



# Atlantic States Marine Fisheries Commission

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*Spud Woodward (GA), Chair*

*Joe Cimino (NJ), Vice-Chair*


*Robert E. Beal, Executive Director*

*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

## MEMORANDUM

Revised January 25, 2023

TO: Commissioners; Proxies; American Eel Management Board; American Lobster Management Board; Atlantic Herring Management Board; Atlantic Menhaden Management Board; Atlantic Striped Bass Management Board; Executive Committee; ISFMP Policy Board; Shad and River Herring Management Board; Spiny Dogfish Management Board; Winter Flounder Management Board

FROM: Robert E. Beal   
Executive Director

RE: ASMFC Winter Meeting: January 31 - February 2, 2023 (TA 23-003)

The Atlantic States Marine Fisheries Commission's Winter Meeting will be January 31-February 2, 2023 at **The Westin Crystal City**, located at 1800 Richmond Highway, Arlington, VA. The room block is now closed; if you need assistance reserving a room, please contact Cindy Robertson at [crobertson@asmfc.org](mailto:crobertson@asmfc.org). This will be a hybrid meeting to allow for remote participation by Commissioners and interested stakeholders in all meetings.

The final agenda and meeting materials for the Winter Meeting are now available at <http://www.asmf.org/home/2023-winter-meeting>; click on the relevant Board/Committee name to access the documents for that Board/Committee. For ease of access, all meeting materials have been combined into one document: [2023 Winter Meeting Materials Combined](#). Supplemental materials will be available on Wednesday, January 25, 2023.

### Webinar Information

Board meeting proceedings will be broadcast daily via webinar beginning Tuesday, January 31 at 9:15 a.m. and continuing daily until the conclusion of the meeting (expected to be 11:30 a.m.) on Thursday, February 2 5. To register for the webinar, please go to: <https://attendee.gotowebinar.com/register/6463339894285834846> (Webinar ID: 905-077-435).

If you are joining the webinar but will not be using voice over Internet protocol (VoIP), you can may also call in at 562.247.8321, access code 941-166-838. 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 in 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

of speakers, balancing the flow of questions/comments between in-person and virtual attendees. The same process will be used for the public and interested stakeholders when the Board Chair provides an opportunity 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 issues), please contact Chris Jacobs at 703.842.0790.

We look forward to seeing you at the Winter 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 23-003, Travel Reimbursement Guidelines, and Webinar Instructions



# Atlantic States Marine Fisheries Commission

## Winter Meeting

January 31-February 2, 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 opportunity to 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 (January 10<sup>th</sup>) have been included in the briefing materials.
2. Comments received by 5:00 PM on Tuesday, January 24<sup>th</sup> will be included in supplemental materials.
3. Comments received by 10:00 AM on Friday, January 27<sup>th</sup> 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, January 31**

**9:15 – 9:45 a.m.**

## **Atlantic Herring Management Board**

*Member States:* Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey

*Other Members:* NEFMC, NMFS

*Chair:* Ware

*Other Participants:* Zobel, Brown

*Staff:* Franke

1. Welcome/Call to Order (*M. Ware*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment
4. Set Specifications for the 2023-2025 Fishing Years (*E. Franke*) **Final Action**
5. Other Business/Adjourn

**10:00 a.m. – 12:45 p.m. American Lobster Management Board**

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

*Other Members:* NMFS

*Chair:* McNamee

*Other Participants:* Perry, Reardon, Beal, Coogan, Trego

*Staff:* Starks

1. Welcome/Call to Order (*J. McNamee*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment
4. Review Report from Atlantic Large Whale Take Reduction Team and Progress on Atlantic Large Whale Take Reduciton Plan (*C. Coogan/M. Trego*)
5. Consider Draft Addendum XXVII on Increasing Protection of Spawning Stock Biomass of the Gulf of Maine/Georges Bank Stock for Public Comment (*C. Starks*) **Action**
6. Update from Work Group on Implementation of Addendum XXIX on Electronic Vessel Tracking for Federal Permit Holders (*C. Starks*)
7. Other Business
8. Adjourn

**12:45 – 1:45 p.m.**            **Lunch Break** (on your own)

**1:45 – 3:15 p.m.**            **Winter Flounder Management Board**

*Member States:* Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey

*Other Members:* NMFS, USFWS

*Chair:* Hyatt

*Other Participants:* Balouskus, Williams, Brown, Nitschke, Wood

*Staff:* Bauer

1. Welcome/Call to Order (*B. Hyatt*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from February 2021
3. Public Comment
4. Review 2022 Management Track Assessments for Gulf of Maine and Southern New England/Mid-Atlantic Stocks of Winter Flounder (*P. Nitschke/T. Wood*)
5. Set Specifications for 2024-2025 Fishing Years **Final Action**
  - Review Technical Committee Recommendations (*R. Balouskus*)
  - Review Advisory Panel Report (*B. Brown*)
6. Consider Fishery Management Plan Review and State Compliance for the 2021 Fishing Year (*T. Bauer*) **Action**
7. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
8. Other Business/Adjourn

**3:30 – 5:00 p.m.**            **Atlantic Striped Bass Management Board**

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

*Other Members:* DC, NMFS, PRFC, USFWS

*Chair:* Gary

*Other Participants:* Lengyel Costa, Mercer, Bassano

*Staff:* Franke

1. Welcome/Call to Order (*M. Gary*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment
4. Consider Addendum I on Ocean Commercial Quota Transfers for Final Approval **Final Action**
  - Review Options and Public Comment Summary (*E. Franke*)
  - Review Advisory Panel Report (*E. Franke*)
  - Consider Final Approval of Addendum I
5. Other Business/Adjourn

**Wednesday, February 1**

**8:00 – 9:30 a.m.**

**Executive Committee**

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

*(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/Call to Order (*S. Woodward*)
2. Committee Consent
  - Approval of Agenda
  - Approval of Meeting Summary from November 2022
3. Public Comment
4. CARES Act Update (*R. Beal/L. Leach*)
5. Discussion on Stipends for Legislative and Governors Appointee Commissioners (*R. Beal*)
6. Discuss Collection of Sharks for Scientific and Educational Purposes (*J. Clark*)
7. Discuss Distribution of Fishery Disaster Funding in FY2023 Omnibus Spending Bill (*R. Beal*)
8. Other Business/Adjourn

**9:45 – 11:15 a.m.**

**American Eel Management Board**

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

*Other Members: DC, NMFS, PRFC, USFWS*

*Chair: Edwards*

*Other Participants: Tuckey, Beal, Eyler, Flowers*

*Staff: Starks*

1. Welcome/Call to Order (*P. Edwards*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from October 2021
3. Public Comment
4. Review and Consider 2022 Benchmark Stock Assessment and Peer Review Report for Management Use and Respond if Necessary **Possible Action**
  - Presentation of Stock Assessment Report (*S. Eyler*)
  - Presentation of Peer Review Report (*J. Flowers*)
  - Consider Acceptance of Benchmark Stock Assessment and Peer Review Report for Management Use
  - Consider Management Response (if necessary)
5. Consider Fishery Management Plan Review and State Compliance for the 2021 Fishing Year (*C. Starks*) **Action**
6. Elect Vice-Chair **Action**
7. Other Business/Adjourn

**11:30 a.m. – 12:30 p.m. Atlantic Menhaden Management Board**

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

*Other Members:* NMFS, PRFC, USFWS

*Chair:* Bell

*Other Participants:* Newhard, Simmons

*Staff:* Boyle

1. Welcome/Call to Order (*M. Bell*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment
4. Consider Approval of State Implementation Plans for Addendum I to Amendment 3 to the Interstate Fishery Management Plan (*J. Boyle*) **Final Action**
5. Consider Atlantic Menhaden Technical Addendum to Addendum I to Amendment 3 (*J. Boyle*) **Final Action**
6. Other Business/Adjourn

**12:30 – 1:30 p.m. Lunch Break** (provided)

**12:30 – 1:30 p.m. Legislative and Governors Appointee Commissioners Luncheon**

**1:30 – 2:15 p.m. Spiny Dogfish Management Board**

*Member States:* Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina

*Other Members:* NMFS

*Chair:* Meserve

*Other Participants:* Newlin, Baker, Didden

*Staff:* Starks

1. Welcome/Call to Order (*N. Meserve*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from January 2022
3. Public Comment
4. Set Specifications for 2023/2024 Fishing Year **Final Action**
5. Review Monitoring Committee and Mid-Atlantic and New England Fishery Management Council's Recommendations for the 2023 Fishing Year (*J. Didden*)
6. Elect Vice-Chair **Action**
7. Other Business/Adjourn

**2:30 – 5:15 p.m. Parliamentary Training**

**Thursday, February 2**

**8:30 – 9:30 a.m.**

**Shad and River Herring Management Board**

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

*Other Members:* DC, NMFS, PRFC, USFWS

*Other Participants:* Neilan, Burrell

*Chair:* Fegley

*Staff:* Boyle

1. Welcome/Call to Order (*L. Fegley*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment
4. Consider North Carolina American Shad Sustainable Fishery Management Plan Update (*B. Neilan*) **Final Action**
5. Update on the 2023 River Herring Benchmark Stock Assessment (*K. Drew*)
6. Consider Fishery Management Plan Review and State Compliance for the 2021 Fishing Year (*J. Boyle*) **Action**
7. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
8. Elect Vice-Chair **Action**
9. Other Business/Adjourn

**9:45 – 11:15 a.m.**

**Interstate Fisheries Management Program Policy Board**

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

*Other Members:* DC, NMFS, PRFC, USFWS

*Chair:* Woodward

*Staff:* Kerns

1. Welcome/Call to Order (*S. Woodward*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment
4. Executive Committee Report (*S. Woodward*)
5. Review and Discuss Commissioner Survey Results (*T. Kerns*)
6. Discuss Atlantic Bonito Management (*D. McKiernan*)
7. Update on Ongoing Stock Assessments **Action**
8. Review Noncompliance Findings (if necessary)
9. Other Business
10. Adjourn



**11:15 – 11:30 a.m.**

**Business Session**

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

*Chair:* Woodward

*Staff:* Beal

1. Welcome/Call to Order (*S. Woodward*)
2. Committee Consent
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment
4. Consider Noncompliance Recommendations (if Necessary) **Final Action**
5. Other Business/Adjourn

# Atlantic States Marine Fisheries Commission

## Atlantic Herring Management Board

*January 31, 2023*

*9:15 – 9:45 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>M. Ware</i> )  | 9:15 a.m. |
| 2. Board Consent   | 9:15 a.m. |
| • Approval of Agenda   |           |
| • Approval of Proceedings from November 2022   |           |
| 3. Public Comment  | 9:20 a.m. |
| 4. Set Specifications for the 2023-2025 Fishing Years ( <i>E. Franke</i> ) <b>Final Action</b> | 9:30 a.m. |
| 5. Other Business/Adjourn  | 9:45 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

## Atlantic Herring Management Board

January 31, 2023

9:15 a.m. – 9:45 a.m.

