were due on July 1, 2023.
- The Cobia Plan Review Team (PRT) reviewed each state report and compiled the annual FMP Review (**Supplemental Materials**).
- Rhode Island, New Jersey, Delaware, Maryland, Georgia, and Florida have requested *de minimis* status for their recreational and/or commercial fisheries.

Presentations

- Overview of the FMP Review Report by C. Tuohy

Board actions for consideration at this meeting

- Accept 2023 FMP Review and State Compliance Reports for Atlantic cobia.
- Approve *de minimis* requests for Atlantic cobia.

5. Total Harvest Quota for Atlantic Cobia for 2024-2026 (10:50-11:20 a.m.) Final Action

Background

- The current total harvest quota for Atlantic cobia is 80,112 fish for the 2021-2023 fishing seasons. The same total harvest quota was also in place in 2020.

- This current total quota results in a coastwide recreational quota of 76,908 fish and commercial quota of 73,116 pounds.
- The Cobia Technical Committee met in July 2023 to discuss recommendations for the 2024-2026 total harvest quota (**Supplemental Materials**).

Presentations

- Technical Committee Report by A. Giuliano

Board actions for consideration at this meeting

- Consider setting the total harvest quota for Atlantic cobia for the 2024-2026 fishing seasons.

6. Timeline for Potential Review of State Recreational Harvest Allocation for Atlantic Cobia (11:20-11:40 a.m.) Possible Action

Background

- Current state-by-state percent allocations of the Atlantic cobia recreational quota are based on states' percentages of coastwide historical landings from 2006-2015.
- The Plan Review Team recommended in last year's FMP Review that the Board discuss whether updates to the recreational harvest allocation are warranted, considering current allocations are based on data through only 2015 and considering the next stock assessment and future specifications.
- The Board Chair requested the Board discuss this at the Summer 2023 meeting.
- Staff identified potential timelines if the Board would like to consider future management action to address state recreational allocations (**Briefing Materials**).

Presentations

- Overview of current state recreational allocations by C. Tuohy

Board actions for consideration at this meeting

- Consider timeline and potential course of action to address state recreational allocations for Atlantic cobia.

7. 2022 Spanish Mackerel Stock Assessment Update and South Atlantic Fishery Management Council Response (11:40 a.m.-12:30 p.m.)

Background

- The 2022 operational stock assessment for Atlantic Spanish mackerel (SEDAR 78) was completed in May 2022 (**Briefing Materials**).
- The South Atlantic Fishery Management Council's (SAFMC) Scientific and Statistical Committee (SSC) reviewed and discussed SEDAR 78 from August 2022 through April 2023, and submitted catch level recommendations in April 2023 for South Atlantic Fishery Management Council (SAFMC) consideration (**Briefing Materials**).
- At their June 2023 meeting, the SAFMC agreed to develop a Framework Amendment to the Coastal Migratory Pelagics FMP to adjust catch levels for Atlantic Spanish mackerel based on the SSC's recommendations and assessment results (**Briefing Materials**).

Presentations

- Assessment overview
- Peer review summary and SAFMC response by J. Carmichael

8. Update on SAFMC Spanish Mackerel Port Meetings (12:30-12:45 p.m.)

Background

- The SAFMC plans to conduct port meetings for king and Spanish mackerel fisheries in 2024 to gain a comprehensive understanding of those fisheries to improve management efforts.
- The SAFMC's Mackerel Cobia Committee discussed port meeting planning in June 2023, and noted the need to coordinate with the Commission and state partners to plan the meetings **(Briefing Materials)**.

Presentations

- Update on SAFMC port meetings by J. Carmichael

9. Other Business/Adjourn (12:45 p.m.)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
COASTAL PELAGICS MANAGEMENT BOARD**

**The Ocean Place Resort
Long Branch, New Jersey
Hybrid Meeting**

November 8, 2022

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

Draft Proceedings of the Coastal Pelagics Management Board Hybrid Meeting
November 2022

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The Board will review the minutes during its next meeting.

INDEX OF MOTIONS

1. **Approval of Agenda** by consent (Page 1).
2. **Approval of Coastal Pelagics Board Proceedings of May 2, 2022** by consent (Page 1).
3. **Move to approve the Spanish Mackerel FMP Review for the 2021 fishing year, state compliance reports, and de minimis requests for Rhode Island, New Jersey, and Delaware** (Page 22). Motion by Lynn Fegley; second by Doug Haymans. Motion approved by consent (Page 22).
4. **Move to approve the Atlantic Cobia FMP Review for the 2021 fishing year, state compliance reports, and de minimis requests for Rhode Island, New Jersey, Delaware, Maryland, Georgia, and Florida** (Page 22). Motion by Doug Haymans; second by Mel Bell. Motion approved by consent (Page 22).
5. **Motion to adjourn** by consent (Page 22)

Draft Proceedings of the Coastal Pelagics Management Board Hybrid Meeting
November 2022

ATTENDANCE

Board Members

Jason McNamee, RI (AA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
David Borden, RI (GA)	Jerry Mannen, NC (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Mel Bell, SC (AA)
Jim Gilmore, NY (AA)	Malcolm Rhodes, SC (GA)
Joe Cimino, NJ (AA)	Chris McDonough, SC, proxy for Sen. Cromer (LA)
Tom Fote, NJ (GA)	Doug Haymans, GA (AA)
John Clark, DE (AA)	Spud Woodward, GA (GA)
Roy Miller, DE (GA)	Gary Jennings, FL (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)	Erika Burgess, FL, proxy for J. McCawley (AA)
Lynn Fegley, MD (AA, Acting)	Marty Gary, PRFC
Russell Dize, MD (GA)	John Carmichael, SAFMC
Shanna Madsen, VA, proxy for J. Green (AA)	Jack McGovern, NMFS

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

Ex-Officio Members

Angela Giuliano, Cobia Technical Committee Chair

Staff

Robert Beal	Tracey Bauer	Adam Lee
Toni Kerns	Emilie Franke	Mike Rinaldi
Tina Berger	Chris Jacobs	
Kristen Anstead	Jeff Kipp	

Guests

Max Appelman, NMFS	Lars Hammer, ME DMR	Will Poston, SGA
Jason Avila	Frank Helies, NOAA	Jeff Ranchen, FL FWC
Pat Augustine, Coram, NY	Helen Takade-Heumacher, USFWS	Kathy Rawls, NC (AA)
Marina Barrineau, FL FWC	Jesse Hornstein, NYS DEC	Jason Rock, NC DENR
Alan Bianchi, NC DENR	John Kravchak	McLean Seward, NC DENR
Jason Bochat, NYS DEC	Aaron Kelly, Kill Devil Hills, NC	Andrew Sinchuk, NYS DEC
Robert Brown, MD Watermen	Danni Logue	David Stormer, DE DFW
Heather Corbett, NJ DEP	Mike Luisi, MD DNR	Mike Thaljauser, Coastal Fisheries
Derek Cox, FL FWC	Michael Manning	Megan Ware, ME DMR
Caitlin Craig, NYS DEC	Dan McKiernan, MA (AA)	Ben Whalley
Maureen Davidson, NYS DEC	Nichola Meserve, MA DMF	Meredith Whitten, NC DENR
Roman Dudus	Brian Neilan, NJ DEP	Christina Wiegand, SAFMC
Jacob Espittia, FL FWC	Tom Newman, NC	Chris Wright, NOAA
Jennifer Foss, NOAA	Derek Orner, NOAA	Eric Zlokovitz, MD DNR
Tony Friedrich, SGA	Lucas Pensinger, NC DENR	
Jamie Green, VA (AA)	Nicholas Popoff, US FWS	

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Draft Proceedings of the Coastal Pelagics Management Board Hybrid Meeting
November 2022

The Coastal Pelagics Management Board of the Atlantic States Marine Fisheries Commission convened in The Monmouth I Room in The Ocean Place Resort, Long Branch, New Jersey, a hybrid meeting, in-person and webinar; Tuesday, November 8, 2022 and was called to order at 10:45 a.m. by Chair Joe Cimino.

CALL TO ORDER

CHAIR JOE CIMINO: I'm going to call us to order. This is the Coastal Pelagics Management Board.

APPROVAL OF AGENDA

CHAIR CIMINO: I'm going to start with Approval of the Agenda. Are there any additions or modifications to the agenda? Okay, seeing none; agenda is approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR CIMINO: We'll look at Approval of the Proceedings from May of 2022. Are there any edits to the proceedings? Seeing none; again, we'll consider that approved by consent.

I don't see many members of the public here, but I will open this up for any public comment on items not on the agenda, and we'll also look at hands for anyone online. Okay, I think we can move through that. We don't see any hands.

UPDATE ON 2022 SPANISH MACKEREL STOCK ASSESSMENT AND PEER REVIEW

CHAIR CIMINO: We're going to move into the 2022 Spanish Mackerel Stock Assessment and Peer Review.

Those of you have looked through the material, and have been paying attention to the South Atlantic Council, would probably agree there is no other way to describe this as clear kerfuffle. We're very fortunate to have our good friend, John Carmichael here, who is the Executive Director of the South Atlantic Council.

John is going to do his best to give us a background on the assessment itself. The concerns from the SSC and for the Council, and just the possibilities on what our next steps are. I'm going to turn it over to John, and once again thank him for doing this for us.

PRESENTATION OF 2022 STOCK ASSESSMENT UPDATE TO DATE

MR. JOHN CARMICHAEL: All right, thank you, Joe. It's been a long time since I gave a stock assessment presentation around this table. It's kind of fun, actually, looking forward to it. The stock was recently assessed through SEDAR 78. I'm going to go through a few highlights from that stock assessment. The slides you'll see are from the SSC presentation, our SSC presentation in August.

A couple of them have PDF references, which refer to the SEDAR 78 Assessment Report, all this information is available on the South Atlantic Council website at the SSC meeting, as well as through the SEDAR website under SEDAR 78, you can find all the iterations of the stock assessment report. A little bit of background on the stock and its assessment history. It was previously assessed in SEDAR 28, back in 2012. Here we are in 2022, it's been quite a while since the stock was assessed. Part of that was due to delays from the MRIP telephone survey, the effort survey transition, where this was held off a bit to get the Effort Survey data. Then COVID came along. It was planned to get this thing done several years ago, but as it turned out, it wasn't able to get completed until last year.

Back in SEDAR 28, the stock was not overfished and it was not overfishing. Then in SEDAR 78 recently updated the data to 2020. That is probably the first thing to note, 2020 was the COVID year, and we all know that there were some quirks of data collection during 2020, and certainly some unexpected things happened, as far as recreational effort in particular.

It turns out people really lacked for time. They did this through the operational process, which means it's somewhat streamlined. There is not lots of meetings, there is not a full data workshop. They

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Draft Proceedings of the Coastal Pelagics Management Board Hybrid Meeting
November 2022

get together, talk about some issues, go over the data, do most of the work through webinars.

There was one data scoping call, and through the process four different assessment webinars where the model was discussed. There is a panel that's created and they give input and approval of all the decisions. All of that played out during the year. The main things that were changed going from 28 to SEDAR 78 was the data and the model updates.

Normally when we do an operational, we bring the model framework up to whatever the current state of the art is. Sometimes there are programming changes, et cetera, they take place over the year. If you can imagine adding eight years of data, there were a number of different things added within the model, different ways of approaching uncertainty, and solving and configurations, et cetera.

But the main input changes dealt with the growth model, 28 was a sex-specific growth model, and that's now been abandoned. Just issues with the data, dividing things out by sex, when you're already kind of struggling to get the data together, as well as perhaps less suggestion that the growth is really that different. Natural mortality was updated to the current state of the art for estimating natural mortality and different natural mortality across ages.

There were some revised growth parameters, because the growth model was being updated. Input data updated through 2020, the most significant change there being going from a coastal household telephone survey of MRIP to the FES of MRIP, and it was a shortened time series. The previous model went back into the '50s, this one started in 1986. Prior to 1986 there were some years of significantly higher commercial landings than really what you see now.

There is not a lot of data necessarily to support those to understand, say the age and length comp. That was one of the issues in 28 that the modelers thought perhaps shortening the time series, getting the landings more in line with when you have

surveys and length and age comps may make the model perform a little bit better, maybe give it a better chance at estimating stock productivity.

But one of the things that did do was cut out some indication of potentially periods of much higher stock productivity. Then finally, there was some alternative pooling of commercial age comps, due to low sample sizes, this was a big topic of discussion, particularly the samples from the northern area, as we're seeing more and more fish being caught farther to the north. I think it underscores some of the challenges we're going to face as we deal with stocks like this, which cross over what is continuing to be a critical boundary within the NMFS, at least the federal scientific program between the Northeast Center and the Southeast Center, with that break between Virginia, North Carolina, and different data collection programs.

You know different ways of getting the sampling done, and how they approach, you know commercial port sampling and other sampling. There was a thought from some of the fishermen that perhaps there may be more age comps in some of those northern areas than may have been dug up for this assessment.

That was a lot of discussion about the commercial age comps, and their difficulty in actually fitting to what was observed. Then there are the recreational data issues. One of the things first noted was there is a spike in the 2020 data, the terminal year. Not surprising to those who have been following the MRIP transition for many years.

That ended up being primarily in shore mode and in Florida. You have a fishery that's crushing along, I'll show the figure in a little minute of pretty steady landings in 2020 comes and the recreational just starts going through the roof. That was evaluated, there was a working paper. Number 3 developed for it that goes into the detail.

You know burrowing down into the MRIP estimates to see where the high catches are showing up. But

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Draft Proceedings of the Coastal Pelagics Management Board Hybrid Meeting
November 2022

ultimately, you know it sort of comes out, well this is the estimate, and the estimate gets put into the model, and you see how it plays out. While it was evaluated, there wasn't anything like changing the estimate or using an average, or anything like that.

Now we get into some of the actual information. This one is primarily recreational and shrimp bycatch. It just shows you what the discard trends are. There is not a lot of shrimp bycatch, but you can see the recreational data, the general rec in the blue, and then the general rec landings in the gray. The general rec discard is the blue, the landings is the gray, and as you see if you look over to the right, you know it's pretty much a flat trend in the landings and then a big spike at the end in the last few years.

Then in the discards you just see kind of a regular increasing trend, although those also do spike to really series highs there in 2020, and even somewhat in 2019 in this figure, so 2019 might have looked like yeah, kind of like normal, but when 2020 came along, as you can see with those right most points, it really took those landings to somewhere that hadn't been seen before.

Then this is the trend in the commercial landings, so the orange line shows with a current 1986 start year. If you look back in the past you see to the left of that line. That is what was used in SEDAR 28, and you see those high landings. Those slightly to the left, that is in the late '70s, '80s, when the commercial fishery really had some high landings.

Even through information from fishermen that were fishing at that time, they said yeah, they believe that that happened. The fishery exploded, and they really recognized that that was too high of landings, and supported the reduction in harvest that followed. But what you see going from the 1986 model to the current time, is you see high landings, somewhat high landings continuing, and then they dropped down quite a bit. Generally, there is not a lot of trends in those landings from after about 2000, it's fairly flat.

The indices, there are not a lot of indices for this stock. We have a hook and line indices from the Florida trip ticket program. We have an MRIP recreational CPUE with all of the caveats and uncertainties and concerns that go with any MRIP CPUE. Then we have a SEAMAP trawl that gets at the young of the year.

SEAMAP, you know is in the south, so if there is any larva appearing farther north, we're probably not getting them. Importantly is, there was no young of year value in 2020 from SEAMAP due to COVID. The SEAMAP is the gray line, and you can see that that is sort of trending downward on the right most.

Then there was a gap in 2020, we don't know where it went. But also, you notice that both the blue and the orange, which is the hook and line in the MRIP. Both of those dropped from 2019 to 2020. You think about the terminal year, this could be important to what the model is thinking is going on with the stock, because it's going into a period where these indices are saying, oh the stock kind of dropped down in 2020 and some of these indices are you know mid-year.

It's also being told from the landings that there was a lot of catch in 2020, so that's a recipe for the model to think the stock biomass is going down. The SSC reviewed all of this information at their meeting earlier in the year, and some of the issues and challenges that they highlighted were the difficulty in selecting that initial start year.

The change to 1986 didn't come easy. The model didn't seem to really have a strong preference. It didn't give a lot of indication as to what start year was best start year, and it really wasn't very well behaved on that parameter. The limited age composition information, as I mentioned. While natural mortality changed its approach, there still was a lot of difficulty in getting a good, robust estimate of it.

The surveys as I just showed, they're pretty flat. They lacked a lot of contrast, which is really important to knowing how the stock is responding,

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and they kind of conflict with landings trends. We had that decline in the surveys in the terminal years and we have landings going way up. There are a lot of pieces of information that aren't really coming together well in this model.

Then of course, which is often the case for our stocks, they were unable to estimate steepness, which is the critical stock recruitment parameter, which gives you an idea of how strong that relationship is. Steepness was fixed and suggesting there is not a very strong stock recruitment relationship for the stock.

That also makes it difficult when you're trying to estimate future, because putting the recruits into the population is critical for your future projections, and when you don't really have steepness, it's hard to know how your stock is going to respond to different levels of SSB in the future. This is what the SSC was faced with. But they did look at the stock status again, you know. They had all those challenges, looking at the results. You see this model is the stock status, as far as there is a stock overfished and stock overfishing. You look at that and say, oh, okay it's pretty good, right? I mean I'm not overfished and I'm not overfishing. That tends to make most people think that oh great, the assessment is doing fine.

This is based on the average of the last three years of that assessment, 2018 through 2020, so it's not capturing, it's not like it's just 2020. It's those last three years, and it's a pretty good spread, and it looks pretty decent. But there is always more to the assessment than this. If we now look into what we're actually seeing, as far as the trends and SSB and fishing mortality here.

The orange lines are the biomass. The one squiggly one with the dots is the actual SSB estimates. The red line with it that is the SSB_{msy}, so that is the target level. The orange line that it's above over its entire time series, that is the minimum stock size threshold. That's the level you want to stay above, or else your stock is declared overfished.

Then the blue below it, the one with the circles is the actual F estimates, your lighter blue line running through there, that's your F_{msy}. You want to be below the F_{msy}. The history of this stock is that biomass is trended since 1985 to 2020 kind of up and down, around B_{msy} levels and actually in a lot of years quite a bit higher. Never been down to MSST.

F has been at or below F_{msy} the whole time series, until noticed right there on the far right 2020, the model wants to drive the F up above F_{msy} slightly. Technically, you would say the stock was overfishing in 2020. But because of uncertainty in the terminal year, the status convention in the South Atlantic is using the average of the last three years. The official status comes out, even from this assessment that overfishing is not occurring.

While the stock is dropped down, it's close to the MSY levels, they are still quite a bit above the minimum stock size threshold, so it doesn't appear to be bumping up against, certainly overfished yet, at least in these runs. The important thing here is that, you know you see how this stock has performed pretty well, pretty flat for a lot of years.

The fishermen we heard from, the SSC presentations and Council discussion, agree that that is what they think has really been happening. They said this stock has been amazingly consistent for the last 20, 30 years. Things begin to look a little bit different as I suggested, when you start to look at the projections.

Here we're looking at the landings and the SSB. The SSB is the orange, the blue is the landings, and at the red you have the terminal, the vertical red line that's the terminal year, so that's 2020. Those values to the right of that are what's projected in the stock assessment's projection models. This is where you really start to see the impact of what the assessment is telling you, as far as of interest to management, versus what it may be saying about stock status.

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Stock status is the past, it influences management, but it's really not a driving factor for managers. What really matters to us as managers is what can we catch in the future, when we put a management plan in place? The first thing to notice is looking at landings in the blue, over on the right, the darker blue. You see the landings are pretty high in the first couple years of the projections. That's again, because of using the idea of the average landings continuing. If you feed the model the average landings, and we saw the increase in 2019, and big increase in 2020. You're telling the model during what we call the interim period, before you apply a different F. You're telling the model that landings are going to be pretty high.

What the model is doing is it's taking that orange line, which is the stock biomass. Remember, so from 2019 to 2020 we see that orange line dip down. Then because of those higher landings, and with the model not having anything to tell it, there is a lot of fish out there to support those higher landings, you see the biomass level drop considerably.

In 2021 the biomass level is down at the MSST level, and 2022 the biomass level is below MSST, in 2023 the biomass is quite a bit below MSST. It's actually projected to be at the lowest biomass the stock has ever seen during this whole 1986 onward period. That is of quite a bit concern, because the model is taking the stock into a place that none of the history has ever shown it to be at.

This is where I think some of the quirks in that data, the spike that you see in the recreational data, the lack of a juvenile survey, going into a projection period with a trajectory in that stock during your terminal year, really all comes together into what created kind of the management storm. You know if these results carry through, and it's really hard to say just yet.

But if projections like this were to carry through, really, we're going to the fishermen and saying, you have this stock which has been crunching along great for 30 years, but your landings are going to be

cut in half. Bear in mind, for a number of years we've been looking forward to this assessment, to potentially give us some increase yield.

Anticipating that fishery effort survey will show higher effort and higher landings over time, show the stock was maybe a little bigger, more productive, and that would help us deal with some of these closures we've been experiencing in the northern zone. I think most of you guys probably know that the commercial fishery in the northern zone has been getting shorter and shorter every year.

This year was the shortest it's been, 2021 the shortest before that, and 2020 the shortest before that. It's kind of hard to rectify from observed data perspective of something like the commercial fishery in the northern zone, that the stock is at an all-time low, because there is just no way the stock can be at an all-time low, and that fishery be having the shortest season it has ever had.

The projections really just don't line up with what we've heard from the fishermen. We heard it loud and clear at the SSC meeting and the Council meeting, and what we're seeing in the actual data that we have to look at this population. This is the real problem with the assessment. In my mind, and I told NMFS, if you all don't want to come talk about it, I will, and I'll give my opinion.

I think that the model does a pretty good job of capturing the history of this stock, when it has full data on the cohorts, and when it's got a fully fished out cohort and it's got a couple years of fishery information, it can do a pretty good job of estimating. But when we project into the future, I just don't have any confidence myself that this model has good projection ability. It's not very predictive. You know that happens sometimes in modeling, you know? It's one thing to observe and describe what happened, but it's another thing to use that to infer the future. To me that is the real core problem we're facing with this model.

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The SSC recommendations coming out of this, where they were concerned with those data and fit issues I mentioned. They did not make a BSIA, best scientific information, evaluation or recommendation. They did not provide a revised ABC, and they suggested that a working group be created to provide guidance on some next assessment steps, to see if they can fix the model. If they can get to something that they feel is robust and they have confidence in.

RESPONSE FROM THE SOUTH ATLANTIC COUNCIL

MR. CARMICHAEL: Those recommendations came to the Council at the September 2022 meeting. The assessment was presented, the SSC recommendations were presented, those issues were highlighted. At that meeting the Science Center offered to update the SEDAR 78 results with some revised MRIP estimates, so we had Richard Cody on the phone at the meeting, and talked about some things they could look at to try and revise those MRIP landings that we highlighted, those high observations in 2020, 2021, et cetera.

The plan was that could be done and reviewed by the SSC when it met a few weeks ago at its October meeting. They were able to get that work done, so the SSC met October 25-27. They did review this. This was, there is another presentation on our website here, this is the cover slide that went in detail of those changes.

They had a revised model, and we had updated MRIP values included in it. Here are a few highlights of the MRIP revisions. If you look at the figures on your right, we're seeing the general recreational landings and the general recreational discards. Those are showing the base model and the model with the new MRIP.

Probably the first thing you're looking at is you're saying, there's one line on there. But no there are two lines on there, it's just that the model really didn't respond at all to the revisions in the MRIP data. The changes were primarily 2020, 2021 landings, East Florida, shore mode, state waters and inland. The same components in MRIP have been

discussed through the transition many times with many species, and particularly in Florida.

Some of the changes, for example, just as highlighted bullets in 2025. East Florida shore, the state waters went from 2,327 to 223,812 fish. That caught the SSC's eye. They were like, well that's a really big change. How do you change the landings that much and you didn't change the model? The inland went from a million to 400,000, so one went up 200,000 one went down 800,000.

Net change landings went down 600,000, but it didn't really seem to affect the model. You'll also see in 2021, so the previous model didn't have any data for 2021, but now we do have some data for 2021, and we see the Territorial Seas going from 2.5 million to 1.2 million, so they dropped down by 1.3 million fish, and the inland went from 82,000 to 175,000, so up 100,000. The first thing you see there is in 2021 we saw an awful lot of Spanish mackerel available to the recreational fishery, which I think kind of reinforces the idea that there is no way the stock can be as low as the model seems to want to take it in the projections. If a shore based recreational and inshore recreational are able to find that many Spanish mackerel, there must be a lot of Spanish mackerel out there.

The SSC looking at the technical aspects of it, concern with the magnitude of those changes, there are some pretty significant changes, and they really didn't feel like they had a very good explanation for why just looking into the estimates and doing some imputing and some other changes could result in such a huge change in the MRIP estimate.

Rather than, I think giving them more confidence, it probably gave them less confidence. In the model, and certainly in the recreational input data, as far as how well it's representing what's really going on out there in the fishery. Based on the review of the model there, and in particular there is issues with the rec data and the lack of the model response to such changes.

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They did not feel the MRIP estimates resolved their concerns. They again did not evaluate the SIA, nor did they recommend a new ABC. The working group just sat there on hold from August through September to October, after the Science Center said they would do some new runs.

But when those new runs didn't really give anybody any more warm and more fuzzy feelings, the working group has now been dusted off, and they're going to develop some terms of reference for additional assessment analyses. The SSC is planning to meet in January via webinar, to review an assessment, I forget which stock.

But they are going to look at the terms of reference, provide them to the Science Center, and let's hope that they will do the runs, and are anticipating additional Spanish model runs coming for the April, 2023 SSC meeting. We're pushing this out a little bit further, and Council we are now extending our timeline, as far as getting started on an actual Amendment.

The SSC is still, the assessment really is still kind of in limbo, in terms of the SSCs model. Where does this leave management? We have ABCs in place. We have existing ABCs, and they're still in effect, and they're in effect until the SSC gives us another ABC, always the case. There is some guidance from NMFS on what to do if say, an assessment is rejected, in terms of ABC. But you know we're not at that point yet.

The assessment hasn't been rejected. As I said, it's still kind of in limbo, and the SSC is still hoping to get something out of it to get something more robust. We're not at the point of say applying the NMFS guidance to say, what do we do now in the interim. But there has been a lot of talk about whether or not these changes can fix SEDAR 78, or whether we need to go back to the drawing board, and maybe do a full benchmark of Spanish, which would be several years, probably five years, best case ten years, most realistic case in the future.

The ABC we have is in place. The ACL is in place. The Amendment actually initiating an Amendment is on hold until we deal with the assessment and get an ABC. But the Council does intend to begin talking about the allocations within Spanish mackerel in December at our upcoming meeting, and applying an allocation decision tool, which Council has developed over a couple years, a way of getting information from a variety of sources and processing it into a way the Council can digest it and use it for allocation decision making. We're going to have some discussions of Spanish, we just won't be at the point of say dealing with new catch levels, etcetera.

What does that mean to us for the stock as we continue to work through this process? You know the stock risk appears low, based certainly on the history and the anecdotal information we've heard from the fishermen, and from our advisors, as far as what they are seeing out there on the water. There is high availability proven in the data.

MRIP landings are high, discards remain high. Commercial sector is reporting large fish, which you go back into that time when the commercial landings were really high, back there in the late '70s. They did not see large fish. That is one of the things that they've noted. You know when they say they were overfishing that stock and they truly believe it, and they did not see the big fish. Now they're saying they see the big fish.

I think also very important is that steadily shortening northern zone seasons. You know through 2022, it just indicates high availability of the stock to those fisheries. The only suggestion of the stock risk arises just in the projections, and they're uniformed by data. They don't have age comp, they don't have CPUE, they don't have surveys to carry into there and tell what's going on with the stock.

It really just becomes kind of an accounting exercise of, how many fish are out there. You apply the F and this is how many can come out. But you don't have any of that other information, that I think this

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model really, really needs. I think it needs the age comp; I think it needs the surveys to really get a handle what the population is doing.

Now one risk and one challenge are certainly that management now remains based on the coastal household telephone survey, the old way of doing MRIP, and not the newer FES. Every year we go that we have to convert FES to CHTS, we know that adds to the uncertainty. It certainly adds to a bit of frustration with constituents, because if you go to the MRIP website you're going to get FES estimates.

This creates confusion all the time, because folks will go there, and they'll see a different estimate reported for Spanish mackerel, then what say the Southeast Regional Office is reporting on their quota tracking page or ACL monitoring page, because they are converting back to the CHTS numbers. That's just a hassle that we have to deal with, it creates confusion, and it probably adds uncertainty to the whole process.

The sooner we can get the catch levels updated to the current method of doing MRIP, the better, because it just relieves a lot of that confusion. Then of course, important here is those actions to address the northern zone closures on hold, until we can deal with these issues. Then the last thing is just, what is the question of climate change for this stock? If this stock is shifting north, how long is it going to take for our assessment data system to recognize that is the productivity higher, because the stock is spreading over a larger area? Is its carrying capacity going up? Is it shifting? We still see fish in the south, so there is not a lot of thought that Spanish is significantly just shifting northward, but it does seem to be some indication of increasing landings northward. There is not a lot in the data yet to really feel like you can hang your hat on it. But certainly, anecdotally in what we're hearing, it does seem to be ramping up a bit, certainly farther north than it has been historically. I think we're getting to the end. Yes, that was the last one. I guess I'll see if there are any questions on that, everyone.

CHAIR CIMINO: Yes, thanks, John. It really is great to have you back presenting stock assessments here with us. I am going to open it up to questions for John on the assessment and all that information presented. Emilie and I have thought about what's next for the Board, and obviously I need opinions on that from all of you.

As you're asking questions, you know keep in mind, we need to figure out our comfort level with exactly what John has said. Do we agree that there is low risk for this stock? Do we have concerns about the timeline? Regarding the northern commercial closures. Emilie, correct me if I'm wrong, but I think we can kind of cover that in the next agenda item a little too.

Not worried so much about that. We can have that discussion later, but questions about the assessment, about where the SSC is, about the timelines. Then just overall communication between the Board and the Council as we go through this. I'll open it up to questions now. Go ahead, Shanna.

MS. SHANNA MADSEN: I just want to echo Joe's sentiments. It's great to have you up here, Dr. Carmichael. You always give an amazing presentation, break it down really well, so thank you so much for being here. I do have a couple questions, so stop me if I'm running on too long. My first question is just a general question. Why did the Subcommittee choose to do an operational assessment, when it had been so long since the last assessment?

MR. CARMICHAEL: Yes, that's partially due to process, partially due to workload management. Our other option is to do what is a research track, which they would go in and look at all the information. It takes about two years. It would have an independent peer review, including the CIE. Because they were using the same model and just updating the data, it felt like the operational approach would give enough of a process to get where they needed to go.

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I think people were maybe a little surprised by just how the model has performed, and the difficulty in, you know resolving the natural mortality in the start year and a number of things from that prior SEDAR 28 assessment. The SSC has had a lot of discussion about recommending, you know just stop here and do a benchmark, or research track as we call it. But they realize, you know those are planned several years out, and that could add significant delay, so I think they're feeling a bit of that dilemma.

MS. MADSEN: Follow up. Maybe this is a little bit of guessing, but how are we feeling about the update coming up in April? Do we think that we're going to get there? I don't know if there has been any consideration or discussions just yet of what might change, in order to kind of get us to a different place than where we're ending up right now. Just kind of trying to think into the future.

MR. CARMICHAEL: Yes, and I talked to the analysts about that quite a bit. They do feel like high optimism that they can get it done. That may somewhat depend on exactly what the SSC requests, but they can get a fair amount of things done, they feel like, between January and the April meeting. Whether or not it resolves the issues is a question I think everyone was perhaps surprised that big changes in the MRIP data didn't really give the model much response.

I think that is coming at the terminal year, things are pretty well locked into place by the long history. I think there are more questions as to whether or not minor changes like that or other configuration changes can actually significantly move the needle on this model, because it seems very well locked in where it is. The issues in picking the start year suggest that it is kind of wagging over on that side.

But once you feed it, you know a lot of 20, 30 years of data for a short-lived fish. You know a lot of cohorts have moved through in that time, and those are pretty well locked in to that history. I think you get that stock stability, but what it's going to do on the end we're concerned about here in the projections, is kind of anyone's guess.

I sense some SSC members and others maybe feel like, yeah, not so sure this is going to change a lot. Others with a little higher optimism and kind of feeling like, you know they need to go through this and do everything they can, to try and salvage this model, if possible. If only just in the interest of time, knowing that if they were to just reject it, then it will be several years before another effort can be made.

MS. MADSEN: One more, if you don't mind, last one, I promise. You have up on the screen discussions about how the projections are really uninformed by some of those data. There are no age comps, the CPUE surveys are flat. What would we be looking at? How would a research track or a benchmark be able to potentially better inform those projections?

Do you think it's just a matter of really tearing apart the model and kind of starting over entirely? Are we data limited, like are we unable to incorporate those things into the projections with the data that we currently have? Just kind of thinking out and wondering what is going to change between now and potentially a research track that we're going to be able to better inform those projections.

MR. CARMICHAEL: I think one of the challenges is just this model ending in 2020 with COVID, you know. When COVID started there was a lot of concern that people weren't going to fish, and licenses weren't going to be sold, and what was going to happen, and we saw quite the opposite. People went fishing a lot. You know we see a lot of stocks with increased landings. We see a lot of shore and inshore effort that happened at that time. I think that is just kind of an unfortunate quirk of the timing of this model.

But back in 2020, talking about things, there was a lot of concern about assessment models that would be done with like a 2020 terminal year. What is that data? Things are really different than the past, which is what models' kind of rely on. What is that really going to do, and the loss of surveys was a concern, so we didn't get the juvenile survey. I

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don't think that a doing what we have now as a research track would have changed a whole lot, unless maybe it found some more data or some different ways of dealing with like the age data from more northern areas, which some of the fishermen have identified. Basically saying, look I've been sampled, the data are somewhere, that sort of thing. I don't think that would have done much with a 2020 terminal year.

I think if we were to do it and update that to 2021 or 2022, we may get over that COVID hump. We could feed it some more juvenile survey information, the survey for the fishery information. There was some talk about looking at the commercial Florida trip ticket and more detail, and trying to make sure that is as strong as it can be.

I think those things would be likely to create some changes. But it still may struggle to project. To me that's one of the things that is just inherent in a stock assessment model. You just don't know what the fishery characteristics are going to be three years into the future. I just really believe we all need to spend more time, and be more critical of looking at those projections, and thinking do they really capture what is going on?

Because I noticed in assessments, if it happened big time in this one there is a tendency to look at status. If it's not overfished and not overfishing everybody thinks it's great, and that happened here. This model came out, the results are out and people are like, oh yeah, man this looks great. It's not overfished, it's not overfishing.

I'm like, well did you look at what you can catch in 2023? They're like, what? Half what you're catching now. People are like what, wait a minute. I think that that is just something we have to deal with in projections, and you know research track won't help that, unless somebody comes up with a better crystal ball, or some other way that is more robust, you know.

But we all know, like we're talking about the climate change issues. This could be affecting a stock like

this, a short-lived fast-growing stock is probably likely to respond quickly to environmental changes, and I think it could be an ongoing challenge for us in the future, with this stock in particular.

CHAIR CIMINO: Thanks, John. Chris.

MR. CHRIS BATSAVAGE: Thank you for the presentation, John. I think you lay out the challenges and risks pretty well. I think you mentioned in 2021 the recreational harvest was also high. Was that also attributed to the shore mode in Florida, or is that from other high recreational landings?

MR. CARMICHAEL: It was shore mode. It was shore mode in multiple states, as I recall in general. But Florida is the one that particularly stood out through this whole time, with their shore mode landings in the transition to FES. But it was high, 2022 I looked at that last week, and you know we don't have the full information in. But through the waves that were done, 2022 looked down a little bit more like historic normal. But with the uncertainty there, all it takes is one really good wave and some high effort, and it could be right back up to where 2020 and 2021 were.

CHAIR CIMINO: Follow up, go ahead, Chris.

MR. BATSAVAGE: Follow up and one other question. Yes, I noticed that the shore-mode harvest the last couple years was much higher than the private boat mode, and in years past it was more on par with private boat. I didn't know if using the old MRIP estimates from the last assessment showed kind of a similar breakdown between the shore mode and the private boat mode, because one result of the revised MRIP estimates is it combined the big bank mode with the pier mode.

In doing that of course, what you catch off the end of a thousand-foot pier is a lot different than what you catch from shore. I didn't know if that might be having an influence on the catch estimates for Spanish mackerel, when you consider just the sheer

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number of trips from shore, and the catch rates from piers is factoring into that. There is a question in there somewhere, so didn't know if that kind of played a role, possibly.

MR. CARMICHAEL: Yes, you do. In the old MRIP and in the older years even in CHTS, the boat mode always was the higher proportion of recreational landings than shore. But it's in those last few years, now that data is just being collected through FES, you know and you do see that the shore mode is running away, far exceeding the boat mode, which that's where I think some of the survey changes and stuff may be in question.

I know like the Outer Banks had a pretty darn good year for Spanish this year, you know off the piers and off the beach. Yes, you get that effort cranked up with some pretty good catches, and you are liable to see it spike up again. Yes, it does seem to me, at least, that it is something with CHTS, and it may be as you say, lumping the piers and the shore together could be having an impact.

MR. BATSAVAGE: Thanks, just one final question on the allocation decision that the South Atlantic Council is going to think about in December. How is that going to work, where you have catch estimates or catches from the commercial and recreational fishery now, based on unrevised MRIP, but we're still dealing with the catch in the old currency?

I'm just curious to know what kind of work that the South Atlantic Council can do on allocations now, you know with just that disconnect between catch in the currency and then also the uncertainty in the recreational harvest estimates, especially when you're looking at commercial recreational allocations.

MR. CARMICHAEL: Yes, the intent on that was that we would have the ABC and we would have the recreational now in the CHTS, and we could apply the allocations. If we're going to look at historical years, we'll have that with the CHTS conversion. I mean the FES conversion; I always flip-flop those.

No, we have the new MRIP and we would be able to apply that. I think likely what the Council will do to look at the MPS and MRIP updates, and apply that for the allocations. But the intent is that whatever allocation percentage changes might happen, they would be applied in the Amendment that brings in the new ABC. At least at this point there is no plans to try and revise allocations based on new data, and apply them to an ABC based on old data. But we're thinking allocation could be a tough discussion, so it might be worth our time to go ahead and start talking about that anyway.

CHAIR CIMINO: Other questions? Go ahead, Jay.

DR. JASON McNAMEE: Thanks, John, great presentation. Just thinking a little bit about, it just seems like there is not enough information available. Just the discussion we've been having; I don't know what would change the kind of give more information to the statistical model. It's a great group working on it.

I think they would have figured it out, you know if there was something there. I just wondered. I kind of poked around a little bit. You know you made the comment about the research track, how it gets mapped out like, you know pretty far out into the future. But there is a state-space approach research track going on now.

I wondered; did they think about that? Did they think about putting this in as one of the candidates? I think the way they did this was they kind of picked the set of candidate species that they were going to kind of bring into that research track. I wondered if this, I think it's either about to start or maybe just started.

I'm not sure where it's at. It's coming up soon, so was wondering if that was a thought. Maybe there is a way to kind of shoehorn it in sort of late in the game. But that might be a way to sort of get something in a quicker timeframe, using a different tool. My whole point is, I think you need a new tool that might be one it might not, I'm not sure.

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MR. CARMICHAEL: Yes, that's a good idea, actually. Top of my head, not sure what the stock are, but Spanish seems to have come out of left field as a surprise, so it might be one that is worth seeing if we can get it in there, especially if there are some distribution shifts going on. That may help.

CHAIR CIMINO: Any other questions? Go ahead, Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Maybe this sort of segues into the next agenda item. But John, as far as timing goes, you know the new work will be done for the April SSC, April SSC does their work, and I assume they are going to report out at the June Council meeting. The June Council meeting, the Council will see the new information.

They've got one of two ways, right? They decide it is good enough, we can base management on this, let's go forward, or they say it's not good enough and then we're stuck, right? Unless, you know Jason's idea works out. You know we're going to have this interim period, where we really don't have much management advice, and the stock is moving.

I think that is going to be our big problem area. If it doesn't work, we may have five years where we really don't have management guidance, and we're trying to manage the stock. The public expects some good news, but we don't have any good news. Is that kind of the dilemma we're potentially in, is this big chunk of time where we don't have any assessment guidance and we need to keep this thing going?

MR. CARMICHAEL: Yes, I think that kind of is how it would play out if the Council gets it in June. I would think if these new runs and iterations of the model don't resolve the issues to the SSCs satisfaction, then I think we would push them to say, well are you at the point of rejecting this model? We can't come back in October with some more runs, like we're going to have to do something a bit more serious and robust to resolve the issues.

I feel, if they can't settle it, if they can't give us a new ABC in April based on this model, then I think we do need to invoke, okay, the model is essentially not informative for ABC. Let's look at our other options in the different data limited approaches, what you do when an assessment is essentially rejected, what you do in the interim, because there is guidance there.

There is stuff in the National Standards. I think we would really have to put that on the table for the SSC, and encourage them to say, okay give us an ABC with the best information you have now. Otherwise, as you say, we're waiting a number of years, and I just don't think that we can hold this existing ABC for another five, six, seven years. That would be a really bad idea.

CHAIR CIMINO: We're kind of coming to time on this issue. As I mentioned, Emilie has given us a lot of thought on where does the Board go next. One thing that she has noted that I want to put out there for all of you too, is that we don't have a technical committee for Spanish mackerel, so just thoughts from the Board on if it's time for that, or are we in a wait, and see?

I'm not sure that we would have any tasks for them at this point, but it is one thing to think about. I am interested in, again, comfort levels and thoughts on what are the Board's next steps, other than are we comfortable with just waiting to see if we get a new ABC next year? Go ahead, Spud.

MR. SPUD WOODWARD: Yes, it's a frustrating situation for us and for the Council, to be in this position of sort of limbo. But I think absent any definitive information on which to move forward, we don't have any choice but a wait and see posture, at least for the short term. I'm interested to learn a little more about, as these fisheries are moving northward.

Where are they actually being prosecuted at, because one of the things that I heard at our South Atlantic Council Mackerel Cobia AP is that with the exception of off of Cape Canaveral, Florida, the

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commercial fisheries are being prosecuted in state waters, which prompted one of our commercial fisheries representatives to say, is this a species that should be considered for management under the Commission rather than the Council.

I've tried to artfully deflect that as best I could, but it does raise an interesting question of, and especially in what we're going to be talking about this afternoon, of what are the optimal governance structures for managing changing fisheries. I had to kind of explain, well you know, we depend on SEDAR like the Council depends on SEDAR. It's not like we have our own separate stock status determination that gives us a different answer than the Council would operate on. Is the fishery as it moves northward, is it occurring primarily in state waters, or is it a mixture of state and federal waters? If so, if it's primarily state waters, then we owe ourselves at least the analysis that we did for cobia, you know looking forward into what is the best governance structure in the future. I think that is something we can be doing now, to sort of think about where are the fisheries occurring, where are they likely to occur?

Sort of have that available in our minds, as we move forward with whatever steps we take, assuming that we get something other than what we have. As John politely, I think, communicated. There is a lot of skepticism that we're going to get anything different than what we have, so anyway that's my perspective. Thank you.

CHAIR CIMINO: No, thank you, I really appreciate that. I agree. That kind of goes back into this next agenda item that we have, looking at the regulations and the differences that the states have compared to the federal FMP. But that does kind of sound like the TC task, I think. Spud, that is a consideration. I think Emilie and I can start working on that information. But if that is the kind of thing, we're going to be looking at then we might want to give real consideration to populating a technical committee for help with that. Erika, go ahead, please.

MR. ERIKA BURGESS: John, thank you for your presentation. I appreciate the hours we've been able to discuss the stock assessment and its challenges. The commercial fishery is very important to Florida. It really is a Florida fishery. But the jurisdiction complications for managing Spanish mackerel are challenging, so I would not want to get in front of the Council at this time. Joe, my preference would be to wait and see what comes out of March.

Not only do we have an ASMFC plan and a South Atlantic Fishery Management Council plan, Spanish mackerel is part of a joint FMP at the federal level with the Gulf Council. There are lots of pieces to unravel as we talk about the future of this fishery, and how we manage it moving forward. But in the meantime, I would like to learn more about the growing fishery to the north.

Who are the participants? Where are the landings happening? I think we could use the interim time to really dig in and understand this fishery better, and perhaps bringing in our Advisory Panel to give us sort of a profile of the fishery. In Florida it's complicated again. We have three different types of commercial fishery prosecuting Spanish mackerel. I don't know how complicated it is to the north, but I would like to learn more.

CHAIR CIMINO: I think we're getting a sentiment here, and I certainly agree with all that has been said. Like I said, Emilie and I will look into that and the Commission will look to see, when is the appropriate time for this Board to reconvene, and if we have to do some stuff by e-mail in the interim, I'm sure we can do that.

**REVIEW OF DIFFERENCES BETWEEN THE
INTERSTATE FISHERY MANAGEMENT PLAN (FMP)
AND FEDERAL FMP FOR SPANISH MACKEREL**

CHAIR CIMINO: If there aren't any other hands on this item, we'll move into those differences in the State and Federal Management, and I'll turn it over to Emilie.

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MS. EMILIE FRANKE: Moving into this presentation, I'll just give a brief overview of the differences between the state and federal FMPs. Again, as we've just discussed, this will probably come up again next year, whenever the Board reconvenes for the next time. We just wanted to remind folks about this, these differences that the Board discussed almost two years ago now in 2020. The last update to the Interstate FMP for Spanish mackerel was the Omnibus Amendment in 2011, and also an Addendum in 2013. Then on the federal side, Spanish mackerel is managed through the federal coastal migratory pelagics FMP. Any management action to consider addressing the differences between the two FMPs was postponed by the Board until completion of the 2022 assessment, which as we just heard is still undergoing revisions.

The differences between the two FMPs exists in terms of the commercial management zones, the commercial trip limits and closures, allowable gears, the recreational season, and also the recreational accountability measures. For the commercial management zones, the Interstate FMP defines the northern zone as New York through Georgia, and also note that Rhode Island did join the management unit in 2021.

Then for the southern zone for the Interstate FMP, the southern zone is just the east coast of Florida. On the other hand, for the Federal FMP, the northern zone is New York through North Carolina, and the southern zone is South Carolina through the east coast of Florida. Moving into the commercial trip limits.

For both the Interstate northern zone and the Federal northern zone, there is a 3,500-pound commercial trip limit. For the Interstate southern zone, which again is just Florida, the trip limit starts at 3,500 pounds, and is reduced throughout the season, depending on the date and how much of the quota has been harvested, and the lowest step there is a 500-pound trip limit.

Under the Interstate FMP, states are not required to close state waters when Federal waters close. Then for the Federal southern zone, which is South Carolina through Florida, the trip limit also starts at 3,500 pounds, and then is reduced by how much of the quota has been harvested. On the Federal side, the Federal Zones close when that Federal Zone's quota has been met.

As John mentioned, just a reminder on some recent federal closures, and as a reminder, the commercial season is March through February for both the Federal and Interstate FMPs. In the most recent four seasons, including this season, the Federal northern zone has closed by the summertime, so June, July or August.

In recent years when this happened, Maryland, Virginia and North Carolina have all implemented a reduced trip limit in state waters as well. They implemented a 500-pound trip limit. Then in the Federal southern zone, that zone has closed in two out of the most recent four years, and that closure typically occurs closer to the end of the season in January or February.

Moving on to the gear differences. The main difference here is that the Interstate FMP lists the prohibited gears for each sector, while the Federal FMP lists which gears are allowable. Then for the recreational season, the difference here is that the Interstate FMP specifies a calendar year season, while the Federal FMP specifies a March through February recreational season.

Then finally here for recreational accountability differences on the next slide. Under the Interstate FMP, if the total ACL is exceeded and the stock is overfished, then the recreational quotas are decreased via reduced bag limits the following year. Under the Federal FMP, if the total ACL is exceeded, the bag limits are also reduced, but if the stock is also overfished then there is a payback reducing the annual catch target. There are just some slight updates, I think. You know if the Board takes action in the future to align, you know what the Omnibus Amendment describes as the quota, just to align the

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terminology to have it consistent with the Federal FMP. That wraps up my presentation on the differences. Again, I think this is something that will come up again next year if the Board needs to consider any sort of Spanish mackerel action, you know following what the Council does in the coming months. Happy to take any questions.

CHAIR CIMINO: Questions. Go ahead, Lynn.

MS. LYNN FEGLEY: Yes, and I'm not sure this question is going to make sense. But we were just talking about, we are potentially staring down the barrel of a reallocation, and I'm wondering how this misalignment would impact that conversation, or if it does.

MS. FRANKE: That is a good question. I might turn to John for some help, but I mean in terms of the allocation between the commercial and recreational sectors. I'm not sure the misalignment would have too much of an impact, more than what we already have, in terms of the different northern and southern zones. I'll see John, is there anything you want to add to that?

MR. CARMICHAEL: No, I think that's right. The first discussion the Council will have will be the Commercial/Rec allocation. That is the primary bit. Then I don't know if there has been a lot of thought about any shifting within those commercial zones at this time. It should be pretty informative, what gets put on the table in December, I suppose, see what Council members bring up.

MS. FRANKE: Just to remind folks, the current allocation is 55 Commercial, 45 Recreational.

CHAIR CIMINO: Yes, and I think part of this goes back to what Spud was saying. Where are these fisheries prosecuted? Because if we don't have a requirement in our plan to go to that reduced trip limit, then one of the questions becomes, do states have the authority to do that on their own? Fortunately, the main states in that northern zone from North Carolina are able to and have been doing that. That becomes a question for us as well.

Other questions for Emilie, or thoughts on this? Go ahead, Lynn.

MS. FEGLEY: Is there any particular timeline or urgency to address this misalignment? I ask that, because I think that this really does feed back to the conversation about really digging into the distribution of our landings. Where are these landings happening? Are they in state waters or are they in Fed waters?

It seems like one path forward would be to, rather than trying to align ourselves with the Federal Plan, to separate ourselves from the Federal Plan. I'm just kind of wondering if one thing has to happen before the other, or do they happen together, or if we even want to think about taking back Spanish mackerel.

CHAIR CIMINO: Go ahead, Spud.

MR. WOODWARD: Well, when this came up at the Advisory Panel meeting, you know Council staff were quick to say well, you know, one of the first things we do is we take those ten criteria that you use to say whether a species should be subject to Federal management, and you sort of run them back through that with what is the current situation with the fishery.

I think part of what we'll be doing is sort of taking, okay what do we know about the way Spanish mackerel fishery works now along the coast. Run it back through those criteria. Look at how those criteria apply to it, and use that as sort of the first filter of whether, should we even consider moving from a joint management environment to an Interstate/Commission management environment.

I will certainly look to you all in North Carolina northward. The other thing I heard pretty clear and loud from the guys that are fishing entanglement gear north of Lookout is, please keep giving us our 500-pound closed season allowance, because they're fishing on species where it goes back to what John was saying.

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You've got an abundant and widely distributed stock, and they can't avoid them. If you take away that 500-pound, you might as well call it a bycatch allowance, then you're going to have a lot of bycatch and you're going to have a lot of waste. They're saying, until we can reconfigure this fishery to something different than what it is. Please don't take that away, because that's preventing a lot of waste that would be unavoidable otherwise.

MS. FRANKE: I think also, partly in response to Lynn's question, in terms of addressing this alignment maybe sooner rather than later. One of the things that Council could potentially address at some point is this issue of the northern zone closure. If the Council does take action on that, it might be beneficial to wait and see what their action might be. If the Board does want to align, or not align with the Council FMP. We at least know what the Council's next step might be. I think there are still a lot of question marks as to potential action the Council might take next year.

CHAIR CIMINO: Spud and then Chris.

MR. WOODWARD: Yes, just a follow up on that and too, just maybe to allay some fears. I think our plans, and Mel and John can correct me if I'm wrong, with using this allocation decision free tool, is just sort of try it out. Want to see, okay here is where we are with our ABCs our ACLs. You know we're going to run again, what's the fishery. We're going to run it through this tool, and just say okay, what would we do different if we wanted to. That doesn't mean that we're committing ourselves to any course of action by using that decision tree.

Is that what we all agree? We've developed this tool. You know it takes, basically the biology, the ecology, the social, the economic and it's designed to merge all that together if you give us something other than just the traditional, historic catch history, you know kind of approach to it. But I don't think anybody is saying, well we're going to take whatever that tool for this as an output, and immediately put it into an amendment or

something. I mean that is certainly not my understanding.

MR. CARMICHAEL: Yes, the important thing about the tool, and this was stressed by staff when we were developing it, and Council was approving the concept, is it doesn't give you the answer. It gives you a process for getting to an answer and evaluating alternatives. But it's not the kind of thing where you're going to plug in data, spit out the results and say okay, there you go.

You know it's really kind of a way to make sure you go through all the different pieces of data for each stock each time, and you're consistent in looking at it across stocks, and how you evaluate things. But like Spud said, it doesn't give you the answer, and it certainly doesn't obligate you then to go in and change the allocation as well. Yes, it's hard to say where that will play out, and as we've not used it a whole lot, so it's a very new thing. This will be one of the first real applications of it, and see where it takes us.

CHAIR CIMINO: Go ahead, Chris.

MR. BATSAVAGE: As stated before, we're really not in a position to address the misalignment between the two plans. We're handling it on an ad hoc basis, more or less, when it comes to dealing with commercial trip limits after the Federal ACL closes, for instance. But looking at the list of things that are kind of misaligned, a couple points to think about for this Board and the Council, when the Council moves forward on an amendment.

The 3,500-pound trip limit to start things off, is it constrained to any of the fishery or barely any of the fishery? None of that has been discussed by the Council before, and you'll see some pushback from the commercial fishery. But when you start at a high trip limit, and that essentially is unlimited, that results in hitting your ACLs a lot quicker.

Rationing out the quota with more reasonable trip limits is probably something worth exploring. The accountability measures in the recreational fishery,

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where we look at bag limit reductions to address overages. I think we've noticed with other recreational fisheries that relying on that tool alone doesn't always get you where you need to go, because in many cases, even with a high bag limit, you have to reduce that bag limit by a big number to get any impact.

Having something maybe a little less prescriptive, in terms of addressing overages, like we do with the recreational fisheries, is something that should be considered in the future. But we're not in a position to move forward on anything, until all these other things we talked about earlier get resolved.

CHAIR CIMINO: I think one thing that we can do, Emilie and I, is just keep track of this and we can provide updates to the Board as necessary, and then of course we will get us back on an agenda when needed.

**CONSIDER THE FISHERY MANAGEMENT PLAN
REVIEWS AND STATE COMPLIANCE FOR THE
2021 FISHING YEAR**

CHAIR CIMINO: I think, unless there are any other hands on this, we can move into the next agenda item, which is Considering the Fishery Management Plan Reviews and State Compliance for the 2021 Fishing Year. I'll be turning this over to Emilie, who will do a presentation first on Spanish mackerel, and we'll pause after that. Then we'll move into cobia.

SPANISH MACKEREL FMP REVIEW

MS. FRANKE: I'll start with the Spanish mackerel FMP Review. We've already been discussing Spanish mackerel for a bit, so I'll keep it brief. But for the Interstate FMP for the Omnibus Amendment for both the recreational and commercial sector there is a 12-inch fork-length or a 14-inch total length size limit. For the recreational sector there is a 15-fish creel limit, and fish must be landed with the head and fins intact. Then for the commercial fishery, I already went over the trip limits, so we'll move on to the next slide.

As far as the status of the stock, as noted earlier, the 2012 assessment SEDAR 28 found this stock to be not overfished nor experiencing overfishing, and again this current stock assessment, SEDAR 78, completed in 2022 with a terminal year of 2020, is still undergoing additional revisions before being considered for use in management.

Moving on to the status of the fishery. As a reminder, all the landings in the FMP Review are calendar year landings, and also this FMP Review uses the current recalibrated MRIP estimates from the fishing effort survey. You know the previous FMP Reviews listed the state-by-state landings from the coastal household telephone survey.

However, with the intent of this new assessment to update to the FES based landings, the PRT agreed it was timely to switch these FMP reviews to reflect what MRIP currently reports for landings. The FMP Review does include this figure showing the comparison from the previous Coastal Household Telephone Survey, harvest estimates, which is the gray dash line, to the current FES based estimates, which is the solid black line.

Again, you can see those higher estimates with the new FES landings. As far as total landings in 2021 combined commercial and recreational. The combined landings were an estimated 14.6 million pounds, with the commercial fishery harvesting approximately 33 percent of that total, and the recreational fishery harvesting about 67 percent of that total. Again, based on the current MRIP estimates.

For the commercial sector specifically in 2021, landings were 4.75 million pounds of which 72 percent were landed in Florida, and 24 percent in North Carolina as the majority there. For the commercial sector, 2021 is one of only three years since 1995 with commercial landings over 4 million pounds.

On the recreational side, again according to the current MRIP estimates, recreational anglers harvested 8.6 million Spanish mackerel, or about

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9.8 million pounds, which is the highest in the time series. Again, Florida and North Carolina account for the majority there, Florida with 69 percent and North Carolina with 15 percent by number of fish.

Then the number of recreational releases of Spanish mackerel have generally increased over time, reaching the highest in the time series in 2021 with 6 million releases. Again, as we heard earlier, there were some questions about the 2020 and '21 MRIP estimates, so the FMP Review will be updated with those revised MRIP estimates that John went over, once they've been updated in the MRIP database.

This figure here shows the commercial landings in blue and the recreational landings in gray. Again, you can see 2020 and '21 were the highest recreational landings in the time series, and commercial landings over the past few decades have largely been below 4 million pounds, except for a couple years, including 2021. Then as far as compliance in 2021 implementation. The PRT found no inconsistencies from the FMP, and again a note here that Rhode Island just declared interest in Spanish mackerel last year, so they are currently developing regulations through their state process for Spanish mackerel. Then finally to wrap up here, on the next slide for de minimis for Spanish mackerel. A state qualifies for de minimis if its previous three-year average combined commercial and rec landings is less than 1 percent of the coastwide average.

De minimis states are not required to implement any monitoring programs, although there are no specific monitoring requirements in the FMP. Rhode Island, New Jersey and Delaware have all requested de minimis, and they all do meet the requirements for de minimis. I'm happy to take any questions before I start the cobia FMP Review, if folks have any questions on Spanish mackerel.

CHAIR CIMINO: Okay, Shanna and then Lynn.

MS. MADSEN: If Lynn's question is about the FMP Review, I might let her take it first. No, different, okay. As the conversation has been developing

around the table, before we get off of Spanish mackerel. My question was more a question of process. I think that you know a lot of us are asking questions about looking to characterize the fishery, gathering information about how the northern states are prosecuting their fisheries and things like that.

You float at the idea of forming a Technical Committee to start to potentially tackle some of these questions, and maybe we don't have specific tasks for that TC just yet. But it does sound like we're going to need to start to gather a lot of this information, in order to be able to really drill down on some of the questions that are coming out of this Board.

My question is, what do we need to do to form a TC, and do we potentially want to discuss that happening today, or going back to the states and starting to evaluate what our workloads look like, who could potentially sit on that, et cetera. I just don't know what the process looks like.

CHAIR CIMINO: Yes, that's a great question. We'll turn it over to Bob. I do think that you know now that we split this group out. I don't think we have any other TC that would seem appropriate to kind of lean on. We'll go to Bob.

EXECUTIVE DIRECTOR BEAL: Yes, the process is actually very simple. If this Board wants a technical committee for Spanish mackerel they can make that decision, and then we would reach out to the states to populate the committee. Pretty straightforward, if that is what the Board wants to do. It doesn't have to go to the Policy Board or anything else, it's a Board decision at this level.

MS. FRANKE: Then maybe over the next few months, once we identify a potential TC member or a point of contact for each state. As staff, I can work with each contact to maybe for each state to submit some just general information on how their fisheries are prosecuted. We can come up with a couple questions for each state to fill out. We will have sort of, I think someone mentioned sort of like

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a fishery profile for the Commission states to get an idea of how the fisheries are prosecuted in each state. I'm seeing some head nods, so I can work over that over the next few months.

CHAIR CIMINO: Okay thanks, Lynn.

MS. FEGLEY: My question is resolved, thank you.

CHAIR CIMINO: Go ahead, Marty.

MR. MARTIN GARY: More maybe a question for Jason or Eric. I'm always intrigued by this northernmost distribution of fish when they're shifting or expanding. I was wondering if either of you could characterize what you're seeing up there in space and time, in terms of that species moving into your waters.

MR. ERIC REID: Well, thank you for the question. I just wanted to thank this Board for putting Rhode Island on this Board. I was really enthralled by a conversation about models that don't work and reallocation and all this other stuff. It's none of your business what happens in Rhode Island, because we're going to be out of here in another month.

To answer your question, Marty. I know outside of Narraganset Bay; I think it's still in state waters. There have been floating fish traps there forever, and they catch those fish pretty regular in the summertime. They are a lot of work to get in the water and get out of the water, and you can't find good help now, so I don't know how many of those traps are physically in the water now.

But I think the majority of our landings in the past is from that particular gear. But I'm sure the recreational sector catches them rod and reel, and there is some, you know gillnetting for bluefish and other things like that, which would certainly catch that fish as well. We don't land a lot of them, but you know. Where is Tom Fote: I've been around a long time, and back in 1979 it was nothing to have 3,000/4,000 pounds of Spanish mackerel in a fish trap.

CHAIR CIMINO: Eric, you asked. Tom has his hand up, so go ahead, Tom.

MR. THOMAS P. FOTE: Yes, I've seen over the years particular times that we had Spanish mackerel all over Jersey. Just when the warm water came up, we got them, and we're probably going to be getting a lot more with the change in temperature, and there are some looking forward to it. That maybe replace some of the fish that are moving north out of our area, but yes, it's interesting.

CHAIR CIMINO: Okay, I do want to continue to move us along, but I guess Bob mentioned it's simple, but I'm not sure. Do we need a formal motion, or we just we assume and it's the will of the Board?

MS. FRANKE: I don't think we need a motion to form a TC. Where it's the will of the Board we'll all move forward with that as staff.

CHAIR CIMINO: Okay, so we'll reach out, we'll send an e-mail looking for nominees for that. Okay, and we'll move on to cobia, and I'm sure we'll have some questions there, so go ahead, Emilie.

ATLANTIC COBIA FMP REVIEW

MS. FRANKE: I'll get in now to shifting gears to this Board's other species, which is the Atlantic stock of cobia. I'll go over the FMP Review here. As a reminder, Atlantic cobia are currently managed through Amendment 1 to the Interstate FMP approved in 2019, which transitioned Atlantic cobia to sole management by the Commission. Then also Addendum I was approved in 2020.

The total harvest quota for fishing years '21 through '23 is about 80,000 fish, which is allocated 96 percent to the recreational sector and 4 percent to the commercial sector. For the commercial sector, along with size limits and possession limits, commercial harvest from non de minimis states, which currently is Virginia, North Carolina and South Carolina, is tracked and reported to the Commission throughout the season, and the fishery closes if

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commercial landings reach the specified commercial closure trigger.

Then 4 percent of the commercial quota portion is set aside for de minimis harvest. For the recreational fishery. Again, in addition to size and possession limits, the recreational quota is allocated to state harvest targets for non de minimis states. Every couple of years when specifications are set, these states evaluate their average landings against their harvest quota, and have to adjust measures if they are exceeding that target.

One percent of the recreational quota is set aside for de minimis harvest, and states that have recreational de minimis status can either adopt the same measures as the nearest non de minimis state, or they can simply adopt a 37-inch total length minimum size limit, and a one-fish per vessel limit.

As far as the status of the stock for Atlantic cobia. The most recent assessment was SEDAR 58, completed in 2020 with a terminal year of 2017. It found the stock was not overfished and overfishing was not occurring. The next SEDAR assessment is tentatively scheduled for 2025, with a terminal year of either 2023 or 2024.

As a reminder, the Atlantic cobia stock extends from Georgia northward. Cobia in Florida waters are considered part of the Gulf of Mexico stock, which is not managed by the Commission. For landings in 2021, total Atlantic cobia landings, both the commercial and recreational sectors combined were about 2.7 million pounds, with only 2.5 percent from the commercial sector, and over 97 percent from the recreational sector. Total 2021 landings were about a 13 percent increase from 2020.

Then on the commercial side, 2021 landings were 66,499 pounds, with Virginia, North Carolina harvesting the majority with about 44 percent each. Then the total landings from Virginia, North Carolina and South Carolina, so those non de minimis states, did not reach the closure trigger, so

the fishery was open through the end of the year. Then for the recreational sector, in 2021 recreational landings were about 2.6 million pounds, or just under 91,000 fish by number. Virginia landed the majority with 63 percent, and North Carolina landed 12 percent. Looking at the whole time series from 1981 through 2021, average recreational harvest is about 1 million pounds per year. But as you can see more recently, landings have increased, so this most recent ten-year average is about 2.1 million pounds per year. Then as far as recreational releases, those have also generally increased. Over the last five years an average of 79 percent of the recreational catch were released alive. This is higher than the previous five-year average of about 61 percent.

This figure just shows the commercial and recreational landings in pounds. Again, you can see the commercial sector is pretty small there, at the bottom in orange, and then the rest is the recreational landings with some increases in recent years, as well as some fluctuations year to year. Then as far as 2021 implementation, the PRT found no inconsistencies from the FMP.

We did see a few regulation changes in 2021 based on Addendum I. After evaluating their previous landings against their new harvest target, Virginia implemented measures designed to reduce their recreational harvest by 42 percent, by lowering their vessel limit and shortening their season. Then North Carolina was able to liberalize their measures, and they increased the vessel limit for private anglers only for an additional month during the year.

Then for de minimis states, de minimis states changed their measures, again to either adopt the nearest non de minimis state, which for all of de minimis states is Virginia, or adopted the standard de minimis measure from the FMP. There are a couple of points here from the PRT regarding de minimis.

On the recreational side to qualify for de minimis a state's recreational harvest in two of the past three

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years must be less than 1 percent of coastwide landings during that time. Rhode Island, New Jersey, Delaware, Maryland and Florida all requested de minimis status, and all these states met their requirement, except for Maryland.

In their compliance report, Maryland noted that given the variability in landings from year to year, after having 0 harvest in 2019 and being just over that 1 percent threshold in 2020. Maryland requested to continue under de minimis until this year's harvest can be evaluated. The PRT did discuss and agree with this rationale.

For commercial de minimis we had a similar situation. To qualify for commercial de minimis, landings for two of the last three years must be less than 2 percent of the annual landings during that time. We had Rhode Island, New Jersey, Delaware, Maryland, Georgia and Florida request commercial de minimis status, and all met the qualifications except for New Jersey.

In their compliance report New Jersey noted that their 2019 and 2021 landings were considered to be pretty anomalous, anomalously high, and also, they are tracking their current landings this year, and their current landings are less than 20 percent of what the landings were during those high years. New Jersey requested to continue under de minimis until this year's harvest can be evaluated, and again the PRT did agree with this rationale.

The PRT recommends the Board approve all de minimis requests, including Maryland and New Jersey. This sort of brought up a conversation at the PRT level that over the next few years you could see multiple states starting to exceed this de minimis threshold, especially if cobia landings in the Mid-Atlantic continue to increase. There are some potential management implications here, including you know if a state becomes non de minimis for commercial they would have to start conducting in-season monitoring and reporting of their commercial harvest.

Then on the recreational side, if a state becomes non de minimis you have to add that state to the calculation of recreational harvest targets. Then another thing is the current allocation regarding those recreational harvest targets is based only on data through 2015. That's another thing the PRT noted the Board may need to update, sort of in the coming years.

You know from the PRTs perspective, they recommend that as the Board is discussing new cobia specifications next year, and with the upcoming stock assessment. The Board should also discuss whether these updates to the recreational harvest targets and the allocations would be appropriate at that time as well.

Then just to wrap up. The final note from the PRT here is the PRT noted that New York's recent commercial cobia landings were 6.9 percent of coastwide landings in 2020, and 2.4 percent in '21. Based on those years, the PRT recommends New York declare an interest in Atlantic cobia, and update their regulations to meet de minimis.

I believe that New York has actually already started the process of updating their regulations to the de minimis requirements, and the PRT also noted that depending on future landing that as we mentioned before, this in-season monitoring may need to be required in some states. That's all I have for the FMP Review for cobia, a little bit more than Spanish mackerel. If you folks have questions, I'm happy to address those.

CHAIR CIMINO: We'll look for hands on questions. You know as we eat lunch today, we're going to have to think some big thoughts on what de minimis means for this species, because it's kind of baked in, since we have recreational harvest targets by state. As states move out of de minimis status there.

I'll tell you, Jim, if MRIP doesn't show decent numbers for New York and New Jersey this year, then I'm worried that survey is missing what's really happening on the water, because there was an

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November 2022

awful lot of talk about that. After we get through questions, we'll look for motions for approval for both species, but any questions? Go ahead, Malcolm.

DR. MALCOLM RHODES: This is probably just housekeeping, but Florida, since they are a member of this Board and requested recreational de minimis. Is that just kind of housekeeping?

MS. FRANKE: Yes, exactly. Florida is still required to submit a compliance report every year that basically says they harvested 0 cobia from the Atlantic migratory stock.

CHAIR CIMINO: Okay, oh go ahead.

MR. JAMES J. GILMORE, JR.: Just to give an update on New York. You know we're struggling with the data. In fact, it's like, are we going to get into declaring the fishery then declare out of the fishery and declare back in the fishery, the way the data is going. Just so, just an update of what New York is doing. We do have a rulemaking in process to adopt the current de minimis commercial and recreational harvest regulations that we've initiated another rulemaking so that if we exceed the coastwide TAC, whatever that we'll be able to shut the fishery down.

We've got the regulatory mechanisms in process. But 2021 the landings were over the 6-point whatever percent, and then this year, up to right now we've made it 200 pounds. The same thing on the recreational side. We had the last 10 years no landings from MRIP. This year we've got 3,500 fish we landed.

It's really all over the place. At this point we're not going to plan to declare in until we get some more stable data, because there are a lot of other factors going on, and I'm sure coming out of the COVID and everything is really making things kind of crazy. But we're going to keep monitoring it and once we get to that point, we'll clearly do what we need to do. Thanks.

CHAIR CIMINO: If no other hands with questions here we'll look for a motion to get these FMP Reviews approved. Lynn.

MS. FEGLEY: Mr. Chair, I would be happy to make that motion. I move to approve the Spanish Mackerel FMP Review for the 2021 fishing year, state compliance reports and de minimis requests for Rhode Island, New Jersey, and Delaware.

CHAIR CIMINO: Thank you for that, motion by Lynn Fegley, second Doug Haymans. Any discussion on the motion? Go ahead, Malcolm.

DR. RHODES: Just to kind of housekeeping. Do we need to add also approving the recommendation for the PRT looking into those de minimis issues? Is that part of this, or does that need to be added on to the motion?

MS. FRANKE: I think that's for cobia, and we don't need to add it to the motion. I think that's something that the Technical Committee and the PRT can discuss next year when looking into cobia specifications. But thanks for that.

CHAIR CIMINO: Any objection to the motion? No hands, good, we'll consider that approved by unanimous consent, and we'll look for a motion for the Cobia Review. Thanks, Doug, go ahead.

MR. DOUG HAYMANS: Mr. Chair, I move to approve the Atlantic Cobia FMP Review for the 2021 fishing year, state compliance reports and de minimis requests for Rhode Island, New Jersey, Delaware, Maryland, Georgia, and Florida.

CHAIR CIMINO: Great, thanks, second by Mel Bell. Any discussion? Great. Any objection to the motion? Seeing no objections, also approved by unanimous consent.

ADJOURNMENT

CHAIR CIMINO: If there is any other business to come before the Board you are not going to be very popular. But go ahead. No, great, so I'll look for a motion to adjourn. But before I do, I want to say

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thank you again to Emilie and John for a great job.
Motion by Malcolm, all right, we are adjourned.

(Whereupon the meeting convened at 12:15 p.m.
on Tuesday November 8, 2022.)

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



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Coastal Pelagics Management Board

FROM: Emilie Franke and Chelsea Tuohy, Fishery Management Plan Coordinators

DATE: July 17, 2023

SUBJECT: Potential Timelines to Review State Recreational Allocations for Atlantic Cobia

The Chair of the Coastal Pelagics Management Board (Board) added an agenda item for the Summer 2023 Board meeting to discuss potential timelines for reviewing state-by-state allocations of the recreational harvest quota for Atlantic cobia.

Under Amendment 1 (2019) to the Interstate Fishery Management Plan for Atlantic Migratory Group Cobia (FMP), percent allocations of the recreational harvest quota are based on states' percentages of coastwide historical landings in numbers of fish, derived as 50% of the 10-year average landings from 2006-2015 and 50% of the 5-year average landings from 2011-2015, with a 1% set-aside for landings in *de minimis* states (Table 1). When new fishery specifications are set, landings for each non-*de minimis* state is evaluated against that state's target as an average of annual landings for years with the same season and vessel limit. If a state's averaged recreational landings exceed its recreational harvest target, that state must adjust its recreational vessel limit or season to reduce harvest to achieve their harvest target. If a state's landings are below its target for two consecutive years, that state may extend seasons or increase vessel limits, if desired, to allow increased harvests to not exceed the harvest target.

In the FMP Review for Atlantic cobia for the 2021 Fishing Year, the Plan Review Team noted:

"...the current allocation of recreational quota to each state is based on landings data through only 2015, which may need to be updated to reflect more recent years. As the Board considers potential management action with the next set of specifications and with the next stock assessment, the PRT recommends the Board discuss whether updates to the state-by-state recreational harvest allocations are warranted."

Reallocation of the recreational quota among states can be accomplished through an addendum to Amendment 1. One scenario that would require reallocation discussions is if a state exceeds the recreational *de minimis* threshold and loses their *de minimis* status; this would require reallocation to add that new non-*de minimis* state into allocation calculations.

If the Board would like to consider future management action to address state recreational allocations, staff have identified potential timelines and course of action outlined below, considering the upcoming stock assessment and specifications. The Board could pursue alternative timelines and course of action as desired. The next stock assessment for Atlantic

cobia is an update (i.e., operational assessment) scheduled for 2025 with potential to inform the 2026 or 2027 total harvest quota, depending on when the assessment is completed. The stock assessment schedule should be finalized by early 2024.

Potential Timeline 1: Prepare Recreational Allocation Action for 2026 Implementation to Coincide with Stock Assessment

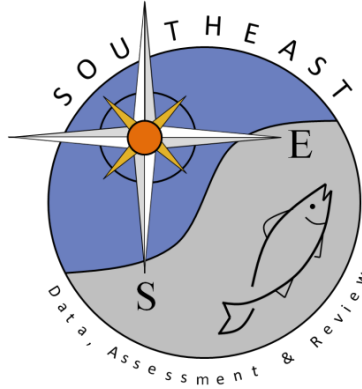
- Summer-Fall 2023: Board tasks the Cobia Technical Committee (TC) with reviewing and summarizing state fishery landings relative to their current state harvest targets, including *de minimis* landings, and identifying relevant trends in state/regional landings.
- Mid-2024: Board initiates draft addendum to consider state recreational allocations, if desired based on TC report.
- Late 2024-Early 2025: Board approves draft addendum for public comment and states conduct public hearings.
- Mid-2025: Board considers selecting final measures and approval of the addendum for 2026 implementation.
- 2026: States implement new recreational management measures based on new recreational allocations/state harvest targets, and based on new total harvest quota if modified based on the stock assessment results (if assessment results are available).

Potential Timeline 2: Prepare Recreational Allocation Action for 2025 Implementation

- Summer 2023: Board tasks the Cobia TC with reviewing and summarizing state fishery landings relative to their current state harvest targets, including *de minimis* landings, and identifying relevant trends in state/regional landings.
- Early 2024: Board initiates draft addendum to consider state recreational allocations, if desired based on TC report.
- Mid-2024: Board approves draft addendum for public comment and states conduct public hearings.
- Late 2024: Board considers selecting final measures and approval of the addendum for 2025 implementation.
- 2025: States implement new recreational management measures based on new recreational allocations/state harvest targets.
- 2026: Potential change to total harvest quota based on stock assessment results, if available, and resulting change to state harvest targets and management measures based on new total harvest quota.

Table 1. Amendment 1 recreational allocation percentages for Atlantic cobia by state.

State	Allocation Percentage
Georgia	9.4%
South Carolina	12.1%
North Carolina	38.1%
Virginia	39.4%
<i>De Minimis</i>	1.0%
Total	100%



SEDAR

Southeast Data, Assessment, and Review

SEDAR 78

South Atlantic Spanish Mackerel

Stock Assessment Report

May 2022

Revised July 2022

SEDAR
4055 Faber Place Drive, Suite 201 North Charleston, SC 29405

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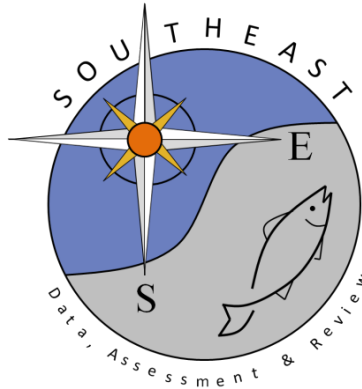
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SEDAR

Southeast Data, Assessment, and Review

SEDAR 78

South Atlantic Spanish Mackerel

Section I: Introduction

May 2022

SEDAR
4055 Faber Place Drive, Suite 201 North Charleston, SC 29405

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I. Introduction

1. SEDAR Process Description

SouthEast Data, Assessment, and Review (SEDAR) is a cooperative Fishery Management Council process initiated in 2002 to improve the quality and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and US Caribbean. The improved stock assessments from the SEDAR process provide higher quality information to address fishery management issues. SEDAR emphasizes constituent and stakeholder participation in assessment development, transparency in the assessment process, and a rigorous and independent scientific review of completed stock assessments.

SEDAR is managed by the Caribbean, Gulf of Mexico, and South Atlantic Regional Fishery Management Councils in coordination with NOAA Fisheries and the Atlantic and Gulf States Marine Fisheries Commissions. Oversight is provided by a Steering Committee composed of NOAA Fisheries representatives: Southeast Fisheries Science Center Director and the Southeast Regional Administrator; Regional Council representatives: Executive Directors and Chairs of the South Atlantic, Gulf of Mexico, and Caribbean Fishery Management Councils; a representative from the Highly Migratory Species Division of NOAA Fisheries; and Interstate Commission representatives: Executive Directors of the Atlantic States and Gulf States Marine Fisheries Commissions.

SEDAR 78 addressed the stock assessment for South Atlantic Spanish Mackerel. The assessment process consisted of a series of webinars held from May 2021 – March 2022. The Stock Assessment Report is organized into 2 sections. Section I –Introduction contains a brief description of the SEDAR Process, Assessment and Management Histories for the species of interest, and the management specifications requested by the Cooperator. Section II is the Assessment Process report. This section details the assessment model, as well as documents any data recommendations that arise for new data sets presented during this assessment process, or changes to data sets used previously.

The final Stock Assessment Reports (SAR) for South Atlantic Spanish Mackerel was disseminated to the public in May 2022. The Council’s Scientific and Statistical Committee (SSC) will review the SAR for its stock. The SSCs are tasked with recommending whether the assessments represent Best Available Science, whether the results presented in the SARs are useful for providing management advice and developing fishing level recommendations for the Council. An SSC may request additional analyses be conducted or may use the information provided in the SAR as the basis for their Fishing Level Recommendations (e.g., Overfishing Limit and Acceptable Biological Catch). The South Atlantic Fishery Management Council’s SSC will review the assessment at its Summer 2022 meeting, followed by the Council receiving the SAR at the Fall 2022 meeting. Documentation on SSC recommendations is not part of the SEDAR process and is handled through each Council

2. Atlantic Spanish Mackerel Management Overview

2.1 Fishery Management Plan and Amendments

The following summary describes only those management actions that likely affect Atlantic Spanish mackerel fisheries and harvest.
FMP Amendments affecting Atlantic Spanish mackerel:

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> • Set MSY = OY = TAC (27,000,000 pounds). • Minimum size limit for is 12 inches FL, except for incidental catch allowance of 5% of the total catch by weight aboard. 	Original FMP (SAFMC 1982) 48 FR 5274	February 4, 1983
<ul style="list-style-type: none"> • Provided framework procedure for pre-season adjustment of TAC. • TAC = 27,000,000 pounds • Limited purse seine harvest to 300,000 lbs in Atlantic and 300,000 lbs in Gulf • Minimum size limit for the commercial and recreational sectors are 12 inches FL or 14 inches TL. 	Amendment 1 (SAFMC 1985) 50 FR 34846	August 28, 1985
<ul style="list-style-type: none"> • Revised MSY and clarified TAC must be set below the upper range of the ABC. • Recognized two migratory groups, Gulf and South Atlantic, with Dade/Monroe county line as the migratory group boundary. • TAC = 2,900,000 pounds • Established allocations for TAC, commercial (2,200,000 pounds, 76%) and recreational (700,000 pounds, 24%). • Established April 1 to March 31 fishing year. • Recreational bag limit of 4 fish in FL and 10 in NC, SC, and GA. • Charter boat permits were required. 	Amendment 2 (SAFMC 1987) 52 FR 23836	June 25, 1987

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> • Prohibited drift gill nets for coastal pelagics and purse seines for the overfished group of mackerels. 	Amendment 3 (SAFMC 1989) 54 FR 29561	July 13, 1989
<ul style="list-style-type: none"> • Reallocated Atlantic group Spanish mackerel equally between recreational and commercial fishermen. • TAC = 6,000,000 	Amendment 4 (SAFMC 1989) 54 FR 38526	September 19, 1989
<ul style="list-style-type: none"> • Extended the management area for the Atlantic groups of mackerels through the Mid Atlantic Fishery Management Council’s area of jurisdiction. • Revised the definition of overfishing. • Redefined recreational bag limits as daily limits, and removed the provision specifying that bag limit caught mackerel may be sold. • Size limit for Spanish mackerel is 12 “ FL or 14” TL. • Bag limit is 4 fish off FL and 10 fish north of FL. 	Amendment 5 (SAFMC 1990) 55 FR 29370	July 19, 1990

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> • Specified rebuilding periods for overfished mackerel stocks. • Provided for commercial Atlantic Spanish mackerel possession limits. <ul style="list-style-type: none"> • In the northern zone, boats are restricted to possession limits of 3,500 pounds. In the southern zone trip limit are 1,500 pounds per vessel per day from April 1 to November 30. From December 1 until 80% of quota is taken: unlimited harvest on Monday, Wednesday, and Friday; 1,500 pounds per vessel per day on Tuesday and Thursday; 500 pounds per vessel per day on Saturday and Sunday. Trip limit 1,000 pounds per vessel per day when 80% of quota is reached. The adjusted quota for Spanish mackerel is 3,250,000 pounds. • Discontinued the reversion of the bag limit to 0 when the recreational quota is filled. • Modified the recreational fishing year to the calendar year, • Changed commercial permit requirements to allow qualification in one of three preceding years. • Changed all size limits to fork length only. Minimum size limit is 12 inches FL. 	<p>Amendment 6 (SAFMC 1992) 57 FR 58151</p>	<p>December 9, 1992</p>
<ul style="list-style-type: none"> • Modified requirements for a king or Spanish mackerel permit. • Set the OY target to 40% static SPR for the Atlantic. • Modified the seasonal framework adjustment measures. 	<p>Amendment 8 (SAFMC 1994) 63 FR 10561</p>	<p>March 4, 1998</p>
<ul style="list-style-type: none"> • Allowed the retention and sale of damaged, legal sized king and Spanish mackerel within established trip limits. 	<p>Amendment 9 (SAFMC 1998) 64 FR 16336</p>	<p>March 28, 2000</p>

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> Established EFH in the South Atlantic 	Amendment 10 (SAFMC 1998) 65 FR 37292	July 14, 2000
<ul style="list-style-type: none"> Addressed Sustainable Fishery Act definitions. 	Amendment 11 (SAFMC 1999)	December 1999
<ul style="list-style-type: none"> Changed the fishing year for Atlantic group Spanish mackerel to March 1 through February 28/29. 	Amendment 15 SAFMC (2004) 70 FR 39187	July 7, 2005
<ul style="list-style-type: none"> Stock ACL= 5,690,000 pounds. <ul style="list-style-type: none"> Commercial = 3,130,000 pounds and recreational = 2,560,000 pounds Accountability Measures (AMs): Commercial sector to close when commercial ACL will be met; payback when total ACL is exceeded (and overfished). Recreational sector to lower bag limit, if necessary, if total ACL is also exceeded. 	Amendment 18 SAFMC 2011 76 FR 82058	January 20, 2012
<ul style="list-style-type: none"> Established coral HAPCs. 	Amendment 19 in CE-BA1 SAFMC 2009 75 FR 35330	July 22, 2010

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> Prohibits king mackerel and Spanish mackerel bag limit sales in Atlantic except state permitted tournaments. Removes income requirements for CMP permits. 	Amendment 20A SAFMC 2013 79 FR 34246	July 16, 2014
<ul style="list-style-type: none"> Recreational fishing measures in SC SMZs. 	Amendment 21 in CE-BA 2 SAFMC 2011 76 FR 82183	January 30, 2012
<ul style="list-style-type: none"> Requires weekly electronic reporting for headboats in South Atlantic. 	Amendment 22 in HB reporting amendment SAFMC 2013 78 FR 78779	January 27, 2014
<ul style="list-style-type: none"> King mackerel and Spanish mackerel dealers must get the universal permit. Federal king mackerel and Spanish mackerel permit holders must sell to federal dealer. Requires weekly electronic reporting for federal dealers. 	Amendment 23 in Generic Dealer Amendment	August 7, 2014

Description of Action	Amendment	Effective Date
	SAFMC 2013 79 FR 19490	
<ul style="list-style-type: none"> • Set Northern (NC/SC line north) and Southern (NC/SC line south) zones and associated commercial quotas. <ul style="list-style-type: none"> • Northern Zone- 622,870 pounds; Southern Zone - 2,507,130 pounds. 	Amendment 20B SAFMC 2014 80 FR 4216	March 1, 2015
<ul style="list-style-type: none"> • For hire reporting requirements. 	Amendment 27 SAFMC 2017	January 4, 2021

SAFMC Regulatory Amendments affecting Atlantic Spanish mackerel:

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> • Commercial allocation is 2,360,000 pounds and recreational allocation is 740,000 pounds. • Bag limits is 4 fish off FL and 10 fish north of FL. 	52 FR 25012	July 2, 1987
<ul style="list-style-type: none"> • Final Rule on technical amendment that allows catch of Spanish mackerel under minimum size limit equal to 5% by weight of total catch or Spanish mackerel on board. 	52 FR 36578	September 30, 1987
<ul style="list-style-type: none"> • Changed TAC to 4,000,000 pounds with 960,000 pounds allocated to the recreational sector and 3,040,000 pounds allocated to the commercial sector. 	53 FR 25611	July 8, 1988
<ul style="list-style-type: none"> • TAC increased to 6,000,000 pounds with 1,440,000 pounds allocated to the recreational sector and 4,600,00 pounds allocated to the commercial sector. 	54 FR 24920	April 1, 1989
<ul style="list-style-type: none"> • TAC changed to 5,000,000 pounds with 3,140,000 pounds allocated to the commercial sector and 1,860,000 pounds allocated to the recreational sector. 	55 FR 25986	June 26, 1990
<ul style="list-style-type: none"> • TAC increased to 7,000,000 pounds with 3,500,000 pounds allocated to commercial sector and 3,500,000 pounds allocated to recreational sector. • Bag limit is 10 fish for areas north of FL and 5 fish for FL. 	56 FR 29920	July 1, 1991
<ul style="list-style-type: none"> • Increased bag limit in Florida to that adopted by the state of FL but not to exceed 10 fish. 	57 FR 33924	July 31, 1992

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> TAC increased to 9,000,000 with 4,500,000 pounds commercial and 4,500,000 pounds recreational. The initial change in the trip limit occurs when 75% of the quota is met instead of 80%. 	58 FR 40613	July 29, 1993
<ul style="list-style-type: none"> TAC for Atlantic Spanish mackerel is increased to 9,200,000 pounds (4,600,000 pounds commercial and 4,600,000 pounds recreational). 	59 FR 40509	April 1, 1994
<ul style="list-style-type: none"> TAC increased to 9,400,000 pounds (4,700,000 pounds commercial and 4,700,000 pounds recreational). 	60 FR 39698	April 1, 1995
<ul style="list-style-type: none"> Reduced to 7,000,000 (3,500,000 pounds commercial and 3,500,000 pounds recreational). Modify trip regime for commercial vessels off Florida east coast: Nov 1 rather than Dec 1 start for unlimited harvest season and increase the Saturday-Sunday daily trip limit from 500 to 1,500 pounds during that season and increase the daily trip limit from 1,000 to 1,500 pounds for all days of the week during the period that follows the unlimited season and continues until the adjusted quota is taken. 	62 FR 23671	May 1, 1997
<ul style="list-style-type: none"> Increased the TAC to 8,000,000 pounds (4,000,000 pounds commercial and 4,000,000 pounds recreational). 	62 FR 53278	April 1, 1997
<ul style="list-style-type: none"> Decrease the TAC to 6,600,000 pounds and change the allocation from 50/50 to 55% commercial (3,630,000 pounds) and 45% recreational (2,970,000 pounds). 	64 FR 45457	August 20, 1999

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> • Increase TAC to 7,040,000 pounds with 3,870,000 pounds commercial and 3,170,000 pounds recreational. • The trip limit from April 1 to November 30 would be 3,500 lb; from December 1 until 75% of the adjusted quota is taken there would be no trip limit on Monday through Friday and on Saturday and Sunday the trip limit would be 1,500 lbs. • The recreational bag limit is increased from 10 to 15 fish per person per day. • MSY = 5.7-7.5 million pounds, Bmsy = 12.2-15.8, MSST = 8.5-11.1, MFMT = 0.38-0.48. 	65 FR 41015	July 3, 2000
<ul style="list-style-type: none"> • Reduce Atlantic Spanish mackerel trip limit to 1,500 lbs per day from March 1, 2004 to March 31, 2004. 	69 FR 9969	March 3, 2004
<ul style="list-style-type: none"> • Reduce trip limit for Atlantic Spanish mackerel to 1,500 lbs from February 1, 2005 to March 31, 2005. 	70 FR 5569	February 3, 2005
<ul style="list-style-type: none"> • Reduce Atlantic Spanish mackerel trip limit to 1,500 lbs from February 5, 2007 to February 28, 2007. 	72 FR 5345	February 6, 2007
<ul style="list-style-type: none"> • Change start date for commercial trip limit of the Atlantic Spanish mackerel in southern zone (off FL) to March 1. 	73FR439	January 3, 2008
<ul style="list-style-type: none"> • Provisions for transfer at sea for gillnets when one set exceeds Spanish mackerel trip limit 	Framework Action SAFMC 2013 79 FR 68802	December 19, 2014

Description of Action	Amendment	Effective Date
<ul style="list-style-type: none"> ACL= 6,063,000 pounds with commercial 3,330,000 pounds and recreational 2,727,000 pounds. 	FW Amendment 1 SAFMC 2014 79 FR 69058	December 22, 2014
<ul style="list-style-type: none"> Trip limits in Southern Zone (SC, GA, FL): 3,500lbs until 75% adjusted quota is met, then 1,500lbs until adjusted quota is met and then 500lbs until the full quota is met. 	FW Amendment 2 SAFMC 2014 80 FR 40936	August 13, 2015
<ul style="list-style-type: none"> Permit restrictions: removes the restriction on fishing for, or retaining, the recreational bag and possession limits of king and Spanish mackerel on a vessel with a Federal commercial permit for king or Spanish mackerel when commercial harvest of king or Spanish mackerel in a zone or region is closed. 	FW Amendment 5 SAFMC 2016 82 FR 35658	August 31, 2017

2.2 Emergency and Interim Rules (if any)

Description of Action	FRN	Effective Date
<ul style="list-style-type: none"> • Divided 3.716 million pounds quota into three areas with 1.869 million pounds going to the Atlantic. <ul style="list-style-type: none"> ○ The Atlantic boundary was bounded by the North Carolina/Virginia state line and a line directly east of the Dade/Monroe County, Florida boundary. • Established a recreational bag limit of 4-fish per trip and allowed sale of recreationally caught Spanish mackerel under the bag limit. • January 1, 1987 to March 31, 1987 	52 FR 290	January 5, 1987
<ul style="list-style-type: none"> • 90-day extension of January 1, 1987 to March 31, 1987 emergency rule for Spanish mackerel. 	52 FR 10762	April 3, 1987

2.3 Secretarial Amendments (if any)

None for Atlantic Spanish mackerel.

2.4 Control Date Notices (if any)

March 7, 2019: participants who enter the commercial sector after March 7, 2019, will not be assured of future access if a management regime that limits participation in the sector is prepared and implemented.

2.5 Management Program Specifications

Table 2.5.1. General Management Information

Species	Spanish mackerel (<i>Scomberomorus maculatus</i>)
Management Unit	Atlantic migratory group Spanish mackerel
Management Unit Definition	All waters from the intersection of New York, Connecticut, and Rhode Island to a line extending due east of the Miami-Dade/Monroe County line
Management Entity	South Atlantic Fishery Management Council (Note: Mid-Atlantic Council participates as voting member on South Atlantic Council’s Mackerel Cobia Committee.)
Management Contacts SERO / Council	SAFMC: Christina Wiegand SERO: Mary Vara/Karla Gore
Current stock exploitation status	Not undergoing overfishing
Current stock biomass status	Not overfished

Table 2.5.2. Management Parameters

Criteria	South Atlantic – Current (SEDAR 28)		
	Definition	Values	Units
M	Average of Lorenzen M (if used)	0.35	Instantaneous natural mortality; per year
F _{CURRENT}	Geometric mean of full fishing mortality rates for 2009-2011 (F ₂₀₀₉₋₂₀₁₁)	0.36	Per year
F _{TARGET}			
Yield at F _{TARGET} (equilibrium)			
F _{MSY}	F _{MSY}	0.69	Per year
B _{MSY}	Biomass at MSY	9548	Metric tons
R ₂₀₁₂			
R _{MSY}			
R _{UNFISHED}			
SSB ₂₀₁₁	Spawning stock biomass in 2011	4862	Metric tons
SSB _{MSY}	Spawning stock biomass at MSY	3266	Metric tons
MSST ¹	MSST = [(1-M) or 0.7 whichever is greater]*B _{MSY}	2127	Metric tons
MFMT	F _{MSY}	0.69	Per year
MSY	Yield at F _{MSY}	2750	Metric tons
OY	Yield at F _{OY}		
F _{OY}	F _{OY} = 65%, 75%, 85% F _{MSY}	65% F _{OY} = 0.449 75% F _{OY} = 0.518 85% F _{OY} = 0.587	
Exploitation Status	F ₂₀₀₉₋₂₀₁₁ / F _{MSY}	0.526	
	F ₂₀₁₁ / F _{MSY}	0.521	
Biomass Status	SSB ₂₀₁₁ /MSST	2.29	
	SSB ₂₀₁₁ / SSB _{MSY}	1.49	
Terminal F (2011)			
Terminal Biomass (2011) ¹			
Generation Time			
T _{REBUILD} (if appropriate)			

Table 2.5.2. Management Parameters Continued				
Criteria	South Atlantic – Proposed (SEDAR 78)			
	Definition	Base Run Values	Units	Median of Base Run MCBs
M	Average of Lorenzen M (if used)			
F _{CURRENT}	Geometric mean of full fishing mortality rates for 2009-2011 (F ₂₀₀₉₋₂₀₁₁)			
F _{TARGET}				
Yield at F _{TARGET} (equilibrium)				
F _{MSY}	F _{MSY}			
B _{MSY} ¹	Biomass at MSY			
R _{MSY}				
SSB				
SSB _{MSY}	Spawning stock biomass at MSY			
MSST ¹	MSST = [(1-M) or 0.7 whichever is greater]*B _{MSY}			
MFMT	F _{MSY}			
MSY	Yield at F _{MSY}			
OY	Yield at F _{OY}			
F _{OY}	F _{OY} = 65%, 75%, 85% F _{MSY}			
Exploitation Status				
Biomass Status ¹				
Terminal F	-			
Terminal Biomass ¹	-			
Generation Time	-			
T _{REBUILD} (if appropriate)	-			

¹Biomass values reported for management parameters and status determinations should be based on the biomass metric recommended through the Assessment process and SSC. This may be total, spawning stock or some measure thereof, and should be applied consistently in this table.

NOTE: “Proposed” columns are for indicating any definitions that may exist in FMPs or amendments that are currently under development and should therefore be evaluated in the current assessment. Please clarify whether landings parameters are ‘landings’ or ‘catch’ (Landings + Discard). If ‘landings’, please indicate how discards are addressed.

Table 2.5.3. Stock Rebuilding Information

None – Atlantic migratory group Spanish mackerel is not currently overfished.

Table 2.5.4. General Projection Specifications

South Atlantic

First Year of Management	2024/2025
Interim basis	ACL, if ACL is met. Average exploitation, if ACL is not met.
Projection Outputs	
Landings	Pounds and numbers
Discards	Pounds and numbers
Exploitation	F & Probability F>MFMT
Biomass (total or SSB, as appropriate)	SSB & Probability SSB>MSST (and Prob. SSB>SSB _{MSY} if under rebuilding plan)
Recruits	Number

Table 2.5.5. Base Run Projections Specifications. Long Term and Equilibrium conditions.

Criteria	Definition	If overfished	If overfishing	Neither overfished nor overfishing
Projection Span	Years	T _{REBUILD}	10	10
Projection Values	F _{CURRENT}	X	X	X
	F _{MSY}	X	X	X
	75% F _{MSY}	X	X	X
	F _{REBUILD}	X		
	F=0	X		

NOTE: Exploitation rates for projections may be based upon point estimates from the base run (current process) or upon the median of such values from the MCBs evaluation of uncertainty. The critical point is that the projections be based on the same criteria as the management specifications.

Table 2.5.6. P-star projections. Short term specifications for OFL and ABC recommendations. Additional P-star projections may be requested by the SSC once the ABC control rule is applied.

Basis	Value	Years to Project	P* applies to
P*	50%	Interim + 5	Probability of overfishing
P*	TBD ¹	Interim + 5	Probability of overfishing
Exploitation	F _{MSY}	Interim + 5	NA
Exploitation	75% of F _{MSY}	Interim + 5	NA

¹ To be determined by the SSC.

Table 2.5.7. Quota Calculation Details

If the stock is managed by quota, please provide the following information.

	Atlantic Spanish Mackerel
Current Acceptable Biological Catch (ABC) and Total Annual Catch Level (ACL) Value for Spanish Mackerel	ACL = ABC = OY ACL = 6,063,000 lbs.
Commercial ACL for Spanish Mackerel	ACL = 3,330,000 lbs.
Recreational ACL for Spanish Mackerel	ACL = 2,727,000 lbs.
Next Scheduled Quota Change	After assessment
Annual or averaged quota?	Annual
If averaged, number of years to average	-
Does the quota include bycatch/discard?	No

How is the quota calculated - conditioned upon exploitation or average landings?

Does the quota include bycatch/discard estimates? If so, what is the source of the bycatch/discard values? What are the bycatch/discard allowances?

The ABC, ACL, and recreational ACT values are based on landed catch only; discards are accounted for in specifying the ABC in terms of landed catch and not total mortality.

Are there additional details of which the analysts should be aware to properly determine quotas for this stock?

No.

2.6 Management and Regulatory Timeline

See attached tables below.

Table 2.5.8 Atlantic Migratory Group Spanish Mackerel Commercial Regulatory History prepared by: Christina Wiegand, SAFMC staff

Year	Quota (lbs ww)	ACL (lbs ww)	Days Open	Fishing Season	Reason for Closure	Season Start Date (first day implemented)	Season end Date (last day effective)	Size Limit	Size Limit Start Date	Size Limit End Date	Retention Limit (# fish)	Retention Limit Start Date	Retention Limit End Date
1983 ¹	27,000,000	NA	365	OPEN	NA	2/4/1983	12/31/1983	12-in FL	2/4/1983	12/31/1983	N/A	2/4/1983	12/31/1983
1984 ²	27,000,000	NA	365	OPEN	NA	1/1/1984	12/31/1984	12-in FL	1/1/1984	12/31/1984	N/A	1/1/1984	12/31/1984
1985 ⁴	27,000,000	NA	365	OPEN	NA	1/1/1985	12/31/1985	12-in FL or 14-in TL	1/1/1985	12/31/1985	N/A	1/1/1985	12/31/1985
1986 ⁴	27,000,000	NA	378	OPEN	NA	1/1/1986	1/14/1987	12-in FL or 14-in TL	1/1/1986	1/14/1987	N/A	1/1/1986	1/14/1987
1987	2,360,000	NA	272	CLOSED	QUOTA MET	4/1/1987	12/29/1987	12-in FL or 14-in TL	4/1/1987	12/29/1987	N/A	4/1/1987	12/29/1987
1988	3,040,000	NA	272	CLOSED	QUOTA MET	4/1/1988	12/29/1988	12-in FL or 14-in TL	4/1/1988	12/29/1988	N/A	4/1/1988	12/29/1988
1989	3,240,000	NA	365	OPEN	NA	4/1/1989	3/31/1990	12-in FL or 14-in TL	4/1/1989	3/31/1990	N/A	4/1/1989	3/31/1990
1990 ³	3,140,000	NA	279	CLOSED	QUOTA MET	4/1/1990	1/25/1991	12-in FL or 14-in TL	4/1/1990	1/25/1991	N/A	4/1/1990	1/25/1991
1991	3,500,000	NA	263	CLOSED	QUOTA MET	4/1/1991	12/20/1991	12-in FL or 14-in TL	4/1/1991	12/20/1991	N/A	4/1/1991	12/20/1991
1992	3,500,000	NA	365	OPEN	NA	4/1/1992	3/31/1993	12-in FL	4/1/1992	3/31/1993	a, b	4/1/1992	3/31/1993
-	-	-	-	-	-	-	-	-	-	-	1,000	1/7/1993	2/19/1993
-	-	-	-	-	-	-	-	-	-	-	500	2/20/1993	3/31/1993
1993	3,500,000	NA	365	OPEN	NA	4/1/1993	3/31/1994	12-in FL	4/1/1993	3/31/1994	a, c	4/1/1993	12/21/1993
-	-	-	-	-	-	-	-	-	-	-	1,000	12/22/1993	2/17/1994
-	-	-	-	-	-	-	-	-	-	-	500	2/18/1994	3/31/1994
1994	4,600,000	NA	365	OPEN	NA	4/1/1994	3/31/1995	12-in FL	4/1/1994	3/31/1995	a,c	4/1/1994	1/28/1995
-	-	-	-	-	-	-	-	-	-	-	1,000	1/29/1995	3/31/1995
1995	4,700,000	NA	365	OPEN	NA	4/1/1995	3/31/1996	12-in FL	4/1/1995	3/31/1996	a, c	4/1/1995	3/31/1996
1996	3,500,000	NA	365	OPEN	NA	4/1/1996	3/31/1997	12-in FL	4/1/1996	3/31/1997	a,c	4/1/1996	3/31/1997
1997	3,500,000	NA	365	OPEN	NA	4/1/1997	3/31/1998	12-in FL	4/1/1997	3/31/1998	a,d	4/1/1997	12/15/1997
-	-	-	-	-	-	-	-	-	-	-	1,500	12/16/1997	3/31/1998
1998	4,000,000	NA	365	OPEN	NA	4/1/1998	3/31/1999	12-in FL	4/1/1998	3/31/1999	a,d	4/1/1998	2/9/1999
-	-	-	-	-	-	-	-	-	-	-	1,500	2/10/1999	3/31/1999
1999	3,630,000	NA	365	OPEN	NA	4/1/1999	3/31/2000	12-in FL	4/1/1999	3/31/2000	a,d	4/1/1999	3/31/2000
2000	3,870,000	NA	365	OPEN	NA	4/1/2000	3/31/2001	12-in FL	4/1/2000	3/31/2001	a, e	4/1/2000	3/31/2001
2001	3,870,000	NA	365	OPEN	NA	4/1/2001	3/31/2002	12-in FL	4/1/2001	3/31/2002	a, e	4/1/2001	3/31/2002
2002	3,870,000	NA	365	OPEN	NA	4/1/2002	3/31/2003	12-in FL	4/1/2002	3/31/2003	a, e	4/1/2002	3/31/2003
2003	3,870,000	NA	365	OPEN	NA	4/1/2003	3/31/2004	12-in FL	4/1/2003	3/31/2004	a, e	4/1/2003	2/28/2004
-	-	-	-	-	-	-	-	-	-	-	1,500	3/1/2004	3/31/2004
2004	3,870,000	NA	365	OPEN	NA	4/1/2004	3/31/2005	12-in FL	4/1/2004	3/31/2005	a, e	4/1/2004	1/31/2005
-	-	-	-	-	-	-	-	-	-	-	1,500	2/1/2005	3/31/2005
2005	3,870,000	NA	365	OPEN	NA	4/1/2005	3/31/2006	12-in FL	4/1/2005	3/31/2006	a, e	4/1/2005	3/31/2006
2006	3,870,000	NA	365	OPEN	NA	3/1/2006	2/28/2007	12-in FL	3/1/2006	2/28/2007	a, e	3/1/2006	2/4/2006
-	-	-	-	-	-	-	-	-	-	-	1,500	2/5/2007	2/28/2007
2007	3,870,000	NA	365	OPEN	NA	3/1/2007	2/29/2008	12-in FL	3/1/2007	2/29/2008	a, e	3/1/2007	2/29/2008
2008	3,870,000	NA	365	OPEN	NA	3/1/2008	2/28/2009	12-in FL	3/1/2008	2/28/2009	a, e	3/1/2008	2/28/2009
2009	3,870,000	NA	365	OPEN	NA	3/1/2009	2/28/2010	12-in FL	3/1/2009	2/28/2010	a, e	3/1/2009	2/28/2010
2010	3,870,000	NA	365	OPEN	NA	3/1/2010	2/28/2011	12-in FL	3/1/2010	2/28/2011	a, e	3/1/2010	2/21/2011
-	-	-	-	-	-	-	-	-	-	-	1,500	2/22/2011	2/28/2011
2011	3,870,000	NA	365	OPEN	NA	3/1/2011	2/29/2012	12-in FL	3/1/2011	2/29/2012	a, e	3/1/2011	1/26/2012
-	-	-	-	-	-	-	-	-	-	-	1,500	1/27/2012	2/29/2012
2012	SEE ACL	3,870,000	365	OPEN	NA	3/1/2012	2/28/2013	12-in FL	3/1/2012	2/28/2013	a, e	3/1/2012	1/5/2013
-	-	-	-	-	-	-	-	-	-	-	1,500	1/6/2013	2/28/2013

Table 2.5.8 Atlantic Migratory Group Spanish Mackerel Commercial Regulatory History prepared by: Christina Wiegand, SAFMC staff

Year	Quota (lbs ww)	ACL (lbs ww)	Days Open	Fishing Season	Reason for Closure	Season Start Date (first day implemented)	Season end Date (last day effective)	Size Limit	Size Limit Start Date	Size Limit End Date	Retention Limit (# fish)	Retention Limit Start Date	Retention Limit End Date
2013	SEE ACL	3,130,000	365	OPEN	NA	3/1/2013	2/28/2014	12-in FL	3/1/2013	2/28/2014	a, e	3/1/2013	1/16/2014
-	-	-	-	-	-	-	-	-	-	-	1,500	1/17/2014	2/28/2014
2014	SEE ACL	3,130,000	365	OPEN	NA	3/1/2014	2/28/2015	12-in FL	3/1/2014	2/28/2015	a, e	3/1/2014	2/19/2015
-	-	-	-	-	-	-	-	-	-	-	1,500	2/20/2015	2/28/2015
2015 ⁵	SEE ACL	3,330,000	365	OPEN	NA	3/1/2015	2/29/2016	12-in FL	3/1/2015	2/29/2016	f, g	3/1/2015	2/29/2016
2016 ⁵	SEE ACL	3,330,000	365	OPEN	NA	3/1/2016	2/28/2017	12-in FL	3/1/2016	2/28/2017	f, g	3/1/2016	2/28/2017
-	-	-	-	-	-	-	-	-	-	-	1,500	2/6/2017	2/28/2017
2017 ⁵	SEE ACL	3,330,000	365	SZ OPEN	NA	3/1/2017	2/28/2018	12-in FL	3/1/2017	2/28/2018	f, g	3/1/2017	1/26/2018
-	-	-	-	-	-	-	-	-	-	-	1,500	1/27/2018	2/28/2018
-	-	-	251	NZ CLOSED	ZONE QUOTA MET	-	11/7/2017	-	-	-	-	-	-
2018 ⁵	SEE ACL	3,330,000	-	NA	NA	3/1/2018	2/28/2019	12-in FL	3/1/2018	2/28/2019	f, g	3/1/2018	12/25/2018
-	-	-	-	-	-	-	-	-	-	-	1,500	12/26/2018	1/26/2019
-	-	-	-	-	-	-	-	-	-	-	500	1/27/2019	2/5/2019
-	-	-	248	NZ CLOSED	ZONE QUOTA MET	-	11/4/2018	-	-	-	-	-	-
-	-	-	341	SZ CLOSED	ZONE QUOTA MET	-	2/5/2019	-	-	-	-	-	-
2019 ⁵	SEE ACL	3,330,000	365	SZ OPEN	NA	3/1/2019	2/29/2020	12-in FL	3/1/2019	2/29/2020	f, g		
-	-	-	-	-	-	-	-	-	-	-	1,500	12/24/2019	
-	-	-	-	-	-	-	-	-	-	-	500	1/29/2020	
-	-	-	156	NZ CLOSED	ZONE QUOTA MET	-	8/24/2019	-	-	-	-	-	-

Notes:

- 1 Spanish mackerel managed as a single stock throughout the Gulf and South Atlantic.
- 2 Spanish mackerel managed as two migratory groups (Atlantic and Gulf migratory) from this point forward.
- 3 Management area extended from TX through NC to TX through NY.
- 4 Stock quota
- 5 Separate Northern (20%) and Southern Zone (80%) quotas.

Trip Limit Codes:

- a Northern Zone (north of Florida/Georgia): 3,500
- b Southern Zone (east Florida): 1,500 pounds per vessel per day from April 1 to November 30. From December 1 until 80% of quota is taken: unlimited harvest on Monday, Wednesday, and Friday; 1,500 pounds per vessel per day on Tuesday and Thursday; 500 pounds per vessel per day on Saturday and Sunday. Trip limit 1,000 pounds per vessel per day when 80% of quota is reached.
- c Southern Zone (east Florida): 1,500 pounds per vessel per day from April 1 to November 30. From December 1 until 80% of quota is taken: unlimited harvest on Monday, Wednesday, and Friday; 1,500 pounds per vessel per day on Tuesday and Thursday; 500 pounds per vessel per day on Saturday and Sunday. Trip limit 1,000 pounds per vessel per day when 75% of quota is reached.
- d Southern Zone (east Florida): 1,500 pounds per vessel per day from April 1 to October 31. From November 1 until 80% of quota is taken: unlimited harvest on Monday, Wednesday, and Friday; 1,500 pounds per vessel per day on Tuesday and Thursday; 1,500 pounds per vessel per day on Saturday and Sunday. Trip limit 1,500 pounds per vessel per day when 75% of quota is reached.
- e Southern Zone (east Florida): April 1 to November 30 would be 3,500 lb; from December 1 until 75% of the adjusted quota is taken there would be no trip limit on Monday through Friday and on Saturday and Sunday the trip limit would be 1,500 lbs.
- f Northern Zone (north of North Carolina/South Carolina): 3,500
- g Southern Zone (SC, GA, east FL): 3,500lbs until 75% adjusted quota is met, then 1,500lbs until adjusted quota is met and then 500lbs until the full quota is met.