Hybrid

Chair: Megan Ware Assumed Chairmanship: 08/22	Technical Committee Chair: Renee Zobel (NH)	Law Enforcement Committee Representative: Delayne Brown (NH)
Vice Chair: Vacant	Advisory Panel Chair: Jeff Kaelin (NJ)	Previous Board Meeting: November 7, 2022
Voting Members: ME, NH, MA, RI, CT, NY, NJ, NMFS, USFWS (9 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. Set Specifications for the 2023-2025 Fishing Years (9:30-9:45 a.m.) Final Action

#### Background

- In September 2022, the New England Fishery Management Council (NEFMC) recommended a 2023-2025 specifications package for Atlantic herring to be submitted to NOAA Fisheries (**Briefing Materials**).
- NOAA Fisheries is working to publish a final rule by February 2023 (after the Board meeting) implementing the specifications for the 2023-2025 fishing years.
- For the 2023 Area 1A fishery, the Board adopted a seasonal quota approach with 72.8% of the Area 1A sub-annual catch limit available June-September (Season 1) and 27.2% available October-December (Season 2) with Season 1 underages rolled into Season 2.

#### Presentations

- Overview of 2023-2025 specifications by E. Franke

#### Board actions for consideration at this meeting

- Set specifications for the 2023-2025 fishing years for Atlantic herring, pending release of a rule by NOAA Fisheries

### 5. Other Business/Adjourn (9:45 a.m.)

# Atlantic States Marine Fisheries Commission

## American Lobster Management Board

*January 31, 2023  
10:00 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 (*J. McNamee*) 10:00 a.m.
2. Board Consent 10:00 a.m.
  - Approval of Agenda
  - Approval of Proceedings from November 2022
3. Public Comment 10:05 a.m.
4. Review Report from Atlantic Large Whale Take Reduction Team and Progress on Atlantic Large Whale Take Reduction Plan (*C. Coogan/M. Trego*) 10:15 a.m.
5. Consider Draft Addendum XXVII on Increasing Protection of Spawning Stock Biomass of the Gulf of Maine/Georges Bank Stock for Public Comment (*C. Starks*) **Action** 10:45 a.m.
6. Update from Work Group on Implementation of Addendum XXIX on Electronic Vessel Tracking for Federal Permit Holders (*C. Starks*) 12:00 p.m.
7. Other Business 12:15 p.m.
8. 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

## American Lobster Management Board

November 7, 2022

10:00 a.m. – 12:45 p.m.

Chair: Dr. Jason McNamee (RI) Assumed Chairmanship: 02/22	Technical Committee Chair: Kathleen Reardon (ME)	Law Enforcement Committee Representative: Rob Beal
Vice Chair: Pat Keliher (ME)	Advisory Panel Chair: Grant Moore (MA)	Previous Board Meeting: November 7, 2022
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NMFS, NEFMC (12 votes)		

### 2. Board Consent

- Approval of Agenda
- Approval of Proceedings from November 7, 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. Review Report from Atlantic Large Whale Take Reduction Team and Progress on Atlantic Large Whale Take Reduction Plan (10:15-10:45 a.m.)

#### Background

- The Atlantic Large Whale Take Reduction Team (ALWTRT) met virtually over six days in November and December 2022. The goal of this meeting was for the ALWTRT to develop recommendations to NMFS for measures in the pot/trap and gillnet fisheries along the Atlantic coast to reduce mortality and serious injury (M/SI) of right whales in US commercial fisheries to below the Potential Biological Removal (PBR) level required by the Marine Mammal Protection Act. This equates to an 88-93% total risk reduction, or an additional 41-46% reduction beyond that accomplished through the Phase 1 measures implemented in 2021. The team reviewed all available data, analyses of various combinations of measures using the decision support tool, and qualitative information to inform the discussion and recommendations.
- The ALWTRT did not produce a consensus recommendation to NMFS during its December 2022 meeting. Rather, a document including key considerations and input from various stakeholder groups was provided to NOAA Fisheries to consider as it develops measures to meet the required risk reduction.

### **Presentations**

- Report from Atlantic Large Whale Take Reduction Team and Progress on Atlantic Large Whale Take Reduction Plan by C. Coogan and M. Trego

## **5. Consider Draft Addendum XXVII on Increasing Protection of Spawning Stock Biomass of the Gulf of Maine/Georges Bank Stock for Public Comment (10:45 a.m.-12:00 p.m.) Action**

### **Background**

- Draft Addendum XXVII was initially initiated in 2017 to proactively increase protection of the GOM/GBK stock but stalled due to the prioritization of Atlantic right whale issues. After accepting the 2020 Benchmark Stock Assessment for American lobster, the Board reinitiated work on the draft addendum in February 2021, with a focus on developing a trigger mechanism that would automatically implement management measures to improve protection of the GOM/GBK spawning stock if the trigger is reached.
- The Addendum considers modifications to the management program with the goal of increasing protection of the GOM/GBK spawning stock. Two issues are included in the addendum. Issue 1 addresses the standardization of a subset of management measures within LCMAs and across the GOM/GBK stock. Issue 2 considers applying either a trigger mechanism or a predetermined schedule for implementing biological management measures that are expected to provide increased protection to the spawning stock biomass and increase the resiliency of the stock.
- The Board approved Draft Addendum XXVII for public comment in January 2022, but then paused development of the Draft Addendum to allow time to better understand other challenges facing the fishery. At its November 2022 meeting the Board rescinded the motion to approve the document for public comment in order to make additional changes to the Draft Addendum. Specifically, the Board requested the management options be modified such that only one trigger level that would result in implementation of new gauge sizes, rather than two triggers (**Briefing Materials**).

### **Presentations**

- Overview of Draft Addendum XXVII for Board Consideration for Public Comment by C. Starks

### **Board Actions for Consideration at the Meeting**

- Make further changes to proposed management options, if necessary
- Approve Draft Addendum XXVII for Public Comment

## **6. Update from Work Group on Implementation of Addendum XXIX on Electronic Vessel Tracking for Federal Permit Holders (12:00-12:15 p.m.)**

### **Background**

- In March 2022, the Board approved Addendum XXIX to Amendment 3 to the Interstate Fishery Management Plan (FMP) for American Lobster and Addendum IV to the Jonah Crab FMP. The Addenda establish electronic tracking requirements for federally-permitted vessels in the American lobster and Jonah crab fisheries. The addenda address several challenges facing the fishery, including stock assessment limitations, protected species interactions, marine spatial planning efforts, and enforcement in federal waters.

- The Addenda require federally-permitted American lobster and Jonah crab vessels with commercial trap gear area permits for Lobster Conservation Management Areas (LCMAs) 1, 2, 3, 4, 5, and Outer Cape Cod to collect location data via an approved electronic tracking device.
- Since approval of the Addenda, Commission staff formed a Work Group comprised of state and federal partners to develop a request for quotes from vessel tracking device manufacturers. The request for quotes was released in the fall of 2020, and the Work Group received five quotes.
- The Work Group reviewed all five quotes, and has determined that four of them met the criteria required by Addendum XXIX for use in the lobster and Jonah crab fishery and have been sent letters of approval.

**Presentations**

- Update on Implementation of Addendum XXIX by C. Starks

**7. Other Business (12:15-12:45 p.m.)**

**8. Adjourn**



# Atlantic States Marine Fisheries Commission

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## Winter Flounder Technical Committee Meeting Summary

Webinar  
January 11, 2023

**Technical Committee Members:** Rich Balouskus (Chair, RI), Paul Nunnenkamp (NY), Tony Wood (NEFSC), Kevin Sullivan (NH), Jared Lamy (NH), Tyler Harris (NJ), David Ellis (CT), Paul Nitschke (NEFSC), Tara Dolan (MA)

**ASMFC Staff:** Tracey Bauer

The Winter Flounder Technical Committee (TC) met via webinar to review the Gulf of Maine (GOM) and Southern New England/Mid-Atlantic (SNE/MA) stock assessments, commercial and recreational fishery trends, and federal specifications for fishing years 2023-2025 approved by New England Fishery Management Council (NEFMC). State waters management measures for fishing year 2023 were set as status quo the last time specifications were reviewed by the Winter Flounder Management Board in 2021. Therefore, the Winter Flounder Technical Committee focused on recommendations for management measures for fishing years 2024-2025, which will put state specifications in line with the NEFMC specifications cycle.

### **Fishery Performance and Stock Status**

The Winter Flounder TC began by reviewing fishery performance and stock status information for both the GOM and SNE/MA stocks. Both the GOM and SNE/MA winter flounder stocks had time series lows in total catch (commercial and recreational landings and discards) in 2020, with a slight increase in total catch in 2021.

Based on the 2022 management track assessment, the GOM stock biomass status is unknown and overfishing is not occurring. The 2021 30+ cm exploitation rate was estimated to be 0.033 which is 14% of the overfishing exploitation threshold proxy (0.23). Overall, indices of GOM winter flounder abundance have not demonstrated any positive response to the large declines in commercial and recreational removals since the 1980s. However, there were increases in the fall 2021 and spring 2021 and 2022 area-swept biomass estimates, which, if they continue, could be the beginning of a positive response to the recent record low exploitation rates.

The SNE/MA stock is not overfished and overfishing is not occurring in 2021. The SNE/MA stock biomass (SSB) in 2021 was estimated to be 3,353 mt which is just above the biomass target (3,314 mt). This change in stock status from overfished to not overfished is due to a change in the years of recruitment estimates that were used to complete the projections to estimate biological reference points. Instead of drawing upon the entire time series of recruitment estimates, the projections now only use recruitment estimates from the last 20 years (2002-



2021). The winter flounder stock is most likely not capable of achieving the high levels of recruitment prior to 2000; therefore, using a truncated recruitment time series of only the last 20 years was deemed a better reflection of future stock productivity for biological reference point estimation. Despite a change in stock status, the perception of the stock SSB and recruitment trends has not changed; trends in survey indices and model estimates all continue to indicate the stock is in poor condition.

**Federal Specifications Approved by the NEFMC**

Table 1 displays the sub-ACLs and corresponding state sub-components for both the GOM and SNE/MA stocks that were approved in Framework 65 by the NEFMC at their December 2022 meeting. A comparison of the 2022 to the 2023 fishing year federal groundfish sub-ACLs reveals that the GOM sub-ACL was adjusted up by 116% and the SNE/MA sub-ACL was adjusted up by 53% to reflect the results of the 2022 management track stock assessments. The state sub-component is an estimation of what the state recreational and commercial fisheries will harvest each year based on status quo state regulations, however, it is not an allocation. The commercial portion of the state sub-component is caught by vessels that do not hold federal Northeast multispecies permits, and the recreational portion is based on calibrated Marine Recreational Information Program catch estimates. There are no accountability measures associated with the state waters sub-component, meaning there is no payback if the state waters sub-component is exceeded since this is outside of the federal multispecies plan. The federal output control system requires an assumption of state water catches to estimate the sector quotas. Table 1 displays the state subcomponents for both the GOM and SNE/MA stocks were adjusted to reflect average catch for the years 2017-2021. In the case of the GOM state sub-component this represents a 20% decrease, and for the SNE/MA state sub-component this represents a 10% decrease.

**Table 1. GOM and SNE/MA Specifications and State Sub-component Average Catch.**

Stock	Groundfish Sub-ACLs		State Sub-component		
	FY22 (mt)	FY23 (mt)	FY22 (mt)	FY23 (mt)	2017-2021 average catch (mt)
GOM	281	607	194	153	151.4
SNE/MA	288	441	21	19	17.2

**Technical Committee Recommendations**

The TC did not recommend any changes to the state waters specifications for the 2024-2025 fishing years. The commercial and recreational measures listed in Tables 2 and 3 have been in place since 2014. The TC discussed whether any adjustments were needed to regulations for the GOM and SNE/MA stocks separately.

For the GOM stock, the TC noted that the exploitation rates were still low, but there was an increase at the end of the time series in most of the independent indices. However, TC members stated it would be irresponsible to be reactionary to any potential sign of improvements in the stock and that any increases in catch may be detrimental to the stock's

potential recovery. The TC did not want to encourage targeting of winter flounder at this time, which might result from liberalizing the current management measures in the GOM. The TC felt that one or two years of increases in the indices does not provide strong enough evidence to justify liberalization of management measures.

For the SNE/MA stock, the TC was in agreement that management measures should remain status quo due to the poor state of the stock. TC members from all of the SNE/MA states highlighted the continued low landings and fishing effort in their respective states and low abundance in all of their surveys. Several TC members also noted they had not heard any interest from commercial or recreational fishermen in their states to liberalize measures. The TC agreed that environmental factors, not fishing mortality, are the major drivers of this stock at this time. A TC member noted there will be a research track stock assessment in 2026 that will incorporate environmental data, is expected to be an improvement upon current assessment methods, and recommended that management in the SNE/MA stock should remain status quo until results are available from this assessment.

Lastly, it was noted by the TC that the current management system of both SNE/MA and GOM winter flounder stocks inherently has some challenges. This is because the federal fishery is managed through output controls (e.g., ACLs) which were implemented in 2010 through Amendment 16 while ASMFC state inshore component being managed through effort controls (i.e., the current state waters management measures). The federal output control-based management requires accounting for all removals. Therefore, assumptions on state water removals are made to estimate the ACLs in the federal groundfish fishery. The NEFMC's Groundfish PDT makes an initial estimate what state water fishery catch is likely to be in the future (state sub-component) for the specifications, but because the PDT does not know what potential changes ASMFC will make before the Board meeting, they have been basing their recommendations on the average of recent catches in state waters with the assumption that trends in recent harvest will continue. The underlining assumption is that there will be little change in current state waters measures, leading to no substantial changes in state water catch. As a result, the state sub-component has continued to decline with declining state waters harvest, despite the recent increases in the sub-ACL on the federal side due to the results of the recent 2022 management track assessments. To help account for this, the Groundfish PDT used a 5-year average of catch to include several years of higher harvest in the average when recommending the state waters sub-component for fishing years 2023-2025 in Framework 65.

**Table 2. Commercial Fishery Winter Flounder Regulations.**

State	Stock Unit	Size Limit	Trip Limit	Seasonal Closure (dates inclusive)	Min. Mesh Size
Maine	GOM	12"	500 lbs	May 1 – June 30	6.5"
New Hampshire	GOM	12"	500 lbs	April 1 – June 30	6.5"
Massachusetts	GOM	12"	500 lbs	Open all year	6.5"
	SNE/MA	12"	50 lbs	Open all year	6.5"
Rhode Island	SNE/MA	12"	50 lbs	Open all year	6.5"
Connecticut	SNE/MA	12"	50 lbs or 38 fish	March 1 – April 14	6.5"
New York	SNE/MA	12"	50 lbs	June 14 – Nov 30 (for all gear besides fyke nets, pound and trap nets)	6.5"
New Jersey	SNE/MA	12"	38 fish	June 1 – Nov 30 (all gear except for fyke nets) Feb 20 – Oct 31 (Fyke net)	6.5"

**Table 3. Recreational Fishery Winter Flounder Regulations.**

State	Stock Unit	Creel Limit	Size Limit	Seasonal Closure (dates inclusive)
Maine	GOM	8	12"	Open all year
New Hampshire	GOM	8	12"	Open all year
Massachusetts	GOM	8	12"	Open all year
	SNE/MA	2	12"	January 1- February 28
Rhode Island	SNE/MA	2	12"	January 1 – February 28
Connecticut	SNE/MA	2	12"	January 1 – March 31
New York	SNE/MA	2	12"	May 31 – March 31
New Jersey	SNE/MA	2	12"	January 1 – February 28
Federal Waters	GOM & SNE/MA	Unlimited	12"	Open all year

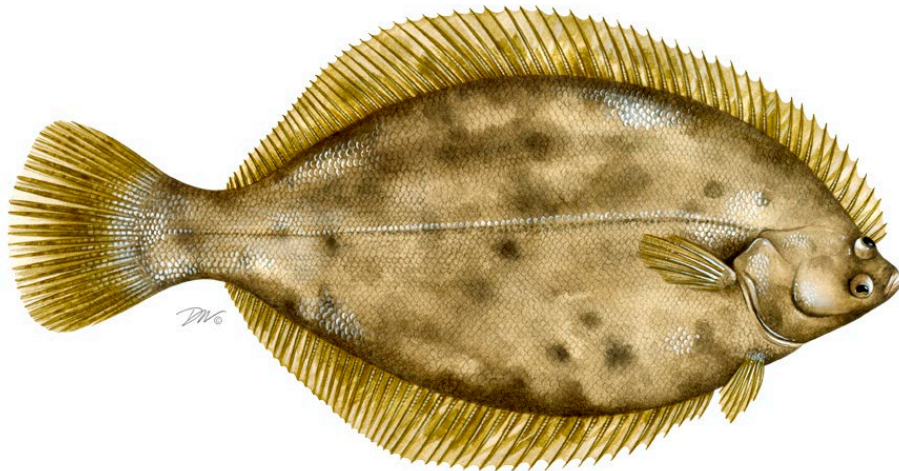
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**ATLANTIC STATES MARINE FISHERIES COMMISSION**

**REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN**

**FOR WINTER FLOUNDER**  
*(Pseudopleuronectes americanus)*

**2021 FISHING YEAR**



Prepared by the Plan Review Team  
Drafted January 2023



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

# Draft for Board Review

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## I. Status of Fishery Management Plan

<u>Date of FMP Approval</u>	Original FMP (October 1988)
<u>Amendments</u>	Amendment 1 (November 2005)
<u>Addenda</u>	Addendum I (May 1992) Addendum II (February 1998) Addendum I to Amendment 1 (May 2009) Addendum II to Amendment 1 (October 2012) Addendum III to Amendment 1 (May 2013)
<u>Management Units</u>	Three stocks units: Gulf of Maine (GOM), Southern New England/ Mid-Atlantic (SNE/MA), and Georges Bank (GBK). Commission participates in management of GOM and SNE/MA stocks.
<u>States with Declared Interest</u>	Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey
<u>Active Boards/Committees</u>	Winter Flounder Management Board, Advisory Panel, Technical Committee, Plan Review Team

The Atlantic States Marine Fisheries Commission (Commission) and the New England Fishery Management Council (Council) manage winter flounder in state and federal waters. The Commission participates in the management of two inshore winter flounder stocks: 1) the Gulf of Maine (GOM) stock, which consists of waters north of Cape Cod; and 2) the Southern New England/Mid-Atlantic (SNE/MA) stock, which consists of waters south of Cape Cod to the Delaware-Maryland border. The decision to consider only inshore stocks of winter flounder was based upon the Commission's focus on fisheries in state waters, and the differences in biological characteristics from the offshore stock in Georges Bank.

### **Interstate Fishery Management Plan (1988)**

The Commission authorized development of the first Fishery Management Plan (FMP) for Winter Flounder (*Pseudopleuronectes americanus*) in October 1988. The purpose of the plan was to: 1) address management of inshore stocks of winter flounder; and 2) prominently consider habitat and environmental quality as factors affecting the condition of the resource. The original FMP and Addendum I called for reductions in fishing mortality on winter flounder. It allowed states the flexibility to achieve those reductions based on the life history characteristics of the particular stocks inhabiting each region. Implementation of the plan required cooperation between state fishery management agencies, NOAA Fisheries, the Council, and the Commission.

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Although all states submitted plans that were approved by the Winter Flounder Management Board (Board), results from a 1995 stock assessment concluded that none of the states achieved a fishing mortality rate corresponding to  $F_{30}$ . Subsequent analyses in early January 1997 indicated that fishing mortality on a coastwide basis was slightly higher than the  $F_{30}$  target for the SNE/MA stock complex. Fishing mortality in the GOM stock was presumed to be higher than in the SNE/MA stock, and the spawning stock biomass was estimated to be at a low level, indicating that the GOM unit might be in greater need of rebuilding than the SNE/MA unit.

In February 1998, the Board approved Addendum II to the FMP. Addendum II adjusted the implementation schedule for management measures by the participating states and called for plans to reach the target fishing mortality goal for rebuilding ( $F_{40}$ ).

## **Amendment 1 (2005)**

In May 1999, the Board acknowledged that it was necessary to update the Interstate FMP for Inshore Stocks of Winter Flounder through an amendment. The original plan and addenda did not prove successful in rebuilding inshore winter flounder populations. In addition, the FMP did not reflect the goals and objectives of the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA), which was established in 1993 after the original FMP was approved. The Board further noted that an upcoming stock assessment would likely provide new information on the status of winter flounder stock complexes. After the assessment was completed in late 2002, the Commission began development of Amendment 1 in February 2003.

Amendment 1 to the Interstate FMP for Inshore Stocks of Winter Flounder, approved in November 2005, replaced all previous Commission management plans. It focused on joint management of winter flounder between the Commission and Council, and was designed to rebuild and maintain spawning stock biomass at or near target biomass levels. In addition, Amendment 1 prioritized restoration and maintenance of essential winter flounder habitat.