Table 2.5.9 Atlantic Migratory Group Spanish Mackerel Recreational Regulatory History prepared by: Christina Wiegand, SAFMC staff

Year	Quota (lbs ww)	ACL (lbs ww)	Days Open	Fishing Season	Reason for Closure	Season Start Date (first day implemented)	Season end Date (last day effective)	Size Limit	Size Limit Start Date	Size Limit End Date	Retention Limit (# fish)	Retention Limit Start Date	Retention Limit End Date
1983 ^{1a}	27,000,000	NA	365	OPEN	NA	2/4/1983	12/31/1983	12-in FL	2/4/1983	12/31/1983	NA	NA	NA
1984 ^{1a}	27,000,000	NA	365	OPEN	NA	1/1/1984	12/31/1984	12-in FL	1/1/1984	12/31/1984	NA	NA	NA
1985 ^{1a}	27,000,000	-	365	OPEN	NA	1/1/1985	12/31/1985	12-in FL or 14-in TL	8/28/1985	12/31/1985	NA	NA	NA
1986 ^{1a}	27,000,000	NA	455	OPEN	NA	1/1/1986	3/31/1987	12-in FL or 14-in TL	1/1/1986	12/31/1986	NA	NA	NA
1987 ²	740,000	NA	365	OPEN	NA	4/1/1987	12/31/1987	12-in FL or 14-in TL	1/1/1987	12/31/1987	GA to NC = 10pp/trip FL = 4pp/trip	7/2/1987	12/31/1987
1988	960,000	NA	276	CLOSED	QUOTA MET	4/1/1988	10/3/1988	12-in FL or 14-in TL	4/1/1988	10/3/1988	GA to NC = 10pp/trip FL = 4pp/trip	4/1/1988	10/3/1988
1989	2,760,000	NA	365	OPEN	NA	4/1/1989	3/31/1990	12-in FL or 14-in TL	4/1/1989	3/31/1990	GA to NC = 10pp/trip FL = 4pp/trip	4/1/1989	3/31/1990
1990 ³	1,860,000	NA	365	OPEN	NA	4/2/1990	3/31/1991	12-in FL or 14-in TL	4/2/1990	3/31/1991	GA to NY = 10pp/trip FL = 4pp/trip	4/2/1990	3/31/1991
1991	3,500,000	NA	365	OPEN	NA	4/3/1991	12/31/1991	12-in FL or 14-in TL	4/3/1991	12/31/1991	GA to NY = 10pp/trip FL = 5pp/trip	7/1/1991	12/31/1991
1992	3,500,000	NA	365	OPEN	NA	1/1/1992	12/31/1992	12-in FL	12/9/1992	12/31/1992	GA to NY = 10pp/trip FL = 10pp/trip	7/31/1992	12/31/1992
1993	3,500,000	NA	365	OPEN	NA	1/1/1993	12/31/1993	12-in FL	1/1/1993	12/31/1993	GA to NY = 10pp/trip FL = 10pp/trip	1/1/1993	12/31/1993
1994	4,600,000	NA	365	OPEN	NA	1/1/1994	12/31/1994	12-in FL	1/1/1994	12/31/1994	GA to NY = 10pp/trip FL = 10pp/trip	1/1/1994	12/31/1994
1995	4,700,000	NA	365	OPEN	NA	1/1/1995	12/31/1995	12-in FL	1/1/1995	12/31/1995	GA to NY = 10pp/trip FL = 10pp/trip	1/1/1995	12/31/1995
1996	3,500,000	NA	365	OPEN	NA	1/1/1996	12/31/1996	12-in FL	1/1/1996	12/31/1996	GA to NY = 10pp/trip FL = 10pp/trip	1/1/1996	12/31/1996
1997	3,500,000	NA	365	OPEN	NA	1/1/1997	12/31/1997	12-in FL	1/1/1997	12/31/1997	GA to NY = 10pp/trip FL = 10pp/trip	1/1/1997	12/31/1997
1998	4,000,000	NA	365	OPEN	NA	1/1/1998	12/31/1998	12-in FL	1/1/1998	12/31/1998	GA to NY = 10pp/trip FL = 10pp/trip	1/1/1998	12/31/1998
1999	2,970,000	NA	365	OPEN	NA	1/1/1999	12/31/1999	12-in FL	1/1/1999	12/31/1999	GA to NY = 10pp/trip FL = 10pp/trip	1/1/1999	12/31/1999
2000	3,170,000	NA	365	OPEN	NA	1/1/2000	12/31/2000	12-in FL	1/1/2000	12/31/2000	15 pp/trip	1/1/2000	12/31/2000
2001	3,170,000	NA	365	OPEN	NA	1/1/2001	12/31/2001	12-in FL	1/1/2001	12/31/2001	15 pp/trip	1/1/2001	12/31/2001
2002	3,170,000	NA	365	OPEN	NA	1/1/2002	12/31/2002	12-in FL	1/1/2002	12/31/2002	15 pp/trip	1/1/2002	12/31/2002
2003	3,170,000	NA	365	OPEN	NA	1/1/2003	12/31/2003	12-in FL	1/1/2003	12/31/2003	15 pp/trip	1/1/2003	12/31/2003
2004	3,170,000	NA	424	OPEN	NA	1/1/2004	2/28/2005	12-in FL	1/1/2004	12/31/2004	15 pp/trip	1/1/2004	12/31/2004
2005	3,170,000	NA	365	OPEN	NA	3/1/2005	2/28/2006	12-in FL	3/1/2005	2/28/2005	15 pp/trip	3/1/2005	2/28/2005
2006	3,170,000	NA	365	OPEN	NA	3/1/2006	2/28/2007	12-in FL	3/1/2006	2/28/2006	15 pp/trip	3/1/2006	2/28/2006
2007	3,170,000	NA	365	OPEN	NA	3/1/2007	2/29/2008	12-in FL	3/1/2007	2/28/2007	15 pp/trip	3/1/2007	2/28/2007
2008	3,170,000	NA	365	OPEN	NA	3/1/2008	2/28/2009	12-in FL	3/1/2008	2/29/2008	15 pp/trip	3/1/2008	2/29/2008
2009	3,170,000	NA	365	OPEN	NA	3/1/2009	2/28/2010	12-in FL	3/1/2009	2/28/2009	15 pp/trip	3/1/2009	2/28/2009
2010	3,170,000	NA	365	OPEN	NA	3/1/2010	2/28/2011	12-in FL	3/1/2010	2/28/2010	15 pp/trip	3/1/2010	2/28/2010

Table 2.5.9 Continued Atlantic Migratory Group Spanish Mackerel Recreational Regulatory History prepared by: Christina Wiegand, SAFMC staff

Year	Quota (lbs ww)	ACL (lbs ww)	Days Open	Fishing Season	Reason for Closure	Season Start Date (first day implemented)	Season end Date (last day effective)	Size Limit	Size Limit Start Date	Size Limit End Date	Retention Limit (# fish)	Retention Limit Start Date	Retention Limit End Date
2011	3,170,000	NA	365	OPEN	NA	3/1/2011	2/29/2012	12-in FL	3/1/2011	2/28/2011	15 pp/trip	3/1/2011	2/28/2011
2012	SEE ACL	2,560,000	365	OPEN	NA	3/1/2012	2/28/2013	12-in FL	3/1/2012	2/29/2012	15 pp/trip	3/1/2012	2/29/2012
2013	SEE ACL	2,560,000	365	OPEN	NA	3/1/2013	2/28/2014	12-in FL	3/1/2013	2/28/2013	15 pp/trip	3/1/2013	2/28/2013
2014	SEE ACL	2,727,000	365	OPEN	NA	3/1/2014	2/28/2015	12-in FL	3/1/2014	2/28/2014	15 pp/trip	3/1/2014	2/28/2014
2015	SEE ACL	2,727,000	365	OPEN	NA	3/1/2015	2/29/2016	12-in FL	3/1/2015	2/28/2015	15 pp/trip	3/1/2015	2/28/2015
2016	SEE ACL	2,727,000	365	OPEN	NA	3/1/2016	2/28/2017	12-in FL	3/1/2016	2/29/2016	15 pp/trip	3/1/2016	2/29/2016
2017	SEE ACL	2,727,000	365	OPEN	NA	3/1/2017	2/28/2018	12-in FL	3/1/2017	2/28/2017	15 pp/trip	3/1/2017	2/28/2017
2018	SEE ACL	2,727,000	365	OPEN	NA	3/1/2018	2/28/2019	12-in FL	3/1/2018	2/28/2018	15 pp/trip	3/1/2018	2/28/2018
2019	SEE ACL	2,727,000	365	OPEN	NA	3/1/2019	2/29/2020	12-in FL	3/1/2019	2/28/2019	15 pp/trip	3/1/2019	2/28/2019

Notes:

- 1 Spanish mackerel managed as a single stock throughout the Gulf and South Atlantic.
- 2 Spanish mackerel managed as two migratory groups (Atlantic and Gulf migratory) from this point forward.
- 3 Management area extended from TX through NC to TX through NY.
- a Stock quota

2.7 State Regulatory History

Provided by the Atlantic States Marine Fisheries Commission

Table 2.2a. State Regulatory History – North Carolina and South Carolina as provided by the state management agencies.

Description of Action	State	Effective Date
1500 pounds max per day, land and sell aggregate king and Spanish mackerel combined	NC	08/04/80
2000 pounds max per day, land and sell aggregate king and Spanish mackerel combined	NC	10/01/81
3500 pounds max per day, land and sell aggregate king and Spanish mackerel combined	NC	10/01/82
Proclamation authority established to specify areas, seasons, quantity, means/methods, size limits	NC	12/01/87
Creel limit: 10 fish/person/fishing trip by hook and line	NC	6/15/88
Creel limit: 10 fish/person/fishing trip by hook and line unless person is in possession of Federal Permit to fish on Spanish mackerel quota. Charter boats with federal Coastal migratory Charter Permit shall not exceed 10 fish per person with more than 3 person on board including captain and mate.	NC	6/22/88
All coastal waters closed to harvest and retention of king and Spanish mackerel taken by any method. Proclamation expires 3/31/89	NC	3/7/89
Creel limit: 10 fish/person/dishing trip by hook and line unless person is in possession of Federal Permit to fish on Spanish mackerel quota. Charter boats with federal Coastal migratory Charter Permit shall not exceed 10 fish per person with more than 3 person on board including captain and mate. Creel limits do not apply to commercial fishermen using nets. Proclamation expires 3/31/90	NC	5/9/89
Creel limit: 10 fish/person/dishing trip by hook and line unless person is in possession of Federal Permit to fish on Spanish mackerel quota. Charter boats with federal Coastal migratory Charter Permit shall not exceed 10 fish per person with more than 3 person on board including captain and mate. Creel limits do not apply to commercial fishermen using nets.	NC	4/1/90
It is unlawful to have a purse gill net on board a vessel when taking or landing Spanish or King Mackerel.	NC	1/1/91
Commercial season closes, reopens 4/1/92	NC	1/5/92

Table 2.2a. State Regulatory History – North Carolina and South Carolina as provided by the state management agencies. Continued		
12 inch FL minimum size.	NC	2/15/94
Creel limit: 10 fish/person/dishing trip by hook and line unless person is in possession of Federal Permit to fish on Spanish mackerel quota. Charter boats with federal Coastal migratory Charter Permit shall not exceed 10 fish per person with more than 3 person on board including captain and mate. Creel limits do not apply to commercial fishermen using nets except as specified by NCAC 3M/.0301.	NC	2/15/94
Proclamation authority for hook and line deleted. Entered into rule: Creel limit: 10 fish/person/dishing trip by hook and line unless person is in possession of Federal Permit to fish on Spanish mackerel quota. Charter boats with federal Coastal migratory Charter Permit shall not exceed 10 fish per person with more than 3 person on board including captain and mate	NC	3/1/96
<p>Temporary rule change: Recreational purpose wording added and commercial gear working changed to commercial fishing operation.</p> <p>12 inch minimum size</p> <p>Creel limit: 10 fish per person per day if taken by hook & line or for recreational purpose</p> <p>Holders of valid federal permits may exceed creel limit. Charterboats with valid federal permits shall not exceed 10 fish per person while fishing with more than 3 persons on board including captain and mate.</p>	NC	7/1/99
It is unlawful to possess more than 15 Spanish mackerel per person per day taken for recreational purposes. It is unlawful to possess more than 15 Spanish mackerel per person per day in the Atlantic Ocean beyond three miles in a commercial fishing operation except for persons holding a valid National Marine Fisheries Service Spanish Mackerel Commercial Vessel Permit.	NC	4/1/01
Full consistency with federal regulations	SC	06/88-2007

Table 2.2b. State Regulatory History - North Carolina through Florida for Spanish mackerel as of 1990 as recorded in the Fishery Management Plan for Spanish Mackerel, Fishery Management Report No. 18, Atlantic States Marine Fisheries Commission, November 1990.

State	Bag Limit	Size Limit	Other
NC	10 fish	none	3,500 lb commercial trip limit
SC	10 fish	12" FL min.	Season closes with EEZ closure
GA	10 fish	12" FL min.	Recreational season open 3/16-11/30; 5% size tolerance by weight on trawlers
FL	5 fish	12" FL min.	1,850,000 lb quota for power assisted gill nets; season: Dec 15-Oct31. 205,000lb quota for all other forms of commercial fishing gears; season: Nov 1-Oct 31. 3 1/2 inch minimum stretched mesh.

Table 2.2c. State Regulatory History - New York through Florida, for Spanish Mackerel at specific times as taken from annual ASMFC FMP Reviews for Spanish Mackerel.

As of December 1995

State	Bag Limit	Size Limit	Other
NJ	10 fish	14" TL min.	
DE	10 fish	14" TL min.	
MD	10 fish	14" TL min.	Declaration allowing regulation through framework. Gill net mesh sizes for Chesapeake Bay.
VA	10 fish	14" TL min.	Size limit exemption for pound net fishery; closure when quota reached; 3500 lb trip limit.
NC	10 fish	12" FL min.	3,500 lb commercial trip limit (Spanish and king mackerel combined); finfish excluder devices required in shrimp trawls. Purse gill net prohibition.
SC	10 fish	12" FL min.	3,500 lb commercial trip limit tracking by reference the federal FMP.
GA	10 fish	12" FL min.	Season closed December 1 - March 15.
FL	10 fish	12" FL min.	3 1/2 inch minimum mesh size, 600 yd. maximum length net. Commercial daily trip limits: 1,500 lb April 1 - November 30; December 1 until 75% of adjusted quota reached-unlimited harvest on Monday, Wednesday, and Friday; 1,500 lb per vessel per day on Tuesday and Thursday; 500 lb per vessel per day on Saturday and Sunday; >75% adjusted quota until quota fulfilled-1,000 lb per vessel per day; >100% of adjusted quota-500 lb per vessel per day.

As of September 1998

State	Bag Limit	Size Limit	Other
NY	10 fish	14" TL min.	3,500 lb. commercial trip limit
NJ	10 fish	14" TL min	
DE	10 fish	14" TL min	
MD	10 fish	14" TL min	Declaration allowing regulation through framework. Gill net mesh sizes for Chesapeake Bay
VA	10 fish	14" TL min	Size limit exemption for pound net fishery; closure when quota reached; 3,500 lb. trip limit
NC	10 fish	12" FL min	3,500 lb. commercial trip limit (Spanish and king mackerel combined); finfish excluder devices required in shrimp trawls. Purse gill net prohibition.
SC	10 fish	12" FL min	3,500 lb. commercial trip limit tracking by reference the federal FMP.
GA	10 fish	12" FL min	Season closed December 1 - March 15.
FL	10 fish	12" FL min	3½ " minimum mesh size, 600 yd. maximum length net. Commercial daily trip limits: 1,500 lb. April 1 - November 30; December 1 until 75% of adjusted quota reached - unlimited harvest on Monday, Wednesday and Friday; 1,500 lb. per vessel per day on Tuesday and Thursday; 500 lb. per vessel on Saturday and Sunday; >75% adjusted quota until quota filled - 1,500 lb. per vessel per day; > 100%of adjusted quota - 500 lb. per vessel per day.

As of October 2001

State	Recreational	Commercial	Notes
NY	14"; 15 fish	14"	3,500 lb. commercial possession limit/vessel
NJ	14"; 10 fish	14" TL	
DE	14" TL; 10 fish	no fishery	
MD	14"; 15 fish	14"	Declaration allowing regulation through framework; gill net mesh sizes for Chesapeake Bay
PRFC	14"; 15 fish	14"	
VA	14" TL; 15 fish	14" TL	Size limit exemption for pound net fishery; closure when quota reached; 3,500 lb. trip limit
NC	12" FL; 15 fish	12" FL	3,500 lb. commercial trip limit (Spanish and king mackerel combined); finfish excluder devices required in shrimp trawls. Purse gill net prohibition.
SC	12" FL; 15 fish	12" FL	Federal commercial harvest restrictions apply; federal permit required to exceed bag limit; state license required to land/sell.
GA	12" FL; 15 fish	12" FL	Commercial landings from state waters limited to bag limits; gillnets/longline gear prohibited in state waters; state waters closed December 1 - March 15 for harvest of Spanish mackerel; commercial landings (3,500 lb. trip limit) from EEZ by federally permitted vessels allowed throughout year as long as the federal quota remains open.
FL	12" FL; 15 fish	12" FL	3½ " minimum mesh size, 600 yd. maximum length net; Commercial daily trip limits: 1,500 lb. April 1 - November 30; December 1 until 75% of adjusted quota reached - unlimited harvest Mon-Fri, 1,500 lb. per vessel/day Sat- Sun; >75% adjusted quota until quota filled - 1,500 lb. per vessel/day; > 100% of adjusted quota - 500 lb. per vessel/day.

As of October 2002

State	Recreational	Commercial	Notes
NY	14"; 15 fish	14"	3,500 lb. commercial possession limit/vessel
NJ	14"; 10 fish	14" TL	
DE	14" TL; 10 fish	no fishery	
MD	14"; 15 fish	14"	Declaration allowing regulation through framework; gill net mesh sizes for Chesapeake Bay
PRFC	14"; 15 fish	14"	
VA	14" TL; 15 fish	14" TL	Size limit exemption for pound net fishery; closure when quota reached; 3,500 lb. trip limit
NC	12" FL; 15 fish	12" FL	3,500 lb. commercial trip limit (Spanish and king mackerel combined); finfish excluder devices required in shrimp trawls. Purse gill net prohibition.
SC	12" FL; 15 fish	12" FL	Federal commercial harvest restrictions apply; federal permit required to exceed bag limit; state license required to land/sell.
GA	12" FL; 15 fish	12" FL	Commercial landings from state waters limited to bag limits; gillnets/longline gear prohibited in state waters; state waters closed December 1 - March 15 for harvest of Spanish mackerel; commercial landings (3,500 lb. trip limit) from EEZ by federally permitted vessels allowed throughout year as long as the federal quota remains open.
FL	12" FL; 15 fish	12" FL	3½ " minimum mesh size, 600 yd. maximum length net; Commercial daily trip limits: 1,500 lb. April 1 - November 30; December 1 until 75% of adjusted quota reached - unlimited harvest Mon-Fri, 1,500 lb. per vessel/day Sat- Sun; >75% adjusted quota until quota filled - 1,500 lb. per vessel/day; > 100% of adjusted quota - 500 lb. per vessel/day.

As of October 2004

State	Recreational	Commercial	Notes
NY	14"; 15 fish	14"	3,500 lb. commercial possession limit/vessel
NJ	14"; 10 fish	14" TL	
DE	14" TL; 10 fish	no fishery	
MD	14"; 15 fish	14"	Declaration allowing regulation through framework; gill net mesh sizes for Chesapeake Bay
PRFC	14"; 15 fish	14"	
VA	14" TL; 15 fish	14" TL	Size limit exemption for pound net fishery; closure when quota reached; 3,500 lb. trip limit
NC	12" FL; 15 fish	12" FL	3,500 lb. commercial trip limit (Spanish and king mackerel combined); finfish excluder devices required in shrimp trawls. Purse gill net prohibition.
SC	12" FL; 15 fish	12" FL	Federal commercial harvest restrictions apply; federal permit required to exceed bag limit; state license required to land/sell.
GA	12" FL; 15 fish	12" FL	Commercial landings from state waters limited to bag limits; gillnets/longline gear prohibited in state waters; state waters closed December 1 - March 15 for harvest of Spanish mackerel; commercial landings (3,500 lb. trip limit) from EEZ by federally permitted vessels allowed throughout year as long as the federal quota remains open.
FL	12" FL; 15 fish	12" FL	3½ " minimum mesh size, 600 yd. maximum length net; Commercial daily trip limits: 1,500 lb. April 1 - November 30; December 1 until 75% of adjusted quota reached - unlimited harvest Mon-Fri, 1,500 lb. per vessel/day Sat- Sun; >75% adjusted quota until quota filled - 1,500 lb. per vessel/day; > 100% of adjusted quota - 500 lb. per vessel/day.

As of October 2005

State	Recreational	Commercial	Notes
NY	14" TL; 15 fish	14" TL	3,500 lb. commercial possession limit/vessel
NJ	14" TL; 10 fish	14" TL	
DE	14" TL; 10 fish	14" TL	Gill net and drift net restrictions
MD	14" TL; 15 fish	14" TL	Declaration allowing regulation through framework; gill net mesh sizes for Chesapeake Bay
PRFC	14" TL; 15 fish	14" TL	Closure when quota reached
VA	14" TL; 15 fish	14" TL	Size limit exemption for pound net fishery; closure when quota reached; 3,500 lb. trip limit
NC	12" FL; 15 fish	12" FL	3,500 lb. commercial trip limit (Spanish and king mackerel combined); finfish excluder devices required in shrimp trawls. Purse gill net prohibition.
SC	12" FL; 15 fish	12" FL	Federal commercial harvest restrictions apply; federal permit required to exceed bag limit; state license required to land/sell.
GA	12" FL; 15 fish	12" FL	Commercial landings from state waters limited to bag limits; gillnets/longline gear prohibited in state waters; state waters closed December 1 - March 15 for harvest of Spanish mackerel; commercial landings (3,500 lb. trip limit) from EEZ by federally permitted vessels allowed throughout year as long as the federal quota remains open.
FL	12" FL; 15 fish Transfer at sea prohibited.	12" FL	3½ " minimum mesh size, 600 yd. maximum length net. Commercial daily trip limits: 3,500 lb. April 1 - November 30; December 1 until 75% of adjusted quota reached - 3,500 lb. per vessel/day Mon-Fri, 1,500 lb. per vessel/day Sat-Sun; >75% adjusted quota until quota filled - 1,500 lb. per vessel/day; > 100% of adjusted quota - 500 lb. per vessel/day.

All information included in the following tables are pulled from annual state FMP compliance reports (NY-FL), and reported in annual ASMFC FMP Reviews for Spanish Mackerel.

As of 2006

Notes: commercial license required to sell Spanish mackerel in all states; other general gear restrictions apply to the harvest of Spanish mackerel.

State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb. trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 10 fish	14" TL.
MD	14" TL, 15 fish	14" TL.
PRFC	14" TL, 15 fish	14" TL. Closure when quota reached.
VA	14" TL, 15 fish	14" TL; size limit exemption for pound net fishery. 3,500 lb. trip limit. Closure when quota reached.
NC	12" FL, 15 fish	12" FL. 3,500 lb. trip limit (Spanish and king mackerel combined). Purse gill nets prohibited.
SC	12" FL, 15 fish	12" FL, 15 fish
GA	12" FL, 15 fish	12" FL. State waters: 15 fish limit, closure from December 1 - March 15. 3,500 trip limit in federal waters. Closure when quota reached.
FL	12" FL, 15 fish	12" FL. Trip limits: April 1 – Nov. 30 - 3,500 lb.; Dec. 1 until 75% of adjusted quota reached - 3,500 lb. Mon-Fri. & 1,500 lb. Sat-Sun; >75% adjusted quota until quota filled -1,500 lb.; > 100% of adjusted quota - 500 lb.

As of 2007

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel		
State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 10 fish	14" TL.
MD	14" TL, 15 fish	14" TL.
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited.
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 15 fish. Closure from December 1 - March 15.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited.	12" FL. Trip limits: April 1 – Nov. 30 - 3,500 lb; Dec. 1 until 75% of adjusted quota reached - unlimited Mon-Fri. & 1,500 lb Sat-Sun; >75% adjusted quota until quota filled -1,500 lb; > 100% of adjusted quota - 500 lb.

As of 2008

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel		
State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 10 fish	14" TL.
MD	14" TL, 15 fish	14" TL.
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited.
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 15 fish. Closure from December 1 - March 15.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited.	12" FL. Trip limits: April 1 to Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached - 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb.

As of 2009

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel		
State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 10 fish	14" TL.
MD	14" TL, 15 fish	14" TL.
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited.
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 15 fish. Closure from December 1 - March 15.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited.	12" FL. Trip limits: April 1 until Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb.
	Cast nets less than 14' and beach or haul seines with no greater than 2" stretched mesh allowed	Restricted Species Endorsement Required
		Transfer of fish between vessels prohibited
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing

During the years 2010 and 2011 no FMP reviews were produced. All management changes were captured in the subsequent 2012 report

As of 2010

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel		
State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 10 fish	14" TL.
MD	14" TL, 15 fish	14" TL.
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited.
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 15 fish. Closure from December 1 - March 15.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited.	12" FL. Trip limits: April 1 to Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached - 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb.

As of 2011

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel		
State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 10 fish	14" TL.
MD	14" TL, 15 fish	14" TL.
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited.
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 15 fish. Closure from December 1 - March 15.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited.	12" FL. Trip limits: April 1 to Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached - 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb.

As of 2012

<p>Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel</p>		
State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 15 fish	14" TL.
MD	14" TL, 15 fish	14" TL.
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited.
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 15 fish. Closure from December 1 - March 15.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited. Cast nets less than 14' and beach or haul seines with no greater than 2" stretched mesh allowed	12" FL. Trip limits: April 1 to Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached - 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb. Restricted species endorsement required. Transfer between vessels prohibited. Allowed gear: beach or haul seine, cast net, hook and line, or spearing.

As of 2013

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel		
State	Recreational	Commercial
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit
NJ	14" TL, 10 fish	14" TL.
DE	14" TL, 10 fish	14" TL.
MD	14" TL, 15 fish	14" TL. 3,500 lb trip limit
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited. 11½" FL for pound net fishery during August and September.
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.
GA	12" FL, 15 fish	12" FL. 15 fish. Closure from December 1 - March 15.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited.	12" FL. Trip limits: April 1 until Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled - 1500 lb; > 100% of adjusted quota - 500 lb.
	Cast nets less than 14' and beach or haul seines with no greater than 2" stretched mesh allowed	Restricted Species Endorsement Required
		Transfer of fish between vessels prohibited
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing

As of 2014

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel			
State	Recreational	Commercial	Regulation Changes
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit	
NJ	14" TL, 10 fish	14" TL.	
DE	14" TL, 15 fish	14" TL. 3,500 lb trip limit	
MD	14" TL, 15 fish	14" TL. 3,500 lb trip limit	
PRFC	14" TL, 15 fish	14" TL. Closure if/when federal waters close.	
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.	
NC	12" FL, 15 fish	12" FL. 3,500 lb trip limit (Spanish and king mackerel combined). Purse gill nets prohibited. 11½" FL for pound net fishery July 3-Sept 30.	
SC	12" FL, 15 fish	12" FL. 15 fish. Closure if/when federal waters close.	
GA	12" FL, 15 fish	12" FL. 15 fish.	As of January 1, 2014, Spanish Mackerel no longer have a fishing season. Size and bag limits will stay the same.
FL	12" FL, 15 fish. Transfer to other vessels at sea is prohibited.	12" FL. Trip limits: April 1 until Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb.	Effective October 12, 2015:
	Cast nets less than 14' and beach or haul seines with no greater than 2" stretched mesh allowed	Restricted Species Endorsement Required	68B-23.006 Other Prohibitions.
		Transfer of fish between vessels prohibited	(1) It is unlawful for any person to possess, transport, buy, sell, exchange or attempt to buy, sell or exchange any Spanish Mackerel harvested in violation of this chapter.
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing	(2) The Commission shall issue a permit pursuant to Rule 68B-2.010, F.A.C., to authorize Spanish Mackerel caught in an organized tournament to be donated to a licensed wholesale dealer.
			(3) The prohibitions of this chapter apply as well to any and all persons operating a vessel in state waters, who shall be deemed to have violated any prohibition which has been violated by another person aboard such vessel.

As of 2015

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel			
State	Recreational	Commercial	Regulation Changes
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit.	<p><i>North Carolina</i></p> <p>One proclamation was issued under rule 15A NCAC 03M .0512 to remain in compliance with the Atlantic States Marine Fishery Commission. Addendum I to the Omnibus Amendment establishes a pilot program that would allow states to reduce the Spanish mackerel minimum size limit for the commercial pound net fishery to 11 ½ inches during the summer months of July through September. The measure is intended to reduce waste of these shorter fish, which are discarded dead in the summer months, by converting them to landed fish that will be counted against the quota. The Division issued a proclamation suspending the 12-inch fork length size limit and adopting the 11 ½ inch fork length size limit in the commercial pound net fishery from July 4, 2016 to September 30, 2016.</p>
NJ	14" TL, 10 fish	14" TL. 3,500 lb trip limit.	
DE	14" TL, 15 fish	14" TL. 3,500 lb trip limit.	
MD	14" TL, 15 fish	14" TL. 3,500 lb trip limit. March-Feb.	
PRFC	14" TL, 15 fish	14" TL. Closure if/when MD and VA fisheries close.	
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit. Closure if/when federal waters close.	
NC	12" FL, 15 fish	12" FL; 11.5" FL in pound net fishery July 4 th – Sept 30 th , 2016. 3,500 lb trip limit for combined Spanish and king mackerel landings.	
SC	12" FL, 15 fish	12" FL. 15 fish. 3,500 lb trip limit. March-Feb. Closure if/when federal waters close.	
GA	12" FL, 15 fish	12" FL. 3,500 lb trip limit.	
FL	12" FL or 14" TL, 15 fish. Cast nets less than 14' and beach or haul seines within 2" stretched mesh allowed	12" FL or 14" TL. Trip limits: April 1 until Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled -1500 lb; > 100% of adjusted quota - 500 lb.	
		Restricted Species Endorsement Required	
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing.	

As of 2016

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel

State	Recreational	Commercial	Regulation Changes
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit.	No state regulatory changes were reported for 2016. In 2017, Framework Amendment 5 to the Fishery Management Plan for Coastal Migratory Pelagics in the Gulf of Mexico and Atlantic Regions was approved by the SAFMC and GMFMC. This Framework Amendment allows commercially permitted vessels to operate as private recreational vessels when the commercial season is closed for Spanish or king mackerel.
NJ	14" TL, 10 fish	14" TL. 3,500 lb trip limit.	
DE	14" TL, 15 fish	14" TL. 3,500 lb trip limit.	
MD	14" TL, 15 fish	14" TL. 3,500 lb trip limit. March-Feb.	
PRFC	14" TL, 15 fish	14" TL. Closure if/when MD and VA fisheries close.	
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GA	12" FL, 15 fish	12" FL. 3,500 lb trip limit.	
FL	12" FL or 14" TL, 15 fish. Cast nets less than 14' and beach or haul seines within 2" stretched mesh allowed	12" FL or 14" TL. Trip limits: April 1 until Nov. 30 - 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Mon-Fri. & 1500 lb Sat-Sun; >75% adjusted quota until quota filled - 1500 lb; > 100% of adjusted quota - 500 lb.	
		Restricted Species Endorsement Required	
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing.	

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PRFC	14" TL, 15 fish	14" TL. Closure if/when MD and VA fisheries close.	
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		Restricted Species Endorsement Required	
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing.	

As of 2018

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel			
State	Recreational	Commercial	<u>Regulation Changes</u>
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit.	
NJ	14" TL, 10 fish	14" TL. 3,500 lb trip limit.	
DE	14" TL, 15 fish	14" TL. 3,500 lb trip limit.	
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PRFC	14" TL, 15 fish	14" TL. Closure if/when MD and VA fisheries close.	
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NC	12" FL, 15 fish	12" FL; 11.5" FL in pound net fishery July 4 th – Sept 30 th , 2018. 3,500 lb trip limit for combined Spanish and king mackerel landings.	
SC	12" FL, 15 fish	12" FL. 15 fish. 3,500 lb trip limit. March-Feb. Closure if/when federal waters close.	
GA	12" FL, 15 fish	12" FL. 3,500 lb trip limit.	In 2018, Georgia implemented a new seafood dealer license (O.C.G.A. 27-2-23 and Board Rule 391-2-4-.09).
FL	12" FL or 14" TL, 15 fish. Cast nets less than 14' and beach or haul seines within 2" stretched mesh allowed	12" FL or 14" TL. Trip limits: April 1 until Nov. 30 – 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Monday – Friday & 1500 lb Saturday – Sunday; >75% adjusted quota until quota filled – 1500 lb; > 100% of adjusted quota – 500 lb.	
		Restricted Species Endorsement Required	
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing.	

As of 2019

Note: commercial license required to sell Spanish mackerel in all states; other general gear restrictions effect the harvest of Spanish mackerel				
State	Recreational	Commercial	<u>Regulation Changes</u>	
NY	14" TL, 15 fish	14" TL. 3,500 lb trip limit.		
NJ	14" TL, 10 fish	14" TL. 3,500 lb trip limit.		
DE	14" TL, 15 fish	14" TL. 3,500 lb trip limit.		
MD	14" TL, 15 fish	14" TL. 3,500 lb trip limit. March-Feb.		
PRFC	14" TL, 15 fish	14" TL. Closure if/when MD and VA fisheries close.		
VA	14" TL, 15 fish	14" TL. 3,500 lb trip limit.	In 2019, Virginia proposed to amend state management of Spanish mackerel to close state waters if federal waters close, beginning in September, 2019.	
NC	12" FL, 15 fish	12" FL; 11.5" FL in pound net fishery July 4 th – Sept 30 th , 2018. 3,500 lb trip limit for combined Spanish and king mackerel landings.	North Carolina discontinued its Addendum I program, which reduced the minimum size limit to 11.5 in FL for the pound net fishery from July to September, beginning in 2019.	
SC	12" FL, 15 fish	12" FL. 15 fish. 3,500 lb trip limit. March-Feb. Closure if/when federal waters close.		
GA	12" FL, 15 fish	12" FL. 3,500 lb trip limit.		
FL	12" FL or 14" TL, 15 fish. Cast nets less than 14' and beach or haul seines within 2" stretched mesh allowed	12" FL or 14" TL. Trip limits: April 1 until Nov. 30 – 3500 lb; Dec. 1 until 75% of adjusted quota reached – 3500 lb Monday – Friday & 1500 lb Saturday – Sunday; >75% adjusted quota until quota filled – 1500 lb; > 100% of adjusted quota – 500 lb.	In 2019, Florida approved a rule to align their state regulations with those of the federal FMP, incorporating the step-down reductions of the in-season vessel limit as threshold levels of Spanish mackerel are harvested. This rule took effect in September, 2019.	
		Restricted Species Endorsement Required		
		Allowed gear: beach or haul seine, cast net, hook and line, or spearing.		

As of 2020**No management changes were reported in 2020****References**

All information included in the previous tables were pulled from the annual state FMP compliance reports (NY-FL), and reported in annual ASMFC FMP Reviews for Spanish Mackerel.

3. Assessment History

Full stock assessments of the south Atlantic Spanish mackerel were conducted by Powers et al. (1996), Legault et al. (1998) and the Sustainable Fisheries Division (2003 and 2007). Historically, the Mackerel Stock Assessment Panel (MSAP) met regularly to oversee and review these assessments and provide advice to the SAFMC and GMFMC.

The most recent full stock assessment for south Atlantic Spanish mackerel was conducted in 2007 in SEDAR 17 using three separate models: ASPIC, BAM, and SRA. The SEDAR 17 Review Panel was presented with a base model using BAM, as neither ASPIC nor SRA were considered appropriate to produce standalone representations of the stock dynamics. The BAM was used with the following as input data: five fisheries and their corresponding age and length compositions, three fishery discard series, shrimp bycatch, seven fishery-dependent indices, two fishery-independent indices, one combined index and discard mortality rates. The base run was configured as a two sex model incorporating differences in growth by sex. Natural mortality was constant through time, but varied by age. The panel did not accept the base model of the assessment as appropriate for making biomass determinations. They concluded that there is an overall increasing trend in biomass, but that a biomass decline was observed from 2003 to 2007. The panel noted that the fishing mortality at the terminal year of the model (2007) did not seem to be inhibiting stock growth. Although the panel did not accept the model conclusions regarding biomass, they accepted model results that the stock was not undergoing overfishing. The panel remarked that the major issues with the assessment were the shrimp bycatch uncertainty, the historical recreational catch derivation, and the lack of an objective likelihood weighting method. The assessment previous to SEDAR 17 was in 2003 through the Mackerel Stock Assessment Panel (MSAP), which included data through the 2001/2002 fishing year (Sustainable Fisheries Division 2003). Estimated fishing mortality for Atlantic group Spanish mackerel was found to be below FMSY and FOY since 1995. Estimated stock abundance had increased since 1995 and was found to be at a high for the analysis period. Probabilities that the Spanish mackerel was overfished were less than 1% and that overfishing had occurred in the most recent fishing year of the assessment were 3%; therefore, the MSAP concluded that south Atlantic Spanish mackerel was not overfished and overfishing did not occur in 2002/2003.

SEDAR-28 (SEDAR-28, 2012) was a benchmark assessment using the Beaufort Assessment Model (BAM) with data through 2011. BAM is an integrated catch-age model, and is customizable to the multiple data sources available (Williams and Shertzer, 2015). A surplus production model implemented with the ASPIC software (Prager 1994, Prager 2004) was used as a complement for comparison purposes. Based on the assessment provided from the BAM, the Review Panel concluded

that the stock was not overfished and not undergoing overfishing. The stock biomass status in the base run from the BAM was estimated to be $SSB_{2011}/MSST=2.29$. The level of fishing (exploitation rate) was $F_{2009-2011}/FMSY = 0.526$, with $F_{2011}/FMSY = 0.521$. The qualitative results on terminal stock status were similar across presented sensitivity runs, indicating that the stock status results were robust given the provided data and can be used for management. The outcomes of sensitivity analyses done with BAM were in general agreement with those of the Monte Carlo Bootstrap Ensemble analysis (an additional way to examine uncertainty) in BAM. In general, stock status results from ASPIC were qualitatively similar to those from BAM.

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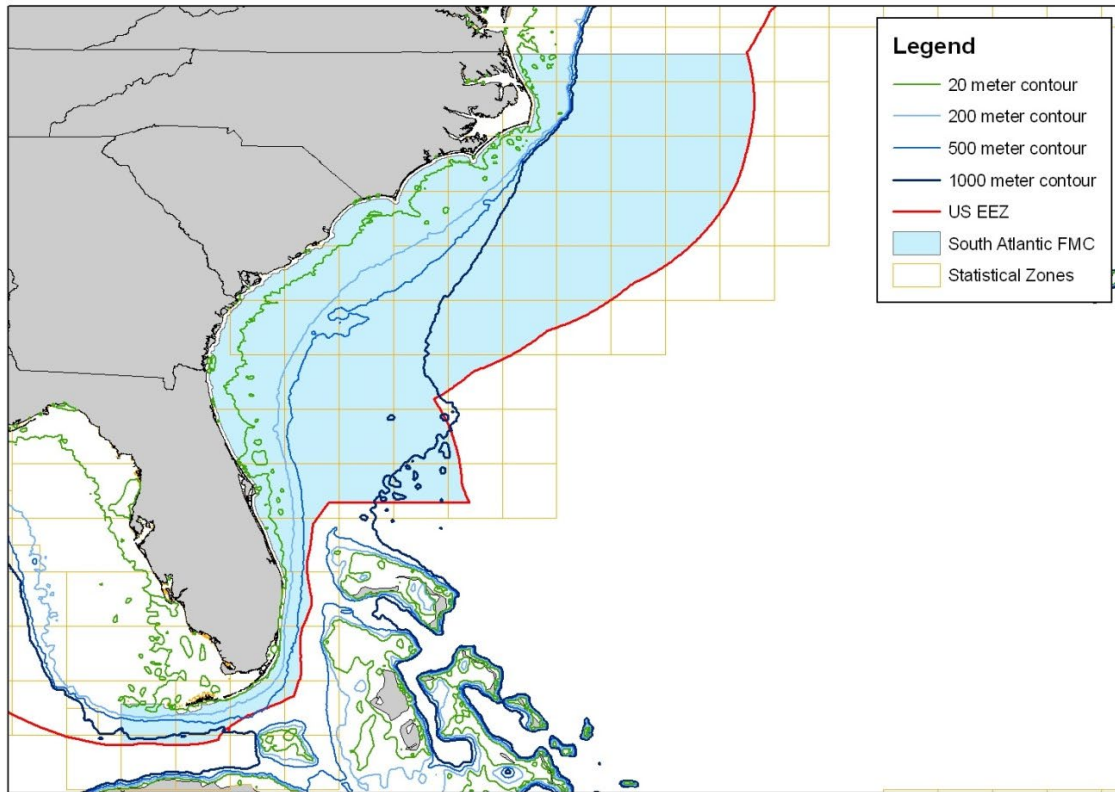
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SEDAR. 2012. SEDAR 28 – South Atlantic Spanish mackerel Stock Assessment Report.

SEDAR, North Charleston SC. 444 pp.

4. Regional Maps

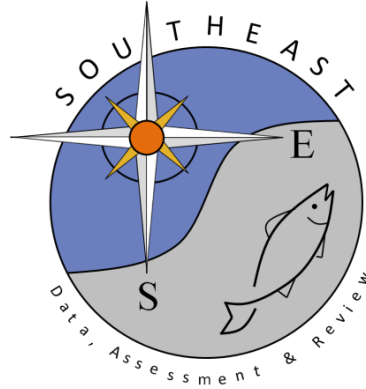
Figure 3.1: South Atlantic Fishery Management Council and EEZ boundaries.



5. Abbreviations

APAIS	Access Point Angler Intercept Survey
ABC	Allowable Biological Catch
ACCSP	Atlantic Coastal Cooperative Statistics Program
ADMB	AD Model Builder software program
ALS	Accumulated Landings System; SEFSC fisheries data collection program
AMRD	Alabama Marine Resources Division
ASMFC	Atlantic States Marine Fisheries Commission
ASPIC	a stock production model incorporating covariates
ASPM	age-structured production model
B	stock biomass level
BAM	Beaufort Assessment Model
BMSY	value of B capable of producing MSY on a continuing basis
CFMC	Caribbean Fishery Management Council
CIE	Center for Independent Experts
CPUE	catch per unit of effort
EEZ	exclusive economic zone
F	fishing mortality (instantaneous)
FMSY	fishing mortality to produce MSY under equilibrium conditions
FOY	fishing mortality rate to produce Optimum Yield under equilibrium
FXX% SPR	fishing mortality rate that will result in retaining XX% of the maximum spawning production under equilibrium conditions
FMAX	fishing mortality that maximizes the average weight yield per fish recruited to the fishery
F0	a fishing mortality close to, but slightly less than, Fmax
FL FWCC	Florida Fish and Wildlife Conservation Commission
FWRI	(State of) Florida Fish and Wildlife Research Institute
GA DNR	Georgia Department of Natural Resources
GLM	general linear model
GMFMC	Gulf of Mexico Fishery Management Council
GSMFC	Gulf States Marine Fisheries Commission
GULF FIN	GSMFC Fisheries Information Network
HMS	Highly Migratory Species

LDWF	Louisiana Department of Wildlife and Fisheries
M	natural mortality (instantaneous)
MAFMC	Mid-Atlantic Fishery Management Council
MARMAP	Marine Resources Monitoring, Assessment, and Prediction
MDMR	Mississippi Department of Marine Resources
MFMT	maximum fishing mortality threshold, a value of F above which overfishing is deemed to be occurring
MRFSS	Marine Recreational Fisheries Statistics Survey; combines a telephone survey of households to estimate number of trips with creel surveys to estimate catch and effort per trip
MRIP	Marine Recreational Information Program
MSST	minimum stock size threshold, a value of B below which the stock is deemed to be overfished
MSY	maximum sustainable yield
NC DMF	North Carolina Division of Marine Fisheries
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
OY	optimum yield
SAFMC	South Atlantic Fishery Management Council
SAS	Statistical Analysis Software, SAS Corporation
SC DNR	South Carolina Department of Natural Resources
SEAMAP	Southeast Area Monitoring and Assessment Program
SEDAR	Southeast Data, Assessment and Review
SEFIS	Southeast Fishery-Independent Survey
SEFSC	Fisheries Southeast Fisheries Science Center, National Marine Fisheries Service
SERO	Fisheries Southeast Regional Office, National Marine Fisheries Service
SPR	spawning potential ratio, stock biomass relative to an unfished state of the stock
SSB	Spawning Stock Biomass
SSC	Science and Statistics Committee
TIP	Trip Incident Program; biological data collection program of the SEFSC and Southeast States.
TPWD	Texas Parks and Wildlife Department
Z	total mortality, the sum of M and F



SEDAR

Southeast Data, Assessment, and Review

SEDAR 78

South Atlantic Spanish Mackerel

Section II: Assessment Report

May 2022

Revised July 2022

SEDAR
4055 Faber Place Drive, Suite 201 North Charleston, SC 29405

Document History

May, 2022 Original release.

July, 2022 The values in tables 17, 19, and 21 were updated due to an error in the units conversion. The captions for tables 24, 25, and 26 were updated to reflect values in the tables. Text was added to a few tables to clarify discards (live, dead, or both).

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1. Introduction

This operational assessment evaluated the stock of Spanish mackerel (*Scomberomorus maculatus*) in the South Atlantic region of the southeastern United States. The primary objectives were to update and improve the 2012 SEDAR 28 benchmark assessment of and to conduct new stock projections. Using data through 2011, SEDAR 28 had indicated that the stock was not overfished and not undergoing overfishing. For this SEDAR 78 assessment, data compilation and assessment methods were guided by methodology of SEDAR 28, as well as by current SEDAR practices and recommendations by the SEDAR 28 review panel. The assessment period is 1986–2020.

Available data on this stock included indices of abundance, landings, discards, and samples of annual age compositions from fishery dependent sources. Three indices of abundance were fitted by the model: one from the Florida commercial trip tickets, one from the recreational MRIP intercepts for harvested fish, and one from the age-0 SEAMAP Coastal Trawl Survey. Data on landings and discards were modeled from five distinct fleets and two bycatch series: commercial handline, commercial gillnet, commercial pound net, commercial cast net, and general recreational (shore, private and charter modes) landings and discards.

The primary model used in SEDAR 28—and the one updated here—was the Beaufort Assessment Model (BAM), an integrated statistical catch-age formulation. A base run of BAM was configured to provide point estimates of key management quantities, such as stock and fishery status. Uncertainty in estimates from the base run was evaluated through a mixed Monte Carlo/Bootstrap Ensemble (MCBE) procedure. Median values from the uncertainty analysis are also provided. Sensitivity runs were developed to evaluate the model at the MCBE bounds for fixed natural mortality, steepness, and general recreational discard mortality parameters as well as exclusion of the commercial handline index.

The assessment estimated that spawning stock has fluctuated on a near-decadal cycle near or above the minimum stock size threshold (MSST) level. The base-run estimate of terminal (2020) spawning stock was above the MSST ($SSB_{2020}/MSST = 1.40$), as was the median estimate from the MCBE ($SSB_{2020}/MSST = 1.42$). The estimated fishing rate has been at or below the maximum fishing mortality threshold (MFMT), represented by F_{MSY} with the exception of the terminal year (2020). The terminal estimate, which is based on a three-year geometric mean, was below F_{MSY} in the base run ($F_{2018-2020}/F_{MSY} = 0.77$) and in the median of the MCBE ($F_{2018-2020}/F_{MSY} = 0.74$). Thus, this assessment indicated that the stock is not experiencing overfishing. However, this result requires caution: if the overfishing rate of 2020 continued in 2021, the geometric mean would indicate overfishing.

The MCBE analysis illustrated that these estimates of stock and fishery status are robust. Of all MCBE runs, 92.6% were in agreement that the stock is not overfished, and 90.0% were in agreement that overfishing is not occurring. Although qualitative results were robust, the primary sources of uncertainty in quantitative results (i.e., degree of overfishing or overfished) was natural mortality and steepness.

The estimated trends of this operational assessment were quite similar to those from the SEDAR28 benchmark. However, the two assessments did show some differences in results, which was not surprising given several modifications made to both the data and the model (described throughout the report). The two assessments showed similar stock status between 1986 and 2011, the terminal year of SEDAR28. Since then, SEDAR 78 indicated that the Spanish mackerel stock has fluctuated near the MSY reference point.

1.1 Workshop Time and Place

The SEDAR 78 South Atlantic Spanish Mackerel assessment took place over a series of webinars held from May 2021 to March 2022.

1.2 Terms of Reference

1. Update the approved SEDAR 28 Spanish Mackerel model with data through 2020. Apply the current BAM configuration incorporating approved improvements developed since SEDAR 28.
2. Evaluate and document the following specific changes in input data or deviations from the benchmark model.
 - Update growth and reproductive models if additional samples are available for fish below 275 mm
 - If available, include any improved information on steepness for similar pelagic species.
 - Evaluate data uncertainty with respect to the recreational landings
 - Calculate different F metrics (in addition to apical F) (to address shifts in the age of apical F towards the end of the assessment time series).
3. Document any changes or corrections made to model and input datasets and provide updated input data tables. Provide commercial and recreational landings and discards in pounds and numbers.
4. Update model parameter estimates and their variances, model uncertainties, estimates of stock status and management benchmarks, and provide the probability of overfishing occurring at specified future harvest and exploitation levels.
5. Convene a working group including SSC representatives to meet via webinar, as needed to review model development relative to terms of reference 1 through 4.
6. Develop a stock assessment report to address these ToRs and fully document the input data, methods, and results.

1.3 List of Participants

Appointee	Function	Affiliation
Rob Cheshire	Lead Analyst	SEFSC Beaufort
Matthew Vincent	Analytical Team	SEFSC Beaufort
Matt Nuttall	Analytical Team	SEFSC Miami
Kyle Shertzer	Analytical Team	SEFSC Beaufort
Chris Palmer	Analytical Team	SEFSC Panama City
Naeem Willet	Analytical Team	SEFSC Panama City
Ashley Pacicco	Analytical Team	SEFSC Panama City
Vivian Matter	Analytical Team	SEFSC Miami
Refik Orhun	Analytical Team	SEFSC Miami
Kevin McCarthy	Analytical Team	SEFSC Miami
Eric Fitzpatrick	Data Compiler	SEFSC Beaufort
Mike Rinaldi	Panelist	ACCSP
Alan Bianchi	Panelist	NCDMF
Tracy Smart	Panelist	SCDNR
Amy Zimney	Panelist	SCDNR
Mclean Seward	Panelist	NCDMF
Dustin Addis	Panelist	SSC
Wilson Laney	Panelist	SSC
Fred Scharf	Panelist	SSC
Appointed Observers		
Thomas Newman	Observer	MCAP
Greg Peralta	Observer	MCAP
Appointed Council Members		
Tom Roller	Observer	MCAP AND SAFMC
Staff		
Kathleen Howington	Coordinator	SEDAR
Judd Curtis	Staff Representative	SAFMC
Alishia Gray	Staff Representative	SERO
Non-Panel Data Providers		
Steve Brown	Data Provider	FLFWC
Chris Bradshaw	Data Provider	FLFWC
Eric Hiltz	Data Provider	SCDNR
Amy Dukes	Data Provider	SCDNR
Dominique Lazzare	Data Provider	FLFWC
Andrew Cathey	Data Provider	NCDMF
Ken Brennen	Data Provider	SEFSC Beaufort
John Carlson	Data Provider	SEFSC Panama City
Alyssa Mathers	Data Provider	SEFSC Panama City
Bradley Smith	Data Provider	SEFSC Panama
Appointee	Function	Affiliation
Non-Panel Data Providers		
Stephanie Martinez	Data Provider	SEFSC Miami
Liz Scott-Denton	Data Provider	SEFSC Pascagoula
Larry Beerkircher	Data Provider	SEFSC Miami
Beverly Sauls	Data Provider	FLFWC
Kelly Fitzpatrick	Data Provider	SEFSC Beaufort

Other		
Adyan Rios	Observer	NMFS
Chip Collier	Observer	SAFMC
Alan Lowther	Observer	NMFS
Beverly Barnett	Observer	NMFS
Brandon Foor	Observer	NMFS
Beverly Barnett	Observer	NMFS
Emilie Franke	Observer	ASMFC
Chris Swanson	Observer	FLFWC
Derek Cox	Observer	FLFWC
Elizabeth Gooding	Observer	SCDNR
Greg Peralta	Observer	Fisherman
Hannah Hart	Observer	FLFWC
Ira Laks	Observer	Fisherman
Jeff Pulver	Observer	NMFS
Jennifer Potts	Observer	NMFS
Julie Defilippi Simpson	Observer	ACCSP
Katie Drew	Observer	ASMFC
Rusty Hudson	Observer	Fisherman
Savannah Lewis	Observer	ASMFC
Scott Crosson	Observer	NMFS
Willow Patten	Observer	NCDMF

1.4 Document List

Document #	Title	Authors	Received
Documents Prepared for SEDAR 78			
SEDAR78-WP01	SEAMAP-SA Coastal Trawl Survey Data and Sample Collection Methods	Amy Zimney	7/29/2021
SEDAR78-WP02	Spanish Mackerel Indices of Abundance in U.S. South Atlantic Waters Based on the SEAMAP-SA Fishery-independent Coastal Trawl Survey	Tracey Smart and Amy Zimney	10/29/2021
SEDAR78-WP03	General Recreational Survey Data for Spanish Mackerel in the South Atlantic	Matt Nuttall	10/25/2021
SEDAR78-WP04	SEDAR 78 Spanish mackerel bycatch estimates from US Atlantic coast shrimp trawls	Eric Fitzpatrick	11/10/2021
SEDAR78-WP05	General recreational and commercial age and length composition weighting for Southeast U.S. Spanish mackerel (<i>Scomberomorus maculatus</i>)	Eric Fitzpatrick	11/10/2021
SEDAR78-WP06	Bycatch estimates of Spanish mackerel in the south Atlantic coastal gillnet fishery	John Carlson, Alyssa Mathers and Kevin McCarthy	10/28/2021
SEDAR78-WP07	Standardized Catch Rates of Spanish mackerel from the Southeast Coastal Gillnet Fishery	John Carlson and Alyssa Mathers	10/29/2021
SEDAR78-WP08	A Review of Atlantic Spanish mackerel (<i>Scomberomorus maculatus</i>) Age Data, 1986 – 2020, From Various Age-data Sources	Chris Palmer, Jennifer Potts, Beverly Barnett, and Rob Cheshire	10/29/2021
SEDAR78-WP09	Fishery-dependent CPUE index for Spanish mackerel derived from MRIP data	Katie Drew	10/29/2021
SEDAR78-WP10	Spanish Mackerel Length Frequency Distributions from At-Sea Headboat and Charter Observer Surveys in the South Atlantic, 2005 to 2020.	Dominique Lazarre Andrew Cathey and Kelly Fitzpatrick	11/3/2021

Document #	Title	Authors	Received
Documents Prepared for SEDAR 78 Cont.			
SEDAR78-WP11	Discards of Spanish Mackerel Calculated for Commercial Fishing Vessels with Federal Fishing Permits in the US South Atlantic	Kevin McCarthy and Jose Diaz	11/4/2021
SEDAR78-WP12	Annual indices of abundance of Spanish Mackerel from Florida commercial trip tickets, 1986-2020	Joe O'Hop and Steve Brown	11/12/2021
Final Assessment Report			
SEDAR78-SAR1	Assessment of South Atlantic Spanish Mackerel	To be prepared by SEDAR 78	May 2022

1.5 Statements Addressing Each Terms of Reference

Note: Original ToRs are in normal font. Statements addressing ToRs are in italics.

1. Update the approved SEDAR 28 Spanish mackerel model with data through 2020. Apply the current BAM configuration incorporating approved improvements developed since SEDAR 28.

SEDAR78 applied the current BAM configuration. The assessment model structure and data sources were very similar to those used in SEDAR28. Important modifications, such as selectivity functions were investigated through likelihood profiles and visual comparisons of model fit to the data. The decision to remove sex-specific growth and selectivity and modify the start year for the model were evaluated and shown to improve model performance.

2. Evaluate and document the following specific changes in input data or deviations from the benchmark model.
 - Update growth and reproductive models if additional samples are available for fish below 275 mm.
 - If available, include any improved information on steepness for similar pelagic species.
 - Evaluate data uncertainty with respect to the recreational landings.
 - Calculate different F metrics (in addition to apical F) (to address shifts in the age of apical F towards the end of the assessment time series).

All the above bullet points were addressed. Growth models were developed with increased age-0 samples primarily from the SEAMAP Coastal Trawl Survey. There was very limited reproduction information. There was no new information on steepness that could be applied in this assessment. Likelihood profiles on steepness had similar results to SEDAR28. Uncertainty in recreational landings was presented in the associated working paper. Years with large increases, such as 2020, were evaluated and discussed in greater detail. The spawning potential ratio conditional on annual F and exploitation rates were examined as additional F metrics.

3. Document any changes or corrections made to model and input datasets and provide updated input data tables. Provide commercial and recreational landings and discards in pounds and numbers.

Changes to data and model are documented in the report, along with tables of updated data input and removals in both pounds and numbers.

4. Update model parameter estimates and their variances, model uncertainties, estimates of stock status and management benchmarks, and provide the probability of overfishing occurring at specified future harvest and exploitation levels.

All of these key estimates and outputs are documented in the report.

5. Convene a working group including SAFMC Science and Statistical Committee representatives to meet via webinar, as needed to review model development relative to terms of reference 1 through 4.

The SEDAR78 panel did not suggest working groups were needed during model development.

6. Develop a stock assessment report to address these TORs and fully document the input data, methods, and results.

Please see this report.

2 Data Review and Update

The input data for this assessment are described below, with focus on modifications from the SEDAR 28 benchmark assessment.

2.1 Data Review

In this operational assessment, the Beaufort assessment model (BAM) was fitted to data sources developed during the SEDAR 78 process, evaluated over several webinars. These data include updates to SEDAR 78 data, where appropriate, which are highlighted below.

Model inputs used in SEDAR 28 and SEDAR 78

- Life history: Meristics, population growth, fishery dependent size at age, female size at age, female maturity, proportion female, age-dependent natural mortality
- Landings and discards: Commercial handline, gillnet, pound net, and cast net combined landings and discards, shrimp bycatch, general recreational landings and discards
- Indices of abundance: Commercial handline, MRIP, SEAMAP YOY ¹
- Age compositions: Commercial handline, gillnet, pound net, and cast net landings, and general recreational landings
- Other: General recreational discard mortality

Updated data sources in SEDAR 78

- Life history: Population growth, fishery dependent size at age, female size at age, age-dependent natural mortality
- Landings and discards: Commercial handline, gillnet, pound net, and cast net combined landings and discards, shrimp bycatch, general recreational landings and discards
- Indices of abundance: Commercial handline, MRIP, SEAMAP YOY
- Age compositions: Commercial handline, gillnet, pound net, cast net, and general recreational

2.2 Data Update

2.3 Life History

A total of 32,348 (1986 — 2020) Spanish mackerel ages were prepared for SEDAR 78. Several data sources reevaluated age sample information for the entire time series. Gear identification was improved for some fishery dependent samples and deemed unreliable for others. In addition, many more YOY samples were collected since SEDAR 28 primarily from the SEAMAP Coastal Trawl Survey (see SCDNR sample sizes, mostly age-0 and age-1 fish, in SEDAR78-WP08 (2021)).

Estimates of the von Bertalanffy growth parameters updated for the population as a whole ($L_{\infty} = 582.5$ mm, $K = 0.6$ yr⁻¹, and $t_0 = -0.5$ yr), the female population ($L_{\infty} = 610.1$ mm, $K = 0.62$ yr⁻¹, and $t_0 = -0.5$ yr), and the fished

¹Abbreviations and acronyms used in this report are defined in Appendix A

population ($L_\infty = 680.4$ mm, $K = 0.2$ yr⁻¹, and $t_0 = -2.77$ yr). For the population as a whole and the female population, the t_0 parameter was fixed, samples were weighted by the inverse of the number of samples at age, and a correction was applied for bias from fishery dependent samples (Diaz et al. 2004). Length at age for all growth models are given in Table 1.

Age-based (Lorenzen 1996) natural mortality estimates were updated using new population growth parameters for SEDAR 78. As in SEDAR28, the cumulative survival of age 2+ based on a point estimate of natural mortality, 0.35, was used to scale the age-based estimates of natural mortality (Table 1).

2.4 Landings

The fleet structure used in SEDAR 78 was the same as that of SEDAR 28, including commercial handline, gill net, cast net, pound net, and general recreational (including estimates of headboat and MRIP private, charter, and shore-based landings). General recreational landings and discards were estimated using the current MRIP methodology (SEDAR78-WP03 2021). The commercial estimated landings were input as whole pounds. The commercial “other” estimated landings were divided between commercial gears based on the annual proportion of each (Table 2). General recreational landings were input in numbers (thousands).

2.5 Discards and Bycatch

Discards were estimated for commercial gill net, handline, and trolling (included with handline) in numbers (SEDAR78-WP11 2021). The commercial discards were converted to pounds based on the average weight of fish less than the 12 inch size limit weighted by the observed proportion in the overall length composition. These minor removals were then combined with their respective catch time series. General recreational discards were estimated in numbers and were modeled separately as in SEDAR 28 (Table 2, SEDAR78-WP03 (2021)). Spanish mackerel are observed in the shrimp trawl fishery in the South Atlantic. Shrimp bycatch estimates were developed using methods consistent with SEDAR 28 (SEDAR78-WP04 2021). General recreational discards and shrimp bycatch were developed in numbers as input to the model (Table 2).

2.6 Indices of Abundance

Two fishery dependent indices and one fishery independent recruitment index were developed for SEDAR 78. The general recreational MRIP index and associated CVs for harvested fish were updated through 2020 (SEDAR78-WP09 2021). This index was later truncated to start in 1986 and renormalized to its mean to coincide with the start year of the model. An index from Florida commercial handline trip ticket records was developed (SEDAR78-WP12 2021). A recruitment index of age-0 fish from the SEAMAP Coastal Trawl Survey was formulated for 1989–2019 (SEDAR78-WP01 2021; SEDAR78-WP02 2021). All finalized indices for potential use in the Spanish mackerel stock assessment and associated CVs are in Table 3.

2.7 Length Composition

As in SEDAR 28, length data were not used to inform the model. However, length compositions can be used to remove bias in samples collected for age determination. Only the commercial gillnet collections had adequate samples to develop weighted length composition data (SEDAR78-WP05 2021). This composition was developed solely to weight the commercial gillnet age composition.

2.8 Age Composition

Age data were available from the commercial handline, pound net, gill net, cast net and general recreational sampling programs. Nominal age compositions were developed for Spanish mackerel except commercial gillnet which was weighted by the length composition (Chih 2009; SEDAR78-WP05 2021). Ages greater than 10 were pooled to age 10 creating a plus group (age 10+; Tables 4–8).

3 Stock Assessment Methods

3.1 Overview

This operational assessment updated the primary model applied in SEDAR28 (2012), an integrated model implemented using the BAM software (Williams and Shertzer 2015). BAM applies a statistical catch-age formulation, coded in AD Model Builder (Fournier et al. 2012). BAM is referred to as an integrated model because it uses multiple data sources relevant to population and fishery dynamics (e.g. removals, length and age compositions, and indices of abundance) in a single framework. In essence, the catch-age model simulates a population forward in time while including fishing processes (Quinn and Deriso 1999; Shertzer et al. 2008). The model is similar in structure to Stock Synthesis (Methot and Wetzel 2013) and other stock assessment models used in the United States (Dichmont et al. 2016; Li et al. 2021). Versions of BAM have been used in previous SEDAR assessments of reef fishes in the U.S. South Atlantic, such as black sea bass, blueline tilefish, gag, greater amberjack, red grouper, red porgy, snowy grouper, tilefish, and vermilion snapper, as well as in the previous SEDAR assessments of Spanish mackerel (SEDAR17 2008; SEDAR28 2012). The primary model in this assessment was a statistical catch-age model (Quinn and Deriso 1999), implemented with the AD Model Builder software (ADMB Foundation 2012). Statistical catch-age models share many attributes with ADAPT-style tuned and untuned VPAs.

3.2 Data Sources

The catch-age model was fit to data from one fishery independent recruitment index, two fishery dependent indices, estimates of bycatch in the shrimp fishery, and to data from each of the five primary fisheries on southeastern U.S. Spanish mackerel: commercial gill net, commercial pound net, commercial cast net, commercial handlines (including hook & line, trolling, and electric reels), and general recreational (including headboat). These data included annual landings by fishery (in total weight for commercial and in numbers for general recreational and shrimp bycatch), annual discards from the general recreational sector, and annual age composition of landings by fishery. Discards from the commercial fisheries were added to landings as they were not a large enough proportion of total catch to model separately (Table 2). Data on annual discard mortalities were not available, but an overall discard mortality rate of 0.2 for the general recreational sector was applied to total discards as per the recommendation of the SEDAR 28 DW. All shrimp bycatch was assumed dead.

3.3 Model Configuration

The assessment time period was 1986–2020. The initial year was modified from SEDAR 28 to begin when adequate information was available to inform the initial age structure of the population and fishing rates. These values were assumed and fixed in SEDAR 28 and age compositions are not available until 1990. SEDAR 28 had to make assumptions about population age structure and fishing mortality to initialize the model in 1950. The terminal year extended from 2012 to 2020. A general description of the assessment model follows.

3.4 Stock Dynamics

In the assessment model, new biomass was acquired through growth and recruitment, while abundance of existing cohorts experienced mortality from fishing and natural sources. The population was assumed closed to immigration and emigration. The model included age classes $0 - 10^+$, where the oldest age class 10^+ allowed for the accumulation of fish (i.e., plus group).

3.5 Initialization

Initial (1986) numbers at age assumed the stable age structure computed from expected recruitment and the initial, age-specific total mortality rate. That initial mortality was the sum of natural mortality and fishing mortality, where fishing mortality was the product of an initial fishing rate (F_{init}) and F -weighted selectivity based on starting year landings. The initial fishing rate was estimated using a starting value of $F_{init} = 0.5$ and no prior. The initial recruitment in 1986 was estimated.

3.6 Natural Mortality Rate

The natural mortality rate (M) was assumed constant over time, but decreasing with age. The form of M as a function of age was based on Lorenzen (1996). The Lorenzen (1996) approach inversely relates the natural mortality at age to mean weight at age W_a by the power function $M_a = \alpha W_a^\beta$, where α is a scale parameter and β is a shape parameter. Lorenzen (1996) provided point estimates of α and β for oceanic fishes, which were used for this assessment. As in previous SEDAR assessments, the age-dependent estimates of M_a were rescaled to provide the same fraction of fish surviving from age 2 through the oldest observed age (12 yr) as would occur with constant $M = 0.35$, which is consistent with the findings of Hoenig (1983) and discussed in Hewitt and Hoenig (2005). The scaled Lorenzen estimator has become common in SEDAR assessments as the most reliable approach to infer age-dependent natural mortality.

3.7 Growth

Mean size at age of the population, female population, and fishery removals under a 12-inch size limit (fork length, FL) were modeled with the von Bertalanffy equation, and weight at age (whole weight, WW) was modeled as a function of FL (Figure 1, Table 1). Parameters of growth and conversions (FL-WW) were treated as input to the assessment model.

3.8 Female Maturity and Sex Ratio

Female maturity was modeled with a logistic function; parameters for this model and a vector of maturity at age were provided by the SEDAR 28 DW and treated as input to the assessment model (Table 1). The sex ratio was assumed to be 50:50, as in SEDAR 28.

3.9 Spawning Biomass

Spawning biomass (in units of mt) was modeled as the mature female biomass. It was computed each year from number at age when spawning peaks. For Spanish mackerel, peak spawning was considered to occur on June 1st.

3.10 Recruitment

Recruitment was predicted from spawning biomass using a Beverton–Holt spawner-recruit model. These stock-recruit parameters are median-unbiased values (Li et al. 2021). For all years in the model (1986–2020), estimated recruitment was conditioned on the Beverton–Holt model. Steepness was fixed at 0.75 for the base run.

3.11 Landings

Time series of landing from five fisheries were modeled: commercial handlines, commercial gillnet, commercial pound net, commercial cast net, and general recreational (including headboat). Landings were modeled via the Baranov catch equation (Baranov 1918), in units of 1000 lb whole weight for commercial fisheries and in units of 1000 fish for the general recreational fishery and bycatch.

3.12 Discards

Starting in 1986 with the implementation of size-limit regulations, time series of discard mortalities (in units of 1000 fish) were available for commercial handline and gill net fisheries. The magnitude of the commercial discards was trivial in comparison to the landings. As a result, the commercial discards were included with the landings rather than model the discards separately. General recreational discards were modeled separately and decremented by the discard mortality rate (0.2) determined in SEDAR 28. As with landings, discard mortalities were modeled via the Baranov catch equation (Baranov 1918), which required estimates of discard selectivities (described below) and release mortality rates.

3.13 Bycatch

Spanish mackerel are observed in the shrimp trawl fishery in the South Atlantic. However, the observer coverage is extremely sparse and effort data are questionable. Estimates were provided by the data workshop that assumed a constant relationship over time between the rate of bycatch and effort by state (SEDAR78-WP04 2021). Bycatch was modeled via the Baranov catch equation (Baranov 1918), assuming that only age 0 fish and a small proportion of age 1 fish were selected with 100% mortality.

3.14 Fishing

For each time series of landings and discard mortalities, a separate full fishing mortality rate (F) was estimated. Age-specific rates were then computed as the product of full F and selectivity at age. The across-fleet annual F was represented by apical F , computed as the maximum of F at age summed across fleets.

3.15 Selectivities

Selectivity curves applied to landings were estimated using a parametric approach. This approach applies plausible structure on the shape of the curves, and achieves greater parsimony than occurs with unique parameters for each age. Flat-topped selectivities were modeled as a two-parameter logistic function (logistic). Dome-shaped selectivities were modeled by combining two logistic functions: a two-parameter logistic function to describe the ascending limb of the curve, and a two-parameter logistic function to describe the descending limb (double-logistic). Another type of domed-shaped selectivity allowed for a freely estimated logit parameter for age-0, a fixed peak at age-1, and an exponential decline for age 2⁺ (logit-exponential).

To model landings, this assessment applied flat-topped selectivity for the commercial handline and cast net fleets, both pooled over years due to small sample sizes. Dome-shaped selectivity was used to model commercial gillnet landings. Commercial pound net and general recreational fleets were modeled using the logit-exponential selectivity. The approach to modeling each of these fleets was modified from decisions in SEDAR 28 to improve model fit and stability and based on total likelihood or likelihood profiles of specific parameters.

Selectivities of general recreational discards and shrimp bycatch could not be estimated directly, because composition data of discards were lacking. Fixed selectivities for these removals were the same as in SEDAR 28.

3.16 Indices of Abundance

The model was fit to two fishery dependent indices of relative abundance (MRIP (1986–2020) and commercial handline (1986–2020)), and one fishery independent index of age-0 recruitment (SEAMAP YOY (1989–2019)). The fishery dependent indices of abundance were limited to harvested fish. Predicted indices were conditional on selectivity of the corresponding fleet, and were computed from abundance (numbers of fish) at the midpoint of the year or, in the case of commercial handlines, biomass.

3.17 Catchability

In the BAM, catchability scales indices of relative abundance to the estimated population at large, adjusted by selectivity of the fleet or survey. For SEDAR 78, as in SEDAR 28, catchability (q) of each index was assumed to be time-invariant, and these parameters (one q per index) were estimated within BAM.

3.18 Biological Reference Points

Biological reference points (benchmarks) were calculated based on maximum sustainable yield (MSY) estimates from the Beverton-Holt spawner-recruit model with bias correction (expected values in arithmetic space). Computed benchmarks included MSY, fishing mortality rate at MSY (F_{MSY}), and spawning stock at MSY (SSB_{MSY}). In this assessment, spawning stock measures total biomass (mt) of mature females. These benchmarks are conditional on the estimated selectivity functions. The selectivity pattern used here were the selectivities at age (weighted by apical F), with effort from each fishery (including discard and bycatch mortalities) estimated as the full F averaged over the last three years of the assessment.

3.19 Fitting Criterion

Model parameters were estimated using a penalized likelihood approach in which observed removals (landings and discards) were fit closely, and observed composition data and abundance indices were fit to the degree that they were compatible. Removals and index data were fit using lognormal likelihoods. Age composition data were fit using the Dirichlet-multinomial likelihood, and only from years that met minimum sample size criteria ($n_{fish} > 10$ and $n_{trips} \geq 10$).

SEDAR 28 fit composition data using the robust multinomial with iterative re-weighting (Francis 2011). Since Francis (2011), additional work on this topic has questioned the use of the multinomial distribution in stock assessment models (Francis 2014), and has recommended the Dirichlet-multinomial as an alternative (Francis 2017; Thorson et al. 2017; Fisch et al. 2021). A chief advantage of the Dirichlet-multinomial is that it is self-weighting through estimation of an additional variance inflation parameter for each composition component, making iterative re-weighting unnecessary. Another advantage is that it can better account for overdispersion, or, larger variance in the data than would be expected by the multinomial. Overdispersion can result from intra-haul correlation, which results when fish caught in the same set are more alike in length or age than fish caught in a different set (Pennington and Volstad 1994). The Dirichlet-multinomial has been implemented in Stock Synthesis (Methot and Wetzel 2013; Thorson et al. 2017) and in the BAM, and since SEDAR 41 has become the standard likelihood for fitting composition data in assessments of South Atlantic fishes.

The model includes the capability for each component of the likelihood to be weighted by user-supplied values. When applied to indices, these weights modified the effects of the CVs derived from index standardization. CVs from index standardization are often smaller for fishery dependent indices than for fishery independent indices due to the typically larger sample sizes. Therefore, initial CVs for the fishery dependent indices were set to 0.2, similar to past SEDAR assessments, to ensure that the fishery independent index was not considered less certain than the fishery dependent index. In the base run, weights on the indices were adjusted iteratively from the initial values based on the index standardization (Table 3) until standard deviations of normalized residuals (SDNRs) were near 1.0, as recommended by Francis (2011).

For some parameters defining selectivities and Dirichlet-multinomial overdispersion parameters, normal priors were applied to maintain parameter estimates near reasonable values, and to prevent the gradient-based optimization routine from drifting into parameter space with negligible changes in the likelihood.

3.20 Configuration of a Base Run

The base run was configured as described above. This configuration does not necessarily represent reality better than all other possible configurations, and thus this assessment attempted to portray uncertainty in point estimates through sensitivity analyses and through a MCBE approach (described below).

3.21 Sensitivity Analyses

Sensitivity runs were chosen to investigate issues that arose specifically with this operational assessment. They were intended to demonstrate directionality of results with changes in inputs or simply to explore model behavior. These model runs vary from the base run as follows:

- S1: Removal of the commercial handline index
- S2: Use the Lorenzen M scaled to the low point estimate of M

- S3: Use the Lorenzen M scaled to the high point estimate of M
- S4: Steepness fixed at 0.6
- S5: Steepness fixed at 0.9
- S6: General recreational discard rate fixed at 0.1
- S7: General recreational discard rate fixed at 0.3

Retrospective analyses were also conducted by incrementally dropping one year at a time for five iterations. In these runs, the terminal years were 2019, 2018, 2017, 2016, or 2015.

3.22 Parameters Estimated

The model estimated annual fishing mortality rates of each fleet, selectivity parameters, catchability coefficients associated with indices, parameters of the mean recruitment model (R_0), annual recruitment deviations, and Dirichlet-multinomial variance inflation factors. Estimated parameters are listed in Appendix B.

3.23 Per Recruit and Equilibrium Analyses

Yield per recruit and spawning potential ratio were computed as functions of F , as were equilibrium landings, discards, and spawning biomass. Equilibrium landings and discards were also computed as functions of biomass B , which itself is a function of F . As in the computation of MSY-related benchmarks (described in §3.24), per recruit and equilibrium analyses applied the most recent selectivity patterns averaged across fleets, weighted by each fleet's F from the last three years of the assessment (2018–2020).

3.24 Benchmark/Reference Point Methods

In this assessment of Spanish mackerel, the quantities F_{MSY} , SSB_{MSY} , B_{MSY} , and MSY were estimated by the method of Shepherd (1982). In that method, the point of maximum yield is calculated from the spawner-recruit curve and parameters describing growth, natural mortality, maturity, and selectivity. The value of F_{MSY} is the F that maximizes equilibrium removals.

On average, expected recruitment is higher than that estimated directly from the spawner-recruit curve, because of lognormal deviation in recruitment. Thus, in this assessment, the method of benchmark estimation accounted for lognormal deviation by including a bias correction in equilibrium recruitment. The bias correction (ς) was computed from the variance (σ_R^2) of recruitment deviation in log space: $\varsigma = \exp(\sigma_R^2/2)$. Then, equilibrium recruitment (R_{eq}) associated with any F is,

$$R_{eq} = \frac{R_0 [\varsigma 0.8h\Phi_F - 0.2(1-h)]}{(h-0.2)\Phi_F} \quad (1)$$

where R_0 is virgin recruitment, h is steepness, and $\Phi_F = \phi_F/\phi_0$ is spawning potential ratio given growth, maturity, and total mortality at age (including natural and fishing mortality rates). The R_{eq} and mortality schedule imply an equilibrium age structure and an average sustainable yield (ASY). The estimate of F_{MSY} is the F giving the highest ASY, and the estimate of MSY is that ASY. The estimate of SSB_{MSY} follows from the corresponding equilibrium age structure, as does the benchmark estimate of discard mortalities (D_{MSY}), here separated from ASY (and consequently, MSY).

Estimates of MSY and related benchmarks are conditional on selectivity pattern. The selectivity pattern used here was an average of terminal-year selectivities from each fleet, where each fleet-specific selectivity was weighted in proportion to its corresponding estimate of F averaged over the last three years (2018–2020). If the selectivities or relative fishing mortalities among fleets were to change, so would the estimates of MSY and related benchmarks.

For this stock, the maximum fishing mortality threshold (MFMT) is defined by the SAFMC as F_{MSY} , and the minimum stock size threshold (MSST) as $75\% \text{SSB}_{\text{MSY}}$. Overfishing is defined as $F > \text{MFMT}$ and overfished as $\text{SSB} < \text{MSST}$. Current status of the stock is represented by SSB in the latest assessment year (2020), and current status of the fishery is represented by the geometric mean of F from the latest three years (2018–2020).

3.25 Uncertainty and Measures of Precision

As in SEDAR 28, this assessment used a MCBE approach to characterize uncertainty in results of the base run. Monte Carlo and bootstrap methods (Efron and Tibshirani 1993; Manly 1997) are often used to characterize uncertainty in ecological studies, and the mixed approach has been applied successfully in stock assessment, including Restrepo et al. (1992), Legault et al. (2001), SEDAR4 (2004), and many South Atlantic SEDAR assessments since SEDAR19 (2009). The approach is among those recommended for use in SEDAR assessments (SEDAR Procedural Guidance 2010), and it is considered to be one of the more complete characterizations of uncertainty used in stock assessments across the United States.

The approach translates uncertainty in model input into uncertainty in model output, by fitting the model many times with different values of “observed” data and key input parameters. A main advantage of the approach is that the results describe a range of possible outcomes, so that the ensemble of models characterizes uncertainty in results more thoroughly than any single fit or handful of sensitivity runs (Scott et al. 2016; Jardim et al. 2021). A minor disadvantage of the approach is that computational demands are relatively high, but this can largely be mitigated through use of parallel processing.

In this assessment, the BAM was successively re-fit in $n = 4000$ trials that differed from the original inputs by bootstrapping on data sources, and by Monte Carlo sampling of several key input parameters. The value of $n = 4000$ was chosen because a minimum of 3000 runs were desired, and it was anticipated that not all runs would converge or otherwise be valid. Of the 4000 trials, approximately 1% were discarded, because the model did not properly converge (the Hessian was not positive definite or a parameter hit a bound). This left $n = 3957$ MCBE runs to characterize uncertainty, which was sufficient for convergence of standard errors in management quantities. All runs were given equal weight when forming the ensemble of results (Jardim et al. 2021).

The MCBE analysis should be interpreted as providing an approximation to the uncertainty associated with each output. The results are approximate for two related reasons. First, not all combinations of Monte Carlo parameter inputs are equally likely, as biological parameters might be correlated. Second, all runs are given equal weight in the results, yet some might provide better fits to data than others.

3.26 Bootstrap of Observed Data

To include uncertainty in time series of observed landings, discards, and indices of abundance, multiplicative lognormal errors were applied through a parametric bootstrap. To implement this approach in the MCB trials, random variables ($x_{s,y}$) were drawn for each year y of time series s from a normal distribution with mean 0 and variance $\sigma_{s,y}^2$ [that is, $x_{s,y} \sim N(0, \sigma_{s,y}^2)$]. Annual observations were then perturbed from their original values ($\hat{O}_{s,y}$),

$$O_{s,y} = \hat{O}_{s,y} [\exp(x_{s,y} - \sigma_{s,y}^2/2)] \quad (2)$$

The term $\sigma_{s,y}^2/2$ is a bias correction that centers the multiplicative error on the value of 1.0. Standard deviations in log space were computed from CVs in arithmetic space, $\sigma_{s,y} = \sqrt{\log(1.0 + CV_{s,y}^2)}$. As used for fitting the base run, CVs of landings and discards were assumed to be 0.05, and CVs of indices of abundance were those provided by, or modified from, the DW (tabulated in §2 of this assessment report).

Uncertainty in age compositions were included by drawing new distributions for each year of each data source, following a multinomial sampling process. Ages of individual fish were drawn at random with replacement using the cell probabilities of the original data. For each year of each data source, the number of individuals sampled was the same as in the original data (number of fish).

3.27 Monte Carlo Sampling

In each successive fit of the model, several parameters were fixed (i.e., not estimated) at values drawn at random from distributions. The steepness, natural mortality, and general recreational discard mortality distributions are described below.

3.28 Steepness

As in SEDAR 28, steepness could not be estimated with stability in the model. Steepness values above 0.60 appeared to be equally likely in the likelihood profile. Steepness was fixed at 0.75 for the base run and uncertainty in the parameters was characterized by a truncated normal distribution with 0.6 and 0.9 as the lower and upper bounds respectively.

3.29 Natural Mortality

As in each model run, the vector of age-specific natural mortality (Lorenzen estimator) was scaled to the fish-only Hoenig (1983) age-invariant M as was done for the base run. The point estimate of natural mortality ($M = 0.35$) was based on a maximum age of 12. To estimate uncertainty, a new M value was drawn for each MCB trial from a truncated normal distribution of (range [0.30, 0.42]) with mean equal to the point estimate ($M = 0.35$) and standard deviation set to provide 95% confidence limits at the bounds. The range was reduced from SEDAR 28 and corresponds to maximum age ± 2 instead of the range of point estimates across many different methods to calculate M (range [0.16, 0.54]). Each realized value of M was used to scale the age-specific Lorenzen M , as in the base run.

3.30 General Recreational Discard Mortality

As in SEDAR 28, discard mortalities δ were subjected to Monte Carlo variation as follows. A new value for general recreational discard mortality was drawn for each MCB trial from a truncated normal distribution range [0.10, 0.30] with mean equal to the point estimate ($\delta = 0.20$) and standard deviation set to provide 95% confidence limits at the bounds.

3.31 Projection Methods

Projections were run to predict stock status in years after the assessment, 2021–2025.

The structure of the projection model was the same as that of the assessment model, and parameter estimates were those from the assessment. A single selectivity curve was applied to calculate landings computed by averaging selectivities across fleets using geometric mean F s from the last three years of the assessment period, similar to computation of MSY benchmarks (§3.24).

3.31.1 Initialization of Projections

Although the terminal year of the assessment is 2020, the assessment model computes abundance at age (N_a) at the start of 2021. For projections, those estimates were used to initialize N_a . However, the assessment has no information to inform the strength of 2021 recruitment, and thus it computes 2021 recruits (N_1) as the expected value, that is, without deviation from the estimate of mean recruitment, and corrected to be unbiased in arithmetic space. In the stochastic projections, lognormal stochasticity was applied to these abundances after adjusting them to be unbiased in log space, with variability based on the estimate of σ_R . Thus, the initial abundance in year one (2021) of projections included this variability in N_1 . The deterministic projections were not adjusted in this manner, because deterministic recruitment follows mean recruitment.

Fishing rates that define the projections were assumed to start in 2023. Because the assessment period ended in 2020, the projections required an initialization period (2021 and 2022). L_{current} (the average landings over the last 3 years in the assessment model) was assumed during the interim period.

3.31.2 Uncertainty of Projections

To characterize uncertainty in future stock dynamics, stochasticity was included in replicate projections, each an extension of a single assessment fit from the ensemble. Thus, projections carried forward uncertainties in natural mortality and discard mortality, as well as in estimated quantities such as spawner-recruit parameters (R_0 and σ_R , selectivity curves, and in initial (start of 2021) abundance at age.

Initial and subsequent recruitment values were generated with stochasticity using a Monte Carlo procedure, in which the estimated recruitment of each model within the ensemble is used to compute mean annual recruitment values (\bar{R}_y). Variability is added to the mean values by choosing multiplicative deviations at random from a lognormal distribution,

$$R_y = \bar{R}_y \exp(\epsilon_y). \quad (3)$$

Here ϵ_y is drawn from a normal distribution with mean 0 and standard deviation σ_R , where σ_R is the standard deviation from the relevant ensemble model component.

The procedure generated 20,000 replicate projections of models within the ensemble drawn at random (with replacement). In cases where the same model run was drawn, projections would still differ as a result of stochasticity in projected recruitment streams. Central tendencies were represented by the deterministic projections of the base run, as well as by medians of the stochastic projections. Precision of projections was represented graphically by the 5th and 95th percentiles of the replicate projections.

3.31.3 Projection Scenarios

The ToRs for this assessment did not define projections scenarios. The SEDAR 78 panel defined three scenarios: F_{current} , F_{MSY} , and $75\%F_{\text{MSY}}$. In each, the landings in the interim period (2021–2022) were calculated based on F_{current} .

- Scenario 1: $F = F_{\text{current}}$, with L_{current} also assumed for the interim period.
- Scenario 2: $F = F_{\text{MSY}}$, with L_{current} assumed for the interim period.
- Scenario 3: $F = 75\%F_{\text{MSY}}$, with L_{current} assumed for the interim period.

4 Stock Assessment Results

4.1 Measures of Overall Model Fit

In general, the BAM fit well to the available data. Predicted age compositions were reasonably close to observed data in most years (Figures 2 and 3). The model was configured to fit observed commercial and general recreational removals closely (Figures 4–10). Fits to indices of abundance were reasonable, though the commercial handline index was generally underfit between 2004 and 2020 (Figures 11–13). There was no clear explanation for this trend and a sensitivity run to evaluate the exclusion of the commercial handline index is discussed in 4.11. The SEAMAP YOY index suggests highly variable recruitment from year to year; however, mismatches between trawl surveys and the timing of migration are an alternative explanation for the variability.

4.2 Parameter Estimates

Estimates of all parameters from the catch-age model are shown in Appendix B. Estimates of management quantities and some key parameters are reported in sections below.

4.3 Stock Abundance and Recruitment

Estimated abundance at age shows a similar pattern across all years with most variation in youngest ages (Figure 14). Annual number of recruits is shown in Table 9 (age-0 column) and in Figure 15.

4.4 Total and Spawning Biomass

Estimated biomass at age follows a similar pattern as did abundance (Table 10 and Figure 16). Total biomass and spawning biomass show nearly identical trends with near-decadal fluctuation in overall landings. The relative contribution and annual variability of YOY fish is lower in the biomass at age due to non-linear size at age.

4.5 Fishery Selectivity

Selectivities of landings from commercial and general recreational fleets are shown in Figures 17, 18, 19, 20, and 21. Selectivities of discards from commercial and general recreational fleets are shown in Figures 22 and 23. Selectivities are tabulated in Table 12. Estimated selectivities of removals indicate that full selection occurs by age one for commercial pound net and general recreational fleets and age three for commercial handline, cast net, and gillnet fleets. General recreational discards and shrimp bycatch were assumed to be mostly YOY (Figures 23 and 23).

Average selectivities of landings, dead discards, and the total weighted average of all selectivities were computed from F -weighted selectivities in the most recent three assessment years (Figure 24, Table 12). These average selectivities were used in computation of point estimates of benchmarks, as well as in projections.

4.6 Fishing Mortality

Estimates of total F by fleet are shown in Figure 25 and Table 13, and estimates of F at age are shown in Table 14. In any given year, the maximum F at age (i.e., apical F) may be less than that year's sum of fully selected F s across fleets. This inequality is due to the combination of two features of estimated selectivities: full selection occurs at different ages among gears and several sources of mortality have dome-shaped selectivity.

Alternative measures of fishing intensity have implications similar to those of apical F (Figure 26). The value of SPR_F has remained near or above the equilibrium MSY level with the exception of the terminal year which was dominated by removals from the general recreational fleet.

Throughout most of the assessment period, estimated landings and discard mortalities in number of fish have been split evenly between commercial and general recreational sectors (Figures 27 and 28). Early commercial landings were dominated by gillnet removals but shifted to a mix of cast net, gillnet, and handline starting in about 2004. Table 18 shows total landings at age in numbers, and Table 19 in 1000 lb. Table 20 shows total dead discards at age in thousand pounds, and Table 21 in weight.

4.7 Stock-Recruitment Parameters

The estimated Beverton–Holt spawner-recruit curve is shown in Figure 31. Variability about the curve was estimated only at relatively low levels of spawning biomass, because composition data required for estimating recruitment deviations became available only after spawning stock had been diminished. The effect of density dependence on recruitment can be examined graphically via the estimated recruits per spawner as a function of spawners (Figure 31).

The mean recruit relationship and variability around that mean are shown in Figure 31. Values of recruitment-related parameters were as follows: unfished YOY recruitment $\widehat{R}_0 = 21939130$, and standard deviation of recruitment residuals in log space was fixed at $\sigma_R = 0.6$ (which resulted in bias correction of $\zeta = 1.20$). Uncertainty in these quantities was estimated through the MCBE analysis (Figure 32).

4.8 Per Recruit and Equilibrium Analyses

Yield per recruit and spawning potential ratio were computed as functions of F . These computations applied the most recent selectivity patterns averaged across fleets, weighted by F from the last three years (2018–2020) (Figure 33).

As in per recruit analyses, equilibrium spawning biomass was computed as a function of F (Figure 34). Similarly, equilibrium biomass and removals are functions of F , allowing for their relationships to be depicted together (Figure 35).

4.9 Benchmarks / Reference Point

As described in §3.24, biological reference points (benchmarks) were derived analytically assuming equilibrium dynamics, corresponding to the estimated spawner-recruit curve with bias correction (Figure 31). This approach is consistent with methods used in rebuilding projections (i.e., fishing at F_{MSY} yields MSY from a stock size of SSB_{MSY}). $F_{OY} = 75\%F_{MSY}$ was considered as another possible values of F at optimum yield (OY). Standard errors of benchmarks were approximated as those from ensemble modeling §3.25.

Maximum likelihood estimates (base run) of benchmarks, as well as median values from MCBE analysis, are summarized in Table 22. Point estimates of MSY-related quantities were $F_{MSY} = 0.52$ (y^{-1}), $MSY = 8210.19$ (1000 lb), $B_{MSY} = 19588.3$ (mt), and $SSB_{MSY} = 6405.87$ (mature female biomass, mt). Median estimates were $F_{MSY} = 0.52$ (y^{-1}), $MSY = 8351.35$ (1000 lb), $B_{MSY} = 19820.72$ (mt), and $SSB_{MSY} = 6410.25$ (mature female biomass, mt). Distributions of these benchmarks from the MCBE analysis are shown in Figure 36.

4.10 Status of the Stock and Fishery

Estimated time series of stock status $SSB/MSST$ showed a near-decadal fluctuation above MSST (Figure 37, Table 11). Base-run estimates of spawning biomass have remained above SSB_{MSY} . Current stock status was estimated in the base run to be $SSB_{2020}/MSST = 1.4$ and $SSB_{2020}/SSB_{MSY} = 1.05$ (Table 22), indicating that the stock is not overfished. Median values from the MCBE analysis indicated similar results $SSB/MSST = 1.42$ and $SSB/SSB_{MSY} = 1.07$ (Figure 37). The uncertainty analysis suggested that the terminal estimate of stock status is robust (Figures 38 and 40). Of the MCBE runs, 92.6% indicated that the stock was above MSST in 2020.

The estimated time series of F/F_{MSY} suggests that overfishing has not occurred throughout most of the assessment period except for 2020 (Table 11, Figure 37). Current fishery status in the terminal year, with current F represented by the geometric mean from years 2018–2020, was estimated by the base run to be $F/F_{MSY} = 0.77$ (Table 22). The fishery status was also robust (Figures 38 - 40). Of the MCBE runs, approximately 90% agreed with the base run that the stock is not currently experiencing overfishing.

Compared to SEDAR 28, the qualitative results of stock and fishery status are similar (Figure 41).

4.11 Sensitivities and Retrospective Runs

Sensitivity runs, described in §3.21, were used for exploring data or model issues that arose during the assessment process, for evaluating implications of assumptions in the base assessment model, and for interpreting MCBE results in terms of expected effects of input parameters. In some cases, sensitivity runs are simply a tool for better understanding model behavior, and therefore all runs are not considered equally plausible in the sense of alternative states of nature. Time series of F/F_{MSY} and SSB/SSB_{MSY} are plotted to demonstrate sensitivity to the changing conditions in each run. This operational assessment explored sensitivity of the base run to changes in data input, natural mortality, steepness, and general recreational discard mortality (Figures 42–45). Of these modifications, results were most sensitive to the scale of natural mortality and steepness.

Retrospective analyses suggest no concerning patterns of estimating F or SSB in the terminal year (Figure 46) or status indicators (Figure 47). Terminal-year recruitment was variable across retrospective peels.

4.12 Projections

Since the stock status is not overfished or undergoing overfishing, three projections are provided for completeness and were recommended by the SEDAR 78 panel.

Projection scenario 1, which assumed L_{current} (average landings over the last 3 years) during the interim period (2021-2022) and $F = F_{\text{current}}$ for following years, predicted the stock to decrease until management measure take place and then increase back to SSB_{MSY} (Figure 48, Table 24).

Projection scenario 2, which assumed L_{current} (average landings over the last 3 years) during the interim period (2021-2022) and $F = F_{\text{msy}}$ for following years, predicted the stock to decrease until management measure take place and then increase but not recover to SSB_{MSY} in the terminal year (Figure 49, Table 25).

Projection scenario 3, which assumed L_{current} (average landings over the last 3 years) during the interim period (2021-2022) and $F = 75\%F_{\text{msy}}$, predicted the stock to decrease until management measure take place and then increase back to SSB_{MSY} (Figure 50, Table 26).

4.13 Discussion

The base run of the BAM indicated that the stock is not overfished $SSB/MSST = 1.4$, and that overfishing is not occurring based on the 3-year geometric mean $F/F_{\text{MSY}} = 0.77$. The 2020 point estimate for F/F_{MSY} indicated overfishing primarily due to a large increase in the general recreational landings during the COVID-19 pandemic. Should this high rate of fishing continue after 2020, overfishing would likely ensue. Indeed, preliminary MRIP estimates of Spanish mackerel landings in 2021 were higher than in 2020. The stock continues to show resilience to fishing effort as in SEDAR 28 (Figure 41). Neither of these models show a stock that was overfished or near overfishing in 2007 as SEDAR17 (2008) indicated.

The Monte Carlo/bootstrap ensemble analyses showed widespread agreement with the qualitative results of the base run. Of all MCBE runs, 92.6% showed that the stock is not overfished, and 90.0% showed that overfishing is not occurring.

4.13.1 Comments on the Assessment

In addition to including the more recent years of data, this operational assessment contained several modifications to the previous data of SEDAR 28, such as the use of modern MRIP methodology, the use of the Dirichlet–multinomial distribution to fit age compositions, pooling age compositions across years for fleets with low annual sample sizes, modification to selectivity functions applied to landings, update of the growth models and natural mortality, removing sex-specific growth and selectivity, and changing the start year of the model. The assessment model itself was also modernized to the current version of BAM. The sum of these improvements should result in a more robust assessment.

There is a lack of available fishery independent indices of abundance for this species. The schooling behavior of Spanish mackerel makes a random survey of their population particularly difficult. The one fishery independent index used (SEAMAP YOY) was highly variable, as would be expected for a recruitment index.

In general, fishery dependent indices of abundance may not track actual abundance well, because of factors such as hyperdepletion or hyperstability. Furthermore, this issue can be exacerbated by management measures. In this assessment, the commercial handline index was generated from Florida trip ticket data. There was a shift in the commercial handline index in 2004 after which a run of positive residuals persisted in the model fit. A sensitivity run excluding the commercial handline index did not influence the results in the terminal year of the assessment. The

index was included in the model but should be investigated further in future assessments. In general, management measures in the southeast U.S. have made the continued utility of fishery dependent indices questionable. This situation amplifies the importance of fishery independent sampling.

Natural mortality plays a driving role in this assessment, as it does in most. The pattern of natural mortality at age affects multiple outputs, including annual fishing rates, benchmarks, and equilibrium age structure expected at MSY. The model could estimate steepness at 0.73 but it was only weakly informed above 0.60 and would stay close to the starting value. As in SEDAR 28, steepness was fixed at 0.75 as a mid-point of the range over which no likelihood signal was available.

4.14 Comments on the Projections

As usual, projections should be interpreted in light of the model assumptions and key aspects of the data. Some major considerations are the following:

- In general, projections of fish stocks are highly uncertain, particularly in the long term (e.g., beyond 5–10 years).
- Although projections included many major sources of uncertainty, they did not include structural (model) uncertainty. That is, projection results are conditional on one set of functional forms used to describe population dynamics, selectivity, recruitment, etc.
- Fisheries were assumed to continue fishing at their estimated current proportions of total effort, using the estimated current selectivity patterns. New management regulations that alter those proportions or selectivities would likely affect projection results.
- The projections assumed that the estimated spawner-recruit relationship applies in the future and that past residuals represent future uncertainty in recruitment. If future recruitment is characterized by runs of large or small year classes, possibly due to environmental or ecological conditions, stock trajectories may be affected.

4.15 Research Recommendations

The research recommendations from the SEDAR 78 panel were as follows:

- Development of a fishery-independent survey for pelagic species would decrease reliance on a fishery-dependent index of abundance that has unexplained trends in residual values in recent years.
- Examine how schooling or migratory dynamics may influence the catchability of the species. In particular, research the assumption of the hyperstability of indices that sample the schooling portion of the stock.
- Age-dependent natural mortality was estimated by indirect methods (Lorenzen) for this assessment. Telemetry- and conventional-tagging programs can provide alternative estimates of natural mortality. Investigate new methods for determining point estimates for natural mortality.

4.16 Sampling Recommendations

- Limited information is available for shrimp bycatch in the Atlantic. Comprehensive observer coverage across space and time are needed to adequately capture the scale and size distribution of bycatch for Spanish mackerel and other species.
- The general recreational discards have increased dramatically in the last 2 years of this assessment. A better understanding of the size composition and mortality of discarded fish would improve the assessment, especially if discards continue to increase due to effort or future management changes.
- Implement systematic age sampling for the general recreational and commercial sectors. Age samples were important for this assessment for determining key parameters but sample sizes were limited, particularly for the general recreational sector, commercial handline and commercial cast net sectors, which account for the majority of the recent landings.

4.17 References

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4.18 Tables

Table 1. Size (FL) in inches and weight in pounds (lb) at age as applied to the population (Pop), female population (F), and fishery-dependent portion of the population (FD) with a 12-inch (FL) size limit, female maturity at age (Fem.mat), Lorenzen age-specific natural mortality (M) scaled to Hoenig point estimate of M.

Age	Pop.FL	Pop.lb	F.FL	F.lb	FD.FL	FD.lb	Fem.mat	M
0	10.32	0.38	11.10	0.46	12.72	0.68	0.00	0.68
1	16.00	1.31	17.07	1.58	15.24	1.14	0.94	0.46
2	19.12	2.18	20.28	2.58	17.30	1.64	1.00	0.40
3	20.84	2.78	22.01	3.25	19.00	2.14	1.00	0.37
4	21.78	3.16	22.94	3.66	20.39	2.62	1.00	0.36
5	22.30	3.38	23.44	3.89	21.53	3.06	1.00	0.35
6	22.58	3.50	23.71	4.02	22.47	3.45	1.00	0.34
7	22.74	3.57	23.85	4.09	23.25	3.80	1.00	0.34
8	22.83	3.61	23.93	4.13	23.88	4.10	1.00	0.34
9	22.88	3.63	23.97	4.15	24.40	4.36	1.00	0.34
10	22.90	3.64	23.99	4.16	24.83	4.58	1.00	0.34

Table 2. Observed time series of landings (L) and discards (D) for commercial handline (cH), commercial gill net (cG), commercial pound net(cP), commercial cast net(cC), shrimp bycatch (SB), and general recreational (GR) fisheries. Commercial landings are in units of 1000 lb whole weight; all others are in units of 1000 fish. Discards include all released fish, live or dead.

Year	L.cH	L.cG	L.cP	L.cC	L.GR	D.SB	D.GR
1986	78.442	4060.803	201.695	.	1758.446	293.467	99.901
1987	106.502	3616.669	470.433	.	1581.880	246.210	10.744
1988	64.864	3280.564	402.161	.	2748.961	295.158	26.275
1989	39.666	3180.917	509.040	.	2612.834	349.373	162.043
1990	111.857	2696.683	509.415	.	2607.275	270.381	164.992
1991	144.012	3798.801	468.247	.	3984.348	336.048	204.527
1992	50.239	2689.136	396.725	.	2627.843	253.739	141.393
1993	99.073	4415.277	328.326	.	1581.289	268.227	119.145
1994	58.246	3705.878	329.600	.	1871.097	300.299	235.680
1995	209.640	3236.730	199.030	15.419	1072.701	304.626	148.449
1996	139.445	2679.097	294.389	65.924	1403.063	247.772	225.914
1997	126.978	2674.398	207.188	210.195	1768.786	287.483	219.410
1998	149.026	2693.649	115.481	68.323	1567.478	259.449	99.250
1999	188.060	1887.672	271.264	66.391	2405.746	290.461	300.960
2000	311.524	1864.970	161.842	361.425	3124.254	270.720	369.641
2001	348.824	1705.127	196.164	892.775	2949.293	216.347	194.657
2002	438.663	1318.160	121.274	968.866	3360.141	237.459	360.647
2003	390.936	1092.515	90.685	1897.957	3324.354	184.847	503.116
2004	590.759	709.698	71.085	2242.104	1755.768	180.568	209.749
2005	841.431	1254.387	47.026	1574.132	2352.000	195.430	308.218
2006	707.656	1648.777	42.924	1524.472	1519.820	133.243	129.569
2007	775.882	1715.951	50.048	1268.365	2465.112	109.382	325.041
2008	869.796	1079.737	192.347	702.770	2648.595	118.257	451.296
2009	977.720	1439.248	363.026	966.518	3271.544	69.966	342.990
2010	1228.006	1346.147	144.150	1798.217	3704.510	112.672	457.321
2011	891.721	1084.574	87.480	1239.174	2770.439	116.988	294.592
2012	1118.972	1431.172	55.277	976.984	2072.331	132.276	239.588
2013	1359.102	1167.578	26.561	344.541	3902.423	94.578	544.831
2014	1748.908	941.229	33.890	562.620	2658.106	111.451	380.148
2015	1223.504	981.574	54.506	177.356	1496.388	126.194	213.302
2016	1401.609	1107.927	73.666	688.890	3447.737	125.049	426.454
2017	1379.049	1117.239	36.896	985.813	1786.717	113.893	298.662
2018	1600.541	1421.607	36.553	699.935	2472.430	89.469	628.452
2019	1382.207	1137.540	157.326	1234.201	4022.032	119.063	862.654
2020	1375.187	1569.859	82.623	666.309	6387.829	117.525	1058.072

Table 3. Observed indices of abundance and CVs from Florida commercial handline trip ticket (cH), MRIP general recreational (GR), and the SEAMAP YOY survey (YOY).

Year	cH	cH CV	GR	GR CV	YOY	YOY CV
1986	0.47	0.2	2.87	0.2	.	.
1987	0.60	0.2	1.18	0.2	.	.
1988	0.70	0.2	1.26	0.2	.	.
1989	0.65	0.2	1.39	0.2	1.16	0.26
1990	0.74	0.2	1.28	0.2	1.64	0.30
1991	0.53	0.2	1.11	0.2	2.21	0.34
1992	0.65	0.2	0.83	0.2	1.65	0.56
1993	1.01	0.2	0.64	0.2	0.79	0.12
1994	0.57	0.2	0.85	0.2	0.80	0.14
1995	0.83	0.2	0.59	0.2	1.36	0.22
1996	0.74	0.2	0.91	0.2	0.79	0.14
1997	0.67	0.2	1.11	0.2	0.36	0.12
1998	0.69	0.2	0.63	0.2	0.79	0.15
1999	0.78	0.2	1.19	0.2	0.86	0.18
2000	0.81	0.2	0.88	0.2	1.22	0.24
2001	0.82	0.2	0.94	0.2	1.89	0.52
2002	0.81	0.2	1.00	0.2	1.15	0.20
2003	0.96	0.2	0.94	0.2	0.72	0.16
2004	1.33	0.2	0.96	0.2	0.84	0.13
2005	1.29	0.2	0.82	0.2	1.00	0.17
2006	1.30	0.2	0.73	0.2	1.27	0.21
2007	1.14	0.2	0.73	0.2	1.32	0.19
2008	1.17	0.2	1.12	0.2	1.63	0.22
2009	1.44	0.2	0.94	0.2	1.18	0.23
2010	1.47	0.2	0.77	0.2	0.79	0.13
2011	1.33	0.2	0.90	0.2	0.40	0.09
2012	1.08	0.2	1.15	0.2	0.29	0.05
2013	1.11	0.2	1.07	0.2	0.82	0.17
2014	1.31	0.2	0.93	0.2	0.64	0.13
2015	1.18	0.2	0.74	0.2	0.46	0.09
2016	1.39	0.2	0.79	0.2	0.99	0.20
2017	1.34	0.2	0.75	0.2	0.96	0.26
2018	1.43	0.2	0.90	0.2	0.52	0.11
2019	1.42	0.2	1.18	0.2	0.45	0.10
2020	1.23	0.2	0.95	0.2	.	.

Table 4. Observed age composition from commercial handline (cH) pooled across all years. The year represents a mid-point of pooled years.

Year	trips	fish	0	1	2	3	4	5	6	7	8	9	10
2007	175	2953	0.0181	0.1384	0.2461	0.2452	0.1646	0.1044	0.0527	0.0207	0.0059	0.0028	0.0011

Table 5. Observed age composition from commercial gill net (cG).

Year	trips	fish	0	1	2	3	4	5	6	7	8	9	10
1992	13	190	0.0128	0.4021	0.3591	0.1109	0.0508	0.0325	0.0204	0.0114	0.0000	0.0000	0.0000
1993	14	150	0.0010	0.1735	0.3020	0.1930	0.1371	0.0538	0.0703	0.0547	0.0147	0.0000	0.0000
1995	11	167	0.0650	0.3532	0.2699	0.1830	0.0848	0.0115	0.0147	0.0097	0.0082	0.0000	0.0000
1996	14	414	0.0802	0.2440	0.3214	0.2718	0.0582	0.0175	0.0034	0.0026	0.0010	0.0000	0.0000
1997	15	246	0.0754	0.2728	0.3860	0.2043	0.0471	0.0035	0.0034	0.0054	0.0000	0.0021	0.0000
1998	24	363	0.2045	0.2007	0.3692	0.1440	0.0515	0.0186	0.0096	0.0020	0.0000	0.0000	0.0000
1999	20	447	0.0879	0.3803	0.1672	0.2052	0.0970	0.0447	0.0165	0.0011	0.0000	0.0000	0.0000
2000	40	588	0.0410	0.3292	0.3315	0.1125	0.1098	0.0364	0.0306	0.0078	0.0012	0.0000	0.0000
2001	37	315	0.2161	0.3698	0.2659	0.1095	0.0302	0.0017	0.0059	0.0000	0.0009	0.0000	0.0000
2002	19	365	0.1325	0.1256	0.2080	0.2478	0.1676	0.0970	0.0089	0.0025	0.0007	0.0095	0.0000
2003	24	365	0.0831	0.4116	0.1515	0.0827	0.1735	0.0701	0.0227	0.0017	0.0004	0.0020	0.0008
2004	30	551	0.0465	0.2861	0.3836	0.2146	0.0316	0.0228	0.0099	0.0038	0.0010	0.0000	0.0001
2005	10	249	0.1431	0.6156	0.1467	0.0678	0.0190	0.0013	0.0064	0.0000	0.0000	0.0000	0.0000
2006	20	355	0.0425	0.3598	0.3227	0.1607	0.0740	0.0273	0.0114	0.0000	0.0016	0.0000	0.0000
2007	18	234	0.2707	0.4321	0.1614	0.0560	0.0420	0.0131	0.0046	0.0118	0.0061	0.0018	0.0003
2008	32	288	0.0857	0.3605	0.2913	0.1273	0.0947	0.0326	0.0079	0.0000	0.0000	0.0000	0.0000
2009	37	348	0.0329	0.3710	0.2962	0.1922	0.0563	0.0418	0.0095	0.0000	0.0000	0.0000	0.0000
2010	42	287	0.1311	0.1857	0.2956	0.1987	0.1100	0.0657	0.0085	0.0046	0.0000	0.0000	0.0000
2011	34	389	0.0571	0.3634	0.2812	0.1821	0.0848	0.0248	0.0054	0.0011	0.0000	0.0000	0.0000
2012	16	208	0.0704	0.2532	0.3401	0.2302	0.0613	0.0343	0.0071	0.0034	0.0000	0.0000	0.0000
2013	15	201	0.2573	0.3884	0.1917	0.1131	0.0258	0.0237	0.0000	0.0000	0.0000	0.0000	0.0000
2014	21	203	0.0545	0.2984	0.3992	0.2028	0.0324	0.0127	0.0000	0.0000	0.0000	0.0000	0.0000
2015	21	205	0.2122	0.4356	0.2213	0.0902	0.0283	0.0119	0.0000	0.0000	0.0006	0.0000	0.0000
2016	14	228	0.0315	0.3419	0.4449	0.1122	0.0560	0.0127	0.0008	0.0000	0.0000	0.0000	0.0000
2017	14	136	0.0000	0.2247	0.5287	0.1525	0.0869	0.0072	0.0000	0.0000	0.0000	0.0000	0.0000
2018	13	31	0.0000	0.2352	0.5788	0.1767	0.0082	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000
2019	19	30	0.0000	0.4373	0.4378	0.0759	0.0422	0.0000	0.0028	0.0040	0.0000	0.0000	0.0000
2020	19	68	0.0068	0.2654	0.5239	0.1383	0.0316	0.0316	0.0023	0.0000	0.0000	0.0000	0.0000

Table 6. Observed age composition from commercial pound net (cP).

Year	trips	fish	0	1	2	3	4	5	6	7	8	9	10
2002	57	773	0.0181	0.5925	0.0660	0.1837	0.0931	0.0323	0.0013	0.0065	0.0026	0.0039	0.000
2003	22	329	0.0000	0.7690	0.0729	0.0122	0.1155	0.0213	0.0061	0.0000	0.0000	0.0000	0.003
2004	18	400	0.0000	0.4775	0.3450	0.0950	0.0100	0.0600	0.0100	0.0000	0.0000	0.0025	0.000
2005	14	341	0.0235	0.7713	0.0850	0.0880	0.0147	0.0029	0.0059	0.0088	0.0000	0.0000	0.000
2006	20	286	0.0000	0.4930	0.3566	0.0839	0.0385	0.0105	0.0070	0.0000	0.0105	0.0000	0.000
2007	18	226	0.1858	0.6018	0.1283	0.0664	0.0000	0.0133	0.0044	0.0000	0.0000	0.0000	0.000
2008	13	110	0.1091	0.5091	0.2364	0.0636	0.0364	0.0091	0.0182	0.0000	0.0000	0.0182	0.000
2009	16	98	0.1020	0.5000	0.3367	0.0204	0.0204	0.0102	0.0000	0.0102	0.0000	0.0000	0.000
2010	25	187	0.0000	0.6257	0.2727	0.0856	0.0000	0.0107	0.0000	0.0000	0.0053	0.0000	0.000
2011	19	210	0.0000	0.4667	0.2048	0.1762	0.0857	0.0429	0.0048	0.0143	0.0000	0.0048	0.000
2012	17	166	0.0000	0.5301	0.3373	0.0602	0.0482	0.0241	0.0000	0.0000	0.0000	0.0000	0.000
2013	10	42	0.2619	0.5238	0.1429	0.0476	0.0000	0.0238	0.0000	0.0000	0.0000	0.0000	0.000
2014	19	172	0.0058	0.6512	0.2500	0.0581	0.0233	0.0058	0.0058	0.0000	0.0000	0.0000	0.000
2015	19	186	0.0000	0.6774	0.2366	0.0591	0.0108	0.0161	0.0000	0.0000	0.0000	0.0000	0.000
2016	22	175	0.0000	0.6514	0.2000	0.1086	0.0286	0.0057	0.0057	0.0000	0.0000	0.0000	0.000
2017	22	193	0.0000	0.4249	0.4715	0.0777	0.0104	0.0104	0.0000	0.0052	0.0000	0.0000	0.000
2018	18	111	0.0000	0.5225	0.2072	0.1892	0.0360	0.0180	0.0000	0.0270	0.0000	0.0000	0.000
2019	27	134	0.0000	0.5448	0.2090	0.1119	0.0896	0.0373	0.0075	0.0000	0.0000	0.0000	0.000
2020	15	78	0.1282	0.3205	0.4359	0.0641	0.0513	0.0000	0.0000	0.0000	0.0000	0.0000	0.000

Table 7. Observed age composition from commercial cast net (cC) pooled across all years. The year represents a mid-point of pooled years.

Year	trips	fish	0	1	2	3	4	5	6	7	8	9	10
2010	74	2215	0.0013	0.0453	0.2763	0.2504	0.2277	0.1165	0.048	0.0214	0.0081	0.0039	0.0012

Table 8. Observed age composition from the general recreational fishery (GR).

Year	trips	fish	0	1	2	3	4	5	6	7	8	9	10
1990	38	262	0.0649	0.4618	0.2672	0.1031	0.0191	0.0496	0.0191	0.0038	0.0038	0.0000	0.0076
1991	19	342	0.0468	0.5029	0.1901	0.1111	0.0614	0.0468	0.0292	0.0117	0.0000	0.0000	0.0000
1992	36	240	0.0083	0.4625	0.2000	0.1000	0.1125	0.0333	0.0375	0.0333	0.0125	0.0000	0.0000
1993	21	113	0.0354	0.4248	0.1150	0.0885	0.1327	0.0885	0.0354	0.0531	0.0088	0.0088	0.0088
1997	17	316	0.1392	0.6139	0.1930	0.0316	0.0063	0.0095	0.0063	0.0000	0.0000	0.0000	0.0000
1998	23	222	0.1171	0.4009	0.2658	0.1081	0.0631	0.0045	0.0045	0.0225	0.0090	0.0000	0.0045
1999	10	101	0.0198	0.7921	0.0297	0.0495	0.0297	0.0396	0.0297	0.0099	0.0000	0.0000	0.0000
2000	15	130	0.0000	0.3077	0.1538	0.0692	0.1769	0.1385	0.0923	0.0385	0.0077	0.0077	0.0077
2002	17	205	0.0683	0.4537	0.1610	0.1220	0.0976	0.0244	0.0146	0.0146	0.0293	0.0098	0.0049
2003	10	321	0.2399	0.6604	0.0748	0.0125	0.0062	0.0031	0.0000	0.0031	0.0000	0.0000	0.0000
2004	13	241	0.1037	0.6598	0.0996	0.0747	0.0373	0.0166	0.0041	0.0000	0.0000	0.0041	0.0000
2005	17	208	0.0144	0.9135	0.0240	0.0240	0.0144	0.0000	0.0048	0.0048	0.0000	0.0000	0.0000
2006	15	232	0.1121	0.7716	0.0388	0.0302	0.0302	0.0086	0.0043	0.0043	0.0000	0.0000	0.0000
2007	10	177	0.1921	0.7288	0.0508	0.0113	0.0000	0.0113	0.0000	0.0056	0.0000	0.0000	0.0000
2008	14	204	0.0980	0.7745	0.0784	0.0343	0.0147	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2010	12	295	0.0949	0.4373	0.2814	0.1017	0.0576	0.0203	0.0068	0.0000	0.0000	0.0000	0.0000
2011	13	348	0.1810	0.4971	0.1236	0.0805	0.0776	0.0230	0.0115	0.0029	0.0000	0.0000	0.0029
2012	31	489	0.0900	0.5460	0.2740	0.0286	0.0348	0.0123	0.0082	0.0061	0.0000	0.0000	0.0000
2013	29	328	0.0732	0.6890	0.1067	0.0671	0.0152	0.0122	0.0213	0.0152	0.0000	0.0000	0.0000
2014	47	494	0.0567	0.7024	0.0911	0.0547	0.0486	0.0162	0.0202	0.0020	0.0020	0.0020	0.0040
2015	38	358	0.2207	0.5810	0.1034	0.0363	0.0307	0.0084	0.0112	0.0028	0.0000	0.0028	0.0028
2016	40	525	0.1314	0.6724	0.0686	0.0324	0.0381	0.0286	0.0114	0.0095	0.0038	0.0019	0.0019
2017	32	331	0.0211	0.6798	0.2236	0.0453	0.0121	0.0060	0.0030	0.0060	0.0000	0.0000	0.0030
2018	58	392	0.0842	0.5051	0.1837	0.1378	0.0485	0.0306	0.0026	0.0026	0.0026	0.0026	0.0000
2019	64	401	0.0574	0.5661	0.1995	0.0898	0.0499	0.0150	0.0125	0.0075	0.0025	0.0000	0.0000
2020	50	250	0.0840	0.3800	0.1920	0.1080	0.1080	0.0600	0.0560	0.0080	0.0000	0.0000	0.0040

Table 9. Estimated total abundance at age (1000 fish) at start of year.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1986	17618.83	17806.94	3265.86	954.79	443.13	188.63	97.08	46.56	24.18	13.47	20.41	40479.87
1987	20083.54	8476.48	8599.45	1486.15	446.14	216.25	97.19	53.15	27.15	14.87	22.08	39522.45
1988	25256.30	9795.56	4207.35	4166.42	741.17	231.02	117.10	55.24	31.77	16.94	24.18	44643.04
1989	21747.10	12252.55	4548.99	1925.75	1967.24	363.78	118.72	63.25	31.44	18.93	25.86	43063.61
1990	21651.04	10445.38	5811.81	2144.68	936.42	992.88	191.81	65.61	36.71	19.05	28.52	42323.91
1991	18150.83	10460.30	5023.22	2817.86	1073.26	485.07	535.00	107.74	38.50	22.38	30.37	38744.53
1992	12465.06	8542.81	4333.16	2035.03	1179.72	470.21	224.63	263.45	56.60	21.43	31.48	29623.57
1993	18757.29	5906.23	3843.93	1942.30	941.92	567.93	237.14	119.14	147.33	33.17	32.82	32529.19
1994	18054.48	8929.19	2591.13	1548.96	804.43	410.87	264.80	119.28	64.85	85.81	41.25	32915.04
1995	18466.48	8511.74	3895.83	1055.08	648.84	354.29	192.87	133.61	64.88	37.64	78.49	33439.75
1996	20406.68	8856.09	4184.07	1827.38	507.86	325.38	186.90	107.62	79.02	40.31	76.22	36597.55
1997	13115.41	9834.42	4406.09	2047.73	916.99	264.09	176.55	106.16	64.11	49.03	75.77	31056.36
1998	25154.19	6214.76	4838.07	2145.00	1015.15	470.15	141.02	98.46	61.96	38.91	79.23	40256.90
1999	23951.30	12246.48	3106.71	2390.27	1087.41	532.42	256.64	80.34	58.66	38.35	76.53	43825.10
2000	14472.77	11550.40	6098.91	1581.65	1251.70	586.79	297.04	148.15	48.07	36.22	73.83	36145.53
2001	19374.13	6820.91	5553.03	3003.40	791.60	644.63	312.34	163.55	84.56	28.33	67.68	36844.16
2002	24012.75	9325.15	3195.47	2603.72	1402.55	379.99	320.31	160.85	87.50	46.81	55.74	41590.85
2003	15588.61	11494.24	4289.28	1475.00	1188.77	657.33	184.16	160.69	83.73	47.11	57.70	35226.61
2004	21462.74	7336.93	5372.95	1949.32	626.90	514.36	293.11	84.68	76.36	41.01	53.41	37811.77
2005	17178.74	10486.18	3856.97	2711.13	902.60	293.18	245.76	142.91	42.19	38.77	49.13	35947.55
2006	20860.77	8258.29	5268.46	1896.18	1270.28	430.61	143.77	123.89	74.19	22.47	48.38	38397.29
2007	26847.99	10254.57	4368.41	2694.79	927.88	633.07	220.59	75.72	67.18	41.24	40.62	46172.05
2008	23288.67	13084.20	5145.57	2152.38	1291.72	454.67	319.76	114.92	40.76	37.21	46.91	45976.78
2009	16683.91	11297.23	6757.72	2732.86	1145.03	701.92	253.15	182.20	67.11	24.32	51.63	39897.08
2010	19439.88	8061.20	5527.51	3363.75	1355.64	581.76	367.13	136.28	101.14	38.30	45.04	39017.62
2011	15155.47	9259.57	3681.57	2507.15	1474.44	607.93	269.41	175.71	67.57	51.81	44.57	33295.21
2012	13391.82	7288.22	4499.97	1798.63	1199.79	720.97	305.80	139.39	93.69	37.03	54.64	29529.95
2013	19195.66	6437.72	3621.22	2233.81	880.72	601.41	372.46	162.88	76.70	53.05	53.82	33689.46
2014	17716.95	8996.48	2633.52	1526.84	959.82	391.39	278.13	179.63	82.20	40.39	59.57	32864.93
2015	25749.22	8483.57	4251.31	1266.92	734.09	473.34	199.06	145.94	97.46	45.98	58.26	41505.15
2016	20926.00	12672.48	4557.95	2362.00	718.56	425.93	281.25	120.97	90.81	61.90	67.86	42285.71
2017	20518.31	10070.78	6139.85	2258.58	1170.04	364.51	222.28	150.96	66.92	51.63	76.44	41090.30
2018	25671.96	10032.73	5444.50	3371.52	1226.95	647.21	206.07	128.23	88.97	40.17	78.67	46936.99
2019	15643.59	12376.35	5182.47	2892.64	1802.07	670.58	362.80	118.38	75.61	53.67	73.90	39252.04
2020	18460.13	7228.16	5793.22	2506.16	1384.45	882.46	337.87	188.04	63.25	41.54	72.84	36958.11
2021	23015.23	8203.22	2486.24	2061.07	902.47	518.67	347.31	140.28	82.74	29.43	57.80	37844.45

Table 10. Estimated biomass at age (1000 lb) at start of year.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1986	6648.5	23377.6	7119.4	2658.1	1399.5	636.9	340.0	166.2	87.3	48.9	74.3	42556.9
1987	7578.6	11128.3	18746.6	4137.6	1409.0	730.2	340.4	189.8	98.1	54.0	80.5	44492.6
1988	9530.6	12860.0	9171.9	11599.6	2340.6	780.2	410.1	197.3	114.6	61.5	88.2	47154.5
1989	8206.3	16085.6	9916.6	5361.4	6212.8	1228.4	415.8	226.0	113.5	68.8	94.1	47929.2
1990	8170.1	13713.0	12669.5	5971.0	2957.3	3353.0	671.5	234.4	132.5	69.2	103.8	48045.3
1991	6849.3	13732.6	10950.4	7845.1	3389.4	1638.0	1873.3	384.7	138.9	81.4	110.7	46994.0
1992	4703.8	11215.4	9446.1	5665.7	3725.6	1588.0	786.6	940.7	204.4	77.8	114.6	38468.5
1993	7078.2	7753.9	8379.6	5407.5	2974.7	1917.8	830.3	425.5	531.8	120.4	119.5	35539.4
1994	6812.9	11722.4	5648.5	4312.5	2540.4	1387.6	927.3	425.9	234.1	311.5	150.4	34473.5
1995	6968.4	11174.6	8492.9	2937.4	2049.2	1196.4	675.3	477.1	234.1	136.7	285.9	34627.8
1996	7700.5	11626.5	9121.2	5087.6	1603.9	1098.8	654.3	384.3	285.3	146.4	277.8	37986.5
1997	4949.2	12910.9	9605.1	5701.2	2896.0	891.8	618.2	379.2	231.5	178.1	276.0	38636.9
1998	9492.0	8158.9	10546.7	5971.9	3206.0	1587.8	493.8	351.6	223.8	141.3	288.6	40462.3
1999	9038.1	16077.7	6772.6	6654.7	3434.1	1798.1	898.6	286.8	211.6	139.3	278.9	45590.3
2000	5461.3	15163.8	13295.4	4403.5	3953.1	1981.5	1040.1	529.1	173.5	131.6	269.0	46401.6
2001	7311.0	8954.7	12105.4	8361.7	2500.0	2176.8	1093.7	584.0	305.3	103.0	246.5	43741.9
2002	9061.2	12242.3	6965.9	7249.0	4429.3	1283.3	1121.5	574.5	315.9	170.0	203.0	43616.0
2003	5882.4	15090.0	9350.5	4106.6	3754.3	2219.8	644.9	573.9	302.3	171.1	210.3	42305.6
2004	8099.1	9632.2	11712.7	5427.1	1979.8	1737.0	1026.3	302.5	275.6	148.8	194.7	40535.7
2005	6482.5	13766.5	8408.0	7548.0	2850.6	990.1	860.5	510.4	152.3	140.9	179.0	41888.5
2006	7871.8	10841.7	11485.0	5279.2	4011.8	1454.2	503.3	442.5	267.9	81.6	176.1	42415.2
2007	10131.1	13462.5	9522.9	7502.6	2930.4	2137.8	772.3	270.5	242.5	149.7	147.9	47270.4
2008	8788.1	17177.3	11217.1	5992.4	4079.4	1535.5	1119.5	410.3	147.0	135.1	170.9	50772.9
2009	6295.7	14831.4	14731.5	7608.6	3616.2	2370.4	886.5	650.6	242.3	88.4	188.1	51509.5
2010	7335.7	10583.1	12049.8	9365.0	4281.4	1964.5	1285.5	486.8	365.1	139.1	164.0	48019.8
2011	5719.0	12156.3	8025.7	6980.1	4656.4	2052.9	943.4	627.4	243.8	188.1	162.5	41755.8
2012	5053.4	9568.3	9809.7	5007.6	3789.1	2434.8	1070.8	497.8	338.2	134.5	199.1	37903.0
2013	7243.5	8451.6	7894.1	6219.0	2781.4	2030.9	1304.3	581.6	276.9	192.7	196.0	37172.1
2014	6685.5	11810.8	5741.1	4250.7	3031.1	1321.7	973.8	641.5	296.7	146.6	216.9	35117.0
2015	9716.7	11137.5	9267.8	3527.2	2318.4	1598.6	697.1	521.2	351.9	166.9	212.3	39515.0
2016	7896.5	16636.7	9936.2	6575.9	2269.2	1438.3	984.8	431.9	327.8	224.7	247.1	46969.7
2017	7742.6	13221.1	13384.7	6288.0	3695.2	1231.1	778.2	539.0	241.6	187.4	278.4	47587.7
2018	9687.3	13171.3	11868.8	9386.6	3874.8	2185.7	721.6	457.9	321.2	145.9	286.6	52107.6
2019	5903.1	16248.1	11297.6	8053.3	5691.2	2264.6	1270.3	422.8	272.9	194.9	269.2	51887.8
2020	6965.9	9489.4	12629.0	6977.4	4372.2	2980.0	1183.0	671.5	228.4	150.8	265.4	45913.0
2021	8684.9	10769.4	5419.8	5738.2	2850.1	1751.6	1216.1	500.9	298.7	106.9	210.5	37547.1

Table 11. Estimated time series and status indicators. Fishing mortality rate is full F , which includes discard mortalities. Total biomass (B , mt) is at the start of the year, and spawning biomass (SSB , mt) at the end of July (time of peak spawning). The MSST is defined by $MSST = 75\%SSB_{MSY}$. SPR is static spawning potential ratio.

Year	F	F/F_{MSY}	B	$B/B_{unfished}$	SSB	SSB/SSB_{MSY}	$SSB/MSST$	SPR
1986	0.393	0.761	19303	0.334	6448	1.007	1.34	0.415
1987	0.328	0.635	20182	0.349	7259	1.133	1.51	0.461
1988	0.385	0.745	21389	0.370	7212	1.126	1.50	0.407
1989	0.355	0.688	21740	0.376	7683	1.199	1.60	0.423
1990	0.327	0.633	21793	0.377	7811	1.219	1.63	0.444
1991	0.507	0.982	21316	0.369	7352	1.148	1.53	0.324
1992	0.405	0.786	17449	0.302	6431	1.004	1.34	0.380
1993	0.513	0.995	16120	0.279	5270	0.823	1.10	0.341
1994	0.502	0.973	15637	0.271	5117	0.799	1.07	0.339
1995	0.363	0.704	15707	0.272	5389	0.841	1.12	0.433
1996	0.322	0.623	17230	0.298	5968	0.932	1.24	0.460
1997	0.334	0.647	17525	0.303	6606	1.031	1.38	0.442
1998	0.311	0.603	18353	0.318	6151	0.960	1.28	0.471
1999	0.279	0.540	20679	0.358	7248	1.131	1.51	0.481
2000	0.324	0.628	21047	0.364	8022	1.252	1.67	0.434
2001	0.393	0.762	19841	0.343	7033	1.098	1.46	0.405
2002	0.416	0.806	19784	0.342	6580	1.027	1.37	0.389
2003	0.488	0.945	19190	0.332	6860	1.071	1.43	0.371
2004	0.405	0.785	18387	0.318	6387	0.997	1.33	0.461
2005	0.390	0.756	19000	0.329	6892	1.076	1.43	0.437
2006	0.347	0.672	19239	0.333	6874	1.073	1.43	0.488
2007	0.367	0.712	21441	0.371	7265	1.134	1.51	0.450
2008	0.263	0.510	23030	0.399	8433	1.316	1.76	0.511
2009	0.333	0.645	23364	0.404	8891	1.388	1.85	0.449
2010	0.457	0.885	21781	0.377	7695	1.201	1.60	0.374
2011	0.369	0.715	18940	0.328	7010	1.094	1.46	0.430
2012	0.346	0.671	17193	0.298	6468	1.010	1.35	0.448
2013	0.477	0.924	16861	0.292	5535	0.864	1.15	0.326
2014	0.364	0.706	15929	0.276	5494	0.858	1.14	0.417
2015	0.199	0.386	17924	0.310	6126	0.956	1.28	0.584
2016	0.334	0.648	21305	0.369	7630	1.191	1.59	0.442
2017	0.242	0.469	21585	0.374	8147	1.272	1.70	0.553
2018	0.258	0.501	23636	0.409	8571	1.338	1.78	0.511
2019	0.369	0.715	23536	0.407	8887	1.387	1.85	0.399
2020	0.653	1.266	20826	0.360	6725	1.050	1.40	0.241
2021	.	.	17031	0.295

Table 12. Selectivity at age (end-of-assessment time period) for commercial handline (cH), commercial pound net (cP), commercial gill net (cG), commercial cast net (cC), and general recreational (GR) landings. Selectivity at age for general recreational discards (GR.D), shrimp bycatch discards (SB.D), and selectivity of landings averaged across fisheries (L.avg), discards averaged across fisheries (D.avg) and catches across fisheries (tot.avg).

Age	FL(mm)	cH	cP	cG	cC	GR	GR.D	SB.D	L.avg	D.avg	tot.avg
0	262.2	0.012	0.027	0.068	0.002	0.084	1.000	1.0	0.059	0.121	0.179
1	406.4	0.076	1.000	0.510	0.037	1.000	0.375	0.2	0.642	0.043	0.685
2	485.6	0.356	0.980	0.980	0.440	0.992	0.000	0.0	0.826	0.000	0.826
3	529.2	0.787	0.921	1.000	0.942	0.967	0.000	0.0	0.986	0.000	0.986
4	553.2	0.961	0.830	0.911	0.997	0.927	0.000	0.0	1.000	0.000	1.000
5	566.4	0.994	0.719	0.771	1.000	0.873	0.000	0.0	0.959	0.000	0.959
6	573.6	0.999	0.597	0.595	1.000	0.809	0.000	0.0	0.899	0.000	0.899
7	577.6	1.000	0.476	0.414	1.000	0.737	0.000	0.0	0.833	0.000	0.833
8	579.8	1.000	0.364	0.262	1.000	0.660	0.000	0.0	0.769	0.000	0.769
9	581.0	1.000	0.267	0.153	1.000	0.581	0.000	0.0	0.710	0.000	0.710
10	581.7	1.000	0.188	0.085	1.000	0.503	0.000	0.0	0.658	0.000	0.658

Table 13. Estimated time series of fully selected fishing mortality rates for commercial handline (F.cH), commercial pound net (F.cP), commercial gill net (F.cG), commercial cast net (F.cC), general recreational (F.GR), general recreational discards(F.GR.D), and shrimp bycatch (F.SB.D). Also shown is apical F (Full.F), the maximum F at age summed across fleets. Full F may not equal the sum of fully selected F's because of dome-shaped selectivities.

Year	F.cH	F.cP	F.cG	F.cC	F.GR	F.GR.D	F.SB.D	Full.F
1986	0.014	0.010	0.284	0.000	0.103	0.006	0.020	0.393
1987	0.013	0.023	0.204	0.000	0.106	0.001	0.016	0.328
1988	0.007	0.020	0.185	0.000	0.185	0.001	0.015	0.385
1989	0.004	0.023	0.175	0.000	0.162	0.009	0.020	0.355
1990	0.010	0.023	0.143	0.000	0.165	0.009	0.016	0.327
1991	0.014	0.023	0.217	0.000	0.274	0.013	0.024	0.507
1992	0.005	0.022	0.177	0.000	0.212	0.013	0.025	0.405
1993	0.012	0.023	0.342	0.000	0.156	0.008	0.019	0.513
1994	0.008	0.023	0.316	0.000	0.171	0.016	0.022	0.502
1995	0.030	0.013	0.260	0.002	0.093	0.010	0.021	0.363
1996	0.018	0.017	0.191	0.008	0.111	0.013	0.016	0.322
1997	0.015	0.011	0.175	0.023	0.132	0.018	0.027	0.334
1998	0.016	0.007	0.174	0.007	0.129	0.005	0.014	0.311
1999	0.019	0.013	0.112	0.006	0.154	0.015	0.015	0.279
2000	0.029	0.007	0.100	0.032	0.194	0.028	0.023	0.324
2001	0.032	0.010	0.098	0.074	0.224	0.013	0.015	0.393
2002	0.043	0.007	0.083	0.090	0.251	0.019	0.013	0.416
2003	0.043	0.005	0.070	0.201	0.232	0.036	0.015	0.488
2004	0.067	0.004	0.046	0.234	0.136	0.012	0.011	0.405
2005	0.091	0.002	0.078	0.159	0.166	0.021	0.014	0.390
2006	0.073	0.002	0.099	0.148	0.110	0.008	0.008	0.347
2007	0.076	0.002	0.098	0.117	0.162	0.015	0.005	0.367
2008	0.079	0.008	0.055	0.061	0.149	0.022	0.006	0.263
2009	0.080	0.015	0.068	0.073	0.189	0.023	0.005	0.333
2010	0.101	0.007	0.071	0.137	0.259	0.029	0.008	0.457
2011	0.082	0.004	0.065	0.107	0.206	0.022	0.010	0.369
2012	0.110	0.003	0.092	0.090	0.172	0.021	0.013	0.346
2013	0.148	0.002	0.086	0.035	0.368	0.036	0.007	0.477
2014	0.219	0.002	0.074	0.068	0.232	0.025	0.008	0.364
2015	0.145	0.003	0.067	0.020	0.114	0.010	0.006	0.199
2016	0.144	0.003	0.063	0.067	0.212	0.023	0.008	0.334
2017	0.124	0.002	0.057	0.083	0.109	0.017	0.007	0.242
2018	0.125	0.002	0.068	0.051	0.146	0.030	0.005	0.258
2019	0.106	0.006	0.054	0.089	0.233	0.061	0.009	0.369
2020	0.125	0.005	0.095	0.056	0.519	0.074	0.009	0.653

Table 14. Spanish mackerel: Estimated instantaneous fishing mortality rate (per yr) at age, including discard mortality

Year	0	1	2	3	4	5	6	7	8	9	10
1986	0.054	0.264	0.390	0.393	0.362	0.316	0.258	0.198	0.146	0.106	0.078
1987	0.040	0.236	0.328	0.328	0.303	0.266	0.221	0.174	0.132	0.099	0.075
1988	0.045	0.303	0.385	0.382	0.357	0.319	0.272	0.223	0.178	0.141	0.113
1989	0.055	0.282	0.355	0.353	0.329	0.293	0.249	0.203	0.161	0.127	0.101
1990	0.049	0.268	0.327	0.324	0.303	0.271	0.233	0.192	0.155	0.124	0.100
1991	0.076	0.417	0.507	0.503	0.470	0.423	0.364	0.303	0.246	0.199	0.161
1992	0.069	0.335	0.405	0.402	0.376	0.338	0.290	0.240	0.194	0.156	0.126
1993	0.064	0.360	0.512	0.513	0.475	0.416	0.343	0.267	0.201	0.149	0.112
1994	0.074	0.365	0.501	0.502	0.465	0.409	0.340	0.268	0.204	0.154	0.117
1995	0.057	0.246	0.360	0.363	0.335	0.293	0.239	0.184	0.136	0.099	0.073
1996	0.052	0.234	0.318	0.322	0.299	0.264	0.222	0.177	0.137	0.106	0.083
1997	0.069	0.245	0.323	0.334	0.313	0.280	0.240	0.197	0.159	0.129	0.106
1998	0.042	0.229	0.308	0.311	0.290	0.258	0.219	0.177	0.140	0.110	0.088
1999	0.051	0.233	0.278	0.279	0.262	0.237	0.205	0.172	0.142	0.117	0.096
2000	0.074	0.268	0.311	0.324	0.309	0.284	0.253	0.220	0.189	0.162	0.140
2001	0.053	0.294	0.360	0.393	0.379	0.352	0.320	0.285	0.251	0.222	0.197
2002	0.059	0.313	0.376	0.416	0.403	0.377	0.346	0.312	0.279	0.250	0.224
2003	0.076	0.296	0.392	0.488	0.483	0.461	0.433	0.403	0.374	0.348	0.324
2004	0.038	0.179	0.287	0.402	0.405	0.392	0.374	0.356	0.338	0.322	0.308
2005	0.054	0.224	0.313	0.390	0.385	0.366	0.341	0.315	0.290	0.268	0.250
2006	0.032	0.173	0.273	0.347	0.341	0.322	0.297	0.271	0.247	0.228	0.212
2007	0.041	0.226	0.311	0.367	0.358	0.336	0.308	0.278	0.251	0.227	0.208
2008	0.045	0.197	0.236	0.263	0.255	0.239	0.218	0.197	0.176	0.158	0.142
2009	0.049	0.251	0.301	0.333	0.322	0.301	0.275	0.248	0.221	0.197	0.177
2010	0.064	0.320	0.394	0.457	0.447	0.423	0.393	0.360	0.329	0.300	0.275
2011	0.054	0.258	0.319	0.369	0.360	0.340	0.315	0.288	0.262	0.238	0.217
2012	0.054	0.235	0.303	0.346	0.336	0.313	0.286	0.256	0.229	0.205	0.185
2013	0.080	0.430	0.467	0.477	0.456	0.424	0.385	0.343	0.301	0.263	0.228
2014	0.058	0.286	0.335	0.364	0.352	0.329	0.301	0.270	0.241	0.214	0.191
2015	0.031	0.157	0.191	0.199	0.189	0.174	0.154	0.133	0.114	0.097	0.084
2016	0.053	0.261	0.305	0.334	0.324	0.303	0.278	0.251	0.225	0.201	0.180
2017	0.037	0.151	0.202	0.242	0.237	0.223	0.206	0.188	0.170	0.155	0.143
2018	0.052	0.197	0.235	0.258	0.249	0.232	0.210	0.187	0.166	0.146	0.130
2019	0.094	0.295	0.330	0.369	0.359	0.338	0.313	0.286	0.259	0.234	0.212
2020	0.133	0.603	0.636	0.653	0.627	0.586	0.535	0.480	0.425	0.373	0.326

Table 15. Estimated instantaneous total mortality rate (per yr) at age, including discard mortality.

Year	0	1	2	3	4	5	6	7	8	9	10
1986	0.732	0.728	0.787	0.761	0.717	0.663	0.602	0.539	0.486	0.446	0.417
1987	0.718	0.700	0.725	0.696	0.658	0.613	0.565	0.515	0.472	0.439	0.414
1988	0.723	0.767	0.782	0.750	0.712	0.666	0.616	0.564	0.518	0.481	0.452
1989	0.733	0.746	0.752	0.721	0.684	0.640	0.593	0.544	0.501	0.467	0.440
1990	0.727	0.732	0.724	0.692	0.658	0.618	0.577	0.533	0.495	0.464	0.439
1991	0.754	0.881	0.904	0.871	0.825	0.770	0.708	0.644	0.586	0.539	0.500
1992	0.747	0.799	0.802	0.770	0.731	0.685	0.634	0.581	0.534	0.496	0.465
1993	0.742	0.824	0.909	0.881	0.830	0.763	0.687	0.608	0.541	0.489	0.451
1994	0.752	0.829	0.898	0.870	0.820	0.756	0.684	0.609	0.544	0.494	0.456
1995	0.735	0.710	0.757	0.731	0.690	0.640	0.583	0.525	0.476	0.439	0.412
1996	0.730	0.698	0.715	0.690	0.654	0.611	0.566	0.518	0.477	0.446	0.422
1997	0.747	0.709	0.720	0.702	0.668	0.627	0.584	0.538	0.499	0.469	0.445
1998	0.720	0.693	0.705	0.679	0.645	0.605	0.563	0.518	0.480	0.450	0.427
1999	0.729	0.697	0.675	0.647	0.617	0.584	0.549	0.513	0.482	0.457	0.435
2000	0.752	0.732	0.708	0.692	0.664	0.631	0.597	0.561	0.529	0.502	0.479
2001	0.731	0.758	0.757	0.761	0.734	0.699	0.664	0.626	0.591	0.562	0.536
2002	0.737	0.777	0.773	0.784	0.758	0.724	0.690	0.653	0.619	0.590	0.563
2003	0.754	0.760	0.789	0.856	0.838	0.808	0.777	0.744	0.714	0.688	0.663
2004	0.716	0.643	0.684	0.770	0.760	0.739	0.718	0.697	0.678	0.662	0.647
2005	0.732	0.688	0.710	0.758	0.740	0.713	0.685	0.656	0.630	0.608	0.589
2006	0.710	0.637	0.670	0.715	0.696	0.669	0.641	0.612	0.587	0.568	0.551
2007	0.719	0.690	0.708	0.735	0.713	0.683	0.652	0.619	0.591	0.567	0.547
2008	0.723	0.661	0.633	0.631	0.610	0.586	0.562	0.538	0.516	0.498	0.481
2009	0.727	0.715	0.698	0.701	0.677	0.648	0.619	0.589	0.561	0.537	0.516
2010	0.742	0.784	0.791	0.825	0.802	0.770	0.737	0.701	0.669	0.640	0.614
2011	0.732	0.722	0.716	0.737	0.715	0.687	0.659	0.629	0.602	0.578	0.556
2012	0.732	0.699	0.700	0.714	0.691	0.660	0.630	0.597	0.569	0.545	0.524
2013	0.758	0.894	0.864	0.845	0.811	0.771	0.729	0.684	0.641	0.603	0.567
2014	0.736	0.750	0.732	0.732	0.707	0.676	0.645	0.611	0.581	0.554	0.530
2015	0.709	0.621	0.588	0.567	0.544	0.521	0.498	0.474	0.454	0.437	0.423
2016	0.731	0.725	0.702	0.702	0.679	0.650	0.622	0.592	0.565	0.541	0.519
2017	0.715	0.615	0.599	0.610	0.592	0.570	0.550	0.529	0.510	0.495	0.482
2018	0.730	0.661	0.632	0.626	0.604	0.579	0.554	0.528	0.506	0.486	0.469
2019	0.772	0.759	0.727	0.737	0.714	0.685	0.657	0.627	0.599	0.574	0.551
2020	0.811	1.067	1.033	1.021	0.982	0.933	0.879	0.821	0.765	0.713	0.665

Table 16. Estimated total landings at age in numbers (1000 fish).

Year	0	1	2	3	4	5	6	7	8	9	10
1986	356.35	3275.06	893.88	270.19	118.98	45.56	19.89	7.65	3.07	1.31	1.54
1987	338.92	1426.61	2033.44	362.17	103.28	45.20	17.39	7.76	3.14	1.35	1.60
1988	519.27	2051.98	1129.36	1135.77	192.46	54.85	24.34	9.68	4.57	1.99	2.32
1989	405.24	2373.07	1139.29	488.56	473.80	79.78	22.66	10.09	4.08	1.98	2.19
1990	376.51	1942.47	1367.36	514.54	214.61	208.58	35.44	10.30	4.79	2.05	2.54
1991	493.44	2840.63	1691.25	965.88	353.18	147.61	144.88	25.12	7.56	3.67	4.17
1992	269.01	1912.71	1213.56	576.79	318.92	116.70	49.14	49.04	8.75	2.73	3.31
1993	492.89	1424.14	1302.97	674.59	310.93	169.84	60.84	24.89	24.14	4.21	3.26
1994	465.73	2159.21	862.20	525.94	259.49	120.26	66.75	24.64	10.60	10.97	4.16
1995	343.24	1465.95	1012.80	289.41	170.56	84.34	39.35	22.25	8.56	3.93	6.64
1996	334.26	1448.96	968.38	443.05	117.81	68.67	34.18	16.36	9.75	4.03	6.28
1997	217.76	1649.26	1030.39	507.93	218.75	57.85	34.03	17.40	8.78	5.62	7.37
1998	414.95	1012.68	1089.12	504.02	228.53	96.66	25.28	14.81	7.65	3.94	6.67
1999	361.12	1992.21	643.36	516.95	227.20	102.97	44.28	12.02	7.49	4.17	7.12
2000	242.05	2092.75	1406.17	396.29	308.02	136.07	63.07	28.24	8.14	5.45	9.90
2001	362.23	1381.94	1447.32	879.58	229.58	178.00	80.18	38.45	18.06	5.50	11.99
2002	470.86	1986.33	871.01	811.85	436.75	113.56	89.95	41.91	21.01	10.35	11.38
2003	278.11	2280.49	1207.66	517.03	422.02	227.08	60.95	50.57	24.96	13.31	15.50
2004	244.91	960.01	1209.25	617.73	205.95	166.49	92.19	25.76	22.43	11.65	14.72
2005	252.99	1673.08	953.85	877.41	301.29	95.58	76.81	42.50	11.91	10.42	12.64
2006	258.01	1062.59	1150.05	548.06	376.97	123.98	39.33	31.92	17.99	5.16	10.62
2007	413.41	1665.42	1058.13	815.41	286.31	188.89	62.27	20.01	16.58	9.54	8.88
2008	291.72	1848.93	1006.58	519.51	320.12	109.20	72.78	24.54	8.13	6.95	8.23
2009	262.09	1995.48	1600.62	777.50	331.65	196.44	66.97	45.06	15.44	5.21	10.34
2010	389.90	1760.86	1641.51	1229.00	507.49	212.40	128.34	45.23	31.73	11.35	12.65
2011	248.46	1672.40	916.03	768.90	462.47	185.34	78.29	48.21	17.44	12.58	10.22
2012	212.38	1224.19	1108.37	556.17	382.39	223.10	89.80	38.45	24.21	8.99	12.55
2013	522.94	1814.13	1259.35	894.56	360.89	239.44	140.93	57.89	25.42	16.36	15.44
2014	344.76	1843.04	770.76	580.92	386.95	155.51	106.50	65.75	28.67	13.44	18.96
2015	296.79	1031.25	779.01	302.81	186.02	117.19	46.86	32.33	20.28	9.02	10.86
2016	359.13	2355.92	1166.89	759.47	240.90	139.71	88.32	36.04	25.56	16.47	17.12
2017	217.58	1148.66	1139.28	574.83	314.81	96.35	56.46	36.57	15.44	11.38	16.20
2018	339.75	1424.21	1129.39	893.68	339.93	174.87	53.00	31.09	20.28	8.63	16.02
2019	272.54	2414.61	1352.43	925.12	593.08	215.22	111.34	34.42	20.73	13.87	18.03
2020	657.60	2591.67	2458.82	1179.97	658.38	407.12	148.26	77.55	24.30	14.79	23.99

Table 17. Estimated total landings at age in whole weight (1000 lb).

Year	0	1	2	3	4	5	6	7	8	9	10
1986	243.73	3742.65	1466.61	578.43	311.52	139.32	68.68	29.09	12.59	5.71	7.06
1987	231.81	1630.29	3336.30	775.35	270.41	138.23	60.06	29.51	12.88	5.90	7.32
1988	355.17	2344.95	1852.96	2431.50	503.90	167.75	84.05	36.78	18.77	8.67	10.64
1989	277.17	2711.88	1869.26	1045.94	1240.52	243.97	78.23	38.35	16.74	8.65	10.04
1990	257.52	2219.80	2243.45	1101.56	561.90	637.84	122.37	39.14	19.65	8.94	11.65
1991	337.50	3246.19	2774.87	2067.81	924.70	451.39	500.27	95.49	31.02	16.02	19.09
1992	184.00	2185.80	1991.10	1234.81	835.01	356.87	169.69	186.40	35.92	11.91	15.15
1993	337.12	1627.47	2137.81	1444.20	814.09	519.37	210.09	94.60	99.06	18.38	14.94
1994	318.55	2467.49	1414.63	1125.97	679.40	367.77	230.50	93.67	43.50	47.87	19.05
1995	234.77	1675.25	1661.72	619.59	446.56	257.92	135.87	84.56	35.13	17.16	30.44
1996	228.62	1655.84	1588.85	948.50	308.46	210.00	118.01	62.19	40.01	17.60	28.80
1997	148.95	1884.73	1690.58	1087.40	572.74	176.90	117.51	66.15	36.02	24.51	33.78
1998	283.81	1157.26	1786.93	1079.04	598.33	295.58	87.30	56.31	31.40	17.20	30.56
1999	247.00	2276.64	1055.57	1106.70	594.87	314.87	152.88	45.68	30.72	18.18	32.62
2000	165.56	2391.54	2307.13	848.40	806.47	416.11	217.77	107.33	33.40	23.76	45.39
2001	247.76	1579.25	2374.64	1883.04	601.09	544.32	276.87	146.13	74.11	23.99	54.94
2002	322.06	2269.93	1429.09	1738.05	1143.51	347.27	310.61	159.31	86.20	45.15	52.14
2003	190.22	2606.08	1981.43	1106.89	1104.94	694.41	210.47	192.20	102.42	58.07	71.05
2004	167.51	1097.07	1984.04	1322.47	539.23	509.12	318.33	97.91	92.04	50.82	67.49
2005	173.04	1911.95	1565.01	1878.40	788.85	292.29	265.24	161.53	48.88	45.47	57.94
2006	176.47	1214.30	1886.92	1173.30	987.00	379.15	135.81	121.33	73.83	22.52	48.69
2007	282.76	1903.19	1736.09	1745.67	749.62	577.64	215.02	76.07	68.04	41.63	40.70
2008	199.53	2112.90	1651.52	1112.19	838.14	333.93	251.31	93.26	33.36	30.30	37.72
2009	179.26	2280.38	2626.16	1664.52	868.34	600.73	231.24	171.27	63.36	22.74	47.41
2010	266.68	2012.26	2693.25	2631.10	1328.72	649.53	443.17	171.90	130.18	49.53	57.98
2011	169.94	1911.17	1502.95	1646.10	1210.85	566.78	270.32	183.26	71.54	54.88	46.84
2012	145.26	1398.98	1818.52	1190.67	1001.19	682.24	310.06	146.15	99.32	39.22	57.51
2013	357.68	2073.14	2066.24	1915.11	944.89	732.22	486.63	220.05	104.32	71.36	70.76
2014	235.81	2106.18	1264.61	1243.66	1013.11	475.54	367.74	249.92	117.64	58.62	86.89
2015	203.00	1178.48	1278.14	648.28	487.05	358.38	161.79	122.88	83.21	39.37	49.78
2016	245.64	2692.29	1914.54	1625.92	630.74	427.25	304.95	136.97	104.88	71.85	78.48
2017	148.82	1312.65	1869.24	1230.63	824.24	294.64	194.94	138.99	63.34	49.66	74.24
2018	232.38	1627.55	1853.01	1913.23	890.02	534.76	183.01	118.17	83.20	37.64	73.43
2019	186.41	2759.36	2218.97	1980.55	1552.81	658.16	384.45	130.83	85.06	60.49	82.61
2020	449.78	2961.69	4034.24	2526.15	1723.79	1244.99	511.94	294.75	99.71	64.53	109.93

Table 18. Estimated time series of landings in number (1000s) for commercial handline (L.cH), commercial pound net (L.cP), commercial gill net (L.cG), commercial cast net (L.cC), general recreational (L.GR), general recreational discards (D.GR) and shrimp bycatch (D.SB), total landings and total dead discards.

Year	L.cH	L.cP	L.cG	L.cC	L.GR	D.GR	D.SB	Total.L	Total.D
1986	43.76	156.91	3029.99	0.00	1762.82	99.91	293.50	4993.48	393.40
1987	57.43	319.35	2379.32	0.00	1584.76	10.74	246.21	4340.86	256.95
1988	32.29	266.07	2074.59	0.00	2753.65	26.28	295.15	5126.59	321.43
1989	19.02	344.78	2023.18	0.00	2613.76	162.04	349.38	5000.74	511.42
1990	53.04	335.96	1683.20	0.00	2606.99	164.99	270.38	4679.19	435.38
1991	66.72	305.42	2327.83	0.00	3977.42	204.54	336.07	6677.39	540.61
1992	22.75	255.72	1619.31	0.00	2622.88	141.40	253.75	4520.66	395.15
1993	44.21	205.91	2662.81	0.00	1579.78	119.14	268.21	4492.71	387.36
1994	26.27	224.77	2389.20	0.00	1869.73	235.69	300.31	4509.97	536.00
1995	98.49	137.28	2131.71	6.91	1072.64	148.45	304.64	3447.03	453.09
1996	66.88	201.05	1750.23	30.26	1403.32	225.92	247.77	3451.74	473.69
1997	60.19	139.77	1689.89	96.38	1768.91	219.43	287.51	3755.14	506.94
1998	69.77	73.37	1664.24	30.99	1565.95	99.25	259.45	3404.31	358.70
1999	87.52	185.80	1215.59	29.33	2400.63	300.96	290.45	3918.87	591.41
2000	145.60	108.19	1165.20	164.17	3113.00	369.63	270.72	4696.15	640.35
2001	160.28	121.85	1014.81	401.46	2934.41	194.69	216.38	4632.82	411.06
2002	198.59	79.08	815.66	419.93	3351.70	360.66	237.46	4864.96	598.12
2003	180.68	61.99	697.47	839.64	3317.91	503.24	184.86	5097.68	688.11
2004	282.13	46.64	448.47	1035.30	1758.55	209.76	180.57	3571.09	390.32
2005	400.64	31.76	796.13	720.63	2359.33	308.26	195.44	4308.49	503.70
2006	336.64	28.13	1033.50	702.54	1523.89	129.57	133.24	3624.70	262.82
2007	369.14	33.44	1095.14	577.59	2469.54	325.08	109.39	4544.85	434.46
2008	415.91	131.35	694.74	321.72	2652.96	451.38	118.26	4216.68	569.64
2009	461.29	237.30	884.32	445.01	3278.89	343.04	69.97	5306.81	413.00
2010	562.27	89.66	797.50	806.49	3714.53	457.40	112.68	5970.46	570.08
2011	398.66	56.07	648.94	539.00	2777.68	294.60	116.99	4420.34	411.58
2012	496.34	34.76	847.97	425.19	2076.32	239.50	132.25	3880.59	371.75
2013	599.94	16.56	698.57	148.01	3884.27	544.81	94.58	5347.35	639.39
2014	782.93	22.88	599.27	240.39	2669.79	380.19	111.45	4315.26	491.64
2015	573.92	36.92	642.60	79.39	1499.61	213.29	126.19	2832.44	339.48
2016	668.95	50.89	722.46	314.35	3448.89	426.44	125.05	5205.55	551.49
2017	658.00	24.39	701.11	456.49	1787.55	298.65	113.89	3627.55	412.54
2018	747.54	23.53	871.03	317.09	2471.66	628.22	89.46	4430.85	717.69
2019	627.99	102.19	685.74	545.80	4009.68	862.39	119.06	5971.39	981.45
2020	612.61	50.51	918.60	291.61	6369.12	1058.02	117.52	8242.46	1175.55

Table 19. Estimated time series of landings in whole weight (1000 lb) for commercial handline (L.cH), commercial pound net (L.cP), commercial gill net (L.cG), commercial cast net (L.cC), general recreational (L.GR), general recreational discards (D.GR) and shrimp bycatch (D.SB), total landings and total dead discards.

Year	L.cH	L.cP	L.cG	L.cC	L.GR	D.GR	D.SB.D	Total.L	Total.D
1986	78.44	201.74	4080.71	0.00	2244.51	63.42	156.98	6605.40	220.40
1987	106.50	470.62	3630.15	0.00	2290.79	5.44	110.97	6498.06	116.40
1988	64.87	402.23	3287.10	0.00	4060.94	12.98	130.90	7815.13	143.89
1989	39.67	509.06	3182.22	0.00	3809.81	87.47	164.77	7540.76	252.24
1990	111.86	509.41	2696.01	0.00	3906.56	85.87	124.25	7223.84	210.11
1991	144.01	468.20	3793.16	0.00	6058.99	109.67	157.73	10464.36	267.40
1992	50.24	396.67	2684.84	0.00	4074.92	79.92	123.81	7206.67	203.72
1993	99.07	328.29	4409.69	0.00	2480.08	56.36	115.59	7317.14	171.95
1994	58.25	329.57	3701.24	0.00	2719.34	122.46	137.85	6808.38	260.31
1995	209.64	199.03	3234.96	15.42	1539.91	76.68	139.25	5198.96	215.93
1996	139.44	294.40	2679.22	65.92	2027.89	115.19	112.25	5206.88	227.44
1997	126.98	207.19	2673.93	210.19	2620.97	128.43	144.07	5839.26	272.51
1998	149.03	115.48	2689.96	68.32	2400.96	45.41	109.46	5423.74	154.87
1999	188.06	271.23	1884.74	66.38	3465.33	159.41	135.14	5875.74	294.54
2000	311.52	161.82	1862.78	361.29	4665.44	219.67	137.28	7362.86	356.95
2001	348.82	196.12	1700.67	891.10	4669.42	94.48	94.82	7806.13	189.30
2002	438.66	121.27	1316.57	966.39	5060.42	178.34	105.36	7903.31	283.70
2003	390.94	90.68	1091.82	1892.09	4852.65	291.64	91.93	8318.18	383.56
2004	590.76	71.09	709.89	2238.38	2635.92	102.10	79.28	6246.03	181.38
2005	841.43	47.03	1255.86	1574.81	3469.45	170.89	93.99	7188.58	264.88
2006	707.66	42.93	1652.05	1525.70	2290.98	65.01	59.71	6219.32	124.72
2007	775.88	50.05	1717.67	1268.88	3623.94	161.20	48.63	7436.43	209.83
2008	869.80	192.36	1080.00	702.58	3849.42	245.51	56.08	6694.16	301.59
2009	977.72	363.09	1440.10	966.47	5008.03	194.72	34.25	8755.41	228.96
2010	1228.01	144.16	1346.85	1798.59	5916.71	229.27	50.46	10434.31	279.73
2011	891.72	87.48	1085.30	1239.75	4330.38	162.73	56.11	7634.63	218.84
2012	1118.97	55.28	1432.52	977.60	3304.74	128.81	62.21	6889.12	191.02
2013	1359.10	26.56	1167.30	344.58	6144.85	259.62	40.95	9042.39	300.57
2014	1748.91	33.89	941.86	562.60	3932.46	200.08	51.62	7219.72	251.70
2015	1223.50	54.51	982.70	177.38	2172.27	103.20	55.19	4610.37	158.39
2016	1401.61	73.67	1108.32	689.18	4960.73	234.92	59.86	8233.51	294.78
2017	1379.05	36.90	1117.30	985.87	2682.27	157.79	52.90	6201.39	210.68
2018	1600.54	36.55	1421.58	699.91	3787.82	314.21	40.00	7546.40	354.21
2019	1382.21	157.31	1137.03	1233.65	6189.49	510.81	60.22	10099.69	571.03
2020	1375.19	82.62	1569.24	666.17	10328.29	514.48	51.57	14021.50	566.04

Table 20. Estimated total dead discards at age in numbers (1000 fish).

Year	0	1	2	3	4	5	6	7	8	9	10
1986	316.49	76.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1987	236.17	20.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1988	297.27	24.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1989	448.08	63.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1990	386.40	48.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1991	472.83	67.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1992	336.76	58.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1993	359.80	27.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1994	473.95	62.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995	405.04	48.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1996	421.64	52.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1997	420.12	86.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	337.84	20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	515.11	76.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	517.09	123.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	374.52	36.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	536.13	61.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	555.66	132.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	353.88	36.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	423.73	79.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	235.51	27.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	385.42	49.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	477.02	92.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	334.84	78.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	501.01	69.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	343.67	67.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	317.51	54.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	576.01	63.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	420.90	70.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	307.11	32.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	458.83	92.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	353.73	58.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	628.55	89.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	766.92	214.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	1044.65	130.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 21. Estimated total dead discards at age in whole weight (1000 lb).

Year	0	1	2	3	4	5	6	7	8	9	10
1986	119.43	100.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1987	89.12	27.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1988	112.18	31.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1989	169.08	83.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1990	145.81	64.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1991	178.42	88.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1992	127.08	76.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1993	135.77	36.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1994	178.85	81.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995	152.84	63.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1996	159.11	68.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1997	158.53	113.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	127.48	27.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	194.38	100.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	195.13	161.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	141.33	47.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	202.31	81.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	209.68	173.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	133.54	47.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	159.90	104.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	88.87	35.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	145.44	64.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	180.01	121.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	126.35	102.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	189.06	90.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	129.69	89.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	119.81	71.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	217.36	83.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	158.83	92.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	115.89	42.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	173.14	121.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	133.48	77.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	237.19	117.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	289.40	281.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	394.20	171.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 22. Estimated status indicators, benchmarks, and related quantities from the base run of the Beaufort catch-age model, conditional on estimated current selectivities averaged across fleets. Also presented are median values and measures of precision (standard errors, SE) from the Monte Carlo/Bootstrap ensemble (MCBE) analysis. Rate estimates (F) are in units of y^{-1} ; status indicators are dimensionless; and biomass estimates are in units of metric tons or pounds, as indicated. Spawning stock biomass (SSB) is measured as total mature female biomass. The definitions of MSST in this assessment is $MSST = 75\%SSB_{MSY}$.

Quantity	Units	Estimate	Median	SE
F_{MSY}	y^{-1}	0.516	0.523	0.111
$75\%F_{MSY}$	y^{-1}	0.387	0.392	0.083
$F_{30\%}$	y^{-1}	0.608	0.615	0.059
$F_{40\%}$	y^{-1}	0.410	0.414	0.038
B_{MSY}	metric tons	19588	19821	2232
SSB_{MSY}	metric tons	6406	6410	1122
MSST	metric tons	4804	4808	842
MSY	1000 lb whole	8210	8351	411
R_{MSY}	thousands	22792	23392	3015
$L_{85\%Fmsy}$	1000 lb whole	8149	8287	410
$L_{75\%Fmsy}$	1000 lb whole	8024	8158	408
$L_{65\%Fmsy}$	1000 lb whole	7807	7932	407
$F[2018 - 2020]$	y^{-1}	0.40	0.39	0.05
$F_{2018-2020}/F_{MSY}$	—	0.77	0.74	0.21
$SSB_{2020}/MSST$	—	1.40	1.42	0.34
SSB_{2020}/SSB_{MSY}	—	1.05	1.07	0.25

Table 23. Results from sensitivity runs of the Beaufort Assessment Model. Current F represented by geometric mean of last three assessment years. Spawning stock was based on total (population) fecundity of mature females. Runs should not all be considered equally plausible.

Run	Description	F_{MSY}	SSB _{MSY} (mt)	B_{MSY} (mt)	MSY (1000 lb)	$F_{2018-2020}/F_{MSY}$	SSB/SSB _{MSY}	SSB ₂₀₂₀ /MSST	R0 (1000)
Base	—	0.516	6406	19588	8210	0.77	1.05	1.4	21939
S1	Drop cH Index	0.541	6090	18647	7874	0.88	0.89	1.18	20835
S2	High M	0.661	5846	20962	9290	0.48	1.47	1.96	30852
S3	Low M	0.427	7408	20419	8085	1.06	0.78	1.05	18153
S4	High Steep	0.737	4727	16298	8477	0.54	1.42	1.89	20014
S5	Low Steep	0.369	9057	25444	8485	1.07	0.74	0.99	26379
S6	High GR Discard M	0.478	6703	20205	7996	0.83	1	1.33	22253
S7	Low GR Discard M	0.566	6066	18891	8467	0.7	1.11	1.48	21626

Table 24. Projection results with fishing mortality rate fixed at $F = F_{\text{current}}$ starting in 2023. Interim period (2021-2022) assumed constant landings based on the average of the last 3 years of the assessment. R = number of age-0 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt) at peak spawning time, L = landings expressed in numbers (n , in 1000s) or whole weight (w , in 1000 lb), and D = dead discards expressed in numbers (n , in 1000s) or whole weight (w , in 1000 lb), $pr.rebuild$ = proportion of stochastic projection replicates with $SSB \geq SSB_{MSY}$. The extension b indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections.

Year	R.b	R.med	F.b	F.med	S.b(mt)	S.med(mt)	L.b(n)	L.med(n)	L.b(w)	L.med(w)	D.b(n)	D.med(n)	D.b(w)	D.med(w)	pr.reb
2021	21287	21728	0.85	0.81	4761	4928	6575	6471	10556	10450	1777	1518	842	745	0.193
2022	20531	17043	1.10	1.03	4164	4383	7342	7198	10556	10441	2069	1725	1016	885	0.124
2023	18993	14749	0.40	0.39	3239	3259	2843	2557	3907	3732	741	557	375	296	0.113
2024	21667	17148	0.40	0.39	5109	4770	3459	3010	4930	4456	836	633	416	326	0.294
2025	22519	18049	0.40	0.39	6048	5567	4012	3470	5885	5225	880	676	447	353	0.403

Table 25. Projection results with fishing mortality rate fixed at $F = F_{MSY}$ starting in 2023. Interim period (2021-2022) assumed constant landings based on the average of the last 3 years of the assessment. R = number of age-0 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt) at peak spawning time, L = landings expressed in numbers (n , in 1000s) or whole weight (w , in 1000 lb), and D = dead discards expressed in numbers (n , in 1000s) or whole weight (w , in 1000 lb), pr:rebuild = proportion of stochastic projection replicates with $SSB \geq SSB_{MSY}$. The extension b indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections.

Year	R.b	R.med	F.b	F.med	S.b(mt)	S.med(mt)	L.b(n)	L.med(n)	L.b(w)	L.med(w)	D.b(n)	D.med(n)	D.b(w)	D.med(w)	pr.reb
2021	21287	21728	0.85	0.81	4761	4928	6575	6471	10556	10450	1777	1518	842	745	0.193
2022	20531	17043	1.10	1.03	4164	4383	7342	7198	10556	10441	2069	1725	1016	885	0.124
2023	18993	14749	0.52	0.52	3239	3259	3570	3415	4891	4909	953	764	480	402	0.113
2024	21128	16681	0.52	0.52	4626	4149	4125	3757	5796	5440	1049	842	519	432	0.181
2025	21804	17407	0.52	0.52	5244	4552	4612	4118	6606	5996	1093	884	550	458	0.230

Table 26. Projection results with fishing mortality rate fixed at $F = 75\%F_{MSY}$ starting in 2023. Interim period (2021-2022) assumed constant landings based on the average of the last 3 years of the assessment. R = number of age-0 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt) at peak spawning time, L = landings expressed in numbers (n , in 1000s) or whole weight (w , in 1000 lb), and D = dead discards expressed in numbers (n , in 1000s) or whole weight (w , in 1000 lb), pr.rebuild = proportion of stochastic projection replicates with $SSB \geq SSB_{MSY}$. The extension b indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections.

Year	R.b	R.med	F.b	F.med	S.b(mt)	S.med(mt)	L.b(n)	L.med(n)	L.b(w)	L.med(w)	D.b(n)	D.med(n)	D.b(w)	D.med(w)	pr.reb
2021	21287	21728	0.85	0.81	4761	4928	6575	6471	10556	10450	1777	1518	842	745	0.193
2022	20531	17043	1.10	1.03	4164	4383	7342	7198	10556	10441	2069	1725	1016	885	0.124
2023	18993	14749	0.39	0.39	3239	3259	2784	2667	3827	3850	725	582	367	307	0.113
2024	21708	17212	0.39	0.39	5149	4655	3401	3117	4853	4597	819	661	408	340	0.260
2025	22573	18160	0.39	0.39	6116	5374	3957	3573	5815	5342	863	704	438	368	0.360

4.19 Figures

Figure 1. Mean length at age (mm) of the population (purple, solid), females (green, dashed) and the fished population (yellow, dotted).

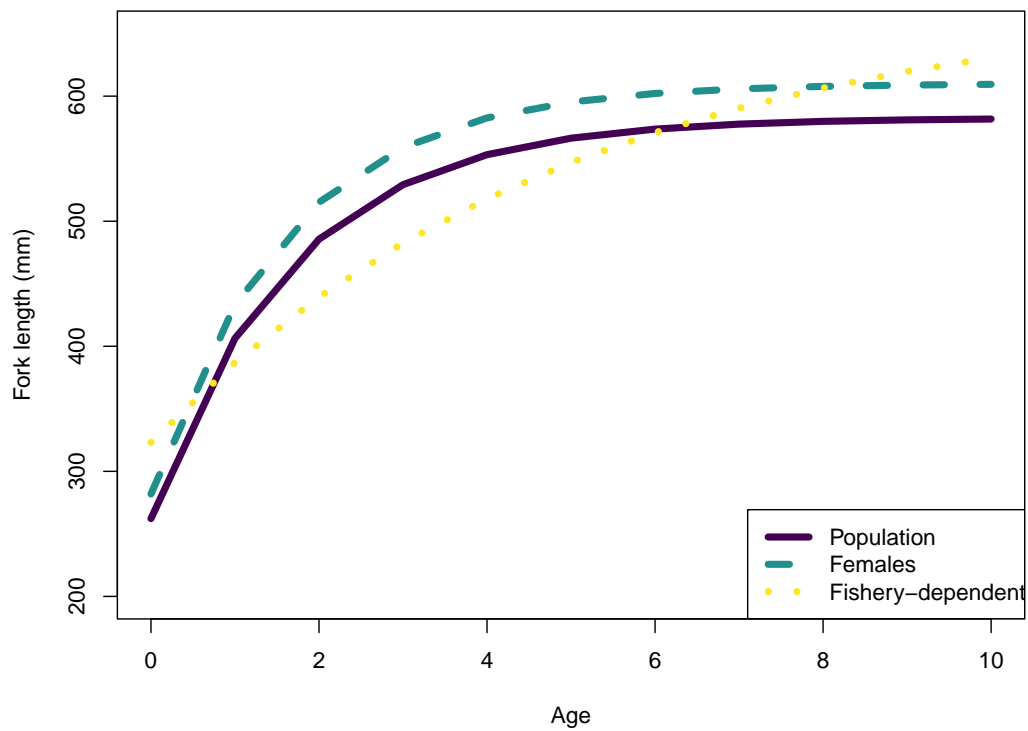


Figure 2. Observed (open circles) and estimated (solid line) annual age compositions by fleet. In panel definition of series; acomp refers to age compositions, cH to commercial handline, cP to pound nets, cG to gill nets, cC to cast nets, and GR to recreation.

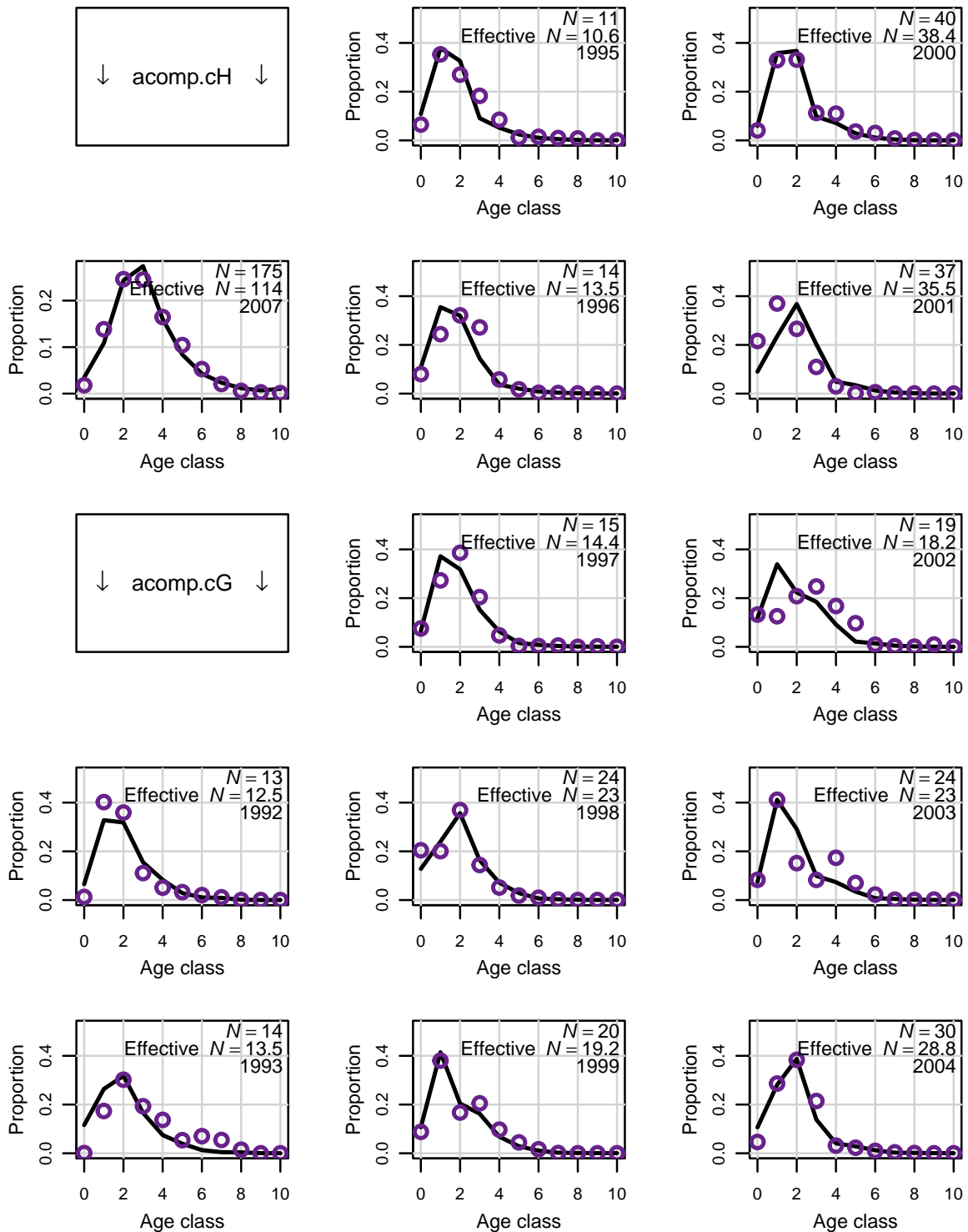


Figure 2. (cont.) Observed (open circles) and estimated (solid line) annual age compositions by fleet.

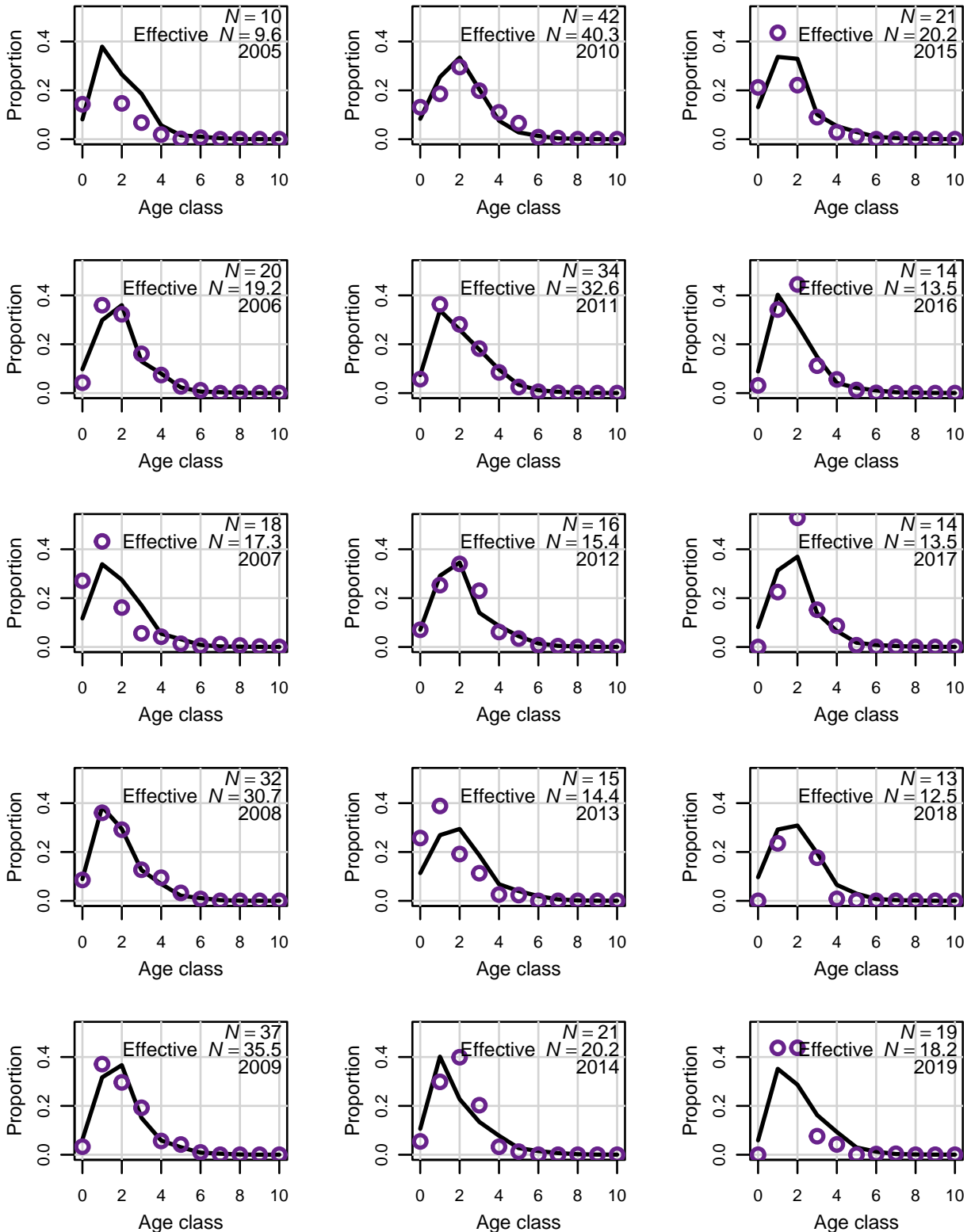


Figure 2. (cont.) Observed (open circles) and estimated (solid line) annual age compositions by fleet.

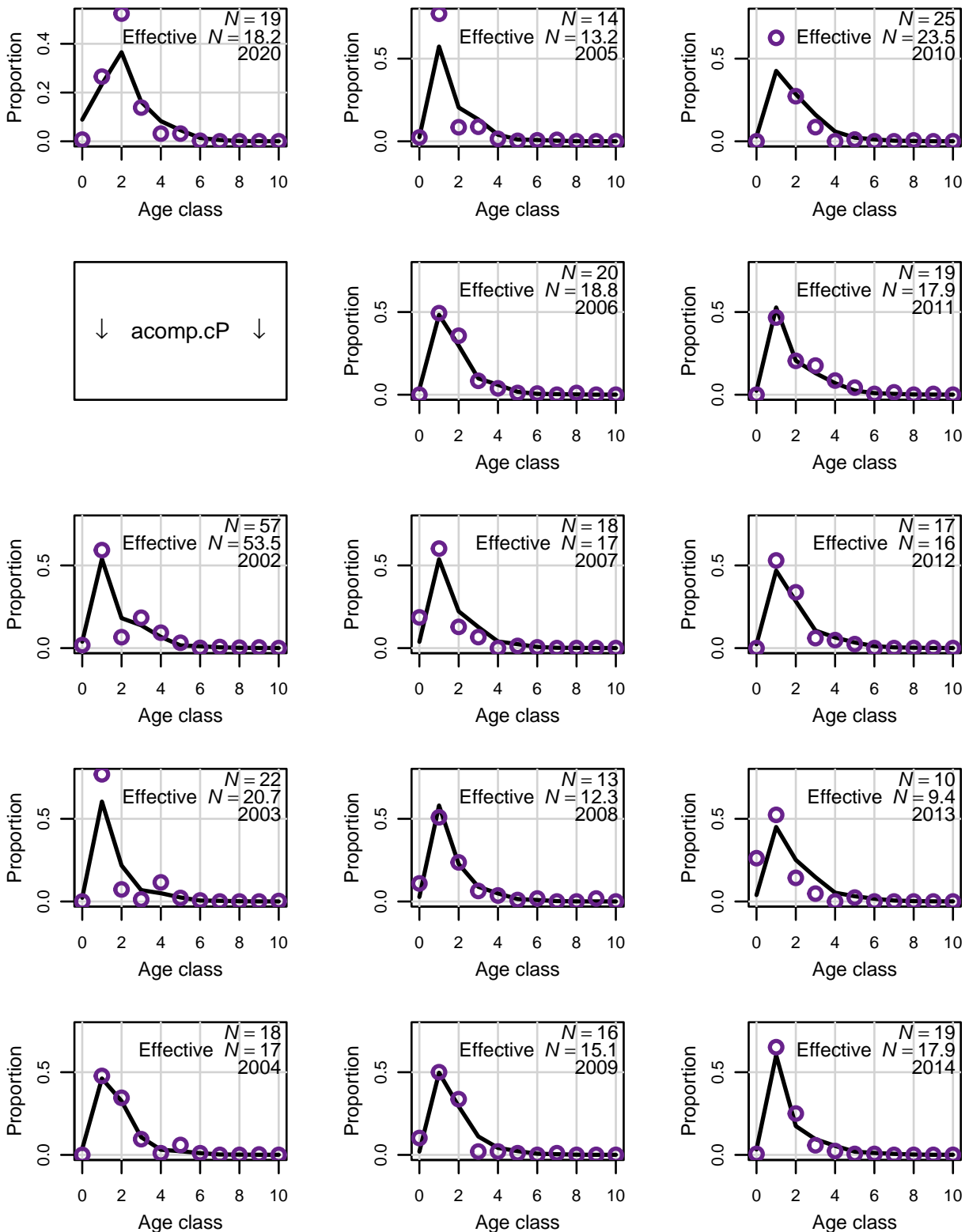


Figure 2. (cont.) Observed (open circles) and estimated (solid line) annual age compositions by fleet.

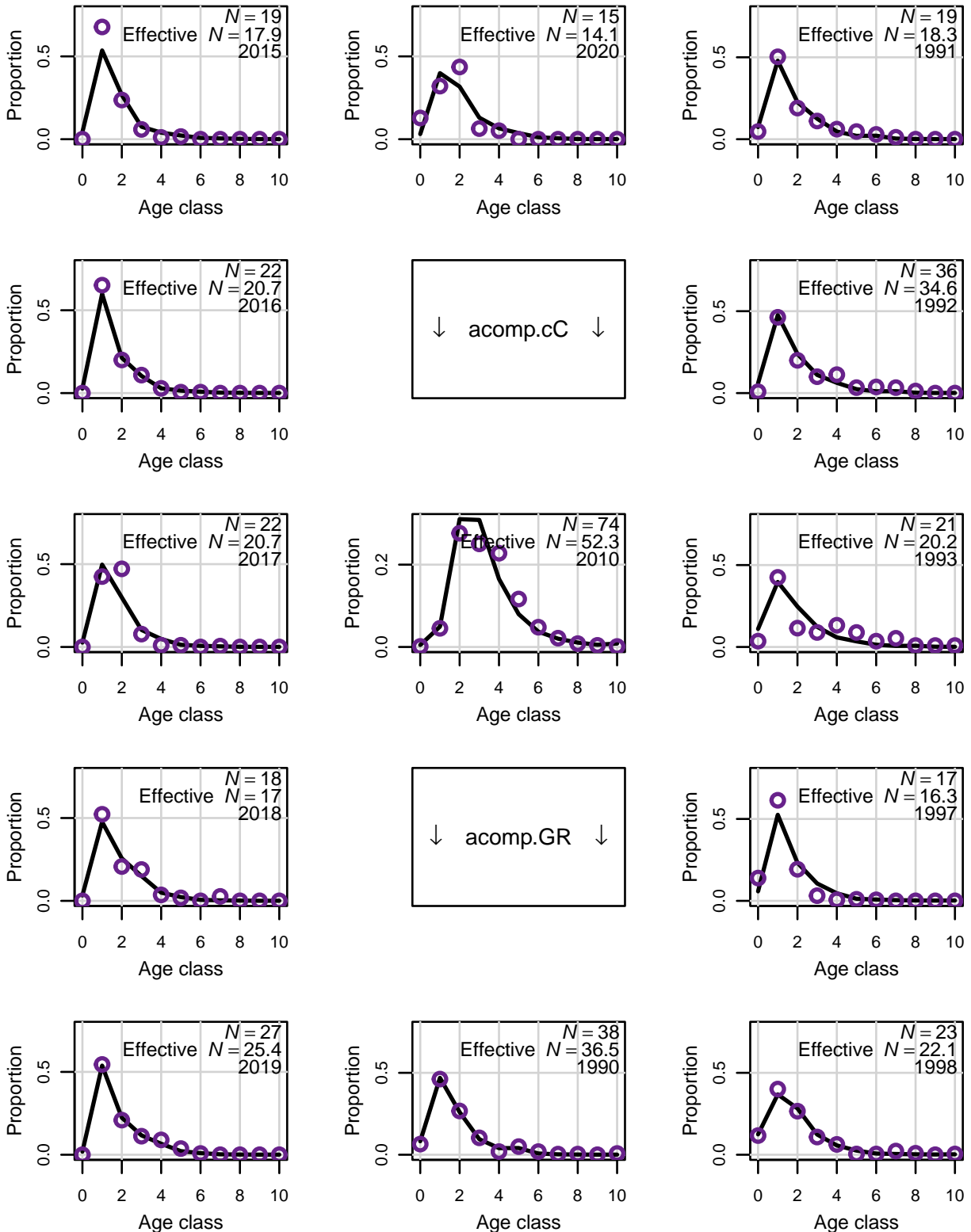


Figure 2. (cont.) Observed (open circles) and estimated (solid line) annual age compositions by fleet.

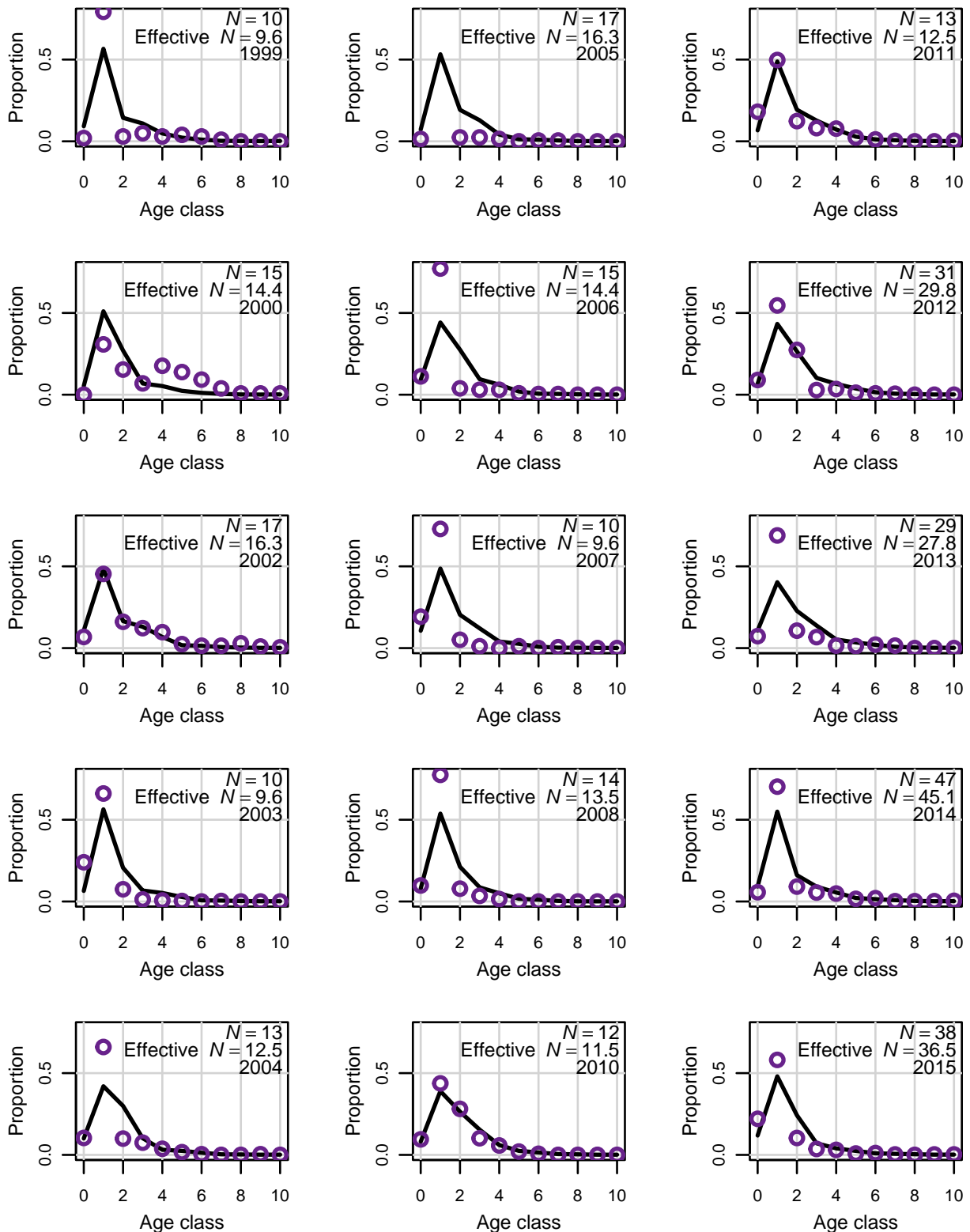


Figure 2. (cont.) Observed (open circles) and estimated (solid line) annual age compositions by fleet.

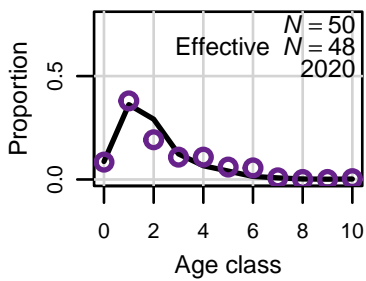
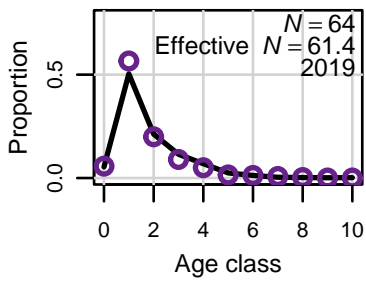
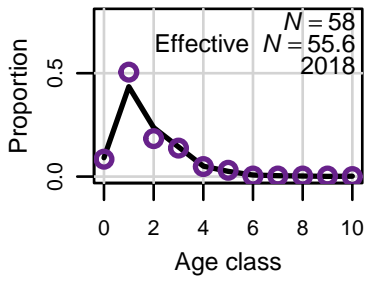
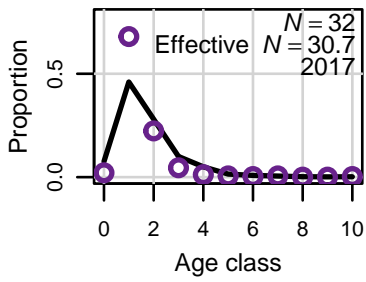
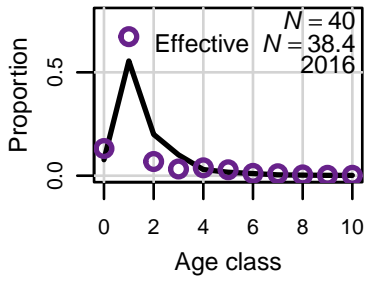


Figure 3. Top panel is a bubble plot of age composition residuals from commercial handline landings; blue represents overestimates and orange underestimates. Bottom panel shows correlation between predicted and observed values. The year is the approximate midpoint of the pooled annual compositions.

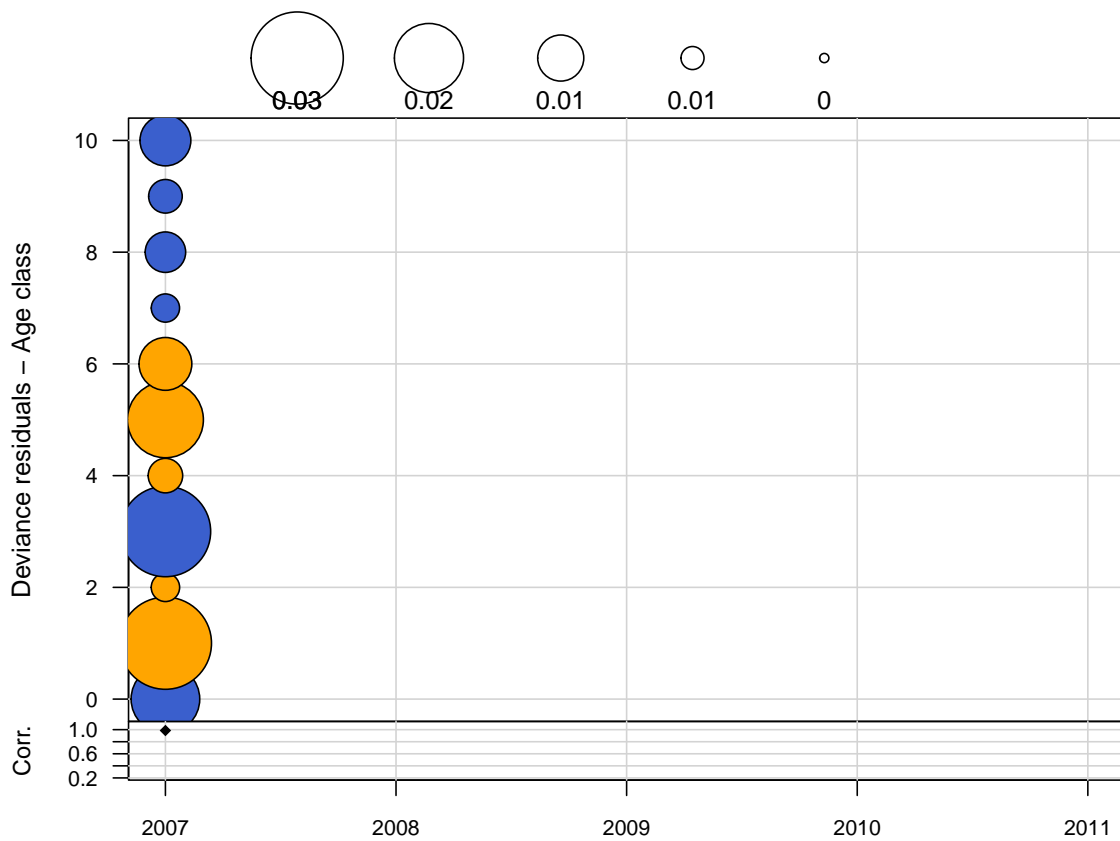


Figure 3. (cont.) Top panel is a bubble plot of age composition residuals from commercial pound net landings; blue represents overestimates and orange underestimates. Bottom panel shows correlation between predicted and observed values.

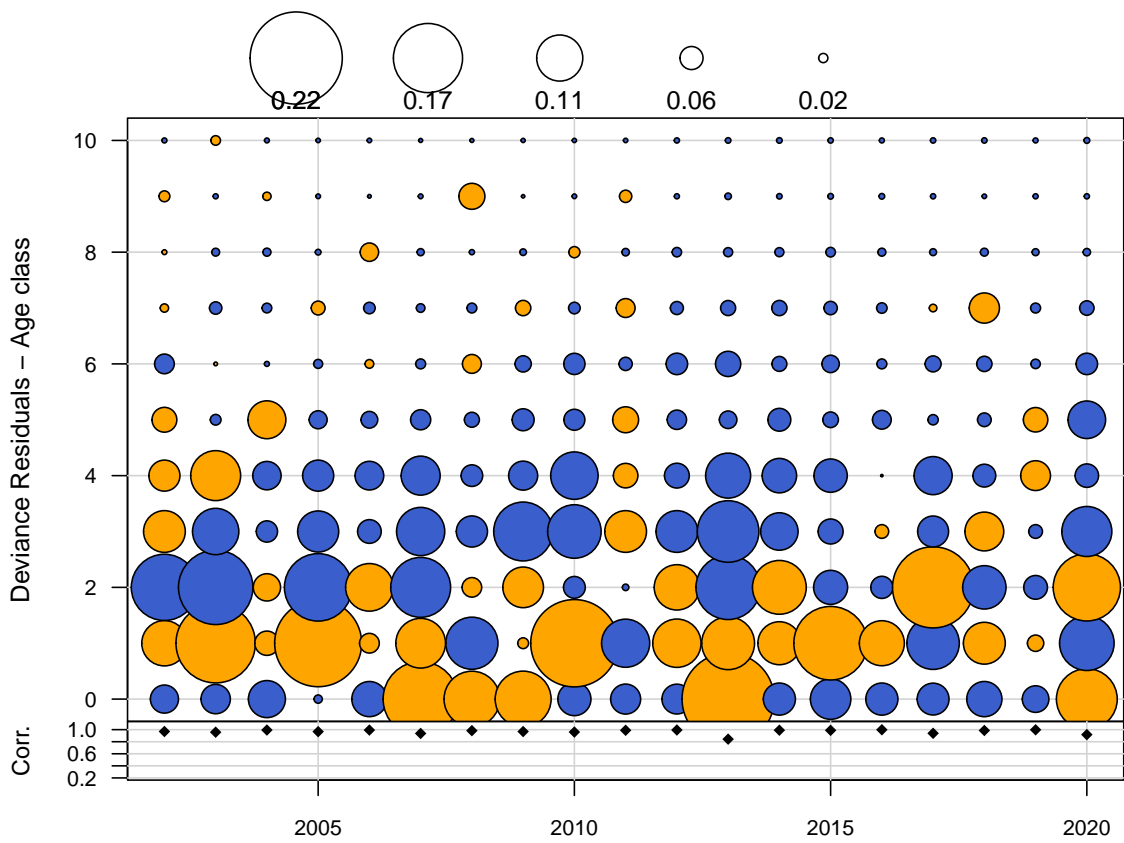


Figure 3. (cont.) Top panel is a bubble plot of age composition residuals from commercial gill net landings; blue represents overestimates and orange underestimates. Bottom panel shows correlation between predicted and observed values.

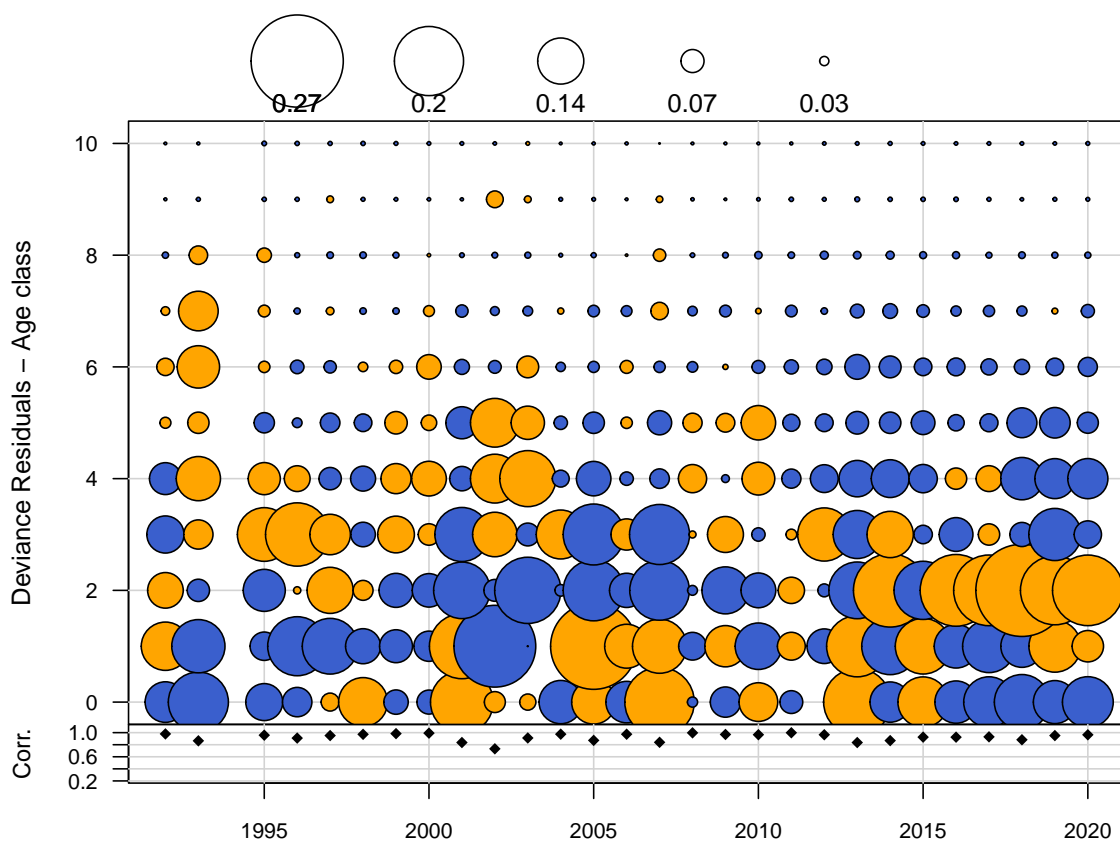


Figure 3. (cont.) Top panel is a bubble plot of age composition residuals from commercial cast net landings; blue represents overestimates and orange underestimates. Bottom panel shows correlation between predicted and observed values. The year is the approximate midpoint of the pooled annual compositions.

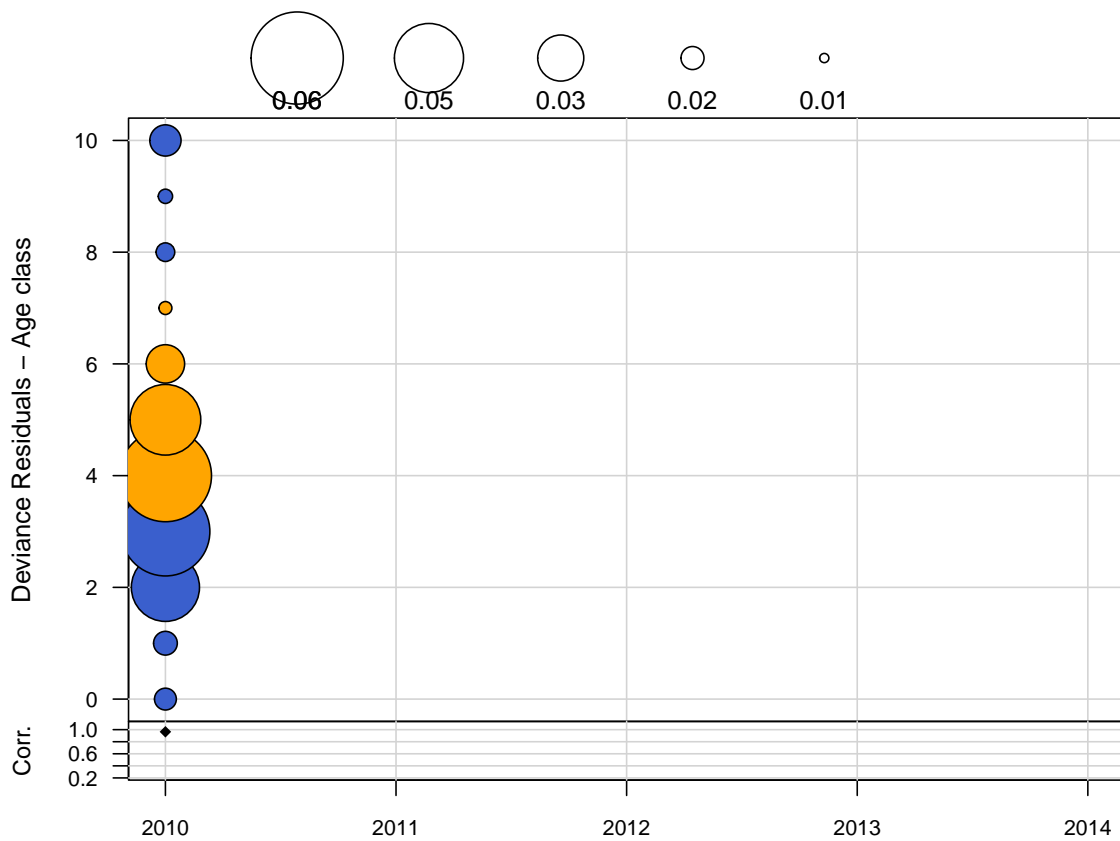


Figure 3. (cont.) Top panel is a bubble plot of age composition residuals from recreational landings; blue represents overestimates and orange underestimates. Bottom panel shows correlation between predicted and observed values.

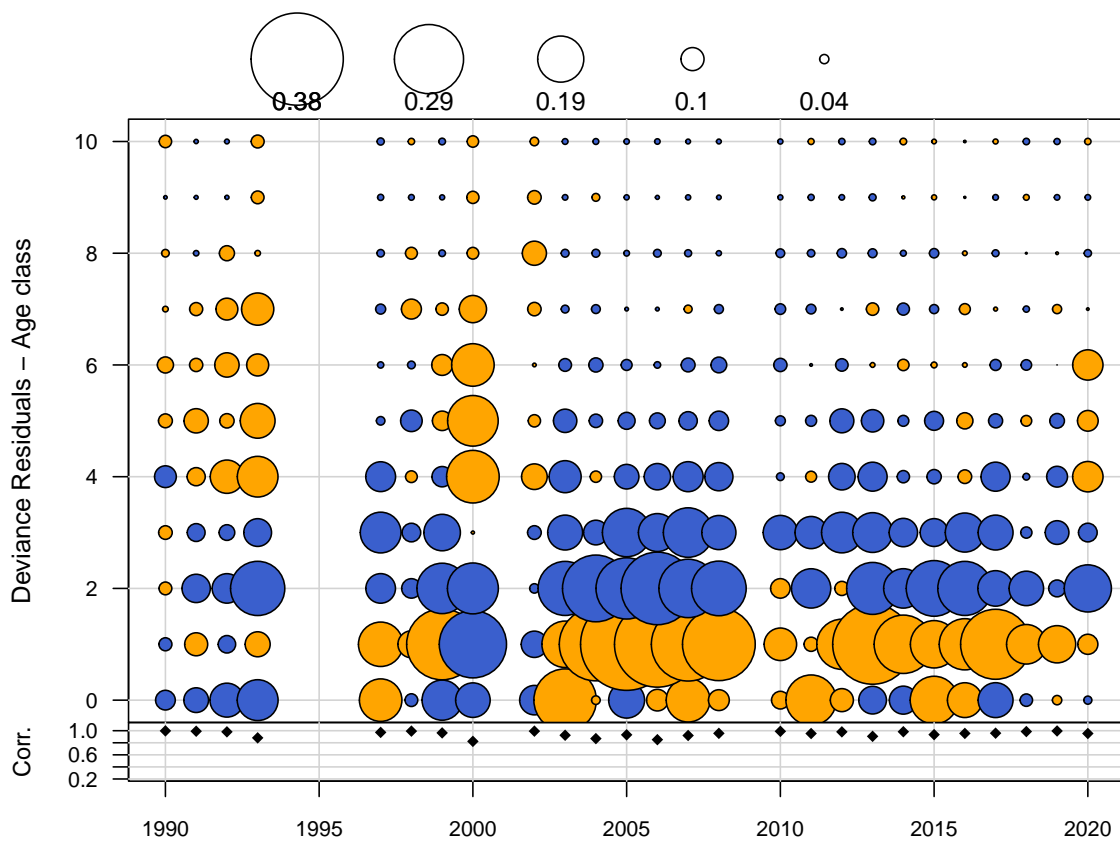


Figure 4. Observed (open circles) and estimated (line, solid circles) commercial handline landings (1000 lb whole weight).

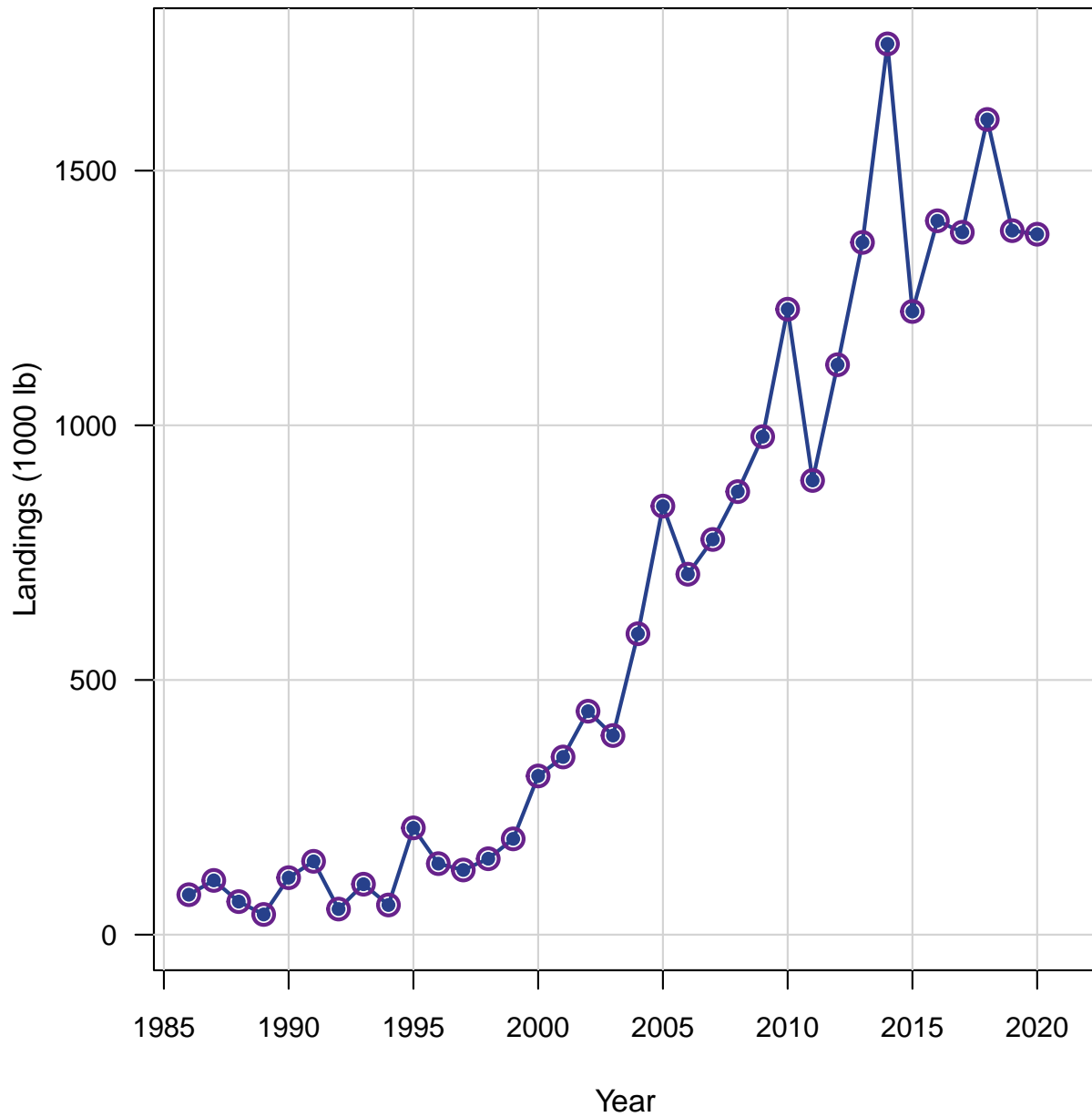


Figure 5. Observed (open circles) and estimated (line, solid circles) commercial pound net landings (1000 lb whole weight).

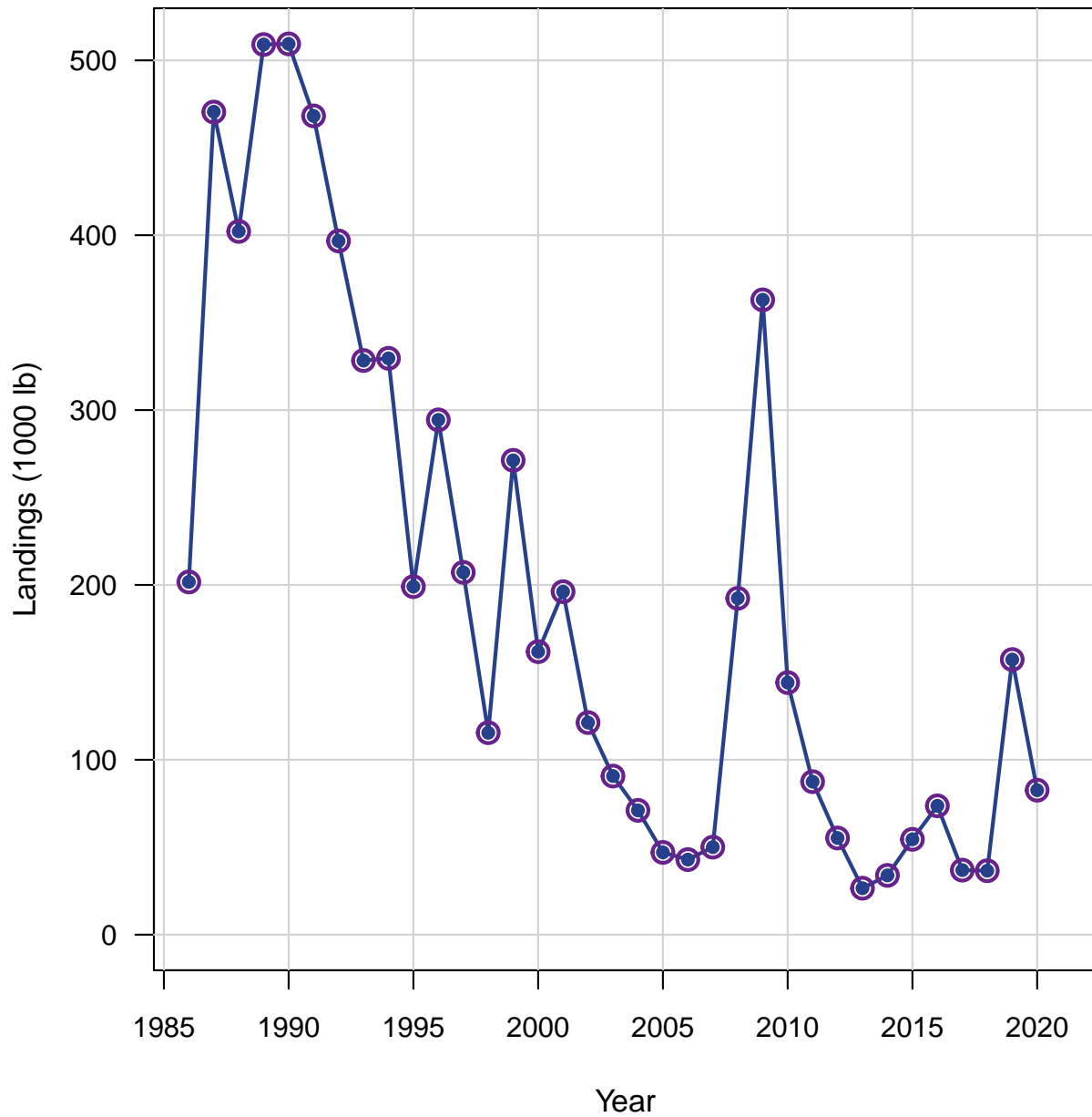


Figure 6. Observed (open circles) and estimated (line, solid circles) commercial gillnet landings (1000 lb whole weight).

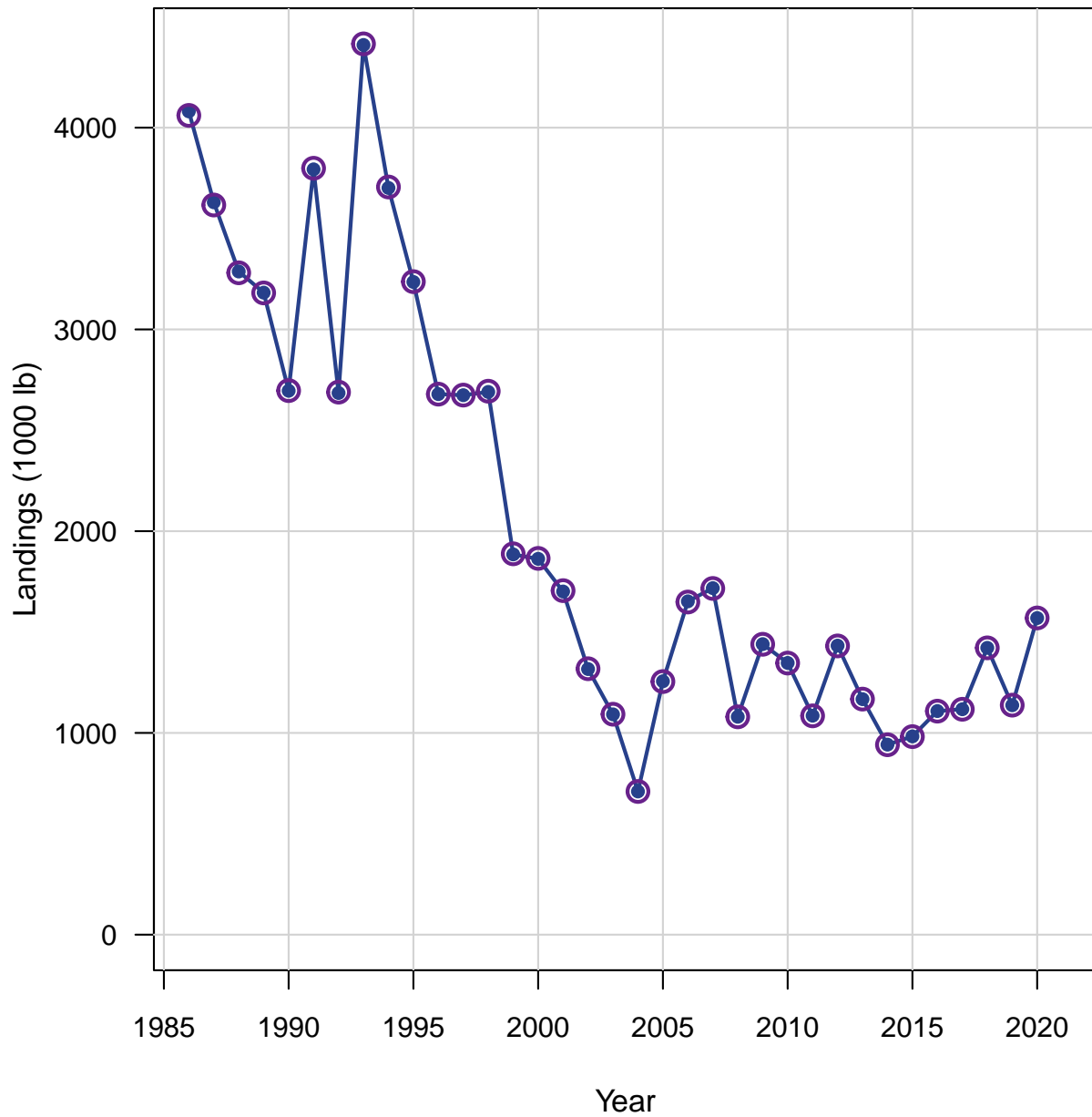


Figure 7. Observed (open circles) and estimated (line, solid circles) commercial cast net landings (1000 lb whole weight).

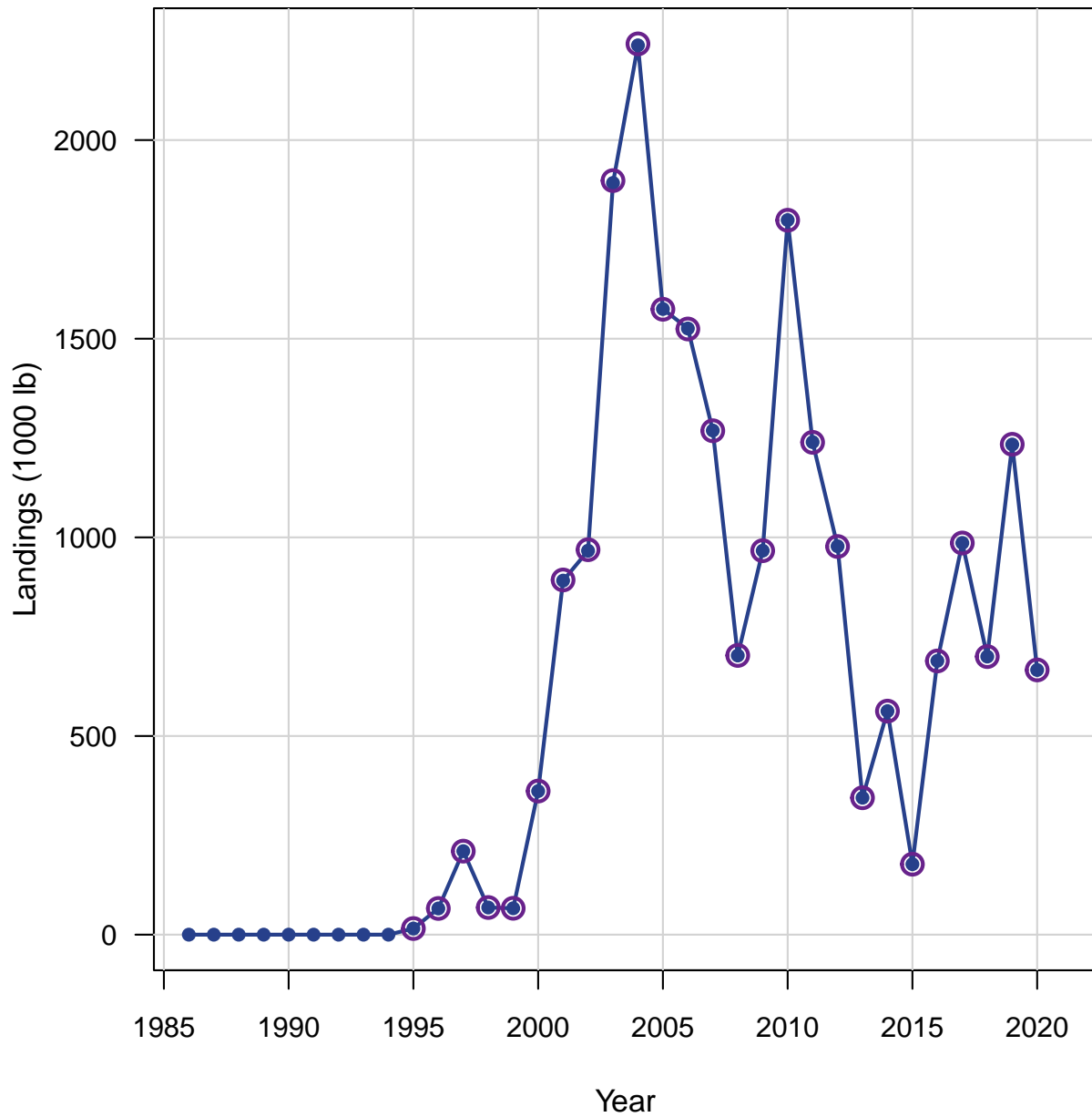


Figure 8. Observed (open circles) and estimated (line, solid circles) recreational landings (1000 fish).

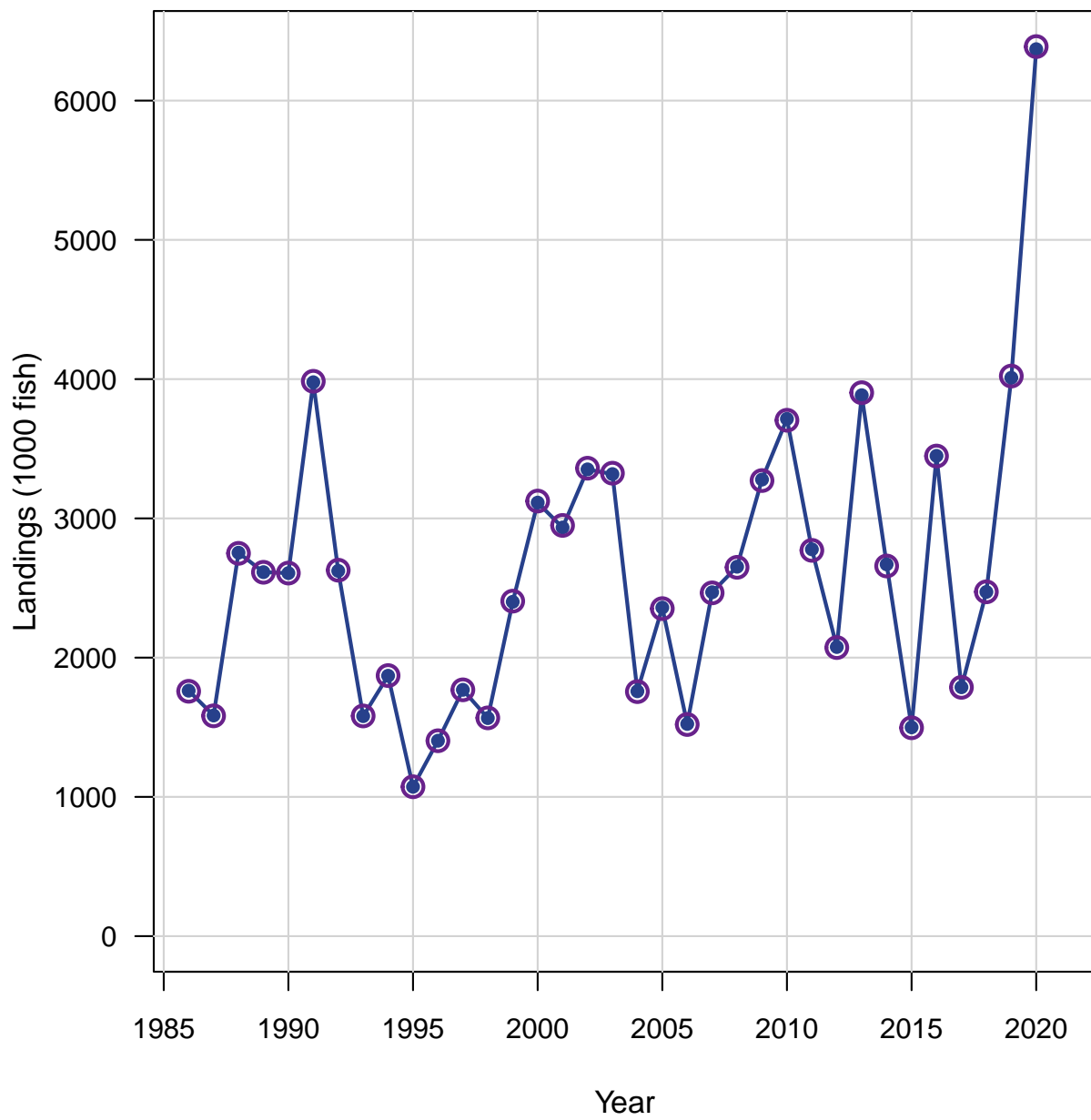


Figure 9. Observed (open circles) and estimated (line, solid circles) recreational discards (1000 fish).

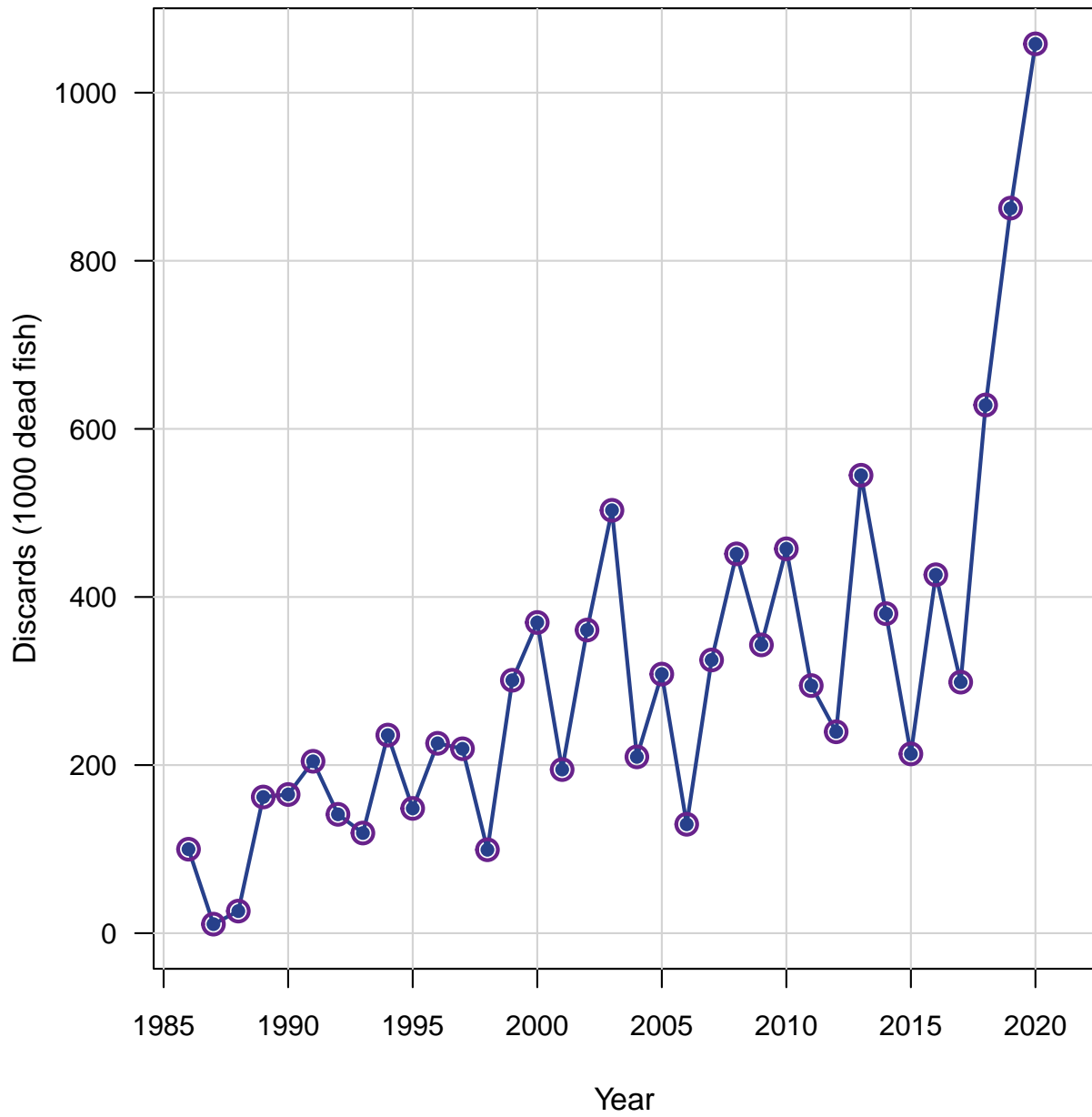


Figure 10. Observed (open circles) and estimated (line, solid circles) discards from shrimp bycatch (1000 fish).