Amendment I required a minimum size limit of 12 inches for commercial and recreational fisheries for both GOM and SNE/MA stock units. Recreational creel limits were ten (10) fish in the SNE/MA stock area and eight (8) fish in the GOM. There were no required closed recreational seasons in the GOM, while a closed season of 20 days during March and April was required in SNE/MA. The 60-day open season for recreational winter flounder fishing could be split into no more than 2 blocks. States were required to implement a minimum size of 6.5 inches square or diamond mesh for the cod-end in both GOM and SNE/MA inshore waters. Additionally, a 100-pound trip limit was required if smaller mesh was being used in the SNE/MA. This “mesh trigger” was intended for the landing of a small amount of winter flounder as bycatch in small-mesh fisheries.

## ***Addendum I to Amendment 1 (2009)***

Addendum I was approved in May 2009, following the 2008 GARM III stock assessment which indicated that the SNE/MA spawning stock biomass was only 9% of the target and the GOM stock was likely to be overfished and experiencing overfishing. For the GOM commercial

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fishery, Addendum I established a maximum possession limit of 250 pounds per vessel. This limit was estimated to reduce 2006-2007 harvest levels by 31% for state water fishing vessels. For the GOM recreational fishery, Addendum I required states to implement regulations to reduce fishing mortality by 11% from the average of 2006-2007 levels. This 11% reduction was estimated to reach  $F_{MSY}$ . States were allowed to achieve reductions through possession limits, seasons, or a combination of both, and also had the option to submit conservation equivalency proposals to achieve the necessary reductions through alternative management measures, subject to approval by the Board.

For SNE/MA, Addendum I's management measures were designed to reach the lowest fishing mortality (F) rate possible with minimal economic and social impacts. The Addendum also sought to reduce dead discards and prevent an influx of effort into state waters. Non-federally permitted commercial vessels were allowed to possess a maximum of 50 pounds of winter flounder. This F rate was projected to reduce harvest by 65%, and was intended solely to allow for bycatch. Recreational fishermen were permitted to possess a maximum of two (2) winter flounder from inshore waters of the SNE/MA stock area. This bag limit was established with the expectation that it would reduce harvest by 46%.

## ***Addendum II to Amendment 1 (2012)***

In response to updated stock status information and federal action to substantially increase the GOM winter flounder state waters subcomponent, the Board initiated Addendum II to Amendment 1 of the Winter Flounder Interstate FMP. This Addendum changed commercial and recreational management measures for the state waters component of the GOM stock only. Specifically, it increased the maximum possession limit for non-federally permitted commercial vessels to 500 pounds. It also removed the 11% reduction in F for the recreational fishery and allowed states the option to open their recreational fishing season year-round.

## ***Addendum III to Amendment 1 (2013)***

Addendum III established an annual specification process to set commercial and recreational management measures for the GOM and SNE/MA fisheries. Each year, with advice from the Winter Flounder Technical Committee, the Board can adjust trip limits, size limits, and seasons for the commercial fishery; the Board can also adjust size limits, bag limits, and seasons for the recreational fishery. The Addendum enables the Commission to quickly respond to federal actions and changes in the winter flounder fishery.

## **II. Status of Stocks**

The most recent peer reviewed stock assessment for all three winter flounder stocks was conducted by the Northeast Fisheries Science Center in 2022. These management track stock assessments included data through 2021.

### **Gulf of Maine**



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The 2022 management track stock assessment determined that GOM winter flounder stock biomass status is unknown and overfishing is not occurring. 2021 biomass (30+ cm) was estimated to be 5,093 metric tons (mt) and the exploitation rate was estimated to be 0.033, which was 14% of the overfishing exploitation threshold proxy (Figures 1 & 2). The assessment noted that there have been significant declines in commercial and recreational removals since the 1980's; as catches continue to remain far below the overfishing level, the general lack of a response in survey indices and age/size structure has been a primary source of concern. However, there were increases in the fall 2021 and spring 2021 and 2022 area swept biomass estimates. If increasing biomass trends continue, then this may be the beginning of a response to the time series lows in removals. Significant sources of uncertainty include gear catchability and that biomass-based reference points cannot be determined. This 2022 assessment update did however incorporate a re-estimated catchability based on a sweep study for the NEFSC survey. (Source: [Gulf of Maine Winter Flounder 2022 Assessment Update](#))

## **Southern New England/Mid-Atlantic**

The SNE/MA management track assessment indicates the stock not overfished and overfishing is not occurring. The stock is now considered rebuilt by the 2023 deadline. Spawning stock biomass has been relatively stable, but low, since 2016, with an estimated 3,353 mt in 2021 (Figure 3). The current SSB is 101% of the biomass target and 202% of the biomass threshold (Figure 4). Recruitment, an important indicator of the stock's ability to rebuild, has declined sharply since the 1980s and remains near the time series low (Figure 5). Based on a recommendation made during the previous assessment update, the recruitment stanza was changed to use only the last 20 years of recruitment estimates instead of the entire time series to make projections. The current stock size and productivity mean many of the historic recruitment estimates are near to impossible to achieve, making the adjusted recruitment stanza more realistic. The lower median recruitment estimate from this shortened recruitment stanza in the long term biological reference point projection results in a much lower SSB value for the SSB at maximum sustainable yield reference point. While stock status has changed, the perception of the stock has not, and model results, continued low harvest, and fishery independent survey indices all reveal a poor stock condition for SNE/MA winter flounder. (Source: [Southern New England/Mid-Atlantic Winter Flounder 2022 Assessment Update](#))

## **III. Status of the Fishery**

### **Stockwide**

Across all stocks (GOM, SNE/MA, and GBK), the winter flounder fisheries are a fraction of their historic productivity. Specifically, commercial and recreational landings have declined since the early 1980s (Table 1, Figure 6). Landings are reported for the 2021 calendar year unless otherwise stated.

**Commercial landings** peaked at 18,279 mt (40.3 million lbs) in 1981, the highest since 1950, but have generally declined throughout the 1990's and 2000's. In 2021, commercial landings were 449.7 mt (0.99 million lbs), an 8% decrease from 2020 landings of 489.8 mt (1.1 million lbs). A

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majority of the landings were taken in Massachusetts (91.3%; Table 2). It is important to note that management action has impacted yearly landings as annual catch limits increased in 2011 and 2012, and a moratorium was in place for the SNE/MA stock between May 2009 and April 2013. (Landings source: NMFS, State Compliance Reports)

**Recreational harvest** was 51.1 mt (112,676 lbs) in 2021, a 19.9% decrease from 2020 harvest of 63.8 mt (140,609 lbs) (Table 1). These recent recreational harvest values represent a significant decrease from the 17,535 mt (38,658,240 lbs) caught in 1981. In 2021, Massachusetts, New York, and New Hampshire comprised the majority of coastwide recreational winter flounder landings, at 80.5%, 11.4%, and 3.7% respectively. Generally, the percentage standard error (PSE) values around each state's recreational data are very high (>50) and indicate very imprecise estimates (Landings source: MRIP).

## Gulf of Maine

**Commercial landings** of GOM winter flounder have substantially declined since the early 1980s, with recent landings being roughly 10% of harvest levels in the 1980s. From 1964 through the mid-1970s, commercial landings were near 1,000 mt. Productivity peaked at nearly 2,793 mt in 1982, and has steadily declined to 141 mt in 2010, the second lowest value in the time series. For the 2021 fishing year (May 1, 2021 – April 30, 2022), landings in the GOM winter flounder stock were 154.6 mt, of which 36.9 mt were landed in state waters (Source: NMFS). The 2021 estimate for total discards is 14.5 mt (Source: NMFS).

**Recreational landings** have declined significantly since their peak in the 1980s. During the 2021 fishing year, the estimate for recreational harvest in the GOM was 42.4 mt. Recreational dead discards make up a small portion of catch and were estimated at 1.2 mt for the 2021 fishing year (NEFSC 2022).

## Southern New England/Mid-Atlantic

**Commercial landings** of SNE/MA winter flounder generally declined throughout the time series from 1964 to 2021, with periodic peaks and dips. After reaching a historical peak of 11,977 mt in 1966 and then declining through the 1970s, total U.S. commercial landings again peaked at 11,176 mt in 1981. After 1981, SNE/MA commercial landings declined to 2,159 mt in 1994 and then increased to 4,672 mt in 2001. Commercial landings have generally decreased since the 2001 peak, and were just 134 mt in 2012 (in part due to the zero possession limit in federal waters). Landings in the 2021 fishing year (as opposed to calendar year) were 72.6 mt, of which 3.0 mt were landed in state waters (Source: NMFS). 2021 total commercial discard estimates were 165.1 mt (Source: NMFS).

**Recreational landings** of SNE/MA winter flounder peaked in 1984 and have declined substantially since. During the 2021 fishing year, the estimate for recreational harvest in the SNE/MA stock was 0.8 mt. Recreational discards were greater than recreational landings in the 2021 fishing year and were estimated at 1.1 mt (NEFSC 2022). The principal mode of fishing is private/rental boats, with most recreational landings occurring during May and June (Source:

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MRIP).

## IV. Status of Research and Monitoring

Amendment 1 to the Interstate Fishery Management Plan for Winter Flounder requires the following research and monitoring activities by certain states:

- Massachusetts, Rhode Island, and New York are required to conduct annual surveys of juvenile recruitment to develop an annual juvenile abundance index.
- Massachusetts, Rhode Island, Connecticut, and New Jersey are required to conduct annual trawl surveys to develop an index of spawning stock biomass.

In 2021, states with a declared interest in the winter flounder FMP conducted the fisheries-independent surveys summarized below.

### Maine

Maine Department of Marine Resources (MEDMR) conducts spring and fall bottom trawl surveys in cooperation with the New Hampshire Fish and Game Department (NHFG). The Maine-New Hampshire (MENH) Inshore Trawl Survey collects length, weight, maturity stage, and age samples for winter flounder. In 2021, 3,165 winter flounder were caught with 419 taken for maturity samples during the spring survey. In the fall survey, 3,853 winter flounder were caught, but none were taken for maturity samples. Mean weight per tow in 2021 remained approximately the same as 2020 levels for the fall survey.

### New Hampshire

NHFG conducts an annual seine survey of juvenile fish in its estuaries from June through November. Winter flounder encountered in the survey during 2021 ranged in size from 2.6 to 14.7 cm total length with a mean of 5.3 cm total length. The survey produces an index of relative abundance for each species encountered using a geometric mean catch per seine haul. The 2021 index value (0.77) for winter flounder decreased from 2020 and is below the average (1.13) since 1997; the index has been highly variable. In addition, NHFG has worked with MEDMR since the fall of 2000 to conduct an inshore trawl survey off of Maine and New Hampshire. Winter flounder are regularly caught in this survey.