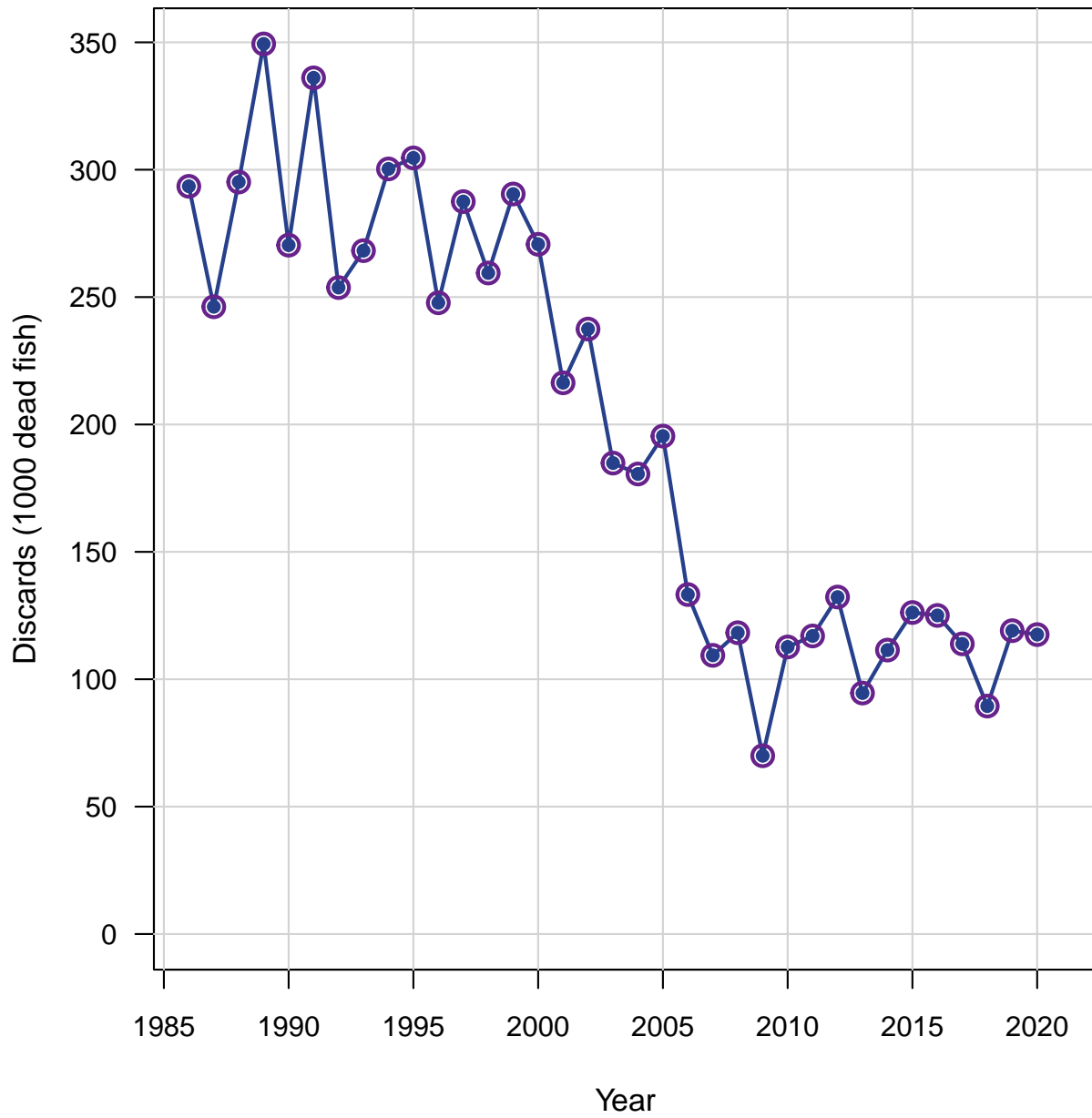


Figure 11. Top Panel: Observed (open circles) and estimated (line, solid circles) index of abundance from Florida commercial handline trip tickets. Bottom panel: Scaled residuals of estimated index of abundance. The model input CVs were modified from the input values by the SDNR weights.

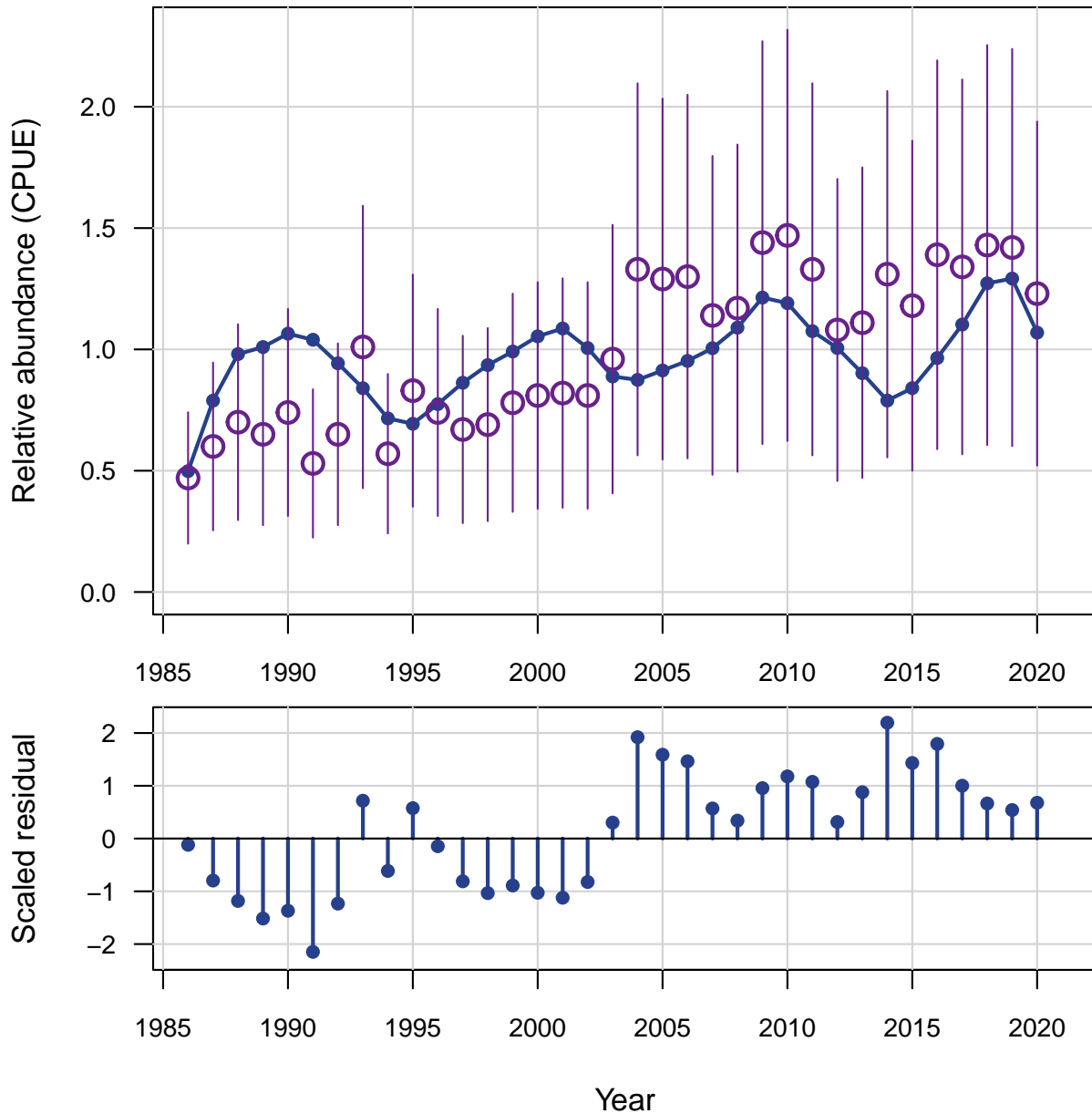


Figure 12. Top Panel: Observed (open circles) and estimated (line, solid circles) index of abundance from MRIP harvested fish. Bottom panel: Scaled residuals of estimated index of abundance. The model input CVs were modified from the input values by the SDNR weights.

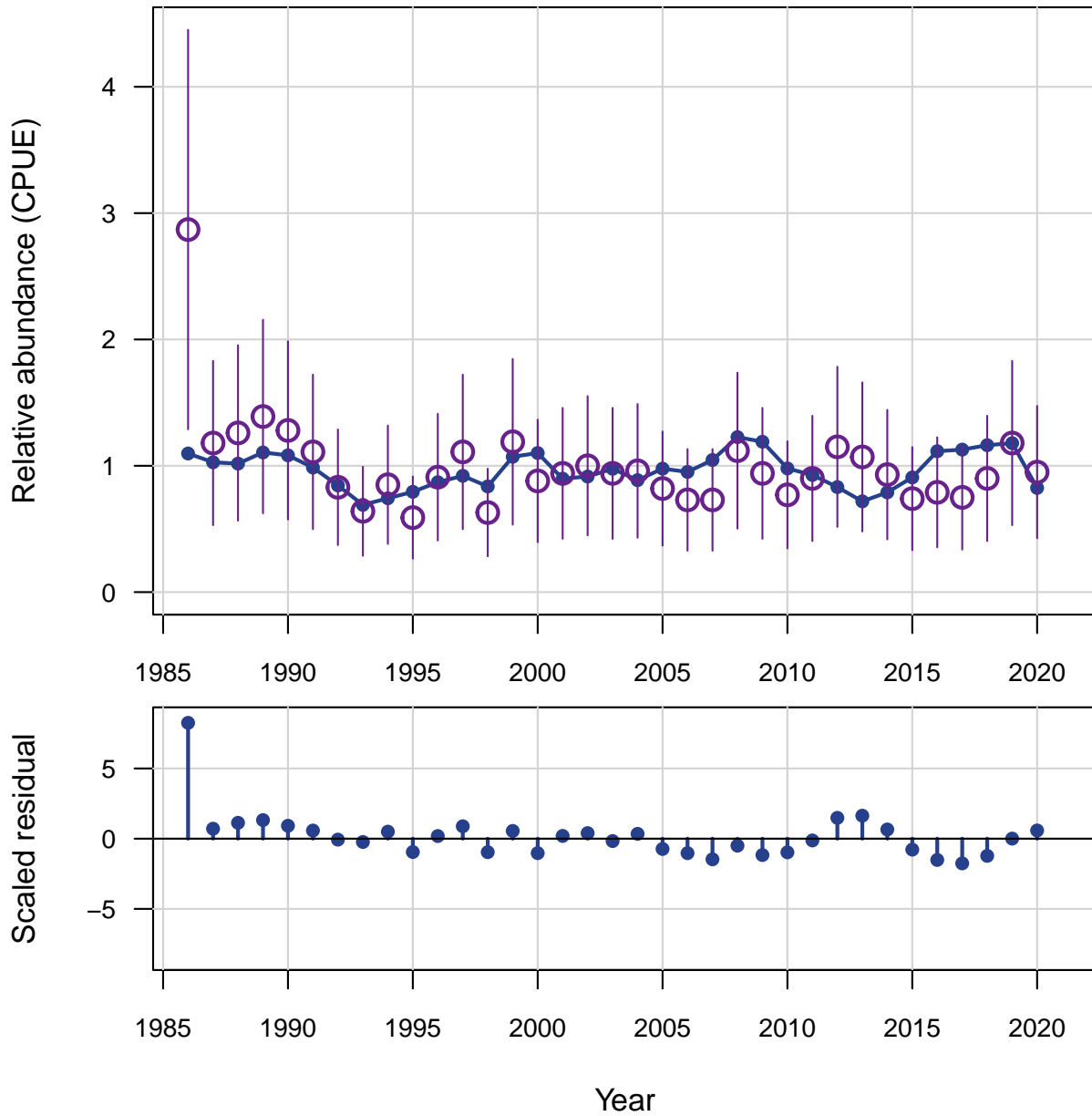


Figure 13. Top Panel: Observed (open circles) and estimated (line, solid circles) index of abundance from SEAMAP YOY samples. Bottom panel: Scaled residuals of estimated index of abundance. The model input CVs were modified from the input values by the SDNR weights.

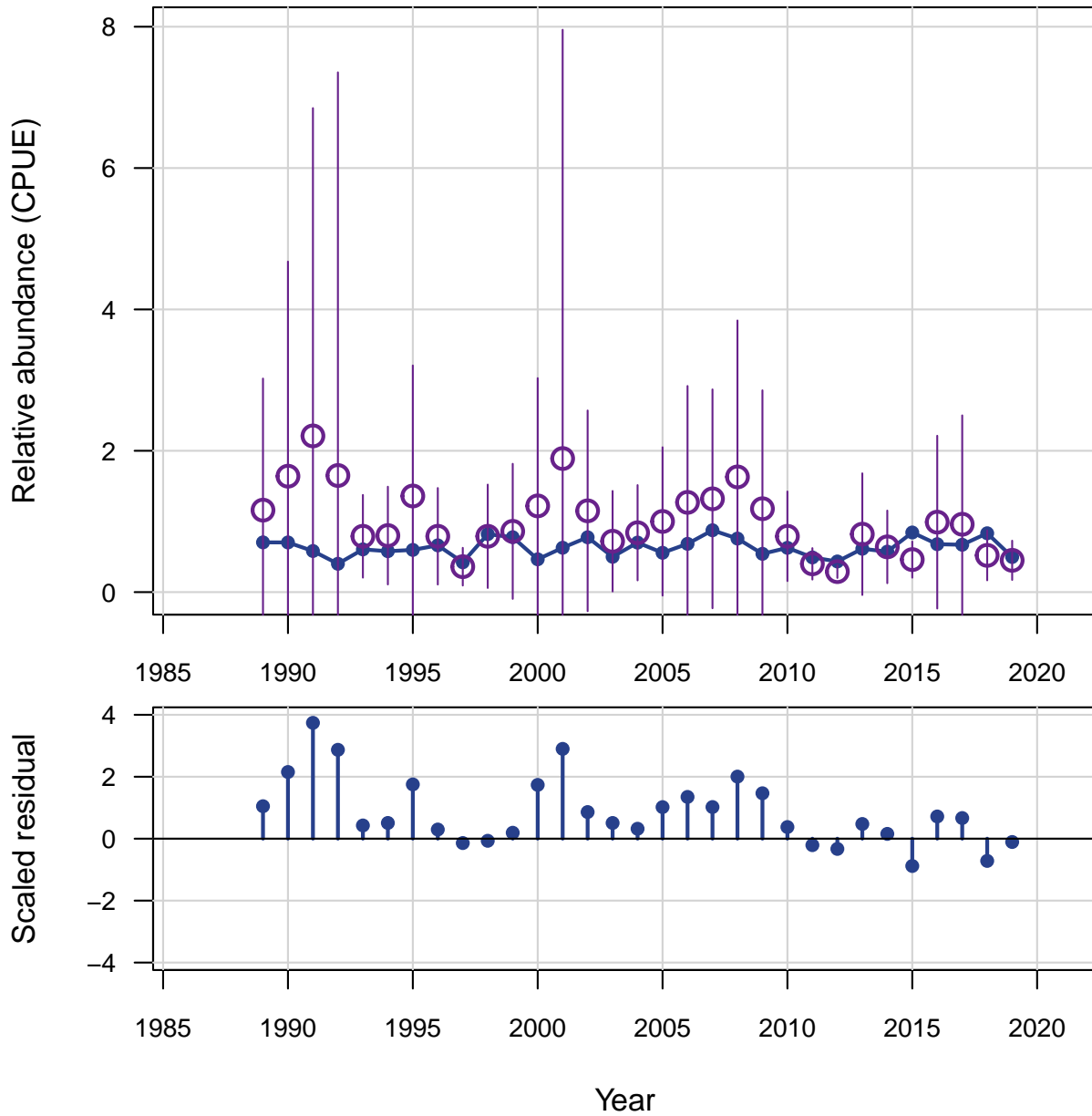


Figure 14. Estimated abundance at age at start of year.

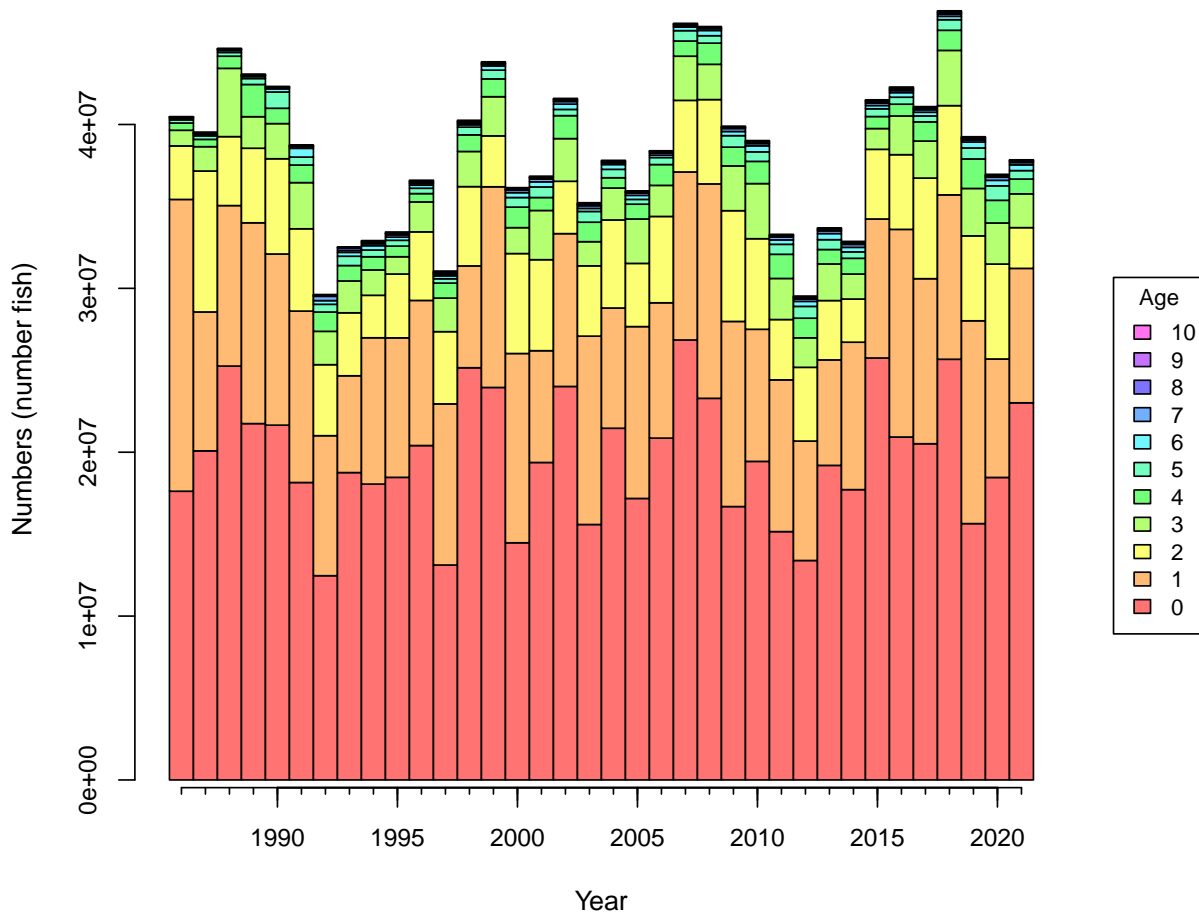


Figure 15. Top panel: Estimated recruitment of age-0 fish. Horizontal dashed line indicates R_{MSY} . Bottom panel: log recruitment residuals.

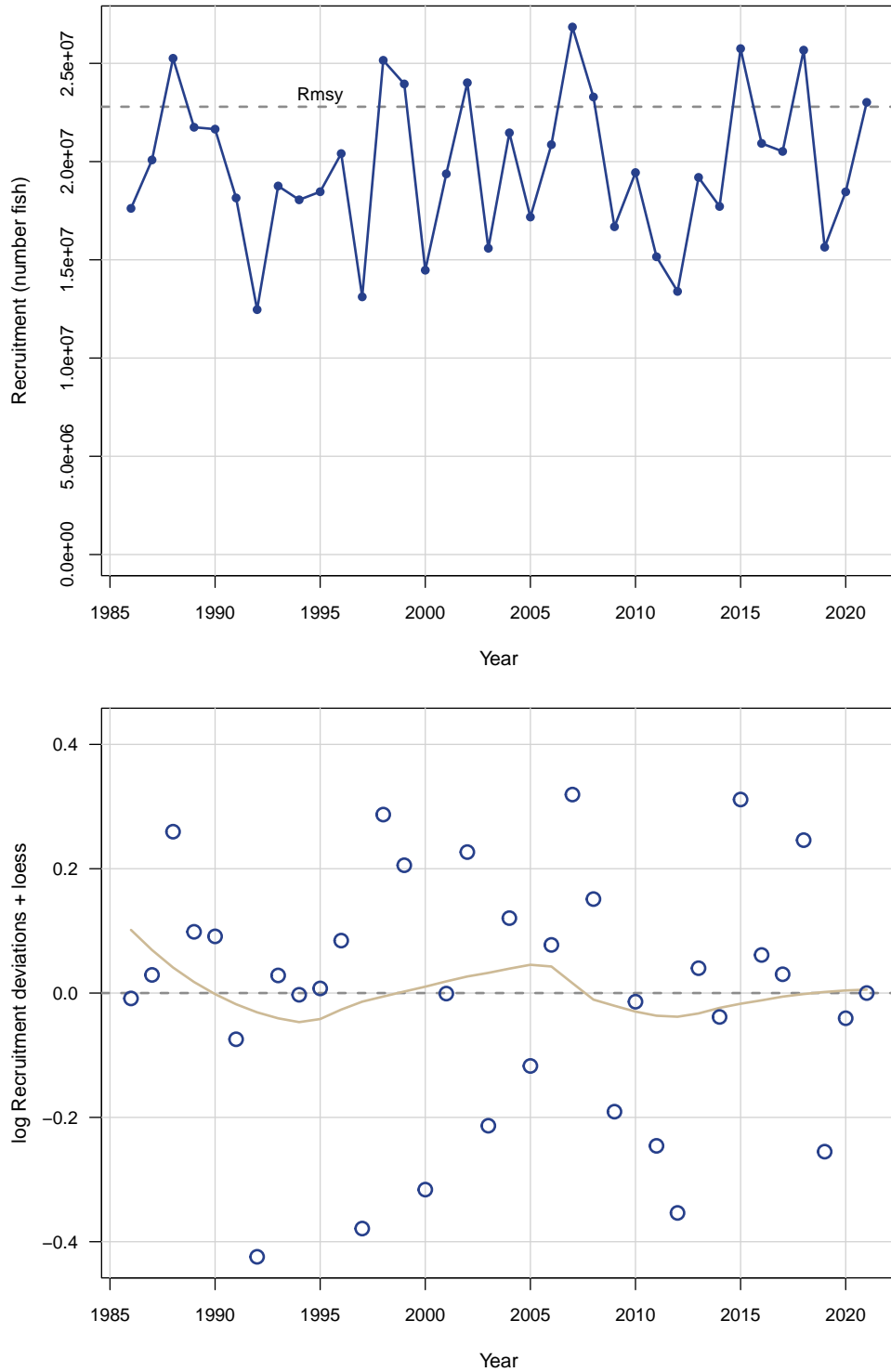


Figure 16. Estimated biomass at age at start of year.

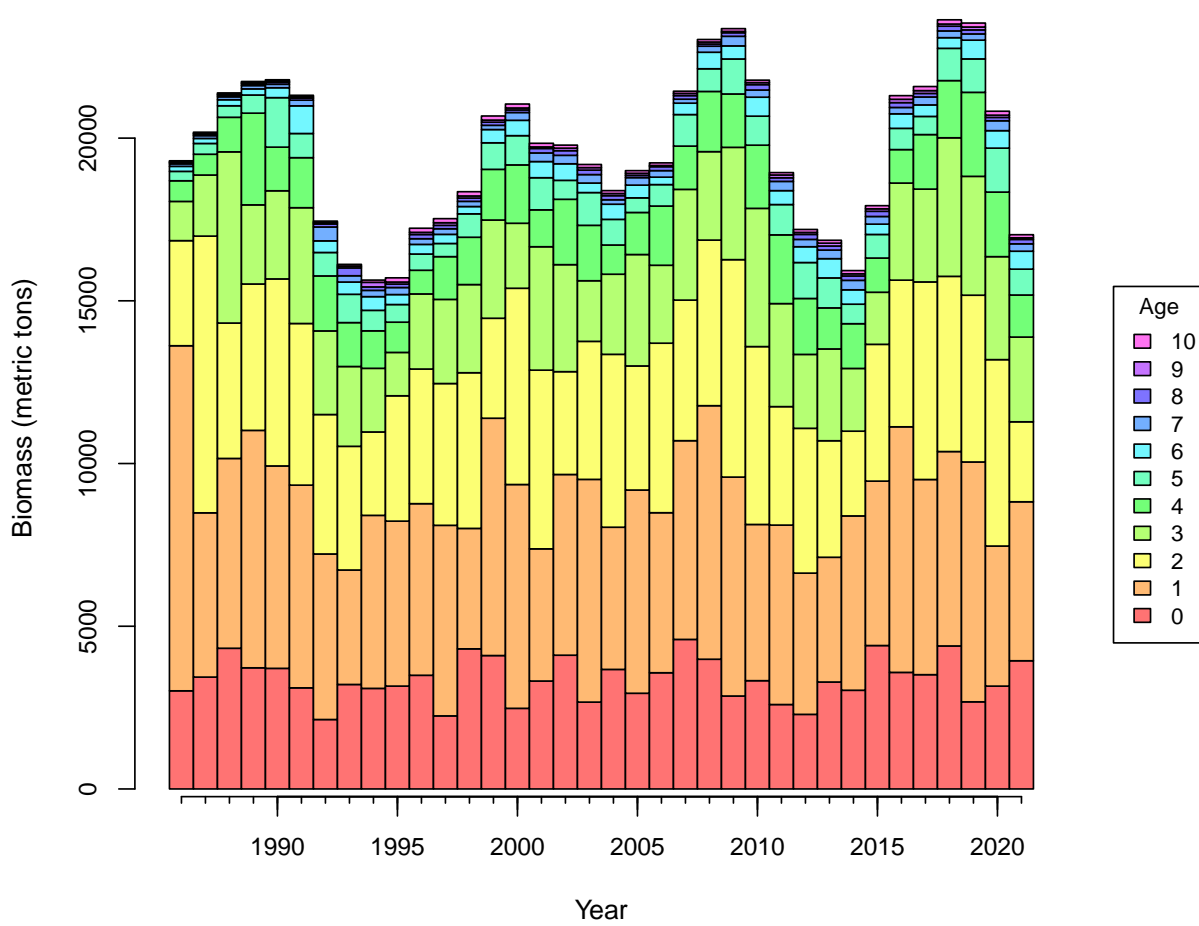


Figure 17. Selectivity of commercial handline fleet for all years in the model. Year indicates start year of the model.

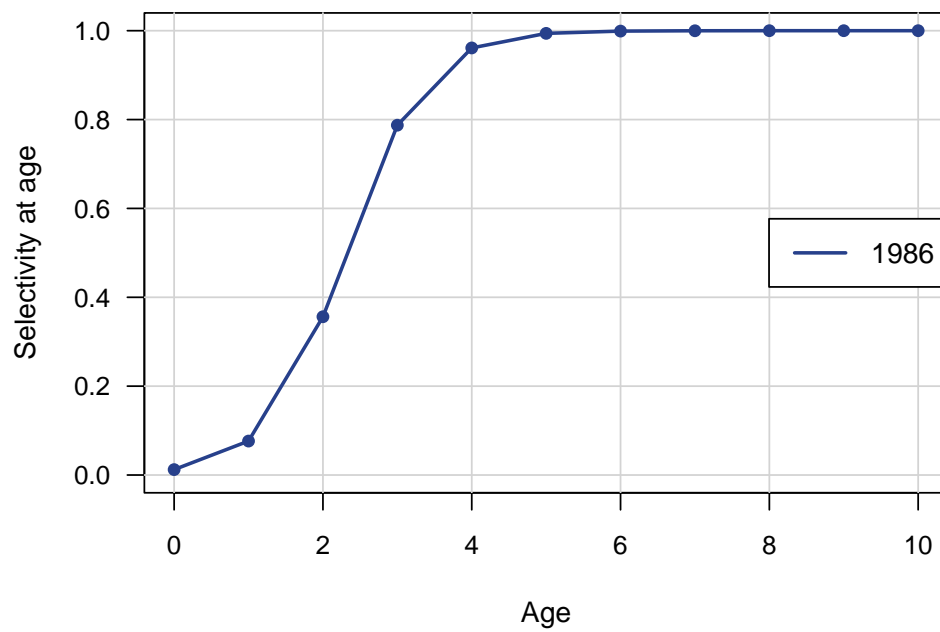


Figure 18. Selectivity of commercial pound net fleet for all years in the model. Year indicates start year of the model.

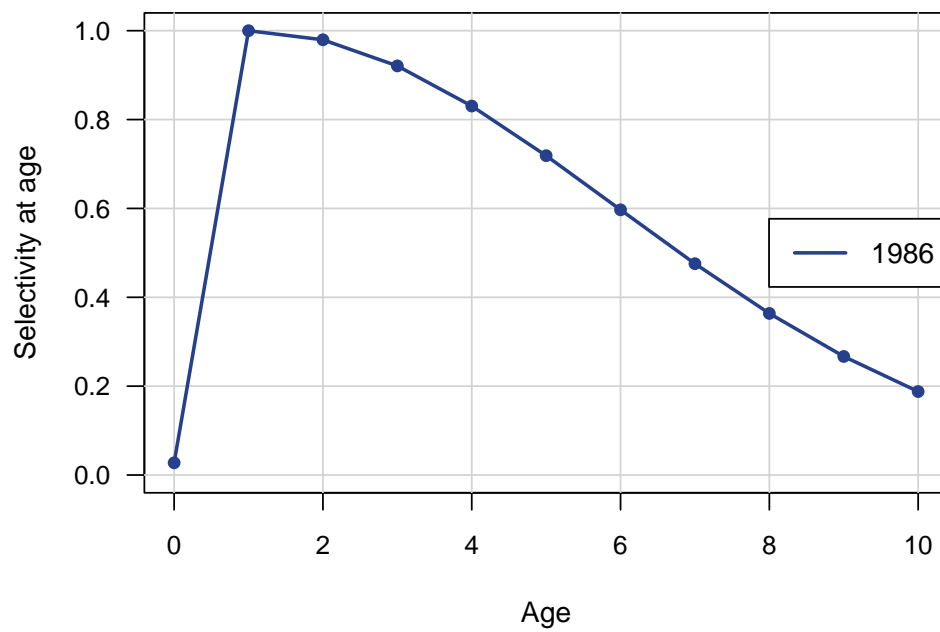


Figure 19. Selectivity of commercial gillnet fleet for all years in the model. Year indicates start year of the model.

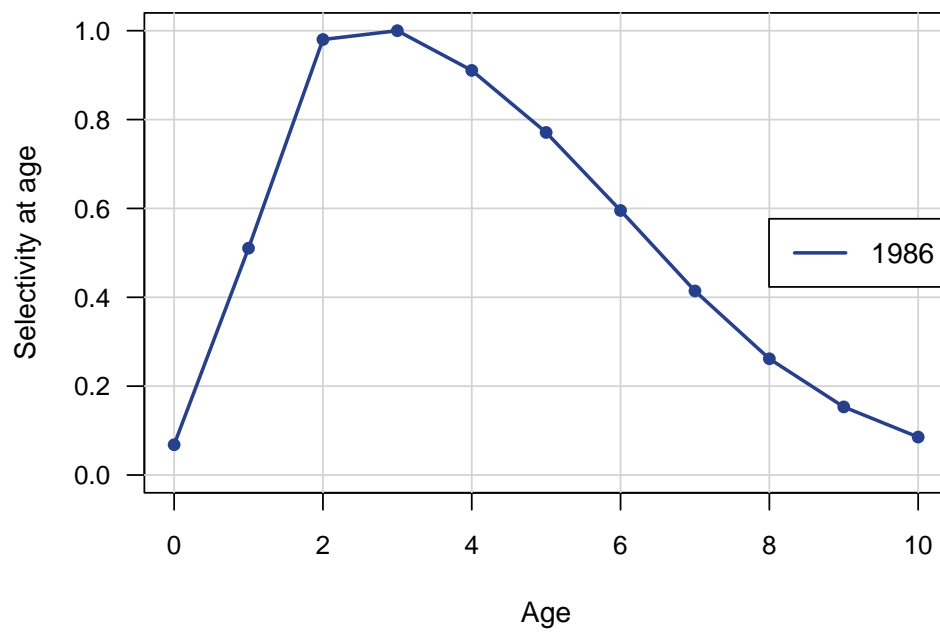


Figure 20. Selectivities of commercial cast net fleet for all years in the model. Year indicates start year of the model.

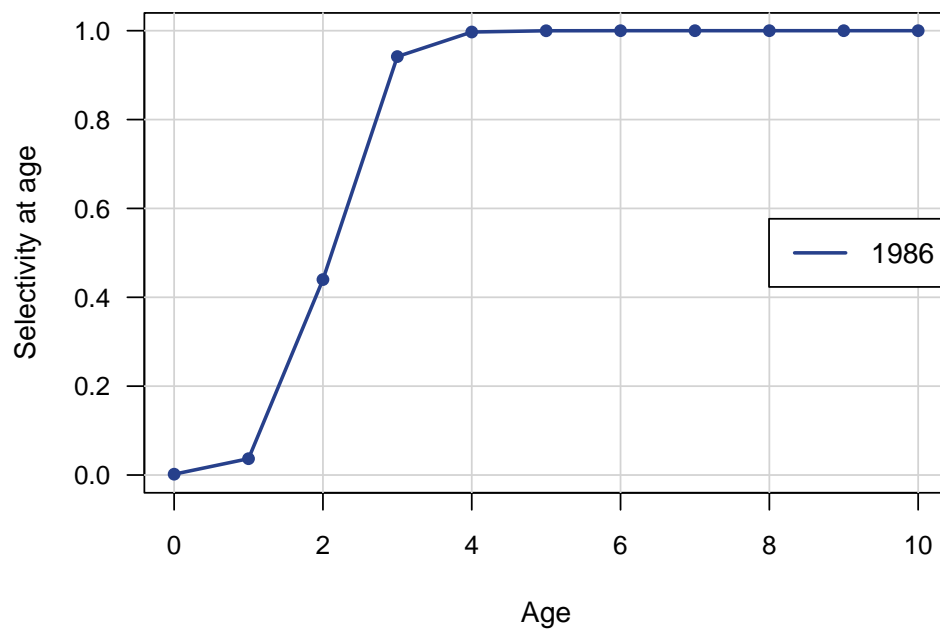


Figure 21. Selectivities of general recreational fishery for all years in the model. Year indicates start year of the model.

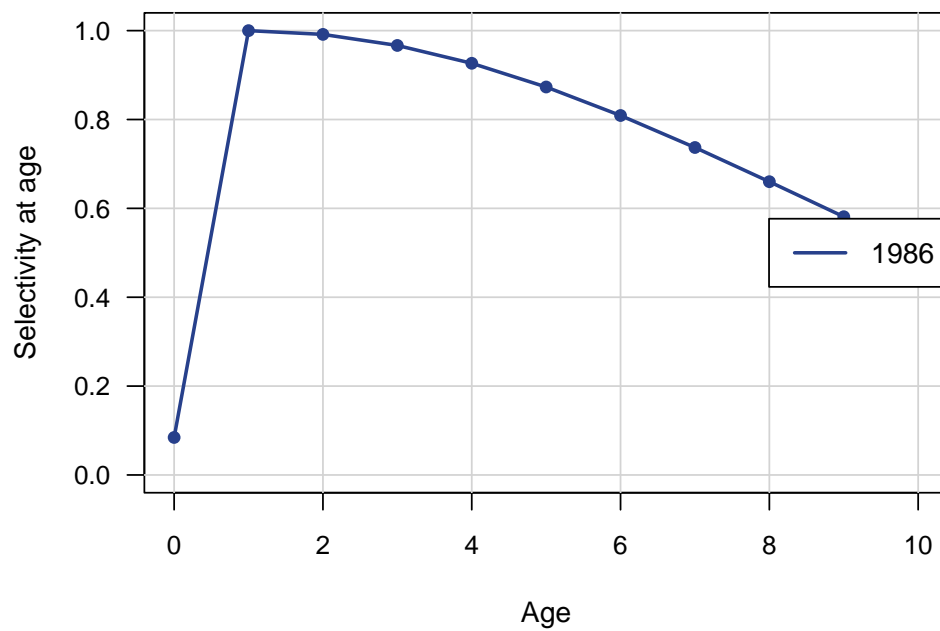


Figure 22. Selectivities of recreational discard for all years in the model. Year indicates start year of the model.

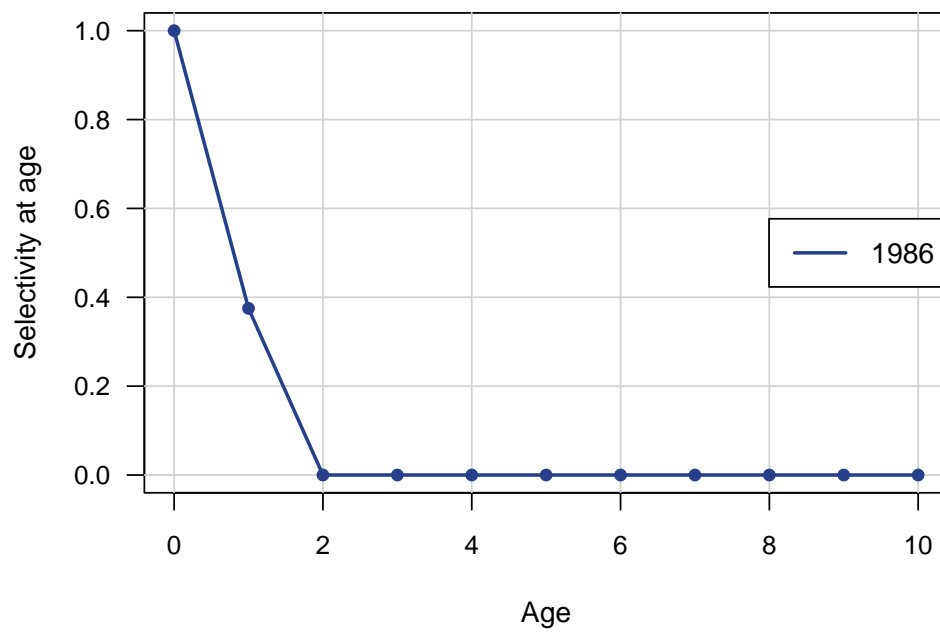


Figure 23. Selectivities of shrimp fishery discard for all years in the model. Year indicates start year of the model.

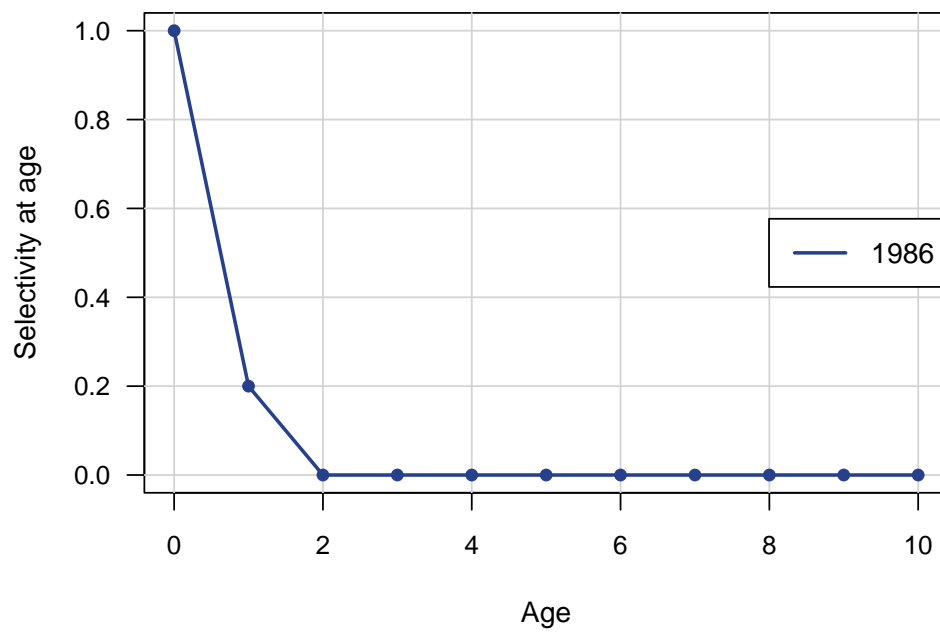


Figure 24. Average selectivity from the terminal assessment year weighted by geometric mean F 's from the last three assessment years for landings (top panel) and discards (bottom panel), and used in computation of benchmarks and central-tendency projections.

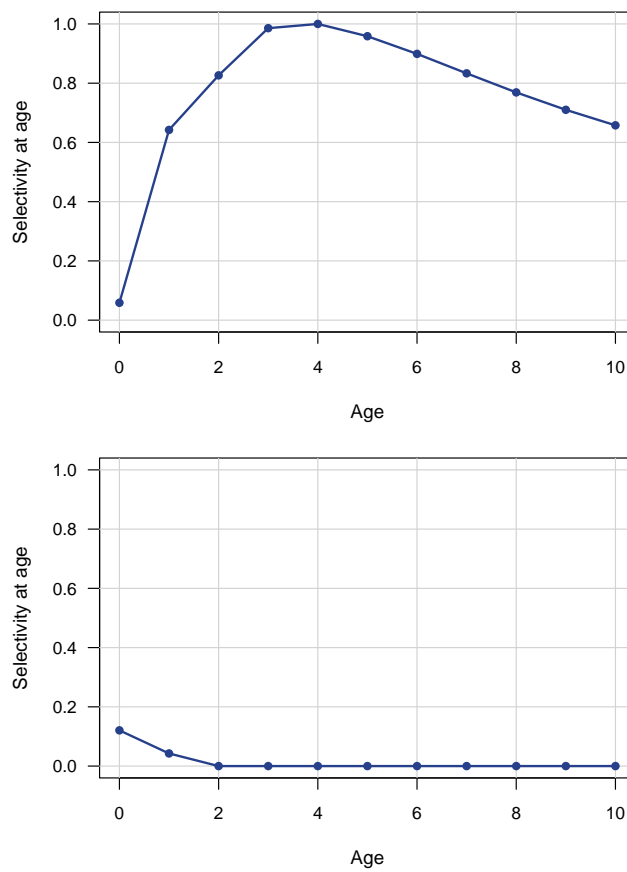


Figure 25. Estimated fully selected fishing mortality rate (per year) by fishery. *cH* refers to commercial handline, *cP* to commercial pound net, *cG* to commercial gill net, *cC* to commercial cast net, *GR* for recreational, *GR.D* for recreational discards, and *SB.D* for shrimp bycatch. Full *F*, the maximum *F* at age summed across fleets, may not equal the sum of fully selected *F*'s because of dome-shaped selectivities.

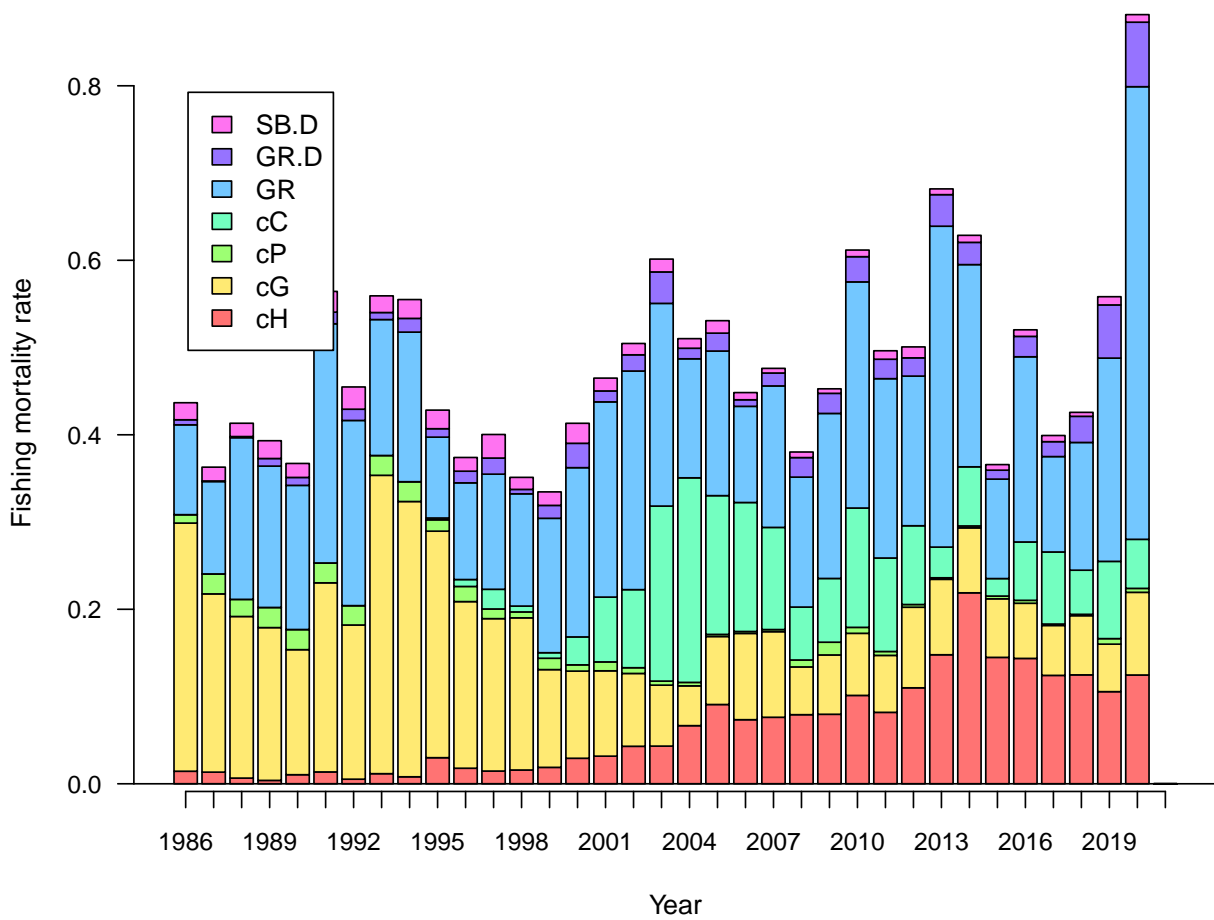


Figure 26. Alternative measures of fishing intensity. Top panel shows equilibrium SPR conditional on annual F , with a reference line at equilibrium MSY. Bottom panel shows exploitation rate (E) computed as number killed divided total abundance (thick black curve), which can be divided into its components of landings (thin green curve) and dead discards (thin blue curve).

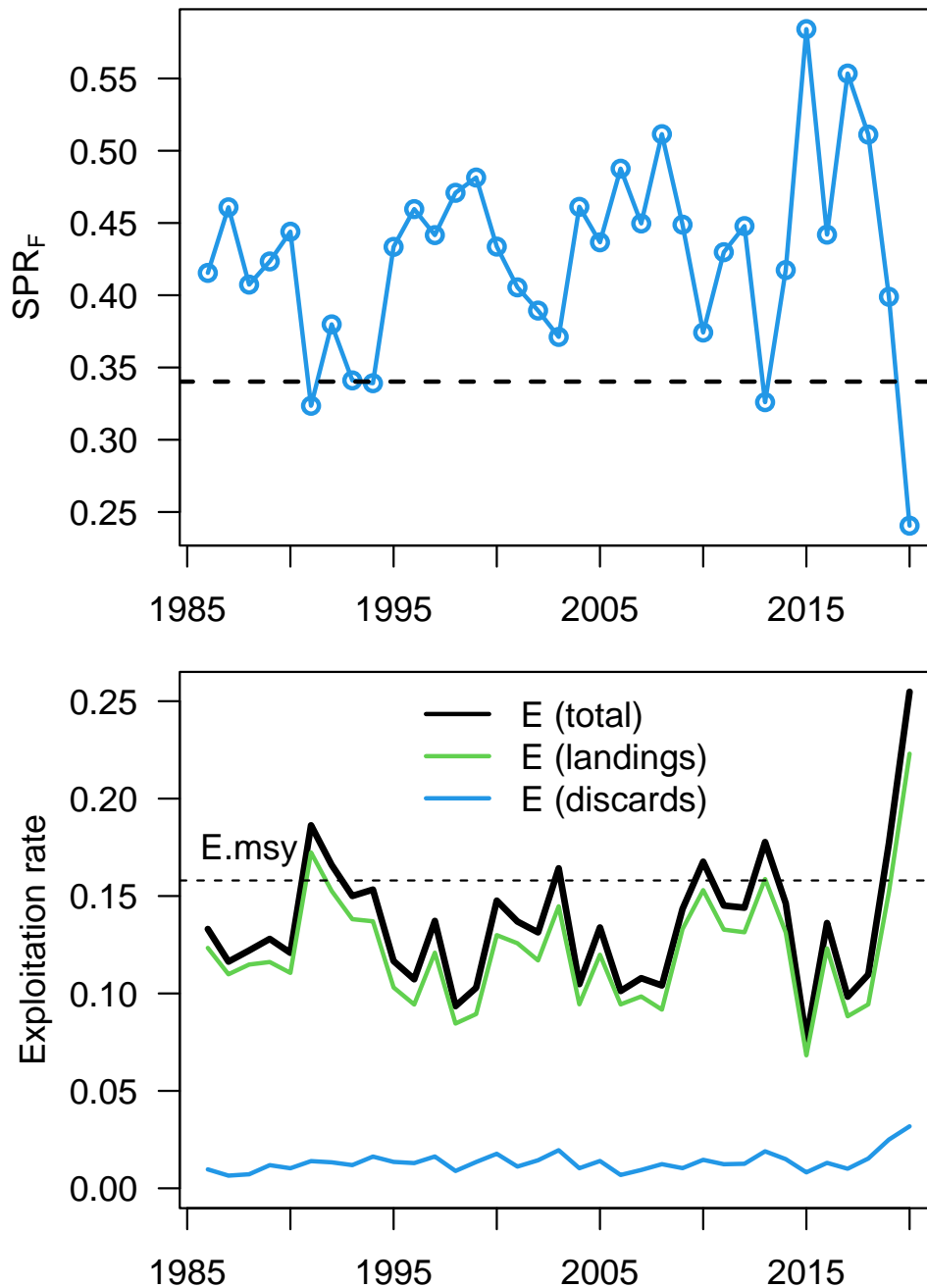


Figure 27. Estimated landings in numbers by fishery from the catch-age model. *cH* refers to commercial handline, *cP* to commercial pound net, *cG* to commercial gill net, *cC* to commercial cast net, and *GR* for recreational.

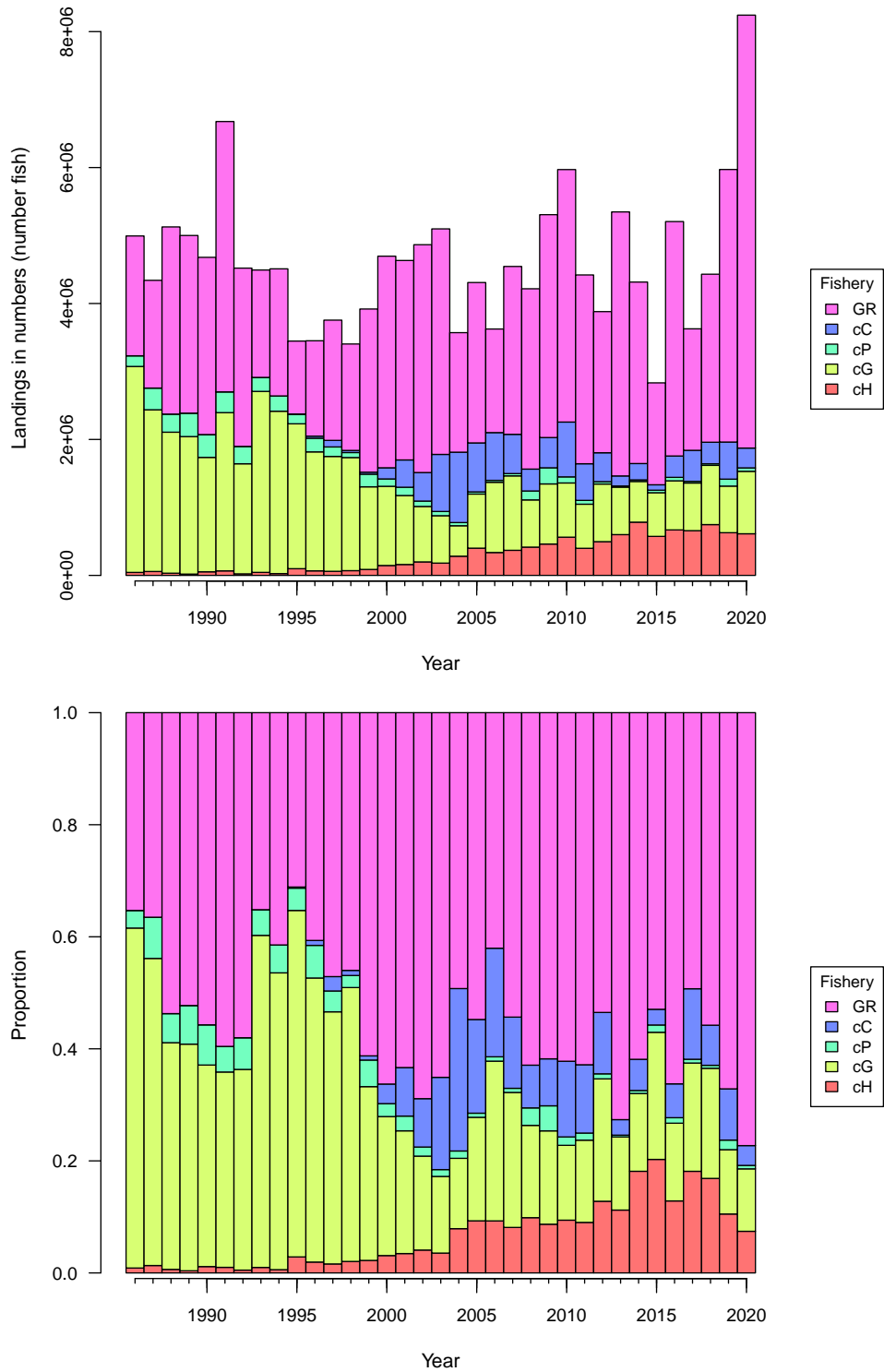


Figure 28. Estimated landings in whole weight by fishery from the catch-age model. *cH* refers to commercial hand-line, *cP* to commercial pound net, *cG* to commercial gill net, *cC* to commercial cast net, and *GR* for recreational. Horizontal dashed line in the top panel corresponds to the point estimate of *MSY*.

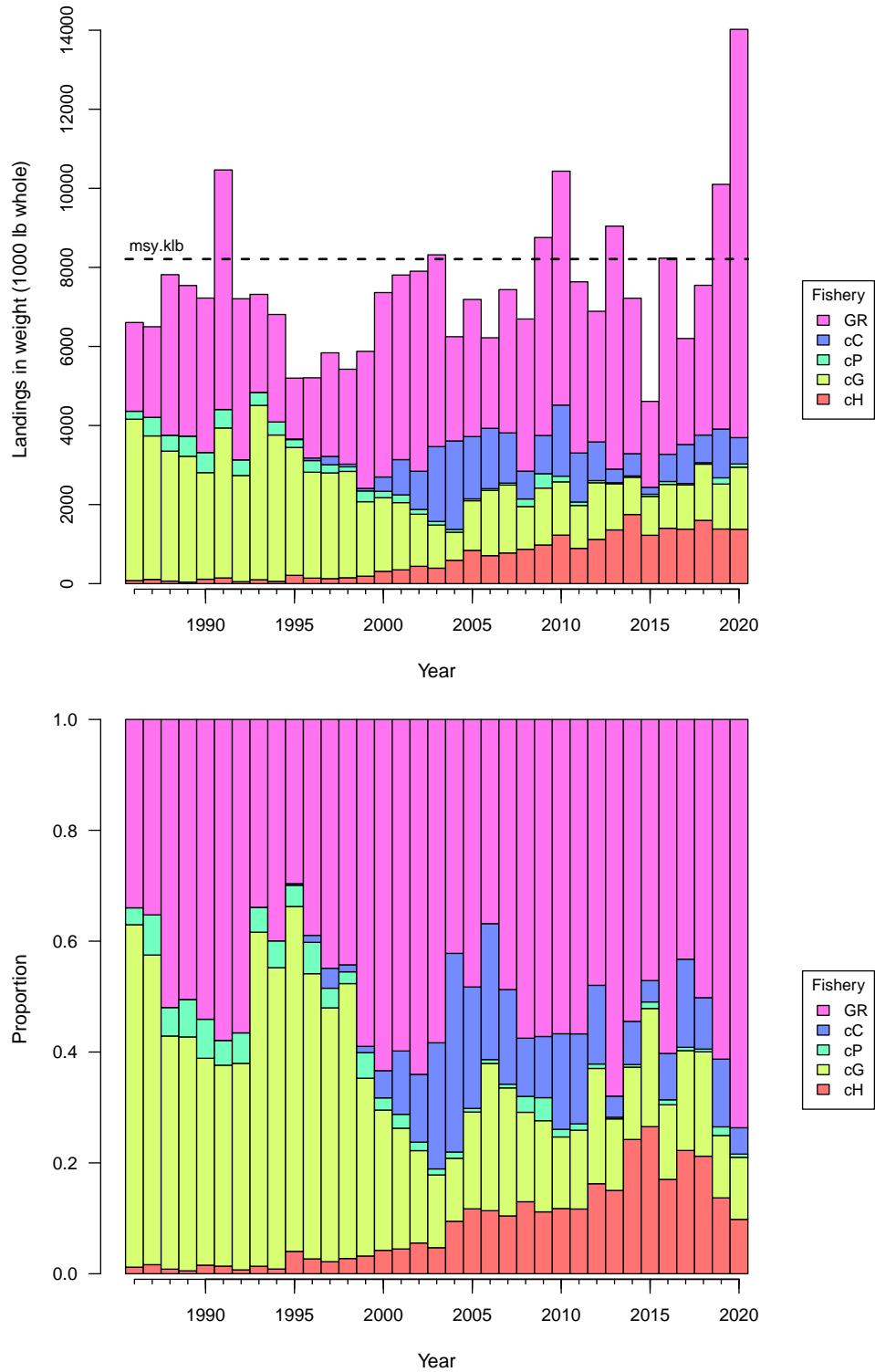


Figure 29. Estimated discards in numbers by fishery from the catch-age model. SB refers to shrimp bycatch, and GR for recreational.

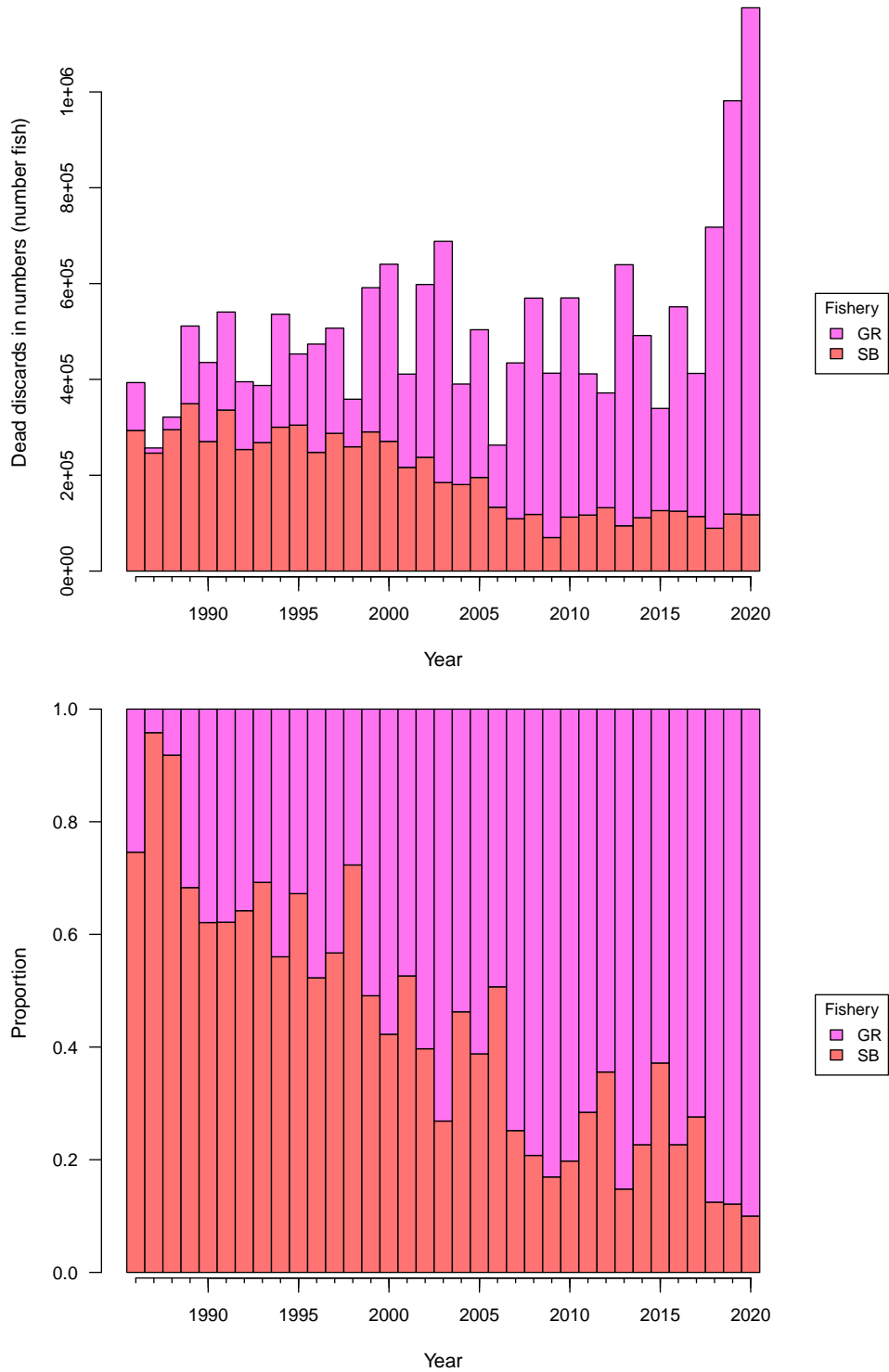


Figure 30. Estimated discards in whole weight by fishery from the catch-age model. SB refers to shrimp bycatch, and GR for recreational.

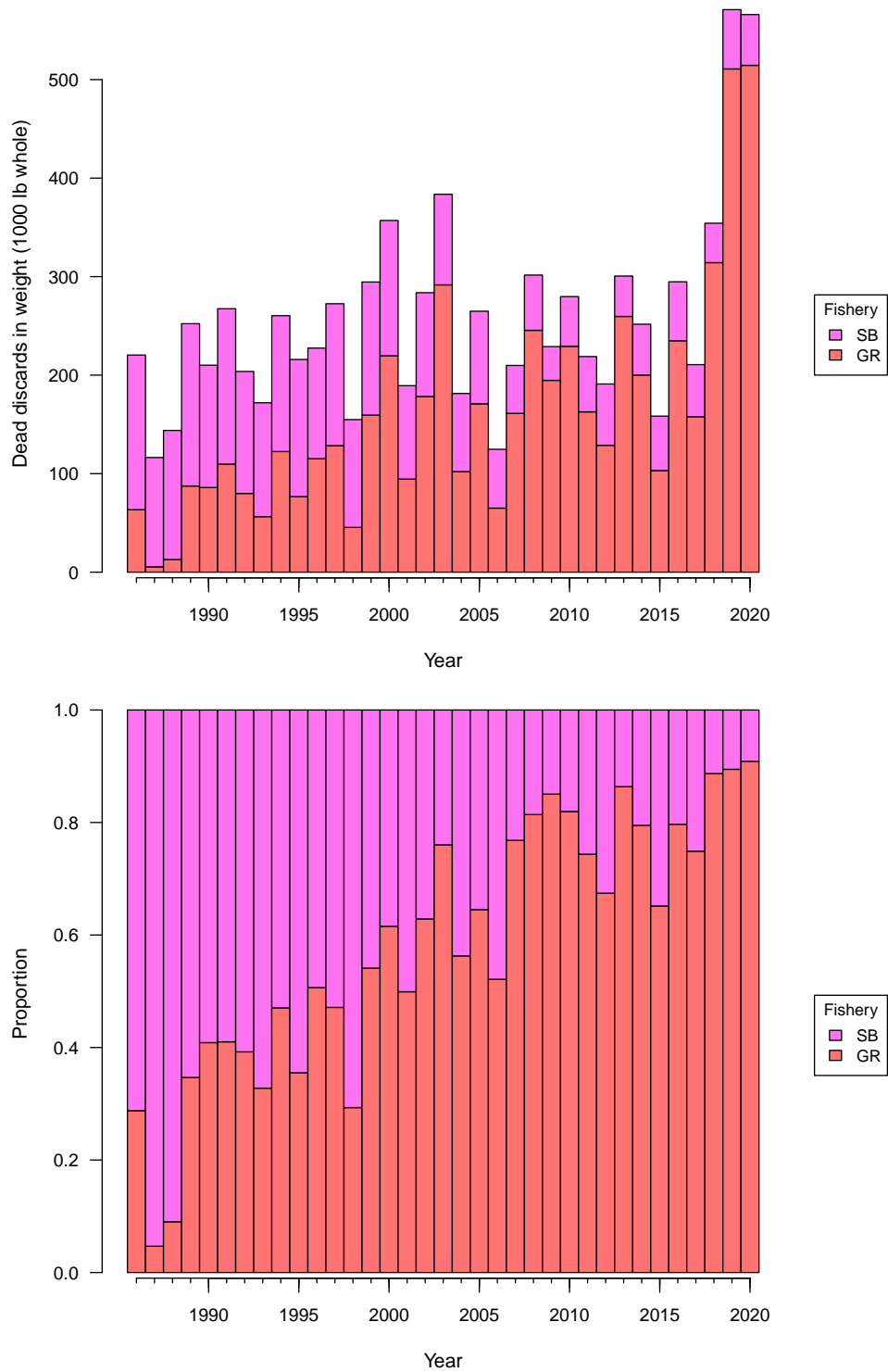


Figure 31. Top panel: Beverton–Holt spawner-recruit curves, with and without lognormal bias correction. The expected (upper) curve was used for computing management benchmarks. Years within panel indicate year of recruitment generated from spawning biomass one year prior. Bottom panel: log of recruits (number age-0 fish) per spawner (mature female gonad weight) as a function of spawners.

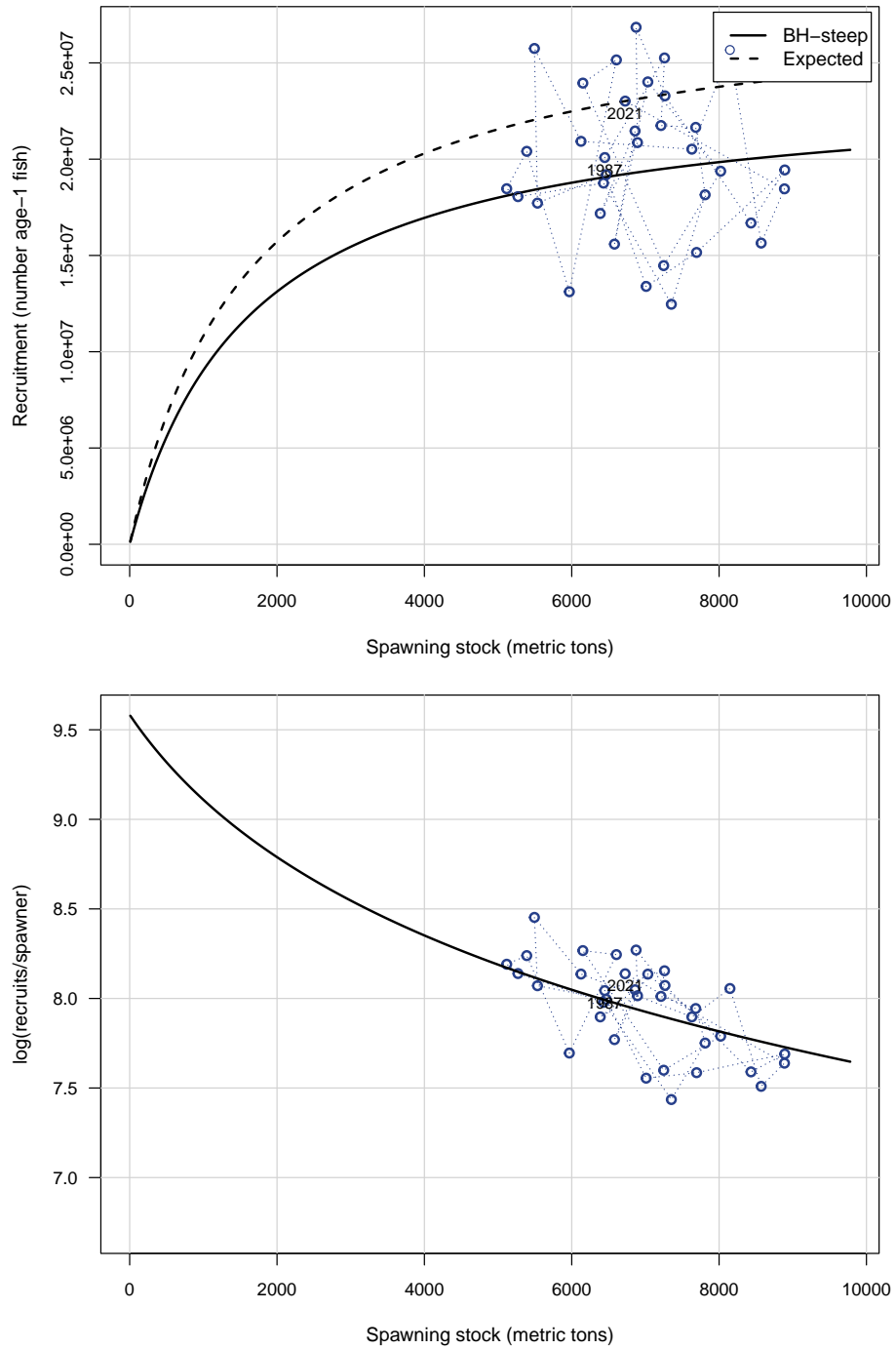


Figure 32. Probability densities of spawner-recruit quantities: Mean recruits (R_0 , age-0 fish), median recruits, and unfished spawners per recruit. Solid vertical lines represent point estimates or values from the base run of the Beaufort Assessment Model; dashed vertical lines represent medians from the MCBE runs.

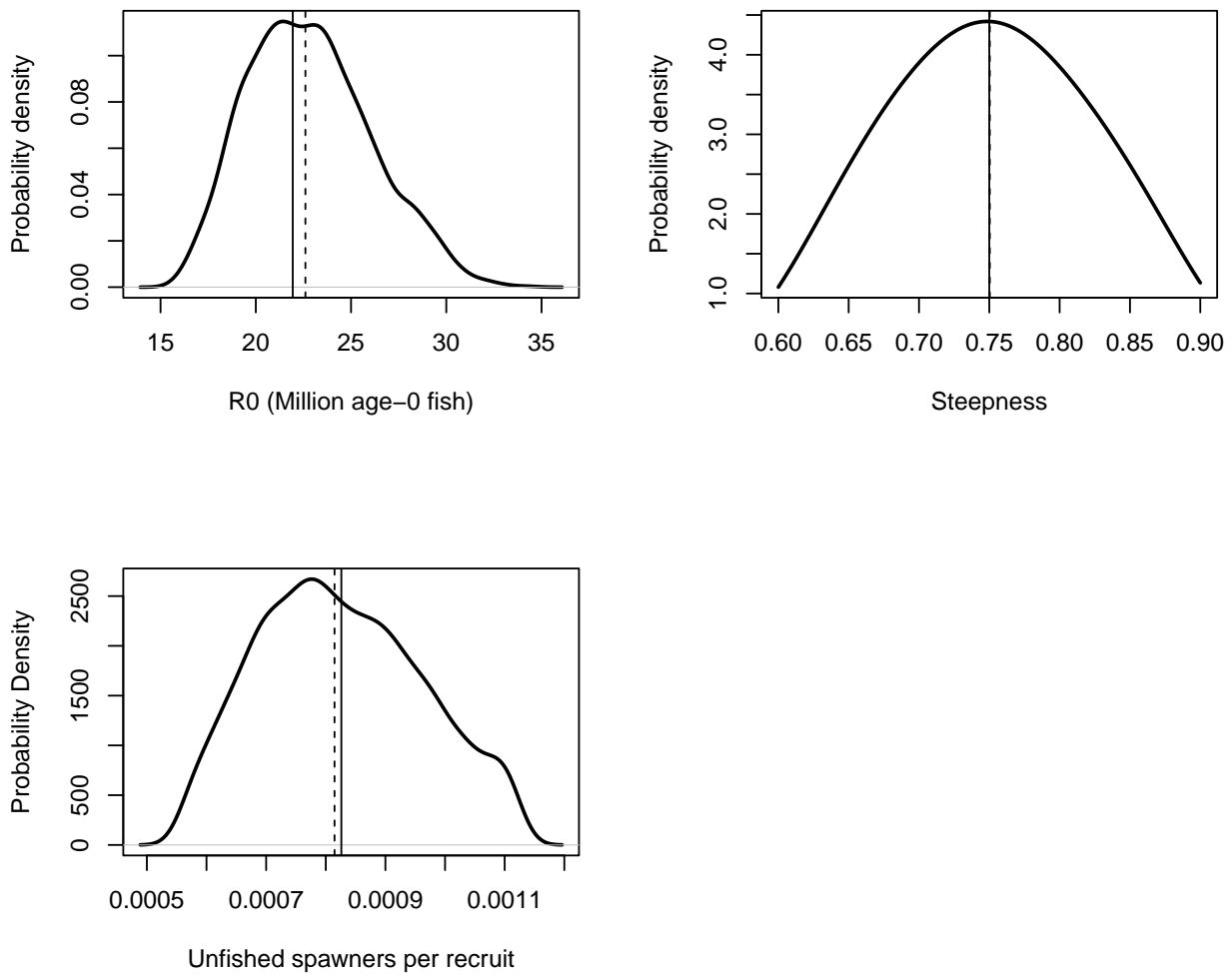


Figure 33. Top panel: yield per recruit. Bottom panel: spawning potential ratio (spawning biomass per recruit relative to that at the unfished level), from which the $y\%$ levels provide $F_{y\%}$. Current F (F_{cur}) is the geometric mean full F from the last 3 years of the assessment. Both curves are based on average selectivity from the end of the assessment period.

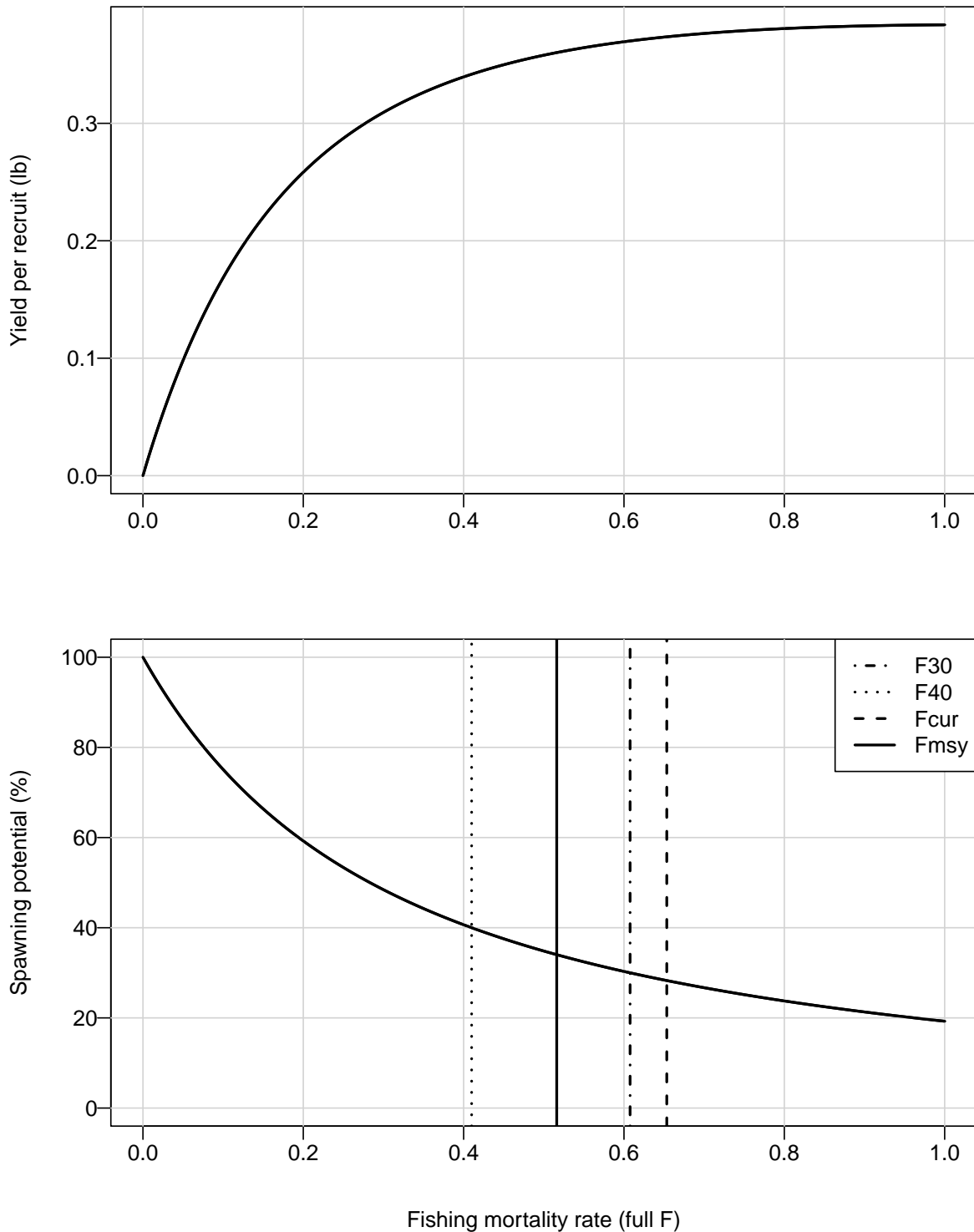


Figure 34. Top panel: equilibrium landings. The peak occurs where fishing rate is $F_{MSY} = 0.52$ and equilibrium landings are $MSY = 8210.19$ (1000 lb). Bottom panel: equilibrium spawning biomass. Both curves are based on average selectivity from the end of the assessment period.

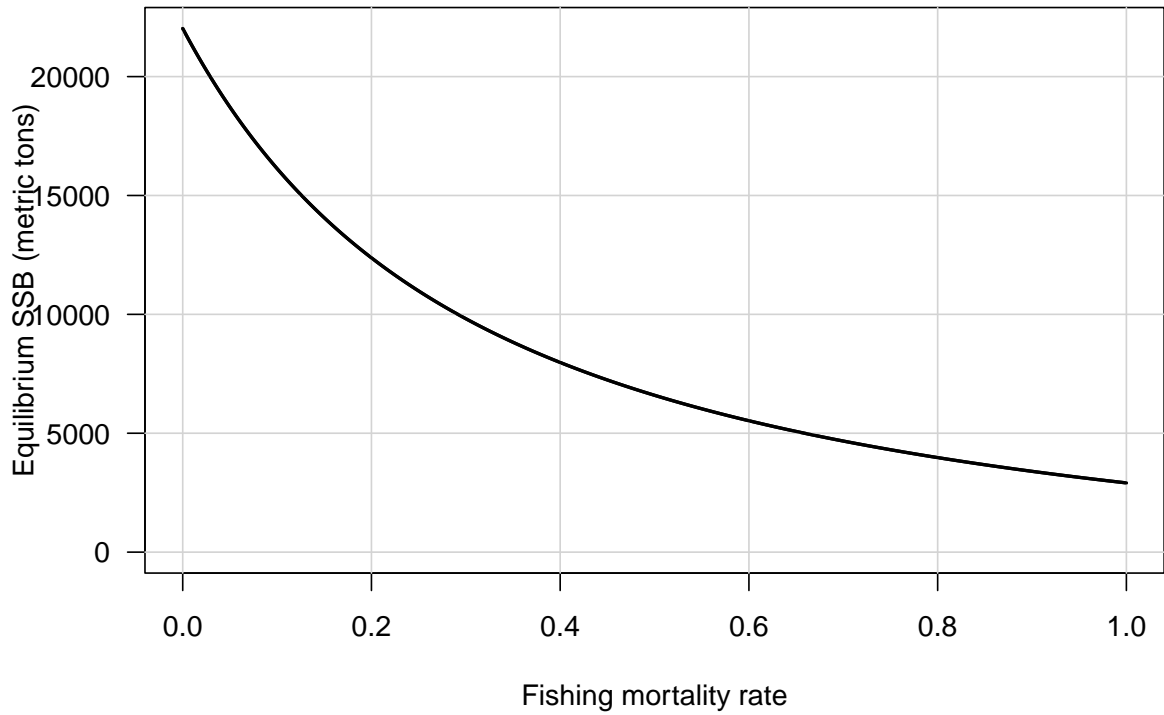
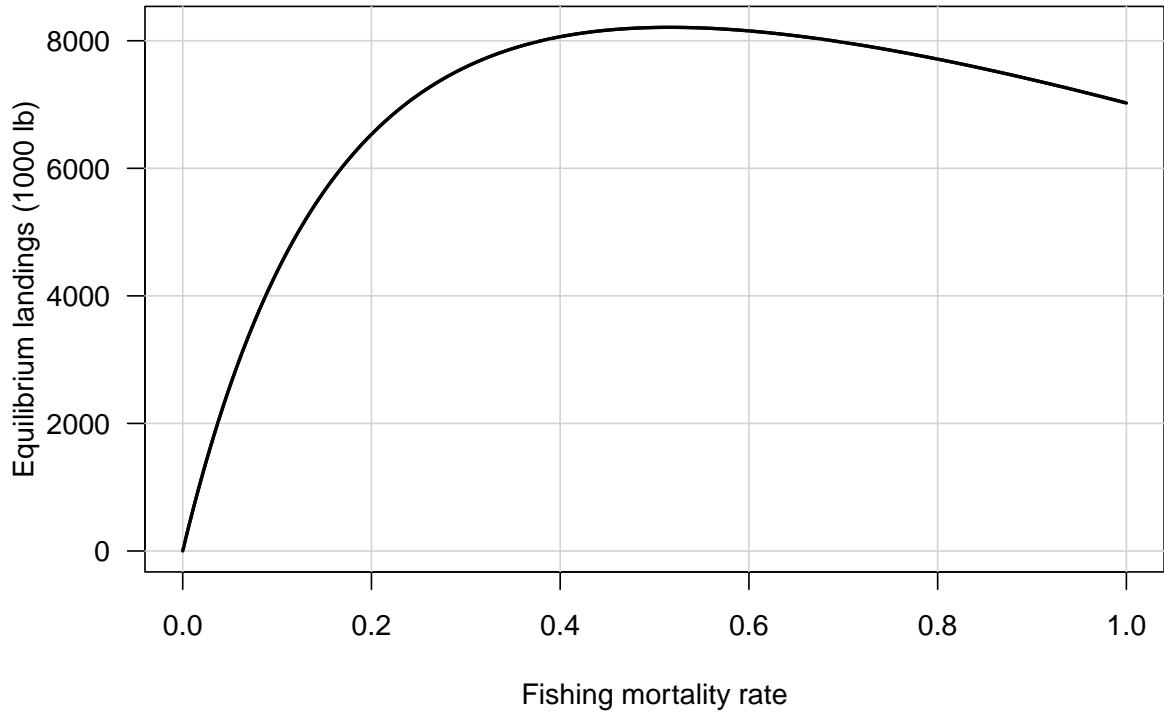


Figure 35. Equilibrium landings as a function of equilibrium biomass, which itself is a function of fishing mortality rate. The peak occurs where equilibrium biomass is $B_{MSY} = 19588.3$ mt and equilibrium landings are $MSY = 8210.19$ (1000 lb).

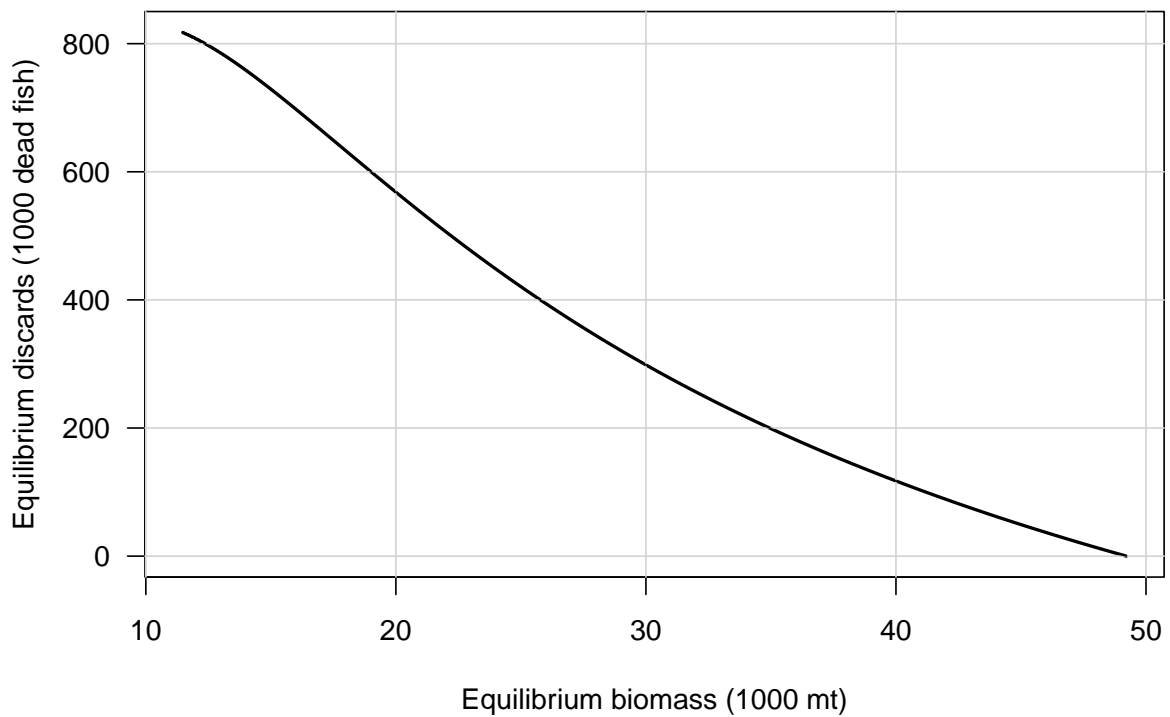
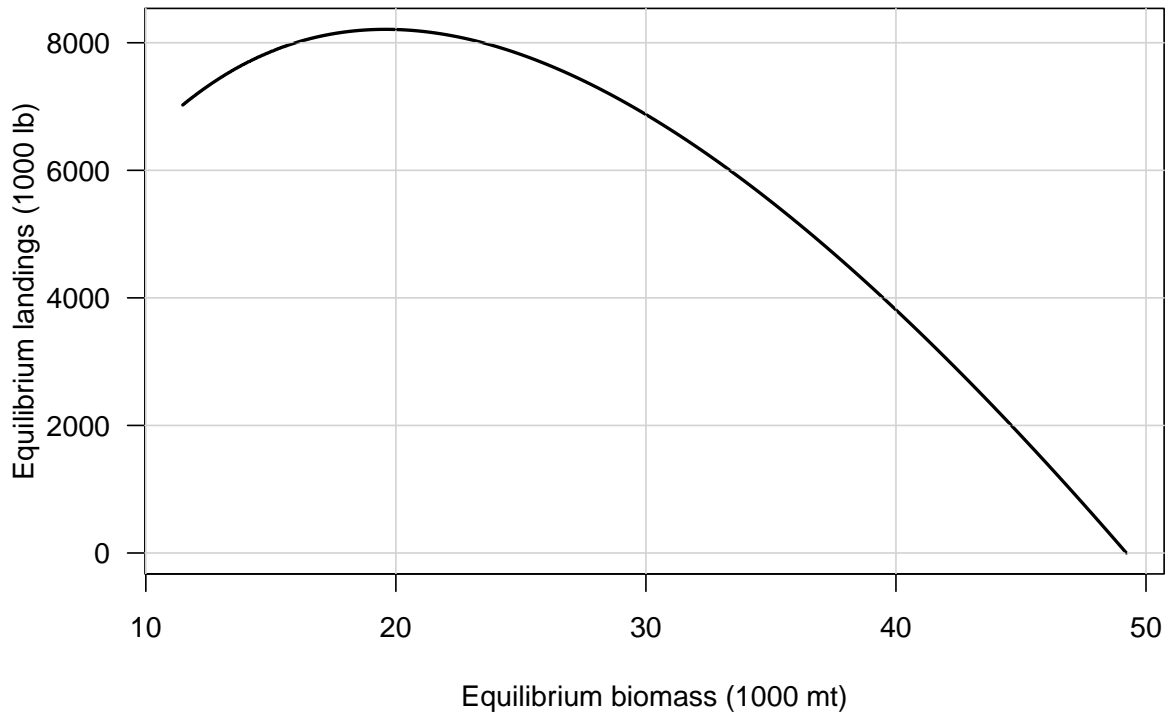


Figure 36. Probability densities of F_{MSY} -related benchmarks from MCB analysis of the Beaufort Assessment Model. Solid vertical line represent point estimates from the base run and the dashed vertical line represent the median of the MCB distribution.

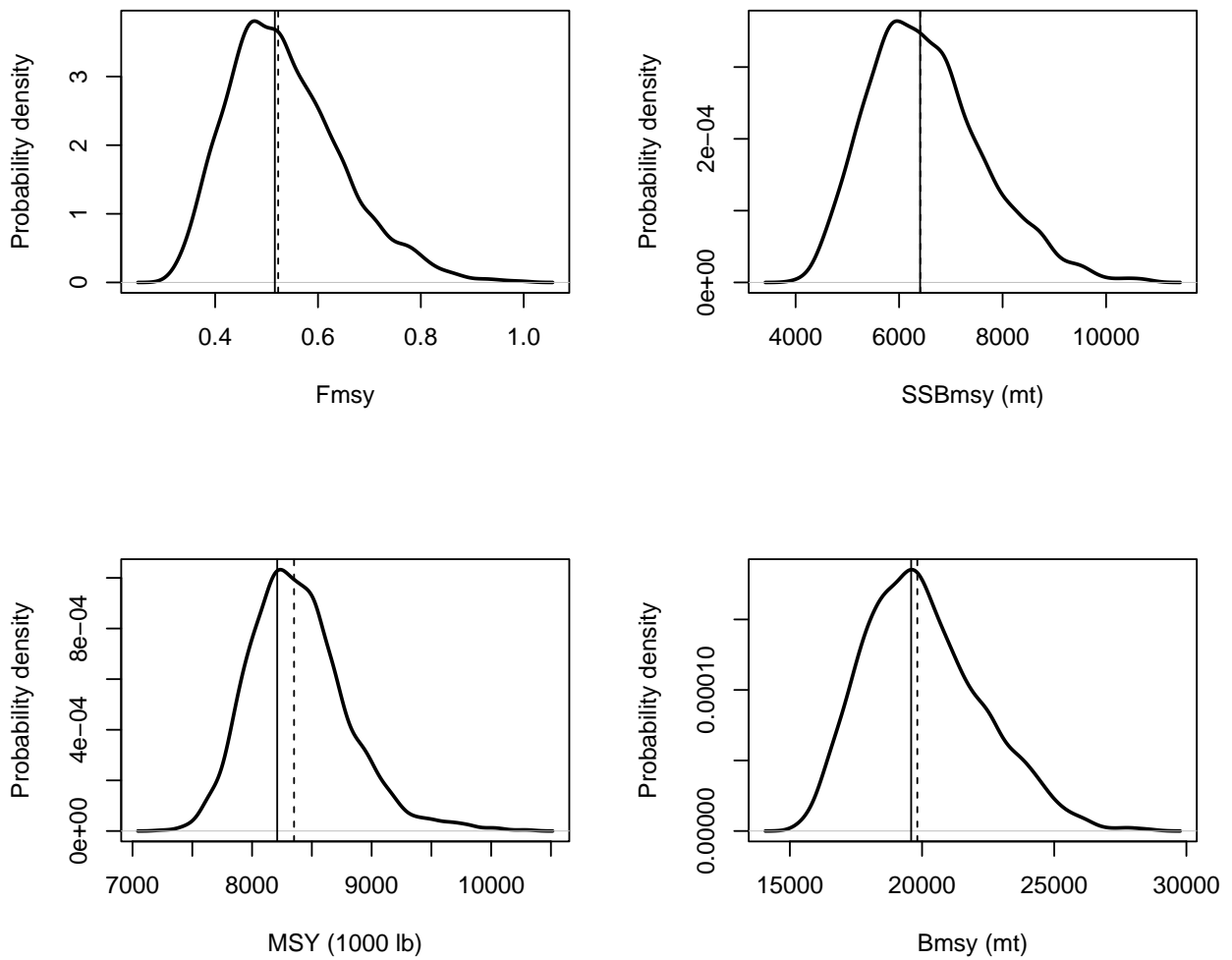


Figure 37. Estimated time series relative to benchmarks. Solid line indicates estimates from base run of the Beaufort Assessment Model; dashed lines indicate the median of the MCB trials; gray error bands indicate 5th and 95th percentiles of the MCB trials. Top panel: spawning biomass relative to the spawning stock biomass at MSY. Bottom panel: F relative to F_{MSY} .

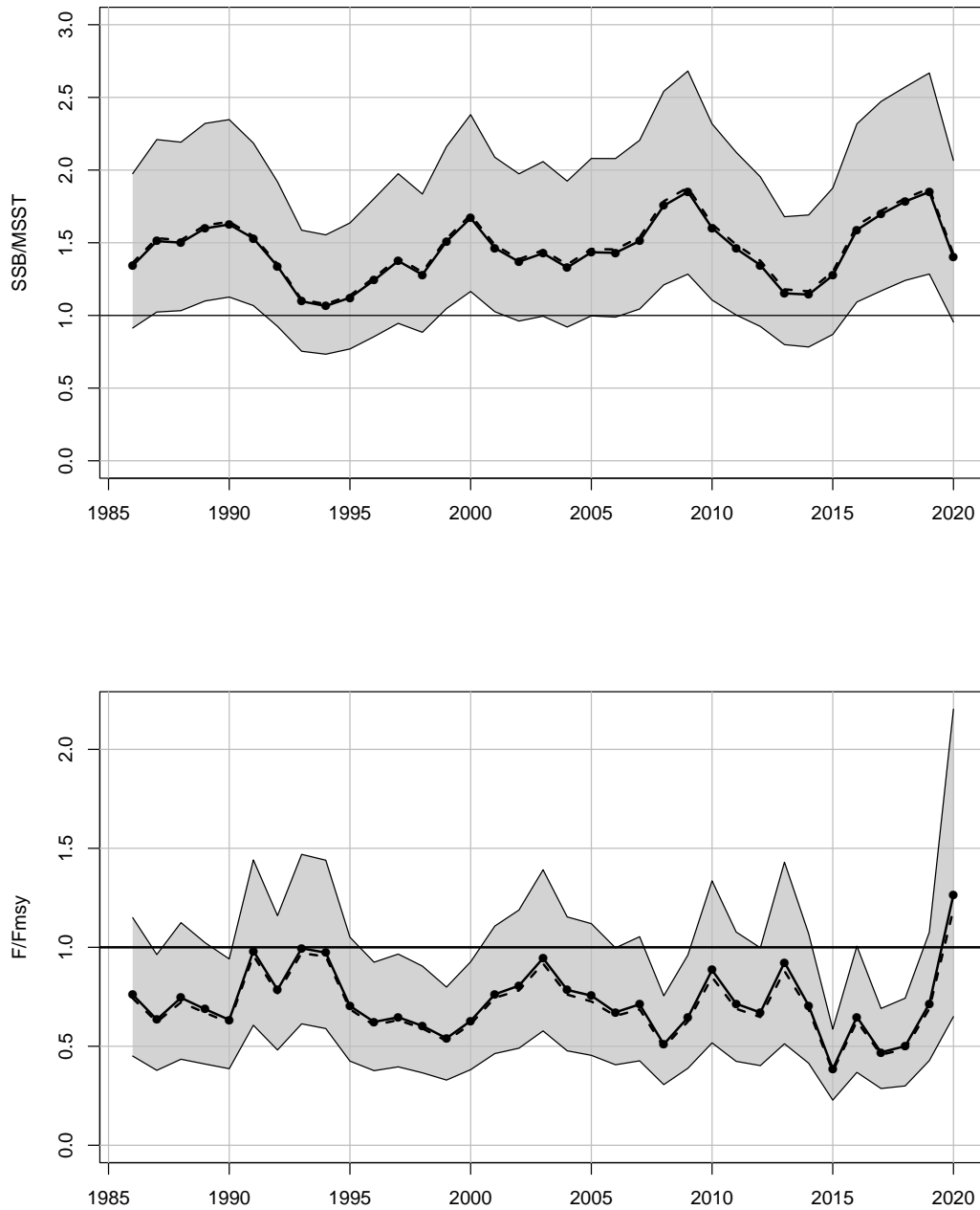


Figure 38. Phase plot of terminal status estimates from MCB analysis of the Beaufort Assessment Model. The intersection of crosshairs indicates estimates from the base run; lengths of crosshairs defined by 5th and 95th percentiles.

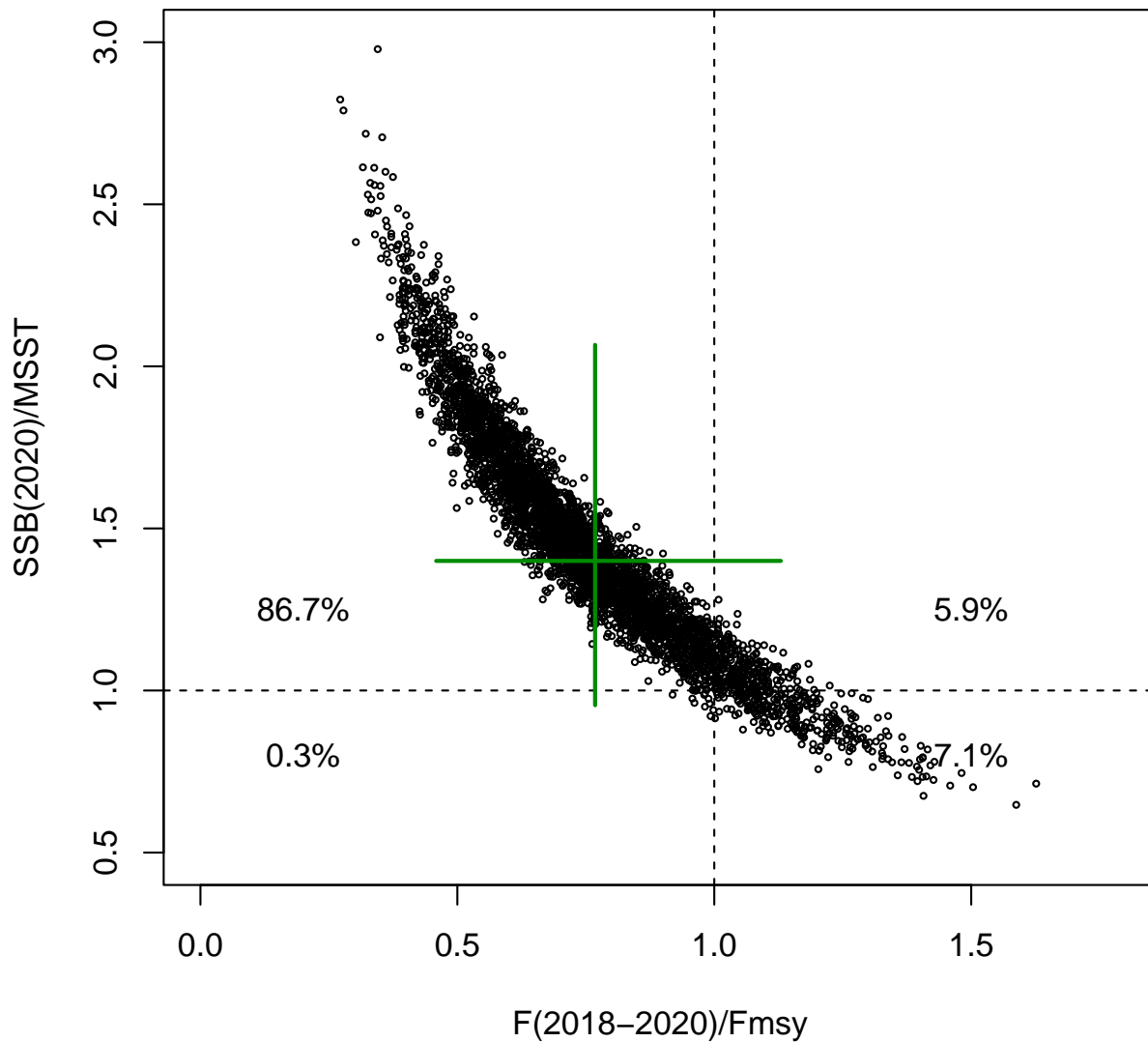


Figure 39. Phase plot of terminal status estimates from MCB analysis of the Beaufort Assessment Model. The intersection of crosshairs indicates estimates from the base run; lengths of crosshairs defined by 5th and 95th percentiles.

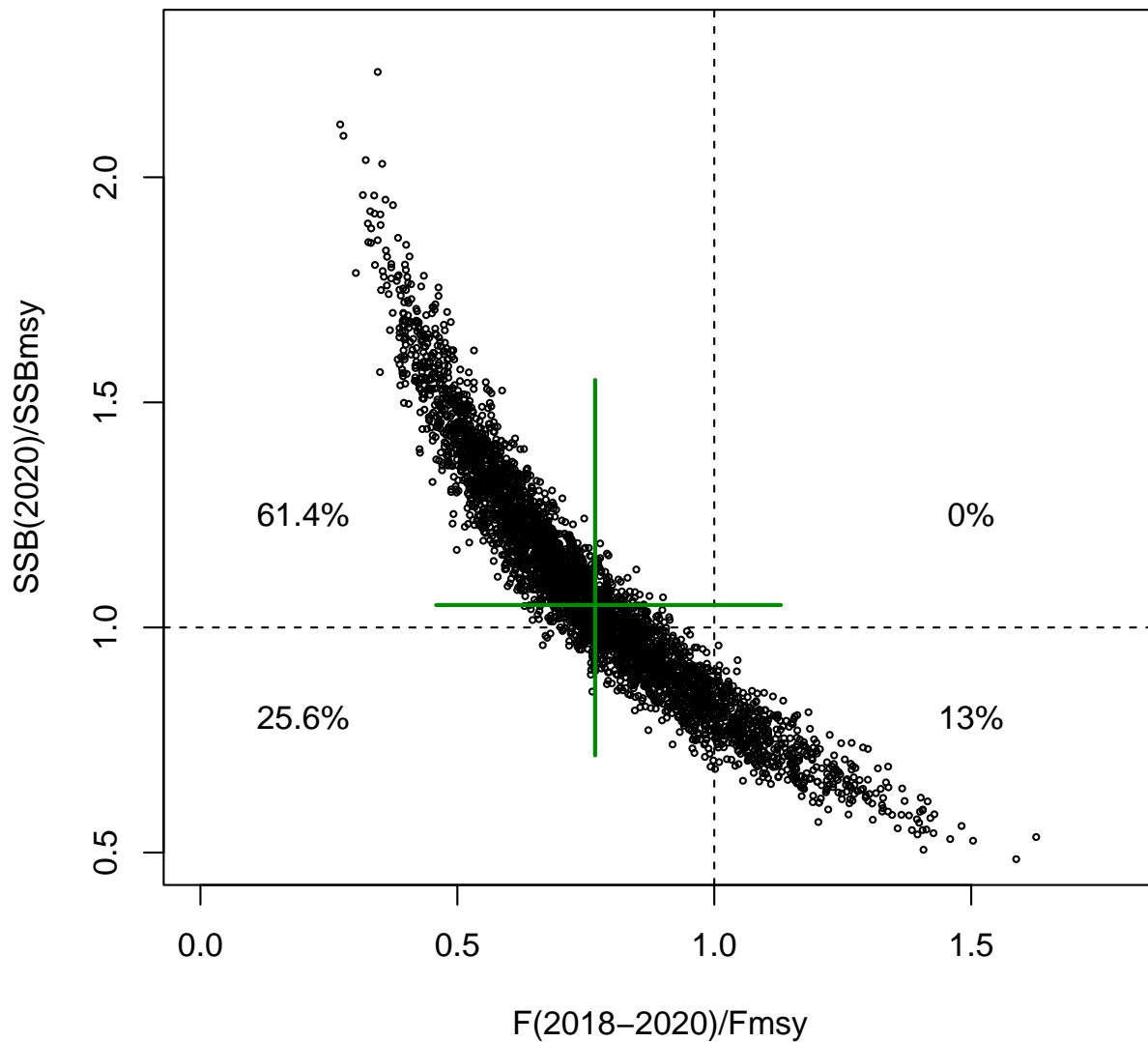


Figure 40. Probability densities of terminal status estimates from MCB analysis of the Beaufort Assessment Model. Solid vertical lines represent point estimates from the base run and dashed vertical lines indicated the median of MCB trials.

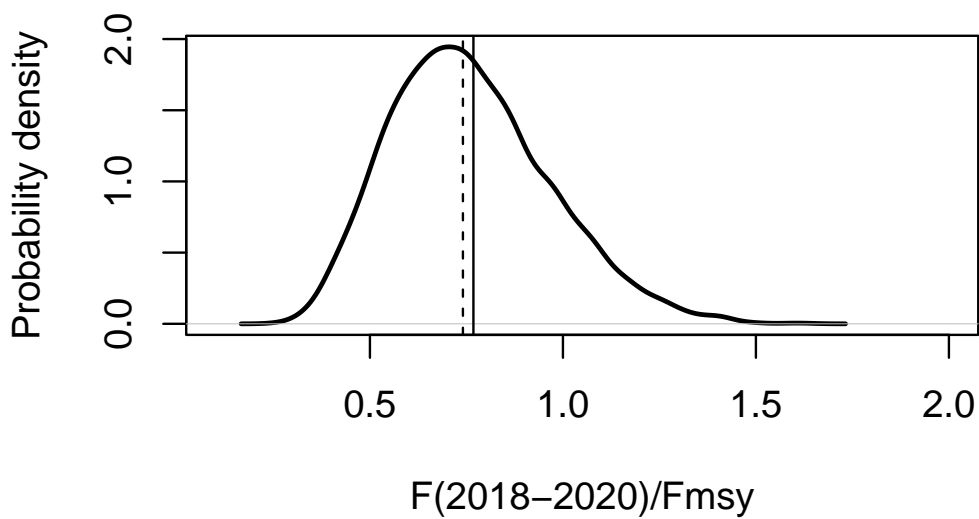
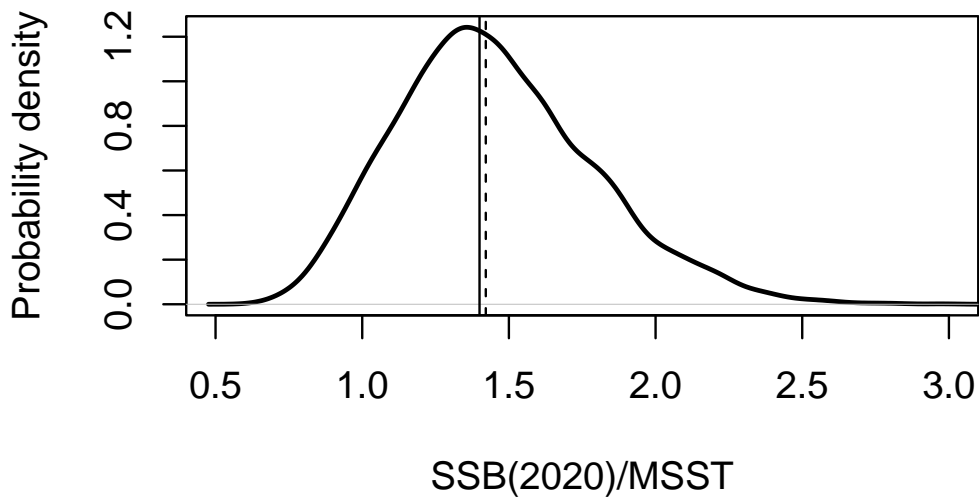


Figure 41. Comparison between SEDAR-28 and SEDAR-78 status indicators. Top panel: Apical F relative to F_{MSY} . Bottom panel: spawning biomass relative to MSST.

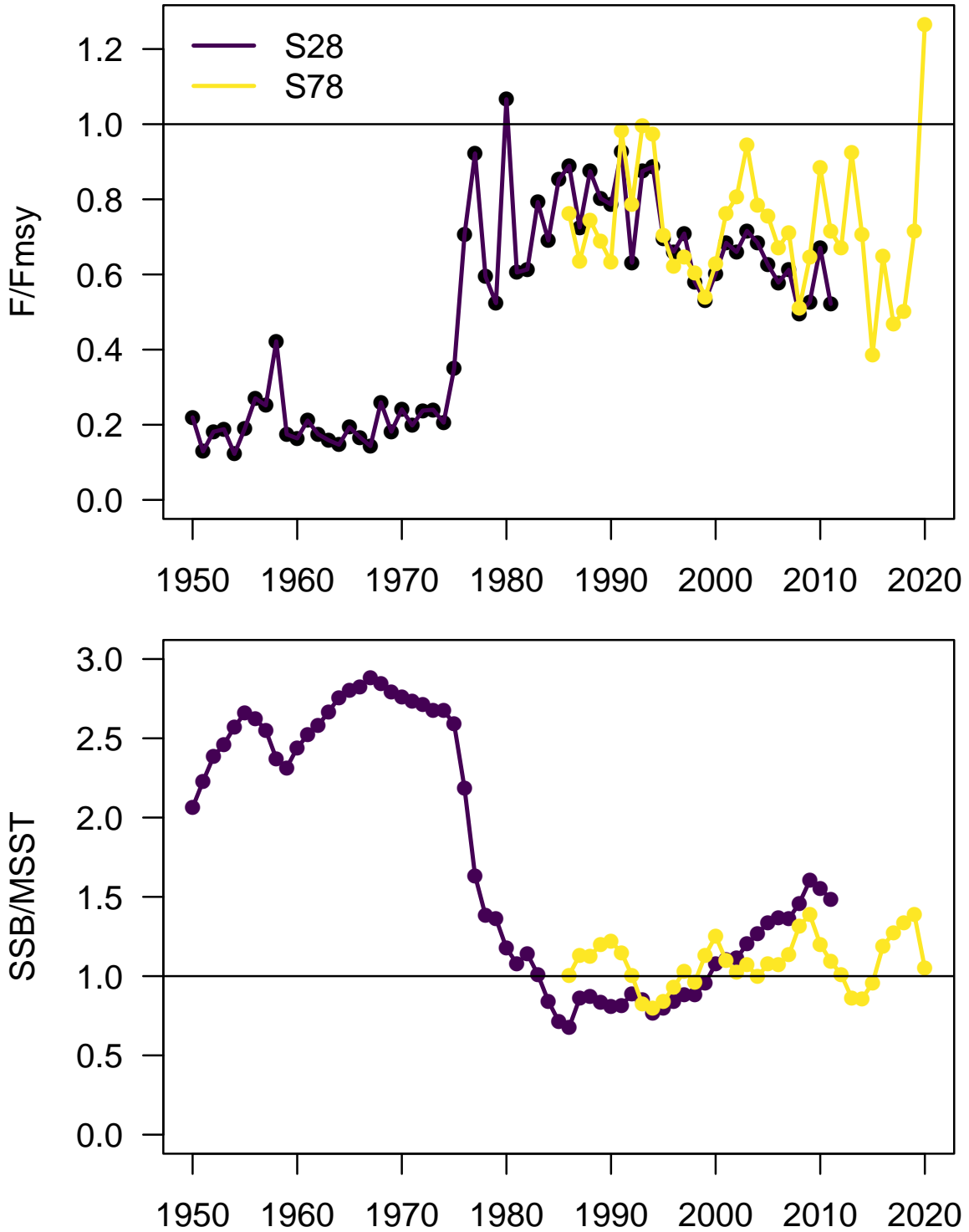


Figure 42. Spanish mackerel: Sensitivity of results to dropping the commercial handline (cH) index. (sensitivity run S1). Top panel – Ratio of F to F_{MSY} . Bottom panel – Ratio of SSB to SSB_{MSY} .

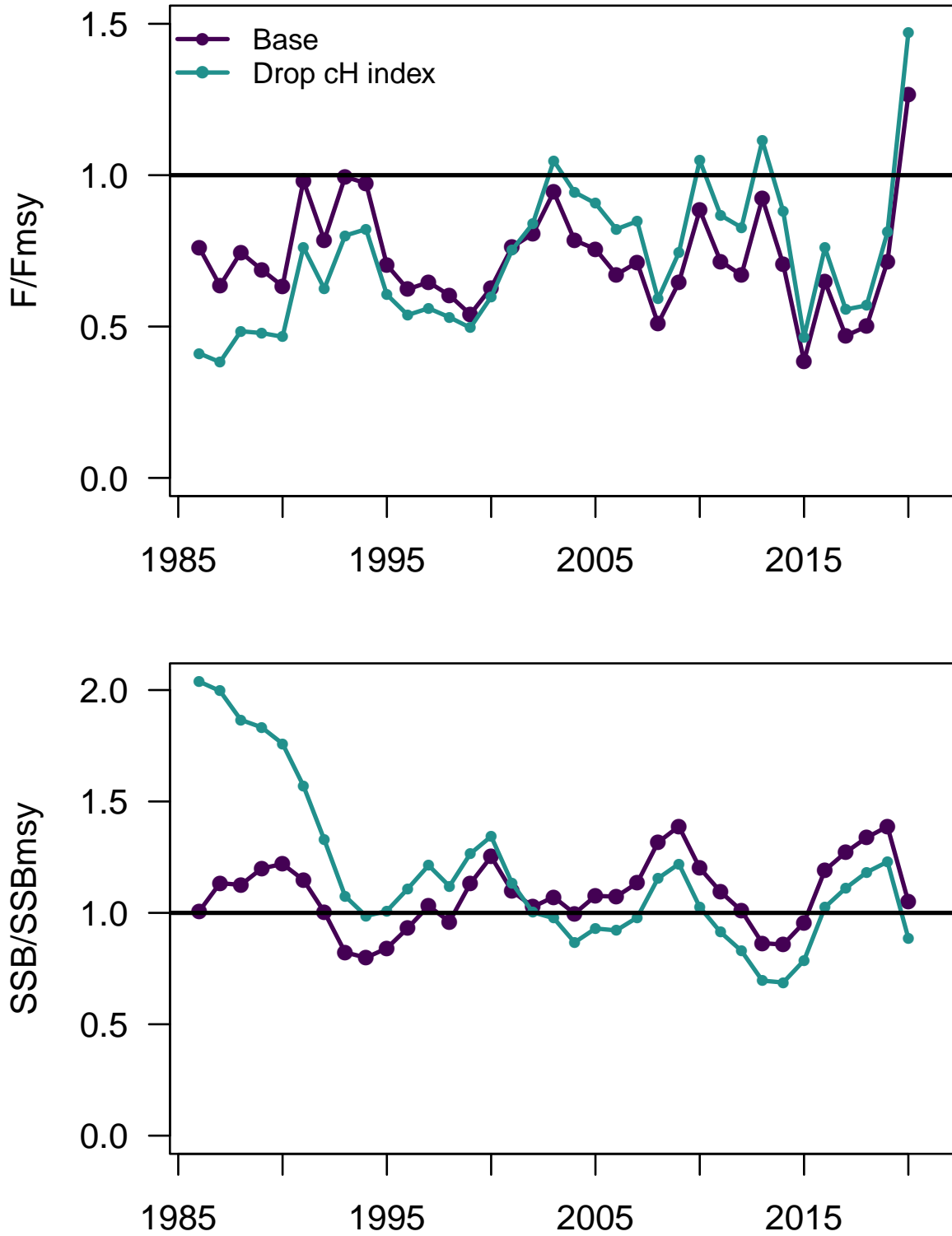


Figure 43. Spanish mackerel: Sensitivity of results to estimates of natural mortality M . (sensitivity runs S2 and S3). Top panel – Ratio of F to F_{MSY} . Bottom panel – Ratio of SSB to SSB_{MSY} .