### Massachusetts

The Massachusetts Division of Marine Fisheries (MA DMF) has conducted a biannual trawl (spring and fall) survey covering MA territorial waters since 1978. Due to the COVID-19 global pandemic and associated health risks to scientists and crew, both spring and fall surveys were cancelled in 2020, but resumed sampling in 2021. GOM winter flounder abundance has been increasing since 2017 in the spring and decreasing since 2018 in the fall. Overall trends of winter flounder biomass and abundance in the GOM from 2000-2021 have shown an increase for spring and no trend in the fall. SNE/MA winter flounder abundance increased in 2021 compared to 2020 in the spring and fall. Overall, winter flounder abundance and biomass in

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SNE/MA shows decreasing trends in the spring and no trend in the fall from 2000-2021.

From June 18 – July 6, 2021, MA DMF conducted the 46<sup>th</sup> Nantucket Sound Estuarine Winter Flounder Young-of-the-Year (YOY) Seine Survey. The survey covers six Nantucket Sound estuaries on the south side of Cape Cod: Great Pond, Waquoit Bay, Cotuit Bay, Lewis Bay, Bass River and Stage Harbor. 141 seine hauls were conducted at 49 Stations in 2021. The 2021 pooled (all estuaries combined) winter flounder YOY index (0.223 YOY / m<sup>2</sup>) is just above the time series median.

In addition, in 2021, MA DMF initiated a 12-month environmental DNA (eDNA) sampling program in Cape Cod embayments and a Boston Harbor estuary study. The eDNA sampling program's goal is to improve our understanding of winter flounder habitat use. Samples were collected monthly starting in August from 10-13 stations in Sesuit Harbor, Wellfleet Harbor, and Pamet Harbor on Cape Cod Bay as well as Green Pond, Waquoit Bay, and the Bass River on Vineyard and Nantucket Sounds. In 2021, a total of 345 samples were collected from these systems from August-December along with environmental data (temperature, salinity, pH, turbidity).

The purpose of the Boston Harbor estuary study is to improve the understanding and identify the use of an urban coastal embayment by winter flounder through a multi-faceted approach. In 2021, an array of 40 acoustic receivers were deployed and maintained, which provided comprehensive coverage of the outer Boston Harbor and adjacent bays. A total of 95 adult winter flounder were tagged with Innovasea V13 acoustic transmitters between April and June 2021. Tags were programmed to last 1,116 days and will allow researchers to monitor immigration, emigration, site fidelity, and movement within the estuary over a 3-year period. Additionally, as part of this study, a beam trawl survey was initiated weekly from June through October in 2021 to generate indices of abundance and map spatiotemporal distribution of YOY winter flounder. In 2021 the survey completed 384 tows and biological, genetic, and water chemistry sampling was conducted concurrent with the survey. The survey captured 3,025 YOY winter flounder. Otoliths were extracted from 242 fish for future aging by DMF's age and growth lab to determine hatch and spawning date.

## **Rhode Island**

Rhode Island Division of Marine Fisheries (RI DMF) conducts five surveys to monitor juvenile and adult winter flounder in its state waters; spring and fall seasonal trawl surveys, a monthly trawl survey, a Narragansett Bay juvenile finfish seine survey, a coastal pond seine survey, and a coastal pond winter flounder spawning stock survey. The seasonal demersal trawl survey samples 42 fixed and random stations in the spring and fall. The spring seasonal trawl survey had a 2021 catch per unit effort (CPUE) of 2.66 winter flounder per tow, a slight increase from the 2020 value, but is the second lowest value in the time series and remains well below the time series median. The fall seasonal trawl survey had a very low 2021 CPUE of 0.33 winter flounder per tow, the lowest value in the time series. The monthly demersal trawl survey samples 13 fixed stations each month. CPUE from this survey in 2021 was 0.47 winter flounder

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per tow, which was also the lowest value in the time series and well below the time series median. The Narragansett Bay juvenile finfish seine survey samples 18 stations once a month from June through October. The 2021 CPUE was 8.87 winter flounder per seine haul, which was an increase from 2020, the highest value since 2009, and above the time series median. However, the index remains low. The coastal pond seine survey samples 24 stations in 8 coastal ponds from May through October. The 2021 survey had a CPUE of 10.99 winter flounder per seine haul, a decrease from 2020 and below the time series median. The coastal pond winter flounder spawning stock survey samples 6 stations with fyke nets from January to May in Point Judith and Ninigret Pond. The 2021 survey had a CPUE of 2.31 winter flounder per fyke set, which is a decrease from 2020 and remains below the time series median. The overall trend in winter flounder abundance for all surveys indicates a declining abundance of this species in Rhode Island waters.

## **Connecticut**

Winter flounder have been monitored through the Long Island Sound Trawl Survey (LISTS) since 1984. Spring and fall surveys are conducted each year. However, the 2021 LISTS spring (April-May) index (geometric mean fish/tow) for all ages of winter flounder was 1.44, the second lowest value in the 37-year time series (lowest previous value was 0.76 in 2017). Similarly, the 2021 spring index for age-4+ winter flounder was 0.44, the second lowest value in the time series. Connecticut Department of Energy and Environmental Protection also conducts a fall estuarine seine survey that provides an index of abundance for young-of-year winter flounder. The geometric mean fish/tow in 2021 was 0.39, the third lowest value in the 34-year time series.

## **New York**

The New York State Department of Environmental Conservation has been conducting a small mesh trawl survey targeting juvenile finfish since 1987. The weekly survey runs from May through October in Peconic Bay using a small mesh sixteen-foot semi-balloon shrimp trawl. In 2021, the YOY CPUE of winter flounder from June through July was 0.29. One total age-1 winter flounder was caught in 2021, for a CPUE of 0.003, the lowest ever in survey history. No age 2+ winter flounder were caught during 2021 for the third year in a row.

The Department also conducts a seine survey in western Long Island bays, which has been ongoing since 1986, using a 200-foot ¼ inch mesh seine. Sampling is conducted at multiple stations twice a month within Jamaica Bay, Manhasset Bay, Little Neck Bay, Hempstead Harbor, and Oyster Bay from May through October. Winter flounder catch per seine for all ages, aggregated for all 5 bays, was 3.79 for 2021, an increase from 2020. 789 winter flounder caught were YOY, and three were age-1+.

## **New Jersey**

The Bureau of Marine Fisheries has conducted an Ocean Trawl program in nearshore ocean waters since 1988. Winter flounder are most abundant in New Jersey during April, and data

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from this survey cruise are used to develop an index of relative abundance in New Jersey waters. Due to the protocols in place for COVID-19, the Ocean Trawl program did not run any cruises in 2021; however, normal operations resumed in April 2022.

## V. Status of Management Measures and Issues

The Winter Flounder Management Board set status quo specifications for the 2021-2023 fishing years. The recreational and commercial regulations listed in tables 3 and 4 have remained consistent since 2014. At the time of setting the 2021-2023 specifications, the Board was concerned about the SNE/MA's low probability of rebuilding by 2023; however, the TC's 2018 commercial measures analysis indicates the SNE/MA region is essentially a bycatch fishery. Any further restriction in measures would likely increase regulatory discards and have a limited impact on fishing mortality. While the stock status of SNE/MA winter flounder was changed to not overfished in a 2022 management track stock assessment, the overall perception of the stock has not changed. The Board intends to continue to work collaboratively with the Council to determine the best path forward in improving understanding of the biology of the winter flounder stock and determining the right management approach for this depleted stock.

## VI. Implementation of FMP Compliance Requirements and De Minimis

### De Minimis

Amendment I allows a state to be granted *de minimis* status if their fishery constitutes less than 1% of the coastwide commercial or recreational landings for the preceding three years for which data are available. A state that qualifies for *de minimis* status based on their commercial landings will qualify for exemptions in the commercial fishery only, and a state that qualifies for *de minimis* based on their recreational landings will qualify for exemptions in their recreational fishery only. States that apply for and are granted *de minimis* status are exempted from biological monitoring/sub-sampling activities for the sector for which *de minimis* has been granted.

### **Request for *de minimis* status**

New Jersey has requested *de minimis* status for its commercial fishery. New Jersey commercial landings have remained well below 1% of coastwide landings for the years 2019-2021, which meets the *de minimis* criteria.

### State Compliance

All of the states with a declared interest in the management of winter flounder have implemented commercial and recreational regulations that are consistent with ASMFC's Winter Flounder FMP (Tables 3 and 4).

## VII. Research and Monitoring Recommendations

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The 2022 Management Track Stock Assessments noted several data needs that would improve future population estimates.

## **Gulf of Maine**

- Additional studies on state survey gear efficiency
- Additional studies quantifying winter flounder abundance and distribution among habitat types, especially within estuarine environments
- Consider applying year specific catchability estimates instead of averaging the full time series
- Consider statistical approaches that overcome the imbalance between night and day tows in a stratum

## **Southern New England/Mid-Atlantic**

- Additional studies on maximum age
- Additional studies on maturity, particularly with regard to latitudinal patterns
- Investigation of localized structure/genetics of the stock
- Update and investigate migration/movement rates, using advances in tagging study design
- Incorporate environmental influences on recruitment, mortality, and/or survey catchability using state-space models
- Assess all three winter flounder stocks at the same time
- Comprehensively evaluate the spatial processes of this species
- Evaluation of alternative model structures that may be robust to patterns of biases evident in age composition fits in commercial catch data and survey time series

## **VIII. Plan Review Team Comments and Recommendations**

- The PRT finds that all states implemented regulations consistent with the Winter Flounder FMP.
- The PRT had no additional comments or management recommendations this year.