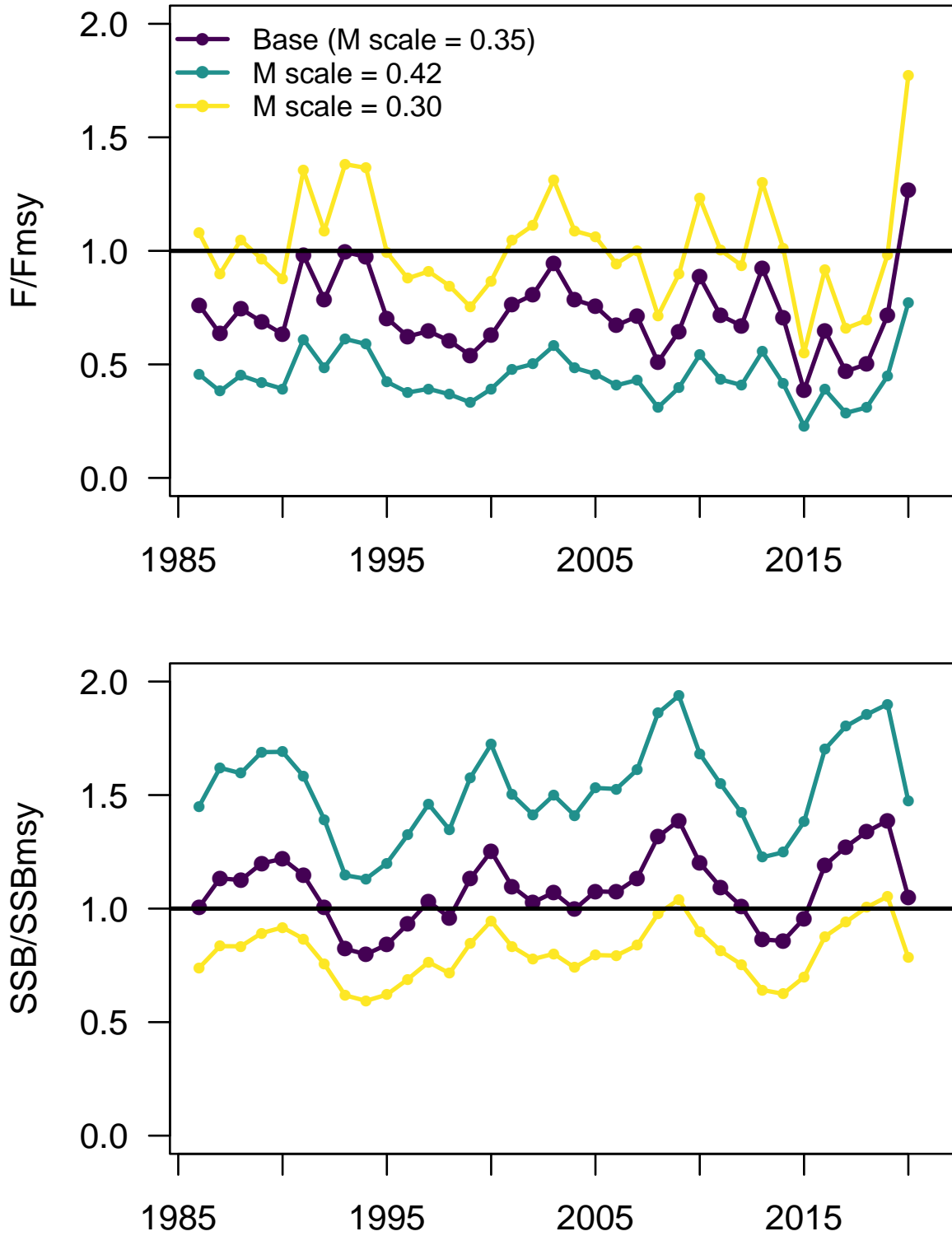


Figure 44. Spanish mackerel: Sensitivity of results to fixed values of steepness (sensitivity runs S4 and S5). Top panel - Ratio of F to F_{MSY} . Bottom panel - Ratio of SSB to SSB_{MSY} .

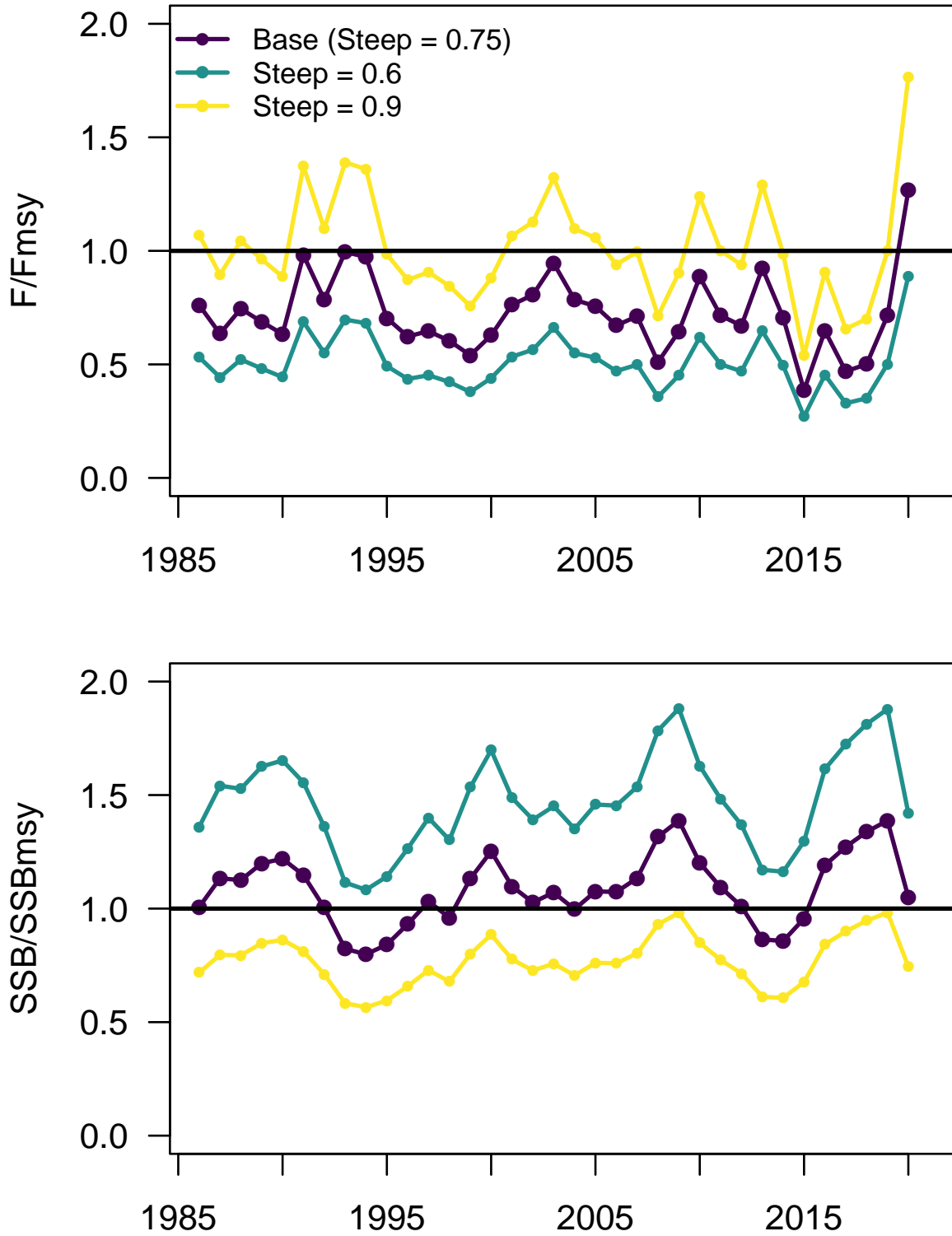


Figure 45. Spanish mackerel: Sensitivity of results to fixed values of general recreational (GR) discard mortality rate. (sensitivity runs S6 and S7). Top panel – Ratio of F to F_{MSY} . Bottom panel – Ratio of SSB to SSB_{MSY} .

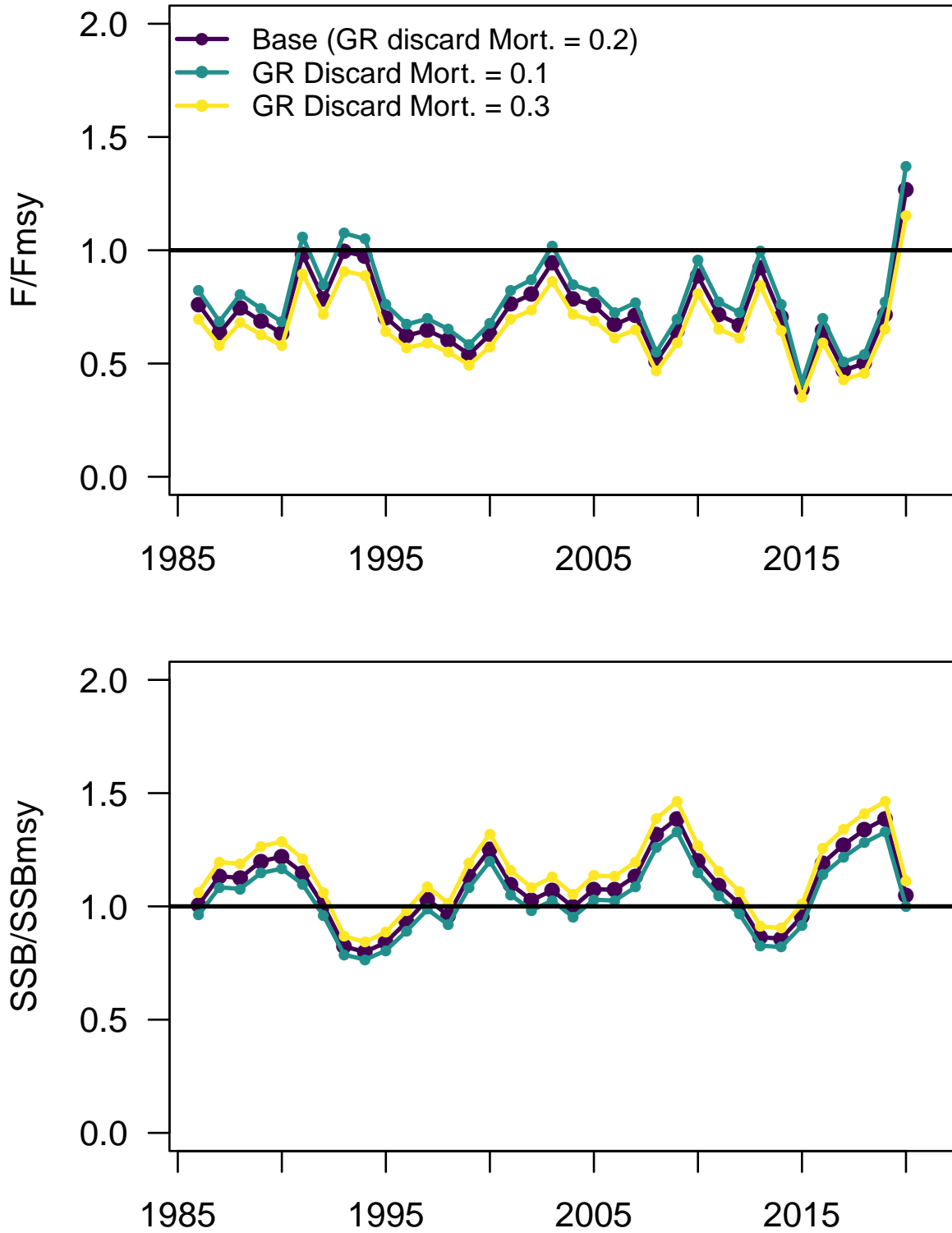


Figure 46. Retrospective analyses. Sensitivity to terminal year of data (sensitivity runs Retro 1–5). Top Panel: Fishing mortality rate, where solid circles show geometric mean of terminal three years, as used to compute fishing status. Middle Panel: Recruitment time series. Bottom Panel: Spawning stock biomass time series.

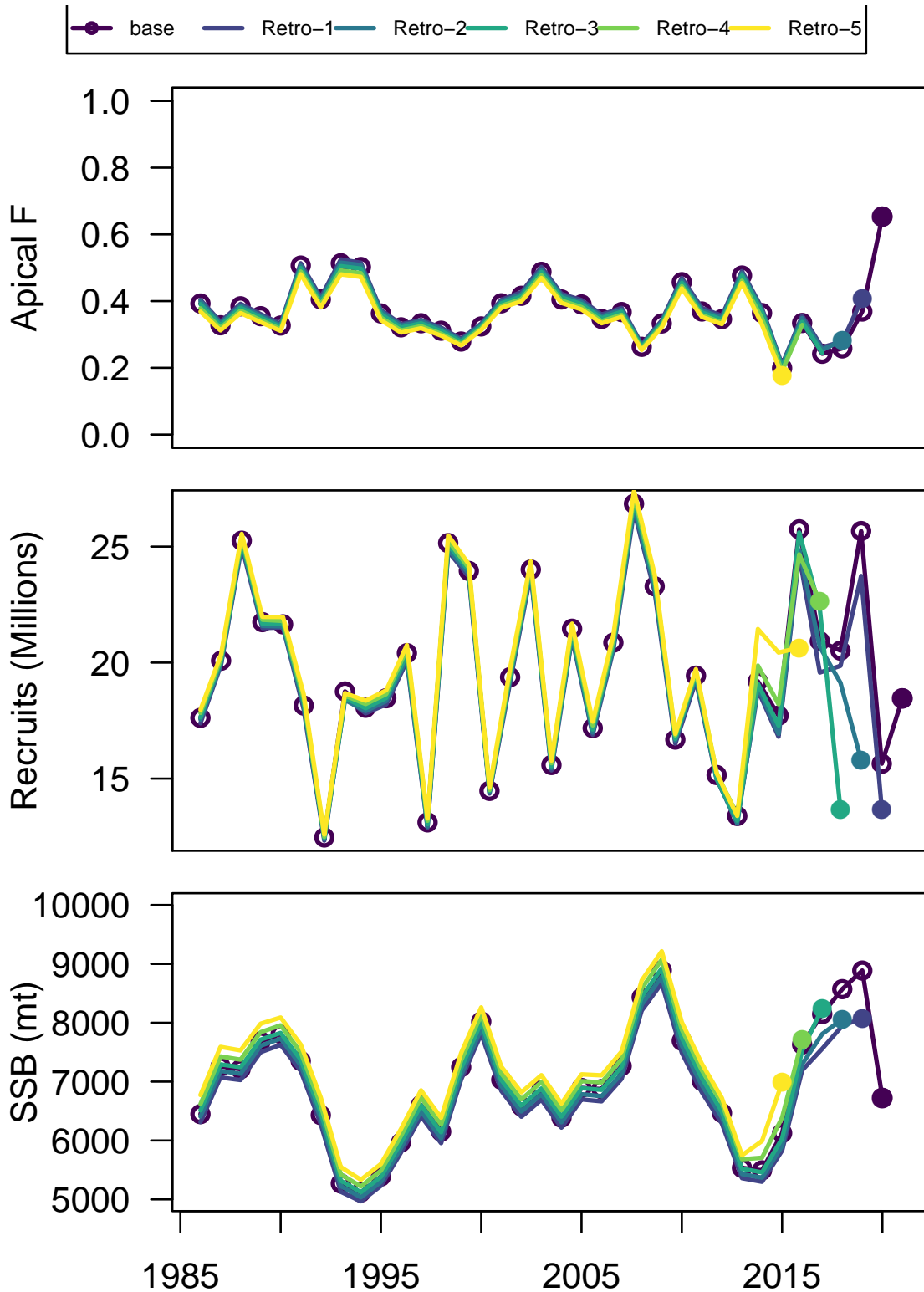


Figure 47. Retrospective analyses. Sensitivity to terminal year of data (sensitivity runs Retro 1–5). Top panel: Relative fishing mortality rate time series. Bottom panel: Relative spawning stock biomass time series.

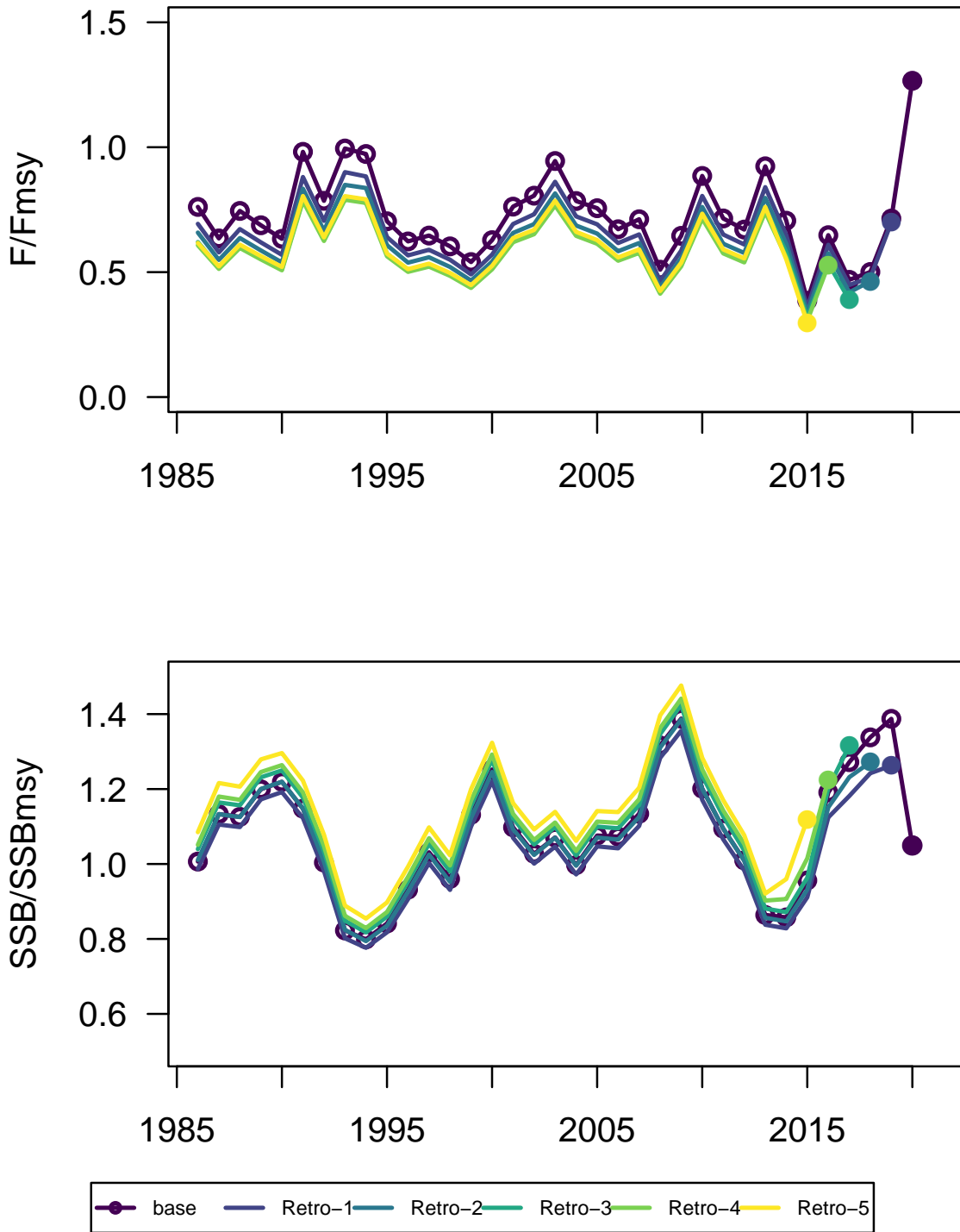


Figure 48. Projection results under scenario 1— $F = F_{\text{current}}$. Interim years (2021-2022) assume current landings based on average of the last 3 years of the assessment. Expected values (base run) represented by solid lines with solid circles, medians represented dashed lines with open circles, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities. Spawning stock (SSB) is at time of peak spawning.

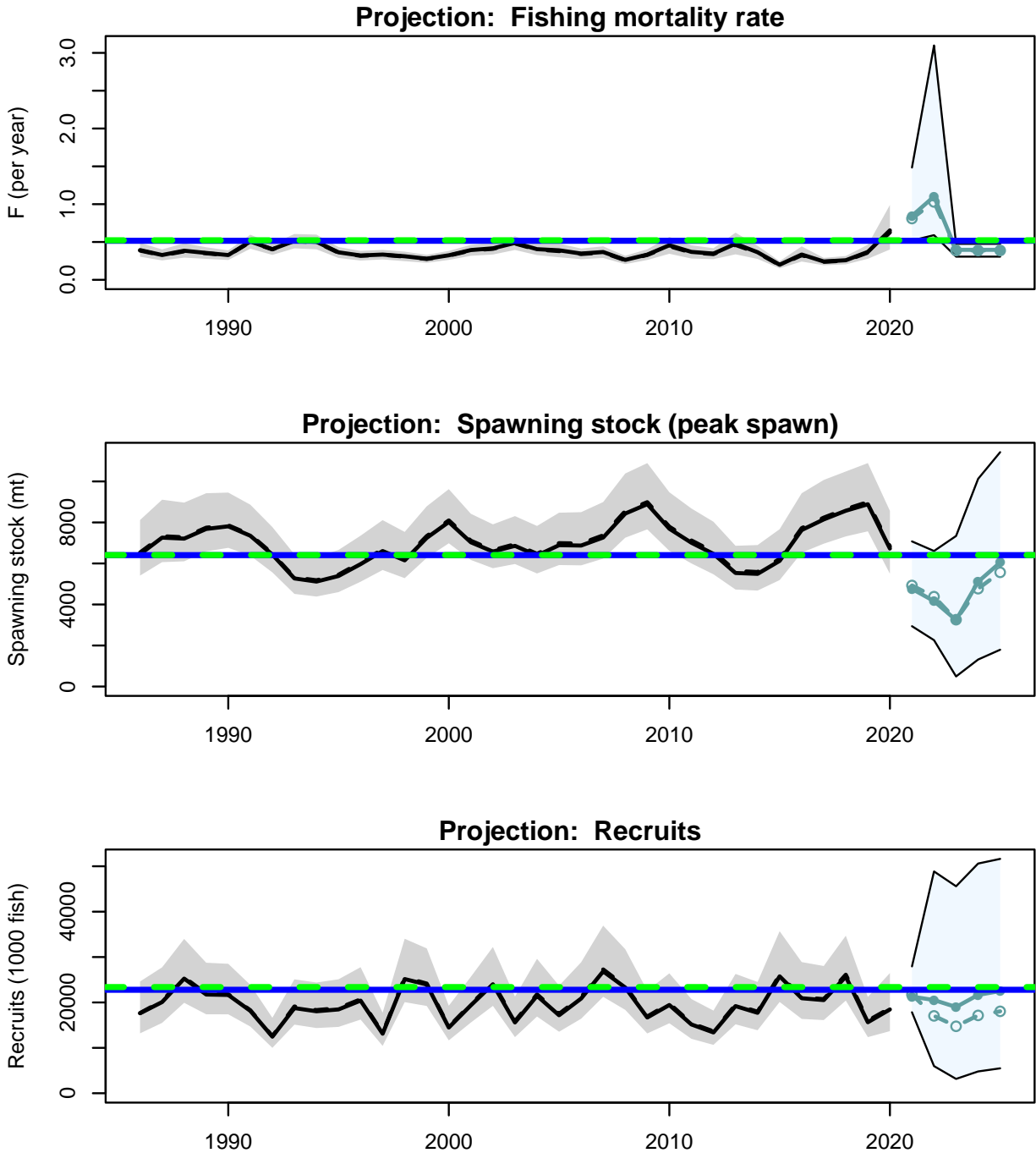


Figure 49. Projection results under scenario 2—fishing mortality rate fixed at $F = F_{MSY}$. Interim years (2021-2022) assume current landings based on average of the last 3 years of the assessment. Expected values (base run) represented by solid lines with solid circles, medians represented dashed lines with open circles, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities. Spawning stock (SSB) is at time of peak spawning.

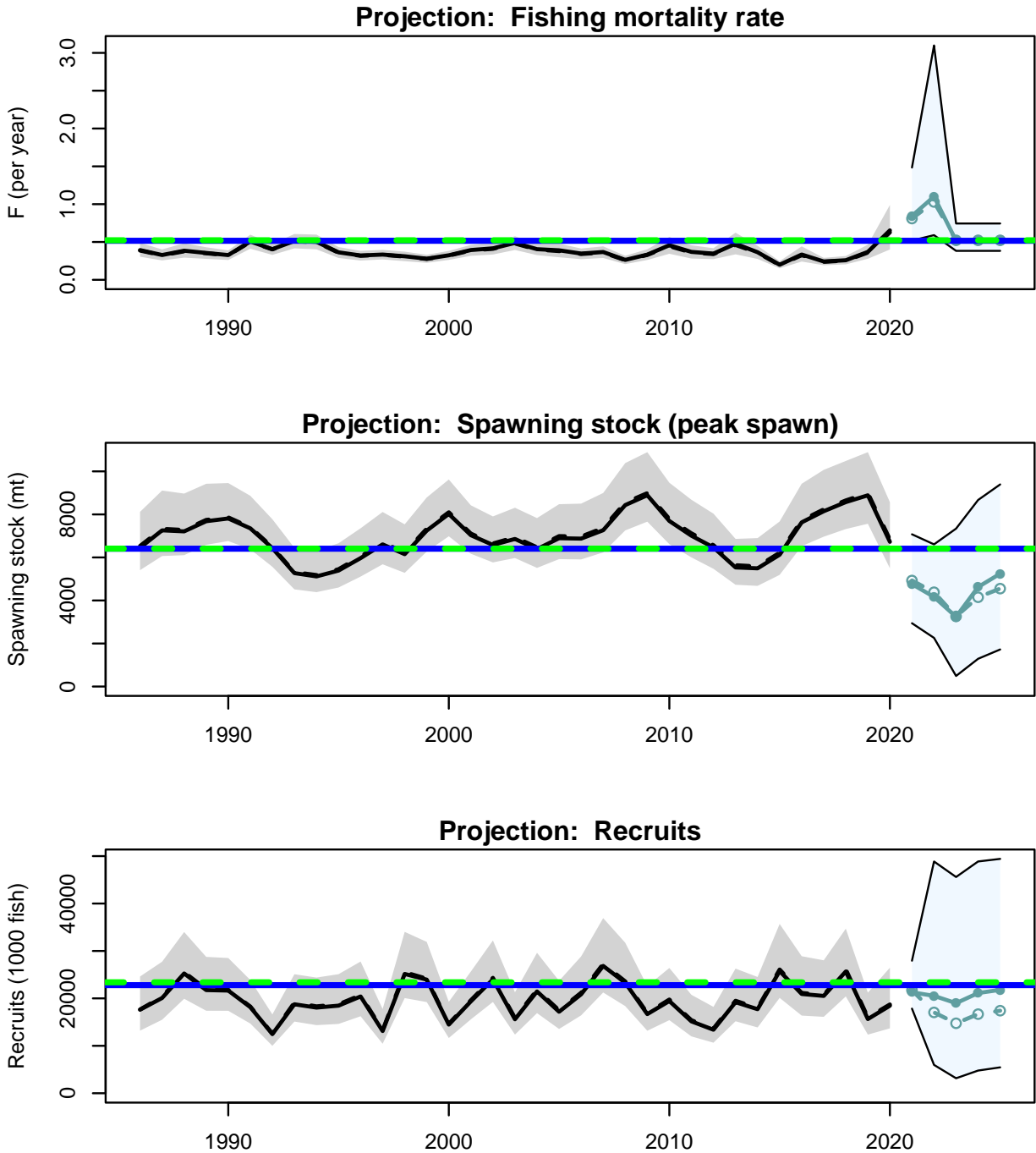
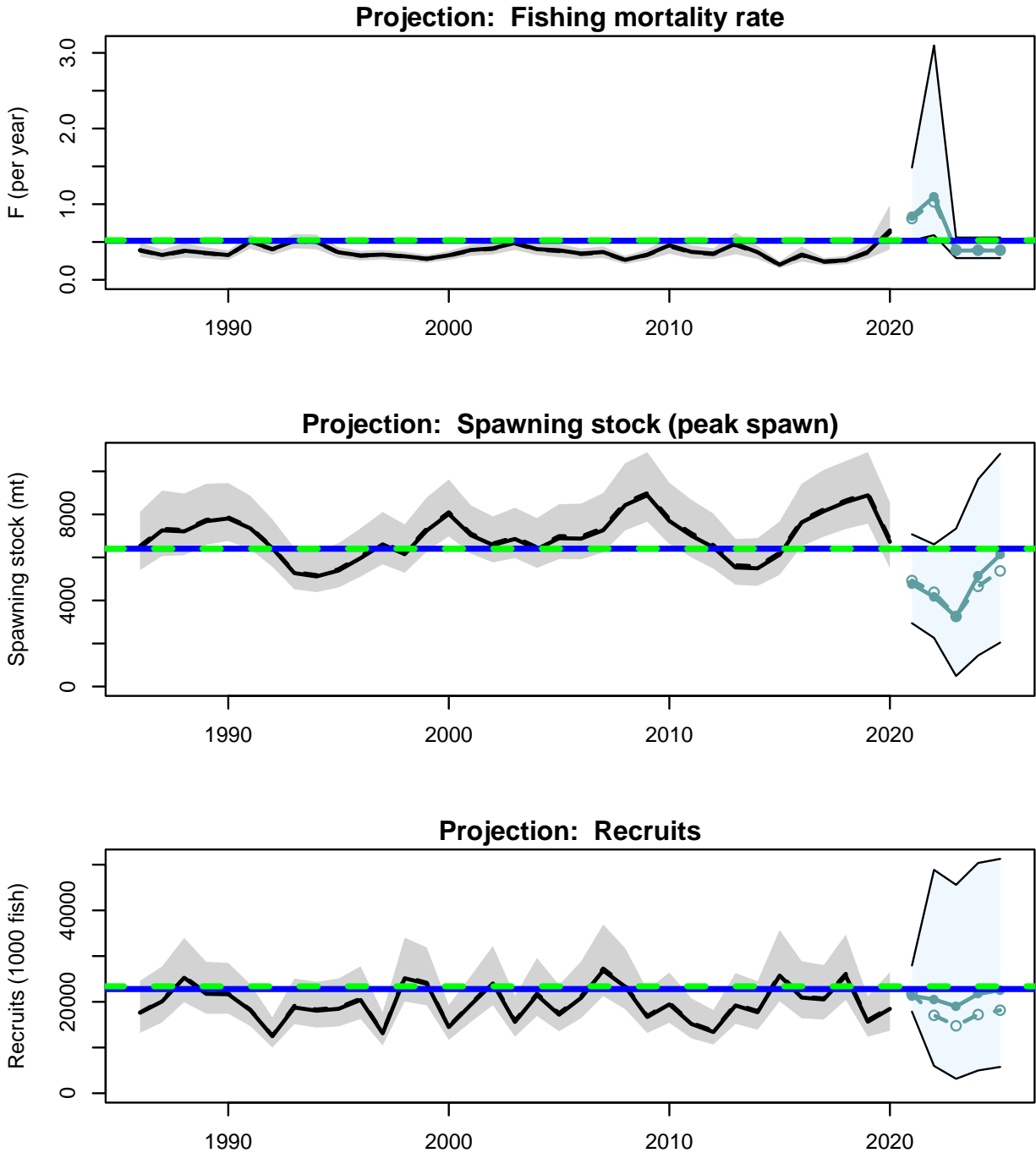


Figure 50. Projection results under scenario 3—fishing mortality rate fixed at $F = 75\%F_{MSY}$. Interim years (2021-2022) assume current landings based on average of the last 3 years of the assessment. Expected values (base run) represented by solid lines with solid circles, medians represented dashed lines with open circles, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities. Spawning stock (SSB) is at time of peak spawning.



Appendix A Abbreviations and symbols*Table 27. Acronyms and abbreviations used in this report*

Symbol	Meaning
ABC	Acceptable Biological Catch
AW	Assessment Workshop (here, for Spanish mackerel)
ASY	Average Sustainable Yield
B	Total biomass of stock, conventionally on January 1 ^r
BAM	Beaufort Assessment Model (a statistical catch-age formulation)
cC	Commercial cast net fleet
cG	Commercial gillnet fleet
cH	Commercial handline fleet
cP	Commercial pound net fleet
CPUE	Catch per unit effort; used after adjustment as an index of abundance
CV	Coefficient of variation
DW	Data Workshop (here, for Spanish mackerel)
F	Instantaneous rate of fishing mortality
F_{MSY}	Fishing mortality rate at which MSY can be attained
FL	Fork length
GLM	Generalized linear model
GR	General recreational fleet (all MRIP modes and headboat)
K	Average size of stock when not exploited by man; carrying capacity
kg	Kilogram(s); 1 kg is about 2.2 lb.
klb	Thousand pounds; thousands of pounds
lb	Pound(s); 1 lb is about 0.454 kg
m	Meter(s); 1 m is about 3.28 feet.
M	Instantaneous rate of natural (non-fishing) mortality
MCBE	Monte Carlo/Bootstrap Ensemble, an approach to quantifying uncertainty in model results
MFMT	Maximum fishing-mortality threshold; a limit reference point used in U.S. fishery management; often based on F_{MSY}
mm	Millimeter(s); 1 inch = 25.4 mm
MRFSS	Marine Recreational Fisheries Statistics Survey, a data-collection program of NMFS, predecessor of MRIP
MRIP	Marine Recreational Information Program, a data-collection program of NMFS, descended from MRFSS
MSST	Minimum stock-size threshold; a limit reference point used in U.S. fishery management. The SAFMC has defined MSST for Spanish mackerel as $75\%SSB_{MSY}$.
MSY	Maximum sustainable yield (per year)
mt	Metric ton(s). One mt is 1000 kg, or about 2205 lb.
N	Number of fish in a stock, conventionally on January 1
NC	State of North Carolina
NMFS	National Marine Fisheries Service, same as “NOAA Fisheries Service”
NOAA	National Oceanic and Atmospheric Administration; parent agency of NMFS
OY	Optimum yield; SFA specifies that $OY \leq MSY$.
PSE	Proportional standard error
R	Recruitment
SAFMC	South Atlantic Fishery Management Council (also, Council)
SC	State of South Carolina
SCDNR	Department of Natural Resources of SC
SDNR	Standard deviation of normalized residuals
SEDAR	SouthEast Data Assessment and Review process
SFA	Sustainable Fisheries Act; the Magnuson–Stevens Act, as amended
SL	Standard length (of a fish)
SPR	Spawning potential ratio
SSB	Spawning stock biomass; mature biomass of males and females
SSB_{MSY}	Level of SSB at which MSY can be attained
TIP	Trip Interview Program, a fishery-dependent biodata collection program of NMFS
TL	Total length (of a fish), as opposed to FL (fork length) or SL (standard length)
VPA	Virtual population analysis, an age-structured assessment
WW	Whole weight, as opposed to GW (gutted weight)
YOY	Young of the year index developed from SEAMAP Coastal Trawl Survey
yr	Year(s)