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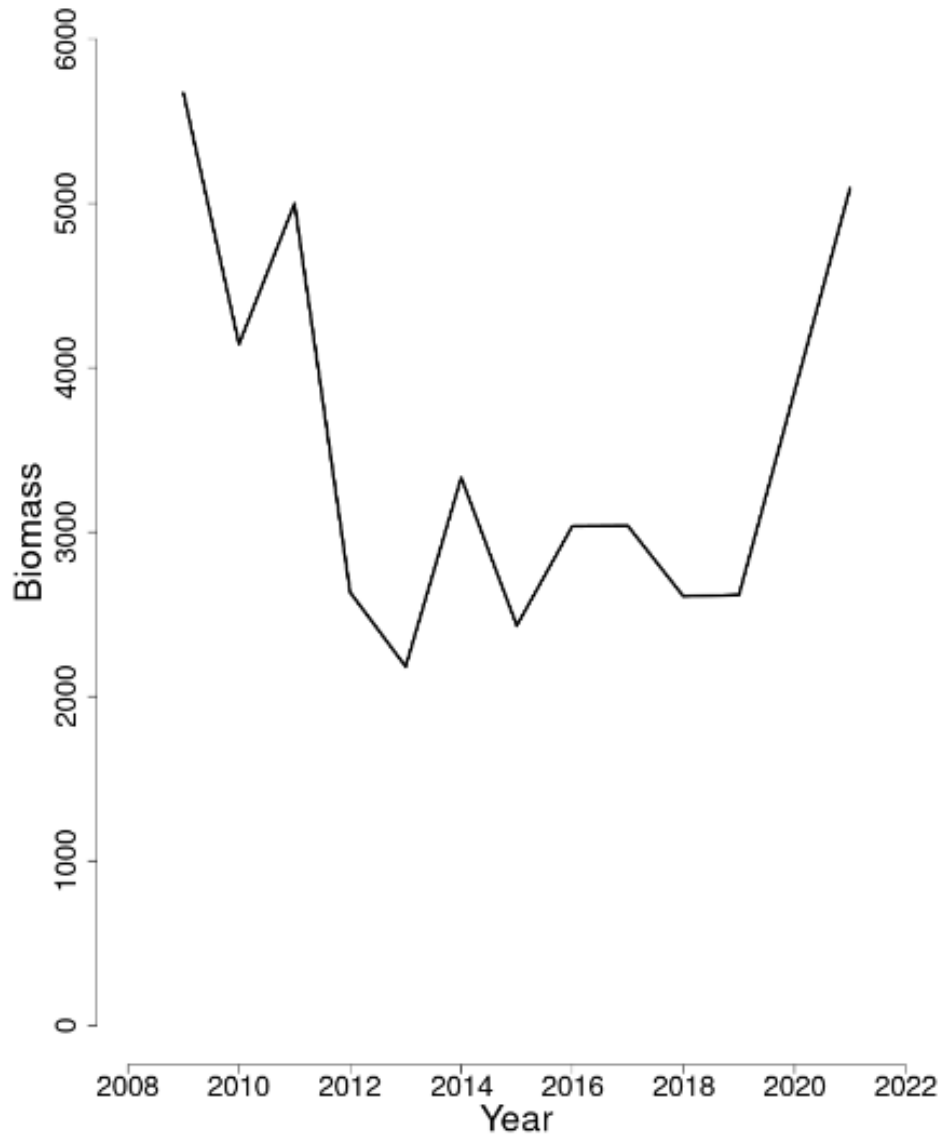
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Available online at [https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/Sector\\_Monitoring/FY21\\_Multispecies\\_Catch\\_Estimates.pdf](https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/Sector_Monitoring/FY21_Multispecies_Catch_Estimates.pdf)
- Northeast Fisheries Science Center. 2022. Gulf of Maine Winter Flounder 2022 Management Track Assessment Report, Northeast Fisheries Science Center, Woods Hole, Massachusetts. US Department of Commerce, NOAA Fisheries; 8 p.  
Available online at [http://www.asmfc.org/uploads/file/638e65532022\\_FLW\\_GM\\_RPT.pdf](http://www.asmfc.org/uploads/file/638e65532022_FLW_GM_RPT.pdf)
- Northeast Fisheries Science Center. 2022. Southern New England Mid-Atlantic Winter Flounder 2022 Management Track Assessment Report, Northeast Fisheries Science Center, Woods Hole, Massachusetts. US Department of Commerce, NOAA Fisheries; 9 p.  
Available online at [http://www.asmfc.org/uploads/file/638e651b2022\\_FLW\\_SNEMA\\_RPT.pdf](http://www.asmfc.org/uploads/file/638e651b2022_FLW_SNEMA_RPT.pdf)



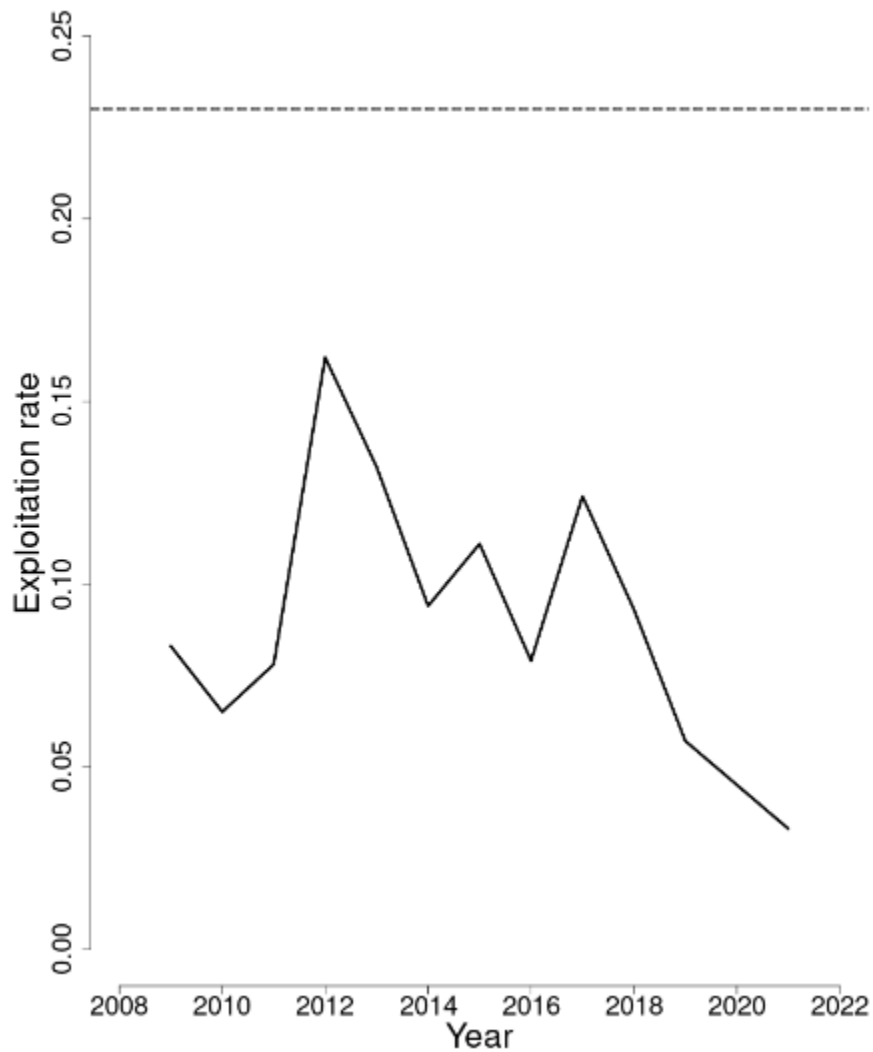
# Draft for Board Review

## X. Figures and Tables



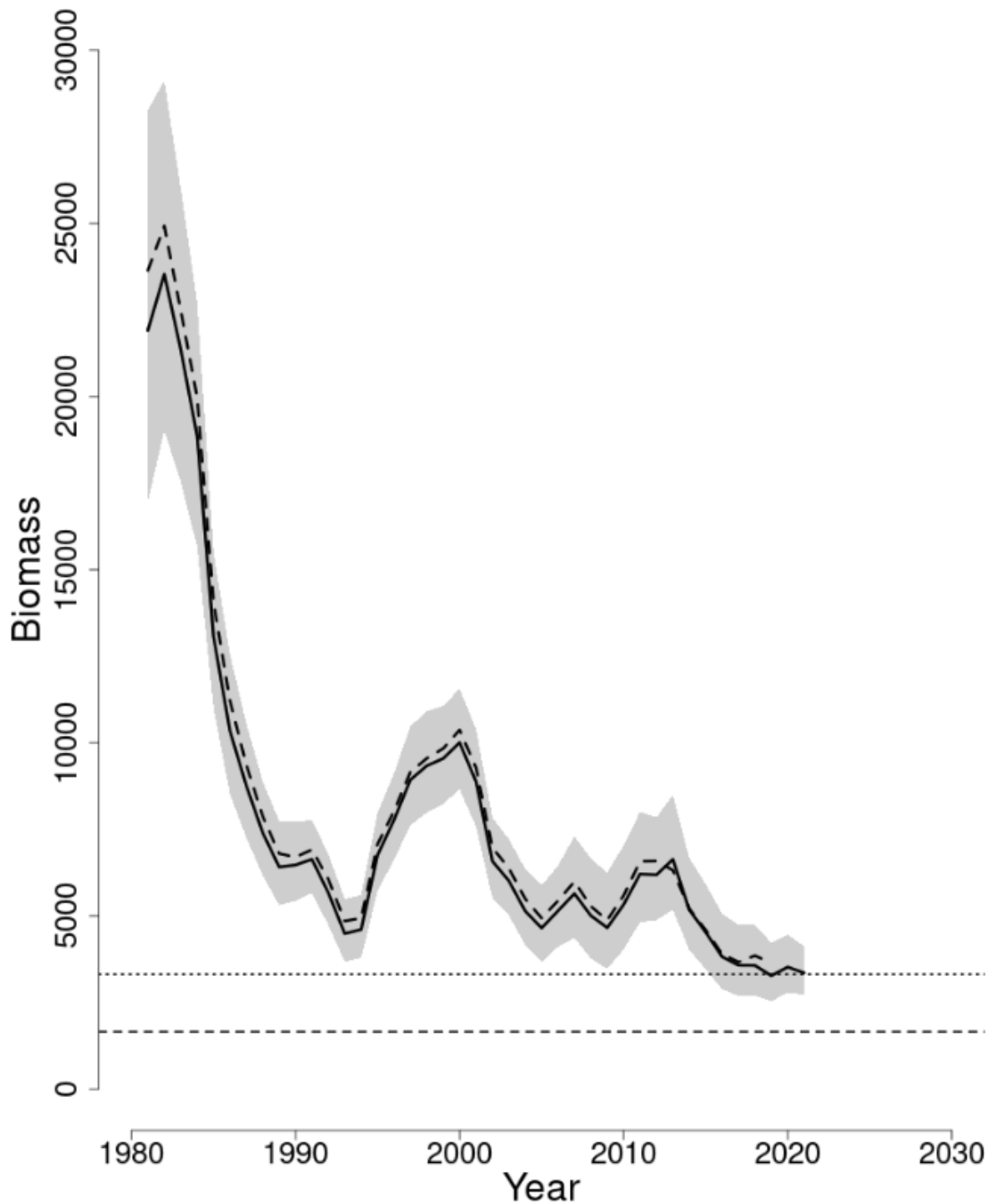
**Figure 1.** Estimates of exploitable biomass (30+ cm) for Gulf of Maine winter flounder between 2009 and 2021 as estimated from the fall MENH, MDMF, and NEFSC trawl surveys. (Source: 2022 Gulf of Maine Winter Flounder Management Track Assessment)

# Draft for Board Review



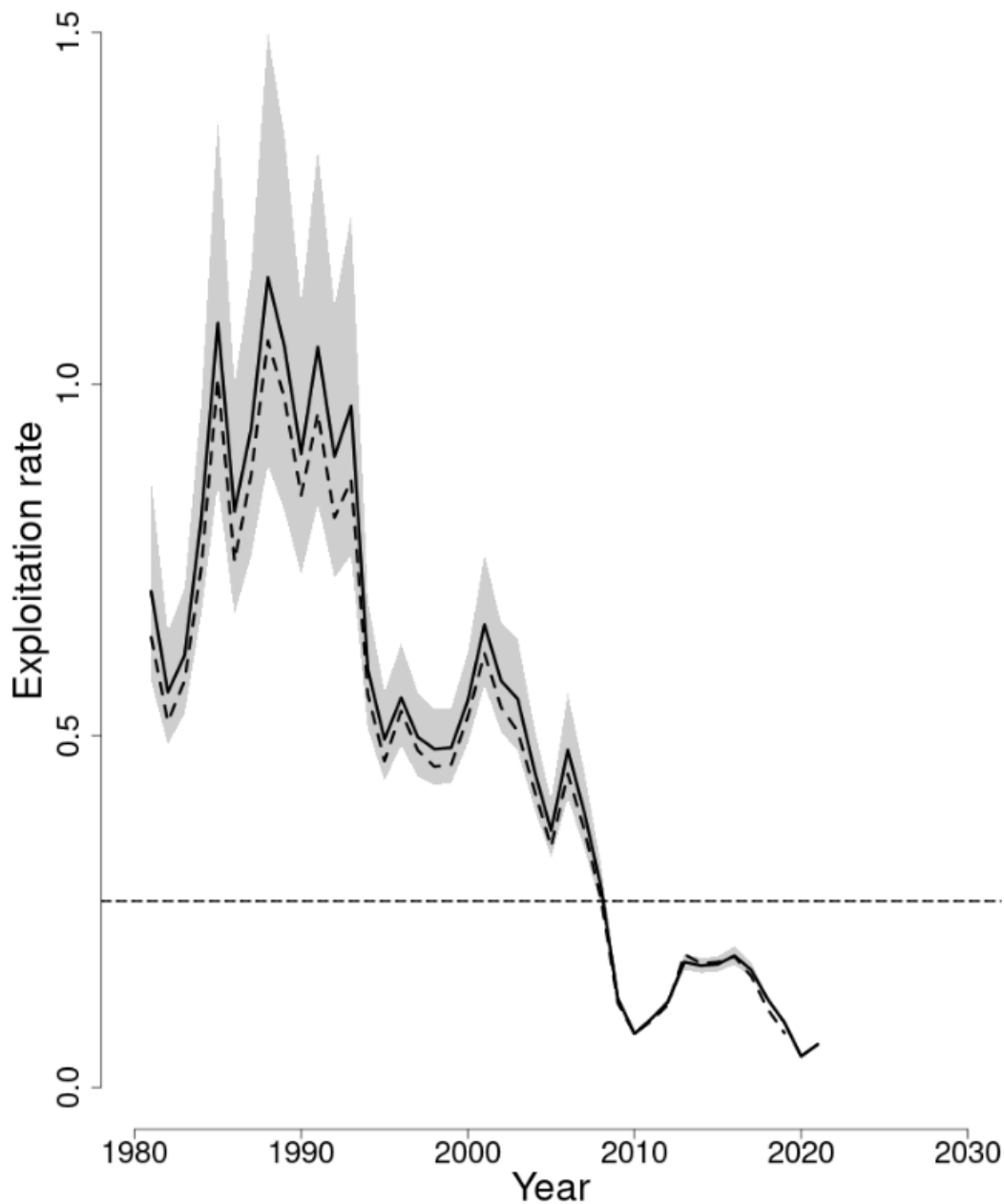
**Figure 2.** Gulf of Maine winter flounder exploitation rate between 2009 and 2021. The dashed line represents the corresponding F-Threshold from the 2022 assessment. (Source: 2022 Gulf of Maine Winter Flounder Management Track Assessment)

# Draft for Board Review



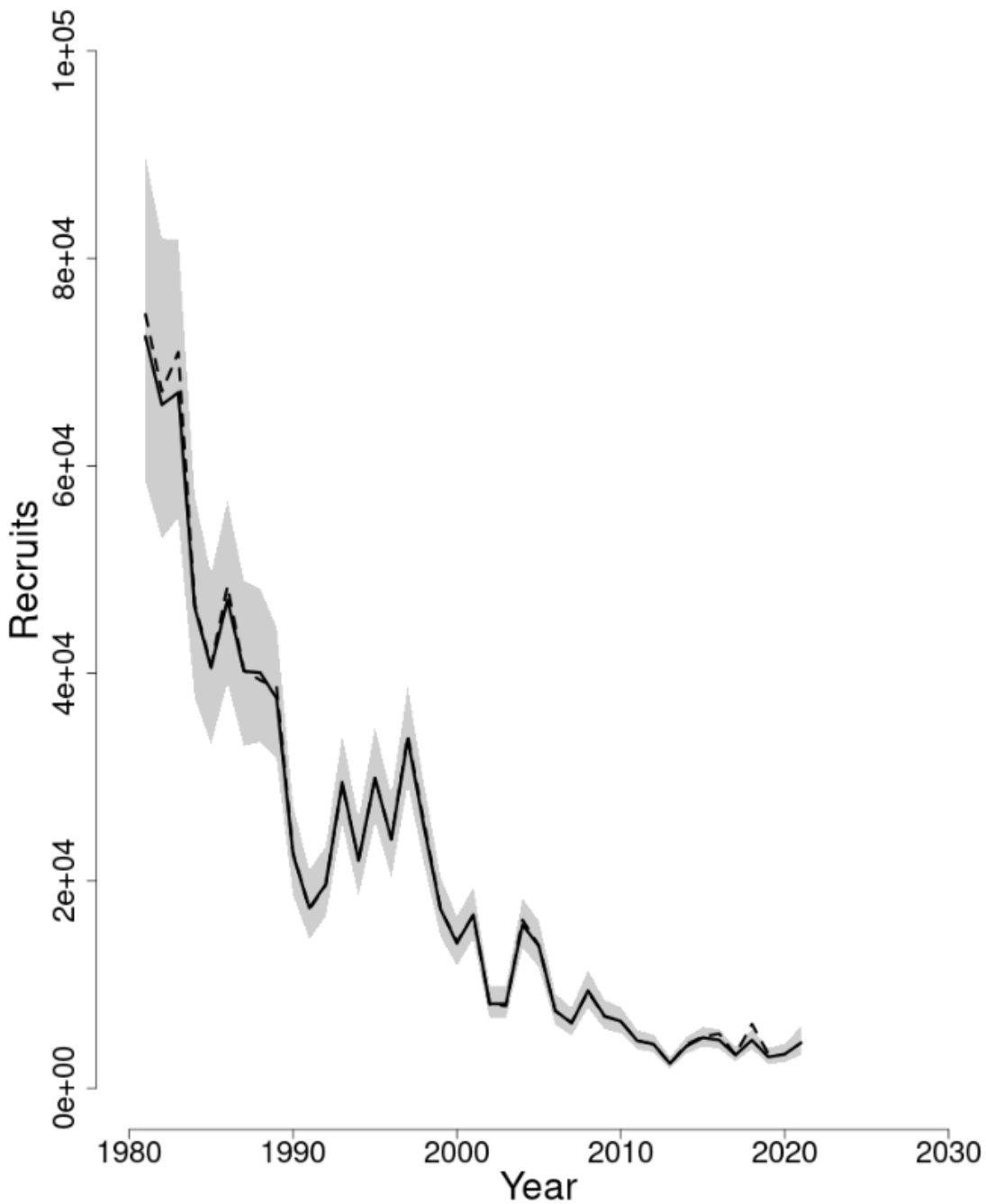
**Figure 3.** Southern New England/ Mid-Atlantic winter flounder spawning stock biomass between 1981 and 2021. The solid line represents results of the current assessment and the dashed line represents results from the previous assessment. The horizontal dotted line is the SSB-target and the horizontal dashed line is the SSB-threshold based on the 2022 assessment. The 90% confidence intervals are shown in grey. (Source: 2022 Southern New England Mid-Atlantic Winter Flounder Management Track Assessment)

# Draft for Board Review



**Figure 4.** Southern New England/Mid-Atlantic winter flounder fishing mortality between 1981 and 2021. The solid line represents results of the current assessment and the dotted line represents results from the previous assessment. The horizontal dashed line is the F-threshold based on the 2022 assessment. The 90% confidence intervals are shown in grey. (Source: 2022 Southern New England Mid-Atlantic Winter Flounder Management Track Assessment)

# Draft for Board Review



**Figure 5.** Southern New England/ Mid-Atlantic winter flounder trends in recruits (000s) between 1981 and 2021. The solid line represents results of the current assessment and the dotted line represents results from the previous assessment. The 90% confidence intervals are shown in grey. (Source: 2022 Southern New England Mid-Atlantic Winter Flounder Management Track Assessment)