Appendix B Parameter estimates from the Beaufort Assessment Model

```

# Number of parameters = 310 Objective function value = 2973.77904752711 Maximum gradient component = 0.000879228531802875
# Linf:
582.500000000
# K:
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# t0:
-0.5000000000000
# len_cv_val:
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# Linf_L:
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# K_L:
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# t0_L:
-2.7700000000000
# len_cv_val_L:
0.1200000000000
# Linf_f:
610.100000000
# K_f:
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# t0_f:
-0.5000000000000
# len_cv_val_f:
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0.00562194911400
# log_R0:
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# steep:
0.7500000000000
# rec_sigma:
0.6000000000000
# R_autocorr:
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# log_rec_dev:
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# selpar_A50_cg1:
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SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE



SSC Meeting FINAL REPORT April 18-20, 2023

**Town and County Inn
Charleston, SC**

Note from ASMFC staff: The following is an excerpt of the April 2023 SSC report to only include the SSC report content for Spanish mackerel SEDAR 78. The full April 2023 SSC report with discussion on other species, is available here: https://safmc.net/documents/ssc_sep_apr2023_report_final-pdf/

VERSION
FINAL
5/22/23

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Note from ASMFC staff: The following is an excerpt of the April 2023 SSC report to only include the SSC report content for Spanish mackerel SEDAR 78. The full April 2023 SSC report with discussion on other species, is available here: https://safmc.net/documents/ssc_sep_apr2023_report_final-pdf/

6. SEDAR 78: SOUTH ATLANTIC SPANISH MACKEREL OPERATIONAL ASSESSMENT

6.1 Documents

Attachment 6a. Spanish Mackerel Summary and Background Presentation
 Attachment 6b. SEDAR 78: Spanish Mackerel Revised SAR
 Attachment 6c. SEFSC Spanish Mackerel Review April 2023
 Attachment 6d. SSC recommended changes for assessment re-run
 Attachment 6e. Setting ABCs guidance and ABC Control Rules
 Attachment 6f. NOAA Fisheries Procedure 01-101-10
 Attachment 6g. NOAA Fisheries Procedure 01-101-11
 Attachment 5c. NOAA-NMFS 10732 SAFMC March 2023 memo

6.2 Presentation

Dr. Erik Williams, SEFSC

6.3 Overview

At the January 2023 SSC meeting, the Committee approved the scope of work for the Spanish Mackerel operational assessment re-run, which was then sent to the SEFSC. At the March Council meeting, the SEFSC determined that the SSC's recommendations regarding natural mortality, assumed recruitment and catch estimates should be considered for the next scheduled stock assessment but due to the extensive rework required would not be available for this assessment (see Attachment 5c). The Center recommended that the SSC develop ABC advice based on the current assessment and analysis completed to date. It also determined that the use of data-limited approaches such as DB-SRA or DCAC in place of the current age-structured assessment model would not be consistent with BSIA.

The SSC should determine whether the current SEDAR 78 model is sufficient for providing management advice and provide an ABC for Spanish mackerel during this meeting. Several alternate options to using the assessment projections for generating ABCs were presented in January (Equilibrium OY, yield at 75% F_{MSY} , 3rd highest landings, etc.), and the SSC should discuss the pros/cons of using these alternate methods in lieu of the assessment projections for making catch level recommendations.

6.4 Public Comment

6.5 Action

- Determine whether the current SEDAR 78 stock assessment is sufficient for providing management advice.
 - *S78 is sufficient for providing stock status (not overfished, not overfishing).*
 - *S78 is sufficient for also providing catch level recommendations using model output but not projections.*

- Provide values for OFL and ABC and make catch level recommendations for each proxy.
 - *Set ABC = Yield at 75%Fmsy from base model run (8.024 mp) (Table 22 in SAR)*
 - *Set OFL = Yield at Fmsy from base model run (8.210 mp)*

➤ **SSC RECOMMENDATION:**

- *In response to the SEFSC letter informing us that the Center was unable to conduct the analyses that were discussed/requested by the SSC and the Spanish Mackerel Working Group, the SSC expresses disappointment in the Center's decision. The SSC felt that the working group carefully considered workload in its discussions and the ultimate request, but appreciated Dr. Williams introduction to his presentation on the SEFSC's response. However, the SSC requests that arrangements for future assessment reviews should continue to provide the SSC the opportunity to request additional analyses or modifications to the assessment, as has been normal practice. Often, such analyses and modifications lead to improved catch advice. Equally as important, they enhance trust in the scientific advice process among Council members and stakeholders. The SSC has enjoyed a long history of working collaboratively and collegially with stock assessment scientists to provide the best possible, mutually agreed advice and hopes to continue to do so going forward.*
- *Concerns, in particular with respect to M, are still significant and were discussed extensively. The SSC discussed that the actual M may be higher than what was used in the assessment, and also refers to discussions on this topic in previous meetings and the working group report.*
- *Given this, the SSC discussed using the sensitivity run with a higher M (0.42) as the base value in the model for determining stock status and for setting ABCs. However, the SSC determined that would require reconfiguration of the model, and per Center workload would not be possible to accomplish.*
- *After considerable discussion, the SSC accepted the assessment base run as the basis for stock status determination but recommends that natural mortality (and other raised issues) should be investigated in the next assessment. The SSC concluded that the stock status determination in the Spanish Mackerel assessment base run is likely conservative because of the use of lower M, and the fact that a higher M will result in increased productivity. In addition, the biomass and harvest trends did not raise significant concerns, but the recent increase in F should be monitored.*
- *The SSC considered the above as justification to deviate from its control rule for setting ABC. The options discussed were 3rd highest (has shown poor performance in the literature), Yield at 75%Fmsy, equilibrium OY, and some others. The SSC was most comfortable with using the Yield at 75%Fmsy.*

Table 3. South Atlantic Spanish Mackerel Catch Level Recommendations

Criteria		Deterministic		Probabilistic	
Overfished evaluation (SSB ₂₀₂₀ /MSST)		1.40		1.42	
Overfishing evaluation (F ₂₀₁₈₋₂₀₂₀ /F _{M_{SY}})		0.77		0.74	
MFMT (F _{M_{SY}} proxy)		0.516		0.523	
SSB _{M_{SY}} (metric tons)		6406		6410	
MSST (metric tons)		4804		4808	
MSY (1000 lbs.)		8210		8351	
Y at 75% F _{M_{SY}} (1000 lbs.)		8024		8158	
ABC Control Rule Adjustment		10%			
P-Star		40%			
M		0.35			
OFL RECOMMENDATIONS					
Year	Landed (lbs ww)	Discard (lbs ww)	Landed (number)	Discard (number)	
2023	8,210,000				
2024	8,210,000				
2025	8,210,000				
2026	8,210,000				
2027	8,210,000				
ABC RECOMMENDATIONS					
Year	Landed (lbs ww)	Discard (lbs ww)	Landed (number)	Discard (number)	
2023	8,024,000				
2024	8,024,000				
2025	8,024,000				
2026	8,024,000				
2027	8,024,000				

FINAL
SUMMARY REPORT
MACKEREL COBIA COMMITTEE
SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL
Saint Augustine, Florida
June 13, 2023

The Committee approved minutes from the March 2023 meeting and the agenda.

Atlantic Spanish Mackerel Stock Assessment (SEDAR 78)

At the March 2023 Council meeting, the Council discussed a letter from the Southeast Fisheries Science Center (SEFSC) stating that the revisions to SEDAR 78 requested by the SSC in January are exploratory in nature and require extensive rework. As such, they cannot be accomplished in a timely fashion. The SEFSC recommended the SSC develop ABC advice based on the current assessment. The SSC met again in April 2023 and determined that SEDAR 78 was sufficient for providing stock status and for providing catch level recommendations using model output but not projections. Dr. Jeff Buckel provided the Committee details of the SSC discussion and catch level recommendations relative to Atlantic Spanish mackerel.

The Committee discussed how to move forward with an amendment to address the new catch level recommendations and possible modifications to management measures for Atlantic Spanish mackerel. The Committee directed staff to begin work on a framework amendment to update catch levels, but to hold off on development of a full plan amendment to address management measures until after mackerel port meetings have been completed.

MOTION 1: DIRECT STAFF TO BEGIN A FRAMEWORK AMENDMENT TO UPDATE ATLANTIC SPANISH MACKEREL CATCH LEVELS BASED ON SEDAR 78 AND SSC RECOMMENDATIONS.

APPROVED BY COMMITTEE

APPROVED BY COUNCIL

Mackerel Advisory Panel Report

The Mackerel Cobia Advisory Panel met on April 21st, 2023 via webinar. The AP Chair, Ira Laks, provided a summary of Advisory Panel discussion and recommendations. The Committee noted the importance of AP member attendance given the critical topics that will be presented to the AP for discussion at upcoming meetings. The importance of attendance will be noted prior to and during the fall AP meeting.

Mackerel Port Meetings

Based on recommendations from the Mackerel Cobia Advisory Panel, the Council directed staff to begin work on a plan to conduct port meetings for king and Spanish mackerel to gain a comprehensive understanding of the fisheries to improve management efforts. Staff presented a discussion document for the Council to review the current CMP FMP goals and objectives, port meeting goals and objectives, draft timeline, and proposed planning team. The Committee provided the following input:

- Gather more information on CMP FMP Objective 6 (minimize waste and bycatch in the fishery) during port meetings. Discuss why king or Spanish mackerel may be discarded by each sector and how stakeholders would like discards to be considered in management.

- Do not present Objective 5 (Atlantic Spanish mackerel allocations) during port meetings because it requests the use of data that is no longer supported, and it is the Council’s intent to remove the objective during the next update.
- Add the following to the goals and objectives for port meetings:
 - Identification of underserved communities and equity and environmental justice concerns.
 - Consideration of interjurisdictional management and cooperation with other councils and the Atlantic States Marine Fisheries Commission (ASMFC).
- Consider whether the Gulf States Marine Fisheries Commission (GSMFC) may be beneficial partners if port meetings are conducted throughout the Gulf of Mexico.

DIRECTION TO STAFF: DO NOT BRING OBJECTIVE 5 OUT FOR DISCUSSION DURING PORT MEETINGS AS IT IS NO LONGER A VIABLE OBJECTIVE.

DIRECTION TO STAFF: ESTABLISH A PORT MEETING PLANNING TEAM AS DESCRIBED IN THE DISCUSSION DOCUMENT.

King Mackerel Tournament Landings

At their December 2022 meeting the Council requested NMFS provide information on king and Spanish mackerel tournament landings over the last ten years and how those landings were accounted for against the annual catch limit. The SEFSC worked with the state agencies to provide these landings and present them to the Council. The Committee provided the following input:

- The Committee would like more information on what charities are receiving money through the sale of donated tournament fish.
- Stakeholders have expressed concerns to the Committee about the king mackerel stock and the role tournaments may be playing in fishery. The Committee requested that the Mackerel Cobia AP discuss these tournaments, their importance to communities and how the sale of fish from these tournaments affects their fishing activities.

Topics for the Fall Mackerel Cobia Advisory Panel Meeting

The Mackerel Cobia Advisory Panel (AP) is scheduled to meet in Charleston, SC this fall. The Committee approved the following topics for discussion:

- Atlantic Spanish mackerel catch level recommendations,
- Mackerel Port Meetings,
- King mackerel tournament landings,
- Citizen Science update,
- Atlantic king mackerel fishery performance report update.

The Committee also noted that the fall meeting may be an appropriate time for the ASMFC’s Spanish mackerel AP to meet jointly with the Council’s Mackerel Cobia AP.

Other Business

Note: Council staff drafts the timing and task motion based on Committee action. If points require clarification, they will be added to the draft motion. The Committee should review this wording carefully to be sure it accurately reflects their intent prior to making the motion.

Timing and Task(s)

MOTION 2: ADOPT THE FOLLOWING TIMING AND TASKS:

1. Begin work on a framework amendment to update Atlantic Spanish mackerel catch levels based on SEDAR 78 and SSC recommendations.
2. Continue development of port meetings including organizing a planning team to facilitate collaboration with other councils and commissions.
3. Convene an in-person meeting of the Mackerel Cobia AP this fall to discuss the topics listed above and note the importance of attendance.

APPROVED BY COUNCIL

Atlantic States Marine Fisheries Commission
East Coast Climate Change Scenario Planning Initiative

August 2, 2023
1:45-3:45 p.m.
Hybrid Meeting

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 (<i>S. Woodward</i>) | 1:45 p.m. |
| 2. Review Findings from the East Coast Climate Change Scenario Planning Initiative (<i>T. Kerns</i>) <ul style="list-style-type: none">• Overview of Summit Meeting• Review Draft Possible Action Plan• Discuss Next Steps | 1:50 p.m. |
| 3. Public Comment | 3:35 p.m. |
| 4. Adjourn | 3:45 p.m. |

The meeting will be held at The Westin Crystal City (1800 Richmond Highway, Arlington, VA; 703.486.1111) and via webinar; click [here](#) for details

Report of the February 2023 East Coast Climate Change Scenario Planning Summit Meeting

April 2023



New England Fishery Management Council



MID-ATLANTIC FISHERY MANAGEMENT COUNCIL



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Executive Summary

This document provides a comprehensive summary of ideas generated at an East Coast Scenario Planning Summit Meeting attended by over 50 East Coast fishery managers on February 15-16, 2023. Summit participants consisted of representatives from each of the three U.S. East Coast Fishery Management Councils, the Atlantic States Marine Fisheries Commission, and the National Marine Fisheries Service.

The goal of the Summit meeting was to develop a set of potential governance and management actions resulting from a scenario-based exploration of the future. It was not possible for the Summit to cover all the issues raised throughout the 2-year scenario process. Instead, focus was placed on **three overarching themes** highlighted in Council and Commission discussions during their meetings in November and December 2022. These themes were:

- **Cross-Jurisdictional Governance and Management:** evaluating the current East Coast fishery governance structure and identifying potential changes to increase our ability to respond effectively to changing conditions
- **Managing Under Increased Uncertainty:** identifying actions to take to prepare for and respond to an increase in uncertainty, where historical conditions can no longer be used to predict the future
- **Data Sources and Partnerships:** identifying how to better coordinate data collection systems and develop partnerships to leverage existing funding

The Summit agenda involved breakout group conversations and prioritization exercises designed to highlight the most promising potential ideas to address the challenges in each of these themes. Many ideas were raised, with particular emphasis placed on the following:

Cross-Jurisdictional Governance

Discussions centered around the importance of future governance structures being more adaptable to continual change, but also recognized the trade-offs between flexibility and consistency/coordination. Participants discussed the possibility of a single, East Coast Management Council with state or fishery-based opt-in representation. But a change of this magnitude, and the barriers of losing the unique characteristics of regional councils and a need to revise the Magnuson-Stevens Act, led to a discussion focused on how we could work toward changes within our current governance structure. Specifically, many supported reconsideration of committee representation, while moving toward more consistent use of committees across Councils and with consideration of modifying voting rules to enhance the role of committees in the process. In addition, many participants raised issues around clarifications of roles and considerations of efficiency in jointly or cooperatively managed stocks. The group recognized that there is a spectrum of approaches to joint or collaborative management, and while not all joint management needs to operate the

same way, clearly defining and recognizing the pros and cons of different approaches would be helpful.

Participants also discussed when and how changes in management authority should be made. Generally, participants felt that triggers should be used to initiate a *review* of management authority, and not trigger immediate change. Participants felt improved coordination within and between all management bodies (all three Councils, the Commission, and the National Marine Fisheries Service or NMFS) was needed. Ideas that received particular attention included improving the coordination between and within NMFS regions, and increasing cross-pollination of the three Council Scientific and Statistical committees (SSCs).

Managing Under Increased Uncertainty

Attendees agreed that improved risk policies may provide a means to better account for current and future climate impacts on species, including both negative and positive impacts. Participants also discussed the possibility of moving toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models, and raised the idea of considering different management approaches at the leading and trailing edges of a shifting species range. Across all of these, we may be able to make better use of tools such as climate vulnerability assessments and management strategy evaluations. Qualitative sources of information and local ecological knowledge have the potential to inform management in a rapidly changing environment, but we will need mechanisms to include these sources in our work.

Data Sources and Partnerships

Fostering better coastwide cooperation must extend beyond jurisdictional issues to include data collection and partnerships. Many scientific surveys are conducted along the East Coast, including by federal and state entities, but the methods of data collection and storage vary greatly. Many regions/entities may not even be aware of what data is collected by another. This contributes to difficulties in sharing data and risks duplication of effort. Participants discussed creating consistent surveys across regions, and at a minimum standardizing the way that data is stored to improve accessibility. Other ocean users also collect environmental data that is important to track under changing climate conditions, so attention should be paid to better partnerships with offshore wind developers, aquaculture, marine transportation, and the military.

There was extensive discussion on reducing uncertainty in fisheries dependent data. This discussion covered incentivizing fishermen to improve reporting of data and collect new data, improving recreational data collection, and improving social-economic data for use in management.

Managing under a changing climate requires a lot of data input, but it is impossible to collect everything of interest. Data prioritization needs to occur - but this requires a clear understanding of how the data will be used. Prioritization must involve increased communication between the science centers and management bodies, including periodic reviews of research priorities.

Next Steps

It was agreed that a report of the Summit Meeting (this report) would be presented to the NRCC for their review at their May 2023 meeting. Presentations of the findings from the Summit will also be presented to each of the three East Coast Councils and the Commission.

In addition, the Scenario Planning Core Team will also draft a separate document to make specific suggestions on which potential action areas to explore further. Following review and discussion of the elements contained in this "draft action plan" document, the NRCC will determine a way forward.

1. Introduction

Over the past two years, representatives from these East Coast fishery management organizations have worked collaboratively and engaged diverse stakeholders to explore how climate change will affect various aspects of fishery management. This exploration was based on a multi-stage scenario planning process, where stakeholders generated several different possibilities for how climate change might affect east coast fisheries.

This document provides a comprehensive summary of ideas generated at an East Coast Scenario Planning Summit Meeting attended by over 50 East Coast fishery managers on February 15-16, 2023. Summit participants consisted of representatives from each of the three U.S. East Coast Fishery Management Councils, the Atlantic States Marine Fisheries Commission, and the National Marine Fisheries Service (NMFS).

Previous steps of the initiative have included: 1) conducting a scoping process for issues facing East Coast fisheries over the next twenty years; 2) exploring the drivers that will shape future change in East Coast fisheries 3) creating a set of four scenarios describing possible conditions in 2042, and 4) gathering initial feedback from managers, Councils and Commission on important issues to address in response to climate related challenges.

The goal of the Summit meeting was to develop a set of potential governance and management actions resulting from this scenario-based exploration of the future. During the meeting, participants discussed ideas already generated throughout the process, added new ideas, evaluated them, and identified some practical next steps to take them forward. In order to encourage creative thinking about what changes might be required, participants were asked to consider the following:

Imagine you are a fishery manager in 2043. What do you wish the fishery managers of 2023 had done back then? What actions should they have taken? What things should they have started?

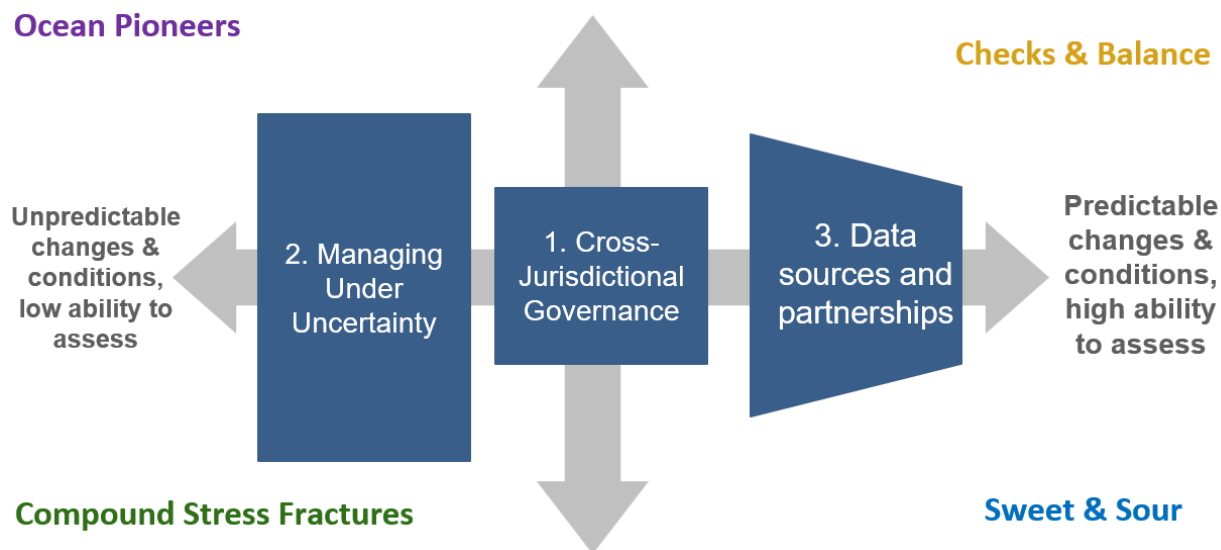
2. Overarching Discussion Themes

It was not possible for the Summit to cover all the issues raised throughout the scenario process. Instead, focus was placed on **three overarching themes** highlighted in Council and Commission discussions during their meetings in November and December 2022. The Summit began with scenario planning Core Team members providing an overview of each of the themes, followed by a brief plenary discussion.

Members of the Core Team provided a brief introduction to each of the three overarching themes, and outlined a number of key questions to be considered during the workshop. Additional detail on the themes below can be found in the Summit briefing materials, available at: <https://www.mafmc.org/s/ECSP-Summit-Briefing-Materials-Feb-2023.pdf>.

Theme 1: Cross- Jurisdictional Governance	A major goal of this initiative has been to evaluate the current East Coast fishery governance structure and identify potential changes to increase our ability to respond effectively to changing conditions. "Governance" here addresses the structure of power, authority, and responsibility for fisheries and geographic areas.
Theme 2: Managing Under Increased Uncertainty	Environmental changes are leading to changes in the distribution and abundance of marine resources. In some cases, these changes mean that historical conditions can no longer be used to predict the future, increasing our uncertainty around appropriate catch limits and management responses. Are there actions we can take now to prepare for and respond to this increase in uncertainty?
Theme 3: Data Sources & Partnerships	The scenario creation framework considered how well science will be able to assess and predict changes in stock production, distributions, and other changing dynamics. This hinges on the ability to produce and evaluate accurate and timely data. Summit discussions focused on how to better coordinate data collection systems and develop partnerships to leverage existing funding.

The three themes are related to the scenario framework in the following way:



- **Cross-jurisdictional Governance:** this theme is relevant across all expected future scenarios. Species range shifts will occur no matter which scenario plays out, so it is important to consider how fishery managers will cope with situations that pose challenges for existing governance structures.
- **Managing Under Increased Uncertainty:** this theme is particularly relevant for scenarios where climate change causes highly unpredictable changes in conditions, leading to less reliable forecasts and assessments (the left-hand side of the matrix). How must management and decision-making evolve to cope with such situations?
- **Data Sources and Partnerships:** this theme reflects the fact that fishery managers rely on timely and accurate information. This theme covers how best to coordinate data collection systems and developing partnerships to leverage funding - in doing so, this might shift us towards the right-hand side of the matrix, where better data creates an improved ability to forecast and assess future conditions.

Later sections of this report describe the discussions and outputs according to each of these three overarching themes. Although the report is structured in a way that treats each theme in turn, it is recognized that there are clear overlaps and interaction between the themes.

Participants were also made aware of a number of other issues that were raised during previous phases of the scenario planning process. These “other issues” were not the

focus of the themes for Summit meeting discussion, but it was recognized that they may intersect with the three overarching themes in various ways. The topics identified were:

- Planning for the challenges associated with other ocean uses (wind, aquaculture) and the potential for spatial analysis and planning to help with these challenges.
- Continuing movement toward ecosystem-based fisheries management (EBFM), and the need to consider the importance of forage species.
- Ensuring adequate shoreside access and infrastructure for recreational and commercial fisheries.
- Increasing trust between stakeholders and managers, including improving communication on science and uncertainty.
- Protecting the edges of stocks that move into new areas or as new fisheries emerge.
- Consider the appropriate role of the Councils, Commission, and NMFS in creating and supporting markets for fishery products as conditions change.
- Planning for the aging of the fleet.
- Understanding that politics (and litigation) can play a big part in fisheries management.

Participants were encouraged to add any potential actions for these themes by writing on flipchart sheets or using post-it notes.

Following the Core Team's presentation of the themes above, participants had the opportunity to ask clarifying questions and express initial reactions to these discussion categories. During this discussion, participants noted the need for this process to be able to consider multi-directional changes (e.g., in ocean temperature), the need to keep in mind the differences between open access vs. limited access fisheries, and the need to think about the possibility of increased funding and how to best use additional funding should it materialize (rather than just flat or reduced funding).

3. Summit Design and Agenda

Breakout Group Conversations

Following the introductory presentations, participants were divided into three breakout groups, each containing around 18 people. Each group had the chance to discuss a theme in a rotation format, with each breakout conversation lasting for approximately 90 minutes. For example, Group 1 started by discussing Cross-Jurisdictional Governance. After 90 minutes, they rotated to another room to discuss Managing Under Uncertainty. Finally, they moved to another location to discuss Data Sources and Partnerships. Groups 2 and 3 also rotated through the three themes, beginning with a different issue.

The result was that groups were able to generate ideas and review ideas from groups that had previously discussed the issues. By the end of the first day of the workshop, each participant had the opportunity to explore ideas across all of the three themes.

The main ideas that emerged from these breakout group discussions are presented in sections 4-6 below, according to theme. A more complete summary of all breakout group ideas is contained in the Appendix for each theme (Appendices B, C, and D).

Summary of Potential Actions

At the end of Day 1, the Core Team facilitators reviewed the notes from the day's breakout group conversations for their theme and created a non-prioritized list of potential action areas that had been identified throughout the day. It was not possible to capture every idea as an individual potential action, but the Core Team was able to group comments and ideas made across breakout groups into common themes and potential areas for action. The list of potential action areas is presented in the following report sections.

The full lists of potential actions were shared with all participants at the start of Day 2. Each breakout group had a chance to review the list of potential actions for each theme, and ask clarifying questions about what the potential action covered. This resulted in a small number of adjustments to the wording of some potential actions.

Prioritization of Potential Actions Using Dot-Voting

Participants were then asked to prioritize the potential actions in the following way. Everyone received 8 votes in the form of dot stickers. Votes could be allocated across any of the potential action areas in any of the themes, but participants could not vote for the same potential action more than once.

Participants were asked to prioritize and choose their votes based on the following considerations:

- Potential actions that will help fishery managers prepare for and cope with the challenges of climate change;
- Potential actions that fishery managers are able to influence;
- Potential actions that are feasible to implement, or where some progress can be made.

The results of the dot-voting exercise are presented in Appendix E.

Plenary Discussion to Identify Preliminary Next Steps

The dot-voting exercise revealed the potential actions areas that the group felt should be addressed as a matter of priority. We held a full plenary discussion to identify how best to make progress for each of those priority action areas. The details of these discussions, and the preliminary next steps agreed to by the group, are presented in Sections 4-6 below for each of the themes.

4. Cross-Jurisdictional Governance

The sections below provide an overview of the guiding questions for cross-jurisdictional governance, a summary of the main ideas discussed in the breakout group, the list of potential actions identified, and a summary of the follow up plenary conversations. Additional details on the breakout discussions around cross-jurisdictional governance can be found in Appendix B, and prioritization exercise (dot voting) results can be found in Appendix E.

Overview

Climate change impacts are already affecting ocean conditions. Ocean temperatures are expected to continue to rise in the decades ahead, no matter which of our scenarios plays out. These rising temperatures will lead to an increased likelihood of stocks shifting their location, often moving north and into deeper waters. In some scenarios, the shifts in location might not be as predictable as this, but changes are still highly likely to happen. These shifts will pose challenges for current governance structures and arrangements, which were mostly established under the assumption that stock locations would remain relatively stable over time. This is no longer the case. In all the scenarios identified in this process, we must assume that stocks will shift, and identify ways that governance approaches can respond.

During the small group discussion portion of the meeting, groups were asked to focus on three organizing questions related to the overall theme of “Cross-Jurisdictional Governance”:

- What is the best structure and representation for governance on the U.S. East Coast?
- When and how should management authority change?
- How can we improve the efficiency and the efficacy of joint fishery management plans?
- How can we improve coordination and collaboration among management entities?

Breakout Group Discussions: Main Ideas

The three breakout groups discussed the governance questions outlined above, with an emphasis on the importance of future governance structures being more adaptable to continual change. The groups discussed broader governance organization, including discussions on how many decision-making groups there should be and who is represented at these decision-making groups. For stakeholder involvement, too many governing groups make participating in the process more difficult. There was discussion around whether the ideal governance structure could de-emphasize state-by-state representation, but many felt that state-by-state approaches had value.

The largest structural change discussed was a change to a single, East Coast Fishery Management Council with state or fishery-based opt-in representation by species or fishery management plan, similar to the Board opt-in process used by the Commission. A change of this magnitude would require substantial revisions to the Magnuson-Stevens Act, which was acknowledged throughout the discussion. While some participants thought the opt-in approach would allow for focused participation and a system that could more easily adapt to changing conditions, others felt that a Council of this size would be tricky to populate and would result in stakeholders feeling less invested in and with less influence over the organization and its outcomes.

Much of the discussion was focused on the varying uses of committees across the various management bodies. Participants acknowledged that each Council uses committees somewhat differently, with committee use in the South Atlantic and New England somewhat more similar to each other compared to the Mid-Atlantic. The number of joint management plans with the Mid-Atlantic and the Commission Boards makes committees difficult to administer. Many felt the approach being used to add voting members from other Councils to species committees has been successful. However, others felt that this positive influence is muted when the full Council makes a different decision than the committee or when the committee is not used at all in the decision-making process. As a result, many supported moving toward more consistent use of committees across Councils, and consideration of modifying voting rules to enhance the role of committees in the process (for example, limiting the power of a Council to overturn a committee decision during final voting, with failed Council approval resulting in issues being returned to the committee).

In addition, many participants raised issues around clarifications and considerations of efficiency in jointly or cooperatively managed stocks. The group recognized that there is a spectrum of approaches to joint or collaborative management, and while not all joint management needs to operate the same way, clearly defining and recognizing the pros and cons of different approaches would be helpful. Joint management has benefits for representation, but also can hinder efficiency and efficacy when groups disagree, particularly if decision making is sequential. More explicit agreements between joint management participants could help to increase transparency and help groups work toward streamlining joint management processes. For both the committee and joint plan discussions, it was emphasized that these changes should apply at the plan level and would not need to be used across all plans in the same way.

Participants also discussed when and how changes in management authority should be made. Generally, participants felt that triggers should be used to initiate a *review* of management authority, and not trigger immediate change. Some participants felt strongly that a change in authority request should only come from one of the Councils. Additionally, because of the concerns regarding Council member and staff expertise, as well as the resources required for transition, transitions should be well-thought out and should not be structured in such a way that frequent changes would be required.

Participants felt improved coordination across and with all management bodies (all three Councils, the Commission, and NMFS) was needed. Ideas that received particular attention included improving the coordination between and within NMFS regions and increasing cross-pollination of the three Scientific and Statistical Committees (SSCs). SSC members and managers could benefit from more exchange of ideas and information across SSCs, particularly for species shifting across jurisdictions and for jointly managed species. In addition, mechanisms for more joint SSC workgroups or meetings and advice could be explored.

Potential Actions for Cross-Jurisdictional Governance (Non-Prioritized)

As discussed in Section 3, following the three breakout groups, Core Team members consolidated the concepts discussed into eight primary ideas for cross-jurisdictional governance. These ideas were primarily centered around the main questions that were considered, but were not presented in a way that required participants to make this/not that determinations. The dot voting was used to illustrate preferences for which actions should be investigated further in the shorter-term. The **potential actions highlighted in yellow** emerged as the top preferences in the cross-jurisdictional governance category.

Cross-Jurisdictional Governance - Potential Actions
<p>Coastwide Council with varying voting representation by FMP</p> <ul style="list-style-type: none"> ● One large Atlantic Coast Fishery Management Council that would allow members/states to opt-in to certain FMPs based on fishery interest. ● <i>Would require a modification to the MSA.</i>
<p>Committee-Based decision making where committees have final vote</p> <ul style="list-style-type: none"> ● In the style of ASMFC Boards, this would structure decision making so that the committees have final votes on FMP actions. The action would not need approval by the full Council. ● <i>Would require a modification to the MSA.</i>
<p>Committee-Based decision making with final Council approval</p> <ul style="list-style-type: none"> ● Modifying the Council SOPPs could allow increased decision making authority at the committee level, by changing procedures such that committee motions that do not pass the full Council get sent back to the committee to be reworked.
<p>Clarify and potentially expand the roles of liaisons between Councils</p> <ul style="list-style-type: none"> ● Consider more consistent use of liaisons across Councils ● <i>If roles were expanded to include voting rights, this would require MSA change.</i>
<p>Change state representation on Councils</p> <ul style="list-style-type: none"> ● Consider modifications needed to state representation, including potentially having more states sit on multiple Councils ● <i>Would require a modification to the MSA.</i>

Consider allowing proxies for Council members

- Proxies would help alleviate workload on individual members, especially if other changes such as increasing joint management or expanding committees occurs.

Re-evaluate and potential revise Advisory Panel representation

- Consider regional/stakeholder interests, including underrepresented/underserved groups

Evaluate mechanisms for cross pollination of SSCs, particularly for jointly managed species

- Managers could benefit from more exchange of ideas and information across SSCs, particularly for species shifting across jurisdictions and for jointly managed species. In addition, mechanisms for more joint SSC meetings and advice could be explored. This could include a coastwide SSC with species-specific complex decision making, joint SSC meetings or the use of SSC liaisons.

Move to more consistent use of committees across Councils and re-evaluate committee representation for each committee/FMP

- Currently, each Council and FMP uses committees differently in the decision-making process. Considering modifying regional/stakeholder group representation could be more effective if Councils used committees in a similar manner.

Improve coordination across NMFS Regional Offices, Science Centers, and General Counsel

- Coordination of processes, information, and guidance within and between different offices of NMFS will be critical as conditions continue to change.

Review joint management plans along coast to explore areas for increased efficiency

- Refers to management plans that are joint or complementary among two or more management entities. Review could occur for all joint plans at once or at an individual FMP level, or some combination of both.

Develop more explicit agreements for joint management

- Joint or cooperative management by two or more management entities currently has varying levels of explicit agreements about the joint management process. Agreements like MOUs could be developed (potentially with sunset provisions) to clarify roles, responsibilities, and processes.

Plenary Discussion: Identifying Preliminary Next Steps for Cross-Jurisdictional Governance

The above yellow highlighted potential actions were the focus of plenary discussion. The group discussed possible mechanisms to move these ideas into the management process. It was noted that the topic of governance structure would need a coordinating body (e.g., an expanded NRCC) to further examine the issues and make recommendations.

Move to more consistent use of committees across Councils, re-evaluate committee representation, and consider committee-based decision making with final Council approval

The discussion focused on finding mechanisms for more consistency in the governance structure between management regions, particularly more effective and better aligned use of committees between the three Councils. This could allow some representation concerns to be addressed in a more meaningful way without legislative changes, particularly for species where substantial portions of their distribution span multiple management jurisdictions or may in the future. Councils could come up with a framework with some consistencies across Councils but allow some flexibility to preserve the unique history and culture differences in the current process.

Evaluate mechanisms for cross pollination of SSCs, particularly for jointly managed species

The discussion focused on better mechanisms for information exchange between SSCs, particularly when two Councils are working on the same species. While there could be utility in looking at this issue on a national scale in the long term, it is important to address this on a regional scale to start. Sub-groups of each region's SSC could meet to discuss a topic or there could be one SSC for the whole region. The group noted that the Commission's scientific group should also be a part of this process.

Next Steps for the Above Actions

A leadership group should be tasked with the following as a first step to address the potential actions above:

- Leadership planning exercise to look at Council species committee structure (use of and more consistency). This would include the membership of the committee as well as how decisions are made.
- Leadership planning exercise to look at the SSC committee structure for cross pollination of Atlantic coast SSCs.
- Clarify Council liaison role and discuss how the liaison could be used consistently across the Atlantic coast Councils.
- For the long term, the national convening of SSCs (the Scientific Coordination Subcommittee of the Council Coordinating Committee) could be one venue to generate additional discussion of how to increase SSC cross-pollination and regional coordination.

Additional Governance Themes Identified for Near-term Wins

In the plenary discussion, participants also identified the following potential next steps for other governance-related actions:

- Identify additional coordination between the NOAA regional offices and science centers to decrease inconsistencies. Think about coordination among regional offices to promote consistent Council interactions.
- Reduce the number of committees and inputs to simplify the process; bring the stakeholders to one place. Seeking improved communication by reducing the number of layers instead of expanding the layers.
- Review the Joint and Complementary plans for ASMFC and the Councils for efficiencies (ways to segregate actions so there are less redundant actions) (this may be a short and long term potential action)
- Consider the final 304f Policy and the impacts to both the Councils and the Commission. The impacts of the 304f policy are important to consider when developing short and long-term potential actions.

5. Managing Under Increased Uncertainty

The sections below provide an overview of the guiding questions for managing under increased uncertainty, a summary of the main ideas discussed in the breakout group, the list of potential actions identified, and a summary of the follow up plenary conversations. Additional detail on the breakout discussions around cross-jurisdictional governance can be found in Appendix C, and prioritization exercise (dot voting) results can be found in Appendix E.

Overview

There are two main approaches to dealing with uncertainties in fisheries management: first, increase investment of time and funding into research and science to better understand the situation and potentially decrease uncertainty in predictions (moving towards the right side of the matrix), and second, create management approaches that will have a good likelihood of being successful even with uncertainty (moving toward the left side of the matrix). Given that conditions on both sides of the matrix are plausible, we need to prepare for all situations.

In addition to planning for uncertainty, being able to respond quickly to change (at management and stakeholder/community levels) will be both useful and necessary. Where science can predict and track changes (right side of the matrix), managers and stakeholders may be able to prepare for the coming changes (creating if/then structures to reduce response times). Where science is less able to predict and track changes, managers and stakeholders will need to be nimble as stocks shift, collapse or exhibit other unpredicted changes. See below for more on these ideas.

During the small group discussion portion of the meeting, groups were asked to focus on three organizing questions related to the overall theme of “Managing Under Increased Uncertainty”.

- How can we increase flexibility, adaptability, and robustness in management?
- How can we better accommodate uncertainty in the stock assessment process and address related management challenges?
- How can we improve the ability for fishermen and other stakeholders to adapt to climate change?

Breakout Group Discussions: Main Ideas

Updating risk policies to better account for climate challenges was the topic discussed the most in the breakout groups. There was agreement that it would be useful to compare risk policies across all the Councils, including how they account for uncertainties due to climate. NEFMC has hired a contractor to compile this information and their report will be made available this spring. ASMFC has a draft risk policy that includes information on climate concerns and information on economic importance that can decrease or increase catch levels, respectively. There was concern that some

existing risk policies only decrease catch, and there is no mechanism for increasing catch for species showing positive responses to a change in climate. Multiple participants also noted a need to track risk, decisions, and consequences to better learn from past decisions (in management and in stock assessments). One participant noted the need to look at consequences, not just at risk, to help determine appropriate management. There were suggestions to include qualitative information when looking at risk. For example, this is done with red tide in the Southeast, and through risk tables in the North Pacific. Results of climate vulnerability assessments could also be used to understand areas of higher and lower risk. A participant noted that Europe has started providing maximum sustainable yield (MSY) as a range with other factors impacting what part of the range is used for management. Participants noted this would require Councils to be very disciplined or they would consistently pick the highest number on the range. One participant suggested moving toward dynamic reference points, but noted that as management adjusted to this new tool, there would be some failures before successes. Multiple participants agreed that the risk policy could be useful for determining what risks (and failures) would be acceptable.

During discussions focused on flexibility and adaptability, participants noted a need to define these terms to ensure common understanding and goals, and agreed that looking at what is achievable and what should be prioritized is also important. There was concern from some that too much flexibility could lead to large swings in management from year to year and that could be detrimental as businesses need stability for planning. At least one of the breakout groups spent a bit of time discussing permits and how they could be more adaptable. Revising or updating permits is a difficult subject to address, however, there could be some easier wins. For example, adding emerging species to existing permits and removing historical moratoria on permits could help add adaptability. There are also requirements to bundle permits that may no longer make sense and should be reconsidered. A few larger changes in permits were also suggested, such as switching from species specific permits to area based permits, and switching from state permits to a universal federal permit that would adjust to species distribution and abundances (for charter boats). When discussing some aspects of permit flexibility (e.g., area based permits or permits that provide flexibility to land a mix of species that are related or caught together), the tendency for fishermen to target high value species would need to be considered to ensure this does not create more choke stocks. There was also a discussion on the need to improve flexibility in fishing gear regulations (Councils have restrictions on what gear can be used to fish what stocks).

Part of the breakout discussions also focused on the idea of if/then management triggers. In general, by identifying triggers and the appropriate management response before the trigger is hit, management will be poised to be responsive and it will reduce administrative work. There were suggestions on how these if/then triggers could be added to existing processes. For example, the MAFMC could add triggers to their risk assessment process, triggers could increase responsiveness when there is joint management across multiple Councils, and triggers could be tied to ABC control rules.

There was a comment that increasing uncertainty should not only equal increased precaution and decreased catch limits. Participants also noted the need to think outside the box, for example, how could this idea tie to EBFM? Is there a way to incorporate qualitative information from fishermen or other sources into the triggers? Can other information also be considered, such as habitat, or predator and prey information, especially in situations where there is a disagreement on the status of a stock? In all of these situations, good communication and transparency about the process will be key.

Potential Actions Identified Across Breakout Groups for Managing Under Increased Uncertainty

As discussed in Section 3, following the three breakout groups, Core Team members consolidated the concepts discussed into eleven primary ideas for managing under uncertainty. These ideas were primarily centered around the main questions that were considered, but were not presented in a way that required participants to make this/not that determinations. The dot voting was used to illustrate preferences for which actions should be investigated further in the shorter-term. The **potential actions highlighted in yellow** emerged as the top preferences in this category.

Managing Under Increased Uncertainty - Potential Actions
<p>Identify and establish best practices for if/then trigger management</p> <ul style="list-style-type: none"> • If/then triggers include Identifying conditions (and necessary data) that would trigger a pre-specified management response • Provide examples where this has previously been successful • Consider when this type of management process could be useful, include consideration of governance change triggers and ecosystem-based triggers
<p>Look into streamlining NEPA compliance and documentation</p> <ul style="list-style-type: none"> • Examine whether programmatic EISs (evaluating broad proposals or planning-level decisions) could streamline document preparation for actions tiered off the programmatic EIS • Consider possibilities for use of functional equivalencies where possible (i.e., using MSA documents to fulfill NEPA requirements) • Establish consistent guidance across regions, including from the NEPA program and from General Counsel • Expand use of Supplemental Information Reports (i.e., reference but do not include information in NEPA analyses that is available elsewhere)
<p>Include spatial considerations in management</p> <ul style="list-style-type: none"> • Consider whether and how to manage the leading and trailing edges of a species distribution differently, perhaps considering different management (harvest strategies) for different portions of the stock

Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)

- Future proofing
- Consider pros and cons of moving toward consistency across species or regions
- Consider including qualitative and ecosystem information in the risk policy framework to improve the understanding of risk and appropriate management responses

Consider risk assessments to identify fisheries at risk of not meeting management goals

- Risk Assessments = an assessment of factors that could hinder a fishery from meeting its management goals (front end)
- Risk assessments can combine qualitative and quantitative information, so can include more sources of information
- Consider how risk assessments can be used not just to set priorities but also in stock assessments and management

Move toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models.

- Consider dynamic reference points and indicator based management
- Assess options for better including climate vulnerability assessment results into management
- Consider when management strategy evaluations and other structured decision making tools are useful.

Use qualitative information to improve management, including our understanding of risk. Specifically, better incorporation of local ecological knowledge / traditional ecological knowledge into management is needed.

- Inventory where and how qualitative information, including local and traditional ecological knowledge is currently being used in management and identify ways into management process
- Explore participatory modeling

Consider and clearly communicate intricacies of uncertainty when making policy/ changing management

- Where does uncertainty matter?
 - For example - 2 tailed distributions- is uncertainty bigger in one direction vs. the other? Are both tails being considered?
 - A large uncertainty may not be a big issue if there is certainty that the stock is improving

Create a more adaptable structure for fishing permits

- Compile information on permits across entire East Coast
- Assess diversity of permits (who holds them, where, in what combinations)
- Assess permit accumulations
- Identify where there are limits in flexibility for fishermen
 - Are there any easy fixes?
 - Identify first steps for harder issues

Identify and remove institutional baggage

- Permit bundles
- Mis-match of mesh sizes across FMPs = regulatory discards
- Gear/trip limits
- Legacy regs

Improve the use of community climate vulnerability assessments in management

- For example, Colburn et al. 2016 (<https://doi.org/10.1016/j.marpol.2016.04.030>)

Plenary Discussion: Identifying Preliminary Next Steps for Managing Under Uncertainty

During the prioritization exercise (dot voting) the following three potential actions emerged at the top preferences for this discussion theme. Additional information on the ranking exercise results for all actions under all three discussion themes are provided in Appendix F.

- Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)
- Move toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models. Move away from trying to model more and more uncertainties and consider robust management approaches
- Include spatial considerations in management

The plenary discussion, which is detailed below, focused almost entirely on these three issues, at the direction of the facilitator and Core Team. This is not intended to convey a lack of interest in these other ideas, and they can be addressed by the Councils and Commission in the future.

Improve use of Risk Policies

Risk policies are a way for fishery management organizations to consider multiple elements of uncertainty and risk tolerance in an organized and transparent manner, as part of the management process. Addressing uncertainty has always been a core element of fisheries management, but climate change is increasing the magnitude of these uncertainties, and the range of issues that we are unsure about.

The discussion focused in part on what should be included in risk policies. Suggestions included expanding these policies to explicitly include climate considerations, and guide managers towards decisions that will promote resilience in human and natural fisheries systems. Considering risk policies in light of the four climate scenarios was offered as a way to approach expansion of risk policies. One approach to incorporating climate change into risk policies would be to consider climate winners as species for which catch limits might be increased. Another might be to consider whether risk tolerance should be adjusted to reflect differences in climate sensitivity and exposure by species (as documented in fish-stock level climate vulnerability assessments). In the northeast, black sea bass is an example of a species for which the recreational harvest control rule includes consideration of the biomass relative to the target and thus can take advantage of this species being a “climate winner.”

There was recognition that management organizations use risk policies differently. Commonly they are applied to setting catch advice, but some policies are broader to cover other categories of decision making. NEFMC has recently commissioned a review of all eight regional fishery management Council risk policies and how they are used. Although the Commission’s risk policies were not covered in this report, it was noted that ASMFC uses Mid-Atlantic Council risk policies for their joint Commission-Council Fishery Management Plans, and is adopting its own risk policy soon.

It is important to learn from one another’s policies, seeking alignment where possible, but retaining differences amongst Councils as needed. One area where alignment might be most appropriate is in policies that relate to setting catch limits for jointly managed species.

There was some discussion about the purpose of risk policies, how they can be used in theory, and whether they are effectively employed, in practice, for making and understanding decisions, and as a tool for communication. Another consideration is whether these policies are sufficiently broad in scope to cover all of the decisions that a Council or the Commission might make.

Move Towards Robust Management vs. Modeling Uncertainties

The concept here is that assessment models can be very complex, and can include uncertainties across multiple elements (e.g., uncertainties related to environmental changes, changes in predator/prey relations, changes in fishing behavior, etc.). A possible solution is to move away from trying to incorporate information on all of these uncertainties within the assessment models used to set catch advice and instead

towards alternative models or mechanisms for setting limits. For example, management strategy evaluation could be used to identify harvest control rules or trigger-based management processes that are robust despite these uncertainties. This action received substantial support from Summit attendees, but there was limited concrete discussion around short-term 'wins' or actions.

One near term step may be to look for examples of where this is used and has been successful, to begin a conversation about how these approaches might be employed. For example, bluefin tuna management employs management strategy evaluation to evaluate reliable indicators and simulate expected outcomes of alternative approaches.

Another near term step is to look across all east coast managed species to identify those where uncertainties are significant in scale or occurring in multiple facets of the assessment, and focus on developing new approaches and strategies for those species. As with the risk policy evaluation, climate vulnerability assessments may help to focus this work on species that have greater sensitivity or exposure to climate change.

Include spatial considerations in management

The concept here is that for species with shifting spatial distributions, management approaches might need to vary at the leading and trailing ends of their range. There could be biological reasons for this, perhaps to preserve genetic diversity found in these areas, or to allow stocks to successfully establish a population in a new area. A related issue is lack of fishery access at the leading edge of species' range. This might be more pronounced as a species moves into another Council region, or offshore of states with low quotas where the species cannot be landed. Another potential action, creating more adaptable structures for fishing permits, is a related issue. A challenge is that the Magnuson Stevens Act requires management of stocks as a unit across their range, but does allow for variable management across space. For equity and clarity of communication consistent management approaches across the species range may be important. Whatever the specific concern, adequate scientific information is needed to support differences in management by area. More information about these issues is needed in order to generalize insights and strategies across different stocks. Monitoring of stocks as they move is needed. Where possible, on the water observations by fishermen should be reflected in management measures, including through increased use of LEK and TEK. Consideration should also be given to whether catch accounting is accurate across the entire range of the species. While the directed fishery would have the same monitoring throughout the species range, other fisheries and gear types encountering the species might have different monitoring or reporting rates, especially if a species is new to an area.

Specific management approaches could be considered. For example, establishing de minimis status along the trailing edge of a species range, or considering measures that provide conservation equivalency. Different size limits by state might also be appropriate, perhaps if fish attain different sizes by location due to environmental conditions or genetic differences. Cobia is an example of different size limits by state.

6. Data Sources & Partnerships

The sections below provide an overview of the guiding questions for data sources and partnerships, a summary of the main ideas discussed in the breakout group, the list of potential actions identified, and a summary of the follow up plenary conversations. Additional detail on the breakout discussions around cross-jurisdictional governance can be found in Appendix D, and prioritization exercise (dot voting) results can be found in Appendix E.

Overview

One of the primary axes used to develop the scenarios was based on the predictability of ocean conditions, which includes how well science is able to assess and predict changes in stock production and distributions. While the first two themes are centered on how to handle cross-jurisdictional issues and evolving the decision-making process to handle uncertainty, this theme focuses on our ability to provide the information necessary to do both. Providing information about stocks and their locations hinges on our ability to evaluate accurate and timely data. This theme asks, "How do we better coordinate our data collection systems and develop partnerships to leverage funding?" Coordination between management entities, federal entities, academic partners, fisheries stakeholders, and other ocean users will play a large role in which side of the axis we find ourselves within the scenario framework.

During the small group discussion portion of the meeting, groups were asked to focus on four organizing questions related to the overall theme of "Data Sources and Partnerships".

- How should we prioritize data/information needed to manage in a changing environment?
- How can we use current funding more efficiently?
- How can we better utilize the fishing industry for data collection?
- What are the best ways to foster outside partnerships for sharing data, especially with other ocean users?

Breakout Group Discussions: Main Ideas

During the Data & Partnerships breakout sessions the three breakout groups discussed a variety of different topics using the four organizing questions from above. The conversations went in a number of different directions. However, there were several main ideas that emerged from the discussions including fostering better coastwide cooperation, improving fisheries dependent data collection, and ensuring that data is being utilized for management.

The East Coast has a lot of jurisdictional issues that were discussed in other themes. However, fostering better coastwide cooperation extends to data collection and

partnerships as well. There are many scientific surveys that are conducted along the East Coast, including by federal and state entities. The methods and data collection/storage varies greatly across these surveys. In addition, regionalized institutions have created scientific silos where other regions/entities may not even be aware of what data is collected by another. Both of these factors contribute to difficulties in sharing data and may contribute to duplicative efforts across the region. Suggested actions to remedy this situation include creating consistent surveys across regions and at a minimum standardizing the way that data is stored so that it is more easily accessible to other researchers. Similarly, there are other ocean users that are collecting environmental data that is important to track under changing climate conditions. It would be good to align various ocean users' needs and wants to attempt to leverage new partnerships and reduce the burden on fisheries surveys. Some potential partners include offshore wind developers, aquaculture, marine transportation, and the military.

Aside from fisheries independent surveys, fisheries dependent data is an important part of fisheries management. There was extensive discussion on reducing uncertainty in fisheries dependent data. This discussion can be characterized by three main points: 1) incentivizing fishermen to improve reporting of data and collect new data, 2) improving recreational data collection, and 3) improving social-economic data for use in management.

The first point stems from the need for finer spatial scale data as well as more environmental data. The latter is extremely important when addressing climate change concerns. Fishermen are on the water for a greater proportion of the year than any fisheries independent survey and could provide data at a much finer spatial and temporal scale than surveys can. The question is how to get fishermen to provide accurate data and even expand what data they are collecting. Devising an incentive structure that rewards fishermen for providing data is one potential solution. There also seems to be a lack of communication between the science community and fishermen. Many fishermen are willing to provide data if given an opportunity but lack the instruction or instrumentation to do so. Often it comes down to whether funds are available or not. This led to a suggestion of creating shovel-ready projects that when funding becomes available can be quickly executed by fishermen.

The most discussion during the data sources and partnerships theme was centered on improving recreational data collection. Participants felt that it was a glaring need in the management process with some fisheries, particularly in the South Atlantic, having greater than 50 percent of their catch allocated to the recreational sector. Some of the suggestions on this topic address the other two points as well, such as creating incentives for reporting. Other suggested actions included the creation of a recreational study fleet to help improve recreational estimates. The structure of this study fleet would need to encompass a wide swath of user types from private shore-based anglers to charter vessels. Another suggestion was to utilize crowdsourcing as a means to expand data collection. This included mining of social media to get data from something recreational anglers love to do which is post pictures of their catch.

The third point, while not discussed in as much detail as the other two, is also very important as we deal with a changing climate and shifting biological productivity. In the end, fisheries is about managing human activity and therefore the human dimensions of the system need to be addressed and monitored. Changing conditions could alter the very definition of what it means to be a fisherman. Do fishermen continue to fish on a particular species or adapt to whatever species are nearest to their port? The cost of chasing a species up the coast could become too prohibitive for smaller owner-operators. The data required to address this point can be difficult to collect and analyze but should be considered when any data prioritization within the region occurs.

The final main idea from data sources and partnerships was ensuring that data is being used in management. Managing under a changing climate requires a lot of data input to make the most informed decisions on the future. Unfortunately, it is impossible to collect everything. Therefore, data prioritization needs to occur. Before that prioritization happens there needs to be a clear understanding of how the data will be used. This will require increased communication between the science centers and management bodies. This should include periodic reviews of research priorities so that the management system can leverage partnerships with other institutions such as NGOs and academia that may look to those priorities when applying for funding. Discussions around priorities will also inform the other main ideas from this theme. For example, coastwide collaboration will be improved by considering what data is essential to collect during fisheries surveys and the shovel-ready projects to improve fisheries dependent data would also align with priorities.

Potential Actions Identified Across Breakout Groups for Data Sources and Partnerships (Non-Prioritized)

As discussed in Section 3, following the three breakout groups, Core Team members consolidated the concepts discussed into eight primary ideas for data sources and partnerships. These ideas were primarily centered around the main questions that were considered but were not presented in a way that required participants to make “this/not that” determinations. The dot voting was used to illustrate preferences for which actions should be investigated further in the shorter-term. The potential actions highlighted in yellow emerged as the top preferences in the data sources and partnerships category.

Data Sources & Partnerships - Potential Actions
Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams (e.g. offshore wind data)
Focus on AI/technology development to more rapidly get data into assessments
Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)
Prioritize recreational data collection to reduce uncertainty including developing incentives for better reporting
Hire staff dedicated to fostering partnerships and coordinating data collection/sharing between other ocean users, management bodies, and within Federal agencies
Expand study fleet, include recreational fisheries and ensure data are used, include shovel-ready data projects
Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms
Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)

Plenary Discussion: Identifying Preliminary Next Steps

The above highlighted potential actions were the focus of plenary discussion. The group discussed possible mechanisms to move these ideas into the management process.

Expand study fleet, including recreational fisheries, and ensure data are used, include shovel-ready data projects; Prioritize recreational data collection to reduce uncertainty including developing incentives for better reporting

Two of the potential actions that received the most votes for data sources/partnerships were primarily focused on the recreational sector. During the plenary discussion, these two potential actions were discussed in tandem. Recreational catch is an important piece to the story especially with regards to climate change. The recreational sector is often the first to see climate-related changes especially in regions or times where the commercial fleet is not operating. The clear message was to develop a plan for how the data will be used. The idea of a recreational study fleet would be to integrate with Marine Recreational Information Program (MRIP) to decrease uncertainty in its estimates. In order to establish a rec study fleet, the centers, regional office, and councils would need to work together in a partnership to identify priority data needs and establish a pathway for integrating the data into management. GARFO could lay the groundwork for such a partnership in its Recreational Saltwater Fisheries Policy Regional Implementation Plan. The Councils and Commission could follow-up by establishing work plans that use the recreational study fleet data. In addition to the

study fleet discussion, the topic of “shovel-ready” or “ready-to-go” projects were discussed. There are many data gaps that fishermen are willing to help fill but need to be provided the right guidance on what and how to collect data. Science Centers in conjunction with the management bodies could develop a series of projects that could be quickly implemented if funding becomes available. These “shovel-ready” projects should extend to the commercial sector as well.

Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)

The conversation around this potential action can be broken into two main points. The first was around fisheries independent surveys. As noted above, there are many federal and state fisheries independent surveys operating along the East Coast. Many of them use different gears and protocols from one another. This makes it difficult to directly compare survey indices. Standardizing surveys across the coast will not be an easy fix. Any changes to survey protocol could break time series. This is not something to be done lightly and therefore requires a clear vision of how the data would be used. The second point raised during the discussion extended beyond the biological and physical variables and centered around socio-economic data. This data is extremely important but is rarely the focus of data discussions. The need for good socio-economic data may be exacerbated by other ocean users such as offshore wind or catastrophic events such as hurricanes. There are examples of demand models being developed in the recreational sector that could be applied to the commercial sector. Economic models like this can help identify potential business decisions which in turn can inform potential impacts from management decisions.

7. Reflections and Concluding Thoughts

At the conclusion of the Summit Meeting, participants recognized the wide-ranging challenges that climate change poses for the future of East Coast fishery management. Session conversations revealed that climate change intensifies the pressures that fishery managers have been facing for years: limitations in information, the need to balance flexibility and stability, and the best way to promote coordination across organizations. Many of the themes identified are long-standing issues. Climate change has brought an added urgency for them to be addressed.

This meeting generated several ideas, and created a potential agenda for action that can help shape changes to fishery management approaches over the coming years. While the focus of this session was limited to three of the most important themes to address, it was clear that climate change will raise several other issues that fishery managers must deal with.

Regarding the next steps that followed from the Summit, it was agreed that a report of the Summit Meeting (this report) would be presented to the NRCC for their review at their May 2023 meeting. Presentations of the findings from the Summit will also be presented to each of the three east coast Councils and the Commission.

In addition, the Scenario Planning Core Team will also draft a separate document to make specific suggestions on which potential action areas to explore further and their appropriate next steps. Following review and discussion of the elements contained in this "draft action plan" document, the NRCC will determine a path forward.

8. Appendices

Appendix A: Summit Participants

Atlantic States Marine Fisheries Commission

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Mid-Atlantic Fishery Management Council

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Michelle Duval
Sonny Gwin
Dewey Hemilright
Peter Hughes
Chris Moore
Brandon Muffley
Adam Nowalsky
David Stormer
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South Atlantic Fishery Management Council

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Judd Curtis
Tim Griner
Kerry Marhefka
Jessica McCawley
Trish Murphey
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NMFS

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Kevin Craig (SEFSC)
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Kelly Denit (Headquarters)
Rick DeVictor (SERO)
Emily Gilbert (GARFO)
Jon Hare (NEFSC)
Evan Howell (Headquarters)
Mike Pentony (GARFO)
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Roger Pugliese (SAFMC)
Jonathan Star (Facilitator, Scenario Insight)

Appendix B: Cross-Jurisdictional Governance Breakout Groups Summary and Potential Actions

This appendix attempts to capture a complete paraphrased list of ideas and considerations raised during the brainstorming sessions for the cross-jurisdictional governance theme. These were ideas identified by participants for the purpose of generating discussion and creative problem solving. Not all of these ideas had broad support and in some cases may have had very little support.

Q1. What is the best structure and representation for governance on the U.S. East coast?

- ***Enhance flexibility and adaptability in our governance structure.***
 - There is a general recognition of the need for more flexibility and adaptability in our governance structure.
- ***Evaluate where questions of state vs. federal jurisdiction and authority may need additional clarity or revision.***
 - Additional clarity, definition of roles, and re-evaluation of responsibilities may be needed in some cases for cooperative state/federal management. States and the federal government have different tools at hand with different flexibilities and differing abilities to be nimble and responsive. We are currently taking advantage of these differences as much as possible, by picking which pieces work well for which parts of the process. However, this approach sometimes creates confusion about authority, and we could consider structural changes that make this piecemeal approach less necessary.
- ***There is a need to think more critically about representation needs, both with regard to current concerns and future needs.***
 - What are the current representation concerns and what are they based on?
 - How many tables should there be, and who gets a seat at the table(s)?
 - When we think about representation needs for the future, we tend to think about it in terms of minor changes to current representation, but we should also think about who is currently underrepresented and underserved in our process.
 - We need to be thinking years and decades into the future about which FMPs will need expanded or modified representation. However, we should be cautious when thinking about this because there will likely be representation overlap between different groups which could create inefficiencies.

- *Consider moving away from designing governance around states as the primary unit of representation.*
 - Is it possible to rely less on organization of representation around the state level? It would be difficult to move away from federalism in this system and states would likely not support this; however, we are struggling to address state representation concerns.
 - Perhaps there is a way to better design the system for representing the best interests of the nation as a whole and introduce aspects of decision making that force conversations away from “what’s in it for my state?” One way of doing this may be to integrate more neutral parties into the decision making process.
 - Increasing the number of at-large members could be another approach, and potentially designating at-large members based on affiliations other than states (e.g., stakeholder group).
 - Appointed Council members need to swear an oath under the MSA to manage for the overall benefit of the nation, but state designees do not. Maybe there should be consideration of state members having to compromise more on state interests.

- *Consider consolidating East Coast Councils into one large Council with opt-in species/FMP Boards or committees.*
 - Some suggested one big East Coast Management Council with opt-in participation by states. The full Council would not need to vote on each management plan; the opt-in participation could be at the level of Boards or committees designed to provide appropriate representation based on interest/fishery occurrence.
 - This may provide a system that is more flexible to manage on a species complex or area basis.
 - Expanded committees may be needed under this approach, where there are multiple representatives from each state (similar to the Commission’s Board).
 - Coordination across the East Coast is somewhat built in with this approach, although there would likely still be governance complications with determining appropriate management authority between the federal Council and the Commission authority in state waters.
 - The Council system is likely to become more complex with an expanded number of representatives. It could also change current regional voting dynamics, for better or worse.
 - Finding members to represent more constituents across a broader area, and potentially having to cover more species/FMPs, may be difficult.
 - Depending on how it’s structured, some stakeholder representation and connection to Council members may be lost (see below).
 - Under this type of system, a similar structure could be used for a large SSC, structured with differing representation by stock complex.

- Some would consider this to be a longer term idea to consider if more modest adjustments to our governance structure don't accomplish what we need. In the coming decades, if there is increasing overlap in representation needs, it may be more efficient to consolidate the East Coast Councils.
- ***Consider the important and unique role of the Councils in stakeholder representation when considering possible changes to governance structure.***
 - Fishermen in each region still need Council members who represent them.
 - One coastwide Council, or an expanded Council jurisdiction, could leave stakeholders with less access to their Council representatives and less invested in the process. Fishermen need to know who to reach out to and have easy access to them.
 - However, an ASMFC Board-style arrangement with a consolidated Council could help maintain sufficient regional representation for stakeholders.
- ***Consider changes in state representation on Councils.***
 - Some states serve on two Councils (e.g., North Carolina and Florida) and this could be worth considering for more states.
 - Rhode Island has attempted to get a seat on the Mid-Atlantic Council based on landing more mid-Atlantic managed species than every other mid-Atlantic state. Coastal representation could be balanced by considering changes in voting representation on Councils.
 - Giving states votes on Councils has an advantage over giving liaisons voting rights, as it would allow access to at-large seats.
 - Changing state representation on Councils would require a change to Magnuson and is likely a less flexible/nimble way of changing governance structure.
- ***Consider that representation/changing distributions may not always become a problem worth revising governance structure for.***
 - Many current plans manage a unit stock that extends beyond the Council's boundaries, and some of these are working well and may continue to work well under changing conditions.
 - Solutions that don't require the entire governance structure to change in the same way for every FMP may be more flexible.

- *Reconsider the use of committees across Councils, and reconsider committee representation/structure.*
 - The Councils currently use committees differently. Adding voting members or otherwise modifying representation has more of an impact for some Councils than others.
 - There is a sense that the committee level is where most of the work either gets done or should get done. In other regions, the Council vote is more of a formality because the more difficult work has already been done by the committee. In the South Atlantic this is even more effective with many of the committees presently structured to include all Council members.
 - Councils could modify their rules to give committees more authority. The groups discussed a few different ways this could be done.
 - Simply giving committees the final vote could be accomplished through a Magnuson revision.
 - It also may be possible to change the Council's SOPPs to cede authority to the committees on certain types of decisions. The full Council may still need to vote, but a procedural change could make it so that if the full Council vote fails, the issue is simply returned to the committee.
 - Additional legal guidance may be needed on this issue and the question of whether the full Council would necessarily need to vote on every issue without changes to Magnuson.
 - If relying more on committees, it may be beneficial to consider a more prescriptive approach to committee population. For example, considering the economic importance of each FMP to different states, or having a certain number of committee representatives by state/sector, etc.
 - Representation between the recreational and commercial fisheries would be important to consider on committees for many fisheries as well as state/regional representation.
 - Committee representation would need to be reconsidered periodically as species distributions and fishery characteristics change with climate change.

- *If committees are expanded, consider staff support from multiple Councils to support the work of the committee.*
 - In situations where committees are expanded and the role of the committee becomes more important, it could be advisable to have staff from multiple Councils, or the Commission, providing support to the committee. The lead staff person could be from the managing Council, but involving staff from other organizations could improve support for committee decision making and keep both management bodies in the loop about actions.

- ***Consider voting rights for Council liaisons.***
 - One suggestion was to think about giving one Council a single vote on another Council. This could be done by giving liaisons voting rights, which has been suggested in the past.
 - There was some question whether giving liaisons voting rights would make a meaningful difference in most voting outcomes. Perhaps if the liaisons were the ones making motions it could, but one additional vote does not necessarily have a major impact.
 - Giving liaisons voting rights would require a change to Magnuson.
 - As discussed below under “General Coordination/Collaboration,” the roles of liaisons can be variable in practice and may need to be clarified.

- ***Allow for designation of proxies at the Council level.***
 - The Commission currently allows for the use of proxies in representation, while the Council does not for appointed members. Allowing proxies at the Council level could help alleviate resource and workload issues. Particularly as management evolves to adapt to changing conditions, approaches like more joint management, more frequent committee meetings, and broadening of stakeholder engagement efforts may mean more strain on individual Council members and their families.
 - Allowing proxies at the Council level would likely require a change to Magnuson.

- ***Evaluate Commission-specific structures and policies for potential changes.***
 - The Commission may benefit from more standardized term limits, similar to Councils.
 - Use of proxies could also be reevaluated at the Commission level.

- ***Other Governance Structure Considerations:***
 - There is some inherent tension between increased representation vs. efficiency and nimbleness. The process is in some ways intentionally slow to ensure proper opportunities for public comments and ensure constituents needs are met. Increased representation would likely further slow the process in some respects: the more people you get involved in management by expanding representation, the more inefficient or cumbersome the process could become.
 - Managers should look for ways to move toward less siloed management and permit structures.
 - Evaluations of appropriate governance representation should go beyond where the stocks are distributed in the water, and even where fishermen are catching them. There is also consideration needed to where the people are that are impacted by the fishery, including shoreside stakeholders and businesses.

Q2. When and how should management authority change?

- ***Guidelines should be developed for when to start considering a management authority transition.***
 - These guidelines should be specific to initiating a review process to consider whether authority needs to change, and not guidelines for automatically changing management authority. Formulaic assignment of management authority would make governance less flexible.
 - Concern about indicators or triggers that would cause species responsibilities to shift too often, leading to an impractical inefficient system.
 - Indicators or factors to be evaluated should include both biological/ecological information about the species but also social and economic information about the fisheries and associated infrastructure.
 - Even when stock distribution does not appear to be changing, there could be a shift in the fishery's importance to different areas. This is something that could be considered to trigger a review of management authority, but does not necessarily mean that transfer needs to occur.
- ***Requests to transfer authority should come from the Councils.***
 - Because of the huge impact to the Councils, a request to change management authority should come from one or more Councils involved (ideally, both Councils involved).
 - A management authority will not always necessarily want to take over management of an FMP, and they should have input in the decision.
 - Councils should also be able to request to give up management of a species.
- ***Transfers of authority should be slow and thoroughly considered.***
 - Transition should not occur overnight; an intermediate step such as joint management will likely be needed (though perhaps not in every case).
 - Much expertise and institutional knowledge will be lost in the transfer process and this needs to be considered.
 - It will likely be resource intensive to transition authority, in terms of staff time and potentially in terms of public involvement/outreach.

Q3. How can we improve the efficiency and the efficacy of joint fishery management plans?

- ***Clarify definitions of "joint" management.***
 - There are many different configurations of joint management and differing arrangements and procedures. Using clear definitions when discussing joint management changes is necessary.
- ***Consider modifications to joint voting procedures.***
 - For some species, sequential voting at separate meetings has produced mixed results, and there are mixed opinions on whether it works well. In some cases, it can cause wasted effort and inefficiencies when two groups disagree (for example, multi-year process to consider an IFQ program for monkfish).
 - In some cases, joint management doesn't feel truly joint where there is a "lead Council," in that decisions often flow from that Council and their SSC.
 - Consider changing voting structure to majority of total members instead of a majority of each group.
- ***Consider where some aspects of joint management are currently working well and may continue to work well into the future.***
 - The problem of changing stock distributions isn't necessarily a new one; it is a problem that had to be dealt with in the original setup of the Council system. Some of the joint management plans we currently have may continue to work fine under changing conditions.
 - For some jointly managed plans, it is not clear there is much additional efficiency that could be achieved.
- ***Consider where joint management agreements and procedures can be improved and made more efficient, in anticipation of more joint management agreements potentially being needed in the future.***
 - Additional joint management agreements, particularly between multiple Councils, may be needed under future changing conditions. In anticipation of this, it would be wise to review ways to improve joint management agreements and processes.
 - Joint management is currently a process that typically takes up a lot of time and resources. It can be a cumbersome and resource-heavy process. There may be ways to streamlining portions of it.
 - Joint management can also be heavily siloed and it is worth considering ways to break down the siloed approach and have a broader conversation about shared values and objectives.
 - Under a system with more heavy reliance on committees, formation of joint committees between management bodies may improve the efficiency of decision making.

- Increased SSC coordination between joint Council-managed species could also streamline decision making.
- A review of different types of joint management, and comparison of where they might work or not work in certain situations, should also look at other examples such as joint management agreements between the South Atlantic and Gulf of Mexico Councils. Some of these plans appear to be working well by allocating a certain amount of the resource to be managed essentially separately by each Council.
- *Consider degree of influence that one management group may have in comparison to the other management partner.*
 - In some cases, it feels as though one body has more influence than the other. This is often true in the cases where there is a “lead Council” and the other Council usually follows suit with management decisions.

Q4. How can we improve coordination and collaboration among management entities?

- *The role of Council liaisons should be clarified.*
 - The role of Council liaisons is blurry. They should be there to represent what their Council thinks, not their personal opinion, but this does not always happen (and is not always possible, based on the timing of meetings and when issues arise).
 - In some cases, issues come up where the liaisons may not know what the majority “position” of their Council would be, and there is not always time to consult.
 - Clarifying the role of liaisons without adding voting rights would not require a change to Magnuson.
- *Enhance mechanisms for SSC cross-pollination.*
 - Scientific advice may be improved by encouraging more idea-sharing between SSCs.
 - In addition, particularly for jointly managed species, having multiple SSCs weighing in on management decisions in a more coordinated fashion could help increase efficiencies and highlight potential issues earlier in the process.
 - Some existing mechanisms for SSC cross-pollination could be reviewed for application elsewhere in the process, and/or enhanced.
- *“Faction mapping” may help illuminate areas of potential efficiency.*
 - Faction mapping could be used to map out different bodies’ authorities and stakeholders. Where stakeholders overlap, there could be ways to reduce duplicative efforts and create efficiencies.
- *Reevaluate and potentially revise Advisory Panel representation.*

- With changing distributions and changing access to the fishery, as well as changing fishery dynamics, advisory panel representation may need to be reevaluated based on regional/state representation as well as stakeholder group representation. This is particularly true if AP representation has not been revisited for a while.
- Expanded AP representation provides a way for more voices to be heard in the process covering a broader regional extent.
- As noted above under Governance Structure & Representation issues, there is a need to better represent underrepresented and underserved communities on our Advisory Panels.
- In some cases it has been a struggle to achieve adequate representation when populating Advisory Panels. Increased use of webinar meetings and other virtual tools may be one way to broaden the universe of potential advisor input.
- However, it is also worth thinking about circumstances under which expanded representation may or may not actually be needed. For example, if a species distribution is changing, it may not be necessary to increase advisory representation until the importance of that species to the local community reaches a certain threshold.

Other Governance Issues

- *The complexity and disconnected nature of the East Coast permitting structure is a governance and management issue that warrants further consideration.*
 - Intersecting with management is the issue of permit silos. Many participants would like to make it easier to acquire permits in different fisheries. This needs to be weighed against the continued need to limit capacity in many fisheries.
 - Many hold permits that they are having to travel further distances to use. They may wish to get out of moving fisheries and into another fishery, but are limited in their ability to do so due to permit structure.

Appendix C: Managing Under Uncertainty Breakout Groups Summary and Potential Actions

This appendix includes the considerations and potential actions we heard during the managing uncertainty breakout groups. We did our best to include the ideas we heard during the breakouts. The ideas are grouped according to guiding questions, presented prior to the breakout discussions, and by potential action.

Q1: How can we increase flexibility, adaptability and robustness in management?

- There is a need to define the terms flexibility, adaptability, and robustness to ensure common understanding and goals.
- We need to better understand risk. Risk includes the probability that something will happen combined with the consequence if it happens. Many Councils/NMFs are not looking at risk this way.
- Looking at what is achievable is also important.
- Too much flexibility could lead to large swings in management from year to year and that could be detrimental as businesses need stability for planning.
- In all of these situations, good communication and transparency about the process will be key.

Identify and establish best practices for if/then trigger management.

- If/then trigger management describes a process where specified information is collected (stock, environmental, or other conditions), monitored, and when a specific threshold or trigger is met or passed, a pre-identified management response is implemented.
- This (if/then trigger management) will reduce administrative workload associated with implementing changes to fishery management actions, since the actions will have been previously analyzed and/or could be implemented directly by the NOAA Regional Administrator.
- This will also reduce flexibility in how management responds (and will not be able to account for other factors that may be important such as availability of alternative options).
 - Could if/then situations be created to allow some flexibility in response?
- It can be difficult to envision future conditions and set up if/then triggers.
- The tool assumes NMFS/Councils will know when a trigger has been met.
- Could qualitative information from fishermen or other sources be incorporated into the evaluating whether triggers have been reached?
- This tool already exists; there are allocations set up this way.
 - For example, the Bering Sea and Aleutian Islands FMP includes pre-arranged "if/then" allocations for yellowfin sole between two sectors depending on the total allowable catch (TAC). If the TAC for the two

sectors is greater than 125,000 metric tons (mt), then the first sector is allocated 60 percent; if the TAC for the two sectors is less than 125,000 mt, then the first sector receives an increasing apportionment.

- Another example is closure thresholds: if a given percent of the ACL has been caught, then the trip limit decreases.
- The lobster fishery has created a rule that if recruitment is below a given amount, then the fishery automatically changes gauge size
- Suggestions on how these if/then triggers could be added to existing processes were:
 - MAFMC could add triggers to their risk assessment process;
 - Triggers could increase responsiveness when there is joint management across multiple Councils;
 - Triggers could be tied to ABC control rules;
 - Could identify ecosystem level triggers that monitor larger ecosystem processes.
- The NE and Canada have an example system of adapting catch allocations for shared stocks based on historical and current distribution.
 - This system is not perfect as there can be large swings in TAC between surveys and distribution shifts.
- Communication on triggers, why they are important and why changes are needed when triggers are met, is important to improve fishermen compliance with the regulation and add transparency to management. Could fishermen provide input on the scale of the response?

Look into streamlining NEPA compliance and documentation.

- Could NEPA Programmatic Environmental Impact Statements decrease response times for management?
- Could the ASMFC concept of conservation equivalency/functional equivalency be implemented for a faster NEPA process?
- Supplemental Information Reports could be used more frequently for compliance with NEPA, when an action builds directly upon prior actions in that fishery management plan, the measures being suggested are typical of the FMP, and stock and fishery conditions have not changed substantially.
- Consistency in NOAA General Counsel guidance across all regions could be helpful.

Include spatial considerations in management.

- Could variable management across an area be considered (a geographic approach)? For example, decreasing or increasing fishing pressure at the edges of a population?
- Could we identify stock status (overfished, subject to overfishing) by regions?

Other comments related to increasing flexibility, adaptability and robustness in management.

- Learn from other Councils.
 - For example, MAFMC has streamlined their specs process to 1 meeting and 1 vote.
- NMFS and Councils should better account for size and age structure in monitoring and management decisions.
- Councils need more socio-economic information to make better management decisions.
- Think outside the box, for example, how could this idea tie to EBFM?
- There were a few comments on the need for better reporting from all fishing sectors, especially the recreational sector
 - There are participants willing to share their data, but they need a structure to do this.
- Different Councils have heard different advice on the use of EC species and what constitutes management action. Consistent advice is needed.

Q2: How can we better accommodate uncertainty in the stock assessment process and address related management challenges?

Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts).

- Risk policies are different from risk assessments; both could be useful, but only risk policies are discussed here.
 - A risk policy articulates the bounds of how risk tolerant or risk averse an organization's management approach is, given certain criteria. Though informed by scientific advice, risk tolerance is ultimately a policy decision.
- A risk policy could be useful for determining what climate-related risks (and failures) would be acceptable.
- Councils approach risk policies and uncertainty buffers differently.
- It could be useful to categorize risk as long term vs. short term risk, as the management response may be different depending on the temporal outlook.
 - In the NE there is a tendency to look at short term risk to businesses and ignore long term adverse effects.
- There was agreement that comparing risk policies from all the Councils, including how they account for uncertainties due to climate would be useful.
 - NEFMC hired a contractor to prepare a report with this information for all Councils. It will be released in spring 2023.
 - ASMFC has a draft risk policy that includes information on climate concerns and information on economic importance that can decrease or increase catch levels, respectively.
 - SAFMC has an ABC Control Rule that is complicated. It seems subjective because uncertainty varies between stocks.

- There was interest in having more consistency in the risk policies across the different management bodies. Some felt consistency was needed and others thought the differences were appropriate. All agreed that inconsistencies will create challenges when stocks move across jurisdictional boundaries, especially if the Council in charge of the fishery management plan changes (see governance discussion).
- There was concern that some existing risk policies only result in a decrease in catch (i.e., they increase uncertainty buffers), and that there is no mechanism for increasing catch (i.e., decreasing buffers) for species showing positive responses to a change in climate.
 - We need a tool to identify species doing well and take this account within a risk policy.
 - We have F_{rebuild} and F_{MSY} . Can we add a new F for stocks doing well? For example, if $B/B_{\text{MSY}} > 2$, implement the higher F because of low risk.
 - Black sea bass are doing well but fishermen are not getting to take advantage of this. They feel like fishermen are being held accountable, but management is not being held to be accountable.
- Is there a way to influence SSCs to take more risk?
- When there is a required cut in catch, the response should be tied to the level of certainty, and anecdotal information should also be considered.
- In order to improve our understanding of risk, we could track risk, decisions, and consequences to better learn from past decisions (i.e., use adaptive management). This could be applied to both science and management decisions.
 - For stock assessments, we can improve our understanding of risk by looking at the history of assessments and retrospective variability.
- Results from NOAA's species and habitat climate vulnerability assessments could be used to identify species that have higher or lower risk of climate impacts.
 - For the Northeast, a crosswalk of the habitat and species assessments was recently completed that merges the findings of both assessments into a single evaluation.

Consider risk assessments to identify fisheries at risk of not meeting management goals

- Risk assessment is a systematic process of evaluating potential risks involved in an undertaking, including the probability that an outcome might occur and the severity of the consequences.
- Risk assessments can combine qualitative and quantitative information.
- Risk assessments help identify scientific and management priorities
- When you look at risk, the risk to the resource and risk to the permit holder should be discussed.

Move toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models.

- Consider moving toward dynamic reference points that adjust to account for current environmental conditions. There should be the expectation that as management adjusts to this new tool, there will be some failures before successes.
 - Use ecosystem and environmental information to inform appropriate dynamic reference points; use trial and error to ID systems that work.
- Accurately measuring uncertainty is hard if not impossible. Are there better ways to measure uncertainty?
 - One idea is to consider historical assessment variability rather than trying to quantify all forms of uncertainty.
- Could other information (habitat availability or condition, predator and prey information) be considered, especially in situations where there is a disagreement on the status of a stock?
- Management strategy evaluations (MSEs) can be used to identify management options that are robust to multiple possible future conditions.
 - Guidelines on how to focus MSEs could be useful.
 - There are other forms of structured decision making (similar tools to MSEs) that could be useful.

Use qualitative information to improve our understanding of risk. Specifically, better incorporation of local ecological knowledge into management is needed.

- Results from climate vulnerability assessments could be used to identify species that have higher or lower risk of climate impacts.
- NMFS and Councils could also explore participatory modeling that includes what fishermen are seeing on the water ([good example from Gulf of Mexico](#))
- Fishermen can also collect data to clarify conditions on the water as they have done for [red tide in the Southeast](#)
- North Pacific Fisheries Management Council uses [risk tables](#), a standardized framework to document concerns about the assessment model, population dynamics, and the ecosystem/environment that are not explicitly addressed within the stock assessment model. A qualitative scoring procedure is used to evaluate the severity of the concern.

Consider and clearly communicate intricacies of uncertainty when making policy/ changing management

- Not all risk is the same, and it can depend on the type and characteristics of uncertainty.
- The type of uncertainty matters.

- A large uncertainty in fishing mortality might be more important than uncertainty of the utilization of a stock, especially in situations where there is certainty that the stock is improving.
 - More nuanced communication about the type of uncertainty is needed
- Characteristics of the uncertainty also matter.
 - For example, with a 2 tailed distribution- is uncertainty bigger in one direction vs. the other? Are both tails being considered? A highly skewed understanding of uncertainty could mean there were large consequences for a wrong decision one direction but not the other and this should influence decisions.

Other Comments related to improving our ability to account for uncertainty in management:

- Simulations could be used to better understand and communicate the risks associated with management decisions
 - There was concern that the high workload on assessment scientists would mean simulations will not be prioritized.
- If management does not account for current conditions, we could be aiming for rebuilding that is not possible. If we can show fishing is not the reason for a low abundance, then we can look to other management responses.
- Consider moving from the concept of maximum sustainable yield (MSY) to the concept of pretty good yield as it can provide more flexibility in its use
- ICES has started providing scientific advice on MSY as a range, with other factors (such as known uncertainties) driving what part of the range is used for management.
 - This would require careful adherence to a risk policy, so that management bodies could avoid consistently picking the highest number on the range.
- There were suggestions to better integrate considerations of scientific and management uncertainty (vs considering them mostly separately as is currently done).
- How do we deal with situations where the stock assessment was not approved. The Council needs the ability to do something in these situations.
- For stocks where we are lacking relevant survey information, what other information can we track? CPUE? An EBFM indicator? There was a suggestion that we need to decide in advance what will be used to make decisions.

Q3: How can we improve the ability for fishermen and other stakeholders to adapt to climate change?

Creating a more adaptable structure for fishing permits. Fishermen need the ability to change target species or locations in order to adapt to changes in environmental conditions and fisheries. Right now permits, permit systems, and

required reporting differ between Councils and between fisheries. Creating consistency in the permit system could allow for permits to be adjustable as stocks move and target fisheries change.

- Possible steps in this process include:
 - Compile information on permits across the entire East Coast.
 - Assess diversity of permits (who holds them, where, in what combinations)
 - Assess permit accumulations
 - Identify where there are limits in flexibility for fishermen.
 - Identify easy changes
 - Address coast-wide permit issues
- Easier wins were identified:
 - Splitting permits
 - Adding emerging species to existing permits
 - Removing historical moratoria on permits
 - Remove requirements to bundle permits that may no longer make sense and should be reconsidered.
- There is a need to consider and assess the community component of permits (who holds permits, and how changes impact communities) and track the accumulation of fisheries permits through time.
- There was concern that changing gear restrictions could increase uncertainty if this brings in latent effort.
- Different permits have different reporting requirements, which is challenging to fishermen.
- Permits are a difficult subject to address, given the financial investment many fishermen have in the existing system.
 - Should fishers granted permits/quota be treated differently than those who invested heavily in the permits/quota?
- Fishermen are concerned with “blowing up” the existing system. The combined impacts could impact uncertainties; so any changes should be tested with small changes first.
- If changes to permits are being considered, the capacity of a fishery should be considered as there are some fisheries that cannot add new capacity.
- It is easier to adjust permits when there are not state by state allocations. State IFQ programs also create less flexibility
- Larger changes in permits were also suggested, such as switching from species specific permits to area based permits (as the NEFMC eFEP contemplates), and switching from state permits to a universal federal permit that would adjust to species distribution and abundances (for charter boats).
 - When discussing a shift to area based permits, the tendency for fishermen to target high value species would need to be considered to ensure this does not create more choke stocks.
- Sub-regional permits could be used to address shifting stocks. There could be a stepwise approach to adding species to permits. For example, adding black

sea bass to lobster permits to allow lobster fishermen to land bass that are caught in the lobster traps.

Identify and remove institutional baggage. Some existing rules that limit the flexibility to respond to changes in fish stock abundance and distribution may no longer be needed or relevant. Councils should identify and remove this “institutional baggage”. Ideas include removing:

- Restrictions on what gear can be used to fish what stocks
- Permit bundle requirements
- Restrictions on using one gear per trip
- Trip limits
- Mis-match of mesh sizes across fisheries (e.g., flounder and black sea bass)
- Limitations in endorsements (e.g., cannot crossover between pot and longline)
- Other legacy regulations

There was also discussion of shifting towards different means of conducting fishery-independent surveys. NEFSC is considering these issues under the [Northeast U.S. Region Federal Survey Mitigation Strategy](#).

Improve the use of community vulnerability assessments.

- Climate change will likely create winners and losers. Are there management changes we can implement that will ensure everyone survives?
- Councils need more socio-economic information to better understand fisher needs

Other comments on improving the ability of fishermen to respond to changes:

- Increasing diversity of catch can increase stability and resilience of fishermen. However, specialized gears can make change hard. How can we incentivize diversity?
 - Potential action: Create a program to support diversification (gear, fisheries, etc.)
- Fishermen need stability. Large swings in management or catch limits are difficult for fishermen and processors.
- Economics (for example, gas prices) impact the ability to follow the fish.
- Commercial infrastructure is also important.
 - Loss of working waterfronts decreases options for where fish can be landed.
 - Sea level rise is also impacting these businesses
 - Could fisheries move to offshore infrastructure?
- Councils need to identify a better mechanism for managing emerging fisheries.
- Increasing market certainty could help with fishermen’s ability to address other forms of uncertainty. For example, adding a market for an invasive species increases market certainty that may help fishermen deal with the ecosystem impacts of that invasive species.

Appendix D: Data and Partnerships Breakout Groups Summary and Potential Actions

This appendix includes the considerations and potential actions we heard during the data and partnerships breakout groups. We did our best to include the ideas we heard during the breakouts. Participants used post-it notes to bring ideas to each guiding question. The ideas are grouped according to guiding questions, presented prior to consolidation, the breakout discussions.

Q1. How should we prioritize data/information needed to manage in a changing environment?

- Develop a process between the NRCC and SEDAR to prioritize data (Use ACCSP as example)
 - One participant noted that the NRCC does not have control over data collection and this should not be pursued.
- Implement better coordination between federal and state recreational permits
 - Then collect data
- Reduce uncertainty in recreational data for species with high recreational catch and effort.
- Shift standard recreational survey to a directed survey.
- Use eDNA for gut content analysis
- Incentivize better reporting both recreationally and commercially.
- Start a conversation about data storage with regards to offshore wind instruments
- Consider data management in addition to data collection.
- Expansion of ocean monitoring systems (e.g., IOOS) regionally.
- Work to better understand what environmental data is needed to improve assessments.
- Evaluate how existing fishery dependent and independent data have been used, then refine and streamline.
- Compatibility and continuity of fishery independent surveys with different gear types.
- Standardize data collection requirements across jurisdictions. States often have less robust data standards, but more flexible regulator requirements.
- Standardize and expand cross-jurisdictional surveys.
- Paperwork Reduction Act could be a barrier for nimbleness.
- Increase communication between science centers and states (e.g., through workshops) and have the group identify data holes and what is not used.
- Be ready to prioritize, say “no”, and/or stop some projects to ensure resources are available for this effort.
- Require finer-scale catch reporting (10-minute square or better)
- Prioritize and develop:
 - Data standards/methods that can be useful for ecosystem management.

- Standards for government, education, and other ocean user development.
- Identify training opportunities for fisheries managers to learn/experience why human dimensions data is important to decision making.
- Prioritize human dimensions data (how people feel about changes/identity/etc) in grant opportunities (S-K, FIS, ACCSP), etc.
- Comprehensive habitat mapping is needed to EBFM and monitoring species' range (contraction/expansion)
- Review the huge list of research needs
 - Sort out those related to climate change and identify gaps.
 - Prioritize those data needs.
- Review ACCSP mode of prioritizing data.
- NRCC and SEDAR initiate a conversation on what can be done and what we can stop doing. New high-level commitment.
- Need to expand the recreational demand model to the commercial sector and up/down the coast.
- Develop a message around why we are prioritizing data
 - Helps with incentives to provide data.
- Use legacy environmental and survey data to make retrospective forecasts of changes in stock distribution to determine which data elements are key in making future predictions.

Q2. How can we use current funding more efficiently?

- Current funding:
 - We cannot prepare for the future with current funding.
 - Need to bring congress into conversation.
 - Combine partnerships with new developing ocean users.
- Expand and utilize technology more.
- Expand current use of environmental data loggers, etc, consistently across the coast of industry vessels (better utilize industry and current funding).
- Centralized, cloud-based data management system.
- Determine if all current funding is still useful and redirect or develop cheaper technology.
- Require environmental monitoring stations on wind turbines
- Plan to fully implement A.I. solutions for data collection and data analysis.
- Partner with NGOs in prioritizing funding decisions, i.e., use fisheries climate change priorities in proposal ranking.
- Conduct modeling to determine how best to “knit” together different existing regional surveys.
- Prioritize data collection in areas, sectors, and gears where uncertainty is highest.
- Strategic planning coastwide for projects and data needs to identify efficiencies.

- Expand study fleet and citizen science approaches consistently across the coast and identify the data/questions each approach is most appropriate for to collect more real-time data.
- Review and collect existing data streams not traditionally used.
- Transition to more efficient sampling methods (drones, gliders, eDNA, etc)
- Right size data collection (if we subsample otoliths, we have collected too many)
- NMFS should be more organized in terms of our programmatic needs and priorities.
- Management needs should drive data needs, not vice-versa.
- Maximize relevant data collection from existing surveys.
- Breakdown geographic barriers, i.e., NEFSC vs SEFSC
- Unified collection (standards) and centralized data management.
- Work with states and feds to standardize gear/collection methods.
- NMFS/states should review long-term fishery dependent surveys and assess their current usefulness and decide to stop doing surveys based on the results of the analysis and reprogram funds.
- Stop building ships to skiffs, i.e., replace white ship fleet.
- One permit system.
- Standardize data collection along the coast (state and fed).
- Clean house of people who do not do their jobs.
- Use for-hire fleet to assist in spatial scale data to assist in the Albatross/Bigelow surveys.
- Partner with organizations that would benefit from serving as a platform for data collection, e.g., USCG, DOD, pilot training, schools, merchant marine academy, marine technical schools.

Q3. How can we better utilize the fishing industry for data collection?

- Collect data to calibrate catch composition with temperature.
- Recreational study fleet
- Reduce size of statistical areas to generate finer, more accurate scaled data.
- Study fleets: (recreational, commercial) use as priors on existing data sources.
- Turn losers, non-reporting, recreational tilefish permittees into data collection instead of fines/sanctions
- Consult a professional outreach expert/firm.
- Actually use stuff, study fleet.
- Ensure whatever is collected is actually used.
- Deploy environmental sensors on fishing vessels.
- Invest in temperature sensors/CTDs and put them on as many boats as possible.
- Better commercial fisheries monitoring, i.e. 100% ASM in NE Groundfish.
- Expand and create RSA programs, e.g. Scallop RSA. Be very thoughtful of program design.

- Use the for-hire fleet
 - eVTRs: Temperature, length of trip, lat/long
- Use fishing vessels as platforms (moorings, temperature, manual observation, eDNA)
- Cooperative/Collaborative research
- Scientific effort to merge/use data from different scales and sampling designs.
- Incentivize data collection. Hybrid fish for science/commercial fishing.
- Trust that the fleet can collect scientifically valid information.
- Tell the industry what you need and work collaboratively to get it.
- Expand the study fleet.
- Begin transitioning current large-vessel government vessel surveys to industry platforms.
- Create an example of how data will be used.
- Create incentives: explain why data is needed, how it will be used and how it will benefit science/management.
- Citizen science reporting for the recreational fishing sector.
- Citizen science and cooperative research. NMFS should increase funding and have a larger role.
- Expand the study fleet and recognize that not every fisherman is cut out to be a study fleet participant.
- Create flexibility and opportunities for fishermen who pitch in to collect data.
- Inclusion of collected data in the stock assessment process along with greater transparency and flexibility in the incorporation.
- Create a number of incentives for fishermen to participate in data collection.
- Utilize fishing industry:
 - First determine what to collect as a harvester (what is needed)
 - Outreach on how to best collect with industry.

Q4. What are the best ways to foster outside partnerships for sharing data, especially with other ocean users?

- Create more regular, structured coordination across relevant Federal organizations for data collection, science, etc.
- Approach well-funded foundations who are about oceans and climate change (not just Federal funding)
- Better prioritize applied research.
- Clearly define how the data are going to be used.
- Be wary of wind farms. They do not have a vested interest in the future of our environment.
- Seek mutually beneficial projects. Each party must benefit somehow.
- We have data. What do we do with it based on climate change?
- How will we use new data?
- Leverage universities to develop stock assessment models for added capacity.

- Use wind turbine money to fund surveys but the surveys are conducted and overseen by NMFS.
- Full-time staff with coordination roles to focus on communication.
- Use OSW turbines as platforms of opportunity to collect species distribution data.
- Foster data sharing:
 - New ocean users collecting standard data in elements partnership.
 - Develop recommendations on what is to be collected.
- Define data gaps and needs, then coordinate with other Federal agencies to determine whether data needs can be met. Is data already available?
- Identify other users and ask for data contributions.
- Collect the right data, not just more data.
- Actually use the study fleet.
- Host a forum of known established partners to discuss what is available and data gaps.

Appendix E: Prioritization Exercise Detailed Results

This appendix provides the detailed breakdown of voting from the prioritization exercise conducted on Day 2 of the meeting (as described in Section 3). Based on the Day 1 discussions, Core Team members finalized a list of potential actions for each theme. These actions are listed and briefly described in the three tables in the body of the Summit report (Sections 4-6). Summit participants were asked to prioritize the potential actions in the following way. Everyone received eight votes in the form of dot stickers. Dot stickers were color coded according to each participant's affiliation, with additional labeling for attendees who are members of both a council and ASMFC. Votes could be allocated across any of the potential action areas in any of the themes, but participants could not vote for the same potential action more than once.

Participants were asked to consider prioritizing:

- Potential actions that will help fishery managers prepare for and cope with the challenges of climate change;
- Potential actions that fishery managers are able to influence, and
- Potential actions that are feasible to implement, or where some progress can be made.

Cross-Jurisdictional Governance

Governance Potential Actions	Total
Move to more consistent use of committees across Councils; re-evaluate Committee representation	25
Evaluate mechanisms for cross pollination of SSCs	17
Committee-based decision making with changes to Council SOPPs (Committee motions not approved by full Council get sent back to Committee)	17
Improve coordination across NOAA Offices	13
Coastwide council with opt-in representation by FMP based on fishery interest	12
Clarify and potentially expand the roles of liaisons between Councils	11
Change state representation on councils	8
Review efficiency/effectiveness of joint management plans along coast	8
Re-evaluate and potential revise Advisory Panel representation	4
Committee-Based decision making where Committee has final vote (does not go back to full Council)	1
Consider allowing proxies at Councils to alleviate workload issues	1
Develop more explicit agreements for joint FMPs	1
Total Cross-Jurisdictional Governance Dots	118

Figure 1: Summit dot voting totals for Cross-Jurisdictional Governance. These vote counts represent the total dots received for each potential action, and do NOT reflect double counting of those representing more than one management body.

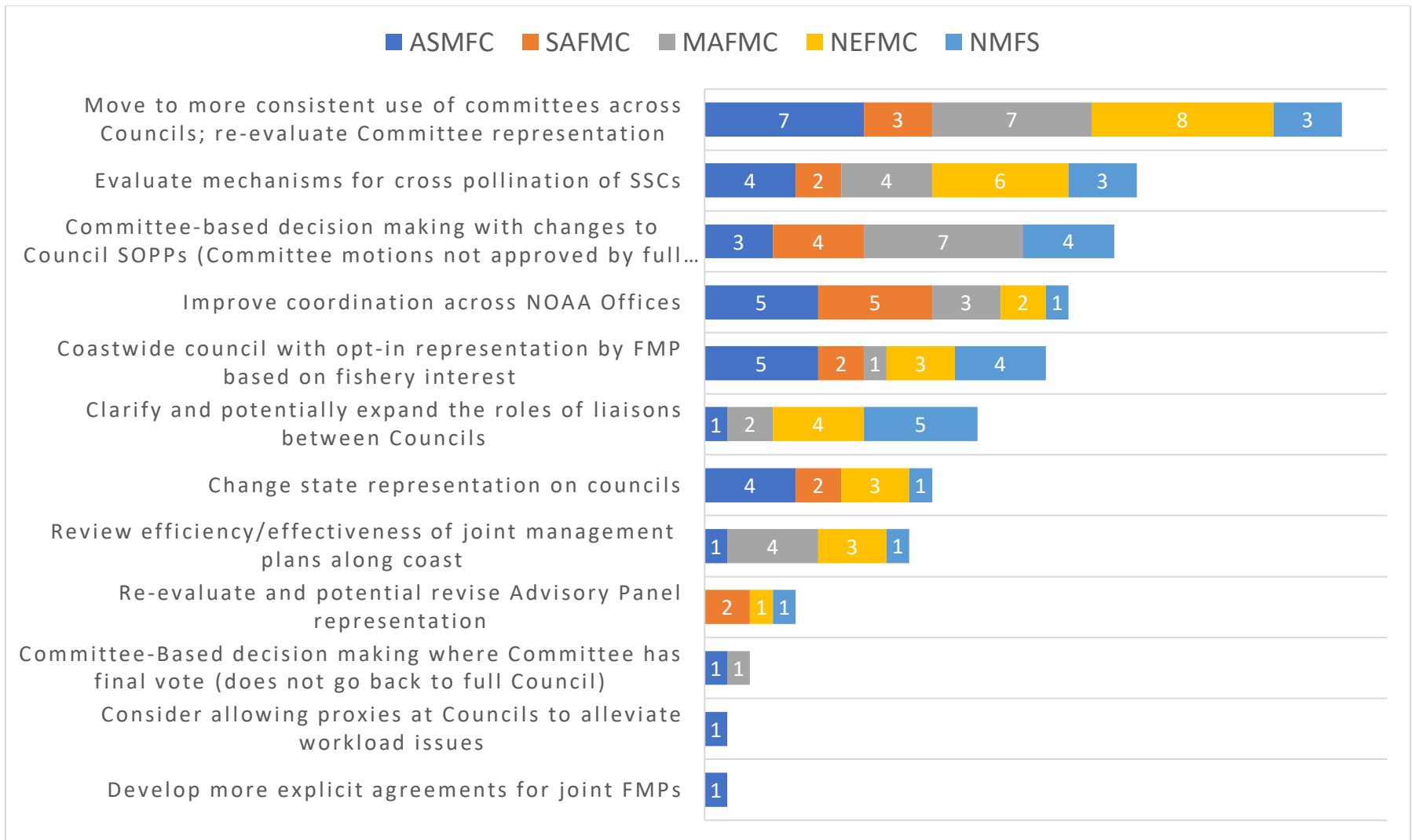


Figure 2: Summit dot voting results by management entity for Cross-Jurisdictional Governance. These results are intended to show interest by management body and therefore reflect double counting of those representing more than one management body. Totals will not add to those shown in Figure 1.

Managing Under Increased Uncertainty

Management Uncertainty Potential Actions	Total
Improving and better operationalizing risk policies	29
Move away from trying to model more and more uncertainties	25
Include spatial considerations in management	18
Identify/establish best practices for if/then management	14
Improve use of community vulnerability analyses	10
Look into streamlining NEPA compliance & documentation	8
Compile information on permits across entire East Coast	7
Consider risk assessment = meet management goals	5
Identify institutional baggage	4
Consider intricacies of uncertainty when making policy/changing management	2
Total Managing Under Uncertainty Dots	122

Figure 3: Summit dot voting totals for Managing Under Increased Uncertainty. These vote counts represent the total dots received for each potential action, and do NOT reflect double counting of those representing more than one management body.

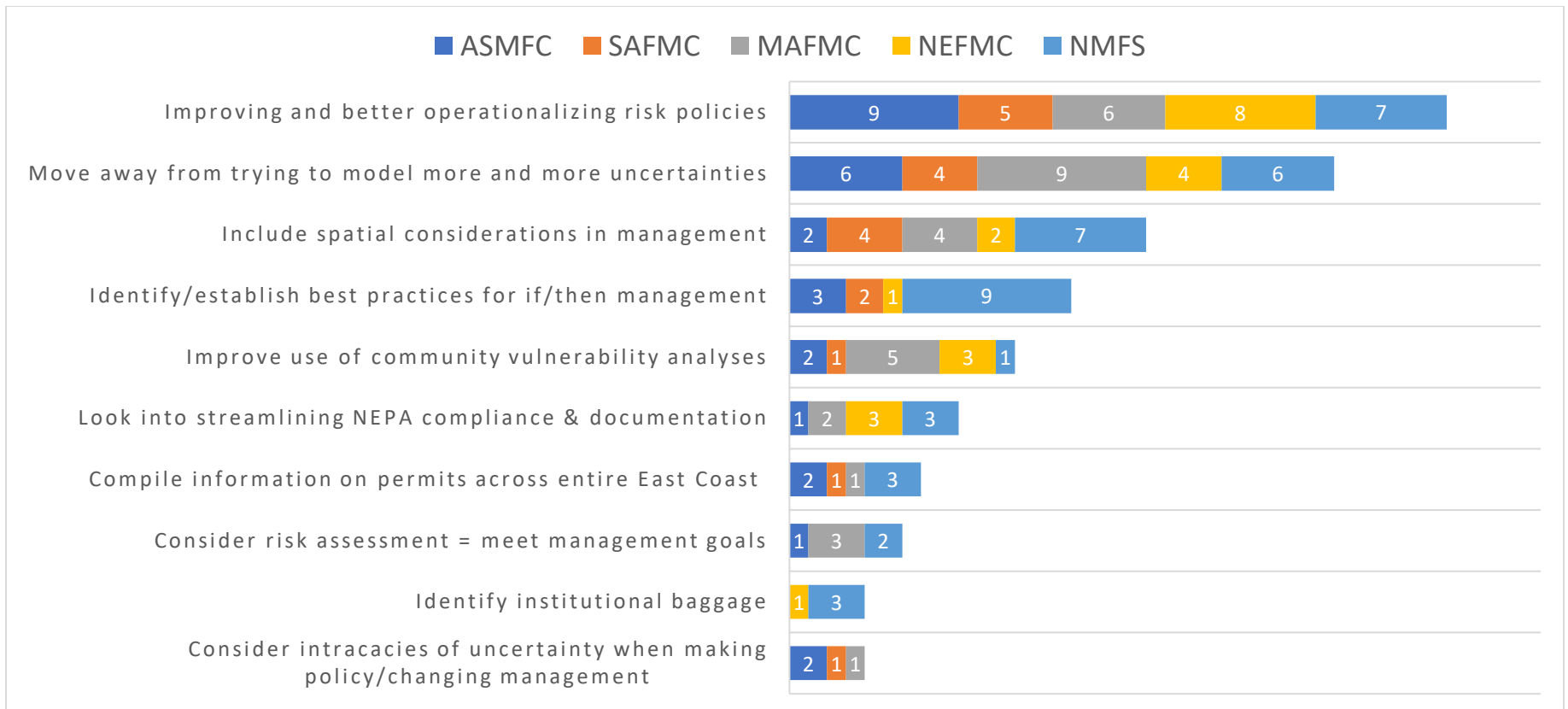


Figure 4: Summit dot voting results by management entity for Managing Under Increased Uncertainty. These results are intended to show interest by management body and therefore reflect double counting of those representing more than one management body. Totals will not add to those shown in Figure 3.

Data Sources and Partnerships

Data Sources and Partnerhips Potential Actions	Total
Expand study fleet, include recreational fisheries and ensure data are used, include shovel-ready data projects	26
Prioritize recreational data collection to reduce uncerainty including devleoping incentives for better reporting	25
Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)	24
Modernize data managment to facilitate better sharing of data and prepare for an influx of new data streams (e.g. offshore wind data)	16
Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms	16
Focus on AI/techn development to more rapidly get data into assessments	5
Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)	5
Hire staff dedicated to fostering partnerships and coordinating data collection/sharing between other ocean users, management bodies, and within Federal agencies	1
Total Data Sources and Partnerships Dots	118

Figure 5: Summit dot voting totals for Data Sources and Partnerships. These vote counts represent the total dots received for each potential action, and do NOT reflect double counting of those representing more than one management body.

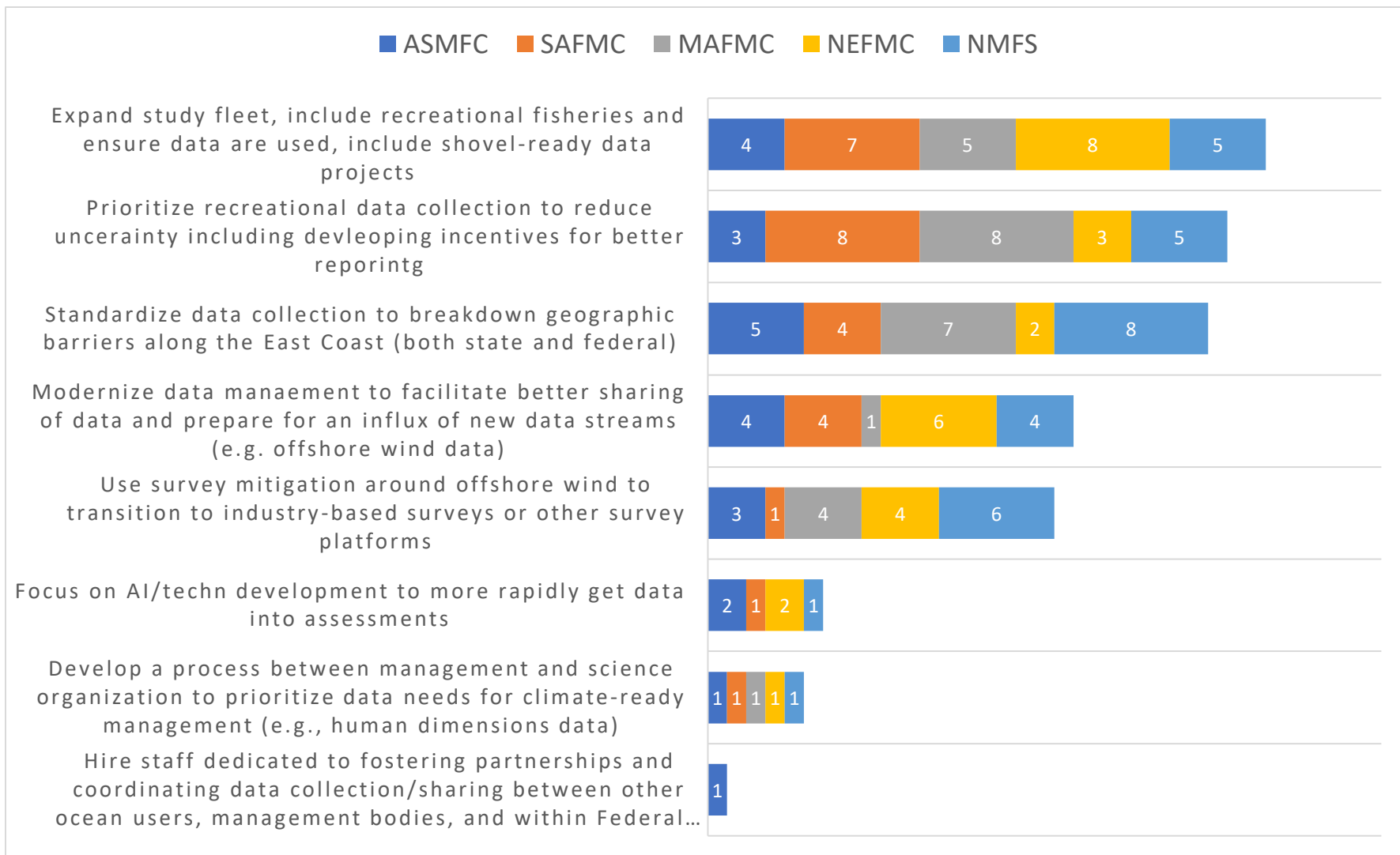


Figure 6: Summit dot voting results by management entity for Data Sources and Partnerships. These results are intended to show interest by management body and therefore reflect double counting of those representing more than one management body. Totals will not add to those shown in Figure 5.



Introduction

The U.S. East Coast Fishery Management Councils (Councils, New England, Mid-Atlantic, and South Atlantic), the Atlantic States Marine Fisheries Commission (Commission), and the National Marine Fisheries Service (NMFS) conducted an East Coast Scenario Planning Initiative to explore jurisdictional, governance, and management issues related to climate change and fishery stock distributions. Representatives from these fishery management organizations have worked collaboratively and engaged diverse stakeholders to explore how climate change will affect fishery management. This exploration was based on a multi-stage scenario planning process, where stakeholders generated several different possibilities for how climate change might affect east coast fisheries.

East Coast Scenario Planning Summit

The capstone to this initiative was the East Coast Scenario Planning Summit, held on February 15-16, 2023. It was attended by representatives from each of the organizations identified above. The goal of the Summit was to develop a set of potential governance and management actions resulting from a scenario-based exploration of the future. It was not possible for the Summit to cover all the issues raised throughout the scenario process. Instead, focus was placed on three overarching themes: Cross-Jurisdictional Governance, Managing Under Increased Uncertainty, and Data Sources and Partnerships. A report of the Summit meeting proceedings is available at: https://www.mafmc.org/s/ECSP-Summit-Report_April-2023.pdf.

As described in the Summit report, participants discussed ideas already generated throughout the process, reflected on them, and added new ideas for potential actions. The core team then grouped comments and ideas raised by participants into potential areas for action. After a prioritization exercise, Summit participants identified potential practical next steps for a limited number of ideas under each of the three themes. There was not time to develop practical next steps for all potential actions that generated some level of support.

Role and Structure of Potential Action Menu

This potential action menu reviews the actions identified at the Summit and suggests possible next steps beyond what could be considered at that meeting. In some cases, the core team has taken the list of potential actions from the Summit and consolidated those with similar themes and would have similar next steps. Thus, the list of potential actions in this document does not always align completely with those in the Summit report. Each potential action includes multiple next steps items.

The Northeast Region Coordinating Council plus the South Atlantic Fishery Management Council leadership reviewed all the potential actions and prioritized them into three levels (high priority, medium priority, and parking lot). A full list of potential actions by priority level can be found in the Appendix.

High priority potential actions are those that could be quick wins and/or that the NRCC working with SAFMC leadership viewed as important issues to address in the near term. Some of these actions

include next steps that are already underway. The medium priority potential actions (also referred to as the 'watch list') are also important issues but could take more time or resources to address. These were viewed as less immediately actionable or less of a priority for immediate allocation of resources compared to the high priority issues. Some high priority actions include next steps with a mix of priority levels. The parking lot highlights ideas that are a lower priority or infeasible to pursue at this time. The purpose of this section is to hold on to some of the Summit ideas for possible future reconsideration as conditions change and as our management systems and technology continue to evolve.

The action menu is intended to be an evolving document, used as a planning tool to guide development collective and individual priorities, and a place to capture future issues and ideas. It is not the intent that individual management bodies would necessarily approve or endorse this document in full, and not all potential actions will be appropriate to apply universally. Some may be relevant for only certain areas, management bodies, or FMPs, while others would need to be applied consistently or developed cooperatively to be effective. Many of the ideas discussed below are explicitly about coordination between organizations and would require collective prioritization and the cooperation of multiple management entities.

Thematic Work Areas

The potential actions in this menu are grouped according to the three themes discussed at the Summit: 1) Cross-Jurisdictional Governance; 2) Managing Under Increased Uncertainty; and 3) Data Sources and Partnerships.

Theme 1: Cross-Jurisdictional Governance

Environmental changes are expected to continue to modify the distributions of many fish stocks due to range expansions, range contractions, or shifts in distribution. These changes will pose challenges for current governance structures and arrangements, which were mostly established under the assumption that stock locations would remain relatively stable over time. The scenario planning process considered the ways in which governance structures and processes may need to be modified to address changes in species distributions and other conditions.

Identify improvements to structure and representation for governance on the U.S. East Coast

Many regional and state representation concerns have been exacerbated by changing fish distributions. In addition, the complexity and sheer number of organizations participating in the management process on the East Coast can pose challenges for adapting to changing conditions. The scenario planning process provides an opportunity to re-evaluate the current governance structure to consider alternatives that may work better under changing conditions.

Identify guidelines for when and how management responsibility should change

Rather than addressing this on an ad hoc basis, consideration should be given to under what circumstances, and by what process, management responsibility may need to be shifted or merged.

Improve the efficiency and the efficacy of joint fishery management plans (FMP)

Joint FMPs may become more common under changing conditions and fish distributions. Because joint FMPs can be more complex or less efficient than those managed only by one entity, it will be beneficial to explore ways in which joint management can be more efficient and effective.

Improve coordination and collaboration among management entities

Aside from joint FMPs, there is a spectrum of ways different groups coordinate with each other to develop FMPs and share information. Increased and improved coordination will likely be necessary in an era of climate change and changing species distributions, including improved processes for coordinating management, resources, and information among multiple entities.

Theme 2: Managing Under Increased Uncertainty

In some cases, environmental changes mean historical conditions can no longer be used to predict the future, increasing our uncertainty around appropriate catch limits and management responses. Are there actions that can be taken now to prepare for and respond to this increase in uncertainty?

Better accommodate uncertainty in the stock assessment process and address related management challenges

Changing ocean conditions are affecting the location of fish stocks, the productivity of fish stocks, and the fishing industry's interactions with bycatch, protected species, and other ocean users. Fish stocks could become less productive or move out of range of the fishermen who catch them. In addition, changing ocean conditions also impact the collection and analysis of data used in the stock assessment process. All of this means managers need to be prepared to make decisions with more uncertainty and less clarity.

There are two main approaches to addressing uncertainty in fisheries management: first, increase investment of time and funding into research and science to better understand the situation and potentially decrease uncertainty in predictions (moving towards the right side of the matrix of scenarios), and second, create management approaches with a good likelihood of success even under uncertainty (left side of the scenario matrix). Ideally, implementation of both options is needed to ensure ecosystem, fishery, and community resilience.

Increasing flexibility, adaptability, and robustness in management

The U.S. fishery management process was not designed to be especially nimble as it prioritizes public input/collaborative management. While there are definite advantages to this process, it can be difficult for management to be nimble and responsive to challenges associated with a changing environment. Given that the impacts of climate change could result in surprises in environmental and fishery conditions, creating management that is flexible, adaptable and robust is necessary.

Improve the ability of fishermen and other stakeholders to adapt to climate change

Fishermen and fishing related businesses need to be able to adapt their fishing practices to account for current or expected changes in fish stocks distribution or productivity. Are there management actions that can help fishermen adapt?

Theme 3: Data Sources and Partnerships

One of the key considerations used to develop the scenarios was the predictability of ocean conditions, which includes how well science is able to assess and predict changes in stock production and distributions. Providing stock information and locations hinges on the ability to evaluate accurate and timely data. Coordination between management bodies, federal agencies, academic partners, fisheries stakeholders, and other ocean users will also play a large role as we adapt to changing conditions.

Prioritizing data and information needed to manage in a changing environment

The next generation of stock assessments and the ability to perform climate ready management will hinge on the ability to have the right mix of data/information available to scientists and managers. As we plan for the future, we will need to determine what data and information to prioritize. We will also need to consider what can be accomplished at the national or regional level and what needs to be addressed on a council-by-council basis. Some of the data and information needed will be readily available while others will need a plan for how to collect and synthesize them.

Using funding more efficiently

Strategies need to be developed on how to efficiently allocate funds spent on data collection to maximize the data/information that are needed especially in a changing climate.

Utilize the fishing industry for data collection

A common theme that arose during the development and application phases of the initiative was the need to collect more fishery dependent data and to better utilize those data in assessments and management in a timely manner. Integrating science with what industry is seeing on the water would also help develop trust between science and industry partners.

Foster partnerships for data sharing

Many entities collect data about the ocean, including academic institutions, non-governmental organizations (NGOs), and other ocean industries such as offshore wind and aquaculture developers. Fostering partnerships with these users may prove to be beneficial for all parties.

Leadership and Staff Roles

The NRCC has agreed to form two groups to help implement and support summit actions, the East Coast Climate Coordination Group and the Climate Innovation Group. These groups will evaluate and address the potential actions highlighted below as well as bring forward new ideas to address Atlantic coast fisheries issues in a changing environment. Each potential next step lists a proposed group that could lead the work on the issue.

Both groups will need logistical and administrative support, in terms of organizing meetings, etc. We suggest that the organizational support is provided by Councils/Commission/NOAA on a rotating basis, like the way that support is provided to NRCC currently.

East Coast Climate Coordination Group

Implementing the potential actions identified through this process will involve important changes to fishery management approaches. Change is difficult to achieve, given how busy everyone is, and how much coordination is involved. To provide the best chance of making effective changes happen, the East Coast Climate Coordination Group has been formed to oversee the implementation of these potential actions. This body will ensure actions are prioritized, jointly or by individual management organizations, estimate resources needed, and executed in a coordinated fashion. Note that all potential actions do not need to be applied universally - some might apply to only some areas, or management bodies, or FMPs.

The body will meet at least once per year, before an NRCC meeting. The appropriate NRCC meeting (spring or fall) will be determined based on the availability of related data and analyses that would influence group discussions (for example, meeting shortly after the State of the Ecosystem reports are presented to the NEFMC and MAFMC might be useful). It will be made up of one member from the following entities: the Commission, MAFMC, NEFMC, NOAA-GARFO, NOAA NEFSC, NOAA SEFSC, NOAA SERO, and SAFMC.

Climate Innovation Group

An early task for the Coordination Group will be to establish and identify the role of a staff-level Climate Innovation Group. Below are possible tasks for this group; these will be refined by the Coordination Group as appropriate and may evolve over time.

1. Identify ideas at an earlier stage that are worthy of consideration by the Climate Coordination Group. Essentially, the Climate Innovation Group would look out for important changes, bring these to the attention of the Coordination Group, and identify possible actions to undertake.
2. Regularly review changes to the factors shaping East Coast fishery management. Using the scenarios as a framework, the group will highlight shifts that might push us towards a different scenario (or a completely new scenario). For example, the group could track evidence¹ showing changes in ocean conditions, new evidence of climate impacts, developments in technology, changing influence of new ocean users, shifting policy

¹ Relevant evidence could be sourced from indicators in existing reports (e.g., State of the Ecosystem), or in collaboration with Science Centers, scientific committees etc. Other more qualitative developments could be sourced from headlines / stories in relevant publications, or from scanning of social media posts.

environment etc. The group could also track various initiatives and tools that could be useful to apply when addressing the various action items. On a regular basis, the group will meet to review and assess new evidence and discuss whether conditions are changing in important ways.

3. Highlight potential actions from the broader list of Summit suggestions. The Climate Innovation Group should determine if some ideas may be resurfacing as more important / more supported than they were at the time of the Summit, or if the feasibility of implementing them has changed, based on changing conditions.
4. Generate any new potential actions. The group will also imagine potential new actions that seem appropriate given the changing conditions. For items (2) and (3), the basic approach will line up with the scenario theory about 'placing bets across a matrix'. Some actions might be robust (work across all scenarios). Others might be recommended to avoid a worst-case scenario. Others might be small experiments to try as a possibility comes more into focus.
5. Present an update of changes and revised potential actions to the Climate Coordination Group, who will decide if any additional actions should be prioritized, resourced and executed.

The existing East Coast Scenario Planning Core Team could form the basis of the Climate Innovation Group, but there will also need to be an evolution of the role and composition of this team. The Climate Innovation Group could encourage a broad range of colleagues and stakeholders to be part of the conversations. For example, it could be important to tap into economists and social scientists to understand changes in socio-economic conditions. The Group should also look to engage with and seek input from management bodies.

High Priority Potential Actions

Theme 1: Cross-Jurisdictional Governance

G1. Reevaluate Council committee structure, use, and decision making

Description: Several potential actions were identified at the Summit related to committee structure, use, and decision making. These actions have been grouped together here as they are interrelated and should be addressed simultaneously for them to have meaningful impact.

As discussed in the Summit Report, these actions primarily address representation concerns related to changing species distributions; specifically, stakeholders who may have increased access to shifting species but may not have “official” representation in the Council process.

Further discussion will be needed regarding whether the potential actions below should occur for all Council-managed species, or whether modifications are only needed for certain species or FMPs that may be experiencing or are projected to experience notable distribution changes.

1. The Councils should **re-evaluate committee representation**, with a focus on FMPs where managed species have shifted or are highly vulnerable to climate change.
2. Councils could **enhance the role of committees in decision making**.
 - The goal of this change is to give more weight to the opinions of committee members who are not members of the Council managing the species.
 - One approach would be to modify Council SOPPs or other procedures to allow increased decision-making authority at the committee level. For example, committee motions that do not pass the full Council could be sent back to the committee to be reworked. Under such a scenario, the Council could not simply override the committee and make a different decision; the measure would need to be sent back to the committee.
 - Other approaches to enhance committee roles in decision making that are not currently possible under MSA are noted in the parking lot section.
3. The Councils should **evaluate how to move toward more alignment in the use of committees across Councils**.
 - Again, the goal of these changes is to give more weight to the opinions of Committee members that are not from the Council with responsibility for managing the species.
 - Currently, each Council and FMP uses committees differently in the decision-making process. Some Councils rely heavily on their committees to craft and guide analysis of management actions, while other Councils rely more on staff, other technical teams, and discussions at the full Council level. Addressing regional/stakeholder group representation concerns by modifying committee structures may be more effective if Councils use committees in a more similar manner. This would not mean that every committee must be used in exactly the same way or that each Council would have exactly the same rules for its committees; but the Councils would aim for some degree of increased consistency.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">● Conduct a leadership planning exercise to further explore options for committee-based decision-making, committee structure, and committee use, building on ideas discussed at the Summit	East Coast Climate Coordination Group

Potential Barriers and Considerations:

- As noted above, the range of possibilities for modifying committee roles in the Council process is currently limited by what is possible under the MSA.
- There are multiple aspects of committee structure, use, and representation that will need to be considered together under this potential action. As mentioned above, these issues are interrelated. For more consistent use of committees to have the intended effects, committee representation will need to be reconsidered. Without more consistent use of committees, restructuring committee representation may have limited impact on management outcomes.
- Increased reliance on committees may have drawbacks in terms of further entrenching management “silos,” given that more deliberation would occur in smaller groups, with more limited discussion occurring at the full Council. Depending on the extent of the Committee composition, this may lead to more differences in approaches between plans.
- If committee roles in decision making are enhanced, management could become less nimble if a Council and Committee become deadlocked, or if a committee cannot reach agreement. Both of these scenarios have occurred in the past.

G2. Re-evaluate and potentially revise Advisory Panel representation

Description: Climate-driven changes in species distributions are leading to increased concern about appropriate representation by geographic area in various parts of the management process. In addition to considering committee and other governance structures, the Councils and Commission should ensure that advisory panel (AP) representation remains appropriate and effective, including that it reflects the geographical distribution of the resource. A review of AP membership should also consider how other ecological and socioeconomic changes may drive changing needs for AP representation (e.g., changes in participation in a particular sector; trends in the use of certain fishing techniques or gears, etc.).

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Individual management bodies conduct evaluation of AP representation and appointment process, including how AP members are recruited and identified, with consideration of underrepresented and underserved groups. This could be conducted for selected or all FMPs and should consider how representation needs (by geographic area, stakeholder group, or other factors) may be evolving with changing conditions. 	Individual management bodies with staff level coordination between bodies

Potential Barriers and Considerations:

- Some management bodies have experienced recent struggles to recruit potential AP members, particularly when seeking broader representation. In addition, AP engagement can be challenging for some FMPs, which could limit the effectiveness of revised AP membership.
- The Councils and Commission should examine how AP input is currently used, and how it can better serve the process.
- Modifying AP representation does not necessarily mean expanding membership, but at a minimum considering whether representation is adequate given changing circumstances.
- If APs are expanded in terms of total members, increased costs may be incurred for meetings.
- AP members new to the management process will likely require training on fishery management and science concepts, e.g., through MREP or like programs.
- There could be other barriers to full AP participation, such as limited internet availability or access to a computer, for web-based meetings, limited English language skills, or inability to take time away from work uncompensated. Such issues would need to be addressed to ensure equity of access to the process.

G3. Develop joint management agreements with aim of clarifying roles and increasing efficiency

Description: Summit participants noted the importance of clarifying roles and increasing efficiency in jointly or cooperatively managed plans. There is currently a spectrum of approaches to joint or collaborative management, and while not all joint management needs to operate the same way, clearly defining and recognizing the pros and cons of different approaches would be helpful. Joint management has benefits for representation, but at times can hinder efficiency and efficacy when groups disagree, particularly if decision making is sequential. More explicit agreements between joint management participants could help to increase transparency and help groups work toward streamlining joint management processes. This issue may be particularly important to address if there is a desire or need for more joint management approaches in the future in response to changing species distributions. In addition, for species that are currently jointly managed, it would be beneficial to review whether the existing procedures and agreements are expected to continue working under different potential future conditions.

Practical Next Steps:

Potential Action	Group
<p><u>High Priority</u></p> <ul style="list-style-type: none"> Review joint FMPs and agreements between the MAFMC and Commission (summer flounder/scup/black sea bass/bluefish) to identify areas for improved efficacy and efficiency 	Commission and MAFMC staff
<p><u>Medium Priority</u></p> <ul style="list-style-type: none"> Evaluate need for additional review and/or agreements on cooperative or jointly managed plans (Council-Council or Council-Commission plans) 	East Coast Climate Coordination Group

Potential Barriers and Considerations:

- While considering joint/cooperative management relationships or FMPs on a case-by-case basis may be the most efficient and appropriate approach to this type of review, looking at other examples (within or across regions/management entities) could provide insight into potential ways of improving a particular joint management process.
- This topic will also be impacted by, and will impact, the consideration of committee structure under G1.

G4. Improve coordination across NOAA offices and regions

Description: Climate driven species distribution changes have begun to engage the Councils, and at times the Commission, with additional NOAA offices and regions. Processes and guidance can vary by office and region for similar issues or management problems. Improved coordination, particularly on process, will be important for efficiency in responding to management issues and the efficacy of the management response. It is also worth considering where there might be redundancies or duplicated efforts that could be coordinated to use resources more efficiently.

The idea of improved coordination was heard in each of the themes. The potential actions under M5 (evaluation of permit structures) and D4 (evaluation of data collection process) are linked to this issue.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">GARFO and SERO review respective management action procedures and processing to highlight opportunities each employs which may benefit or expedite implementation of actions approved by the Councils.	GARFO, SERO

Potential Barriers and Considerations:

- This is a potential action that seemed to have some support but lacked specifics in how it should be approached, other than some specific actions considered under the other two themes (M5 and D4).
- The potential action above pertains to the regional offices, but future consideration could be given to whether a similar process for the science centers, or between the regional offices and science centers, or with other offices within NOAA, may be worthwhile.
- As noted above, this potential action intersects in important ways with the other two themes and many of the potential actions within them. Effective coordination between NOAA offices will be critical to making progress on this potential action menu.

Theme 2: Managing Under Increased Uncertainty

M1. Identify ecosystem-level contextual information that can be considered within the management process to help incorporate climate information into decisions

Description: Changing climate and ocean conditions can impact fish stocks, fish habitats, and interactions between species and fisheries, sometimes in surprising ways. It is important to proactively consider ecosystem level impacts when making management decisions. This can be via quantitative or qualitative information, including the use of ecological risk assessments², such as the risk assessment MAFMC uses as part of its ecosystem approach to fisheries management framework, which results in a more holistic consideration of issues. NMFS has written a [technical memo](#) that provides examples of how ecosystem risk assessments have been used in fisheries management.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> NMFS offers to present findings of newly released Tech Memo looking at example ecosystem risk assessments to Councils and Commission 	NMFS staff coordinating with Councils/Commission
<ul style="list-style-type: none"> Consider adding major state-only-managed fisheries to these ecosystem risk assessments for a more complete perspective 	NMFS
<ul style="list-style-type: none"> Identify opportunities to use specific types of quantitative and qualitative ecosystem information to identify and avoid risks 	Climate Innovations Group, individual Councils and Commission
<ul style="list-style-type: none"> Share lessons learned 	NRCC or other

Potential Barriers and Considerations:

- No forcing mechanism
- Need here is likely to be Council/Commission and FMP specific

Long-Term Objectives:

- Create a fishery management system aware of and able to respond to significant ecosystem changes.

² Ecological risk assessments are management decision tools that integrate information on individual and cumulative pressures to estimate the relative probability and magnitude of an undesirable ecological response. They provide a framework that can analyze relative risk broadly or in response to a small number of drivers. A climate vulnerability assessment is a more limited and targeted form of risk assessment.

M2. Streamlining FMP documentation and rulemaking

Description: Councils spend substantial staff time writing NEPA and other federal compliance documents, so processes that introduce efficiency should allow Councils to reduce administrative work, resulting in time savings that could be used to address new climate-oriented initiatives. Streamlining the FMP and regulatory processes is also a key way to make management more nimble and efficient, so that management responses to changing conditions can be completed in a more timely manner.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Review the use of programmatic Environmental Impact Statements (EISs) for Council actions and encourage their use where appropriate 	MAFMC considering this near-term
<ul style="list-style-type: none"> Identify areas where NEPA documents can be streamlined, including when incorporation by reference to recent related documents would be appropriate 	GARFO, SERO, NMFS HQ, Councils
<ul style="list-style-type: none"> Develop more clear and consistent guidelines for use of Categorical Exclusions (CEs) under NEPA, including MSA document templates; identifying NMFS vs. Council responsibilities 	GARFO, SERO, NMFS HQ, Councils
<ul style="list-style-type: none"> Work with NOAA General Counsel (GC) to establish consistent GC guidance with regards to the use of CEs and Supplemental Information Reports (SIRs), rulemaking, public comment etc. 	GARFO, SERO, NMFS HQ
<ul style="list-style-type: none"> Identify process steps Council and NFMS staff can take to use MSA documents to satisfy NEPA requirements 	GARFO, SERO, NMFS HQ, Councils
<ul style="list-style-type: none"> Consider alternative rulemaking approaches or action development approaches 	GARFO, SERO, NMFS HQ

Potential Barriers and Considerations:

- Programmatic EISs involve a large investment of time and resources up front; should consider whether the efficiency gained on the back end is worth it.
- Might inadvertently limit opportunities for public participation in the process, in certain cases

Long-Term Objectives:

- Identify options for reducing burdens associated with NEPA and other documentation, without sacrificing the public process and opportunities for meaningful input.

Theme 3: Data Sources and Partnerships

D1. Expand study fleet, include recreational fisheries, and ensure data are used

Description: The vision of a study fleet is a partnership between the science centers, management bodies, and fishermen where the science centers define data needs for assessments and management. There is currently a small commercial fisheries study fleet in the Greater Atlantic region; however, expanding the study fleet along the coast, particularly to include recreational fisheries, would greatly benefit the assessment/management process under a changing climate. This would require cooperation by all parties to better utilize fishery dependent data in the assessment/management process.

Practical Next Steps:

Potential Action	Group
<u>High Priority</u>	
<ul style="list-style-type: none"> Identify places where study fleet and associated projects' data can be utilized in Council and Commission work plans and actions. Develop a mechanism for Councils and Commission to access study fleet data. Develop a plan to track and communicate use of study fleet data. Find ways to incentivize industry to participate. Within this plan include using industry to collect more environmental data via instrumentation and data loggers. 	Councils, Commission, and Centers
<ul style="list-style-type: none"> Include Recreational Study Fleet Pilots in GARFO's Recreational Saltwater Fishing draft policy implementation plan (NEFSC has already initiated an initial pilot focused on the New England for-hire groundfish fleet) 	GARFO, NEFSC
<u>Medium Priority</u>	
<ul style="list-style-type: none"> Develop shovel-ready cooperative research projects that can be quickly initiated if funding becomes available. 	Centers
<u>Parking Lot</u>	
<ul style="list-style-type: none"> Develop plan to incorporate the recreational study fleet data to improve recreational estimates from Marine Recreational Information Program (MRIP) 	Centers

D2. Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms

Description: The development of offshore wind areas will present challenges for accessing survey areas using traditional methods/gear. This is an opportunity to redesign surveys and transition to industry-based or other platforms that could be more effective in offshore wind areas.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Implement the NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast U.S. Region 	NEFSC, adapting strategy to other regions in the future.
<ul style="list-style-type: none"> Explore opportunities to utilize smaller platforms such as commercial vessels for conducting surveys 	Centers
<ul style="list-style-type: none"> Develop plan for integrating multiple survey data streams into the assessment process 	Centers

D3. Improve the use of existing data

Description: While there is definitely a need for new and novel data sources, there is a wealth of data already available in the region that could be better utilized. This includes being more transparent on how current data is used but also thinking of ways to take advantage of existing behaviors (e.g., generating recreational catch data from social media posts). Making use of this kind of selective/anecdotal data as opposed to relying solely on census or survey data is more important when traditional data is scarce. In addition, as data collection activities expand, plans for how it will be used should be made. Some potential actions are listed below, but this priority should be ongoing. New ideas to use existing data should be supported moving forward.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Hold meetings to discuss what existing data streams and historical datasets could be better utilized to inform decision making, assessments, and monitoring. Do this across regions and management bodies. 	Councils, Commission, Regional Offices, and Centers
<ul style="list-style-type: none"> Have similar meetings at the PDT/FMAT level for more immediate FMP needs. 	Councils and Commission

Medium Priority Potential Actions (Watch List)

The potential actions in this category are important but not as suitable for near-term action as those on the high priority list. This is referred to as a watch list because the Climate Coordination and Climate Innovation Groups will routinely track whether environmental or fishery conditions, and/or resources and support available for these actions, have changed in a manner that would increase the priority level of these actions.

Theme 1: Cross-Jurisdictional Governance

G5. Evaluate mechanisms for cross-pollination of SSCs

Description: As with G1 above, there are a range of possibilities for actions that could enhance cross-pollination between the different Council SSCs as well as the Commission’s science groups, particularly for species that a) are jointly managed, and/or b) are experiencing changes in distribution across jurisdictional boundaries.

Mechanisms for increased coordination and information sharing between SSCs could include (but are not limited to) formation of cross-SSC subgroups, holding more joint SSC meetings, holding joint subgroup meetings, or assigning liaisons between different SSCs. Further discussion is needed to explore where it might be helpful to have multiple groups involved in decision making/recommendations, vs. simply more coordination and exchange of information/ideas.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Hold a workshop inviting a subset of all three East Coast SSCs and representation from the Commission Science Community to identify potential ways of improving coordination and knowledge sharing between East Coast SSCs, particularly for species spanning multiple jurisdictions and jointly managed species 	Councils and their SSCs and invited participants from the Commission
<ul style="list-style-type: none"> Consider adding to topics for discussion at future Scientific Coordination Subcommittee (SCS) meeting(s) 	SCS steering committee; CCC

Potential Barriers and Considerations:

- Although the next steps and approach talk about sharing ideas, not developing shared management advice, if the latter is considered, this must be approached with caution as individual Councils are bound by the ABC recommendations of its appointed SSC.
- Higher costs of larger combined meetings could be an issue, given travel expenses for larger groups would be greater, and because SSC members are compensated for their time.

Theme 2: Managing Under Increased Uncertainty

M3. Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)

Description: Many fishery management bodies have existing risk policies. Risk relates to both the probability of an event occurring, and the severity of expected outcomes. Risk policies identify the bounds of how risk tolerant a management body should be given certain criteria. These policies inform and work in conjunction with harvest control rules.

Existing risk policies might be based on assumptions of stationarity. At the Summit, participants discussed how these policies could be reassessed to include the challenges related to a changing climate and non-stationarity in marine populations and ecosystems. Discussions noted a need to address species responding poorly to, and those benefiting from, changing ocean conditions. Summit participants also discussed North Pacific Fishery Management Council (NPFMC) use of risk tables as a quantitative way to assess and communicate multiple uncertainties, including those related to climate. During implementation of the risk policies, it will be important to clearly communicate uncertainty.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Share NEFMC compilation of risk policies from across all Councils. Present the report to NRCC and explain what NEFMC is doing to revisit its risk policy, which is a multi-year work priority starting in 2023. Also present the Commission's new policy when finalized. 	NEFMC/ Commission
<ul style="list-style-type: none"> Develop a staff-level working group to discuss pros and cons of different approaches for accounting for climate-related uncertainties within the risk policies, including how to respond to species doing well in a changing climate. Bring forward to East Coast Climate Coordination Group for discussion. 	Climate Innovation Working Group
<ul style="list-style-type: none"> Evaluate the need for all Councils/Commission to consider climate in their risk policies and explore potential benefits of aligning risk policies where practicable. Offer time to discuss alignment at future NRCC meetings. 	East Coast Climate Coordination Group
<ul style="list-style-type: none"> Identify steps individual Councils/Commission can take to make risk policies more reflective of climate challenges 	All east coast Councils and Commission
<ul style="list-style-type: none"> Ensure the risk policies consider and clearly communicate intricacies of uncertainty (including the shape of the uncertainties) when making policy/ changing management 	All east coast Councils and Commission

Potential Barriers and Considerations:

- No forcing mechanism
- Need to consider benefits and challenges of aligning policies
- MAFMC recently updated their risk policy (2020) so are unlikely to want to update it again in the near future
- The Councils seem to want the ability to retain separate risk policies

Long-Term Objectives:

- Councils implement risk policies that account for climate change and this facilitates climate resilient fisheries. Provide pathways within risk policies for considering stocks that are climate change winners differently
- Where practicable and needed (i.e. for fisheries under joint management), align risk policies between management bodies so that management is consistent up and down the coast
- If there is interest, expand this discussion to include other Councils/regions via the CCC

M4. Identify and establish best practices for increasing nimbleness and/or responsiveness in management

Description: In situations where plausible future conditions can be predicted either quantitatively or qualitatively, it may be useful to create management frameworks that are nimble, adaptable, and robust to expected changes. For example, if/then triggers could be applied in certain limited management circumstances where a range of responses could be considered in advance. Resulting actions could then be implemented through an expedited process. This potential action was identified as a medium priority for a coordinated climate adaptation initiative because it can be addressed individually by each management body. Examples are available in existing FMPs.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Identify good examples of if/then triggers being used in management. Examine examples for best practices. Brainstorm other areas where if/then triggers might be useful such as ecosystem-based triggers or governance triggers. <ul style="list-style-type: none"> ○ Southeast Shrimp example: close federal waters when states request and have provided environmental info to the SE Regional Administrator ○ Commission example: GOM/GB lobster gauge size change triggered by recruitment index, striped bass immediate action if the assessment indicates specific outcomes, considering dropping fine scale monitoring northern shrimp unless a trigger condition is reached ○ New England skate example: if a skate total allowable landings limit (TAL) is exceeded for wing or bait by >5%, this triggers the Regional Administrator to reduce possession limits for the following fishing year ○ Mid-Atlantic surfclam example: minimum size waiver where discard, catch, and survey data indicate 30% of clams below 4.75 inches (50 CFR 648.75(b)(3)) 	Climate Innovation Group; Councils, Commission, and NMFS

Potential Barriers and Considerations:

- Councils may be hesitant to use if/then triggers because unforeseen circumstances may make a certain trigger response less appropriate or effective. Changing the trigger response would be possible but could require a longer process.
- Given uncertainties in the stability of surveys, especially given changing ocean uses, it may be challenging to develop and implement triggers based on survey indices.
- Doing sufficient NEPA analysis in the action where triggers are developed could be challenging and require assumptions about future conditions.

Long-Term Objectives:

- Identify options for increasing nimbleness and robustness of the fishery management process.

M5. Create a more adaptable structure for fishing permits

Description: Lack of access to fishing permits, allocation, or quota can limit a fisherman’s ability to adapt to changes in fish stocks. Fishing permits are not consistent between fishery management bodies or fisheries. Can managers revise the permit system to make it more flexible and adaptable to impacts from a changing climate?

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Improve data systems (two interrelated actions) <ul style="list-style-type: none"> ○ Create a shared vessel registry to streamline data accessibility ○ Advance One Stop Reporting 	NMFS electronic reporting/monitoring group
<ul style="list-style-type: none"> ● Review permit systems on the East Coast to identify areas where the regulations can be modified to allow for flexibility and adaptability by the fishermen. <ul style="list-style-type: none"> ○ Are there permits in place that can be split? ○ Can emerging species be added to existing permits? ○ Do some permits need to be bundled? ○ Engage industry through advisory panels or other means to identify issues. Multiple engagement approaches are likely needed. 	NMFS, Councils, and Commission working with fishing industry
<ul style="list-style-type: none"> ● Present findings and recommendations to modify programs to allow for adaptability to Councils and Commission. 	Council Staff/NMFS

Potential Barriers and Considerations:

- Fishing businesses have invested heavily in permits and thus may be hesitant to embrace change.
- U.S. East Coast permitting structure is extremely complex - state vs. federal differences, regional differences, species/FMP differences
- There are concerns that splitting previously bundled permits across two or more fishing vessels could increase fishing effort and therefore impact conservation.

Long-Term Objectives:

- Create a flexible and adaptive permit system. For example, create a system that allows fishermen to adjust fishing to match the species present in their historical fishing area, or allows them to follow the fish and land the fish in a new location.

Theme 3: Data Sources and Partnerships

D4. Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)

Description: Having standardized surveys and other data collection/storage methods across the various regions would allow data to be more easily transferable and usable. This is particularly important when considering survey changes/limitations arising from external factors like climate change and offshore wind development. This is the foundation of the fisheries management process. Securing funding and starting this process is important.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Develop a National Survey Program 	NOAA
<ul style="list-style-type: none"> Northeast and Southeast Fisheries Science Centers develop a strategy for combining survey methodology (This could include standardizing survey gear where appropriate or a modeling framework to merge different survey technologies) 	Centers/ State-Federal Programs
<ul style="list-style-type: none"> Prioritize and develop data standards so data can be readily used in various modeling frameworks that combine data across regions 	Centers/State-Federal Programs
<ul style="list-style-type: none"> Standardize data management and storage so the data is readily accessible by researchers 	Centers/State-Federal Programs

Potential Barriers and Considerations:

- Confidentiality of state/Fed data. Offshore wind reluctance to share data.
- Consider economic data as well as environmental and biological.
- Need to evaluate regional and coastwide fishery dependent and independent data systems to facilitate assessment of shifting populations.
- Consider reviewing and standardizing east coast permits because data collection is so tightly linked to the permits. See M8 above.

D5. Focus on Artificial Intelligence and technology development to get data into assessments more rapidly

Description: Under a changing climate there will be a greater reliance on multiple data sources. Quickly synthesizing data to keep pace with change will require reliance on technology to automate much of the processing.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">Start developing AI to better integrate video and camera surveys as well as other large data integration needs	Centers
<ul style="list-style-type: none">Develop methods to directly funnel fishery-dependent data (VTRs, observer data, study fleet, etc.) into assessments and for use in monitoring.	Centers and Regions

Parking Lot (Lower Priority) Actions

As noted in the Introduction, this section is intended to hold ideas that are low in priority, infeasible to meaningfully address under current conditions, or are in conflict with other approaches with higher levels of support. All potential actions will be regularly reviewed by the Climate Innovation Group and the Climate Coordination Group. The Coordination Group will shift priorities as needed based on what is or is not working, and based on how conditions may be changing. The intent of this section is to maintain a record of these Summit ideas for possible future reconsideration as conditions change, but to take no near-term action on them.

Theme 1: Cross-Jurisdictional Governance

G1 (Parking lot). Additional ideas for reevaluating Council committee structure, use, and decision making

These items were raised during the Summit but would require changes to MSA and are therefore included in this section rather than with the other G1 actions. Potential actions for reevaluating Council committee structure, use, and decision making that could be considered in the short-term are discussed under G1 in the High Priority Potential Actions section above.

- Give committees final votes on FMP actions. The action would not need approval by the full Council.
- Allow for committees to take final action on some types of management tools or approaches without full Council approval, while other actions would require going back to the Council. E.g., committees could develop specifications without Council approval but amendments and frameworks would require Council approval.

Potential Barriers and Considerations:

- This would require legislative action.

G6. Coastwide Council with varying voting representation by FMP

Description: Some Summit attendees suggested the idea of having one East Coast Management Council with opt-in participation by states. This was primarily supported to increase levels of coordination, efficiency, and for increased ease of ensuring adequate representation as species distributions and other conditions change.

Under such an approach, the Council could be organized such that the full Council would not need to vote on each management plan; the opt-in participation could be at the level of Boards or committees designed to provide appropriate representation based on interest/fishery occurrence. Expanded committees may be needed under this approach, where there are multiple representatives from each state (like the Commission's Boards). This governance structure is not currently provided for under the MSA.

This potential action is included in the list of possible actions for potential longer-term consideration due to the legislative barriers to implementation, as well as the desire to first explore other, smaller scale changes within our current system. Some considered this to be a long-term idea to consider if more modest adjustments to our governance structure don't accomplish our objectives. In the coming decades, if there is increasing overlap in representation needs, it may be more efficient to manage species and stocks through a single East Coast Council.

Potential Barriers and Considerations:

- This would require legislative action.
- Concerns were expressed about this structure leading to the loss of more local representation by Council members and to stakeholders feeling less connected to and invested in the process.
- It may be difficult to populate a large East Coast Council if members would need to be responsible for keeping track of more management plans than they do currently.

G7. Change state representation on councils

Description: To address representation concerns caused by changing stock distributions, some Summit participants suggested evaluating which states would most appropriately have voting representation on each East Coast Council. This included the suggestion of evaluating whether there should be more states that sit on multiple Councils (like North Carolina and Florida currently do).

Giving states votes on Councils could be a more meaningful change in representation compared to giving liaisons voting rights, as it could allow access to at-large seats.

Potential Barriers and Considerations:

- This would require legislative action.
- Compared to some of the other governance potential actions in this document, this would be a less flexible or nimble way to modify governance structure. If additional changes are needed in the future, the likely need for further legislative action to do so could limit how quickly changes could be made.

G8. Clarify and potentially expand the roles of liaisons between Councils

Description: As species distributions change and effective communication and coordination between different management entities becomes increasingly important, the role of the liaisons between Councils may become more important. In addition, as representation concerns become more pronounced, it is important to clearly define the ways in which liaisons are expected to represent the views of their Council and what degree of influence they should have on another Council's deliberations. Summit participants discussed that the Council liaison role may be used somewhat differently between Councils, and between different people who have held that role at the same Council. The question of whether liaisons should be given some level of voting rights led to a discussion of the intended role of the liaisons, e.g., whether liaisons are intended to be representing the views and positions of their full Council (which is not always possible), and/or to serve in a general communication/coordination role. Additional clarity around the role of Council liaisons, and potentially increased consistency in their use, may be beneficial. In addition, consideration could be given to potential changes to the role of the liaison, particularly in light of the representation concerns described above under G1 (high priority actions).

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Develop report on the roles and use of liaisons between Councils and between the Councils and Commission, potentially building on 2007 Mid-Atlantic Fishery Management Council's Report to Congress on COUNCIL MANAGEMENT COORDINATION, but with recommendations for improving clarity and effectiveness of the liaison role 	TBD
<ul style="list-style-type: none"> Conduct an evaluation of the feasibility and pros and cons of liaison voting rights (at full Council) 	CCC

Potential Barriers and Considerations:

- If there is a desire to give liaisons voting rights at the full Council level, this would require legislative action.
- The role of liaisons may need to be considered in conjunction with, or following, reconsideration of committee structure and use as described above. These potential actions are motivated by similar representation concerns, and any potential changes to committee representation and use may influence the future desired role of Council liaisons.
- The Councils may wish to consider adding definitions/clarification of the liaison role into their SOPPs, operations handbook, or other written policies.

G9. Consider allowing proxies for Council members

Description: Currently, appointed Council members cannot use proxies or designees to fill in for them at meetings because the MSA only provides for the principal state officials, the Regional Administrator, and the nonvoting members to designate individuals to attend Council meetings in their absence. Allowing for proxies could help alleviate increased workload issues for Council members, particularly if future governance changes lead to increased committee meeting frequency, more joint management meetings, or other changes that increase workload for Council members. Currently, equity and representation issues may arise from the workload and time commitments required for Council membership and how they would limit many people from participating.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Consult with General Counsel on what would be required to allow proxies for appointed Council members. 	NMFS Headquarters
<ul style="list-style-type: none"> Raise at a future CCC meeting to gauge interest and explore feasibility. 	Councils

Potential Barriers and Considerations:

- If pursued, additional thought would need to be given to the distinction (if applicable) between and definitions of proxy, designee, or alternate. With these definitions, the role and abilities of a proxy/designee/alternate would need to be clearly defined. For example, what would be the expectations and rules for attendance, voting, chairing committees, compensation, etc.?
- Additional clarity is needed on whether legislative changes would be required, and whether proxies would also need to be appointed by the Secretary of Commerce, potentially in conjunction with the appointment of regular Council members.
- In the Commission's structure, Commissioners are allowed to appoint proxies (ongoing, board specific or meeting specific). This has advantages for spreading the workload across multiple people, but also creates a cost barrier of sending multiple people to meetings. This could create similar issues in the Council system for Council proxies if both the appointed member and proxy need to attend a meeting, particularly when considering Council member stipends.
- The role of proxies may need to be considered in conjunction with, or following, reconsideration of committee structure and use as described in G1 (high priority). Some workload issues could be addressed under a review of committee representation and process (e.g., if there is explicit consideration of ensuring workload balance across committees for individual Council members; and if most committee meetings are held in conjunction with Council meetings or by webinar).

Theme 2: Managing Under Increased Uncertainty

M6: Include spatial considerations in management; specifically in relation to leading and trailing edges of shifting stocks

Description: Climate change is influencing the distribution of some fish stocks, including expansions, contractions, shifts northward, and shifts offshore. As stocks shift their distribution, there may be advantages to managing the leading and trailing edge of a stock differently. For example, if stock genetic diversity is high at one of the edges, more conservative management may make sense. Similarly, if an ecological niche has been recently vacated in an ecosystem, then management may want to minimize fishing on a replacement species to ensure the replacement species is able to form a viable population in the new area. Some stock assessments (e.g., work of the Transboundary Management Guidance Committee, which allocates quota to countries based on stock distribution) are already beginning to account for such shifts.

Practical Next Steps:

Action	Group
<ul style="list-style-type: none"> • Create a working group to explore this issue. <ul style="list-style-type: none"> ◦ Compile examples of where spatial considerations across a fishery or stock have been used in management decisions. ◦ Explore ways to measure stock shifts (scientifically) and how to identify what should be considered leading and trailing edges 	Climate Innovation Working Group
<ul style="list-style-type: none"> • Recommend East Coast Councils/Commission consider if spatial management is appropriate for any of their managed stocks. <ul style="list-style-type: none"> ◦ Figure out which stocks this is an issue for using LEK and ecological information ◦ Consider spatial distribution when making management decisions (Review King and Spanish mackerel and cobia management and consider these approaches for other stocks with a focus on leading and trailing edges being managed differently than the core). 	Councils/Commission

Potential Barriers and Considerations:

- National Standard 3 requires that stocks are to be managed as a unit throughout their range, to the extent practicable.
- National Standard 4 does not require the same management across the entire range of a stock, just management that does not discriminate between states.
- Enforcement could be more complex if regulations differ between areas.

Long-Term Objectives:

- Plan for shifting stocks; ensure management has considered the potential needs of stocks leaving or moving into an area (it would be detrimental to fishermen if important stocks leave an area and no replacement stocks move in), and ensure the ecosystem remains healthy.

M7. Consider alternative management options instead of, or in addition to, using stock assessments that directly incorporate environmental or ecosystem parameters within the assessment

Description: Changing climate and ocean conditions mean that underlying assumptions common to stock assessment models (i.e., environmental stationarity and ecosystem equilibrium conditions) are no longer valid. This will make identifying appropriate catch limits more challenging than it is now.

Given that changing climate and ocean conditions can impact many aspects of a fish stock (direct impacts on productivity and distribution of the stock, changes to habitat, changes to predator/prey relationships, etc.) it may be impossible to incorporate all important sources of uncertainty into stock assessment models and results. Therefore, in addition to incorporating climate indicators directly into traditional stock assessments, it may be important to consider alternative approaches to incorporating climate uncertainties into the management process, including other methods for accounting for uncertainty in the stock assessment and other methods for setting catch limits that are robust to multiple uncertainties. Alternative approaches may not be useful for all fisheries, and thus there will be a need to evaluate and identify which species could most benefit from alternative approaches.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Look for case studies on robust management options, including: <ul style="list-style-type: none"> ○ Indicator based management (Bluefin tuna) ○ Robust Harvest Control Rules (UCSB peer reviewed paper) ○ Dynamic reference points 	Climate Innovation Group
<ul style="list-style-type: none"> ● Look for case studies on when MSE was useful in supporting decisions 	Climate Innovation Group
<ul style="list-style-type: none"> ● Using the CVA results, identify east coast managed species that are particularly vulnerable to climate change and consider developing new approaches for those species <ul style="list-style-type: none"> ○ For example, MAFMC and NEFMC are considering how a combination of species and habitat CVAs can be used to identify focal Habitat Areas of Particular Concern to prioritize consideration for conservation recommendations 	All east coast Councils and Commission

Potential Barriers and Considerations:

- Communication across science and management spaces may be challenging
- MSE is costly with lots of upfront investment, but intended to save time/resources long term
- Robust HCRs should not be the only approach, especially in situations where the data or assumptions feeding into the HCR are incorrect.

Long-Term Objectives:

- Explore options for creating management frameworks, harvest control rules, etc. that are robust to the uncertainties associated with a changing climate.

M8. Better incorporate qualitative information including local ecological knowledge (LEK) and community vulnerability assessments to improve management in a changing climate

Description: Implementing quantitative analyses of climate impacts on all species is not feasible. Therefore, identifying options for incorporating qualitative information on how the ecosystem is changing and fisheries are reacting may be both necessary and useful. There are existing examples to build on: MAFMC has a risk assessment that combines quantitative and qualitative information to better understand the risk a fishery will not meet its management goals, and NPFMC uses semi-quantitative risk tables to understand risks not included within a stock assessment. Participants at the Summit expressed interest in ways to incorporate local or traditional ecological knowledge into the fisheries management process. These types of information are relevant across multiple actions identified here, including M1, use of ecosystem level context, M3, use of risk policies, and M6, spatial considerations.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Inventory where and how qualitative information, including LEK is currently being used in management and identify ways into management process, including: <ul style="list-style-type: none"> ○ Examine proposed and implemented ideas from the NPFMC climate taskforce ○ Consider examples from Southeast where participatory modeling incorporated LEK into stock assessments 	Climate Innovation Group
<ul style="list-style-type: none"> ● Improve the use of Community Vulnerability Assessments <ul style="list-style-type: none"> ○ Identify NMFS’ plans to characterize community vulnerability in the past and near future. Identify options for filling any gap ○ Discuss options for using knowledge of community vulnerabilities to plan for the future. ○ Note that not all community vulnerabilities are climate-focused. 	Climate Innovation Group
<ul style="list-style-type: none"> ● Consider expanding State of Ecosystem (SOE, used in New England and Mid-Atlantic) and Ecosystem Status Reports (ESR, used in the South Atlantic) to include qualitative indicators, for example qualitative network models. <ul style="list-style-type: none"> ○ NEFMC discussed this during the 2023 SOE briefing 	NEFSC/ SEFSC

Potential Barriers and Considerations:

- Need to establish trust of qualitative data and indicators as compared to quantitative indices
- Those who hold LEK will need to agree to provide it

Long-Term Objectives:

- Create a robust fishery management process responsive to quantitative and qualitative information.

Theme 3: Data Sources and Partnerships

D6. Develop incentives for better reporting to help reduce uncertainty

Description: The best way to improve the assessment/management process under changing climate conditions and shifting species distributions is to ensure the most accurate data is available. Fisheries dependent data is particularly useful as it is collected year-round and at a finer spatial scale than is possible with fisheries independent data. Therefore, it is important to incentivize accurate and timely reporting.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">Develop tools to better utilize citizen science	Centers, Councils and Commission
<ul style="list-style-type: none">Develop a report that identifies weaknesses in fishery dependent reporting requirements	Centers
<ul style="list-style-type: none">Develop plan to monitor and enforce compliance to reporting requirements	Councils, Commission, Law Enforcement, Permit Offices
<ul style="list-style-type: none">Better coordinate with State and Federal recreational data collection to utilize state volunteer survey data	Centers and Commission

Potential Barriers and Considerations:

- More consistently apply and enforce reporting requirements

D7. Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams (e.g. offshore wind data) and foster new partnerships

Description: Other uses of the ocean are rapidly expanding. While dealing with various sectors can be challenging, it also creates an opportunity for us to foster new partnerships. As such, we can and should anticipate an influx of new data streams.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Hire staff dedicated to fostering partnerships and coordinating data collection/sharing between other ocean users, management bodies, and within Federal agencies 	Centers
<ul style="list-style-type: none"> Explore new partners that would mutually benefit from serving as a platform for data collection (USCG, DOD, IOOS/Regional Associations, merchant marines, transit, National Marine Sanctuaries, etc.) 	Centers
<ul style="list-style-type: none"> Approach NGOs and Universities to develop mutually beneficial projects and funding. 	Centers, Regional IOOS Associations
<ul style="list-style-type: none"> Host a forum of known partners to discuss available funding sources, potential collaborations, and data gaps. 	Centers, Regional IOOS Associations
<ul style="list-style-type: none"> Use offshore wind turbines as platforms for data collection. 	Centers, Regional IOOS Associations, State/Federal Programs

Potential Barriers and Considerations:

- Relationships with other ocean users can be contentious.

D8. Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)

Description: The need for more data will continue to increase under a changing climate. It is unlikely that we will be able to expand on existing data collection without sacrificing data that is currently collected. It will be imperative for the agency and the regions to prioritize data needs to focus on what will be most important moving forward, especially human dimensions data.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Prioritize human dimensions data and identify training opportunities for managers to help them better consider human dimensions in decision making. 	Councils, Commission, Regional Offices, and Centers
<ul style="list-style-type: none"> Hold a workshop to determine which data needs are necessary across regions to inform decisions and prioritize the collection of those data. Consider the relevance of findings from the 2021 NOAA Fisheries Atlantic Coast Science Coordination Workshop, the NMFS Next Generation Data Acquisition Plan, and other relevant workshops and reports. 	Centers

Appendix: List of Actions by Priority

G=Cross-Jurisdictional Governance
M=Managing Under Increased Uncertainty
D= Data Sources and Partnerships

High Priority

- G1. Reevaluate Council committee structure, use, and decision making
- G2. Re-evaluate and potentially revise Advisory Panel representation
- G3. Develop joint management agreements with aim of clarifying roles and increasing efficiency
- G4. Improve coordination across NOAA offices and regions
- M1. Identify ecosystem-level contextual information that can be considered within the management process to help incorporate climate information into decisions
- M2. Streamline FMP documentation and rulemaking
- D1. Expand study fleet, include recreational fisheries, and ensure data are used
- D2. Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms
- D3. Improve the use of existing data

Medium Priority (Watch List)

- G5. Evaluate mechanisms for cross-pollination of SSCs
- M3. Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)
- M4. Identify and establish best practices for increasing nimbleness/ responsiveness in management
- M5. Create a more adaptable structure for fishing permits
- D4. Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)
- D5. Focus on AI/technology development to more rapidly get data into assessments

Parking Lot

- G1. Additional ideas for reevaluating Council committee structure, use, and decision making
- G6. Coastwide Council with varying voting representation by FMP
- G7. Change state representation on councils
- G8. Clarify and potentially expand the roles of liaisons between Councils
- G9. Consider allowing proxies for Council members
- M6: Include spatial considerations in management; specifically in relation to leading and trailing edges of shifting stocks
- M7. Consider alternative management options instead of, or in addition to, using stock assessments that directly incorporate environmental or ecosystem parameters within the assessment
- M8. Better incorporate qualitative information including local ecological knowledge (LEK) and community vulnerability assessments to improve management in a changing climate
- D6. Develop incentives for better reporting to help reduce uncertainty
- D7. Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams (e.g., offshore wind data) and foster new partnerships
- D8. Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)

Atlantic States Marine Fisheries Commission

Tautog Management Board

August 2, 2023

4:00 – 5:00 p.m.

Hybrid Meeting

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. Luisi*) 4:00 p.m.
2. Board Consent 4:00 p.m.
 - Approval of Agenda
 - Approval of Proceedings from January 2022
3. Public Comment 4:05 p.m.
4. Consider Approval of Fishery Management Plan Review and State Compliance for the 2022 Fishing Year (*J. Boyle*) **Action** 4:15 p.m.
5. Consider Committee Reports on Commercial Tagging Program and Possible Changes to the Tagging Program **Possible Action** 4:25 p.m.
 - Technical Committee Report (*C. Weedon*)
 - Law Enforcement Committee Report (*K. Blanchard*)
6. Progress Update on the 2025 Tautog Stock Assessment Update (*K. Drew*) 4:45 p.m.
7. Review and Populate Advisory Panel Membership (*T. Berger*) **Action** 4:50 p.m.
8. Elect Vice-Chair 4:55 p.m.
9. Other Business/Adjourn 5:00 p.m.

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details

MEETING OVERVIEW

Tautog Management Board

August 2, 2023

4:00 - 5:00 p.m.

Hybrid Meeting

Chair: Mike Luisi (MD) Assumed Chairmanship: 11/21	Technical Committee Chair: Craig Weedon (MD)	Law Enforcement Committee Representative: Jason Snellbaker (NJ)
Vice-Chair: Vacant	Advisory Panel Chair: Vacant	Previous Board Meeting: January 22, 2022
Voting Members: MA, RI, CT, NY, NJ, DE, MD, VA, NMFS (9 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from January 25, 2022

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 should use the webinar raise your hand function and the Board Chair will let you know when to speak. 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 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 Fishery Management Plan Review and State Compliance for the 2022 Fishing Year (4:15-4:25 p.m.) Action
Background <ul style="list-style-type: none"> • State compliance reports were due May 1, 2021 • The Plan Review Team reviewed each state report and compiled the annual FMP Review (Supplemental Materials).
Presentations <ul style="list-style-type: none"> • Overview of the Tautog FMP Review by J. Boyle
Board Actions for consideration <ul style="list-style-type: none"> • Approve FMP Review for 2022 fishing year, state compliance reports, and <i>de minimis</i> requests

5. Consider Committee Reports on Commercial Tagging Program and Possible Changes to the Tagging Program (4:25-4:45 p.m.) Possible Action
Background <ul style="list-style-type: none"> • The commercial harvest tagging program was fully implemented by all states in 2021.

- The Technical Committee (TC) and Law Enforcement Committee solicited feedback on the current state of the program in response to recent public comments, including a TC survey to harvesters and dealers within each member state (**Briefing Materials**).
- New York State also initiated a study of potential alternative tag types and tag placements (**Supplemental Materials**).

Presentations

- Technical Committee Report by C. Weedon
- Law Enforcement Committee Report by K. Blanchard

6. Progress Update on the 2025 Tautog Stock Assessment Update (4:45-4:50 p.m.)

Background

- The TC met to review the stock assessment schedule and is recommending the next assessment update occur in 2025.

Presentations

- Progress Update on Tautog Stock Assessment Update by K. Drew

7. Review and Populate Advisory Panel Membership (4:50-4:55 p.m.)

Background

- There is one new nomination to the Tautog Advisory Panel from New York —Nicholas Marchetti, a commercial rod and reel trapper (**Briefing Materials**).

Presentations

- Nomination by T. Berger

Board Actions for Consideration

- Approve Tautog Advisory Panel Nomination

8. Elect Vice-Chair

9. Other Business/Adjourn

Tautog

Activity level: Low

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

Committee Task List

- TC – May 1, 2022: compliance reports due

TC Members: Craig Weedon (Chair, MD), Alexa Kretsh (VA), Coly Ares (RI), Linda Barry (NJ), Sandra Dumais (NY), Scott Newlin (DE), David Ellis (CT), Sam Truesdell (MA), Alexei Sharov (MD), Joshua McGilly (VA), James Boyle (ASMFC Staff)

SAS Members: Coly Ares (RI), Linda Barry (NJ), Alexei Sharov (MD), Sam Truesdell (MA), Jacob Kasper (UCONN), Katie Drew (ASMFC Staff), James Boyle (ASMFC Staff)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
TAUTOG MANAGEMENT BOARD**

**Webinar
January 25, 2022**

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

1. **Motion to approve agenda** by Consent (Page 1).
2. **Motion to approve proceedings of October 19, 2021** by Consent (Page 1).
3. **Motion to adjourn** by consent (Page 15).

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

ATTENDANCE

Board Members

Dan McKiernan, MA (AA)	Tom Fote, NJ (GA)
Raymond Kane, MA (GA)	John Clark, DE (AA)
Rep. Sarah Peake, MA (LA)	Roy Miller, DE (GA)
Jason McNamee, RI (AA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
David Borden, RI (GA)	Mike Luisi, MD, Administrative proxy
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Russell Dize, MD (GA)
Justin Davis, CT (AA)	Dave Sikorski, MD, proxy for Del. Stein (LA)
Bill Hyatt, CT (GA)	Pat Geer, VA, Administrative proxy (AA)
Jesse Hornstein, NY, proxy for J. Gilmore (AA)	Shanna Madsen, VA, proxy for Sen. Mason (LA)
Emerson Hasbrouck, NY (GA)	Bryan Plumlee, VA (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)	Chris Wright, NMFS
Joe Cimino, NJ (AA)	

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

Ex-Officio Members

Craig Weedon, Technical Committee Vice-Chair

Jason Snellbaker, Law Enforcement Representative

Staff

Robert Beal	James Boyle	Kirby Rootes-Murdy
Toni Kerns	Emilie Franke	Sarah Murray
Laura Leach	Lisa Havel	Mike Rinaldi
Maya Drzewicki	Chris Jacobs	Caitlin Starks
Tina Berger	Jeff Kipp	Anna-Mai Svajdlenka
Pat Campfield	Dustin Colson Leaning	Deke Tompkins
Lisa Carty	Adam Lee	Geoff White
Kristen Anstead	Savannah Lewis	

Guests

Karen Abrams, NOAA	Jeff Brust, NJ DEP	Alexa Galvan, VMRC
Jeff Amorello	Peter Clarke, NJ DFW	Lewis Gillingham, VMRC
Max Appelman, NMFS	Margaret Conroy, DE DFW	Edward Gladue
Mike Armstrong, MA DMF	Heather Corbett, NJ DEP	Brendan Harrison, NJ DEP
Pat Augustine, Coram, NY	Nichole Lengyel Costa, RI DEM	Jacob Holtz, MD DNR
Jason Avila, Avila Global	Greg Cudnik	Jeff Kaelin, Lund's Fisheries
Linda Barry, NJ DEP	Jessica Daher, NJ DEP	Emily Keiley, NOAA
Chris Batsavage, NC DENR	Lorena de la Garza, NC DENR	Pat Keliher, ME (AA)
Mel Bell, SC (AA)	Laura Deighan, NOAA	Maira Kelly, NOAA
Rick Bellavance	Steve Doctor, MD DNR	Adam Kenyon, VMRC
Alan Bianchi, NC DENR	Lynn Fegley, MD DNR	Marguerite Koehler, TMS Waterfront
Kurt Blanchard, RI DEM	Cynthia Ferrio, NOAA	Chip Lynch, NOAA
Francis Blount	Alexa Fournier, NYS DEC	John Maniscalco, NYS DEC

These minutes are draft and subject to approval by the Tautog Management Board.

The Board will review the minutes during its next meeting.

Guests (continued)

Jerry Mannen, NC (GA)	Nick Popoff, FL FWS	Scott Curatolo-Wagemann, Cornell
Conor McManus, RI DEM	Kathy Rawls, NC (AA)	Mike Waine, ASA
Nichola Meserve, MA DMF	Tara Scott, NOAA	Megan Ware, ME DMR
Mike Millard, US FWS	Bill Shillingfo	Craig Weedon, MD DNR
Sen. Dave Miramant, ME (LA)	Somers Smott, VMRC	Ritchie White, NH (GA)
Allison Murphy, NOAA	Anthony Sodano	John Whiteside
Brian Neilan, NJ DEP	David Stormer, DE DFW	Logan Williams
Adam Nowalsky, Port Republic, NJ	Rachel Sysak, NYS DEC	Steven Witthuhn, Greenlawn, NY
Tim O'Brien, NY	Wes Townsend, Dogsboro, DE	Greg Wojcik, CT DEEP
George O'Donnell, MD DNR	Corinne Truesdell, MA DMF	Chris Wright, NOAA
Cheri Patterson, NH (AA)	Richard Vaughan	Harvey Yenkinson
Michael Plaia	Vincent Tor	Renee Zobel, NH FGD

The Tautog Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday, January 25, 2022, and was called to order at 1:00 p.m. by Chair Michael Luisi.

CALL TO ORDER

CHAIR MICHAEL LUISI: This is Mike Luisi; I am the new Board Chair for Tautog Management Board, and I would like to call this meeting of the Tautog Management Board to order. Today is January 25, 2022. Before I get started, I would like to recognize the service of Bill Hyatt, the former Tautog Board Chair, and thank Bill for his time spent Chairing this Board.

I was looking back through the proceedings from the previous meeting, and realized that Bill made a comment early on that he was able to be a Board Chair for Tautog for two years, without ever having to do anything in person. While I hope to follow in Bill's footsteps in a leadership role on this Board.

I really hope that is not going to be the case for me, and for all of us, hopefully we'll all be able to see each other sometime soon, as we clear through the pandemic that we've been dealing with for the last two years. Thanks again, Bill! Okay, with that said, I would like to move to the first item on the agenda, which is the Approval of the Agenda. There is one item to note here.

Originally, when the meeting agenda came out, there were six items on today's agenda, and then we had supplemental materials come out with a revision to today's agenda. I would like to make sure everybody is using and working from the current agenda, which has six items. What we did was we removed the election of Vice-Chair from the original agenda.

APPROVAL OF AGENDA

CHAIR LUISI: With the agenda before you with six items, are there any members of the Board that would like to make any additions or modifications to that agenda? If you could raise

your hand. Okay, seeing no hands raised, the agenda is approved.

APPROVAL OF PROCEEDINGS

CHAIR LUISI: Moving on to the next item on the agenda, which is the Approval of the Proceedings of the minutes from the October, 2021 meeting.

Are there any Board members that have any additions or modifications to the proceedings from the October Board meeting? Okay, seeing nothing at this time, are there any objections to approving the proceedings and minutes from the October, 2021 meeting? Seeing no hands, that is approved with no objection.

PUBLIC COMMENT

CHAIR LUISI: Moving on to our third item on today's agenda, we're here for Public Comment. This is an opportunity for the public to offer comment on anything not on today's agenda. Is there anyone from the public that would like to provide public comment today? If you're a member of the public and you don't have the ability to raise your hand through your device, if you're just on the phone, just please speak up and recognize yourself before you begin. Okay, I have Tim O'Brien. Go ahead, Tim.

MR. TIM O'BRIEN: How are you guys?

CHAIR LUISI: We're great, thanks, Tim. Can you just tell us your name for the record, and who you're affiliated with?

MR. O'BRIEN: Yes, my name is Tim O'Brien, and I'm a New York fisherman. I just wanted to comment on the tags, and see if we're going anywhere with this. I posted a comment. You know what we're seeing is a problem with the tags infecting the fish and harming the fish, so I was wondering.

CHAIR LUISI: Tim, if I could stop you here for just a second. The Law Enforcement Committee is going to provide some discussion on the commercial tagging program towards the end of today's meeting. Since you're talking about the tags, I think

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it might be best if we just hold off on your comment until then. Would that be, okay?

MR. O'BRIEN: Yes, that's fine.

CHAIR LUISI: I'll ask for public comment on that agenda item later on in today's meeting, and then please just like you did, raise your hand and I'll go ahead and call on you, you can give us your thoughts. All right, thanks, Tim. Is there anyone else from the public? Okay, seeing none at this time, let's go ahead.

**REVIEW AND DISCUSSION ON THE
HYPOTHETICAL SCENARIOS FROM THE RISK
AND UNCERTAINTY DECISION TOOL**

CHAIR LUISI: I would like to move on to the next item on our agenda, which is a Review and Discussion on the Hypothetical Scenarios from the Risk and Uncertainty Decision Tool. We have Jason McNamee with us to provide that presentation, so I'm going to turn the floor over to Jason, if you're ready, Jason. Whenever you're ready you can go ahead and get started.

DR. JASON McNAMEE: I'm ready to go, Maya, I think you're going to control the presentation for me, so thank you for that. I see it up on the screen there. Hi everybody, this is a quick presentation, just kind of updating you. If you recall the last Board meeting you had asked, since we weren't taking any management action on tautog, but we have sort of initiated testing out our Risk and Uncertainty Tool on tautog.

We did some hypothetical scenarios, so we're just reporting out on that. Just quick background, I think you all are fully up to speed on this at this point, but just to get everybody's head back in the space of risk and uncertainty. The Draft Risk and Uncertainty Policy and Decision Tool, what it does is it provides a method for arriving at the appropriate risk tolerance level for a stock, giving management priorities and the characteristics of that species and that fishery.

The tool kind of creates this risk tolerance level. We can then use that to select harvest levels based on things like projections. An important nuance here is it's not a tool for assessing the varying risk levels of different management approaches. That's a different thing that hopefully we start doing more frequently, but that would be a Management Strategy Evaluation, where you are kind of comparing two different management strategies, and seeing how they stack up across different metrics. That's not what this is. This is a little bit different, where we're just trying to set an objective way for determining the Board's risk tolerance for any particular management decision that needs to be made, so that we don't have to iterate back and forth with the technical groups to decide that.

This is a schematic of what kind of happens in the process. You have your technical inputs over in the left-hand box there. They go all the way from sort of their standard stuff, like stock status, model uncertainty, all the way down to socioeconomic considerations are built into it as well. Those are your technical inputs, they get plugged in.

Then you have the second component, which are the weightings, and this is where the management board decides how important all of those different technical inputs are in the construction of that final risk tolerance level. You plug all that stuff in, you turn the crank, and out of the tool comes a risk tolerance level.

We're going to start talking about that risk tolerance level, in terms of it being a goal probability of achieving the reference point. You know just to kind of characterizes that a little bit better, what we are putting forward is, this is our goal. You know it's not anything other than what we hope will occur. Hopefully that type of terminology helps a little bit in how we're talking about this.

In the end that probability that comes out of the tool will be used with projections to identify a harvest level, and then that will allow us to move on with our process. We selected tautog as a pilot case to test out the policy and the tool. The Technical

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Committee for tautog, and the Committee for Economics and Social Science provided technical input for us.

We then got the Board together. If you'll recall, we did the kind of online surveying to provide those inputs on the weightings, and then we combined those to develop the four regional tautog risk and uncertainty decision tools. Back last year in the fall, the Board reviewed the preliminary decision tool, so we kind of did a little presentation like this showing you the outcome.

At the time, we were also in the process of going through a stock assessment, and determining whether or not we needed to take any management action. Luckily for tautog we did not. That is good for tautog, bad for adjusting the decision tool. But it was good news. But we didn't have to take any management action.

What we decided to do instead was to put together some hypothetical scenarios, so that we could see what would have happened had we needed to do anything. That kind of gets us back up to speed as to where we are today. This is another schematic of the risk and uncertainty process. You've got your technical components that go into the decision tool.

This is kind of an iterative process, and I don't know that this was necessarily clear from the outset here. There is kind of an iteration here, where we plugged the technical components in, and you produce a goal probability, but you do this without the socioeconomic considerations, and you use that to set some preliminary harvest levels. You look at the differences between those preliminary levels and status quo, and then you can pull in those socioeconomic components, because now the folks on the SAS, they understand what we're talking about, what the impact might be. That allows them to do their part in populating the Decision Tool. Then they plug in their information, and off we go.

Again, all of those next steps are triggered by initiation of a management action, which we didn't have here. What we're doing instead is kind of jumping over those and creating a make-believe world, and setting up some hypothetical scenarios. What we did, the two highest level scenarios that we looked at were, what if there was no difference in the harvest level, or what if we needed about a 5 to 10 percent change in harvest. It could have been up or down.

Just a little tangent here. I know that I often have to sort of pause and think about this kind of in a very focused manner, because it can get confusing. We thought we would take you on a little tangent here to talk about the probability. When we're talking about an F rate with a 60 percent probability or an F rate with a 50 percent probability, what exactly does that mean?

Hopefully, these next three slides help to give you a little more information on that. When we do a stock assessment, we often use projections to set up our management metrics. These projections take into account uncertainty. Basically, a thousand runs are sort of a standard number of projections to run. It could be more; it could be less.

But you conduct about a thousand runs with different parameter configurations, so different starting abundances within the uncertainty that the assessment thinks there might be around that. It goes through and it picks up a slightly different abundance, starting abundance, slightly different recruitment amount, et cetera, et cetera.

It kind of goes through, resamples those two things, and produces basically a new reality, and you do that a thousand times. You get this kind of haze of reality. In the plot you're looking at, on the screen there you had your total F on the Y axis, and then time along the X axis. The darker colors are the center of the distribution. Those represent the darker the blue is, that is your expected outcome.

As that blue color gets lighter those are less likely, but within the realm of probability outcomes, given the uncertainty in the stock assessment. When we

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talk about the probability that we're trying to meet, what's better higher or lower? Of course, we shouldn't characterize it as being better or worse, but the way we can characterize it is that in the case of F, or fishing mortality, the higher the probability you set the more conservative your management will be.

Often, we talk about 50 percent probability. What you can see here is it's not a coin flip that folks often like to sort of characterizes it as it's more that you're taking all of those projections and those different possibilities and outcome, and you're splitting it in half, and you're picking the middle of that distribution, the center of that dark blue, and you can kind of see the dark black line right in the center there.

That is what you're picking. You are basically setting it at the most likely outcome for the center of the distribution. If you were to do something a little different, and say bump that up to a 60 percent probability. What you're doing is you're setting that fishing mortality rate at a level that makes the projection distribution asymmetrical, and so 60 percent of your realizations will be below the F target, and 40 percent will be above it. What you're trying to do is give yourself more chances of being at the F target that you selected.

There is a 60 percent chance, rather than just a 50 percent chance. Hopefully that was helpful context for you. Again, it was just a little tangent, so that the rest of the presentation makes sense. Using the technical inputs from the Technical Committee, and the weightings from the Board. The Decision Tools can produce regional goal probabilities without those socioeconomic considerations.

This includes everything except those socioeconomic components. Then you can see there is a list there in that first sub bullet. What you come out with, in the case of tautog, are the following probabilities. For the Massachusetts/Rhode Island Region without

the socioeconomic considerations, you would want to select a 54 percent probability.

Since we're talking about F, I'll keep talking about that. A 54 percent probability of being at your F target. Long Island Sound is a little bit more than that at 59 percent. New Jersey and New York Bight is 61 percent, so that's the highest one, and then DelMarVa drops it back down to about 56 percent.

One important note is that Amendment 1 stipulates that you need to be at a minimum of a 50 percent of the F target. That kind of sets some sideboards up, in the case of tautog. Even if the Decision Tool were to produce a probability that was less than 50 percent, so more risky, less conservative. You would get kind of set back at 50 percent.

Basically, you couldn't go below that per the FMP. It's an important consideration in the case of tautog. I don't know how unique that is for that to be stipulated in the different management plans, but it is explicit in the tautog FMP. Hypothetical scenarios, we looked at a couple of different things here.

You've got the hypothetical differences between the preliminary harvest level and a status quo harvest level, so there are two potential hypothetical situations there. One is to have no difference, and one is to have about a 5 to 10 percent difference, so that's what we looked at with regard to the harvest levels.

Then we also looked at some alternative weightings for the socioeconomic components. We looked at some differences here to kind of show you what the tool does, given these different circumstances, so you can kind of see in real time. You know how much does it go up, how much does it go down, given different weightings.

Just a sort of interesting fact, and this is something that John Clark brought up a couple times as we've been discussing this. The way that the Board ended up setting the weightings for the short term and long-term socioeconomic components, they basically canceled each other out. There was kind

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of a split between those who valued short term over long term considerations. There was an equal split, and so they ended up canceling each other out. To kind of, again, test the bounds of the tool, we tinkered with those a little bit as well. We'll look at one, given the current weighting that we produced, and then we also tweaked those a little bit to put a lot of the weight on the short term versus the long term, and then we put a really extreme weight on the short term versus the long term, and then vice versa.

Hopefully that made sense, and we'll kind of translate now into the next slide. This is the outcome of all of that. To orient you to the table here. Let's start with the left-hand column. These are your scenarios, and I'll kind of walk through those. Then the next column over, these are your socioeconomic weightings, so these are the weighting factors that go into the model.

Then you have commercial and recreational, and each of those has a short-term ST or long-term LT to phone into it. In the right-hand column that's the outcome, that's your answer. If any of these scenarios were real, these would be the probabilities that we would be telling the Technical Committee to use when giving us back the F rate that we need to meet for our management changes.

Scenario 1 that's no change to the harvest level, so these are the same as what I showed you in that table on, I'm not sure if it was the last slide or two slides ago. That's the existing, or that is without any of the socioeconomic weightings. Then we get into our different scenarios, so that's Scenario 2, that's if we had a 5 to 10 percent change to the harvest level, so 2A is if we kept the weightings how we had configured them as a Board.

You can see that they sort of offset each other there, because they are of equal value. Those full probabilities look exactly the same as the row up above it. To go on to 2B, this is a

scenario where we said the short-term considerations are more important than the long term, but at a moderate level, so the scoring is not that extreme.

What you can see there is that those initial probabilities all decrease to varying degrees. For the Mass/Rhode Island Region they went from 54 percent down to 52 percent. This is that push and pull of the decision tool, where you're weighting those socioeconomic factors in the short term higher, and in this case what that did was it decreased the probability, meaning it would allow you a less conservative management option.

Moving on to 2C. This is short-term considerations with an extra high weighting, so we bumped that score up to 10, and kept the long term the same as it was. In a sort of logical manner, it drives those probabilities down even further. You can see that it goes from 54 down to 50 percent for the Mass/Rhode Island Region, just another here from New Jersey/New York Bight goes from 61 percent down to 57 percent.

The short-term considerations are really pulling that and allowing you to be less conservative with your management. Then 2D and 2E is just the reciprocal of those. Here we've got short term being weighted less than the long term. Then 2D is with the long term at a moderate level, so you can see the probabilities all go up from that initial value.

From 54 percent up to 56 percent for Mass/Rhode Island, 61 percent up to 63 percent for New Jersey/New York Bight, and then when you make that super extreme it goes up a little bit more. You can see that in that bottom row. We'll come back to this table so you can process that a little more, but just to kind of wrap up the presentation, so that we can get to your questions. Any questions, and as we get on to the questions here, just a final thought on, thanks, Jay, but now what.

We think the idea here is to get any feedback from the Tautog Board on this test run of the tool. We'll kind of collate your feedback, and then report those findings back to the Policy Board. That is kind of the

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next steps for this process. With that Mr. Chair, happy to take any questions, and Maya, it might be most helpful to flip back to that last slide we were on with the table.

CHAIR LUISI: Thanks, Jason, appreciate the presentation. I'm glad you captured at the end there, kind of what you're looking for, as far as direction from the Board. Before we get to that let's see if anyone has any clarifying questions for Jason. Okay, Chris Wright, go ahead, Chris.

MR. CHRIS WRIGHT: Yes, Jason, if a stock is overfished or overfishing, how would that get incorporated into that timeline in the feedback? You know when would you consider that in that chart that we had in the beginning in the timeline?

DR. McNAMEE: Yes, thanks for the question. That in particular that aspect, it's actually built into the decision tool. Stock status is one of those technical inputs that are at kind of the higher end of the decision tool there. In the case if stock status were bad, those would add precaution into the system. Those, like we're looking at the table here on the screen, those probabilities would be higher than that if stock status were bad. Each component of stock status gets treated as an independent factor in the decision tool.

CHAIR LUISI: John Clark, you're next.

MR. JOHN CLARK: Thanks for another very interesting presentation on this, Jay. Just looking at the chart up there. It looks like even under the most extreme weightings that the probability only changes about 4 percent. Is that pretty typical that these weightings are not meant to really effect the probability too much, Jay?

DR. McNAMEE: Yes, good question, John. I think your exactly right. A couple of answers. What we wanted to illustrate here for you is that you don't get wild swings in the proportions, like you don't go all the way up to

100 percent just by some small modifications in the tool. That was part of the reasoning here for the scenarios that were selected. But in the end, I think your comment is correct.

By building this into that logistic function that is exactly what that does, it kind of tapers the effect of things as you get out towards the tails, and it slows them down. The reason for that, there are a couple of reasons for that. One is so they don't get wild fluctuations. The other is so you can kind of fit in different components that might have different scales associated with them. You know that's why we chose the logistic function of form for the tool, but what you said is correct. Kind of a long-winded way to say, yes.

CHAIR LUISI: All right thanks, Jay. Bill Hyatt.

MR. BILL HYATT: Yes, John just asked the same question I was going to ask. I was seeing a 6 to 8 percent swing in the probabilities between the most extreme scenarios. I just wanted to know if they had a gut feel for that to be the expected. I think that's just been answered, so thank you.

CHAIR LUISI: Any other questions from the Board at this time? I don't see any hands raised for questions, any comments? Jay, I wonder if you could go back to the statement that you made at the conclusion of your presentation, and just kind of frame out what it is you might be looking for regarding comment or direction from the Board here, so everyone is clear, and then we can seek to obtain that from the Board members.

DR. McNAMEE: Yes, thanks, Mr. Chair, I think that will help. I'll kind of lead off here, and Sara if you're out there in radio land and you want to add in, please do. But you know the idea here is, we've gone through tautog with the risk and uncertainty tool from beginning to end. Feedback from the Board, did you love it, did you hate it, do you think there are things that need to be fixed or investigated further, or do you think this is ready to be tested on another species?

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Anything in that type of comment range would be really valuable for us to then go back to the Policy Board and start to think about, you know you may want to test it on another species first. Are we ready to start building this in, and what is the sequence we want to build it out with, that sort of thing? Sara, I don't know if there is anything in addition that you think we should request from the Board.

MS. SARA MURRAY: No, I think you covered everything. That's really it, any feedback and thoughts on parts you thought were challenging, or if you thought it worked well. Any thoughts on next steps or comfort level. Anything in that vein would be very helpful. Thank you.

CHAIR LUISI: Okay, well let's see what the Board would like to offer here. We'll start with Dan McKiernan, go ahead, Dan.

MR. DANIEL MCKIERNAN: I have kind of a general question about, and I really like the approach and it's really fascinating. But would this work for a Magnuson species? Does Magnuson, with all of its priorities and guidelines, does it get too muddled? My question is, is this only appropriate for ASMFC species that don't have to deal with all the nuances of Magnuson?

CHAIR LUISI: Yes, that's a really good question, Dan. I'll turn to staff first. Maybe that conversation has come up, or if there is anyone from the Service on the line that may be able to speak to that.

MS. MURRAY: Yes, I'll chime in again, Mr. Chair, if that's all right.

CHAIR LUISI: Sure.

MS. MURRAY: Yes, we have discussed this, and the intention is for this to be applied to Commission managed only species, so that there is no conflict there as the Councils, for example, have their own risk policies, and that

would present a challenge to have conflicting risk policy. The intention is to use this for species that the Commission manages solely.

MS. KERNS: Mike, if you're talking to us, you're muted.

CHAIR LUISI: Oh boy, I'm sorry about that. Okay, let me think about what I said while I was going on and on. I appreciate the answer to that question, and I guess it's time now to really consider what we want to do with this tool. As Jay mentioned, you know we didn't have an opportunity with tautog to use the tool, because we decided not to make any management adjustments, based on the most recent assessment.

But it doesn't mean the tool couldn't be used somewhere else. There was a mention of perhaps taking this to the Policy Board, to see if the Policy Board would like to consider other species for this tool to be used with. With that idea in mind, let me see what you all think. I'll go to Bill Hyatt. Go ahead, Bill.

MR. HYATT: Just have maybe another question for Jay. In considering this tool. In the opinion of the people that worked on it. Is it better to gather a lot of the information in advance of needing to actually apply it to management decisions, or do you perceive gathering the information sort of in the heat of the decision-making process? How does this type of tool, how do you envision it kind of rolling out into something that can be applied?

DR. McNAMEE: Yes, that's an awesome question, Bill. I think it's the former of what you said. What I mean by that is, I think you want to get these constructed, and not try and do that necessarily in the heat of the moment. Some of them you have to wait for stock assessment information. Some of the components depend on that.

Some of that has to wait. But there is no reason why a Board couldn't get together and kind of set up their weightings for the socioeconomic components, so the weighting part of it. That could be done ahead of time. In fact, it would be best to

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do that ahead of time, when you can sort of think clearly and objectively about it.

But remember, this is always meant to be kind of an iterative process. Even though you set those weightings up ahead of time, there is always this opportunity to kind of revisit. I'll give you a scenario. Say you set your decision tool up for Species X, and then you go through an assessment process and the outcome is really bad for Species X.

It's going to result in some really significant reductions that's going to really hurt, let's say a particular community. During that, even though you've already set your weightings, the folks that interact with that community might come forward and say, hey look, here is our reasoning for up weighting the short-term consequences this time.

The point is that you're being explicit as to why you are changing the weighting, so that gets recorded, and then you can reproduce with that new weighting, if the rest of the Board concurs with you. That is kind of the idea there. I think it is best to create it ahead of time, and then sort of tweak while you're in the process. That's kind of the idea.

CHAIR LUISI: John Clark, you're next. Go ahead, John.

MR. CLARK: I think this is a great idea to bring to the Policy Board and try with other species. I know during several addendum/amendment processes, I've talked about it, many others have talked about taking into account the long term and short-term effects on the economies involved. This is a small concrete step toward taking those into account when we move to actually change our compliance requirements during the addendum and amendment process. I would like to see this move forward; I think it's really good.

MS. TONI KERNS: Mike.

CHAIR LUISI: Yes, go ahead, Toni.

MS. KERNS: Just to clarify. I think what we're trying to get feedback from this Board, in terms of what we would discuss at the Policy Board level is that this Board was a test case for using the Policy. We worked a little bit with it in striped bass at the very beginning, and then we moved it to this Tautog Board, since it was going through the assessment process. When we bring it back to the Policy Board, I think it would be great to have feedback to them.

See if you think it should be tested on other species as well, or are we at a level that you're comfortable enough to make this a policy that the Commission uses for all of its Commission managed species? I just want to make sure that there is this like kind of clear distinction that will be asking the question of the Policy Board. Are you ready to accept this as your risk policy, or are you going to be testing it on additional species?

CHAIR LUISI: Okay, yes, thanks for that clarification, Toni.

MR. CLARK: I would like to see it tested on other species, but I do think it should be made a policy, so kind of both.

CHAIR LUISI: Do you have a preference, John, which you would prefer to happen first?

MR. CLARK: I think it would give everybody more kind of acceptance and belief in it, if it was tested on one more species, maybe, before we take it live for everything.

CHAIR LUISI: Okay, that's a good point, John, I appreciate that. Anyone else from the Board have any thoughts regarding whether or not you would like to see this tested or made a policy, one versus the other or at the same time. One before the other. Is this something that this Board is comfortable in moving this to the Policy Board for further discussion, since there is nothing really in the plans right now to use this draft policy with tautog. Bill Hyatt.

MR. HYATT: Building on what Jay said before, in terms of a preferred way to develop and apply this. You know I agree with John, I think building it out for a couple of additional species, for which we anticipate needing to take management action, would be a good step. I think instead of thinking about it as a test, at least based upon what Jay said earlier. I would think about it more as a build-out for a couple of species that we would anticipate using it on. Jay, please jump in if I'm misinterpreting anything that you said.

CHAIR LUISI: Thanks, Bill, that's a good way to look at it. It's clear in my mind. Jay, I'll ask you, is that along the lines of how you were thinking this might work well for the Commission?

DR. McNAMEE: Yes, absolutely. I think that is spot on to kind of keep it rolling, give it a couple more cases to give people that context. That's how it would implement anyway, so it's kind of in this stepwise process. It's not like you have to redo the ones that you've done already, if you like the way they came out. I think it can work well that way.

CHAIR LUISI: If that is the pleasure of the Board, Toni, can I ask you, would there need to be a motion?

MS. KERNS: I think we have that on the record here. Staff have the reporting, and we can bring that into the Policy Board discussion.

CHAIR LUISI: Bill, did you have a follow up to that? I see your hand again.

MR. HYATT: No, just forgot to put my hand down.

CHAIR LUISI: Okay, so before staff takes this discussion and runs with it, let me ask, is there any objection to what we have heard about expanding this to some other species, through discussion with the Policy Board, for species that we may be considering management change in the near future, so that it can be

tested prior to its being approved as a policy for the Commission.

Is there any objection to that idea, which was floated? Toni just indicated that staff would be able to package that together and prepare it for the Policy Board discussion at a later date. Okay, I don't see any objection at this time, so that will be the plan, and we will have that discussion next at the Policy Board. But Jason, thank you very much for your presentation and the work that you've done here. Perhaps we'll be using it down the road, the next time that we need to make some management changes on this species, so thanks again.

REVIEW OF THE FEEDBACK FROM THE LAW ENFORCEMENT COMMITTEE ON THE COMMERCIAL TAGGING PROGRAM

CHAIR LUISI: All right, that takes us to our last item on the agenda, other than Other Business, which is a Review of the Feedback from the Law Enforcement Committee on the Commercial Tagging Program. Jason Snellbaker is with us. Jason represents the Law Enforcement Committee for this Board, and I'm going to turn over to Jason. Jason, did you have a presentation you wanted to offer, or are you just going to speak?

CAPT. JASON SNELLBAKER: Yes, I believe somebody there was going to throw the slides up for me.

CHAIR LUISI: Okay, great. Whenever you're ready, Jason, you go ahead and you can get started whenever you're ready.

CAPT. SNELLBAKER: Good afternoon, Board and Mr. Chair. In August the Board was presented initial reports from the TC, Industry and the Law Enforcement Committee on the implementation of the tagging program. The focus was general, and it was to assess compliance and reducing illegal harvest.

The assessment of compliance and reducing illegal harvest has not been done in depth. In October, the Board considered questions for the Law Enforcement Committee to answer to help assess,

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Number 1 the compliance with the tagging program, and the impact of the program in reducing illegal harvest and markets.

Today we're going to go over a summary of the Law Enforcement Committee feedback on each of the Board questions. First question, are there any areas of concern, examples: specific fisheries or markets where compliance with tautog tagging requirements remains a significant issue. Please be as specific as possible.

Law Enforcement Committee feedback. A few commercial harvesters in possession of fish above the trip limit upon returning to the dock are penning fish up at sea. The fishermen cited the need to avoid multiple trips in bad weather. Sometimes this occurred prior to the season opening. Generally good compliance in the commercial fishery, primarily concern was observed by the recreational sector.

Harvest above the trip limits coordinating among bad actors makes monitoring difficult in the recreational sector, and the commercial sector. Law Enforcement Committee was challenged by limited staff and competing priorities in monitoring the illegal harvest of tautog. Question 2, is there a practical way for agencies to collect information on noncompliance with tagging requirements in the fishery or markets that could inform and improve the efficiency and effectiveness of Law Enforcement efforts?

Examples might include specific types of advanced information gathered by Agency biologists or by partner organizations. Please be as specific as possible. Next slide was the feedback from the Law Enforcement Committee. Using other agencies or organizations to monitor markets is challenging. There is a distrust of outsiders from the community. Inspections need to be synced or conducted simultaneously; otherwise, illegal sales move elsewhere. Again, most commercial harvesters and markets appear compliant.

It is unclear if collecting noncompliance information would help more. The best approach is for the Law Enforcement Committee to meet regularly, and exchange updates in information. The primary of concern is the recreational fishery, but increasing monitoring is challenged by limited staff. Question 3, any additional thoughts or recommendations for improving the efficiency and effectiveness of enforcement of the tagging program.

Law Enforcement Committee feedback, a few Law Enforcement Committee members have heard of frustration from commercial harvesters about the tag type, specifically citing the tags causing sores or infections and hurting sales. Law Enforcement Committee felt the best way to strengthen compliance with the tagging program is to have full buy-in from the commercial sector, and possibly continue to test and evaluate tag types may help improve compliance. Question 4, now that the tagging program has been underway for a couple of years, what is your expectation on if the program will ultimately be successful at reducing illegal fishing and markets? The Law Enforcement Committee, overall, the Law Enforcement Committee is in agreement that the tagging program has reduced the illegal harvest.

The big change is that the illegal harvest seems to primarily be in the recreational fishery. When harvest is above the possession limit it's difficult to determine if the extra fish are intended for private consumption or illegal sales. That concludes the Law Enforcement Committee summary, is there any additional questions at this time?

CHAIR LUISI: Yes, thanks, Jason. Let me see if anybody has any questions for Jason at this time. As I mentioned before we began the meeting, during the public comment there will be an opportunity for the public to offer some thoughts here as well. Dan McKiernan.

MR. MCKIERNAN: The question I have, I think has to do with Question Number 1. There were some comments about multiple trips being made in bad weather. Could we go back to that slide? I guess one of my questions is on that first bullet, where it

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was found that some folks were making multiple trips to avoid bad weather.

Were those in a quota managed state? The challenge we have here is some of our states, like us and the state of Rhode Island, have a finite quota. You know if somebody made multiple trips to avoid bad weather, it's probably less of a problem than if the incident where this state took place was not a quota managed state.

CAPT. SNELLBAKER: From what I understand it would be where there was a trip limit. Maybe if there was a 200-pound trip limit, what was happening is the vessel would go out to sea, maybe catch 4 or 600 pounds, not fish for three days, but have the trip limit penned up, or be able to go out to sea inshore/nearshore, close to the dock or even at the dock, be able to take 200 pounds out of that pen and sell it, you know versus trying to go out in bad weather and get 200 pounds every day, if that makes sense to you.

MR. McKIERNAN: Yes, it does. All I'm pointing out is, if it's a quota managed state it's less of a problem, because the overall removals would be capped. But if it's not a quota managed state then it could result in excessive harvest. Thanks for that.

CHAIR LUISI: Any other questions on this Law Enforcement Committee report? Any questions? Any comments? Why don't we take an opportunity to give some thought to, for Board members to get some thought to any comments they want to make, and I'll go ahead and offer an opportunity for the public at this time. Earlier we had Tim O'Brien, Tim are you still with us?

MR. O'BRIEN: Yes.

CHAIR LUISI: There you go, we can hear you, so if you want to offer your comments now, I think it is more fitting than when you had put your hand up earlier. Go ahead.

MR. O'BRIEN: Yes, thanks for the information. Basically, the problem that we're seeing is these tags harming the fish, the live fish, and effectively they get infections, and it's affecting the market value. I think a different tagging system would maybe avoid this from happening.

CHAIR LUISI: Thanks for your comment, did you have any thoughts as to what that tagging system could look like? I guess you would be in favor of the Commission working to evaluate other types of tags, is that what you're getting at?

MR. O'BRIEN: Yes. I guess the challenge is putting a tag through, say the meat or the fillet of the fish would damage the fillet. The gill is obviously damaging the fish, maybe something that goes through a fin. I'm not familiar with all the tags, but I have seen them in horseshoe crab, it's a thin plastic tube almost, like almost like a zip tie. But yes, there is a challenge with not harming the fish and not ruining the product. It would have to just be tested.

CHAIR LUISI: Got you, thank you for your comment, I appreciate it. Anyone else from the public, before I come back to the members of the Board? Okay, I have another hand, Anthony Sodano.

MR. ANTHONY SODANO: Yes, hello. In fact, I was just going to comment on Tim's remark, the same thing is happening with my fish tagging them, you know inserting the applicator into the gills sometimes the fish jump, you know it seems to cause them pain. I mean it obviously causes them pain, and sometimes the gills get damaged.

Like Tim said, there goes either a fish or people don't want to buy them. Also, infections, you sometimes if I'm holding a fish in pens to get to my daily limit, you know if it takes two days or whatever. Seeing the same thing, you know it doesn't take long. Just to reiterate what Tim said, I agree with that, and I think a different tagging. I mean the tagging system is probably good for illegal fish and all that, which obviously helps the species, but I think a different way of tagging would definitely work better. That's all I have to say.

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CHAIR LUISI: Thanks for your comment. One last time, I didn't see any new hands come up from any members of the public. Okay, seeing no additional hands, I come back to the Board. Dan McKiernan, go ahead, Dan.

MR. MCKIERNAN: I guess it would be useful for us to hear from some of the dealers, because when I read the reports that were part of the materials for this meeting, I read about fish that were being held for up to three months, which I was really surprised that anybody would hold a fish for more than three months, or that long. It seems to me that if the tag is being used properly, it seems like we're not getting many complaints from all states, but it seems to be a core group of fishermen that are challenged by that.

It seems like we should be talking to the dealers about whether this is actually affecting ex-vessel price, because these fish are destined to die anyway. If it reduces the shelf life, I would be interested to know if it's actually affecting market value, because we're not hearing from dealers. I can tell you that I had a really interesting case, where a dealer in Massachusetts shipped a fish to New York, and that fish was short, and that dealer called me to tell me exactly who caught that fish. It was caught by an out of state Environmental Police Officer, not the state where it was landed. I think that's brilliant. That's exactly what we were trying to accomplish. I will concede that the tag that was originally tested by the state University of New York was a smaller version of the tag that we went with in the end, and we went with the larger, it was a larger tag in the end, because we needed to put more information on the tag.

The smaller tag that was in the trials, in the end wasn't large enough to inscribe all the necessary information. I'm personally a little skeptical that we need to change the tagging system. But I'm certainly open minded. But I would like to hear from dealers, as to whether or not this is a market issue or not.

CHAIR LUISI: I would as well. Maybe I'll ask Toni what the process would be working with staff to get some type of report, maybe at our next meeting, regarding the situation and with some dealer information, with dealer input. Toni, is there something we could do here as a Board to task staff with that?

MS. KERNS: Thanks, Mike, I think we can definitely task staff to work on that. What I would want, and I don't necessarily think we have to work this out today, but I would want to know specifically what questions you would like us to ask the dealers. Then we may need some help from the states on dealers to reach out to, it's not someone that we and our FMP coordinators interact with on the regular. In order to get quick response back for you guys we would need a little help there.

CHAIR LUISI: Okay, do you think that's something that we could put down as an item for an upcoming agenda, to see if we could generate. You know maybe staff can work up some ideas to build from, and we can go from there.

MS. KERNS: Yes, we can do that, and I will say that would either be at the spring or summer meeting that we would bring that back to you all. As you know, Kirby, who is the coordinator for this species is leaving us at the end of the month for a new job, and so we'll just have a new staff member on this, and it will take a little while to get up to speed, and I want to make sure to set that expectation.

CHAIR LUISI: It does take time, and in my mind that's fine. It doesn't seem as if this issue is so pressing that we need answers immediately. Before I ask the Board if they support that concept moving forward, I've got a few other hands to go to. I'm going to start with Eric Reid, and then Bill Hyatt, I'll come back to you. Eric, you're up first.

MR. ERIC REID: As far as the market value goes for live tautog, it's an ornamental dinner. It's a pretty exotic dinner, and those fish are served whole. As far as I know they're served whole, it's a big presentation thing, and the market value for something that's got a big blemish or bruise or

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some other thing on its face, absolutely does lose value in my mind.

That's the problem. You know nobody is buying a live tautog to cut it into fillets, and then throw the rack away. They're using it as a special occasion. You probably had one on your birthday, Mike, you know. But it does affect the market value when the fish itself isn't perfect. That's my opinion.

CHAIR LUISI: Thanks, Eric, my birthday is in two weeks, so I'll be expecting a package in the mail, I guess.

MR. REID: You'll get a package all right.

CHAIR LUISI: I'm sure I will. I thought I had Bill next. Bill, did you put your hand down accidentally, or did you want to make the same point?

MR. HYATT: No, no. I did have a question, I did put my hand down, but I'll ask it. Just for clarification on Jason's Law Enforcement report. I looked at the meeting materials again. It mentioned relative to what was being observed in the recreational fishery that boats are being observed operating in unison.

It says later on that it's hard to prove that the fish overharvest from the recreational fishery is being directed towards the market. I guess my question to Jason, is that kind of what they suspect? Do they suspect that the remaining issue, relative to illegal harvest for the market, is largely being driven by illegal recreational harvest?

CAPT. SNELLBAKER: If I gave you a scenario where three or four guys were out in a boat, and they came back with you know 50, 60, 70 extra tautog. When you're standing on the dock and you don't know these folks, you have no idea whether they're just out there for a good day of fishing.

They had a good day, and they weigh the risk and reward, or once they go home at the end of the day, are they going to take them somewhere to a local establishment where they live, which is often in another state? You know we don't know what their intention was. You know when you're conducting inspection and you're conducting business and issuing summonses, they are not going to come out and tell you that.

That is kind of what that was meant. I don't know if that answers your question or not. I mean anytime we see a large number of fish, we try and assess, you know based on the gear, you know any kind of conversation we have, how knowledgeable they are. You know it's just small talk sometimes, where it indicates to us that these guys know what they're doing, they've done this before. But a lot of times you just don't know.

MR. HYATT: Are they keeping these fish alive? Are they coming ashore alive, or are these fish coming into shore every day?

CAPT. SNELLBAKER: I've personally seen it both ways. I've seen people who had tanks, and in conversation they had a swimming pool or a tank in their basement, and they kept fish alive in their house for personal consumption in their family.

CHAIR LUISI: Next on my list I Have Jesse Hornstein.

MR. JESSE HORNSTEIN: I just wanted to make the Board aware that New York is going to be sending out a survey to permit holders and dealers as well, to get additional feedback on how the program went this year. We would be happy to share the survey that was put together with staff, to work towards getting additional information from other states as well.

CHAIR LUISI: All right, I appreciate that information, Jesse. Dan McKiernan.

MR. McKIERNAN: Yes, thanks, Mr. Chairman. Just if you would allow me one more comment here. I want us to be really careful about conclusions, anecdotal conclusions about the saleability of a

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single fish in a pan. I had a fisherman comment to me, an out of state fisherman who felt that his fish were worth more, because a lot of the illegal fish on the market, because of the tagging program, disappeared.

His fish brought a higher ex-vessel price, because some of the dealers couldn't get the unlawful fish. Now I'm not saying the dealers knew the fish were unlawful, but you know once fish leave Massachusetts in the old days, before the tagging program, who would know? I think this overall program probably increased price per pound to the legally caught tautog.

I just want us to keep an eye on that. As I understand it, New York just finished their first year with the tagging program. It was easier for us in the second year, so maybe through some more practice with the tag and the applicator, maybe things get better in the second year.

CHAIR LUISI: Anyone else from the Board that would like to make a comment on this? Jason McNamee.

DR. McNAMEE: Just a quick comment. You know to echo something that Dan McKiernan said earlier. You know I'll keep an open mind on this as well. If there is a better solution out there, I'm interested to learn about that better solution. But you know I would need it to be based on, as careful testing as we did in the first round.

That would be compelling to me if there is something as effective that gets tested with the same amount of care that we took when picking the current tags, you know modifications to that notwithstanding. I just wanted to sort of offer that comment to the Board as well. You know I'm sort of, like Dan McKiernan just said a moment ago.

Our fisherman didn't love the idea, kind of worked through it. I think it's going okay in Rhode Island, and like he said, it took some getting used to. That is the reason why I just

don't want to haphazardly switch after making that effort and implementing it in our state. But if there is a better solution that can have as good or better outcomes that people are interested in, I am open minded about taking a look at that, and seeing the data that comes out of that study.

CHAIR LUISI: Yes, I think your point is well covered here, as far as jumping the gun to making changes. I don't necessarily think that's where we are, but I think it would be helpful, as recommended by, I think it was Dan, to put some information together to try to solicit some information back from the dealer side of this fishery. I'll take that as a task, unless there is objection by the Board. We've already discussed it, and it sounds as if Toni is in step, or aware of that tasking, once we have a new staff person to replace Kirby after his departure. We'll have to look forward to that at a meeting in either the spring or summer, more likely probably in the summer. Is there anything else on this topic regarding commercial tagging, to come before the Board at this time? Okay, I see no hands at this time. Roy Miller, go ahead, Roy.

MR. ROY W. MILLER: Just looking at the pictures that were included in our supplemental materials. Some of the tagging wounds from the long-term holding of tautog for up to three months look pretty nasty. Having not been involved in the original testing process for tags, is there any more work that should be done, to try to avoid pictures like we saw?

Is the three-month holding time way beyond what anyone would have thought would happen with these animals before they were consumed? The question is basically, is there more work we should do with regard to tag type, or is this the best we can accommodate?

CHAIR LUISI: That's a good question, Roy. I was not part of that initial experiment to determine the best tag type, so I would have to look to staff, or members of the Board who played a role in that to help me with this one. Does anyone have any thoughts, anybody involved in that?

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MR. KIRBY ROOTES-MURDY: Hey Mike, it's Kirby. I'll just note that as Dan McKiernan mentioned before. One of the challenges has been trying to make sure we have all the information on the tag, to uniquely identify that fish to the state and year. I think something that the Board, if they truly wanted to consider an alternative tag, you know there could be other ways to come up with a unique ID, if there is interest in using a smaller version of the current one.

That would be maybe one approach if there is interest in that. But otherwise, I think it's important to try to refer back to that study that New York and Massachusetts took part in, to evaluate the tag types, because a number of them were looked at. The Law Enforcement Committee had provided guidance on what their concerns were, especially around tamper ability. There was some considerable thought given to the strap tag that is currently being used.

CHAIAR LUISI: Okay, thanks, I appreciate that, Kirby. John Maniscalco.

MR. JOHN MANISCALCO: Not speaking as a commissioner, but just as someone to provide some additional information on the initial tagging study. We held those fish for approximately a month, certainly under different conditions than some of our fishermen are working under. But we did not see the effects, we did not see the mortality rates. But if interest is evident in our survey responses that we will be sending out, New York state is more than happy to help with investigating alternative tag types.

CHAIR LUISI: Okay, appreciate that, John. Yes, I think the Board could learn something from the survey, and perhaps provide some direction moving forward after receiving that information. Okay, I think we have what we need at this time. It sounds as if New York is going to be doing a survey, and we're going to work to put something together for a future

meeting, regarding some questions and specifics that we want to direct towards the dealers in this situation, and see what kind of information they can have for us. Is there anything else at this time on this topic from the Board? Okay, seeing no hands at this time, that takes us to our last item on today's agenda, which is Other Business. Is there any Other Business to come before the Board at this time? Chris.

MR. WRIGHT: I would just like to thank Kirby for all of his great work, and congratulations on the new job.

CHAIR LUISI: Yes, thanks, Chris, you took the words right out of my mouth. I was going to thank Kirby for all his work and efforts, not only on this Board, but on all the other species that he's been working on throughout, I think it was nine years, I read that Kirby has been with the Commission.

Congratulations, Kirby, and best of luck on your new position.

ADJOURNMENT

CHAIAR LUISI: Okay, that concludes our business today, and I would entertain a motion to adjourn. Chris' hand is still up, so I'm going to say Chris Wright, seconded by Dave Sikorski. Any objection to the motion. Seeing none, we are adjourned. Thank you all very much.

(Whereupon the meeting adjourned at 2:18 p.m. on Tuesday, January 25, 2022)

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Atlantic States Marine Fisheries Commission

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Tautog Technical Committee

Meeting Summary

April 3, 2023

Technical Committee Members: Craig Weedon (Chair, MD), Sandra Dumais (NY), Nichole Ares (RI), Linda Barry (NJ), Scott Newlin (DE), Joshua McGilly (VA)

ASMFC Staff: James Boyle and Katie Drew

The TC met via conference call on April 3, 2023 to draft a set of questions for TC members to use to survey commercial dealers and harvesters in their respective states about the commercial tagging program. The TC will reconvene in May to discuss the results and develop recommendations to present to the Board at the Summer Meeting.

Additionally, the TC is interested in hearing from members regarding the percentage of each states' fishery (based on landings) that utilizes live storage, as well as the mean length of fish to consider when discussing tag size.

Survey Questions

1. Did you use live storage?
 - If so, what system of live storage?
 - i. Flow-through water system
 - ii. Cage in open water system
 - iii. Closed tank system
2. Did you experience issues with the tags?
 - i. No
 - ii. Yes, and I did not find a solution
 - iii. Yes, but I found a solution
 - a. Please describe your solution
 - If yes, describe issues with the tags.
 - i. Note: can be open ended or multiple choice (e.g. lesions, tags not locking, etc)
3. Did you use the National Band & Tag applicator?
4. How long do the fish spend in live storage on average?
5. Did fish die from the tags?
 - If so, what % of fish died?
6. Did the tags cause excessive damage?
 - If so, What % of fish had damage?



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MEMORANDUM

May 16, 2023

Tautog Technical Committee (TC) Meeting Summary

TC Attendees: Craig Weedon (MD, Chair), Sam Truesdell (MA, Vice Chair), Lindy Barry (NJ), Sandra Dumais (NY), Josh McGilly (VA), and Coly Ares (RI)

Staff: James Boyle, Katie Drew, and Kurt Blanchard

Other Attendees: Rachel Sysak (NY DEC), Jesse Hornstein (NY DEC), and Jason Snellbaker (NJ DEP)

The Commission's Tautog Technical Committee (TC) met via conference call on Tuesday, May 16th to discuss the following items:

- 1) Review state survey results regarding tautog commercial tagging issues.
- 2) Develop Recommendations to the Tautog Board regarding the results of the commercial tagging survey.
- 3) Review stock assessment update timeline.

Background

The primary purpose of this Technical Committee meeting was the continued discussion of reported live market fish quality and mortality issues presumably associated with the commercial tagging requirements. During the previous Technical Committee meeting on April 3, a list of survey questions targeted at harvesters and dealers were developed. Prior to the May 16th meeting states surveyed fishery stakeholders using this list of questions; summarized responses from the states helped guide the meeting discussion. In addition, the TC discussed the recent Policy Board approval for NY to tag tautog in various locations on the fish for the commercial season, and to conduct tagging experiments with different tags. The best practice recommended for tagging tautog in the left operculum was included in the Technical Guidance Document but not mandated in the FMP. Furthermore, the TC noted that a previous study, conducted before the implementation of the tagging program, evaluated a smaller version of the current tag. The current tag was chosen to accommodate the amount of unique identification numbers that are required.

1. Review state survey results regarding tautog commercial tagging issues.

The TC was briefed on the survey results from NY, MA, NJ, RI, MD, CT, and VA. The results showed that each region was experiencing varying levels of problems associated with fish that had been tagged in the operculum. The most concerning problems were associated with the live market in NY, although stakeholders in other states reported similar issues. Tagging

injuries have been reported to cause external wounds, that manifest over time and reduce the value of the fish, sometimes resulting in mortality. The severity of the wounds was associated with longer holding time periods in captivity, mainly greater than two weeks.

New York

The NY survey received responses from 20 tautog dealers and 83 harvesters, 52 of whom utilize live storage. 61 harvesters and 14 dealers reported issues with the tags, including lesions (42 harvesters and 12 dealers) and mortality (48 harvesters and 12 dealers). When asked to provide the percentage of fish that were damaged or died due to tagging, the most common response was 10-25% for both harvesters and dealers. Other reported issues included the tags falling out and the applicators deteriorating from use in saltwater.

Massachusetts

MA received 42 responses from harvesters and two from dealers. 32 harvesters had issues with the tags, with 25 reporting excessive damage and 15 reporting mortality. When asked to provide the percentage of fish that were damaged or died due to tagging, the most common responses were 11-25% were damaged and 4-10% died. Other reported issues included the tags falling out and the applicators deteriorating from use in saltwater.

New Jersey

NJ received responses from seven harvesters, five of whom use live storage and reported issues with the tags, including lesions (two harvesters), excess damage (3 harvesters), and excess mortality (3 harvesters). The most common excess damage and mortality rates were 10-25%. Other reported issues included the tags falling out.

Rhode Island

Rhode Island received 22 harvester responses and one dealer response. Three harvesters utilize live storage. Six harvesters reported issues with the tags, four of whom reported mortality. Two of the four reported more than 75% of their fish died from the tags. Other reported issues included the tags falling out and the applicators deteriorating from use in saltwater.

Maryland

Due to confidentiality, the MD survey results are not shown.

Connecticut

CT received 12 responses from harvesters, four of whom use live storage. Three harvesters reported damage on 10-100% of fish, and four reported mortalities on 5-20% of fish.

Virginia

VA received 10 responses from harvesters. One harvester utilizes live storage and was the only one to report issues with the tags. The harvester reported a 5-8% mortality rate from the tags and excessive damage to the fish. Other reported issues included the tags falling out.

2. Develop Recommendations to the Tautog Board regarding the results of the commercial tagging survey.

A range of recommendations were discussed from eliminating / pausing the tagging program, different tags for the live market, and tradeoffs between the security of the tag design and

identifying the most workable tag. The merits of the program were also discussed. It was noted that NY landings have increased recently, which may be due to better reporting. The TC quickly reached a consensus opinion that the tagging program must remain in place, and various new studies to focus on changing the tagging locations, tag size, or tag type may provide relief to the harvesters. New York is planning a study that will assess injury and survival rates for a suite of tags, building upon a previous experiment in 2016, prior to the implementation of the tagging program, that tested a National band strap tag by holding fish for 30 days in flow-through storage tanks. The study will be conducted over three phases. Phase one will evaluate the feasibility of a cinch tag around the tail of the fish, as well as the current tag and its smaller version in the fin rays and caudal peduncle. The feasibility study will be done on a sample of 10 fish, with all 10 receiving the cinch tag and the others receiving different combinations of national band tags in the caudal peduncle and fin rays. These fish will be held for 10 days in a cage anchored to a dock at a marine pier. Phase Two will be a replica on the initial 30-day study. The tags and locations that appear feasible through phase one will be progressed to the 30-day study either in a cage anchored to a pier or the original study facility with flow through systems. Finally, the tag and location with the best result will be tested in live markets and with commercial fishers in the fall/winter of 2023. Markets and commercial fishers who demo the tag will be required to fill out a check-in survey to collect standardized information on tag performance. **The TC recommends that these results be replicated in other states, especially those with a strong live market.**

3. Review stock assessment update timeline.

K. Drew presented the stock assessment timeline. Tautog was last assessed in 2021, with only one region (NJ-NYB) found to be overfished and no regions experiencing overfishing. The next assessment update was tentatively scheduled for 2024; however, the Commission assessment schedule is extremely heavy in 2024, with 3 benchmarks and 4 assessment updates for other species already scheduled for completion, and adding another assessment to the schedule would increase the burden on Staff and TC/SAS members that are involved in the other assessments. **The TC recommends targeting 2025 for the next stock assessment update and 2028 for the next benchmark stock assessment.** Although recreational removals along the coast have increased in 2021 and 2022, relative to the 2018-2020 average, the TC felt that postponing the assessment update by one year would not have significant negative consequences, given tautog's life history. Conducting a benchmark assessment in 2028 will permit the inclusion of some new fishery independent recruitment surveys, such as Maryland's SAV Habitat Survey, New York's Juvenile Recruitment Survey, NJ Ventless Trap Survey, and the Delaware Reef Trap Survey. In addition, the models would likely be transferred from ASAP to WHAM to keep up-to-date with the next generation of stock assessment model frameworks.



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MEMORANDUM

May 12, 2023

To: Tautog Management Board
From: Tina Berger, Director of Communications
RE: Advisory Panel Nomination

Please find a new nomination to the Tautog Advisory Panel – Nicholas Marchetti, a commercial rod and reel/trapper from New York. Please review this nomination for action at the next Board meeting or via email vote.

If you have any questions, please feel free to contact me at 703.842.0749 or tberger@asmfc.org.

Enc.

cc: James Boyle

M23-59

TAUTOG ADVISORY PANEL

Bolded names await approval by the Tautog Management Board
Bolded and italicized name denotes Advisory Panel Chair

May 12, 2023

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Appt Reconfirmed 8/18

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Appt. Reconfirmed 7/6/03
Appt Reconfirmed 6/10
Appt Reconfirmed 8/15

TAUTOG ADVISORY PANEL

Bolded names await approval by the Tautog Management Board
Bolded and italicized name denotes Advisory Panel Chair

May 12, 2023

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Maryland (2)

Victor Bunting Jr. (rec)
11123 Bell Road
Whaleyville, Md 21872
Phone: (443) 614-6484
Email: Victorbunting@rocketmail.com
Appt. Confirmed 8/3/10
Appt Reconfirmed 8/15

Vacancy (processor/comm)

Virginia (2)

Jim Dawson (comm.)
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Chincoteague, VA 23336-1221
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Jimdawson1@verizon.net
Appt Confirmed 2/25/03
Appt Reconfirmed 2/07
Appt Reconfirmed 8/15

Wes Blow (rec)
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Newport News, VA 23601
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Appt. Confirmed 8/5/15
Appt Reconfirmed 8/15



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: John Maniscalco State: New York

(your name)
nicholas marchetti

Name of Nominee: _____
8 navy pier court unit 2013

Address: _____
staten island, new york 10304

City, State, Zip: _____

Please provide the appropriate numbers where the nominee can be reached:
5162729395

Phone (day): _____ Phone (evening): _____

FAX: _____ Email: neverenuffishing@hotmail.com



FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.
tautog fishery
 1. _____
 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?

X

 yes _____ no _____

3. Is the nominee a member of any fishermen's organizations or clubs?

X

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?
tautog

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?
tautog

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? _____ years

12

X

2. Is the nominee employed only in commercial fishing? yes _____ no _____
rod & reel, trap

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)? 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 _____

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 _____

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 _____ 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

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, nicholas marchetti, feel as though the black fish fishery needs an advisor like myself, who fishes april 16th through January 25th to speak on the fisheries behalf as well as the commercial fisherman. I feel I would be a good fit for this position because of my countless years of experience and expertise, as well as this being my main fishery.

Nominee Signature: 

Date:

Nicholas Marchetti

Name: _____
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

Jesse Hornstein (Proxy)

State Director

State Legislator

Emerson Hasbrouck

Governor's Appointee

Atlantic States Marine Fisheries Commission

Spiny Dogfish Management Board

August 3, 2023

8:30 – 9:00 a.m.

Hybrid Meeting

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*) 8:30 a.m.
2. Board Consent 8:30 a.m.
 - Approval of Agenda
 - Approval of Proceedings from February 2023
3. Public Comment 8:35 a.m.
4. Review Progress on Mid-Atlantic and New England Fishery Management Councils' Joint Action on Monkfish and Dogfish Fisheries to Reduce Atlantic Sturgeon Bycatch (*C. Ferrio*) 8:45 a.m.
5. Consider Approval of Fishery Management Plan Review and State Compliance for the 2021-2022 Fishing Year (*J. Boyle*) **Action** 8:50 a.m.
6. Other Business/Adjourn 9:00 a.m.

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details.

MEETING OVERVIEW

August 3, 2023
8:30 – 9:00 a.m.
Hybrid Meeting

Chair: Nichola Meserve (MA) Assumed Chairmanship: 10/21	Technical Committee Chair: Scott Newlin (DE)	Law Enforcement Committee Representative: Baker (MA)
Vice-Chair: Pat Geer (VA)	Advisory Panel Chair: Vacant	Previous Board Meeting: February 1, 2023
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NC, NMFS (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 1, 2023

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 should use the webinar raise your hand function and the Board Chair will let you know when to speak. 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 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.

1. 4. Review Progress on Mid-Atlantic and New England Fishery Management Councils' Joint Action on Monkfish and Dogfish Fisheries to Reduce Atlantic Sturgeon Bycatch (8:45-8:50 a.m.)
Background <ul style="list-style-type: none">• In response to the 2021 Biological Opinion and 2022 Action Plan to Reduce Atlantic Sturgeon Bycatch in Federal Large Mesh Gillnet Fisheries, a joint FMAT/PDT of the New England and Mid-Atlantic Fisheries Management Councils formed to develop a range of alternatives to reduce sturgeon bycatch in the Monkfish and Spiny Dogfish Fisheries.
Presentations <ol style="list-style-type: none">2. Review Progress and Timeline Updates on the Mid-Atlantic and New England Fishery Management Councils' Joint Action on the Spiny Dogfish Fishery to Reduce Atlantic Sturgeon Bycatch by C. Ferrio

5. Consider Fishery Management Plan Review and State Compliance for the 2021-2022 Fishing Year (8:50-9:00 a.m.) Action
Background

- State Compliance Reports were due on July 1, 2022.
- The Plan Review Team reviewed each state report and compiled the annual FMP Review (Supplemental Materials).

Presentations

- Overview of the FMP Review Report by J. Boyle

Board Actions for Consideration

- Approve FMP Review for 2021-2022 fishing year, state compliance reports, and *de minimis* requests

6. Other Business/Adjourn

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
SPINY DOGFISH MANAGEMENT BOARD**

**The Westin Crystal City
Arlington, Virginia
Hybrid Meeting**

February 1, 2023

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

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The Board will review the minutes during its next meeting.

INDEX OF MOTIONS

1. **Approval of agenda** by Consent (Page 1).
2. **Approval of Proceedings from January 25, 2022** by Consent (Page 1).
3. **Move to adopt a 12-million-pound commercial quota for the 2023/2024 fishing year (May 1-April 30) for spiny dogfish, with a 7,500-pound trip limit for the Northern Region, consistent with the actions of the Mid Atlantic Fishery Management Council and New England Fishery Management Council** (Page 5). Motion by John Maniscalco; second by Raymond Kane. Motion approved by consent (Page 5).
4. **Move to nominate Pat Geer as Vice-Chair of the Spiny Dogfish Board** (Page 5). Motion by Chris Batsavage; second by Joe Cimino. Motion carried (Page 5).
5. **Motion to adjourn** by Consent (Page 5).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	Joe Cimino, NJ (AA)
Rep. Allison Hepler, ME (LA)	Peter Clarke, NJ, proxy for T. Fote (GA)
Cheri Patterson, NH (AA)	Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)
Doug Grout, NH (GA)	John Clark, DE (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Roy Miller, DE (GA)
Nicola Meserve, MA, proxy for D. McKiernan (AA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Lynn Fegley, MD, (AA, Acting)
Jason McNamee, RI (AA)	Russell Dize, MD (GA)
David Borden, RI (GA)	Pat Geer, VA, proxy for J. Green (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Justin Davis, CT (AA)	Jerry Mannen, NC (GA)
Bill Hyatt, CT GA)	Chad Thomas, NC, proxy for Rep. Wray (LA)
John Maniscalco, NY, proxy for B. Seggos (AA)	Jay Hermsen, NMFS
Emerson Hasbrouck, NY (GA)	

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

Ex-Officio Members

Scott Newlin, Technical Committee Chair

Staff

Robert Beal	Tracey Bauer	Chris Jacobs
Toni Kerns	Kurt Blanchard	Jeff Kipp
Madeline Musante	James Boyle	Caitlin Starks
Tina Berger	Pat Campfield	

Guests

Mike Armstrong, MA DMF	Emily Gilbert, NOAA	Thomas Newman
Pat Augustine, Coram, NY	Lewis Gillingham, VMRC	Molly Ogren, RI DEM
Rob Beal, ME DMR	Willy Goldsmith, Pelagic Strategies	Michael Pierdinock
Alan Bianchi, NC DENR	Kurt Gottschall, CT DEEP	Nicole Pitts, NOAA
Delayne Brown, NH F&G	Melanie Griffin, MA DMF	Marisa Ponte, NC DENR
Jeff Brust, NJ DEP	Jay Hermsen, NOAA	Jill Ramsey, VMRC
Mike Celestino, NJ DEP	Matthew Heyl, NJ DEP	Zach Schuller, NYS DEC
Caitlin Craig, NYS DEC	Harry Hornick, MD DNR	Chris Scott, NYS DEC
Jesica Daher, NJ DEP	Jesse Hornstein, NYS DEC	Ethan Simpson, VMRC
Jason Didden, MAFMC	Kris Kuhn, PA F&B	Somers Smott, VMRC
Phil Edwards, RI DEM	Brooke Lowman, VMRC	Beth Versak, MD DNR
Lynn Fegley, MD (AA)	Mike Luisi, MD DNR	Craig Weedon, MD DNR
Glen Fernandes	David McCarron, NEFMC	John Whiteside
Cynthia Ferrio, NOAA	Joshua McGillt, VMRC	Tim Wildman, CT DEEP
Jared Flowers, GA DNR	Dan McKiernan, MA DMF	Josh Winger, NC DENR
Marty Gary, PRFC	Kevin McMenamin, Annapolis, MD	
Matt Gates, CT DEEP	Steve Meyers	

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Draft Proceedings of the Spiny Dogfish Management Board Hybrid Meeting
February 2023

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, via hybrid meeting, in-person and webinar; Wednesday, February 1, 2023, and was called to order at 1:30 p.m. by Chair Nichola Meserve.

CALL TO ORDER

CHAIR NICHOLA MESERVE: If Dogfish Board members can please take their seats, we're going to get started and call the February 1st Spiny Dogfish Management Board meeting to order. My name is Nichola Meserve from Massachusetts. I'm joined up from by Caitlin Starks, the FMP Coordinator for ASMFC, and also virtually we have Jason Didden; the Mid-Atlantic Council staff, who will be helping us with some information for our specification setting action item.

APPROVAL OF AGENDA

CHAIR MESERVE: You have before you an agenda for today. Are there any modifications to the agenda? Seeing none; we'll consider that approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR MESERVE: We also have minutes from our last meeting in January of 2022. Are there any revisions to the minutes? Seeing none; we will consider those approved, and move on to Public Comment.

PUBLIC COMMENT

CHAIR MESERVE: This is a time for public comment on items that are not on the agenda. Is there anyone that would like to make comment in the room or virtually, any hands? No hands for public comment.

SET 2023/2024 SPECIFICATIONS

CHAIR MESERVE: We will move on to the setting of the 2023/2024 specifications. This is a final action item, but first we will receive a

presentation from Jason, and Caitlin as well. When you're ready, Jason, go ahead.

MR. JASON DIDDEN: Looking at 2023 spiny dogfish specifications. I'm going to run through basically the materials that the Councils focused on, leading into their setting of specifications. Currently we're at an ABC of about 17.5 thousand metric tons. That is really built off of the 2018 assessment. It leads to almost a 30-million-pound quota, and that is kind of what we're operating under right now.

On the federal side it's an open-access fishery, 7500-pound federal trip limit. It was changed last May. Then we have the regional and state quotas in trip limits that you all set. We just wrapped up a research track assessment. It was well reviewed from a methods perspective. But landings trends are down, the indices are down. That usually doesn't end well.

I mean the biomass trends since 2012, I believe is down. I think in 2019 the terminal year of the assessment, it wasn't overfished, but it's more or less headed in that direction. We'll get a 2023 management track assessment. That will determine stock status in future ABCs. We're not using the research track assessments for that. We'll wait until we update the data for the management track assessments. If I had to bet, I would bet we'll either be overfished or close to overfished when that comes around, given landings.

The indices have been trending down in the subsequent years. The assessment went through '19, then we got '20, '21, '22, and again, the indices with the landings were not real positive in those update years, so we won't know until that gets done and reviewed, but it doesn't look great. Just backgrounds on the federal quota and in total landings.

Again, the landings tracked up with the increasing quotas during the rebuilding period. But since 2012 have been overall trending down below the quota, except were pretty close in 2019. Just dogfish prices in 2021 dollars. You can kind of see the

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Draft Proceedings of the Spiny Dogfish Management Board Hybrid Meeting
February 2023

erosion trend from 2008 to 2013. Then since 2013, fairly stable with a bit of an increase in real prices.

Just an update on where things stand roughly right now. We're at, you know still well below the quota trajectory. Landings had been tracking in 2022 fishing year, very similarly to 2021. Here 2022 is in blue. The last few weeks landings have increased a bit more than this same time last year, so we're a little bit above last year at this point.

These lines definitely preliminary, especially with a transition at NMFS To CAMS data processes for quota monitoring. But that is approximately where we are this year and last year. Again, the fishing year is a May 1 start. We've got some requests at the Council meetings for a little more info on like time of year landings for states.

Some of that kind of got into confidential data, but summarizing, you know just for background. Northern areas; Rhode Island, Massachusetts, New Hampshire, mostly Massachusetts. You have landings start in June, wrap up in early October, generally, and through all three of these areas, you know they start off low, they trail off low, and they're kind of strongest in the middle of these month periods.

New Jersey/Maryland mostly late October to December, a little bit in the spring sometimes. Then Virginia is mostly late November to early April. Just kind of a sense of the transitioning through the year of where landings occur. Just trends in vessel participation. You can see that like landings themselves peaking out around 2012, so did vessel participation, and has been trailing off since then.

We have our Advisory Panel provide kind of commentary on their perspective on the preceding fishery year performance. They continue to flag that COVID-19 didn't have a huge impact on the dogfish fishery. But

demand was low before, and it's still low. It's been fairly stable. Their sense is that the market could support a bit more landings, if vessel participation and production increases, in terms of the markets that they are targeting. But again, landings have been fairly low.

Reasons for those landings that have been flagged by our AP include, there are better opportunities in other fisheries, like the oysters and shrimp in Virginia. There continues to be interest by some, but not all, to keep bumping the trip limit up to get more vessels participating. The Councils have kind of had trip limits on, you know as a topic of interest for a number of years. It's kind of been, you know I think any further increases beyond the 2022 increase to 7500, I think is kind of on hold, until we see the final results of the management track and have a better sense of what might be upcoming for spiny dogfish.

The Advisory Panel continues to provide input that they have a lot of concern about the science on spiny dogfish. They tend to focus on, is a survey covering where the dogfish are, and how has the survey been performing, in terms of when it leaves the dock, when it's hitting different areas. Does that create extra noise in the indices?

Then there has been some work on fish behavior in recent years that kind of have flagged some interesting findings about migration patterns in spiny dogfish, and time spent off the bottom. For the previous way we were assessing spiny dogfish, it was more or less a swept area biomass expansion, where the survey coverage and the fish behavior issues become really acute, because you're expanding up from the area.

You surveyed the total area to get a ballpark on biomass. The newest estimate and there are some backgrounders on this. The other week in New England and next week, the Mid, moving to a more standard analytical model, where the survey isn't the whole thing, it's just an index that the models tune into as it tries to replicate what is going on with spiny dogfish biomass and fishing mortality,

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and then the different observed data, whether it's catches or the survey.

We're kind of moving away from just depending on the survey to using the survey as a tuning index in kind of a more modern analytical assessment. We got some input from the AP, and got a lot of concern about just depending on the survey. In the dogfish assessment, Andy Jones at the Center did some neat CPUE work for the assessment, looking at both trawl observer data and study fleet data, to try to develop another index.

Kind of stealing that idea from them as kind of a quick check on the survey. Staff here, me, did a simple catch per observed trawl hour, after some filtering to remove really oddball tows or things like that. Saw a remarkably similar pattern as a trawl survey. I just included it through 2019 in my observer analysis, because of impacts from COVID.

But you'll see Andy's analysis kind of further follows the survey. It's not a random survey, it's looking at where people are fishing for other fish, really, and probably trying to avoid dogfish. While it's not stratified random design, the power here is you have thousands of observed tow-hours each year.

It remarkably followed the trend of the survey. The blue there is a spring survey three-year average line, and then I've got just a calculated observed spiny dogfish annual pounds per trawl hour, just from the observer data. As far as, you know kind of trying to look at these kinds of things that are a pretty tight trend. The correlation was quite high on that.

Again, I stopped in 2019, but Andy's work continued. His model was much fancier than what I had done. It integrated all observer data as study fleet data. The study fleet was less impacted by COVID, it kind of keeps, they have less data loss than the observer data through COVID. But you can kind of see the 2019 point where I left off and then his analysis kind of

continues downward trend after that in a similar fashion as you just saw with the survey. It was a little bit of kind of just a check that some other data sources were pointing to a similar trend, as we saw, with the survey.

You can see the spring survey continued on a downward, in a similar fashion as his analysis in the terminal years there, and again, a totally different way of looking at it. He was looking at just again, observed trawl data and then study fleet data that he has a way to combine, but kind of saw a similar trend.

Our SSC kind of looked at the available information and decided that it should then reduce the ABCs point. They looked at where biomass seemed to have kind of trended from '16, '17, '18 average to the '21 to '22 average. That was about a 40 percent decline, or about 11 percent per year over that time period in the spring trawl data.

They looked at what our ABC would have been in 2019, and kind of reduced it by the same amount, as a kind of way to approximate kind of a reduction, more or less, following the Council's risk policy. In the interim, while we're waiting the updated management information from the research track assessment.

That ABC is that 7,788 metric tons and is less than half of the previous ABCs. From ABC to Specs, the quota we dropped through small amounts for Canada and recreational landings, based on recent history. These are relatively small amounts compared to the ABC. Then discards are a bigger (muffled). Often in the past had to spend taking an average of recent discards, but we said, well, if we think the ABC should be going down, because abundance is going down.

If abundance is going down then so also discards, hopefully. The Monitoring Committee decided that it seemed reasonable to scale discards down by that same amount. It's a lot of uncertainty in this. It would be lower than all the previous estimates, but kind of matches, trying to match the trend that we're seeing in abundance trends.

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February 2023

Again, a good bit of uncertainty in that discard set aside, and exceeding that ACL has consequences, maybe damage to the stock, but definitely paybacks. Those from any that occurred in 2023 overages, then the paybacks occur in 2025. Again, it's hard to predict the future, but we're really not anticipating higher quotas in those years, given the trends and the results of the assessment we've seen so far.

That kind of brings into the question, should there be some kind of management uncertainty buffer. The conclusion of the Monitoring Committee, as we kind of looked at the variability in landings and discards is that an 18 percent buffer. We did not think that there would be likely to be large overages.

But, with no buffer or minimal buffer, you know there is enough uncertainty, especially on the discard just random variation year to year, or trends, if the trends in abundance change. You could end up with an ACL overage if there is not buffer. Again, pros of bigger buffers, not going to damage the stock, and you're quite likely to avoid a big overage and not affect those out years, which while it's going to lower the quota now, it's going to end towards increasing stability. Of course, on the flip side, we got input that if landings get down much more than the most they could potentially be with our new ABCs.

There is basically one major processor left and if they exit the fishery, you know it's not clear who is going to process that catch, some either if not collapse, substantial disruption of the industry. Then if you have a big buffer and you're setting aside a lot of quota year to year, and like you're not going to be catching optimum yield.

Pros of smaller buffers, more likely to utilize the full ABC, catch optimum yield, and industry had provided input that if there is a quota around 12 million pounds, they say they can hold on for another year or two. But then again, if we do end up with an overage, potentially damage the

stock, and you're facing deductions for overages in the out years, when ABCs may even be smaller to start with.

Skipping kind of some of the staff recommendation stages and committee discussions. The Mid-Atlantic Council and New England went with a 0 percent buffer that leads to a 12-million-pound quota. Their rationale was that yes, there might be some higher risk of overage, primarily due to the uncertainty about expected discards, but industry very clearly stated they are willing to kind of tolerate that risk, due to the potential impact of the quota being so low.

Then they also, the Councils also kind of discussed that because, well, some of the barriers to the state's trade quota under the Commission system have been reduced in recent years. In order to catch that full 12 million pounds, you would have to have kind of very low friction quota transfers. That is not likely to occur perfectly.

It seemed unlikely that even with a 12-million-pound quota here that it would actually be caught. All states do trade, and try to trade the best they can. They don't want to trade so much away that they disadvantage their own folks. There is likely some kind of built-in buffer on that 12-million-pound quota, due to kind of the allocations through the Commission that there is a little extra buffering built in there.

This is kind of the range of buffers here. You know going down to that management uncertainty buffer in the middle, 0 percent, 5 percent, 13 percent, 18 percent. Everything above that is all the same, and then bigger buffer means smaller quota. The quota ranges kind of from 12 to about 9 million roughly here.

The Councils you know kind of evaluated the potential for underages, overages, input from industry, and went with that 0 percent management uncertainty buffer. We don't think that there necessarily will be a quota overage, an ACL overage with that, but certainly without a

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buffer there. There is new history of overages in this fishery.

But with a little management uncertainty buffer or no management uncertainty buffer, it does increase the potential for ACL overages and future paybacks. But that is a recommendation of the Councils that draft environmental assessment for that is under review at GARFO with the NMFS folks right now. I think that's it; I'll take questions. Thank you.

CHAIR MESERVE: As I was saying, are there any questions for Jason on the material he presented? Seeing none; we'll move on to Caitlin, who has a couple slides to lead us into a discussion of the action that we need to take on the specifications.

MS. CAITLIN STARKS: Thank you, Madam Chair. We just have a couple quick slides here for the Board's consideration, as you consider the specifications for 2023/2024. If the Commission were to adopt the 12-million-pound quota, which would be consistent with what the Councils have done, it would result in these regional and state quotas shown in this table.

I did want to put these up, to make sure the Board is fully aware of what those would look like in the bottom row in bold. Then last year the Commission set the trip limit for the northern region to 7500 pounds for the 2022 to 2023 fishing year. That was consistent with the change that the Councils made to the federal trip limit.

That federal trip limit will remain 7500 pounds unless it's changed by the Commission. Because the Commission specified it was only for 2022 and 2023, the Commission would need to respecify the trip limit for 2023 and 2024. With that I can take any questions or lead into Board discussion.

CHAIR MESERVE: Are there any questions for Caitlin? If not, I think we would be best served by looking for a motion that would set the

quota and the northern region trip limit for fishing year 2023. Is there anyone prepared to do so? John Maniscalco.

MR. JOHN MANISCALCO: I move to adopt the 12-million-pound commercial quota for 2023/2024 fishing year, May 1st through April 30th for spiny dogfish, with a 7500-pound trip limit for the northern region, consistent with the actions of the Mid-Atlantic Fishery Management Council and the New England Fishery Management Council.

CHAIR MESERVE: Thank you, John, is there a second to that motion? Ray Kane. Is there any discussion from the Board on the motion? As this is a final action, is there any public comment? Seeing no hands; we'll see if we can do it the easy way. There is one hand, John Whiteside, go ahead.

MR. JOHN WHITESIDE: Many of you have already heard my comments at both the Mid-Atlantic and New England Council, and I support the 12-million-pound commercial quota for 2023/'24 and I urge you to do that for just a variety of reasons. Please, let's not let the last dogfish processor close. Thank you.

CHAIR MESERVE: **The easy way, is there any objection to the motion? Seeing none; we'll consider that approved by unanimous consent, and move on to the election of a Vice-Chair.**

ELECT VICE-CHAIR

CHAIR MESERVE: Is there anyone prepared to nominate a Vice-Chair for the Spiny Dogfish Board. Chris Batsavage.

MR. CHRIS BATSAVAGE: I would like to move to nominate Pat Geer from the Commonwealth of Virginia as Vice-Chair of the Spiny Dogfish Board.

CHAIR MESERVE: **Is there anyone that would like to second that motion? Joe Cimino, thank you, is there any objection to the motion? Seeing none; congratulations, Pat.** Is there any other business to come before the Spiny Dogfish Board today? Toni Kerns, please.

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 Hybrid Meeting
February 2023

MS. TONI KERNS: Just a reminder, and Jason mentioned it, but the research track assessment will be presented at the Mid-Atlantic Council meeting. Caitlin has the dates, and we will send a reminder e-mail at the beginning of next week for the link to the Council's webpage.

MS. STARKS: Yes, the Council presentation will be on Wednesday, February 8, they will start at 9:45 a.m. with bluefish, and then go into spiny dogfish. The meeting will end at 10:30 a.m., and we will resend the link to you all.

ADJOURNMENT

CHAIR MESERVE: Okay, thank you for that reminder, any other business to come before the Spiny Dogfish Board? I'll take a motion to adjourn then, Ray Kane, Russell Dize seconds. Any objection? Seeing none; the Spiny Dogfish Board is adjourned. Thank you.

(Whereupon the meeting adjourned at 1:58
p.m. on Wednesday, February 1, 2023)

Atlantic States Marine Fisheries Commission

ISFMP Policy Board

*August 3, 2023
9:15 -10:45 a.m.
Hybrid Meeting*

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 (<i>S. Woodward</i>) | 9:15 a.m. |
| 2. Board Consent (<i>S. Woodward</i>) | 9:15 a.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from May 2023 | |
| 3. Public Comment | 9:20 a.m. |
| 4. Executive Committee Report (<i>S. Woodward</i>) | 9:30 a.m. |
| 5. Review and Consider Changes to Conservation Equivalency: Policy and Technical Guidance Document (<i>T. Kerns</i>) Possible Action | 9:40 a.m. |
| 6. Report from the Atlantic Coast Fish Habitat Partnership (<i>S. Kaalstad</i>) | 10:20 a.m. |
| 7. Review Noncompliance Findings, if necessary Action | 10:35 a.m. |
| 8. Other Business | 10:40 a.m. |
| 9. Adjourn | 10:45 a.m. |

The meeting will be held at The Westin Crystal City (1800 Richmond Highway, Arlington, VA; 703.486.1111) and via webinar; click [here](#) for details

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

MEETING OVERVIEW

ISFMP Policy Board
Thursday August 3, 2023
9:15-10:45 a.m.
Hybrid Meeting

Chair: Spud Woodward (GA) Assumed Chairmanship: 10/21	Vice Chair: Joe Cimino (NJ)	Previous Board Meetings: May 3, 2023
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 May 3, 2023

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. Executive Committee Report (9:30- 9:40 a.m.)

Background

- The Executive Committee will meet on August 2, 2023

Presentations

- S. Woodward will provide an update of the Executive Committee's work

Board action for consideration at this meeting

- none

5. Review and Consider Changes to Conservation Equivalency: Policy and Technical Guidance Document (9:40-10:20 a.m.) Possible Action

Background

- The Executive Committee (EC) tasked the Management and Science Committee (MSC) to review the *Conservation Equivalency: Policy and Technical Guidance Document*. The Executive Committee requested a series of question regarding conservation equivalency. A sub group of the MSC members and others addressed the EC's *questions*. *Based on these questions and guidance from the EC staff has revised the*

*guidance document (**supplemental materials**). The changes provide more structure and details to the document.*

Presentations

- T. Kerns will review changes to the *Conservation Equivalency: Policy and Technical Guidance Document*.

Board action for consideration at this meeting

- Approve changes to the *Conservation Equivalency: Policy and Technical Guidance Document*.

6. Committee Reports (10:20-10:35 a.m.)

Background

- The Atlantic Coast Fish Habitat Partnership will meet the week of July 24, 2023.

Presentations

- S. Kaalstad will provide an update of the ACFHP's work

Board action for consideration at this meeting

- None

7. Review Non-Compliance Findings, if necessary Action

8. Other Business

9. Adjourn

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
INTERSTATE FISHERIES MANAGEMENT PROGRAM (ISFMP) POLICY BOARD**

**The Westin Crystal City
Arlington, Virginia
Hybrid Meeting**

May 3, 2023

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

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INDEX OF MOTIONS

1. **Approval of agenda** by consent (Page 1).
2. **Approval of Proceedings of February 2, 2023 Hybrid Meeting** by consent (Page 1).
3. **Move that the Commission establish a temporary technical committee to review the two papers on Atlantic bonito and little tunny that were submitted by the American Saltwater Guide Association. The Commission will inform the State Directors of this proposal and ask them to nominate a scientific staff member of their choice to join the review. The review will assess the technical quality of the papers, the relevance of the information, and suggest possible revisions, data gaps, and management implications and options. The committee will convene online, elect their own chairperson, and prepare a report with their findings and recommendations for presentation to the ISFMP Policy Board at the Summer Meeting (Page 13). Motion by Mr. David Borden; second by Dr. Justin Davis. Motion fails (2 in favor, 11 opposed, 3 abstentions, 1 null) (Page 16).**
4. **Move to approve the ASMFC Stock Assessment Schedule as presented today (Page 28). Motion by Mr. Tom Fote; second by Mr. Mel Bell. Motion carries unanimously (Page 28).**
5. **On behalf of the American Lobster Board, recommend ISFMP Policy Board approve the creation of a subcommittee to engage Canada’s Department of Fisheries and Oceans to discuss transboundary issues related to the importation of lobster as it relates to different minimum 24 gauge sizes in the two countries. The subcommittee shall be made up of up to four members of the Lobster Management Board who have license holders that fish in Area 1 and/or 3, one representative from the National Marine Fisheries Service, and the Commission’s Executive Director or his designee (Page 31). Motion by Dr. Jason McNamee on behalf of the American Lobster Management Board.**
6. **Motion to substitute to request the ISFMP Policy Board create a subcommittee to be made up of up to four members of the American Lobster Management Board who have license holders that fish in LCMA 1 and/or 3 and at least one representative from NMFS and the Commission’s Executive Director or his designee. The Subcommittee, prior to the engagement with parties in Canada who have an interest in lobster management and commerce, shall discuss and develop an approach on how best to find solutions that would be beneficial to both the sustainability of the lobster stock and commerce between the countries (Page 32). Motion by Mr. Mike Ruccio; second by Mr. Pat Keliher. Motion passes by unanimous consent (Page 33).**
7. **Move to adjourn** by consent (Page 34).

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	Loren Lustig, PA (GA)
Sen. Allison Hepler, ME (LA)	John Clark, DE (AA)
Cheri Patterson, NH (AA)	Roy Miller, DE (GA)
Doug Grout, NH (GA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Sen. David Watters, NH (LA)	Lynn Fegley, MD (AA) (Acting)
Dan McKiernan, MA (AA)	Russell Dize, MD (GA)
Raymond Kane, MA (GA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Chad Thomas, NC, proxy for Rep. Wray (LA)
Jason McNamee, RI (AA)	Mel Bell, SC (AA)
Dave Borden, RI (GA)	Malcolm Rhodes, SC (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Chris McDonough, SC, proxy for Sen. Cromer (LA)
Justin Davis, CT (AA)	Carolyn Belcher, GA, proxy for D. Haymans (AA)
Bill Hyatt, CT (GA)	Spud Woodward, GA (GA)
Jim Gilmore, NY, proxy for B. Seggos (AA)	Erika Burgess, FL, proxy for J. McCawley (AA)
Emerson Hasbrouck, NY (GA)	Gary Jennings, FL (GA)
Jeff Brust, NJ, proxy for J. Cimino (AA)	Marty Gary, PRFC
Tom Fote, NJ (GA)	Mike Ruccio, NOAA
Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)	Rick Jacobson, US FWS
Kris Kuhn, PA, proxy for T. Schaeffer (AA)	

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

Staff

Robert Beal	Madeline Musante	Jeff Kipp
Toni Kerns	Tracey Bauer	

Guests

Max Appelman, NOAA	Anthony Friedrich, SGA	Justin Pellegrino, NYS DEC
Pat Augustine, Coram, NY	Alexa Galvan, VMRC	Michael Pierdinock
Russ Babb, NJ DEP	Angela Giuliano, MD DNR	Marisa Ponte, NC DENR
Carly Bari, NOAA	Mark Grant, NOAA	Will Poston, ASGA
Julia Beaty, MAFMC	Hannah Hart, MAFMC	Jill Ramsey, VMRC
Alan Bianchi, NC DENR	Jay Hermsen, NOAA	Zachary Schuller, NYS DEC
Nicolas Calabrese, U MASS	Emily Keiley, NOAA	Chris Scott, NYS DEC
Blane Chocklett	Wilson Laney	McLean Seward, NC DENR
Luyen Chou	Mike Luisi, MD DNR	Ryan Silva, NOAA
Haley Clinton, NC DENR	Shanna Madsen, VMRC	Sam Truesdell, MA DMF
Derek Cox FL FWC	Anne Markwith, NC DENR	Mike Waive, ASA
Laura Deighan, NOAA	Nichola Meserve, MA DMF	Megan Ware, ME DMR
Ben Dyar, SC DNR	Steve Meyers	Angel Willey
Julie Evans	Tina Moore, NC DENR	Chris Wright, NOAA
Glen Fernandes	Allison Murphy, NOAA	Erik Zlokovitz, MD DNR
Cynthia Ferrio, NOAA	Thomas Newman	
James Fletcher	Gerry O'Neill, Cape Seafoods	

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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, a hybrid meeting, in-person and webinar; Wednesday, May 3, 2023, and was called to order at 10:15 a.m. by A.G. “Spud” Woodward.

CALL TO ORDER

CHAIR SPUD WOODWARD: For those here virtual, I’m Spud Woodward; current Chair of the Commission. Our first item of business is Approval of the Agenda. Everybody should have a draft agenda. I know we have one item of Other Business. New York tautaug. I assume you still want to do that, Jim?

MR. JAMES J. GILMORE: Yes, I was going to raise my hand and put that on, but I know staff has done a wonderful job and got ahead of me, so yes, thank you.

CHAIR WOODWARD: Any other additions, modifications to the draft agenda? Yes, Shanna.

MS. SHANNA MADSEN: I would just like to add something under Other Business. I just wanted to quickly discuss our practices for doing transfer letters. I have some suggestions there that I kind of just wanted to throw at the Policy Board, nothing super official.

APPROVAL OF AGENDA

CHAIR WOODWARD: All right, I’ve got that duly noted. Anything else? Any opposition to accepting the agenda as modified? Seeing none; we’ll consider that accepted by consent.

APPROVAL OF PROCEEDINGS

CHAIR WOODWARD: We also have Proceedings from the February, 2023 Meeting of the Policy Board. Are there any edits, modifications, corrections to those proceedings? Seeing none; any opposition to accepting those proceedings

as presented? All right, we’ll consider those accepted by consent as well.

PUBLIC COMMENT

CHAIR WOODWARD: This is the time in the Policy Board meeting where we’ll have an opportunity for Public Comment. Is there anyone in the room? I don’t see anyone. Anybody virtually who wants to make a public comment? No, okay, we’ll dispense with that.

EXECUTIVE COMMITTEE REPORT

CHAIR WOODWARD: I’ll give the report from this morning’s meeting of the Executive Committee.

We had several items we dealt with. First of all, which was the report on the draft Fiscal Year 2024 Budget. Our Vice-Chair is out of the country, and so Laura went over the draft budget and just remind everybody that pretty much that budget is based off of the action plan that has been prior deliberated on and approved by the Board.

We had unanimous approval of the proposed budget for 2024. Then we went into a discussion about the stipend proposal, and Bob Beal presented an overview of that. Roy Miller provided some comments. Yesterday during the Legislative and Governor’s Appointees Luncheon there was a robust discussion about that policy. Just a little background on it. It was contemplating financial compensation for Legislative and Governor Appointee Commissioners and Proxies based on concerns that the workload over the years has expanded beyond just four quarterly Commission meetings to requiring some of these Commissioners to have to attend joint meetings with Councils and other specialty meetings.

After a pretty lively discussion, a motion was made, seconded and ultimately approved with a vote of 14 to 1 to maintain status quo, which is no financial compensation for Legislative and Governor Appointee (LGA) Commissioners. However, that vote was taken recognizing that there needs to be further work to specifically determine the actual use

of a stipend if we were to go forward, because it's kind of a complicated issue.

You've got some LGA Commissioners who simply wouldn't be eligible to receive a stipend, even if it were available. You've got some that if it were available would just choose to not do it. The analyses that have been run were sort of a, if everybody took advantage of it that was eligible. There is going to be some further analysis of this, and it is certainly not an issue that is off the table. But it will be something that the Ex-Com will probably contemplate at a future.

Then Toni went into the Conservation Equivalency Policy and Technical Guidance Document Update, the draft of that. Again, there was a pretty lively discussion about that. Sort of the gist of it is that there is some good and there is some bad, and there is some stuff that may not be very practical.

What we're going to do going forward is take the input that was provided by the Ex-Com, take a subset of Ex-Com and other interested parties, and get some further feedback on it. Then Bob and Toni will work to refine this draft, and come back to the Ex-Com at probably the August meeting, assuming we can get everything done.

Again, you know the purpose of this is to, as much as possible, perfect the conservation equivalency guidance, so that the flexibility is retained but it addresses concerns about it being a little too loose around the edges sometimes. Again, this is a work in progress, and hopefully this is something that we can bring to closure before the end of the calendar year.

Then we had a legislative update from Alexander Law, there are some bills at play across the river over there. One of them I think everybody may be aware of is, and it's not a bill yet, but it is a discussion draft to establish NOAA as a separate entity, similar to EPA. Bob and I have talked about it since this kind of emerged.

One of the concerns I think we have is, that if you were looking at the draft, the word fish is never even in there. It seems to be very focused on weather and climate and that sort of thing. This was a little concern about the consequences of that. Whether that will get traction remains to be seen, but there were a few other bills. The Recovering America's Wildlife Act is back in play.

But again, it's being confounded by the who is going to pay for it part of the equation, which is still not resolved. But we'll continue to monitor those. The Legislative Committee is doing a great job of maintaining high situational awareness on these bills. When things start moving along, we'll make sure that everybody is fully aware of opportunities for engagement to support or either convey concerns, because we all know that sometimes things are not what they appear to be when these bills emerge out of Congress.

Then we've got an update on future annual meetings. Just to remind everybody, this year's annual meeting will be in Beaufort, North Carolina, October 15-19. I reminded everyone that the hotel we'll be using is actually built on the site of the former menhaden reduction plant in Beaufort.

It's a great site, great hotel, and it's hard to believe that they processed millions and millions of menhaden there, but it doesn't smell like that anymore, so don't worry about needing to bring your own individual Febreze to the hotel. That was it, we had closed session and we had Executive Director Performance Review.

We're happy to say that we're going to have Bob for a while longer. I think everybody agrees that Bob is doing a great job, and we're certainly happy to have him. That's my report on the Executive Committee meeting. If there are any questions. All right, seeing none; then we'll move on to our next item, and that is Discuss Possible Responses to Issues Identified in the Commissioner Survey. Bob.

**DISCUSS POSSIBLE RESPONSES TO ISSUES
IDENTIFIED IN THE COMMISSIONER SURVEY**

EXECUTIVE DIRECTOR ROBERT E. BEAL: At the last Policy Board meeting, you know at the winter meeting, we went over the results of the Commissioner Survey, which we do annually, just sort of getting at the tone of where the Commissioner's feel we are on work products and output of the Commission, staffing and all the other things that we do at the Commission.

At the end of that presentation there was a bit of a discussion, and then a couple commissioners suggesting, there are recommendations in there, especially in the open-ended questions in that survey, about things we can do better and things we can change, and things we need to sort of start thinking about, sort of in the longer term.

We frankly didn't have enough time at the last meeting, and needed to get our thoughts a little bit organized to talk about that. That is what we're doing here. There was a document that was included in the briefing material, I think it was in supplemental, Toni, is that right?

MS. TONI KERNS: I believe it's main materials.

EXECUTIVE DIRECTOR BEAL: Main materials, okay. It's just a one-pager, titled Commissioner Survey Result Summary, March 24 of this year. It kind of goes over the background that I talked about. You know 29 Commissioners responded to the survey this winter.

It breaks up the responses, or lumps them into categories and breaks them up into a couple of different groupings, short term issues, long term issues, and then the notion that drivers have changed. What is the Commission going to have to react to over time? The short-term issues that are listed there are getting meeting materials out earlier, and brevity and clarity of these briefing materials. We get it, there is a lot of volume that is set out in these briefing materials, and a lot of you guys sit on at least one Council, and everything else that you have to do

homework on to get ready for these meetings. Any summary documents or brevity or decision documents, or anything that we can use, I think would be effective there.

This one is a little bit difficult to define. Improving the efficiency of meetings. I mean, I get it, quicker meetings are more efficient. But, if not everyone gets to talk, you end up with results that you have to revisit or don't really represent that will of the group, maybe that is not efficient. I think that one probably warrants some conversation.

Again, back to summaries of lengthy documents, easier access to graphs and tables. Those are the pieces that I think a lot of people study, and a picture is worth a thousand words, kind of an idea. Getting good graphs and tables is always effective. The long-term issues, bureaucracy in the federal partnership, you know that is always out there.

The notion of improving our partnership with National Marine Fisheries and USGS and U.S. Fish and Wildlife Service and the other federal agencies we interact with, obviously is important in keeping those partnerships improving and evolving is great. Following science and not political pressure, dealing with shifting in stock allocations, incorporation of ecological considerations. We do that for some of our species but not all.

Legislative changes, that is kind of what we talked about earlier in Spud's update. There are a lot of things being considered on Capitol Hill that may impact the Commission, and how we operate. They are not directly modifications to the Atlantic Coastal Act, but if things change under Endangered Species Act or NOAA becomes its own entity, and the word fish isn't anywhere in that bill that is considering that, that may be a problem, and all those different things we have to consider.

Offshore wind, that is an obvious one, I think, that is going to be something we have to react to. Risk and Uncertainty Policy is something we've been developing for a while, and we haven't fully implemented it yet. I think it's just about ready for prime time, but the last time we talked about it there

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The Board will review the minutes during its next meeting

was some interest in sort of test driving it one more time before we actually bought it.

Then drivers of change, again, these are things we're going to have to react to as a Commission over time, and sort of big picture climate change and unpredictable environmental conditions, and stock is not responding to our management decisions. You know we've got a number of species. You know northern shrimp is a great example, or a terrible example, depending where you sit, that we've had a moratorium on that stock for the last seven years, and the stock is not responding at all.

It's not because of obviously fishing mortality, it's an environmental condition. The Commission sometimes is criticized because we're not rebuilding some stocks, even though we've got full moratoria implemented on northern shrimp and sturgeon and other fisheries we've cut way back to just remnants of what the fisheries used to be, and the stocks aren't responding for a lot of different reasons, environmental conditions and other things. That is a quick summary. You know I think again, the short-term issues are something that we feel we can tackle, and if there are specific recommendations from this group on how to handle some of the meeting efficiencies and meeting materials, we want to hear them, and we're happy to react to that.

The longer-term issues, the idea there, is there something that we as staff or you all as a group of 45 Commissioners should be working toward to react to, as longer-term issues? We're happy to help move in that direction. Happy to answer any questions, Mr. Chair, but that is a summary of the background.

CHAIR WOODWARD: Thank you, Bob. Yes, I just want to offer a few minutes maybe, if folks are willing and ready to provide some feedback to Bob on some of these, especially the efficiency of meetings. I think that one was particularly challenging. You know during the meeting planning phase, you know there is an effort

made to allocate a sufficient amount of time, to ensure that there can be adequate discussions.

Obviously, some things are more complex than others. I think that, as Bob said, is one of those things, like where are we looking at the change to status quo to gain efficiency? Are we talking about the length of meetings, the time allocated for board meetings? If there is anybody that's got any thoughts on that, and certainly you know, you can communicate that outside of the Policy Board meeting environment, to me, to Bob, to Toni, to whoever. But if anybody has got any thoughts now, I would certainly appreciate hearing them. Yes Sir, Senator Watters.

SENATOR DAVID WATTERS: One thing I wanted to mention is that in our Capital Hill visits yesterday, of course as I was presenting some materials to each of our delegation staffers about the ongoing planning to establish an 11-state group on the Atlantic Coast to look at mitigation compensation issues for fisheries related to offshore wind.

Atlantic States Marine Fisheries Commission has no position on offshore wind, fine, but it just suggests to me that maybe we do need to have more directed Commission involvement in the policy that is being developed in offshore wind industry, related to fisheries and environment protection, mitigation and compensation.

I think in a way there will be an expectation, I think of the states and the fishing industry to look to this group, because of our expertise in fisheries management, to have some kind of opinion as to what measures are being taken. Whether it's in the BOEM Environmental Review once option areas have been described, or whether it might be on a policy about state's establishing funds for receipt of industry, or federal funds for mitigation compensation.

Of course, that may involve issues about how such funds get divided among states that are fishing out of the same species that might migrate, and being affected in different ways. I know we have a lot of areas in which this would come up, but I'm

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wondering whether it needs to be an opportunity for a particular focus in the Commission on the offshore wind industry on the Atlantic states.

CHAIR WOODWARD: I know Bob is involved with BOEM's discussions, so Bob, maybe you can just update everybody what you have been participating in, how you've been providing feedback and some of the discussions we've had internally about the role of ASMFC in this offshore wind topic.

EXECUTIVE DIRECTOR BEAL: Great, thank you, happy to do that. To be honest, the Commission is kind of wandering around a little bit in the woods, trying to find our direction on offshore wind. You know there has been, as you said, a lot of engagement with that 11-state group, which is the states of Maine through North Carolina, but it doesn't include Pennsylvania, since they don't have the offshore issues.

The Commission, frankly has stepped back a little bit since that group has become more active, and let those 11 states, and obviously it is external to the Commission process. But those 11 states have been represented, and are talking quite a bit. I have as the Chair mentioned, been involved with BOEM and some of those data groups on mitigation and compensation.

A number of Congressional Offices have reached out to us in the past, trying to get our perspective on compensation and mitigation legislation, what should that look like, who should be involved. Should the Commission, frankly, be the clearing house for all of that money, which generally the folks around this table have said, we probably shouldn't be the group that makes decisions on who gets the money and how much they get.

There may be a role for ASMFC in providing data to the group that ultimately makes those decisions through ACCSP and other things on harvest history and other things, for commercial and for-hire fisheries. I'm involved in a lot of

different angles, the State Directors in particular are involved in a lot of different parts of wind power.

The Commission, you know this body, hasn't really formally done a lot collectively. There is a lot of sorts of pieces that are very involved in it, but collectively the Commission hasn't done a lot. While I'm speaking, tomorrow at one o'clock, and Friday at one o'clock, Alexander and I are doing a Congressional briefing on compensation legislation that we've invited, essentially all the coastal offices from the House and Senate side.

The House is on Thursday, Senate is on Friday, I believe. If anyone is interested in participating in that sort of hearing what the 11 states have been up to, and hearing the perspective from a couple of Congressional Offices on where some of that legislation may go, those are open-ended meetings, and the invite is available for anyone that is interested in doing that. Senator Watters, that is a long-winded way of saying, we're doing a lot of pieces of wind power, and involved at a lot of different levels, at the staff level and obviously the state level.

But we don't have a wind power committee or anything set up at the Commission. Historically we've talked about it a lot, and decided kind of this piecemeal approach may be appropriate for the Commission, rather than a larger, more dedicated commitment to coming up with one position, because it's difficult for 15 states to come out with one position on wind power. Different governors have different perspectives, and it's just a lot of times when it's a controversial issue, or something that governors and legislative folks disagree on. The Commission's position is kind of watered down a lot, and it doesn't say a whole lot. But again, that is what we've done historically. That doesn't have to be what we do moving forward. If there is something different that we can and should do that is for this group to decide.

CHAIR WOODWARD: All right, thank you, Bob. Again, in regards to the survey results and the issues. If you don't feel about dealing with it today individually, please circle back to myself, Bob, Joe,

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you know share your thoughts and ideas about how to address some of these things, we would appreciate it. Loren, I saw your hand.

MR. LOREN W. LUSTIG: I appreciate always the opportunity to provide feedback to the Commission. I consider it a serious and important part of my role. I'm wondering though, about the number of respondents compared to the ones that do not respond. Has that norm changed over the years?

Is there anything else that we should do that would tend to increase the number of responders? I personally think that the document is efficient, easy to use. It is valued, and I couldn't propose any ways that we would change, but perhaps others in our group here could. That's my question. Thank you.

CHAIR WOODWARD: Yes, I'll look to Toni for a specific, but I think our participation trends have remained kind of stable over time. I thought maybe we could offer an all-expense paid trip to Arlington, Virginia as an incentive. But I guess that really won't work. But anyway, I'll look to Toni for that.

MS. KERNS: Spud, you're correct. I think we've had some low years of like maybe 21 or 22 individuals responding, and some high years of like closer to 35. But on average I don't think we veer too far from like 5 or 6 difference every year. Because the survey is anonymous, it's hard for us to sort of incentivize folks.

We just send out the reminder e-mails when it's really low. I asked Spud to send out a reminder e-mail that maybe motivates some more folks. If you all have ideas of what would push you to fill out the survey, I would bring it back to you all, since you are the ones that are filling it out. Please, let me know and I'm happy to utilize those methods.

CHAIR WOODWARD: Al right we have Ray and then Eric.

MR. RAYMOND W. KANE: Toni, question, 29 surveys out of a possible 45 were fulfilled. Are the Legislative Committee people, like Governor's Appointees and Proxies and Legislative Appointments responding more so than the Directors from each state?

MS. KERNS: The survey is anonymous and I cannot tell you.

MR. KANE: Pardon me, but after you fill out the survey, you're supposed to notify the office that you filled it out. I don't really know how anonymous it is, I don't really care. But I'm just curious to know. Maybe the Directors are too embroiled in other work to take time to fill out the survey. I would be curious to know if the appointees, the Legislative Appointees and Governor's Appointees are filling out the survey.

MS. KERNS: If 29 people filled it out, maybe 15 people told us that they did. I still can't tell you.

CHAIR WOODWARD: Yes, that's that nonresponse bias, you know it's always a problem in everything we do, isn't it? Eric.

MR. ERIC REID: What about the game? We played a game years ago, where everybody had a little button. We had a game. No more games, yes okay. Do you want to get the 100 percent response or something like that, bring back the game.

CHAIR WOODWARD: We'll take that into consideration, the game. Tom.

MR. THOMAS P. FOTE: With my BA and my MBAs marketing management, I realize if you get that many responders to a survey, that percentage, you're doing great, because usually you get 3, 4, 5 percent. You've done fantastic! I never sent back that I do it, but I do it every year. You probably wish I didn't, because I usually complain every year.

I mean that's how surveys are. I don't know how most of you people. You probably, because you are directors and things like that, get more e-mails than I, and I'm still getting 300 e-mails a day from all the people that want to send me and tell me what they want. You get bogged down and you forget. As we

get older, our memory is not as good as it used to be. I say, oh, I forgot about that survey. Luckily, you send out three or four reminders, so I think we're doing good.

CHAIR WOODWARD: Bill, did you have your hand up?

MR. BILL HYATT: We're all asking ourselves over here, what's the game?

MS. KERNS: There are controls that you can do, and like immediately fill out responses to questions that are up on the screen, so you would fill out the survey here at the meeting, and you would hit the button. I'll leave it at that.

CHAIR WOODWARD: We can certainly put some thought into bringing back the game, I guess. We would have to buy it. Yes, there is cost associated with it. I think probably one of the issues that we always face is that, okay so we fill out the survey, we get the summary of the results, but where does that change anything?

I think that is what we're trying to do here with this, is at least identify the issues that have emerged out of it, and where are some of these things actionable? You know where do we take some of those survey results and put them into action to affect change that people want to see. Again, I'm going to put the burden back on you all, to continue the feedback loop.

If you identify an issue, help us identify a solution, because that is how we get things done. With that we'll move on. Our next agenda item, and just to frame it up for Toni, is back in February some questions were raised regarding Atlantic Bonito management, and then we also ended up discussing some similar concerns about false albacore. Toni is going to give us an update on some of the internal analyses that have been done regarding management of those two species.

MS. KERNS: I just want to point out that there were some additional materials added, one from

the state of Massachusetts on measures that they are thinking about putting in place for Atlantic bonito, and then also there were reports that were compiled on both of these subjects that were quite extensive subjects, both of these species on life history landings and assessment information where available, and management information where available.

In the white paper that was in your meeting materials, there was information from the states about whether or not they would be able to implement management measures for the species, if the Commission did or did not have an FMP. But before we get into those pieces, if we were to add any additional species to the Commission's portfolio, it would impact both Commission staff and the state's staff.

We would probably either need to have another ISFMP staff member, and possibly a new stock assessment scientist, or we would need to have measurable changes in the current species priorities for both management and stock assessments, and we would have to have some pretty major shifts, in order to take this on if we don't add additional staff.

Then as well as the states yourselves would need to be able to populate TCs, Stock Assessment Subcommittees, Plan Development Teams and PRTs for both of these species, which I can imagine may be a little difficult, or maybe not for some of the states, depending on your staffing situations.

For the states that could implement management measures on their own. In the table, I hadn't heard back from two of the states, but in my presentation, I've included information for them. That's the first option, states could just put measures in on their own, from one or both of these species. There are four states that cannot put measures in on their own, but there are some caveats for those states.

For South Carolina and Delaware, they would not be able to move by themselves, but if there were federal measures, they could follow those. For North Carolina and Maryland, they cannot move on their own, unless they started a state FMP, but that could

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take several years to do so. I believe North Carolina is thinking about doing an FMP for false albacore, that's correct, Chris, or not still thinking about it?

MR. CHRIS BATSAVAGE: Not necessarily an FMP, it's a little nuanced. The North Carolina Marine Fisheries Commission is considering moving forward with rulemaking authority for false albacore. We don't have rulemaking authority, so we can't set regulations, unless that species is managed through ASMFC or either the Mid or South Atlantic Councils.

That will take a few years to get in place, just kind of through the rulemaking process, in order for us to set regulations. Then if that happened, we could do that without an FMP. We could just have a rule that gives the Director Proclamation Authority, similar to what we have now for sheepshead, because we have sheepshead regs, no FMP. But it will take a few years and it would only limit our regulations to our state waters. It's limited in scope, considering the range of false albacore.

CONSIDER OPTIONS PAPER FOR ATLANTIC BONITO AND FALSE ALBACORE MANAGEMENT

MS. KERNS: Thanks, Chris. The second option, if the Board is interested in taking a next step for one or both of these two species, is to have staff develop a white paper that would be similar to what we did with welk, maybe that's five years ago now. Time just flies. This white paper would have information on distribution, habitat, life history, landings, any management history.

I would probably borrow from those wonderful papers that were in the supplemental materials, because a lot of that work has been done through that paper. Then lastly is a fishery improvement project, or a FIP. It's a stepwise, multistakeholder effort to improve fishery management practices. It's often used more for species that have a larger commercial fishery.

As an incentive to have more sustainable management for that species, it often goes along with certifications. We did do a FIP process when we did the Jonah crab fishery, and there were processors, grocery stores involved. I'm not sure that is the best FIP for these two species. There isn't as heavy of a commercial fishery for these that I am aware of, but I'm open to different ideas. That is all I have on my presentation.

CHAIR WOODWARD: I'll make sure we acknowledge the efforts of the American Saltwater Guides Association, who took it upon themselves to have a literature search done, and provide that information back to us, which certainly reduces the burden on the Commission for better understanding the biology, population dynamics and other elements of these two species.

We want to make sure we acknowledge them. They did this on their own, and I think it sets a good model that if you come to the Commission with a conservation concern, and you put your money where your mouth is, so to speak, so we certainly appreciate that. I've got David Borden has had his hand up virtually, so I'm going to stop off with him, and anyone else at this point. I've got Chris Batsavage and Senator Watters. David.

MR. DAVID V. BORDEN: Thank you very much, Mr. Chairman. I apologize for not being at the meeting, but I have had a chance to go through the different documents. I would like to start by commending the Mass DMF and the Saltwater Guides Association for all the work that they've done on these two. I think they are being proactive, which is what the intent is.

That said, I don't think we're at a juncture where we need to delve into the specifics or have a detailed discussion on how we utilize the information. I think it's actually premature. I appreciate the fact that Toni and staff have identified a number of different ways forward, but I think there is kind of an interim step that we need to follow, which would be a technical review of the documents that are available.

I'm also concerned about workload issues that Toni identified, and work priorities. My suggestion is, and

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I've developed like a tasking motion. My suggestion is that we basically move forward and ask the states directly, have the Commission send a letter to the State Directors, and ask that they appoint a technical or a management staff to the Committee. If they so choose, and the operable words there are "if they so choose". Then let the state staff do the work, and prepare comments and suggestions. I think if we follow that format, we'll be in a position where we can then have a little bit more of a consensus on the different strategies that we might want to utilize in the future. The one thing that would pretty much leave Commission out of this, unless they want to have a staff member participate in those discussions.

I think the one thing that would be useful would be to have one of the state's volunteer to coordinate that activity. As I said before, I've prepared a motion, but I'm going to defer to the Chair whether or not we use the motion. I think it might be possible if people like that idea to just do it by consensus. That's up to you, Mr. Chairman, thank you.

CHAIR WOODWARD: Yes, I've got a copy of your motion, so we'll keep that in the queue. I want to go now to Chris Batsavage and then Senator Watters.

MR. BATSAVAGE: Yes, I think it's an interesting idea that David Borden is bringing forward to get the states together, especially those with active fisheries for both species, if you look at the available information. But I think also, I think what might also be in there too, is just to get a sense of what management could look like.

With our ASMFC species there are some species we manage pretty intensely. We have a lot of information; we spend a lot of time on them. There are others that, I guess for lack of a better term, we just have passive management, where we have regulations in place and they are not revisited a whole lot. Both options have different workload responsibilities, you know for the states or if it was ASMFC in this case.

But I think it would also be helpful too, if this was ultimately something the states decided to do on their own, outside of ASMFC and the Councils, to at least work together, come up with at least some kind of relatively similar regulations that are kind of meeting the same objectives. If that is something that would be considered under what David is proposing, yes, I think it would be a good way to go, in addition to the other things he suggested.

CHAIR WOODWARD: Senator Watters.

SENATOR WATTERS: Kind of a question for Toni and for Bob as well, in that I can see the consequences, in terms of cost if we did an FMP through the ASMFC, and there we are. Because it is asking a lot to bring in new species to the Commission. My questions are around, what are the consequences, potentially, of our not taking species under management? What situation might we find ourselves in?

I think it's not unrelated to the question that we may be seeing more of this, because of what's happening with certain fishery pressures would develop in other species. Then of course, with warming of the ocean, what we've seen is the range is extended, and so the fishing might start occurring in places where these species weren't before. What situation do we find ourselves in a few years from now, in terms of potential depletion, or potential conflicts among the states. As I said, I don't expect this will be the first time that we notice something like this occurring.

MS. KERNS: It's hard to say what the exact consequence would be, without having a stock assessment for these species, and knowing how much fishing is going on or not going on, whether that fishing is going on in state waters versus federal waters. It's difficult to say. I mean yes, there potentially could be consequences, obviously, for not managing.

In particular if there is an emerging fishery that continues to get bigger, and there are no management measures on that species. It's one of the reasons why we took action on Jonah crab, because we were concerned, we were seeing the landings increase significantly very quickly.

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CHAIR WOODWARD: Yes, I think we would all like to be more precautionary than we are reactive, but I think there is always trying to figure out that balance. To determine whether a precautionary approach is necessary, you've got to better understand a risk. I think that is what is challenging in a lot of these situations.

It's okay, what kind of risk of overexploitation or whatever are we dealing with? A lot of times, you know if we've got species that we just don't have a very thorough and complete dataset on. Anyway, that is kind of, I think where we face right now. But Dan, and then I'm going to go to Adam Nowalsky online.

MR. DANIEL McKIERNAN: To Senator Watters question, you know the reason we're even having this conversation is, we received reports and many of us have seen it personally, that the Gulf of Maine is seeing these young of the year juvenile bonito that we've never seen before. Constituents wrote to me, and I said, well we'll take a look at it, and why don't we inform ASMFC, because heck, maybe this was happening in Rhode Island forever, or Connecticut, and now they've just moved up north and there is nothing new.

But if it is new, and these fish are vulnerable, because they've been taken as functional bait, as if people taking buckets of them, or whatever. Maybe it's appropriate to put a squeeze on that, and to prevent doing that. My objective going into this, looking at our Massachusetts Statutory Authority, was to go to my state commission and propose a very simple regulation to curtail that activity, if it was deemed warranted.

I was hoping getting some informal feedback from this group, from my neighboring states in a forum like this would give us some of that motivation. I did have a question, if you would indulge me, to Chris Batsavage. Chris, you mentioned that in your rulemaking you would only be able to affect the state waters catch. But could you not enact a possession rule that could be enforced at the pier upon landing?

MR. BATSAVAGE: Yes, thanks for the question, Dan. Yes, so if people were out in federal waters fishing, when they come into our state waters, they are bound to the state regulations.

MR. McKIERNAN: Okay, and as far as David Borden's conceptual ideas, we would be supportive of that, and we would provide staff to create a white paper if that is appropriate, and to just move this forward. But I am mindful that I don't know if we would regret going down the road of a new species in a management plan. But it would be ideal, as we've already kind of submitted to this Board some research, and if we want to go a little bit further and dive into other states data as well that may be appropriate. But I hope I haven't overburdened this Board or the Commission, but I do think it's appropriate when we see these emerging issues, to at least start the conversation and possibly take some action.

CHAIR WOODWARD: I'm going to go to Adam online, and then it will be Erika Burgess.

MR. ADAM NOWALSKY: I certainly support any organization out there that is willing to put their money where their mouth is on science. That is certainly for the benefit of the resource, as well as all of us as managers. My understanding is that the literature that we did receive from ASGA so far is in draft form, and is without peer review at present time, is that correct?

MS. KERNS: I believe that is correct, it is not peer reviewed, yes.

MR. NOWALSKY: Again, I certainly appreciate the efforts, but I do think whatever decisions we make moving forward should be based on independently funded science that goes through a peer review process, as we do with almost all the other data we review, and I certainly think that would be part of as we move forward. We've got to look at ways to go ahead and get that data to inform our decision making.

CHAIR WOODWARD: Yes, I think what we received from the American Saltwater Guides Association is

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really just a literature review of everything that was out there, and really no stock status determination or anything like that, that would typically require a peer review. But again, it never hurts to have someone else look at it and see where the gaps are, and how thorough that is. But thank you for that, Adam. I'm going to go to Erika Burgess and then Eric Reid.

MS. ERIKA BURGESS: Florida has looked into the need for conservation and management of little tunny for multiple times over the last decade and greater, and we've routinely come to the determination that additional management of this species is not warranted. For that reason, I do not see our need to continue to explore this. This might be something that other states might wish to do for their waters, but off of Florida, where we land upwards of 50 percent of the coastwide landings for that species, we've determined that management is not warranted.

We have the ability to implement regulations in our state waters and adjacent federal waters in the absence of an FMP. I can't support this, and I would welcome other states to explore options that they can do within their own authorities, but consistently we arrive at the same conclusion, and if you would like to know more, I would be happy to chat with others online.

CHAIR WOODWARD: Eric Reid, and then I'm going to go to Jim Gilmore.

MR. REID: These two species are highly migratory, and they're available throughout the northwest Atlantic as well as a lot of other places in the Atlantic. I'm pretty sure that the Service follows ICCAT regulations for these two species, which do not exist. However, you talk about a white paper. Doing a white paper is one thing, reading somebody else's white paper is much more cost efficient, I believe. On May 15 through 18, at the ICCAT Intercessional Meeting of the Small Tuna's Working Group, they are looking at reviewing the stats for biology and life history, age and growth, genetics, maturity and reproduction. They are also going to get an

update on data poor methods and review appropriate approaches for future development. Now, I'm pretty sure that the future in ICCAT time is like my great, great grandkids might have a problem with. It's something along those lines. My final point is that the IUCN, which is the International Union for Conservation of Nature, puts out a thing called the Red Book, which is species of most concern, and species of least concern.

It is the premiere document about species status, lists both these species as species of least concern. In my little red book, they are also species of least concern. The Commission has got plenty of other things to do that are more pressing, as we've just heard for the last two days, and probably for some time before that.

I don't think we should waste Commission resources on taking on these two particular species, because there is very little that is known about them. They are opportunistic in where they appear on the coast, and of course fishermen are opportunistic as well. People have been fishing for these fish for a very long time. I don't see any reason we should get in this management scheme at all. That is where I'm at, thank you.

CHAIR WOODWARD: Jim Gilmore and then I'll go to Tom Fote.

MR. JAMES J. GILMORE: Following up with Senator Watter's comment before. I think at this point yes, we have a system where we're seeing this in our states. You know we tend to react to it, and try to put in some management if it becomes an issue. As Toni said, it's worked well. I mean we saw it happening with Jonah crab, and it started out with states noticing it, and then we decided to do an effort on it.

In fact, right now with New York, if anybody wants to help us, we're going to do stuff on blowfish, because they are back in big numbers, and people remain concerned about that. However, the one caution we do is that, you know if we kick this down the road or whatever, not to forget that sometimes, and I'll use welk as the example.

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A few years back we all decided we really didn't need to manage welk, and there was a state well to the north of us, I won't say who, and former people that killed that. Then it took Connecticut and New York, what 10 years to get welk regulations in, and we probably did damage to that population.

In some points when we get to that tipping point, the Commission is very helpful in getting us to say, if we try to do it in the state and we get a lot of opposition, it's difficult to do it. If you say, well the Commission told us to do it, it is a lot easier. We've got to keep that in mind as we move forward. Thanks.

CHAIR WOODWARD: Tom, and then I'll go to Mel Bell.

MR. FOTE: Jim covered the points I was going to make, so I'll pass.

CHAIR WOODWARD: Oh, okay, very good. All right, Mel and then I'll go back to David Borden online.

MR. MEL BELL: I was just going to say, we in our state, just because of how we're set up, it's even a little more complex. You know I think the states that can implement through rulemaking or some process, something in place as Dan has done, that's great. We have an additional challenge in that all of our fishery's regulation is actually state law, which requires an act of General Assembly, and they only have authority for state waters.

The point about, well couldn't the state restrict harvest. The problem we run into there is we've had a case in federal court where we've lost before when we tried to do that. Unless our best-case scenario is basically adopting federal regulation by reference in the existing state law. We have some additional challenges too. The other thing is that we don't have the same degree perhaps, we haven't really heard from our fishermen that the same degree of interest.

The species are landed. There are some issues probably with identification, just because of use of common names or common names switching around. But I would say depending on which species you're talking about; you know most of ours are probably in federal waters. Just some additional challenges. But we are not in a position to take some sort of action at this point, nor could we, just to make that clear.

CHAIR WOODWARD: David, I'm going to go back to you and then Lynn and then Justin.

MR. BORDEN: I'll make this quick, because it's my second bite. I just want everybody to be clear. I did not suggest that we start managing these species. I think that I specifically said that it was premature. The only thing I suggested was a variation of what Adam indicated, that we need some kind of review on this. There is a lot of work that's been done.

I think we need a set of outside eyes to look at the information and see what we can use and not use, and where it might possibly lead. Then at a subsequent meeting put that back on the table, and then have some aspects of what has already been discussed, discussed. I was just suggesting an interim step that's all.

CHAIR WOODWARD: David, you alluded to the fact that you've got a motion that you had constructed and provided to staff. Do you want to make that motion, to maybe focus it?

MR. BORDEN: Yes, I'm happy to make that as a motion, but I was kind of hoping that we could avoid doing that, simply because what I was suggesting does not commit the Commission to anything other than writing one letter. It doesn't change any work priorities, doesn't change any assignments for the technical staff that are already overburdened. But if it's your preference, Mr. Chairman, I would be happy to make that as a motion.

CHAIR WOODWARD: Well, we've got it displayed on the Board, and I think at least the language of that motion will maybe help people better understand what you're talking about.

MR. BORDEN: Okay, so I move that the Commission establish a temporary technical working committee to review the two papers of Atlantic bonito and little tunny that were submitted by the American Saltwater Guides Association. The Commission will inform the State Directors of this proposal and ask them to nominate a scientific staff members of their choice to review the proposal. The review will assess the technical quality of the papers, the relevance of the information and suggest possible revisions, data gaps, and management implications and options. The Committee will convene online, elect their own chairperson, and prepare a report with their findings and recommendations for presentation to the ISFMP Policy Board at the Summer Meeting.

CHAIR WOODWARD: All right, thank you, so we have a motion, do I have a second? We've got a second from Justin Davis. Let's hold discussion on that until I go down the rest of my list here, and you can certainly discuss that if you want to. But I want to go to Lynn and then Justin, and then Mike Waine online and then Pat Keliher.

MS. LYNN FEGLEY: I just wanted to point out on a slight tangent that we've been having a little fun with Seafood Watch. I just wanted to say for the record that cobia is up on Seafood Watch. Cobia is, and the alternate name is bonito. Just so people are aware, we know bonito are not cobia and cobia are not bonito, but they are as listed as the same critter under the Seafood Watch.

CHAIR WOODWARD: All right thanks, Justin, and then I'm going to go to Mike Waine and then Eric and Dan.

DR. JUSTIN DAVIS: I'll be brief, and I think this is a good motion. It's a good approach suggested by David. I think, Mr. Chairman, you said earlier something about being precautionary and not reactive. I think just because there is a perception there is not an issue with these fish right now, is not a reason to not look into it, gather information.

Talk about what sort of precautionary regulation might be appropriate. It seems like a good next step, acknowledging the interest from some members of the public in seeing the Commission work towards some precautionary management. I think this is a good approach suggested by David.

CHAIR WOODWARD: Mike Waine online, is that right? I think he wants to speak to the motion. Go ahead, Mike.

MR. MIKE WAINE: I've been trying to keep tabs on this. As this continues to be discussed at ASMFC, and perhaps specifically across the states. I'm just curious about what the plan is to engage the broader recreational fishing community on this discussion. I think ASGA has done a good job messaging to the light tackle community, but there is a lot of other stakeholders within the recreational fishing industry that would be very interested in this discussion.

I just want to flag this before this thing gets too far down the field. I don't believe it's ASGA's intent to try to sneak in regulations on these species. I think a little help from some of the communication professionals within the states, and ASMFC would be needed as this conversation continues. I just want to flag this, because I don't really feel like that is being discussed right now. I want to make sure that it's in the mix.

MS. KERNS: Mike, at this time there is, I mean depending on what happens with this motion. Even if this motion passes, there is no Commission FMP, so there would be no Commission public hearings on this. If the Commission does decide to take this species on as an FMP, then we would do our regular FMP process where we scope first.

That is when we would start to engage with the public on the different types of broadscale management that we would do. Then we would then identify with the Board specific management measures, and then take those back out for public comment, so that we would be following our regular process.

MR. WAINE: Mr. Chair, just a quick follow up.

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CHAIR WOODWARD: Go ahead.

MR. WAINE: Based on Toni's response, am I interpreting that as, there are no plans to engage the broader stakeholders on this until management is being considered, because that wasn't really the point I was trying to make. I just wanted a little clarity.

MS. KERNS: There has been no decision, this motion is on the table, and this motion the way David describes it, is for the states to do all of these things. The Commission actually would not be doing this work. It would be up to the states. If the states that decide they want to be a part of this group wanted to engage with the public, that would be up to those individual states. But the Commission itself is not actually taking on any management at this time.

MR. WAINE: Understood. Mr. Chair, perhaps my comments are best directed to the states then, thank you.

CHAIR WOODWARD: Thank you, Mike. Did I miss you, Pat, all right, sorry, go ahead.

MR. PATRICK C. KELIHER: You went right over me to Mike Waine, and I'll never forgive you for that, Mr. Chairman. To Toni's point, this is not a Commission issue then, and we're making a motion. This is a process problem. We're making a motion to then direct the states, and the Commission isn't involved.

This should be a voluntary action by the states. If the states want to get together and do this, then I would suggest that that is the direction that we go in. I don't have a dog in this fight, other than the fact that I love catching bonito and albacore, and think that if there was warranted need to manage, then we should be moving in that direction. But for this first step, I almost feel like this is out of order.

CHAIR WOODWARD: Yes, I think we just have a little bit of a disconnect here between intent and procedure. But we now have something that

belongs to the Policy Board, so we've got to do something with it one way or the other. Let's try to tighten up this conversation here, because we are impeding on our time. We have other issues to deal with. I'm going to go to Eric really quick, and then Erika, and then I've got Mike Ruccio, then Tom and then back to you, Justin, and let's try to wrap this up. MR. REID: Thank you, Mr. Chair, I'll be brief. I agree with Mr. Keliher, the Commission should stay out of that. That's my position. To Ms. Fegley's point, that is why I cited the Red Book not Sea Watch, because they know what they're talking about. When they say it's of least concern, they mean it. Just so you know.

CHAIR WOODWARD: All right, Erika.

MS. BURGESS: I am most concerned about the process, and the precedent that this motion is establishing, that the Commission would turn around and write a letter to the states to say, hey you need to put your technical staff to work to review the work of a private organization, and do peer review.

Would anybody who submits a report to ASMFC from public comment then be directed? Would the states be directed to review the technical merit of those reports? That is a slippery slope, and I am very uncomfortable with. As I indicated earlier, Florida has undergone technical review of whether the species needs management multiple times. I cannot support a letter from this body to the state of Florida to ask that they participate in further review.

CHAIR WOODWARD: Mike Ruccio.

MR. MIKE RUCCIO: I'll also try to be brief. I admit that I don't have a particular dog in this fight, but I am struggling with this motion a little bit. I'm cognizant of the comments that Mr. Reid made regarding work that is being done to the management bodies. I'm also aware of the documentation that's already been provided by Mass DMF and Dan McKiernan's staff, and would like to see those incorporated in this if there is a comprehensive review.

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But I think the part that I am struggling with the most is perhaps what those findings and recommendations from this technical review are designed to do. It's one thing to conduct a literature review, but I'm finding myself lacking for, how is this directing towards a next step, and whether that involves the Commission consideration of management, to empower the states to pursue their own regulation, and I'm just a little bit unclear of that and I think some of that is playing out in others comments as well.

CHAIR WOODWARD: All right, Tom Fote and then Justin, and I think I'm going to call the question on this so we can dispense with it.

MR. FOTE: Basically, the fishery in New Jersey and in New York, mostly because I used to fish from New York, was in federal waters. We don't really have a fishery in state waters, it's all federal waters. It isn't because there is bunker coming in, because if you fish for bonito you know that they are taking small spearing and small fish. Now that's different from albacore. Albacore has always been in state waters. I really think it's part of NOAAs responsibility if they want to look at it, because New Jersey and New York it's federal waters. It's not a species that comes in our bays and estuaries.

CHAIR WOODWARD: Justin.

DR. DAVIS: My sense is the misgivings about this motion around the table are mostly around the idea that this is something that is directing the states to do something, when we think maybe the Commission doesn't have the ability to do that. I'm wondering if resolution to that issue is, rather than calling this a temporary technical committee, saying that we're establishing a workgroup.

That it's going to review this information, and that it's going to meet and then come back to this body at some point with a summary of the information they reviewed, and some recommendations about different ways to move forward. I think there is some interest around

the table in not dropping this issue altogether. But I think there is also a sense that we don't have enough information right now to decide what to do.

You know for instance, we've heard that Florida has examined this issue multiple times, and has presumably done some sort of analysis, and you know review of policy options, and has arrived at the idea that it's not necessary to regulate these species. I'm curious to learn more about that. I'm just wondering if we amended this motion to call it a work group, and struck a lot of the language directing exactly what the group is going to do, and made it simpler if that would help, recognizing that would drag this out longer, but just offering that.

CHAIR WOODWARD: My sense is that there is some trepidation with the Commission asking anybody to do anything at this point, with this. That is why I think we're probably at the point of just voting this up or vote it down. Perhaps we've had a good discussion, leave it to the states that have an interest in pursuing this individually, to find a mechanism to collaborate together.

Because right now I do think we've got a procedural and an authority issue here that is bad. I would really like to dispense with this if at all possible. I know Doug, you had your hand up. You haven't had a chance yet. I'll let you have the last word on this and then I want to have a vote on it.

MR. DOUGLAS E. GROUT: Just briefly. You know if we dispense with this by voting it down that's fine. But what I was going to say is, this Commission has thought of having us get involved with bonito management. Historically we used to have a group called the Management Science Committee that we would direct them to look into that issue, and then bring forward a paper describing the pros and cons of it. But if you want to just get rid of it that's fine.

CHAIR WOODWARD: I think that's a good point, but again, I think what we're really dealing with here is we've got states that individually have an interest in this, and maybe pursuing some conservation, and we have some that obviously don't. I think we're not going to have any public comment on it.

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I appreciate your being here, but I think we've got to resolve this issue, and we're running out of time. At that point, I'm going to call the question on this. We have a motion before us. All those in favor of the motion, signify by saying aye. All right, caucus for a minute or two. Our time is up on caucus. **I'm ready to call for a vote. All those in favor of the motion, signify by raising your hand.**

MS. KERNS: Connecticut, Rhode Island.

CHAIR WOODWARD: All right, those opposed.

MS. KERNS: New Hampshire, Delaware, Maryland, Virginia, South Carolina, Georgia, Florida, Pennsylvania, New Jersey, New York and Massachusetts, sorry, Dan.

CHAIR WOODWARD: All right, null votes. One null.

MS. KERNS: North Carolina.

CHAIR WOODWARD: And abstentions.

MS. KERNS: NOAA Fisheries and Fish and Wildlife Service and Maine and PRFC.

CHAIR WOODWARD: Okay, so motion fails. Where does that leave us? Dan, go ahead.

MR. McKIERNAN: What was mentioned earlier in the discussion, but we didn't really proceed down this road is to attack this like we did welk, which was voluntary. I think Pat Geer had organized it, I think he found us some Sea Grant money, and we all contributed to all of our technical information and our regulations, and we had numerous conference calls.

I think it's probably more appropriate to do that. You had mentioned if a state has an interest, they can do it on a voluntary basis, not under the authority of the Commission, but just under a lot of the relationships that we have around the table.

CHAIR WOODWARD: That's exactly what I was going to describe. You did a great job of it. Those states that do have an interest work together, do the necessary analysis, and if an aggregate of states believe that interstate management is the best way to address this, then they can come back to this Board, present their findings, and then we'll go from there.

How does that sound to everyone? All right thanks, thank you all for that good discussion. I know it's always a tough thing to consider a need, but not necessarily have an easy way to address it. I appreciate the discussion, and thank you, David for the motion, we appreciate it. Our next agenda item is an Update on the Follow Up Addendum for the Harvest Control Rule, and that's Toni.

MS. KERNS: I have failed to say that on the back room there is some waterproof cards of hard to identify mackerels and tunas that the Mid-Atlantic Council made with NOAA Fisheries, and Julia reached out. If anybody is interested in taking any of those card's home, please do so.

UPDATE ON FOLLOW-UP ADDENDUM FOR THE HARVEST CONTROL RULE

MS. KERNS: Next up is the Harvest Control Rule Addendum and the Recreational Management Measures Amendment.

In your briefing materials there were two timeline documents to these, if you want to reference them while I go through the document. As you all know, we are working with the Mid-Atlantic Council on developing both of these management documents. The Board and Council have a follow up to the Harvest Control Rule Addendum and Framework. The Board's directed the Plan Development Team to further develop the percent change approach, including a potential F-based approach for that, as well as continuing developing the biological reference point approach and the biomass-based matrix approach, and that the PDT should develop measures using modeling or other approaches for alternatives for the biological reference points and the biomass matrix approach.

OVERVIEW OF TIMELINE

MS. KERNS: For the timeline for this addendum, the document that is on your briefing materials has many more parts of this listed, but I was trying to keep it simple here. Today we need to approve a Plan Development Team that will work with the Council's FMAT. This summer we will begin to develop the draft document itself.

Throughout the summer through next year, we'll do some back and forth with the Board and Council as the document is being developed. In August of next year, we will approve the document for public hearings. We'll have those hearings in the summer and fall. Then in April of 2025, we will take action, and in the winter of '25 federal rulemaking would occur, and hopefully have this document implemented by 2026, which is the expiration date of the original Harvest Control Rule Addendum.

CONSIDER APPROVAL OF PLAN DEVELOPMENT TEAM MEMBERSHIP

MS KERNS: We did receive some Plan Development Team nominations, those were Mike Celestino, Rachel Sysak, Adam Nowalsky, Corinne Truesdale, and Sam Truesdell. For PDTs it is recommended, or traditionally Board members are not on Plan Development Teams because of the perception that a Board member would have two bites at the apple.

You all are giving recommendations and direction to the Plan Development Team to draft documents, and then you are making the decision on the document. For Board members to be on PDTs, it has the appearance of developing the measures that you would be finalizing. Because of this, we're recommending that we consider having a small working group made up of Commissioners and Council members, to advise the PDT when needed.

This document was pretty difficult to put together. Last time there were times when the PDT and FMAT probably could have used some advice from the Board. We would utilize this

workgroup in that way if the PDT had some questions, and they could go back to that small workgroup. Staff is suggesting that Adam be placed on that workgroup instead of the PDT, based on sort of the general rules and processes that we normally follow for PDTs, and not having Board members on them.

But that is the decision of this Board to make. If you would prefer to have Adam on the PDT, then that is the decision you all can make today.

I just want to quickly go over the recommended timeline, and again this one is also greatly abbreviated from what is in your materials. But the Recreational Amendment is the amendment that looks at sector separation and recreational accountability.

This summer I'll ask for PDT members for that, but I figured we would get the other document out of the way first. Then in December of this year, the FMAT and PDT will bring forward a scoping document for the Council and Board to approve. We would do scoping in the winter of '24, provide a review of the scoping, and get direction from the PDT and the FMAT to develop management measures for the amendment document. In the spring of '25, we would approve the public hearing document, have public hearings in the spring and summer of '25. Then take final action in August of '25. You can ignore those top ones.

Then in the winter of '26, the EA would be developed and federal rulemaking would occur. The implementation date is a little unknown, since we don't know how much time we would need for that EA development from the Council side of the process. It's not something that the Commission does. If you could go back to the PDT nomination slide. Today, I'm just looking for approval of the PDT.

CHAIR WOODWARD: Okay, Shanna.

MS. MADSEN: Toni, if I may. I'm not sure. If the Board decides that they would move Adam to a Commissioner or Council Work Group, Virginia did have intent to nominate someone to this PDT, so I do

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have a replacement for you, because four seems kind of sparse to me. I think that e-mail might not have come through, so apologies. But I just verified with my staff member, who did want to be a part of this PDT if we need another person.

MS. KERNS: Shanna, we're happy to have another person. You can just tell us who it is and that person could be approved today. We were fine with this only being a smaller number, because we are working with the FMAT as well, so it's the combined group. We do have more than just these individuals. There would be the Mid-Atlantic Council staff that are on the FMAT, and also NOAA Fisheries staff that include both policy and scientific, socioeconomic, the typical folks that you see on an FMAT.

CHAIR WOODWARD: All right, Jason.

DR. JASON McNAMEE: Question about Adam, I guess here. Just a personal comment from me. Adam is very technically savvy; I think could be totally fine on the PDT. I'm not sure if we need to make that explicitly in the sort of action that we take care of for keeping him in, or if we want to move him. If this other, if the little asterisk is a thing, I would be interested in being on that group. If there is some mechanism to jump on there, I would be interested in that.

EXECUTIVE DIRECTOR BEAL: Just to respond to that, Jason. You know the asterisk next to Adam's name obviously is nothing personal. Adam is great, very technically sound and contributed a whole lot to the previous iterations of the Harvest Control Rule activities. You know it's the practice of the Commission has been that if somebody is on a management board, we don't put them on Plan Development Teams or Technical Committees or Advisory Panels, just because they get kind of two shots at it.

Nothing against Adam. The idea of potentially setting up a Working Group or something else that interacts with the PDT is really to accommodate Adam and others that may be interested and that technical expertise. If you

recall, the last go around with Harvest Control Rule conversations and PDT, there was a lot of input from National Marine Fisheries Service and Board members, and Mid-Atlantic Council members and others that contributed to that group. You know the PDT reacted to it, and flushed out some of those ideas. You know I think continuing that sort of process where there is a group of super interested Board and Council members that can contribute, I think is a good process. But we may not want to sort of go against the practice of the Commission of actually appointing Board members to a PDT. That's why, sure Adam's not here. I'm sure he's listening, but I just don't want him to think we're singling him out for any reasons, other than just his membership on the Board.

CHAIR WOODWARD: I'm going to go to Jeff Brust, and then Adam actually has his hand up.

MR. JEFF BRUST: I just wanted to get on record and say, I totally understand the optics concern we have here with folks double dipping on technical committees and then boards. I do want to reiterate the words of Jay Mac and Bob Beal though, that Adam is definitely very savvy technically. We've had very good success working with him through some of these technical issues.

I certainly think that he will bring something to the table, as he has already shown, as Bob already mentioned. I think it would be hard for any of us here to disagree that Adam was pretty instrumental in getting us to the point that we are now, with some of the options that we have on the table. I know that he has some other ideas to continue carrying the ball down the field. I would like to somehow get Adam involved in this, whatever the decision is.

I also just a question of clarification, I guess for Toni. I believe you said if we go with this working group that the PDT will connect with them as needed, which opens the opportunity for not at all. Is there a way that we can set up a schedule or some definitive interactions between these two groups, so that there is the direction and interaction that is, I believe deserved?

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MS. KERNS: I think we could try to figure something out. I don't know if we need to figure that out right at this very moment. I didn't want to obligate that group to have to check in after every single meeting that they had, because that could be a lot of work on the PDT and the workgroup. That would mean double the meetings for the PDT perhaps. But I think we could try to figure out what that needs to be, whether it's every other meeting that they can check in.

I mean obviously when the PDT has questions and they're struggling to get direction on an issue, they would reach out for sure. If the Board is directing them to look at other alternatives besides the ones that are identified in the motion, they may need to reach out to those Board members that developed those different ideas to get better direction on those options as well.

CHAIR WOODWARD: I've got Adam online, and then I've got Lynn and then Mike Ruccio and then Jeff.

MR. ADAM NOWALSKY: Thanks very much. First off, let me put my tissue away here, wiping the tear from the corner of my eye. I appreciate all the kind words here today. I think I am also flattered that I was put on this nomination list. I think the original request went out citing council members were appropriate, which I am presently, as well as previous experience with the percent change approach, which I had a lot of work doing. That being said, I think this approach of having a small Commissioner/Council Member group. I am not alone in my contributions. I am not alone in my abilities. I think there are a number of people at both the Council and the Commission that sit around the table that can contribute. But I do think Jeff's comments about trying to find some more specific input points, as opposed to simply when needed, is what would really make this work.

If the PDT was able and the FMAT was able to define, okay we don't have to check in with them, this isn't mom or dad checking your homework kind of thing. I think what we're looking for, because we know the options that came out of the last work. While they were certainly refined, and worked on by the FMAT/PDT, there were a number of individuals that were involved, including the Service submitting those originally.

I suspect the continued development of those, those individuals including myself would be willing participants to work on them, both from a conceptual as well as a technical nature. I think I would put that out there that this group, if we could find a way to provide predefined input points, I would certainly think that's a reasonable way forward. Again, I appreciate all the kind words I've heard today, and sorry I'm not there to personally thank you looking in the eyes. Thank you very much.

CHAIR WOODWARD: Thank you, Adam. All right, Lynn and then Mike Ruccio.

MS. FEGLEY: Well, it seems like sort of a convoluted workaround. You know if we have a workgroup that is advising the PDT of Commissioners, they still get two bites at the apple. I mean maybe I'm not seeing it correctly, but maybe we just need to call it what it is, and maybe this is just a Joint Plan Development Team with Commissioner/Council input.

Because I mean, for sure the input of people like Adam is going to be valuable. Nothing is going to go forward without being thoroughly discussed at the overarching management body. I don't know, it just seems a little convoluted, although I do understand the perception issues.

CHAIR WOODWARD: Mike, and then I'll go to Justin.

MR. MIKE RUCCIO: I echo what others have said about Adam. He brings value to whatever groups he's involved with, it's certainly nothing personal against him. But this issue does tend to come up time and again, I think particularly with the Service, because our folks tend to do a little bit of everything. I would really encourage, perhaps through this Board

and through the Commission to like tighten up the standard operating procedures for working group operations.

To have this explicit, it's very difficult when it is kind of the practice, but it's not written down. It would give it so much more backing to have these lines clearly delineated in one of the written documents, so that when these issues come up, we don't have to have this one-off conversation. It's clear that if you're a seated board member you can't participate in the PDT. You'll probably still be there, you'll probably contribute, or things of those nature. It's just encouragement to kind of decide how we want this to operate, and then capture that in writing.

CHAIR WOODWARD: All right, Justin.

DR. DAVIS: Sorry, Adam, I'm going to heap on here a little bit. Having worked with Adam when I was the Vice-Chair of the Fluke, Scup, Sea Bass Board and then now as the Chair, there is nobody who is as familiar with the details of this process. He's been with it since the beginning. It would be a disservice to the Commission if we don't find a way to have him involved with this.

I think the suggested approach, while it is admittedly sort of like a contrived work around. Maybe it will be an interesting experiment to try, to have these PDTs working on these policy issues, but then having periodic input from Board members in a focus, structured way. Maybe that will end up being valuable, maybe something we want to do again in the future. I would support the asterisk approach here.

CHAIR WOODWARD: I think we're at the point where we need to take action on this. We have basically two alternatives. We have a PDT nomination list that includes a Board member, and we have an alternative that would be PDT members that doesn't include, but has the creation of a working group that would be populated with people that would consult and advise and interact with the PDT, to ensure that

the PDTs products were the best they could be. That is where we're at. All right, John.

MR. JOHN CLARK: Sorry, Spud, I was just going to ask whether you need a motion for this.

MS. KERNS: Shanna, who is the person that you wanted to put on this list?

MS. MADSEN: Alexa Galvan.

MS. KERNS: Can you put Alexa on there, and I'll pretend to spell her name for you.

CHAIR WOODWARD: While she's doing that, we could resolve this by, if there is no opposition to using, I'll call it as Justin said, the asterisk approach. If everybody is okay with that, then we don't necessarily need a motion, per se. We then accept the nomination to the PDT with the asterisk.

Then we will populate a workgroup with Commission and Council members that will interact with them in a yet to be determined manner, to ensure again that there is some symmetry there, and that the outputs are better than they would be otherwise. How about that, does that make sense to everybody?

Is anybody opposed to that? Does everybody understand that? I don't see anyone opposed to it, Toni, so I'm going to for the record say that is what the Policy Board is supporting. Okay, any last, any confusion? I want to make sure we're not going at a place where nobody wants to go. Okay, all right. I see heads nodding. Very good, all right, thank you. I think, David, you had your hand up. Do you want to make a comment?

MR BORDEN: No sir.

CHAIR WOODWARD: All right, very good, okay thank you all. Now we'll move on to something really easy. Discuss the future of the Mid-Atlantic Fishery Management Council's Research Set-aside Program.

**DISCUSS FUTURE MID-ATLANTIC FISHERY
MANAGEMENT COUNCIL'S RESEARCH SET-
ASIDE PROGRAM**

EXECUTIVE DIRECTOR BEAL: Yes, I'm going to try to summarize a program that has got about 20 years with a history in a few slides, and Brandon Muffley is in the back of the room from the Mid-Atlantic Council, and he's my phone-a-friend for this whole meeting. If I need anything I'll ask for Brandon's help.

A lot of these slides I actually plagiarized from the Mid-Atlantic Council and put our background on it, and I'm taking full credit for it, just so you guys know what I'm up to. But no, the Research Set-aside Program, a little bit of history on it that most folks know. It started in 2001. The first Research Set-aside activity and programs were funded in 2002.

The species that ASMFC manages that are involved in that program are summer flounder, scup, black sea bass, bluefish and dogfish. The overall goal of this was to meet unaddressed research needs. You know there are a lot of research needs, there is a long laundry list of research needs that were unaddressed, didn't have funding, didn't have resources to conduct scientific work, and Research Set-aside was developed to address those unaddressed needs.

The way it functionally worked was up to 3 percent of the overall quota could be set aside for each of these species in any given year. That was agreed to by the Mid-Atlantic Council and ASMFC during a spec setting process. That amount would be taken off the top, and then the remaining 97 percent or so was then divided based on the allocation formulae that is in the FMP.

The overall goal was frankly just to convert fish into funding. Obviously that 3 percent, or up to 3 percent of the quota had a value, and those fish were turned into cash in two different ways. One is, and we're supposed to call it compensation fishing. One is a PI and a vessel, a

Principal Investigator and a vessel. Develop an arrangement to say test the gear.

If a vessel or a Principal Investigator wanted to try a new net configuration or a mesh size, or something along the way. They would obviously catch some of those species. As part of that research activity, they would keep what they caught and sell it. Selling those fish would then generate income to offset the expenses of conducting that research.

The second approach was a third-party auction, where a Principal Investigator would be allocated a certain quota of one of these species or multiple species. That quota would then go out to auction. In the old iteration the commercial and/or for-hire captains could purchase that quota, and the purchase of that quota then generated the revenue. The revenue then funded and supported the research.

The previous iteration, commercial, as I mentioned, commercial and for-hire vessels were both involved. State and federal vessels were involved. This program averaged about a little over a million, one to two million, two million in the highest years, dollars per year were generated, so quite a bit of money was generated with this program historically. In 2014 there were 103 vessels and more than 2,000 trips involved with this program, and I'll talk about that, the cumbersome difficulty of managing that many vessels and that many trips a little bit later. But that is an important highlight, how many people and how many trips were involved. One of the big things that this overall program funded historically was the NEMAP Survey. NEAMAP Survey wouldn't have been able to get up and running without the funding that came out of the RSA program.

That program is now funded through money directly from National Marine Fisheries Service. It moves through ASMFC, but ultimately ends up at the Virginia Institute of Marine Sciences. Here is the overall process. There is the Mid-Atlantic Council, NOAA Fisheries and the states all have different responsibilities within the overall program of the RSA.

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The Mid-Atlantic Council creates the program, sets the priorities, does a proposal review. The federal government has the grant administration, project selection, oversight, technical support, compensation, fishing permitting, et cetera. This part is where the states come in, the right-hand column, which is really important, and a pretty significant amount of work.

That's why we're having this conversation is the dockside enforcement, compensation fishing permitting and administration for all the vessels that are going to land in an individual state, and then quota monitoring, reporting and reconciliation if anyone goes over their quotas. This is again, a Principal Investigator could have got, say 10,000 pounds of summer flounder.

That 10,000 pounds could have been divided up into smaller allotments through the auction process, and that 10,000 pounds could have been spread across, you know 10, 15, 20 vessels, depending on how they divvy up the quotas. There is quite a bit of burden in this program on the states, and towards the end that is going to be the questions back to the Policy Board.

This is kind of a figure highlighting that not all species are created equal or have equal value. You know summer flounder and black sea bass are really where the money comes from in this program. As I mentioned, a lot of other species involved, but they just don't have the value that those two species have. That is where the revenue is coming from.

Program strength, the previous program had a lot of strengths and a lot of value. It did provide funding for high priority research, and really there were no federal dollars involved. There was federal activity involved, with administration of the program, but no federal dollars supporting that research.

It ultimately allowed managers to be involved with their decision process on what research gets carried out. It gets fishermen and

researchers working together. It created some more trust between the industry and the PIs and scientists, and it gave NOAA an opportunity to work with managers, and the fleet to solve a number of problems that they had.

However, there were some issues with the previous iteration of this program. As you've noticed, this slide has more words on it than the last slide. There were more concerns than strengths in a lot of people's minds. You know as I mentioned earlier, large administrative and enforcement cost that weren't expected initially, and some of that came or evolved over time, given the burden and the number of vessels that were involved in this fishery. The value of fishing opportunities, as I talked about earlier, there are a couple species that really generated the revenue here. You know, foregoing 3 percent of the harvest cost the industry. You know where no federal dollars were involved, it really worked out to folks that participated in this fishery sacrificed some of their fishing opportunities and funded the research directly.

Enforcement, there were a number of enforcement issues. There was financial incentive not to report trips. Trips came in, if nobody was at the dock, they kind of went and were sold, and away they went and weren't counted against RSA. A number of instances like that were noticed, and folks were caught.

This really led to potentially overfishing, so if trips were being landed no one is accounting for them, not count against the quotas, overfishing is resulting. Recreational landings reporting is not verifiable. They didn't have any one necessarily at the dock to catch every recreational trip that is coming back, and verify their catch.

Then as I mentioned earlier, capacity to monitor the 103 vessels and 2,000 trips in one year, was very limited at the state level, and put a lot of burden on the states. It took a lot of permitting to allow those folks to go out and do their work. The research had some problems as well, you know failed peer reviews for some of the projects.

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The application, some of the projects weren't that useful for management, weren't plugged directly into management, and limited number of groups and applied for this funding. Ultimately, all of this concerns and issues with the program led to the cancellation or suspension of the program in 2015, and that is where we are now. It's still suspended, and no activity is going on.

The Mid-Atlantic Council over the last couple years has put a lot of time and effort into this, looking at what would redevelopment look like? They've held four workshops, industry workshops, and those were all virtual because of COVID. The Mid-Atlantic Council's Research Steering Committee has met at least three times that I know of.

They had their SSC's Economic Working Group involved, and provided some feedback as well. The RSA Framework was developed through the Research Steering Committee in these workshops, and they developed a standard goal for administration, enforcement, funding and research. Here are all the key elements of this program.

Here is kind of where the Commission is involved. Here is where the Commission comes into play, and what message and what are your thoughts collectively on where we go from here? The new framework that has been developed and kind of now is an old system and a new system that is kind of described. In the briefing materials that went out to the Board there is a table with two columns in it, old versus new.

In that table there are a number of things that will fall to the states, potentially, for states to address and reconcile. They are kind of in the red text that is up here. Vessel and sector participation, so how many vessels can be involved? Is 103 too many? Is that a reasonable number? Should it just be 10 vessels. What sectors, is it for-hire and commercial, or is just one or the other? Are there state and federal permit holders? Could they all be included and

participate? Is there a phase-in option, where you start small and go bigger over time, as we deal with enforcement issues? Do you want to limit the location of where landings can occur, time of the day where they are, certain dealers that can be involved in this?

These are all things that narrow down the complexity of the program, and make it more enforceable, and take out some of the loopholes and shenanigans that were going on last go around. You know the notion of putting state staff on vessels as observers came up. Third party auction, there was a suggestion that maybe ASMFC is a good group to administer that third party, which is a pretty significant amount of work.

The last bullet there, you know the greater the restrictions that are put on this program that equals less participation. Less participation equals less funding generated. If you have fewer people bidding or interested, you are going to generate less income. You know that diminishes the value of the program overall.

The Research Steering Committee of the Council came up with a consensus conditional recommendation. The recommendation recognized the value of the program, it produced science, and a lot of work still remains to be done, and details need to be addressed. Then the final one is really where the Commission comes in, you know concerns about state administration burden, and the cost benefit of the program.

This is my final slide, which is, you know what feedback does this group want to provide to the Mid-Atlantic Council on where to go from here? You know should the Commission support continued RSA redevelopment? Again, there is a lot of work ahead. Are there other recommendations and feedback to the Mid-Atlantic Council?

If the Commission says yes, let's continue redevelopment, and we support that. Certain species, are there only certain sectors? What are the funding options with third-party auction or not the third-party auction? How does this group want to

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engage with the Mid-Atlantic Council. I know it's a whole lot of questions. This group has talked about the Research Set-aside in the past. But the Mid-Atlantic Council is going to revisit this issue at their June meeting.

I think they are looking for pretty direct feedback on what the Commission thinks, and what the state's ability is to address all of these administrative and enforcement issues and burdens that we placed on them, should this process go forward. Happy to answer any questions, I know I was kind of the lightning round of stuff for Research Set-aside, but there is a lot here, and the Council is looking for some help.

CHAIR WOODWARD: All right, let's start off with Emerson and then I'll go to Dan, and then Lynn.

MR. EMERSON C. HASBROUCK: I don't have any questions, but if it's appropriate at this time I would like to make some comments. Thank you. I was involved significantly in the old RSA program, and I continue to be involved in the monkfish RSA program. I conducted four Mid-Atlantic RSA projects that were all very successful, provided good information for management. For most of those I just worked with vessels directly. In terms of one of the slides, less participation equals less revenue. That's not necessarily true. I worked with a small number of vessels each time, 10 to 12 vessels, and were able to work out things to get market value for those compensation landings.

In any event, redevelopment is not going to look like the past program. It can't. That's why the workshops were held. I participated in those workshops, so that a new program does not look like and does not have the problems of the old program. I would ask when you think about RSA, don't think about the old program, other than what were the issues that need to be changed and addressed.

That is what the workshop was going through and developing, and it still needs to be

developed. The output from the workshops, Bob, you didn't have a slide on it but you referenced it. It's in our meeting materials. Under Goal 2, is to ensure effective monitoring, accountability, and enforcement of RSA quota.

That goal addresses not all, but most of the problems that came up during the previous RSA program, so that is being addressed. If you look at the objectives in there, some of that is to provide support for administrative or law enforcement activities with the states, to improve the state's ability to revoke RSA fishing privileges, and several other things as well, to assist the states. That gets at a lot of those specific issues.

I guess the bottom line is a newly developed RSA program is not going to look like the old program. It's not going to have the problems of the old program. Otherwise, why is the Research Steering Committee going through that. They realize that they need to address those problems. I'm not sure where you want to go with this, Mr. Chairman, but if you want a motion, I'm prepared to make a motion at some point here. Thank you.

CHAIR WOODWARD: I think at this point, Bob is just seeking feedback from as many interested parties or potentially participating parties about their perspective on their ability to achieve success, I guess with this. Just hold on your motion, and we'll see what else folks have to say, so Dan and then I'm going to go Lynn and then Tom.

MR. McKIERNAN: My concern is I don't think we have enough time to actually cover this topic in what is time remaining. I participated in all those workshops, and I raised a lot of concerns. I personally don't know what the Research Set-aside Committee is thinking, in terms of what recommendations or what concerns we had that they are going to heed. Many of them are simple. The idea of selling fish to for-hire vessels was a colossal mistake, and it was completely unenforceable. The currency isn't compatible.

For-hire trips work on bag limits and size limits, and suddenly you have poundage, and it was completely

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unmanageable. As far as the auctions. To multitudes of vessels, it put a lot of burden on us, and I would say that the Mid-Atlantic Council gave the states the fluke fishery, the sea bass fishery, the summer scup fishery, and I think the success in RSA is when the federal government has a very simple permitting scheme and a letter of authorization scheme, where you can manage and monitor this. You can't effectively manage and monitor this when you've got scores and scores of boats trying to capitalize on this. Also, the summer flounder isn't worth what it was. Emerson is right in a lot of ways. The money isn't there on fluke that used to be there, nor on sea bass, with these quotas being so high. I would like to see maybe this continued until the August meeting, or maybe a special conference call or something, because I don't know what the Mid-Atlantic Council is thinking.

CHAIR WOODWARD: All right, I think that is a good point, and we are getting tight on time, and if this is a subject that is much more complex than our ability to have the kind of discussion we need, then maybe that is something we need to contemplate. How does that? Brandon, would you, kind of maybe give us a little idea on the Mid's timeline on this, maybe help inform our discussions on this?

MR. BRANDON MUFFLEY: Brandon Muffley; Mid-Atlantic Council staff. I mean we don't have a specific timeline. It's actually not going to be on our June Council meeting. We had thought we might put it on our August Council meeting, since we tend to meet jointly with the Commission, it's not with the Policy Board at that time, but at least a number of Commission folks may be at that meeting.

We were thinking about bringing an update back to the Council at that time. You know I think we, particularly me as the person sort of overseeing how we may redevelop the program, is understanding where the states are. As Bob had pointed out, you all play a critical role in the sort of operationalization of the RSA program, and where you all are at in regards to supporting,

either the continued work to redevelop it, or not. It takes a lot of work.

GARFO hasn't had an RSA program to administer in the Mid-Atlantic for several years now, so there is going to be a lot of sorts of thinking through how we develop this program, to make sure we can do it successfully. But if the states aren't willing to support the program, and sort of commit the resources, because there is not going to be a lot of resources to do it.

It's challenging to sort of step through all of that work that is going to need to be done. You know getting your feedback in regards to where you are at with the program, I think would be really helpful. I think the plan is to bring it to the August Council meeting, where you all may be there.

CHAIR WOODWARD: All right, thanks, Brandon. Just a comment and then I'll go back to the list here. I was just talking to Bob. As Dan suggested, maybe a webinar between now and the August meeting, with the states that are directly affected by this have a chance to more thoroughly discuss this, understand it, prepare them just to have a broader discussion at the August meeting.

If that sounds like a reasonable course of action, because we don't need to give this short shrift, but we are running out of time, and as Brandon said, this is very complicated. There are a lot of moving parts, and if the states can't fulfill their part of the relationship, then it's doomed to failure before it ever starts again. I think it's going to be important that we give this the attention it needs. With that, I'll go to Lynn and then to Tom, and then back to Jay-Mac.

MS. FEGLEY: I sure would like to learn more about this. Brandon answered some of my questions. You know the state of Maryland, I have no idea where we would find resources for something like this. It's just inconceivable to me, and I'm not sure I understand the mechanism.

Would the states be voluntarily participating, or would a Research Set-aside Program happen that

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was determined by somebody that it was going to happen, and then suddenly we would be committed, you know without really having much of a choice. You know the resources are going to be tough, and the resource is put up against the benefit, is something we would have to look really hard at.

CHAIR WOODWARD: Just for those that are virtual, I just want to make it clear, we're not going to take any public comment on this particular topic, unless we do have a motion, and I don't think we're moving in the direction of a motion at this point. Tom, and then I'll go to Jay Mac.

MR. FOTE: I have concerns. I mean I looked at it the last time we did it, and we were in more robust times. We basically had extra poundage. Now when you take 3 percent or 4 percent or whatever you do take from the stock, it means days at sea for a lot of the recreational sector, and the same thing with the commercial sector. There was not a lot of support in the recreational community after the debacles that are going on there. I haven't paid much attention to it, so I would be interested in being better informed on it. But I have real concerns over it.

DR. McNAMEE: I'll be quick, because it sounds like we're maybe going to come back to this, so I'll save the majority of my comments for that. But maybe I'll give you the highest-level comments. I'm more optimistic than most of the comments that you heard here. You know I saw the value of the program in our state.

Respectfully disagree with Dan on the recreational, at least the one that I know that happened. I see value in it. I do. I also felt the administrative burden, so I would like to see those things get sorted out as well. I'm interested in continuing the conversation, and maybe could offer a different perspective to it.

CHAIR WOODWARD: I think the plan moving forward would be to try to organize a webinar, provide adequate time for this to be more

thoroughly discussed, questions asked, more clarity, and then we can bring this back to the Policy Board at the August meeting, if that is satisfactory to everybody. Does that seem okay? I don't see anybody vigorously shaking their head no, so I'm going to assume that's good. Okay, thank you all. Next, we've got Dr. Drew with an Assessment Science Committee Report.

ASSESSMENT SCIENCE COMMITTEE REPORT

DR. KATIE DREW: Assessment Science Committee met last month to discuss a number of things, but the most important relevant to this Board is the Assessment Schedule. Current benchmark schedule, we have eight benchmark assessments scheduled between 2023 and 2025, which are circled in red on this schedule.

We're not even counting the ones that the Northeast Fisheries Science Center and the Southeast Fisheries Science Center are doing, even though some of our Technical Committee members do participate on those work groups. There are a lot of benchmark assessments scheduled for the next three years, and we also have six assessment updates scheduled for this time. This does not even include the number of sorts of additional follow up tasks that are going on for eel and horseshoe crab and striped bass in between these assessments.

The workload over the next few years is pretty intense from the stock assessment side. The Assessment Science Committee recommended some changes to this schedule, in order to help balance some of the workload. The two key things we're highlighting here that would need to be approved by the Policy Board, would be to change the sturgeon and menhaden single-species assessments that are currently down as benchmarks to assessment updates.

Menhaden Board already got this information, and were basically fine with it. For menhaden, there are not changes to the model plan, the single species model, the BAM is a solid, well-developed model that has been peer reviewed multiple times, identified any new data sources. We're not planning

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any new changes to the data or the model that would warrant a benchmark.

Doing an update instead of a benchmark would reduce the workload for the TC and SAS, who overlapped significantly with the ERP Work Group, as well as staff and the Peer Review Panel, who last time specifically asked that we not (cut out) because it's a lot of work to produce that and to review that. By going to an update, it would create more time and energy to be directed towards the ERP, and the ERP Assessment would remain a benchmark.

Sturgeon, the 2017 benchmark assessment recommended an update in five years and a benchmark in ten years. We had it on the 2022 schedule, and that got postponed. We're kind of in between the timeline for an update and a benchmark right now, and the TC after reviewing the research recommendations and progress on those, recommended doing an update in 2024 to allow more time for existing projects to be completed.

We would do an update this year, spilling into finishing next year, and the TC would sort of recommend when we would do a benchmark, based on the status of those research projects and how the update went at the end of that. Those are the two major changes that would need to be approved by the Policy Board. I'm also going to highlight something that ASC did not talk about, but the Board should probably be aware of, which is that the river herring assessment, which is ongoing right now.

The SAS recommended pushing the completion of that assessment back, basically one meeting cycle. Originally, we were going to try to get it peer reviewed in August of this year, and present it to the Board at annual meeting in October of this year. But based on sort of progress, we would like to now have this peer reviewed in late November, early December, and presented to the Board in February. It would still be peer reviewed and completed in 2023, but the Board would not receive the results until 2024.

The River Herring Board is not meeting this meeting cycle, so we wanted to provide an update to the coastwide board of the Policy Board, just to get that on everybody's records. But the bigger change is the change to the sturgeon and the menhaden going from a benchmark to an update for those, so thanks, and I'm happy to take any questions.

CHAIR WOODWARD: All right, go ahead, Bill.

MR. HYATT: Just a quick question. Just curious of the thinking on tautaug. I just see that it's identified for an update in '24, but it might not be updated in '24. I don't see anything else schedule through '30 for it, and my recollection is it just sort of squeaked through in a couple of regions of getting out of overfished at the last update.

DR. DREW: I'll be honest. When we brought this to ASC and the workload issue, we didn't even count tautaug, because it only has little asterisks there on that schedule, and honestly, we weren't even thinking about that as something to contribute to this workload issue. Obviously, it would be additional work.

The thing about tautaug is it's actually four stock assessments, because it is four regions. ASC did not specifically talk about this. I would imagine that sort of the recommendation would be not to add any more assessments to the next two to three years. I think, you know we could definitely come back to that in 2026, and do an update of that at that point.

But I think that would probably something we would have to schedule in the future, in a few years, to get that on the schedule, without overburdening everybody else. But it's definitely something I think on our current radar for a future, that we want to make sure we don't let that slide too far.

CHAIR WOODWARD: All right, Eric.

MR. REID: At this point we spent a lot of time talking about modifying gear and maybe time-area closures for Atlantic sturgeon, so what would any change in the timeline for Atlantic sturgeon do to those pending regulations?

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DR. DREW: We're still going to complete the update next year. I think, so we would have some updated information on abundance and mortality, trends in abundance and mortality. I think it should not, well I don't want to speak to that group, in terms of whether that aligns or not. But I don't think doing a benchmark would necessarily provide any more different information than an update would at this point.

CHAIR WOODWARD: Any other questions? All right. What we need now is Board approval of the schedule, as presented by Dr. Drew. Tom Fote.

MR. FOTE: Make the motion to approve the ASMFC Stock Assessment Schedule as presented today.

CHAIR WOODWARD: We have a motion by Tom, second by Mel Bell. Any discussion? Justin.

DR. DAVIS: Just a quick question. By approving this motion, the issue of the tautaug stock assessment is still unresolved as to when that will next happen?

DR. DREW: Yes, it's still going to get the little asterisks, which is sort of like scheduled but not official. If the Board would like to make a recommendation on that, I guess they could, to officially take it off or bump it to another year. But ASC has not dealt with that we could come back to that.

CHAIR WOODWARD: All right, we have a motion and a second. Any opposition? Any further discussion on the motion? Any opposition to the motion? Seeing none; anybody online opposed? All right, no opposition, so the motion carries. Thank you. Next up we've got Kurt Blanchard giving us a report from the Law Enforcement Committee.

LAW ENFORCEMENT COMMITTEE REPORT

MR. KURT BLANCHARD: The following is a report on the activity of the Law Enforcement

Committee since the last reporting period. The LEC has been successful in and have participated in the following deliberations. We have worked with Ms. Toni Kerns on implementing a new membership orientation process., with replacement of four Committee members.

We have conducted outreach to new members with guidance on the roles and responsibilities of the LEC. We received very positive feedback in this effort. We participate in discussion in reference to the current tautaug tagging study, as well as collaborating with the Striped Bass Plan Review Team, with new law enforcement compliance reporting language.

The LEC convened a business meeting on May 2, 2023 to address the following topics. We conducted a review and update of the guidelines for resource managers on the enforceability of fisheries management measures dated August, 2015. This review by the LEC helped to identify new management measures, as well as considering the relevance of previous management measures.

The LEC established a subcommittee to finalize this document, and the goal is to forward the final draft to this Board for approval in 2023. The LEC received an update from the ACCSP on the status and implementation of the VMS program in the American lobster fishery, as well as receiving a presentation about, (and this is going to be a mouthful), National Association of Conservation Law Enforcement Leadership Academy, and the International Conservation Chief's Academy Wildlife Officer Exchange Program.

This program is of interest, as the Chair of the LEC was invited to participate in this program, in his role as a state officer, and then a clear graduate. The exchange was with the ICCA graduate from a fisheries compliance and enforcement agency of police. This shared experience helped to increase international collaboration and individual capacity to address wildlife crimes globally.

This next section are some notable cases. In the past I've been asked a number of times, people want to know what the Law Enforcement is doing, and they

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never hear back from us, an occasional report. I just wanted to highlight a few. The first is the one you saw last night in the Annual Awards of Excellence. It was the state of New York with the seasonal striped bass pulse operation, over three years along the Hudson River during the annual migration.

The second is a NOAA/U.S. Coast Guard conducting enhanced enforcement of the Right Whale speed rule, which state law enforcement part is along the Atlantic coast, and as well as the South Carolina. This is a cute one. I shouldn't say cute, but Operation "Sea Fluke", a catchy name. It's the South-Eastern Area Flounder Liberation from Unlawful Killing and Exploitation. This was a wide-ranging investigation into the illegal commercial harvest and sale of flounder, and other saltwater finfish species. This three-month investigation led to over \$48,000.00 in fines against four separate offenders with additional license sanctions. Mr. Chair, thank you, and I'm available for any questions.

CHAIR WOODWARD: Thank you, Kurt. Any questions for Kurt? Tom.

MR. FOTE: One of the questions I would like to ask is, we passed an emergency action yesterday on striped bass that will basically be 180 days, so we have to change the regulations for 180 days, and if we don't renew it, it would basically go back to the regulations. I asked my law enforcement about it.

I guess we should have asked the Law Enforcement Committee what enforcement problems you'll be having. I would like to have a report on that, maybe at the next meeting that we could discuss concerns with there. I think it's important. From the wording I got from the head of New Jersey Law Enforcement was not happy on this. All our regulations are published, and they are out in the New Jersey Registry and in the state documents.

MR. BLANCHARD: We would be happy to review that, Tom, we have similar concerns. We're going to have to wait and see how the next 180 days goes, and what the real impact is to law enforcement.

CHAIR WOODWARD: All right, any other questions? Thanks, Kurt. Next, we're going to get a brief update on East Coast Climate Change Scenario Planning Initiative.

UPDATE ON EAST COAST CLIMATE CHANGE SCENARIO PLANNING INITIATIVE

MS. KERNS: In the interest of time, I will go very fast. We did have the Summit meeting back in February for the East Coast Climate Change Scenario Planning, which is looking at how climate change is affecting our management of the Atlantic coastal fisheries. This meeting is with all of the three Councils, as well as the Commission and NOAA Fisheries. Core Team has written a report about the meeting, and then we have pulled together a list of potential actions that will be reviewed by the Northeast Regional Coordinating Council next week.

Those potential actions try to list out different ideas that came up at the workshops, as well as other ideas that we heard from both the Commissions and the Councils. The NRCC will kind of give us some direction on that draft action plan, and then at the August meeting I will have a very thorough report on that draft action plan, the summit, and the direction that the NRCC is giving.

CHAIR WOODWARD: All right, thanks, Toni, any questions for Toni on that? Yes Sir, Senator Watters.

SENATOR WATTERS: Yes, I wanted to thank all for the great work on this. Just speaking as a legislator, and given the timing of the August meeting that you're going to have. Has there been any thought to what interface that you might have, in terms of the policy issues that arise, and potential legislation that legislators would have to introduce in their individual states?

MS. KERNS: For any of the possible actions that could need legislative changes, and most of those are

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legislative changes to the Magnuson-Stevens Act. Those are sort of issues that the Core Team has identified to say, this may have a long-term change needed. That is what we've sort of pointed out in this draft action plan.

That the NRCC would need to think about and discuss those, and then give better direction. I mean the NRCC is not a decision-making body. Any potential actions that move forward need to go to the Commission, the Council and NOAA Fisheries to make those decisions on, so kind of have advice that way.

CHAIR WOODWARD: All right, any other questions for Toni? All right, seeing none we'll move along. We did not have any noncompliance findings, thankfully.

OTHER BUSINESS

CHAIR WOODWARD: We do have three Other Business items that hopefully we can dispense with quickly. One is related to lobster. I'm going to let Toni explain that.

MS. KERNS: I'll pass it over to Jason as the Lobster Board Chair to read the motion that the Lobster Board made to the Policy Board.

DR. McNAMEE: Okay, to read the motion into the record here: On behalf of, no that's not it.

CHAIR WOODWARD: All right, we'll hold off on that a minute, while that gets disentangled. I'm going to call on Jim Gilmore.

NEW YORK TAUTOG

MR. GILMORE: New York is still experiencing an issue with our Tautog Tagging Program, which I think you talked about back at the October meeting. Specifically, we're still getting reports of 10 to 25 percent mortality, lesions, damage to the fish, whatever. But obviously there seems to be mostly a problem in New York.

Going forward, we've got survey information that we've done with the help of the

Commission, where we'll be looking at the data. Is it a capacity issue with storage tags, is it water quality issues, those types of things. But the one thing that we wanted to bring up is that we are going to reevaluate the tags. The original study was up through Stonybrook.

The Commission is helping with that, but the one question that I wanted to raise is, under the guidance it required an opercula tag, and we are going to look at other options on a tag that may not be an opercula tag, so the states that are currently in the tagging program, we wanted to raise this.

Is there any issue with that, because if it turns out it is a tagging problem, that could change things. The question right now is again, is there any objection or any issue with us pursuing a non-opercula tag, and I'll leave it at that. Toni may follow up with a little bit more detail, because I probably missed some things.

MS. KERNS: Tautog has guidelines for what type of tag to use and where the tag should be put in the fish. The state is just asking to put the tag somewhere else for just this year. But it's still using the same tag. The TC is going to discuss whether or not it would be effective to put it somewhere else, making sure that it doesn't damage the fish. The reason for the ask is the damage that the tag is currently doing as reported by some New York fishermen.

CHAIR WOODWARD: All right, so response to that, concerns about what New York is proposing to do? Bill.

MR. HYATT: Just a question, because I'm not sure I'm hearing this correctly. Is the ask to do an evaluation of tags, different type of tags in different locations, or is the ask to implement the program differently?

MS. KERNS: The ask is to implement the program differently. Just as a reminder, the guidelines are recommendations they are not requirements.

CHAIR WOODWARD: Justin.

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DR. DAVIS: Just briefly a comment on this. I don't know if it was last year or the year before, we sort of asked some questions of the Law Enforcement Committee about this program, and they gave us some feedback. Maybe this is a better discussion at the Tautog Board, but I would be interested in going back to the Law Enforcement Committee two years later here, and essentially asking how has this program aided with enforcement?

Because the intent of this program was to assist in cutting down on unlawful tautog harvest. I think it was well intentioned. I would like to learn now that we've implemented it for some number of years that it's doing some good, and it's assisting enforcement. If we find out that it's not, I think this program is placing the administrative burden on agencies, certainly on my program, which is very short staffed.

I just feel like if this program is not serving the intended purpose, can we find out if there are ways to modify it so it could, or should we decide that it was a well-intentioned effort but it didn't work out the way we thought it would and abandon it? I don't know how it would be most appropriate to reach out to the Law Enforcement Committee and ask for that input.

MS. KERNS: The Tautog Board will receive a review of the program, again in August, and so we can make sure that we have another discussion with Law Enforcement prior to, specifically asking if they have seen better compliance.

CHAIR WOODWARD: Go ahead, Dan.

MR. McKIERNAN: Yes, I would be interested to hear from New York Law Enforcement, because I think the state of New York is sort of the hub of much of the tautog distribution in commerce, a lot of fish. I would be really curious to hear their take, because they are going to have to inspect fish from many states, and if one state deviates from the location of the tag. If it's not a problem

for New York Law Enforcement then I would feel more comfortable about it.

MS. KERNS: I think we can try to do that, Dan. As a reminder, this program was put in place because of the large volume of black-market fish that were being put into the market by recreational fishermen, not the commercial fishermen. We were trying to find a way to prevent those recreational fish making it into the commercial market.

CHAIR WOODWARD: Jay.

DR. McNAMEE: Yes, I like those suggestions here to kind of check back in, because I'm not super comfortable otherwise. I mean there was a lot of effort that were put into this particular tag. You know I think other tags were considered, and this one is what we kind of defaulted to. But as long as things are happening in an organized way, and we're getting feedback, I'm comfortable with kind of moving forward here, but I'm not otherwise.

CHAIR WOODWARD: Again, is your question answered? Okay. Sometimes it's kind of hard to discern whether the question gets answered, isn't it? We're going to go back to Jay on the lobster.

LOBSTER BOARD MOTION

DR. McNAMEE: That one looks right. I'll read the motion into the record for the Board. **On behalf of the American Lobster Board, we recommend to the ISFMP Policy Board to approve the creation of a subcommittee to engage Canada's Department of Fisheries and Oceans to discuss transboundary issues related to the importation of lobster as it relates to the different minimum gauge sizes in the two countries.**

The subcommittee shall be made up of up to four members of the Lobster Management Board, who have license holders that fish in Area 1 and/or Area 3, one representative from the National Marine Fisheries Service, and the Commission's Executive Director or his designee.

CHAIR WOODWARD: All right, this is a Board motion, so it doesn't need a second. We can have discussion on it. Mike, saw your hand.

MR. RUCCIO: The past 48 hours has been a flurry of activity on how to best engage with our northern counterparts, so I have a substitute motion to offer, if that would be appropriate at this time.

CHAIR WOODWARD: Okay.

MR. RUCCIO: I as well will read this into the record, and then if we need a second on this and I get one then I'll give some rationale for it. **This is a motion to substitute to request the Policy Board create a subcommittee to be made up of up to four members of the American Lobster Management Board who have license holders that fish LCMA 1 and/or 3, and at least one representative from National Marine Fisheries Service and the Commission's Executive Director or his designee.**

The Subcommittee, prior to the engagement with parties in Canada who have an interest in lobster management and commerce, shall discuss and develop an approach on how best to find solutions that would be beneficial to both the sustainability of the lobster stock and commerce between the countries.

CHAIR WOODWARD: All right, so we have a motion. This does need a second. I have a second from Pat Keliher. Discussion on the motion, questions. Cheri, questions? Seconding, all right. Mike.

MR. RUCCIO: Just give some very brief rationale, because I know we're pressed for time. The challenge is there is clearly a need to have these conversations with Canada. Being frank, I think it's in Canada's best interest to have these conversations with us, and the way the previous wording was suggested that the Commission and/or state would directly engage with DFO.

While that is not an absolute breach of protocol, typically the preference is for federal level conversations between National Marine Fisheries Service and DFO, so this would keep basically that same intent, have a small group to talk about, what is it that we want to talk about? How do we message this through? There are varying levels that that can occur with.

My suggestion would be that we work with the Greater Atlantic Regional Fisheries Office, as they are on point with management of lobster. They can speak directly with DFO at the behest of the Commission and the states that are interested in this issue. If for whatever reason that is unsuccessful, in terms of Canada not engaging fully, we have a more formal bilateral agreement with Canada, meet regularly with them at a higher level of government engagement.

There are varying degrees. My preference would be that as the Committee works, hopefully they can find kind of the lowest level at which to have these conversations, and try to forge out some conversations. But there are other options that move through, and escalate all the way up to Department of State. I think that is all the work the Subcommittee can do, but wanted to kind of tweak the language, so that we're trying to preserve the process and kind of the decorum that we've typically had in communications with our counterparts at the federal level in Canada.

CHAIR WOODWARD: Any questions? Pat.

MR. KELIHER: I just wanted to thank Mike Ruccio for working with me yesterday to refine this language, and I appreciate the partnership from him and his counterparts to try to find a way forward on this issue. This is critically important conversations that need to happen. I was prepared to just work with the states to engage, but I do think it's important that National Marine Fisheries Service is part of this conversation, and hopefully we can do this in a way that keeps the state department out of this conversation. Thank you very much.

CHAIR WOODWARD: Any other questions or discussion on the motion? Jeff.

MR. BRUST: Just a question on authority here, what the Subcommittee's authority is. We're asking them to develop an approach, and then are we leaving it to them to determine, are we giving them the discretion to determine that that approach is appropriate, or does it come back to Policy Board or the Lobster Board? Then, regardless of that answer, are we also giving them, once that approach is developed, are we then allowing them to engage with Canada or is that a separate action?

CHAIR WOODWARD: I can't answer that so somebody else better. A lot of finger-pointing going on, that doesn't bode well, does it?

MR. BRUST: If I may, Mr. Chair. I'm not opposed to this. I just want to make sure we know what authority the Committee has.

CHAIR WOODWARD: No, it's a good question, I think it's relevant, and I think it's important. Mr. Keliher.

MR. KELIHER: With all subcommittees, they usually report back to the Board and Policy Board, so that certainly would be the intent of the action here. I think because this Committee is going to engage with Canada, that is why I thought it was important to include the Commission's Executive Director as a designee as part of this, to flag any issues that he thought would be important to come back to this Policy Board before any action was taken. While not explicit, I was trying to create those safeguards, Jeff, that would address those issues.

CHAIR WOODWARD: Any further discussion, questions? **Any opposition to the motion? Seeing none; motion passes by unanimous consent.** Thanks. One last thing, Shanna, transfer letters.

PRACTICES FOR DOING TRANSFER LETTERS

MS. MADSEN: I'm going to make this super-fast, because I'm starting to get into hangry territory. I have been doing a lot of transfer letters, I think I know a lot of us have been. It gets really unclear for us to know who is supposed to send the letter first, who is supposed to send the letter of acceptance? Are there three letters, are there two letters? Where do the letters go to?

I was just hoping to bring to the Policy Board that maybe it would be a great idea if we came up with some sort of form that was really easy to fill out that said, here is the species that I intend on transferring and here it is between the two states, and hear what the stipulations are of that. I know that that might require some later discussion with our federal partners, because I recognize that they are also included on those transfer letters. But just something to make this a little bit more clear, concise and efficient, I think would be really useful for all of us.

EXECUTIVE DIRECTOR BEAL: Yes, just really quickly. Thanks, Shanna, for bringing that up. There are a lot of moving parts on our end to respond to all those letters as well. I don't recall the exact wording within some of the FMPs, if it says a letter will go from this state to that state, and if it specifically says a letter or if it just says in writing. I think a form would suffice for that, but if it does specify a letter has to be written. Let us go back and look at what the wording is, and we'll see if we can streamline that a little bit.

CHAIR WOODWARD: Any other business? Yes, Bob has one thing.

EXECUTIVE DIRECTOR BEAL: Very quickly. Yes, I just wanted to introduce the Commission's newest staff member, back in the back of the room, Simen Kaalstad is going to head up the Commission's Habitat Program. He'll be heading up the Atlantic Coastal Fish Habitat Partnership as well. He's been here for, I don't know, almost a month now. He should be up and running and a lively veteran at this point. If you guys can all introduce yourself to Simon, he's in the back of the room, so we just wanted to

welcome him here and introduce you to everybody. Thank you, Mr. Chair.

ADJOURNMENT

CHAIR WOODWARD: Thanks, and welcome, Simen to the three-ring-circus that is the Atlantic States Marine Fisheries Commission. All right, with no other business I'll entertain a motion to adjourn. How about a second? I assume there is no opposition, so we'll stand adjourned.

(Whereupon the meeting adjourned at 12:45 p.m. on Wednesday, May 3, 2023)

**The Center for Conservation Biology
William & Mary**

Advancing conservation through science

The Center for Conservation Biology documents unprecedented osprey nest failures within the lower Chesapeake Bay

For release: July 14, 2023

Williamsburg, VA – In 2023, The Center for Conservation Biology has documented the highest rate of osprey nest failure ever recorded within the lower Chesapeake Bay. Only 17 of 167 nests monitored during the season produced any young. The nesting population produced only 21 young resulting in a reproductive rate of 0.13 young per pair. This rate is below that recorded during the height of the DDT era. In order for the population to sustain itself, pairs should produce 1.15 young per pair.

The poor reproductive performance documented during 2023 is a trend that has been observed for the past fifteen years. In Mobjack Bay, productivity peaked during the 1980s and has declined to the present day. Researchers within The Center believe that the ongoing decline in young production is driven by overharvest of Atlantic menhaden. Forage fish such as menhaden, anchovy, sardine, capelin and herring play significant roles in marine ecosystems throughout the world. These small schooling fish are responsible for transferring energy from plankton to higher-level predators such as osprey. When forage fish are overharvested the marine food web is broken and higher-level predators suffer.

Within Mobjack Bay young osprey are starving in nests because the decades-long overharvest of menhaden has caused local depletion. Within osprey pairs, males are responsible for hunting and providing fish to broods. Between 1985 and 2021, the rate of menhaden captures by male osprey declined from 2.4 fish per 10 hours to only 0.4 fish per 10 hours, a decline of more than 80 percent. Although osprey do feed on other fish species within the lower Chesapeake Bay none of these species offer comparable nutrient content. Atlantic menhaden is the keystone species that osprey depend on during the nesting season.

An experimental study conducted by Center biologists during the 2021 nesting season supplemented diets of osprey broods by providing menhaden and demonstrated that reproductive rates could be driven back to sustainable levels. On a broad scale, recovery of reproductive rates will require the restoration of menhaden stocks. Menhaden harvest policy has become a political mine field with special interests on all sides. Osprey within the lower Bay are increasingly demonstrating that our choices about harvest policy are having consequences for the broader Chesapeake Bay ecosystem.

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Atlantic JAI and Gulf LPUE time series show clear statistically significant predictability. More importantly, forecast skill increases with θ indicating the presence of deterministic nonlinear behaviour ($p < .05$), and that any environmental effects may be convolved with stock-recruitment dynamics. The nonlinear signal is less strong for Atlantic LPUE ($p < .2$) and Gulf JAI. In the latter case, baseline predictability is very low, indicating that the time series itself may not be very predictable.

Overall, year-to-year changes in both Gulf and Atlantic menhaden abundance show predictable nonlinear dynamics. However, for the Gulf, this is only recoverable from LPUE. The apparent lack of signal in the Gulf JAI time series could be due to (i) limited time-series length, (ii) too much uncertainty or incompleteness of the measurements or (iii) strong stochastic forcing.

3.2 Question 2: Is there evidence of interaction between stock and recruitment?

Next, we look for interactions between stock and recruitment by using convergent cross-mapping (CCM). Essentially, if stock and recruitment are dynamically related to each other, there should be a correspondence (mapping) between the attractors reconstructed from each that can be used predictively. Namely, if stock has a dynamic effect on recruitment, then the recruitment time series contains the signature of the stock dynamics, and so it should be possible to predict stock by cross-mapping from recruitment. As expected, CCM identifies clear and strong coupling between the JAI and LPUE time series of each species. In the Atlantic (Figure 5a), there is evidence of causation in both directions: stock affects recruitment, recruitment affects stock. For the Gulf (Figure 5b,c), there is evidence that stock affects recruitment, indicated by cross-mapping from JAI to LPUE. LPUE, however, cannot predict JAI at 0 time lag. Additionally, the effect of stock on recruitment is much clearer when Texas data are included ($\rho(L_{\max}) = 0.5x$) rather than excluded ($\rho(L_{\max}) = 0.2x$). That is to say, the JAI appears to contain much more information about the stock dynamics when it is constructed with Texas data. This justifies focusing on the JAI with Texas in the remaining analysis.

ASMFC Atlantic Menhaden Board Adopts Ecological Reference Points

From: Tina Berger <tberger@asmfc.org>
Cc: ALL ARLINGTON STAFF <allarlingtonstaff@asmfc.org>
Date: Thu, Aug 6, 2020 5:42 pm

OR IMMEDIATE RELEASE, AUGUST 6, 2020
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ASMFC Atlantic Menhaden Board Adopts Ecological Reference Points

Arlington, VA – The Atlantic States Marine Fisheries Commission’s Atlantic Menhaden Management Board approved the use of ecological reference points (ERPs) in the management of Atlantic menhaden. By adopting ERPs, the Board will be accounting for the species’ role as an important forage fish. The 2020 Atlantic menhaden benchmark assessments, which were endorsed by an independent panel of fisheries scientists, used the Northwest Atlantic Coastal Shelf Model of Intermediate Complexity for Ecosystems (NWACS-MICE) in combination with the single-species model (Beaufort Assessment Model or BAM) to develop Atlantic menhaden ERPs by evaluating trade-offs between menhaden harvest and predator biomass.

“The Board took another important step in managing Atlantic menhaden in a broader ecosystem context,” stated Board Chair Spud Woodward of Georgia. “It’s the culmination of more than a decade of effort by state, federal, and academic scientists to develop ERPs that reflect menhaden’s role as a key food source for several fish species. These ERPs are not a silver bullet to resolve all our fisheries management issues, and the models on which they are based will continue to evolve. However, the use of ERPs for menhaden management will enhance the success of predator management by providing a more abundant forage base for rebuilding predator fish populations. It is important for us to keep those rebuilding efforts on track through the use of proven management tools such as controls on fishing mortality.”

In February and May, the Board tasked the ERP Work Group with additional analyses to explore the ERPs sensitivity to a range of ecosystem scenarios (different assumptions about fishing mortality for other key predator and prey species) and Atlantic herring biomass. These analyses suggested the original scenario (ERP target and threshold outlined below) most closely approximates short-term conditions for the ecosystem. As a result, the ERP Work Group recommended using the original scenario ERPs presented in the assessment report. Moving forward, the ERPs for Atlantic menhaden are:

ERP target: the maximum fishing mortality rate (F) on Atlantic menhaden that sustains Atlantic striped bass at their biomass target when striped bass are fished at their F target

ERP threshold: the maximum F on Atlantic menhaden that keeps Atlantic striped bass at their biomass threshold when striped bass are fished at their F target

Atlantic striped bass was the focal species for the ERP definitions because it was the most sensitive predator fish species to Atlantic menhaden harvest in the model, so an ERP target and threshold that sustained striped bass would likely provide sufficient forage for other predators under current ecosystem conditions. For the development of the ERPs, all other focal species in the model (bluefish, weakfish, spiny dogfish, and Atlantic herring) were assumed to be fished at 2017 levels.

In addition to adopting ERPs, the Board discussed setting fishery specifications for 2021-2022. In 2017, the Board set the total allowable catch (TAC) at 216,000 metric tons for 2018-2019, and then maintained that TAC for 2020 with the expectation that it would be set in future years using ERPs. With the adoption of ERPs, the Board tasked the Atlantic Menhaden Technical Committee to run a projection analysis to provide a variety of TAC scenarios and their risk of exceeding the ERP F target to compare in setting specifications for 2021-2022. The Board will review the projection analysis at the Annual Meeting in October and then determine a TAC for 2021-2022. As stated in Amendment 3, if a TAC is not set at the Annual Meeting, the TAC from the previous year will be maintained.

For more information, please contact Kirby Rootes-Murdy, Fishery Management Plan Coordinator, at krootes-murdy@asmfc.org or 703.842.0740.

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PR20-15

The press release can also be found here - http://www.asmfc.org/uploads/file/5f2c7891pr15AtlMenhadenERP_Adoption.pdf

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Sustainable and Cooperative Management of Atlantic Coastal Fisheries

SHARE ON

They don't look at the two seminal species being reproduced by larvae. They don't know them, showed to the real world as the E.P. definition requires. See page 12

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Introduction

Assessment and Management History

Current Management Challenges and Future Work

The Path to an Ecosystem Approach for Forage Fish Management: A Case Study of Atlantic Menhaden

Leela not clear

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addition? reply?

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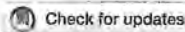
from BAM. All focal species had recently undergone single-species stock assessments, which provided life history, landings, and index data through 2017, as well as estimates of fishing mortality and population size. Newer data were not available for all of the groups included in the full NWACS EwE model; as a result, inputs for those groups were extrapolated from the terminal year of 2013.

The ERP WG evaluated the five ERP models based on their performance (i.e., residuals, sensitivities, and other diagnostics), their strengths and weaknesses, and their ability to inform the fundamental ecosystem management objectives (Buchheister et al., 2017a,b; McNamee, 2018; Uphoff and Sharov, 2018; Nesslage and Wilberg, 2019; Chagaris et al., 2020). The ERP WG ultimately recommended using the NWACS-MICE model rather than the other four for two reasons. First, the EwE framework used by the NWACS-MICE model was the only approach that could address both the top-down effects of predation on Atlantic menhaden and the bottom-up effects of Atlantic menhaden on predator populations, which were required to evaluate the key tradeoffs between Atlantic menhaden harvest and predator needs that were central to the identified ecosystem objectives. Second, the NWACS-MICE implementation was less data-intensive than the full NWACS model, which reduced some of the uncertainty associated with modeling the data-poor predators and prey in the full model. This meant the NWACS-MICE model could be updated more quickly and efficiently, on a timeframe that met manager's needs. Comparisons of the full and MICE versions of the NWACS model indicated that the NWACS-MICE model included the fish predators most sensitive to the menhaden population. Striped bass was the most sensitive fish predator to Atlantic menhaden harvest in both models. In the full NWACS model, nearshore piscivorous birds were also sensitive to Atlantic menhaden F , but their response was similar to striped bass over the range of scenarios explored by the full model (Southeast Data Assessment and Review [SEDAR], 2020b). This choice was consistent with a growing body of literature that has recommended models of intermediate complexity (i.e., MICE) for ecosystems as representing a compromise between complexity/realism and uncertainty for use in management (Plagányi et al., 2014; Collie et al., 2016; Punt et al., 2016). Specifically, the ERP WG recommended using the NWACS-MICE in conjunction with the single-species assessment model, BAM; the NWACS-MICE model would provide strategic advice about the trade-offs between Atlantic menhaden fishing mortality and predator biomass to set reference points, while the single-species model would be used to provide short-term tactical advice about harvest strategies to achieve the ERP F target (Chagaris et al., 2020; Southeast Data Assessment and Review [SEDAR], 2020b). The ERP report was peer-reviewed with the single-species assessment in 2019, and the ERP WG's recommended tool was deemed acceptable for management use by a panel of independent experts (Southeast Data Assessment and Review [SEDAR], 2020b). The peer-review panel also recommended the continued development of the alternative models going forward.

Current Management

The development and implementation of ERPs for Atlantic menhaden was a lengthy process (Figure 4 and Table 1), but in August 2020, ASMFC adopted the approach from the ERP WG for management use. The ERP target was defined as the maximum F on Atlantic menhaden that would sustain striped bass at their biomass target when striped bass were fished at their F target. The ERP threshold was defined as the maximum F on Atlantic menhaden that would keep striped bass at its biomass threshold when striped bass was fished at its F target. For both reference points, all other species in the model were fished at their *status quo* (i.e., 2017) F rates. Striped bass was the focal predator species for this analysis because it was the most sensitive to Atlantic menhaden F in both the NWACS-MICE and the full NWACS models. Thus, levels of Atlantic menhaden F that sustain striped bass should also sustain piscivorous birds and less sensitive predators, in the absence of significant disruptions to the ecosystem (Southeast Data Assessment and Review [SEDAR], 2020b). With these ERP targets and thresholds, the Atlantic Menhaden Management Board reviewed projections from the single-species model, BAM, and set a quota for 2021 and 2022 of 194,400 mt, a 10% decrease in the quota from 2020.

FIGURE 4



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Food supplementation increases reproductive performance of ospreys in the lower Chesapeake Bay

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The Atlantic States Marine Fisheries Commission (ASMFC), the governing body responsible for managing fisheries on the U.S. East Coast, formally adopted the use of Ecological Reference Points (ERPs) for Atlantic menhaden, *Brevoortia tyrannus*. Scientists and stakeholders have long recognized the importance of menhaden and predators such as ospreys, *Pandion haliaetus*, that support the valuable ecotourism industry and hold cultural significance. Landings in the reduction fishery are at their lowest levels and menhaden is facing potential localized depletion. Mobjack Bay, located within the lower Chesapeake Bay, has been a focus of osprey research since 1970 and represents a barometer for the relationship between osprey breeding performance and the availability of their main prey, menhaden. Since local levels of menhaden abundance were not available, we conducted a supplemental menhaden feeding experiment on osprey pairs during the 2021 breeding season. Our main objective was to determine if the delivery rate of menhaden had an influence on nest success and productivity. Nest success ($\chi^2 = 5.5$, $df = 1$, $P = 0.02$) and productivity ($\beta = 0.88$, $SE = 0.45$, $CI = 0.049, 1.825$, $P = 0.048$) were significantly higher within the treatment group. Reproductive rates within the control group were low and unsustainable suggesting that current menhaden availability is too low to support a demographically stable osprey population. Menhaden populations should be maintained at levels that will sustain a stable osprey population in which they are able to produce 1.15 young/active nest to offset mortality.

KEYWORDS

osprey, *Pandion haliaetus*, menhaden, *Brevoortia tyrannus*, localized depletion, ecological reference points, food supplementation

1 Introduction

World fisheries landings since the late 1980s have been steadily declining (Pauly and Zeller, 2016, FAO, 2020). With mounting concern over the state of our fisheries, management strategies have shifted focus from single-species to ecosystem-based objectives (Pauly et al., 2008). This style of management attempts to integrate ecological,

economic, and social factors to secure and protect the sustainability of our fisheries and the ecosystems within which they reside (Einoder, 2009). Thus, United States federal policy firmly reinforces the implementation of Ecosystem-Based Fisheries Management (EBFM) which is an approach that considers trophic interactions and aims to promote the health and resilience of the ecosystem (McLeod and Leslie, 2009; Link, 2010, NMFS (National Marine Fisheries Service), 2016). Apex predators are essential indicators within this management approach and may provide more sensitive measures of changing fish populations because of their dietary dependencies (Furness, 1982; Diamond and Devlin, 2003). Monitoring fish-eating bird populations may be both more cost effective and better suited to the problem of understanding fish populations within an ecosystem (Cairns, 1988). Bird metrics may play an increasing role in the assessment of prey availability, especially in areas where conventional fisheries data are insufficient (Cairns, 1988). Bird populations may serve as an early warning system for changes in fish populations that have ecosystem implications (Kabuta and Laane, 2003; Cury et al., 2005).

The Atlantic States Marine Fisheries Commission (ASMFC), the governing body responsible for managing fisheries on the U.S. East Coast, formally adopted the use of Ecological Reference Points (ERPs) for Atlantic menhaden, *Brevoortia tyrannus*. Historical estimates of menhaden were limited and the harvest effects did not produce sufficient information on important predator species. Therefore, the ASMFC developed an interest in establishing ERPs to set quotas and evaluate menhaden's status and role as a forage species (Drew et al., 2021). Scientists and stakeholders have long recognized the importance of predators, such as bottlenose dolphins, *Tursiops truncatus*, and humpback whales, *Megaptera novaeanglia*, that support a valuable ecotourism industry and hold cultural significance (Gannon and Waples, 2004; Glass and Watts, 2009; Butler et al., 2010; Smith et al., 2015; Drew et al., 2021).

Atlantic menhaden are a schooling fish that can be found along nearshore coasts along the Atlantic Ocean from Nova Scotia, CAN, to Florida, USA and go through large age- and size-dependent seasonal migrations (Dryfoos et al., 1973; Nicholson, 1978; Liljestrand et al., 2019). As indeterminate spawners, adults are capable of spawning multiple times in a season and inhabit estuarine and coastal areas such as Chesapeake Bay (Ahrenholz, 1991, Southeast Data Assessment and Review [SEDAR], 2020). As juveniles, they spend their first spring and summer in estuaries and by late fall, they join with other subadults and adults and migrate to nearshore coastal waters (Southeast Data Assessment and Review [SEDAR], 2020; Anstead et al., 2021).

Menhaden support the largest fishery in the U.S. East Coast by volume and is used for bait and reduced to fish oil and meal which are used for animal feed, fertilizer, and human health supplements (Anstead et al., 2021). The reduction fishery began in the mid-1800s with the use of purse seine gear and peaked in 1956 with over 20 menhaden reduction factories along the Atlantic Coast (Southeast Data Assessment and Review [SEDAR], 2020). Currently, landings in the reduction fishery are at their lowest levels (Southeast Data Assessment and Review [SEDAR], 2020) and at Chesapeake Bay, populations of menhaden are facing potential localized depletion. ASMFC defined localized depletion in Chesapeake Bay "as a

reduction in menhaden population density below the level of abundance that is sufficient to maintain its basic ecological, economic, and social/cultural functions" (Annis et al., 2009). Localized depletion has not been officially defined or evaluated by managers because estimates of the standing stock within Chesapeake Bay have been unavailable and thresholds for exploitation cannot be resolved.

Known as the fish hawk, we selected the osprey as an appropriate non-fish ERP to evaluate localized depletion of menhaden and food limitation within Chesapeake Bay. The ERP Work Group emphasized the research need for diet data collection and demographic responses of non-fish predators (Atlantic States Marine Fisheries Commission [ASMFC], 2017). According to Buccheister et al. (2017), the nearshore piscivorous birds such as ospreys are sensitive to the overfishing of menhaden. Ecologically, ospreys are generalized specialists (Beirregaard et al., 2014). Specialized in that they are obligate piscivores and generalized in that they predate upon many species of fish. Ospreys surface plunge at a maximum depth of one meter and are more susceptible to a decrease in fish density than other birds such as pursuit divers that search for prey while swimming on the water surface and dive to deeper depths (Ashmole, 1971; Cramp and Simmons, 1979). Piscivory and plunge diving influences an ecological indicator's response to fish supply perturbations (Einoder, 2009). Reduced prey availability and fluctuations in environmental conditions are more evident in the foraging behavior and breeding success of a specialist (Furness and Ainley, 1984; Montevecchi, 1993). Moreover, shallow divers and surface feeders are more vulnerable, are considered more sensitive indicators than pursuit divers, and show greater variation in breeding performance (Montevecchi, 1993; Monaghan et al., 1994; Scott et al., 2006). As one of the more recognized raptors, ospreys have been used as an ecotoxicological sentinel species of environmental health due to their reproductive responses to natural and anthropogenic pressures and life history traits (Henny et al., 2008; Johnson et al., 2008; Grove et al., 2009). Ospreys exhibit strong nest fidelity and their reproductive status is observable by ground, boat, or aerial surveys which makes them a valuable and efficient sentinel of the ecosystem (Ogden et al., 2014) and an appropriate ERP for menhaden (Buccheister et al., 2017).

The Chesapeake Bay supports one of the largest osprey breeding populations in the world (Henny, 1983; Watts and Paxton, 2007). As with many similar populations, ospreys in the Chesapeake Bay experienced dramatic declines in the post-World War II era due to reproductive suppression (Tritt, 1969; Kennedy, 1971; Wiemeyer, 1971; Reese, 1977) induced by environmental contaminants (Via, 1975; Wiemeyer et al., 1975). The population sustained a low point by 1973 when Henny et al. (1974) estimated its size to be 1,450 breeding pairs. From 1973 to 1995, the population more than doubled in size to nearly 3,500 pairs (Watts et al., 2004) and believed to be between 8,000-10,000 pairs in 2020. However, the population has experienced spatial variation in recovery (Watts et al., 2004; Watts and Paxton, 2007). For example, average doubling time for the population on low-salinity, upper reaches of tributaries, was less than four years while doubling time on higher-salinity reaches of the lower Chesapeake Bay exceeded 40 years (Watts et al., 2004). This variation reflects the extent of the

earlier decline, immigration from other regions of the Chesapeake Bay, and the local demography of pairs that may have been influenced by prey availability.

Mobjack Bay has been a focus of osprey research since 1970 and represents a barometer for the relationship between osprey breeding performance and menhaden availability (Glass, 2008). During the mid-1970s, there was little evidence of food limitation reflected in osprey reproductive performance and brood sizes within the higher salinity zones of the lower Chesapeake Bay (Stinson, 1976). However by the early 2000s, the proportion of menhaden in the diet had dropped by 40% and reproductive rates had dropped to precarious levels (Glass, 2008). We conducted a supplemental feeding experiment for osprey pairs nesting in Mobjack Bay during the 2021 breeding season. A clear barrier in resolving the relationship between osprey productivity and menhaden consumption is the lack of menhaden abundance data that can be scaled down to the local level. If such data were available, we could monitor osprey foraging, provisioning, and productivity, and assess the functional response to available menhaden. Since such data are not available, a food manipulative experiment in the wild was performed (Piatt et al., 2007). Our secondary objective was to determine prey composition and the dietary importance of menhaden.

2 Methods

2.1 Study species

Ospreys are large, long-winged raptors with a nearly global distribution that feed exclusively on fish (Poole, 2019). Most osprey populations across North America are migratory, spend the winter months in Central or South America and begin breeding at the age of three (Henny & Wight, 1969). Age-at-first-reproduction in Chesapeake Bay ospreys was recorded from 4 years (Kinkead, 1985) to 5.7 years (Poole, 1989; Poole et al., 2002). As the population reaches carrying capacity, age-at-first-reproduction increases (Spitzer, 1980; Poole, 1989). Poole (1989) estimated that pairs within the Chesapeake Bay must produce 1.15 young per year in order to offset adult mortality. On average, if the population consistently meets or exceeds this rate (demographic source) then the population would be expected to be stable to increasing (Pulliam, 1988). If the reproductive rate consistently falls below this threshold (demographic sink) the population would be expected to decline in the absence of compensatory immigration.

2.2 Food addition experiment

We established treatment (fish addition) and control (no fish addition) nests to assess the effect of increased provisioning on demography. We added $472 \text{ g} \pm 7.9 \text{ (SE)}$ of menhaden every $3.5 \text{ d} \pm 0.2$ to treatment nests from the time of hatching to six weeks of age. We delivered menhaden to nests using a telescopic pole with a mounted delivery device. We sourced fresh or previously frozen

menhaden from a local fishing supply company and the fish were counted, weighed, coded, and separated into packages for easy deployment. We selected study nests based on accessibility and randomly assigned accessible nests to treatments. We conducted an initial survey (late March to mid-April) of the study area for osprey nests ($N = 114$) and recorded location (latitude, longitude), accessibility by boat, nesting stage, nest substrate, height over water, and water depth. We screened nests for initial inclusion in the study based on accessibility, height over water (to allow for ready access to the nest) and water depth (to allow for boat access and maneuverability). We only included nests within the study that survived to hatching stage. We monitored all nests included within the initial draw until clutches hatched. Nests that hatched eggs were randomly assigned to two treatment groups (Figure 1) including a control group ($N = 15$) and a food addition group ($N = 16$). The nests in the East River were limited in boat accessibility and therefore assigned to the control group.

2.3 Demography

We monitored nests twice per week from clutch completion to fledging to quantify demographic parameters including clutch size, brood size, and the number of young fledged. From observations, we determined brood reduction (number of young lost between hatching and fledging). We noted the age that nestlings died and the stage when nests failed. We consider a nest to be successful if the pair produced at least one young to fledging age. We consider productivity to be the number of young that reached fledging age (7 wks) per active nest (Steenhof & Newton, 2007). We used a telescopic mirror pole to facilitate the examination of nest contents for nests that were $>2 \text{ m}$ above the water line.

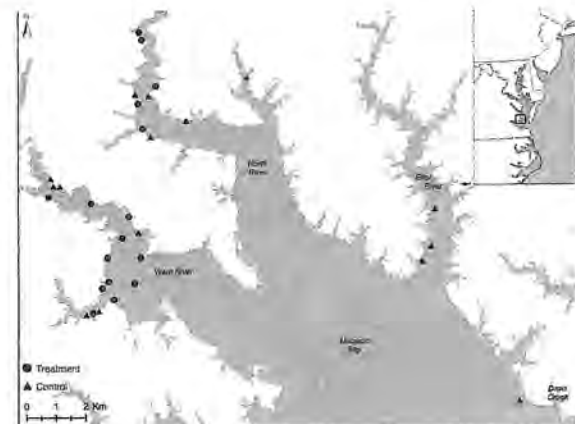


FIGURE 1
Map of the experimental area of Mobjack Bay on the lower eastern region of Chesapeake Bay, VA, USA. The locations of the control group ($N = 15$) represented by black triangles and the food addition group ($N = 16$) represented by black circles.

2.4 Provisioning

We used trail cams (Browning Strike Force HD Pro X - BTC-5HDPX) to quantify nest provisioning rates including the average number of fish (n/day), biomass (g/day) and energy (kcal/day) for a subsample of treatment (N = 7) and control (N = 4) nests. We deployed cameras on nest structures that would accommodate them. We fastened trail cams to 1.91 cm (3/4 inch) diameter conduit and mounted conduit to the nesting structure such that cameras were positioned approximately 1 m above the nest. Cameras were programmed to record an image every 5 min during daylight hours (05:00 to 22:00). We extracted images from the photo set that depicted fish delivered to nests and identified all fish to the lowest taxonomic level possible. Most fish were identified to the species level but others could only be identified to the genus or family level. We estimated fish length from photos within an image processing program, ImageJ with Java (<https://imagej.nih.gov/ij/index.html>) and compared to known lengths from reference structures (Poole et al., 2002) including adult bill (male = 32.5, female = 34.6 mm) and talon (male = 28.9, female = 30.0 mm). We estimated the biomass (g) of each fish using species-specific length-mass equations from published literature and FishBase (<https://fishbase.in/>, Appendix 2). We converted biomass to energy (kcal) using published species-specific energy density values (Appendix 3). For species that could not be identified to species, we used length-mass equations and energy density from a representative species of the taxonomic group. We consider the provisioning of control nests to include fish provided by adults and for treatment nests to include fish provided by adults and menhaden that we added to nests. It is important to note that treatment nests that did not have trail cameras were observed by boat and consumption of supplemented fish by the adults and young were verified.

2.5 Statistical analysis

Data were not independent, not normally distributed, and non-homogenous therefore, we used appropriate tests. We investigated the influence of treatment (control vs food addition) on demographic parameters including nest success, clutch size, the number of young hatched, brood reduction, and productivity. We constructed a two-by-two contingency table and used Pearson's Chi-squared analysis to compare the relationship between treatment type and nest success. We used Generalized Linear

Models (GLMs) to determine if there were the average differences in clutch size, the number of young hatched, brood reduction, and productivity between the treatment types. For provisioning (fish/d, biomass/d, energy content/d), we analyzed data from trail cameras to evaluate the relationship between provisioning and demographic parameters. It is important to note that our models were based on totals and/or average provisioning rates including naturally provisioned and supplemental fish.

We used Generalized Linear Mixed Models (GLMMs) with a negative binomial distribution and log link, nest and treatment type as the random effects, and food addition and total provisioning (natural and supplemented) as the fixed effects. For the influence of provisioning on demographics, we used GLMs with a negative binomial distribution and log link and compared the effects of the mean fish/d, biomass/d, and energy content/d (natural and supplemented) on productivity (both treatment groups combined, N = 11). We calculated the supplemented average biomass/d/nest and energy content/d/nest threshold needed for the production of 1.15 fledglings per nest-season (estimated break-even rate). All analyses were performed in RStudio 4.02 and we used the MASS and gmmTMB packages for model development and validated by the DHARMA package for residual diagnostics on hierarchical regression models (Venables and Ripley, 2002; Brooks et al., 2017; R Core Team, 2020; Hartig, 2021).

3 Results

3.1 Food addition and demography

For the food addition group, 13 of the 16 nests (81%) succeeded with an average productivity rate of 1.13 ± 0.18 (SE) young/active nest. The three nests that failed in this group failed on average during the first 1.38 ± 0.5 wks. or when young were 10 d old. For the control group, five of the 15 nests (33%) succeeded with an average productivity rate of 0.47 young/active nest. The ten nests that failed in this group failed on average during the first 2.2 ± 0.5 wks. The age at failure (d) between the food addition and control groups was not statistically significantly different ($\beta = -0.47$, SE = 0.41, P = 0.25). The age at failure for the control group ranged from 3 - 42 d with the highest mortality experienced during the first $15.5 \text{ d} \pm 3.4$ of the nestling period. Nest success and productivity were significantly different between the control and food addition groups (Table 1, Figure 2). Clutch size, the number of young hatched, and brood

TABLE 1 Two-way contingency table used for the Pearson's Chi-squared analysis that summarizes the relationship between treatment types and nest success during the 2021 osprey breeding season in the lower Chesapeake Bay, VA, USA ($\chi^2 = 5.5$, $df = 1$, $P = 0.02$).

TREATMENT	NEST SUCCESS (NESTS)		
	SUCCESSFUL	FAILED	TOTAL
FISH ADDITION	13	3	16
CONTROL	5	10	15
TOTAL	18	13	31

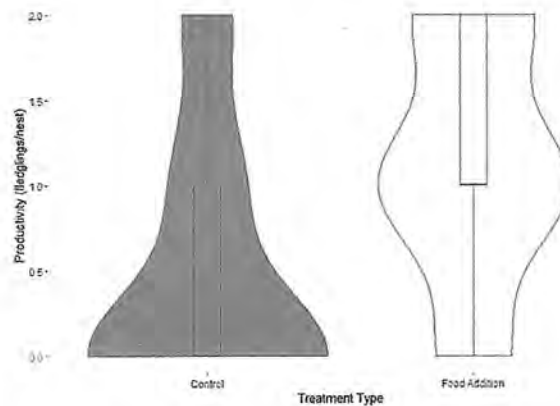


FIGURE 2

Productivity between the control group (N = 15) and the treatment group (N = 16) of ospreys during the 2021 breeding season in the lower Chesapeake Bay, VA, USA ($\beta = 0.88$, SE = 0.45, pseudo $R^2 = 0.14$, CI = 0.049, 1.825, $P = 0.048$). Violin shapes represent the density of data distribution and the middle horizontal line of the box plots represent the median values.

reduction were not significantly different between the control and food addition groups (Table 2).

3.2 Provisioning and productivity

Food supplementation had a significant influence on the number of fish and amount of energy available to osprey broods (Table 3). A total of 241 Atlantic menhaden was supplemented to the food addition group and contributed 32,384 g that represented an estimated 61,206 kcal. This increased the average total prey biomass and energy content within the food addition group to 226.5 g/d/nest and 396.2 kcal/d/nest. The average biomass that was delivered to the control group was 166.8 g/d/nest and the average energy content was 242.2 kcal/d/nest (Appendix 1). For the control group, adult osprey delivered an average of 1.2 fish/d/nest compared to 1.1 fish/d/nest for the supplemented group.

Food supplementation had a significant influence on the likelihood that pairs reached the threshold reproductive rate of 1.15 young/nest (Figure 3). The estimated average fish biomass and energetic content needed for a pair to produce the threshold reproductive rate was 202.7 g/d and 338.6 kcal/d respectively. Within the study area, pairs required supplementation of 63.4 g/d of menhaden or 121 kcal/d in order to reach the productivity threshold.

Diet composition included a diverse list of fish species (Appendix 1). A total of 600 fish were documented as prey by ospreys in which 81% of taxa were identified to 21 species or to at least family. Atlantic menhaden (39%) dominated prey composition. Other known species included Atlantic herring (*Clupea harengus*) (10.3%), Atlantic croaker (*Micropogonias undulatus*) (5.8%), gizzard shad (*Dorosoma cepedianum*) (5.7%), and spot (*Leiostomus xanthurus*) (5%).

TABLE 2 Results for GLMs used to compare demographic parameters between treatment types during the 2021 osprey breeding season in the lower Chesapeake Bay, VA, USA.

DEMOGRAPHIC PARAMETERS	β	SE	PSEUDO r^2	CI	P
CLUTCH SIZE	0.07	0.21	0.75	-0.34, 0.48	0.75
No. of YOUNG HATCHED	0.12	0.24	0.04	-0.33, 0.62	0.57
BROOD REDUCTION	0.20	0.31	0.02	-0.81, 0.40	0.50

TABLE 3 Results of GLMMs with treatment effects on provisioning rates per d of nests under trail camera surveillance (N = 11) during the 2021 osprey breeding season in the lower Chesapeake Bay, VA, USA.

TREATMENT EFFECTS	β	SE	Z VALUE	CI	P
FISH (number of fish/d)	0.25	0.02	13.4	0.21, 0.29	< 0.001
BIOMASS (g of fish/d)	0.002	0.0004	4.65	0.001, 0.003	< 0.001
ENERGY CONTENT (kcal of fish/d)	0.001	0.0002	5.22	0.008, 0.002	< 0.001

4 Discussion

Supplementation of osprey nests with menhaden had a significant influence on the ability of nesting pairs to reach reproductive rates required for population maintenance. Our study shows that productivity was food limited as previous studies have substantiated (Simons and Martin, 1990; Richner, 1992; Wiehn and Korpimäki, 1997; Ferrer et al., 2018). Osprey pairs that did not receive supplementation had reproductive rates (0.47 young/nest) that were less than half of threshold levels. Within Mobjack Bay, productivity rates have shifted from reproductive surplus to reproductive deficit since the 1980s. For example, populations at various locations along the main stem of Chesapeake Bay were considered strongholds (McLean, 1986; Byrd, 1988). During 1983 and 1984, the average reproductive rate was 1.39 young/pair (Byrd, 1987). By 1988 and 1990, average productivity had dropped to 0.91 young/pair (Byrd, 1988, Byrd, 1990) and by 2005 and 2006 productivity had dropped further to 0.75 young/pair (Glass, 2008). If fishing pressure on menhaden within Chesapeake Bay persists, osprey productivity rates could decline precipitously, threaten population stability, and eventually lead to widespread population collapse. Menhaden populations should be maintained at levels that will sustain a stable osprey population in which they are able to produce 1.15 young/active nest to offset mortality.

Our research suggests that food addition significantly influenced osprey provisioning rates and these rates impacted reproductive performance. Specifically, daily average biomass and energy content of the prey composition significantly influenced productivity. Lind (1976) used a model developed by Wiens and Innis (1974) and calculated that each adult osprey required 286 kcal/d and each nestling at 11–16 d old needed at least 113–170 kcal/d. Based on calculations in which fish with an energy content of 1 kcal/g, a nest with two young plus the female would require 794 g of fish/d in order

to successfully fledge and a nest with three young would require 1048 g of fish/d (Winberg, 1960). Along the U.S. Eastern Coast, Poole (1982) determined that male ospreys delivered 816–1426 g/d to nests that had young and nests that produced three–four young. In our study, menhaden consisted of 39% of the total diet composition and these fish have a high energy content of 1.89 kcal/g (June and Nicholson, 1964). Based on the calculations of Winberg (1960), if a nest fledged two young that was supplied with 39% or 309.7 g/d or 585.3 kcal/d of menhaden, the estimated additional biomass and energy content required would be 648.2 g/d or 1,225.1 kcal/d. Similarly if a nest fledged three young and was supplied with 39% or 408.7 g/d or 772.4 kcal/d of menhaden, the estimated additional biomass and energy content required would be 855.5 g/d or 1,616.9 kcal/d. For the nests in our study, the added average biomass and energetic threshold needed for a nest to reach the reproductive break-even point are 63.4 g/d and 121 kcal/d which would be a total average of 208.1 g/d and 347.6 kcal/d (Figure 3).

When we directly compared the provisioning rates in this study to historical studies in Mobjack Bay and the higher salinity areas of Chesapeake Bay, declines in daily fish deliveries were made evident. In 1975 and 1985, the fish delivery rate was 0.53 fish/hr/nest and 0.35 fish/hr/nest (McLean and Byrd, 1991). In 2006 and 2007, ospreys in the higher salinity areas delivered an average of 0.26 fish/h/nest (Glass, 2008). Our study revealed that in 2021, the fish delivery rate diminished to a mean of 0.11 fish/hr/nest. The average daily biomass delivered per nest fell from 237.1g and 172.3g in 1975 and 2007 to 144.7g in 2021 (Appendix 1, McLean and Byrd, 1991; Glass, 2008).

Brood reduction has been an effective parameter linking reproductive performance to food limitation in osprey (Glass, 2008). In a 5-yr study, Reese (1977) determined nestling loss rates in the upper Chesapeake Bay ranged from 8–23%. Nestling mortality rates were 47% and 78% for the supplementation and control groups respectively in this study. Poole (1984) conducted a

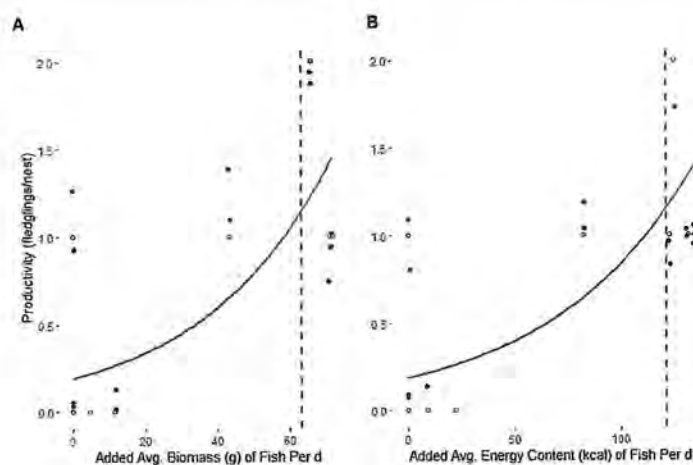


FIGURE 3
GLM's of the influence of the added (A) avg. biomass/d/nest ($\beta = 0.03$, SE = 0.01, Pseudo $R^2 = 0.60$, CI = 0.01, 0.05, $P = 0.02$) and (B) avg. energy content/d/nest (kcal) ($\beta = 0.02$, SE = 0.005, Pseudo $R^2 = 0.64$, CI = 0.006, 0.03, $P = 0.02$) for osprey pairs under trail camera surveillance after seven weeks post hatch of the first egg in 2021 breeding season in the lower Chesapeake Bay, VA, USA. The data points represented by white circles have been "jittered" along with random points represented in black circles for improved visibility of model fit. The dotted lines indicate the supplemented average biomass (63.4 g) and energy content (121 kcal) thresholds needed per d to produce 1.15 young per nest-season.

4-yr study in New England and determined that 75% of nesting mortality was caused by starvation. Glass and Watts (2009) determined that brood reduction was highly significant between nests in the lower estuarine sites compared to the higher estuarine sites and these data suggested that ospreys in the higher salinity areas were experiencing more food limitation than the lower salinity areas. Brood reduction has generally been linked with the lack of food availability in other study areas (Poole, 1982; Jamieson et al., 1983; Eriksson, 1986; Hagan, 1986; Forbes, 1991; Glass and Watts, 2009). Although brood reduction was higher in the control group, differences were not found to be significant in our study. This discrepancy could have been attributed to treatment effects in which the timing and intensity of the protocol was not strong enough to detect a significant signal. Perhaps if we supplemented more fish in greater frequency, we would have observed significant differences in the average brood reduction between the experimental groups.

The most compelling explanation for lower provisioning and productivity rates is localized depletion of the primary prey base. Although proximate causes of lower productivity may include storms, inter- and intraspecific competition, predation, as well as age-related care by parents, the ultimate cause of lower productivity may often be food shortage (Steenhof and Newton, 2007). Atlantic menhaden has a higher lipid content compared to other species with a nearly a 2:1 energy content/biomass ratio (June and Nicholson, 1964). Ospreys depend on menhaden and their reproductive performance is inextricably linked to the availability and abundance of this fish. In fact, previous studies have substantiated that menhaden are a vital prey item for ospreys during the breeding season particularly in the mid-Atlantic and northeastern United States (Spitzer and Poole, 1980; Poole, 1989; McLean and Byrd, 1991; Steidl et al., 1991; Glass and Watts, 2009). In 1985, this fish species consisted of 75% of the prey composition of ospreys in the lower Chesapeake Bay (McLean and Byrd, 1991). Then in 2006 and 2007, menhaden declined to 32% of the prey composition (Glass, 2008). In our study menhaden comprised of 39% of the total prey composition (Appendix 1). Assuming that the prey composition of ospreys reflects prey availability on a local level (Greene et al., 1983; Edwards, 1988; Glass, 2008), the current percentage of menhaden could indicate that this species has diminished in availability compared to the later portion of the 20th century.

Potential localized depletion of menhaden populations is one of the major sources of concern and conflict within Chesapeake Bay. According to the ASMFC, the coastwide stock assessment has determined that menhaden is not overfished and that no overfishing is occurring (Southeast Data Assessment and Review [SEDAR], 2020). However, a coastwide assessment does not capture spatial variation in menhaden availability for locations with persistent depletion such as Chesapeake Bay. Seine surveys of juvenile menhaden in Maryland and Virginia indicate that low levels of abundance and recruitment have been happening since the early 1990's and 2000's (Atlantic States Marine Fisheries Commission [ASMFC], 2004, Southeast Data Assessment and Review [SEDAR], 2020). Our data suggests that the reliable metric that links osprey population decline and food limitation is the osprey productivity rate. During the population decline in northern Florida, Bowman et al. (1989) determined that the productivity rate was 0.56 young/nest and this was due to

insufficient food availability. When the Florida Bay population was healthy and food was abundant (Henny and Ogden, 1970), the productivity rate was 1.22 young/nest which is similar to the rate acquired by the food addition group of our study at 1.13 young/nest.

5 Conclusion

EBFM evolves when ERPs are consistently monitored (Pilkitch et al., 2004). According to Amendment 3 of the Interstate Fishery Management Plan (FMP) for Atlantic menhaden (Southeast Data Assessment and Review [SEDAR], 2020; Anstead et al., 2021), ERPs are described as “a method to assess the status of menhaden not only with regard to the sustainability of human harvest, but also with the regard to their interaction with predators and the status of other prey species.” The ERP working group is tasked with developing ERPs that are menhaden-specific that can account for the abundance of menhaden and their species role as a forage fish (Amendment 3 to the FMP, Anstead et al., 2021). Ospreys are non-fish predators and can serve the ERP role which can allow management to practice informed decisions to develop harvest targets, assess menhaden's role as prey for upper trophic levels, and advance an ecosystem approach to fisheries management (EAFM) which considers multiple components of the ecosystem than just the target species (Patrick and Link, 2015). The menhaden population within Mobjack Bay is not currently adequate to sustain the osprey breeding population and we recommend that industrial purse seine fishing occur outside Chesapeake Bay.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary Material. Further inquiries can be directed to the corresponding author.

Ethics statement

The animal study was reviewed and approved by Institutional Animal Care and Use Committee (IACUC-2021-05-03-14981-bjpxt).

Author contributions

MA and BW designed and conducted the research. MA and BW performed the experiment, statistical analysis, and wrote the paper. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fmars.2023.1172787/full#supplementary-material>

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Compose

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- Today on AOL
- New Mail 4.3K
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Study Area	Nests (N)	Successful (N)	Young (N)	Success Rate (% of nests)	Reproductive Rate (Young/Pr)
Polyhaline					
Lower York	44	3	5	6.8	0.11
Ware River	29	2	2	6.9	0.07
North River	33	1	1	3.0	0.03
East River	21	0	0	0.0	0.00
Lynnhaven River					
Total	127	6	8	4.7	0.03
Tidal Fresh					
Upper James	54	45	77	83.3	1.43
Upper Rapp	37	28	56	75.7	1.51
Total	91	73	133	80.2	1.46

From: Tom Lilly <foragematters@aol.com>
Sent: Friday, June 30, 2023 2:00 PM
To: michael academia <macademia@email.wm.edu>; Watts, Bryan <bdwatt@wm.edu>; Phil Zalesak <flypax@md.metrocast.net>
Subject: Fw: Mobjack Bav nestina collapse

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Atlantic States Marine Fisheries Commission

Business Session

*August 3, 2023
11 – 11:15 a.m.
Hybrid Meeting*

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 (<i>S. Woodward</i>) | 11:00 a.m. |
| 2. Board Consent | 11:05 a.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from November 2022 | |
| 3. Public Comment | 11:05 a.m. |
| 4. Review Noncompliance Findings, if necessary Final Action | 11:10 a.m. |
| 5. Other Business/Adjourn | 11:15 a.m. |

The meeting will be held at The Westin Crystal City (1800 Richmond Highway, Arlington, VA; 703.486.1111) and via webinar; click [here](#) for details

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
BUSINESS SESSION**

**The Westin Crystal City
Arlington, Virginia
Hybrid Meeting**

November 9, 2022

These minutes are draft and subject to approval.
The Business Session will review the minutes during its next meeting.

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These minutes are draft and subject to approval.
The Business Session will review the minutes during its next meeting.

INDEX OF MOTIONS

1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings from May 2022** by Consent (Page 1).
3. **Move to approve the 2023 Action Plan as modified today** (Page 10). Motion by Tom Fote; second by John Clark. Motion carried without objection (Page 10).
4. **Move to re-elect Spud Woodward as Commission Chair and Joe Cimino as Commission Vice-Chair** (Page 10). Motion by Pat Keliher on behalf of the Nominating Committee. Motion approved without objection (Page 11).
5. **Move to adjourn** by Consent (Page 11).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	Loren Lustig, PA (GA)
Cheri Patterson, NH (AA)	John Clark, DE (AA)
Doug Grout, NH (GA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Dan McKiernan, MA (AA)	Lynn Fegley, MD (AA) (Acting)
Raymond Kane, MA (GA)	Pat Geer, VA, proxy for J. Green (AA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Jason McNamee, RI (AA)	Jerry Mannen, NC (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Chris McDonough, SC, proxy for Sen. Cromer (LA)
Justin Davis, CT (AA)	Doug Haymans, GA (AA)
Bill Hyatt, CT (GA)	Spud Woodward, GA (GA)
Jim Gilmore, NY (AA)	Erika Burgess, FL, proxy for J. McCawley (AA)
Joe Cimino, NJ (AA)	Gary Jennings, FL (GA)
Tom Fote, NJ (GA)	Marty Gary, PRFC
Adam Nowalsky, NJ, proxy for Sen. Gopal (LA)	Mike Ruccio, NOAA
Kris Kuhn, PA, proxy for T. Schaeffer (AA)	Rick Jacobson, US FWS

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

Staff

Robert Beal	James Boyle	Jeff Kipp
Toni Kerns	Pat Campfield	Sarah Murray
Tina Berger	Emilie Franke	Caitlin Starks
Maya Drzewicki	Lisa Havel	Deke Tompkins
Kristen Anstead	Chris Jacobs	

Guests

Jason Avila	Adam Kenyon, VMRC	Somers Smott, VMRC
Alan Bianchi, NC DENR	John Kravchak	Bryan Sparrow, Fuji Film
Colleen Bouffard	Mike Luisi, MD DNR	Rene St. Armand, CT DEEP
Nicole Caudell, MD DNR	Tina Moore, NC DENR	Alex Su
Karson Cisneros, MAFMC	Brandon Muffley, MAFMC	Beth Versak, MD DNR
Heather Corbett, NJ DEP	Brian Neilan, NJ DEP	Eric Wallace
Jessica Daher, NJ DEP	Derek Orner, NOAA	Kate Wilke, TNC
Jeffrey Dobbs, NC DENR	Nicholas Popoff, US FWS	Angel Willey, MD DNR
Cynthia Ferrio, NOAA	Will Poston, SGA	Chris Wright, NOAA
Anthony Friedrich, SGA	Jill Ramsey, VMRC	Faith Zerbe, DE Riverkeepers
Alexa Galvan, VMRC	Jeff Renchen, FL FWC	Erik Zlokovitz, MD DNR
Lewis Gillingham, VMRC	Chris Scott, NYS DEC	
Jesse Hornstein, NYS DEC	McLean Seward, NC DENR	

These minutes are draft and subject to approval.
The Business Session will review the minutes during its next meeting.

The Business Session of the Atlantic States Marine Fisheries Commission convened in The Monmouth I Room in The Ocean Place Resort, a hybrid meeting, in-person and webinar; Wednesday, November 9, 2022, and was called to order at 10:15 a.m. by Vice-Chair Joe Cimino.

CALL TO ORDER

CHAIR JOE CIMINO: Some of you are aware Chairman is trying to beat some weather here, and he headed out early, so I will be subbing for him. Joe Cimino; New Jersey DEP, Vice-Chair of the Commission. We have some agenda items to go through here. We're going to get some exciting presentations on the Action Plan.

APPROVAL OF AGENDA

CHAIR CIMINO: I'll start with our call to order, and look for approval of the agenda. I see no hands in objection, so we'll approve by consent.

APPROVAL OF PROCEEDINGS

CHAIR CIMINO: Approval of the proceedings from May, 2022. If no issues or objections we'll consider approved by consent. Public comment. You all look like you work here. I don't think we have any public comment.

CONSIDER APPROVAL OF THE 2023 ACTION PLAN

CHAIR CIMINO: Okay, so we'll get into the Approval of the 2023 Action Plan.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Just really quickly before you jump into the details of the Action Plan. This will be very similar to how we've done it in the past. We'll go through each of the goals, and at the end of each goal we'll stop and you guys can ask any questions or make any recommendations for changes.

You know if there is anything really significant that will take a lot of staff time, we may need to talk about tradeoffs. But we think it is a pretty comprehensive plan so far. As you see, all the

staff is up here, and so we'll each go through sort of the goals that each department has in the Action Plan.

The first one is Goal Number 1 that's fishery management activities, and if you guys will remember that it's divided up into high priority species and what we call medium low priority species. The high priorities are just that. They're the ones that are, they're busy. There is a lot going on with those species next year.

The other ones, there still is a lot going on with some of those medium and low priorities, but they are not quite as high profile, and won't take quite as much staff time and Commissioner time to work through those. With that I'll turn it over to Toni to go through Goal Number 1, please.

MS. TONI KERNS: Thank you, Bob, and thank you, Mr. Chairman. For the high priority species, and just as a reminder, it's not that we think that these species are more important than another one, it's about staff workload and Board workload. For American eel, this moved up into the higher priority. The stock assessment peer review will be occurring in the coming months, and then we'll be able to report out to the Board, and if necessary, we'll take management action.

Under American lobster there is a couple things that are continuing from last year, but in particular we'll be working with all of our state and federal partners, as well as ACCSP on implementing and integrating the tracking device data collection as part of Addendum XXIV. In addition, the Board made it clear it's going to be moving forward on Addendum XXVII, which is the trigger mechanism for the protection of spawning stock biomass in the Gulf of Maine/Georges Bank stock.

Then scrolling on down to striped bass, the Board did approve Addendum I for public comment and this is for their voluntary transfers of commercial quota. Then for summer flounder, scup, black sea bass and bluefish, we have some very similar bullets, so I'm only going to go over it one time here under black sea bass.

That is to continue working with the Mid-Atlantic Council on some of the recreational measures, and this is one to do the recreational sector separation and catch accounting amendment. It could turn into some version of an addendum, just to be clear, and then as well as develop the recreational reform technical guidance document, and continue developing the harvest control rule options that did not get approved earlier this year.

This species will also, all the species will have a research track and a management track stock assessment and peer review. Then moving down to bluefish, the one difference is that we'll be working with the Council to develop a management uncertainty policy for that species. For horseshoe crab, we'll work with a workgroup that will review and update the best management practices for handling biomedical catch.

We'll move forward with conducting the ARM if it does get approved at the meeting tomorrow. For Jonah crab, we're going to work with same as lobster on the tracking device, as well as review the benchmark stock assessment and respond if necessary. I'm going to skip through scup, because that is the same bullet.

For shad and river herring we'll review the river herring benchmark stock assessment and peer review and respond as necessary, and there is still a couple of SFMPs and shad habitat plans that will come forward to the Board. Then scrolling down to our medium and low priority species. For Atlantic croaker and spot, we'll initiate a benchmark stock assessment that will be peer reviewed in 2024.

For Atlantic herring, we'll be exploring funding options for a biological sampling program. This week the Board did not take any action for Draft Addendum III, which is the allocation of the Area 1A quota. I think we'll probably pull this bullet out of the document, unless I hear otherwise today from the states. Scrolling down to Atlantic sturgeon, we'll be initiating the

benchmark stock assessment for review in 2024, and continue to monitor the federal activities in response to the action plan to reduce Atlantic sturgeon bycatch in federal large mesh gillnet fisheries, and respond to any actions that the Council may take if necessary. For black drum we'll be reviewing the benchmark stock assessment and peer review that will be coming out, and respond, if necessary, as well as updating the indicators of fishery performance and indices of abundance. For coastal shark, again we'll continue to monitor HMS activities, but specifically looking at what they are doing with Amendment 14.

Then also any proposed rules to consider the prohibition and retention of sharks listed as threatened under the Endangered Species Act. We've been told by HMS that that is a possibility for next year. For Atlantic cobia we will explore reactions to emerging harvest in the Mid-Atlantic. We heard a little bit about this yesterday.

We won't go into it for now, but if there are questions, answer them. Northern shrimp, we will develop the management triggers to indicate when the stock can support a commercial fishery, and that is through the workgroup that has been engaging on how to move forward with northern shrimp management.

For red drum we'll initiate a benchmark stock assessment, which would be peer reviewed in 2024. Then under Spanish mackerel we'll review the revised SEDAR stock assessment, in response to the South Atlantic Council's SSC recommendation, and then we'll respond, if necessary, in collaboration with our South Atlantic partners, and we'll consider development of a management action to address the differences in the state and federal management plan that we heard about yesterday at the Coastal Pelagics Board meeting, and we'll do that with the Council.

For spiny dogfish, if there are actions that get taken through the New England and Mid-Atlantic Councils for the reduction of sturgeon in the large mesh gillnet fisheries, we would respond in the spiny dogfish that is one of the species that is in that

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action plan from NOAA. I've already gone over spot, and we don't have any new tasks for weakfish or winter flounder or tautaug.

Under the crosscutting issues, a lot of these issues are carrying over from last year. We've been working on them, but work continues on them. But we did add to the scenario planning is to respond to the summit recommendations, to make sure any proposed actions that come out of there have a path forward.

Then we also added to the bulleted list, even though we have been working on these things this year to continue to develop and finalize the de minimis policy for use in Commission FMPs. Lastly, to explore the development or the guidance or policy level document on allocation and the use of mode splits, which has been discussions in the past, but not officially in the Action Plan. That is everything that I have, I'll take questions.

CHAIR CIMINO: Questions for Toni? Go ahead, Adam.

MR. ADAM NOWALSKY: At the Mid-Atlantic Council's meeting in October, the Executive Committee approved a draft 2023 Implementation Plan, which will be considered by the Full Council in December. That included under summer flounder, scup and black sea bass, initiate development of action to replace recreational harvest control rule after a sunset period. The question is, does the item we have here for those species that continue development of recreational harvest control rule options. I interpreted that as specifications on an annual basis, or was that really referring to the changes that would need to be made because of the sunset period on that action?

MS. KERNS: Adam, those are the changes or the work that needs to be done on the options that weren't approved that the Board asked staff to do. Then if that includes a management action because we're ready before the end of the year, we can roll that into that bullet.

CHAIR CIMINO: Adam, are you okay? Thank you, great question. Any others? No, okay. Bob.

EXECUTIVE DIRECT BEAL: Pat Campfield is going to run through Goal 2, which is the Science Program Activities.

MR. PATRICK A. CAMPFIELD: This includes all of the Commission's fisheries research, surveys and stock assessment activities. In the first category under the Science Committees, that includes Management Science Committee, Assessment Science Committee, Fisheries Socioeconomics.

New activity for 2023 is to update the Commission's research priorities. We do this across the board every five years, so the document was last updated in a comprehensive fashion in 2018, so we'll do that again here in 2023. Then any priority research that comes out of that we'll try to work with the science committees to develop proposals to fund that kind of research.

We'll also incorporate risk and uncertainty lessons learned for the next iteration of the tool. You may recall a lot of work done on risk and uncertainty for tautaug. The next candidate species is cobia, so we'll try to move that forward next year. Also, a bit down in the weeds, but for the stock assessment purposes, create a centralized repository for archiving assessment modeling code to enhance our ability to run models.

Under data collection, nothing really new under the SEAMAP program. Under the NEMAP Survey program, communicate with offshore wind energy developers on the use of the NEMAP brand, in terms of their pre and post construction surveys and monitoring. Under collection of new data to address stock assessment needs, support the states, South Atlantic Council and ACCSP with Citizen Science projects, to collect new recreational live release data.

Under the fisheries research category and under fish gauging, we plan to conduct age sample exchanges and workshops to compare protocols for both menhaden and Atlantic sturgeon. Then under

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ecosystem-based management and changing ocean conditions, nothing really new. Toni alluded to the Scenario Planning Initiative that we went through yesterday.

There is also a lot of strong science coming out of NMFS and their fishery science center, so we continue to stay plugged in with the science centers on latest and greatest, including products like their climate and vulnerability assessments. Then finally, under competing ocean uses, to determine the Commission's role in wind energy intersections with fisheries. I think those are the highlights in science.

CHAIR CIMINO: Thank you, Pat, questions for Pat? Seeing none; oh, we do. Go ahead, Jay, sorry.

DR. JASON McNAMEE: One question I had was that concept you have in there for the repository. I just wanted to mention. I think, I can't remember what the context was. I think it was like an ecosystem modeling workshop thing that I was at. But I think NOAA is thinking about something similar. It's just important to just be connected with that so we don't have like, I don't know, competing repositories.

Maybe that's okay to have that. But at least we'll know where the different tools are. I just wanted to mention that, and then just a quick question on the bullet on the enhanced. I can't remember exactly how it was written, but the enhanced computing power. I just wonder what that, you're talking about like a super computer or efficient code? I was just sort of wondering.

MR. CAMPFIELD: You all are very curious about the computational speed and code we used in the stock assessments, but really, I think we're on the same page that you're talking about with NMFS. This is stemming from the bluefish assessment that is just wrapping up, and Katie has been a major contributor to, using what's call GitHub, so a centralized repository for the code, but sort of on shared servers where you

can run the models a lot faster. Working with Tony Wood in Woods Hole and the Science Center on bluefish, but doing it more broadly for all Commission assessments.

CHAIR CIMINO: I was going to say that all Doug Adams fans chuckle when they see a bullet point like that, and then I'll turn it over to Dr. Drew.

DR. KATIE DREW: Just to add on to that. I think one of the things we did find with the bluefish assessment is that NOAA has very strict requirements about how they use GitHub, and we certainly wouldn't want to compete with them in any way, but we want to set up something to be more flexible for ASMFC purposes, and complement whatever NOAA is doing with their own repository.

CHAIR CIMINO: Go ahead, John.

MR. JOHN CLARK: Pat, did I miss it? Did you mention anything about the Economic and Social Sciences Committee in this one?

MR. CAMPFIELD: Thanks, John, so at the top of the goal there are a few bullet points there on the highlights of what we try to achieve each year with the SAS Committee, and providing input to the fishery management plans. There have been some one-off inquiries related to the menhaden, I think black sea bass, in the last couple of years. But again, the overall activity is to keep the Socioeconomic Committee engaged, and when requests come in from the Boards, if there are data to try to provide that advice.

MR. CLARK: Thanks, I was just curious, just because I noticed in a lot of the comments coming up about the horseshoe crab ARM is that so many of the commenters were saying the economic value of ecotourism for the crabs and the birds. I was just curious if that was something that was being considered to look at. I'm sure that is something that might come up with other species, as we move forward or those type of issues.

EXECUTIVE DIRECTOR BEAL: John, in response. We don't have anything specific in there for horseshoe

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crab or your ecotourism type thing. But if that is something, a bullet we want to add to the action plan, and ask the SAS Committee to look at it, you know that is fair game for sure.

MR. CLARK: Right, I just meant that has been so highly scrutinized, I just figured it would be something that at least we could say, you know we are aware of that situation.

CHAIR CIMINO: Yes, and I think there is going to be some discussions during the Horseshoe Crab Board meeting about what is the future of the ARM, and what are we going to look at moving forward. We had the peer review of the ARM that suggested a management strategy evaluation, and so if something like that comes along, you know we'll certainly be looking at socioeconomics. I'll turn it over to Lynn, go ahead, please.

MS. LYNN FEGLEY: Just to pile on John's comment. I don't advocate adding this as a bullet to this plan yet. But in a couple hours we'll be tackling menhaden allocation. We have a lot of concerns in our state about what the impacts are when you do these reallocations to market, and also the impacts of transferring quota on markets in the state. Like when are you really disrupting how product is flowing up and down the coast, when you do these allocations?

I think it's something that we need to maybe for all of our species, think about considering, and maybe allowing the SAS to start doing some more. I know data are hard to come by in this regard, but it would be nice when we have these conversations, if we had a little ability to address some of these economic and market concerns. Like I said, I don't know the best for this plan, but maybe it's something we can put on our radar, and think about when we go around again.

CHAIR CIMINO: Yes, I agree, and you know sitting through the Climate Scenario Workshop yesterday, when you're thinking about the

future you also need to have a base line, right. I'm not sure we do for every species. I feel pretty comfortable saying we really don't. I agree, I think it's something that in some form or another we have to start to tackle. Any other comments or questions?

EXECUTIVE DIRECTOR BEAL: All right, the next goal is Goal 3, fisheries statistics, and Geoff White will handle that one.

MR. GEOFF WHITE: Goal 3 is really focused on the fisheries dependent data collected through ACCSP. The items highlighted on a continuing basis take up a fair amount of the activities that are reliant by other departments and other agencies. We kind of tweaked a few items in that section to include an additional component of the MRIP surveys that we help support, as well as engaging and aligning with the Commission's Outreach and Communication Plan. Similar item on partnerships. I wanted to just continue highlighting the data approaches, and the partnerships with all the other agencies in data collection initiatives, and data dissemination to support other systems. Specifically, under fisheries dependent data collection, within SAFIS we're trying to highlight items that will really focus on accomplishing in 2023. The first item reads a little bit cryptically, but truthfully, we've been using the same species list across the dealer and the trip reporting applications for a long time as a choice, and it's necessary at this point to separate out the species unit, market grades that are available to selection lists in the dealer reports.

That those rows that are available for commercial trips or for-hire trips. That is shortening those lists, entities are selecting better records, it allows us to drive which questions are being asked in which application. This is kind of an initial step we're already working on, which should be rolling out early in 2023.

Another major item is to extend the one-stop reporting initiative, to expand that a bit more across more of the federal permits, and to begin gaining the requirements from the states by holding a workshop on what their requirements are for one-

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stop reporting. Also, we're supporting implementation of spatial data management.

As I have mentioned about the lobster trip locations, VMS, not just collecting the location data, but providing ways for the state agencies to visualize that and look into other means of support with it. Then more towards the end of the year and throughout the year, we're looking at applying designing and applying the updated participant and permit information database design.

Again, it's an item that helps to better show the history of a particular entity in the data warehouse, as well as which records should be visible to those through the confidentiality approaches. It may not be the exciting things that folks were thinking about when it comes to the action plan, but they are definitely necessary steps to move this forward.

Under recreational surveys we are sharing the infrastructure that we've developed with both the Gulf of Mexico and Hawaii, to kind of standardizes and extend the methodology for some of those staff and agency-based data collection activities. Under data standards, distribution and use, we will be convening a workshop to identify the best practices on data validation, reconciliation and documentation for improving data integrity.

This is a lot of the Coordinating Council's Accountability Workgroup, and how the different data streams do line up and connect for data quality and use by management. We'll continue to refine the for-hire program methodology with MRIP, to more fully incorporate logbooks and the math that goes along with that.

We'll be establishing policies and procedures for ACCSP Citizen Science data and data collection systems, including the SciFish project. Under data distribution, we're looking to expand the data warehouse contact, really looking at the updated MRIP standards and

presentation of the recreational estimates aligning with public presentation of the MRIP estimates that will be changing in April of 2023.

Also, establishing new biological data feeds to fulfill that section of the data warehouse. Of course, under data use, we do a lot to support the assessments that are going on. We'll be continuing to provide validated commercial landings data for the Commission assessments and the SEDAR assessments that were listed there, and responding to data requests. Thank you.

CHAIR CIMINO: Thank you, Geoff, any questions for Geoff? Go ahead, John.

MR. CLARK: Geoff, if you're going to be looking for volunteers to go to Hawaii, I'll mentor them on the tablets. I'm sure we have APAIS staff that would love to do that.

DR. McNAMEE: I was wondering about the large pelagic survey, so that item is about working with the states to transfer that program to states, or I was wondering like what you mean by that bullet.

MR. WHITE: It's a recognition of something that has been done by the states already. The large pelagic telephone survey add-on to the for-hire survey component, is an extension of that phone interview that is already occurring, and the states were already doing. But we hadn't captured a recognition of that in the Action Plan. It's not a new activity, it is more an explanation of what happens.

CHAIR CIMINO: Anyone else?

EXECUTIVE DIRECTOR BEAL: Moving on, Goal 4 is compliance LEC activities, and Toni is going to handle that, I believe.

MS. KERNS: I just have two updates for the Law Enforcement goal. The first is in concurrence with the goal for lobster and Jonah crab that will have the Law Enforcement Committee work with the states to incorporate or implement the vessel tracking devices consistent with the Addendum.

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In addition, the Committee has started this week working on making changes to the guidelines for resource managers, so I don't know if we should say newly revised guidelines. But I'll think of a way to edit that to show that this will be the third update to that document. It was last updated in 2015.

CHAIR CIMINO: Question?

EXECUTIVE DIRECTOR BEAL: All right that was quick. Moving on, Goal 5 is habitat work, and Pat is going to cover that.

MR. CAMPFIELD: Goal 5 covers the Habitat Program as well as the Commission support of the Atlantic Coastal Fish Habitat Partnership. Not a lot of new activities, though continue to generate habitat management series publications, the Habitat Hotline Outreach Newsletter of state activities and federal partner activities.

They will also continue to work on fish habitats of concern. Under the leverage partnerships section, a couple of activities under the Atlantic Coastal Fish Habitat Partnership are to identify partners and support restoration, grant administration, and project management. That is an activity that the U.S. Fish and Wildlife Service has supported for a number of years. Hopefully that will continue, but with some new federal legislation that may change, so we need to brainstorm and find a Plan B. Also work with partners to develop standardized SAV monitoring protocols for the coast. That has been working closely with PEW and other NGOs leading that effort.

Then finally, implement the new ACFHP five-year strategic plan, and the next annual action plan for the partnership, including new initiatives with climate resilience and DEJ. The ACFHP Steering Committee is meeting down the hall this week, to hopefully put the finishing touches on that next Strategic Plan.

CHAIR CIMINO: Thank, Pat, any questions for Pat?

EXECUTIVE DIRECTOR BEAL: Great, thanks, moving along, Goal 6 is Outreach efforts, and Tina Berger will cover that.

MS. TINA L. BERGER: Thank you. As Bob mentioned, this goal is about outreach and communication. As many of the other sections or goals, we do a lot of things on a continuing basis. I'll just highlight a few of the big things that we will be working on next year. We'll continue to keep on making our annual report a slim, sleek, concise overview of what we're accomplishing each year.

We're going to highlight our outreach efforts on some focused subjects and species, and those are identified under that first header under current and new technologies. We're going to be doing a lot of work on the website, not completely revising it, but certainly updating and upgrading it, making it HTTPS compliant, increasing its flow and user friendliness, and developing new content.

We will also be migrating three of the websites that we currently host in-office to an off-site host, to increase security of our own servers and internal structures. Under stakeholder participation, we'll continue to revitalize advisory panels for those species that will have major activities next year, and get our advisory panel primer up to date, including several new changes that have been made.

Under media relations and networking, as Geoff mentioned in his, we're going to be finalizing a communication plan that seeks to clarify our staff roles and responsibilities, and provide a vision for future outreach efforts for all the Commission programs. We will continue on a continuing effort, respond to factual inaccuracies that have been showing up in various news articles, in particular horseshoe crab, but other species as well. That is the major activities for Goal 6. Thank you.

CHAIR CIMINO: Thank you, Tina, any question? Yes, John.

MR. CLARK: Not a question, Joe, I just wanted to thank Tina for her phenomenal efforts in responding to all the false information coming out about the Horseshoe Crab ARM, and you know just seeing some of the things that we've already seen about the latest update of the menhaden assessment. It looks like it's going to be keeping your hands full, Tina, responding to these types of things. Thanks again.

CHAIR CIMINO: Loren.

MR. LOREN W. LUSTIG: Thank you for the report regarding outreach. I'm very familiar with some programs that have been developed in the past that take outreach into the classrooms. For example, there is a program that occurred in Maryland, when I was working there, called Grasses in Classes, that encouraged to actually have a hands-on, in terms of conservation. A similar program, Trout in the Classroom in Pennsylvania. Do we have any plans or hopes to develop similar programs that relate to marine fishes?

MS. BERGER: I'll answer this in this way. You know the Commission is centralized in Arlington. It is hard for us to get sort of programs out into nature, based on our accessibility to that. We can certainly work in greater effort to work with the state programs, and working with their education, to get into classrooms through the states.

That may be a more appropriate way to do that than at the Commission level. We have in the past participated in a lot of tradeshow and coast fests, as in the Georgia Coast Fest, where we hit a large number of young children with activities and information that is easily accessible. I agree with you, it's an important way to educate our youth, and get them familiar with the natural world. I'll seek ways to do that at the Commission level.

CHAIR CIMINO: Yes, I would just add that we had the State Directors meeting with all the other Commissions just last week, and we had a

pretty long discussion on equity and diversity. You know the general consensus was, the only way that we're going to see diversity around these tables, and in fisheries management, is to start getting people interested at a very early age. Any other questions?

EXECUTIVE DIRECTOR BEAL: Moving on to Goal 7. This is the Commission's legislative activity. A lot of this is care and feeding, but a couple of highlights. In fact, we started this work last night. Eric Reid opened up lines of communication with Congressman Pallone and his staff, so that's pretty nice, we were able to see them at their celebration party last night.

Moving on to some other specifics. Obviously, there was an election yesterday, and we will reach out to the new staff members and new officers, and committee structure may be changing and other things. We'll get to know those folks early in the new year, once the 118th Congress is set. Then a lot of the activities we work on through the legislative program is appropriations and support for the activities of the Commission, highlighting or adding SEAMAP, South Atlantic and trawl survey work there.

The other bills, the Bipartisan Infrastructure Law and the Inflation Reduction Act have a ton of money in them, and we're trying to find ways to tap into that money for habitat work, survey work and other things. We just noted that in there. We need to add the RISEE Act to the last bullet under the topic of engaging Congress and the administration on legislation. We will add that. We already have Recovering Americas Wildlife Act in there, and we'll see where that goes. We may be able to take that off if that were to pass before the end of the calendar year. There are some conversations about fishery compensation and litigation legislation for offshore wind power, and we'll track that pending legislation as well. We'll work with NOAA leadership and Congressional folks for sort of the out fiscal years, '23 and '24, trying to get our priorities recognized there.

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Again, you know highlighting our budget priorities, SEAMAP, South Atlantic, Chesapeake Bay work for menhaden, and also there is a specific ask in here for helping South Carolina with their research vessel. That vessel is a little bit beyond the useful life of a survey vessel, we'll say. It's being held together by duct tape and bubblegum, but it's still working, and we're going to try to get that replaced and retrofit and help out South Carolina with that.

Then the last bullet here that's new is highlighting the USGS Commission partnership. ASMFC and the other three Commissions, including the Great Lakes, have new and cooperative programs and research work going on with USGS. I'm going to try to find some financial support for that in the year moving forward.

Those are the highlights of our legislative activity, and we're getting very close to hiring a new Legislative Coordinator, which will be great. Happy to answer any questions on that. Moving on, last but not least, Goal Number 8, right, is Laura's finance and administration activities.

MS. LAURA C. LEACH: As you are well aware, most of the activities in Goal 8 are ongoing every year, so I'm really going to only point out one that I'm really excited about. I mean I love them all, that's not how I meant that. But Geoff has been working very hard to develop a database, comprehensive database, that we can track everything of our incoming funds, as well as the contracts that go out from those funds.

Because, especially with the project cooperative agreement that we have that Derek Orner runs. We put out a lot of contracts on those. We have a lot of money in those, and it's been run by spreadsheets for a very long time, and Geoff and I have been working very hard to make a comprehensive database that will capture the complete life cycle. I'm very excited about that. Everything else is ongoing, so I'm not going to bore you. You can ask me any questions that

you would like, but otherwise that is the only one I'm going to highlight.

CHAIR CIMINO: Questions for Laura? Thank you, Laura. Erika, go ahead, please.

MR. ERIKA BURGESS: My question was back on the legislative item. Bob, I was wondering if work on streamlining the federal disaster funding is included in your legislative priorities? I know several states have run into issues with the amount of time it takes to get federal disaster declarations approved, and then funding through the OMB process.

More recently in Florida, we as many of you know, were devastated by Hurricane Ian, which wiped out much of our infrastructure in Southwest Florida, and our Southwest shrimping fleet. The response we have from NOAA is that, come back to us in a year, show us your losses, and then we'll consider a disaster request. In the meantime, we have people without homes, without businesses, without boats. This system just really seems to be broken. I would like to see it be an ASMFC priority.

EXECUTIVE DIRECTOR BEAL: Thanks for that comment. We do not have that included here. The question is, how much of that can we affect at ASMFC? In other words, you know it is a federal process, OMB is involved. For the herring disaster in the northeast, we're actually working with the states, and hopefully be able to move that money along pretty quickly once we get it.

But the bottlenecks are not on our end. We can put something in here, but there are conversations going on at the federal level to speed that up and make it more efficient. It's up to the group. We can put something in here, but I'm not sure we can affect a whole lot of change from the Commission side of things.

CHAIR CIMINO: Go ahead, Pat.

MR. PATRICK C. KELIHER: I don't disagree with anything that Bob said. But one thing that we may want to though consider around disaster declaration is the appropriations component,

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adding that as a priority to already appropriations requests. That is going to be an ongoing conversation.

Especially in light of what is happening on the west coast with the Alaskan crab fishery and the huge amount of money that is going to be requested there. You may want to think about it strictly from, I agree with all your comments, but strictly from an appropriations standpoint. I can see us wanting to add that to our asks going forward through that process.

EXECUTIVE DIRECTOR BEAL: Okay, we can add that if the group is comfortable with that. One other noteworthy thing here is that when we were at the State Directors meeting in San Diego last week, Sam Rauch reported out. They are going to hire a full-time staffer or two that is going to be available just to work on disaster. Some of the activity that happens within NOAA Fisheries, hopefully will be sped up, if that person is on staff full time. But we can add some language about appropriation and seeking funds for disasters.

CHAIR CIMINO: Yes, and part of that was Sam's recognition that this is happening a lot more often. I think that's a good idea. I mean it needs to be part of our bigger discussions.

MR. KELIHER: Yes, I think that's a good reminder. I had forgotten about that conversation, because those were some very key questions asked to NOAA leadership around streamlining the process. While it's not captured here, it certainly was captured by the State Directors in that meeting last week.

CHAIR CIMINO: Sorry, go ahead, Tom.

MR. THOMAS P. FOTE: Yes, we've been discussing the same problem at MAFAC, and how do we basically correct the problem. I'll work with you, because I'm still going to be on MAFAC until 2025, so we can work that way also.

CHAIR CIMINO: Great, thank you. Any other questions? **We're looking for a motion to approve as modified. I'm going to give it to Tom Fote, and I'm going to give a second to John Clark.** That is homefield advantage there.

ELECTION OF COMMISSION CHAIR AND VICE-CHAIR

CHAIR CIMINO: The next item is election of Chair and Vice-Chair, and for once I'm going to pass this over to Bob with no smart Alec remarks.

EXECUTIVE DIRECTOR BEAL: You can save those remarks until after the election, Joe. I think everyone knows where we are. Spud Woodward has been Chair for a year and Joe Cimino has been Vice-Chair of the Commission. But the Guiding Documents of the Commission require an annual election of leadership at the Commission.

The Commission sets up a Nominations Committee every year, and the membership this year is Erika Burgess from Florida, John Clark from Delaware, and it's Chaired by Pat Keliher from Maine. With that I will call on Mr. Keliher for a report out from the Nominations Committee.

MR. KELIHER: The Nomination Committee did send an e-mail through Bob last week, asking for further nominations. After receiving countless requests for other names to be put forward, and considering that, as I was just reminded by my seatmate to my left that the current Chair decided to duck out of this meeting early.

We did have to have an emergency meeting of the Nominations Committee. But in light of all that, we did come to the conclusion, because of the fantastic work of our Chairman, Spud Woodward, and Vice-Chairman Joe Cimino, that we would move them forward as a slate for renomination, or for nomination.

EXECUTIVE DIRECTOR BEAL: Okay, thank you, Pat, for that report from the Nominations Committee, and since it is from a committee it does not need a second. The Commission always does allow

nominations from the field, so are there any other nominations, outside of what the Nominations Committee has brought forward?

Seeing none; let's see if we can do this efficiently now. Bet we can. **Is there any opposition to reelecting Spud Woodward as the Commission's Chair and Joe Cimino as the Vice-Chair of the Commission? Seeing no hands; congratulations, Spud, wherever you are in your travels, and congratulations, Joe on another year.** (Applause)

CHAIR CIMINO: Yes, thanks. I wanted to say, Spud had some comments, and this kind of even goes to the Action Plan too. Hopefully, if all goes well, he'll be home safe and things will be all right there, and he'll be able to make those comments during Policy Board, which he'll be chairing virtually, and thank you all. Yes, any other business to come before us? Go ahead, Tom.

MR. FOTE: Yes, I was just thinking of the first time that I got a chance to vote as a commissioner, with the vote in the election in 1991. I remember that at that period of time, that was the only opportunity at the Business Meeting, we got Governor's Appointee and Legislative Appointee able to vote. The progress over the years has really been something. It gave me a warm feeling to basically do this vote again.

ADJOURNMENT

CHAIR CIMINO: Okay, if nothing else, I'll entertain a motion to adjourn.

(Whereupon the meeting adjourned at 11:05 a.m. on Wednesday, November 9, 2022)