# Draft for Board Review

## Commercial and Recreational Winter Flounder Landings

Sources: State Compliance Reports, ACCSP, MRIP 2022

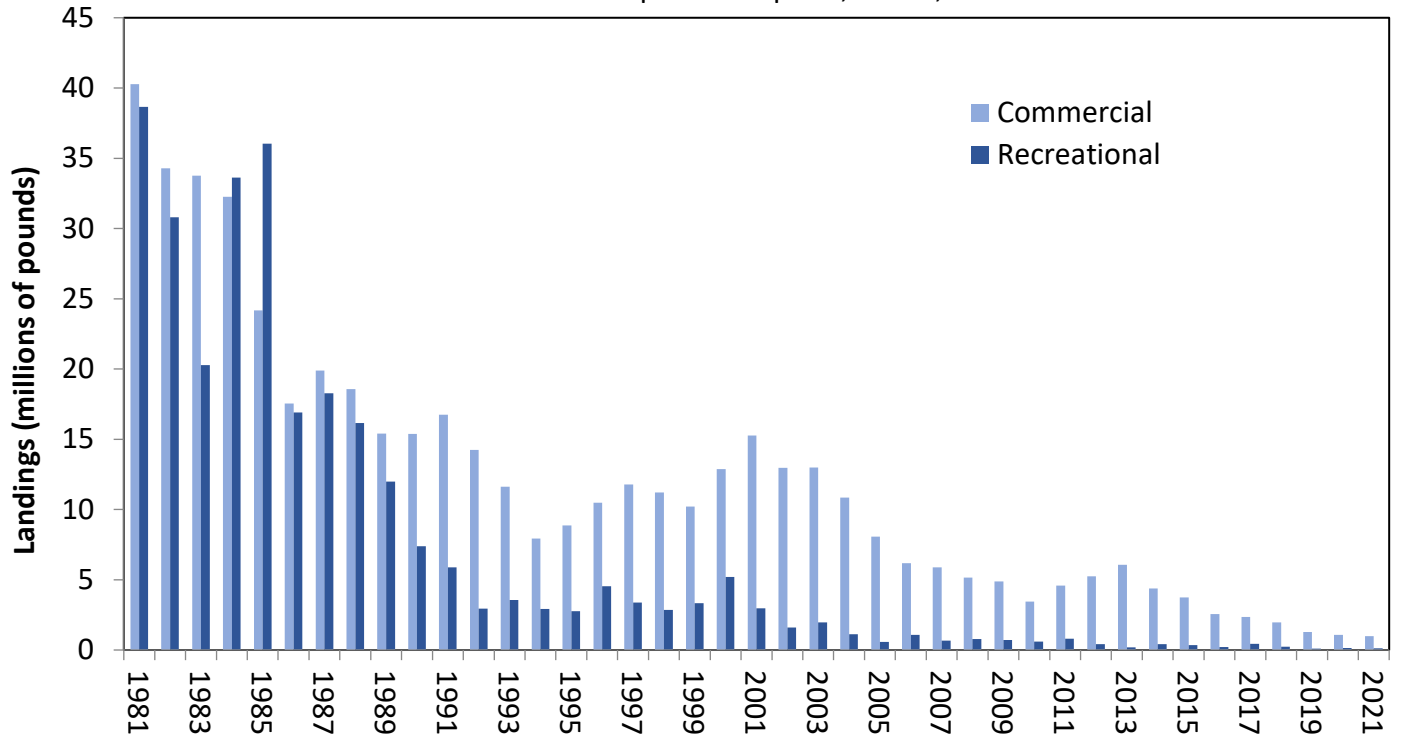


Figure 6. Commercial and recreational winter flounder landings.

# Draft for Board Review

**Table 1. Coastwide commercial and recreational landings of winter flounder.**

Source: ACCSP, MRIP.

Year	Commercial Landings (lbs)	Recreational Landings (lbs)	Total Harvest (lbs)
1981	40,281,800	38,658,240	78,940,041
1982	34,287,800	30,800,886	65,088,685
1983	33,762,300	20,270,442	54,055,083
1984	32,259,500	33,619,053	65,878,553
1985	24,169,500	36,044,271	60,236,129
1986	17,551,600	16,910,804	34,462,404
1987	19,900,600	18,267,160	38,263,989
1988	18,558,400	16,152,719	34,724,190
1989	15,403,400	11,984,077	27,388,876
1990	15,375,295	7,388,964	22,764,259
1991	16,755,114	5,879,856	22,634,970
1992	14,232,802	2,952,663	17,185,467
1993	11,618,074	3,556,271	15,184,307
1994	7,934,950	2,918,614	10,855,524
1995	8,869,168	2,752,809	11,621,978
1996	10,489,726	4,533,524	15,023,249
1997	11,774,996	3,369,650	15,164,882
1998	11,213,153	2,861,094	14,077,436
1999	10,219,341	3,323,925	13,543,267
2000	12,876,176	5,190,358	18,066,533
2001	15,274,384	2,961,872	18,236,255
2002	12,955,503	1,611,635	14,567,138
2003	12,986,593	1,967,619	14,954,212
2004	10,854,383	1,118,236	11,972,618
2005	8,074,650	575,650	8,650,300
2006	6,149,946	1,087,320	7,237,266
2007	5,882,975	677,000	6,559,975
2008	5,158,100	787,911	5,946,010
2009	4,877,566	715,732	5,593,298
2010	3,452,445	600,397	4,052,841
2011	4,593,883	805,448	5,399,331
2012	5,238,701	427,191	5,665,892
2013	6,054,017	191,785	6,245,801
2014	4,375,270	415,101	4,790,371
2015	3,752,672	336,896	4,089,568
2016	2,561,793	203,185	2,764,978
2017	2,347,429	428,764	2,776,587
2018	1,976,173	223,355	2,199,529
2019	1,286,817	87,074	1,373,891
2020	1,078,525	140,609	1,219,134
2021	991,501	112,676	1,104,177

# Draft for Board Review

**Table 2. 2021 Winter flounder commercial landings and recreational harvest (A + B1) by weight (lbs) by state. "C" denotes confidential landings. (Source: State compliance reports, ACCSP, and MRIP)**

State	Commercial		Recreational		
	Pounds	Percent	Pounds	PSE	Percent
Maine*	C	C	2,575	80	2.3%
New Hampshire	6,002	0.61%	4,217	36	3.7%
Massachusetts	904,556	91.23%	90,726	30.4	80.5%
Rhode Island	67,452	6.80%	1,952	92.2	1.7%
Connecticut	8,591	0.87%	10	97.7	0.0%
New York	4,347	0.44%	12,825	113.2	11.4%
New Jersey*	C	C	371	81.3	0.03%
Maryland*	C	C	0	-	0.00%
<b>Total</b>	991,501		112,676		

\* Maine and New Jersey's landings are not confidential, but have been removed to keep Maryland's landings confidential.



# Draft for Board Review

**Table 3. Commercial winter flounder regulations.**

State	Stock Unit	Size Limit	Trip Limit	Seasonal Closure (dates inclusive)	Recruitment Assessment	SSB Assessment	Min. Mesh Size	<i>De minimis Request</i>
Maine	GOM	12"	500 lbs	April 1 – June 30	N/A	N/A	6.5"	No
New Hampshire	GOM	12"	500 lbs	April 1 – June 30	N/A	N/A	6.5"	No
Massachusetts	GOM	12"	500 lbs	Open all year	N/A	Bottom Trawl Survey (May, Sept)	6.5"	No
	SNE/MA	12"	50 lbs	Open all year	YOY Seine Survey (June)	Bottom Trawl Survey (May, Sept)	6.5"	No
Rhode Island	SNE/MA	12"	50 lbs	Open all year	Narragansett Bay Juvenile Finfish Survey	Bottom Trawl Surveys	6.5"	No
Connecticut	SNE/MA	12"	50 lbs or 38 fish	March 1 – April 14	YOY Fall Estuarine Seine Survey	Long Island Sound Trawl Survey	6.5"	No
New York	SNE/MA	12"	50 lbs	June 14 – Nov 30 (for all gear besides fyke nets, pound and trap nets)	Small Mesh Trawl Survey, Seine Survey	N/A	6.5"	No
New Jersey	SNE/MA	12"	38 fish	June 1 – Nov 30 (all gear except for fyke nets)  Feb 20 – Oct 31 (Fyke net)	N/A	Ocean Trawl Survey	6.5"	Yes

# Draft for Board Review

Table 4. Recreational winter flounder regulations.

State	Stock Unit	Creel Limit	Size Limit	Seasonal Closure (dates inclusive)
<b>Maine</b>	GOM	8	12"	Open all year
<b>New Hampshire</b>	GOM	8	12"	Open all year
<b>Massachusetts</b>	GOM	8	12"	Open all year
	SNE/MA	2	12"	January 1- February 28
<b>Rhode Island</b>	SNE/MA	2	12"	January 1 – February 28
<b>Connecticut</b>	SNE/MA	2	12"	January 1 – March 31
<b>New York</b>	SNE/MA	2	12"	May 31 – March 31
<b>New Jersey</b>	SNE/MA	2	12"	January 1 – February 28



# Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201  
703.842.0740 • 703.842.0741 (fax) • www.asmf.org

## MEMORANDUM

**TO:** Atlantic Striped Bass Management Board

**FROM:** Atlantic Striped Bass Advisory Panel

**DATE:** January 24, 2023

**SUBJECT:** Advisory Panel Recommendations on Draft Addendum I Options

The Atlantic Striped Bass Advisory Panel (AP) met via webinar on January 17, 2023 to discuss AP recommendations on the proposed options in Striped Bass Draft Addendum I to Amendment 7 regarding ocean commercial quota transfers. ASMFC staff provided the AP with an overview of the draft addendum background, proposed options, and public comment summary.

### AP Members in Attendance

Louis Bassano (Chair, NJ recreational)	Leonard Voss (DE commercial)
Dave Pecci (ME for-hire/recreational)	Chris Dollar (MD recreational)
Peter Whelan (NH recreational)	Charles (Eddie) Green (MD for-hire/rec)
Patrick Paquette (MA recreational)	Dennis Fleming (PRFC rec/processor/dealer)
Craig Poosikian (MA commercial)	Bill Hall (VA recreational)
Andy Dangelo (RI for-hire)	Kelly Place (VA commercial)
Michael Plaia (RI comm/rec/for-hire)	Jamie Lane (NC commercial)
Bob Danielson (NY recreational)	Jon Worthington (NC recreational)
Eleanor Bochenek (NJ fisheries scientist)	

*Bob Humphrey (ME comm./for-hire) and Jamie Lane (NC commercial) provided comments via email, which are incorporated into this summary.*

ASMFC Staff: Emilie Franke

Public Attendees: Marty Gary (Striped Bass Management Board Chair), Will Poston, Jaclyn Higgins, Erik Zlokovitz

A majority of AP members support status quo Option A (no transfers permitted), while some AP members support Option B (transfers permitted with overfished conservation tax). The following is a summary of AP members' recommended options, discussion, and additional recommendations.

### ***Proposed Management Options***

14 AP members support the status quo **Option A: no transfers permitted** for the following reasons:

- Considering transfers is not appropriate while the stock is overfished and rebuilding.
- The public comments are overwhelmingly in support of Option A.
- Transfers will not benefit the stock in any way, especially when the stock is overfished or overfishing is occurring.
- There shouldn't be any increase in either sector's harvest while the stock is overfished.
- Concern that quota transfers set up the potential for behind-the-scenes or non-transparent 'horse-trading'.
- The only quota likely available for transfer is the North Carolina quota since fish have not been available there inshore; as long as the stock is overfished, we need the buffer of not harvesting that quota.
- If quota is transferred north, large breeding females would be taken out of the fishery.
- A striped bass caught in southern state commercial fisheries is not the same size as striped bass caught in northern state commercial fisheries. There is concern around moving quota from an area that harvests smaller fish to an area that harvests larger fish (i.e., losing more spawning potential). Moving quota along the coast will disrupt the current rebuilding analysis and assumed size of commercial catch.
- The stock is experiencing recruitment failure in the Chesapeake Bay, so this is a time for caution and conservation.

4 AP members support **Option B: transfers permitted with overfished conservation tax** for the following reasons:

- Quotas were developed by science, and the science would not set total quotas that would jeopardize the stock.
- The commercial fishery already is already constrained and closely monitored with payback and accountability provisions in place.
- The striped bass fishery is primarily recreational, and the commercial fishery has been diminished to 10% of total removals with low, relatively stable landings; allowing transfers would not have a significant, if any, impact on the status of the stock since the commercial fishery is at such low levels.

There was no support stated for Options C, D, or E.

### ***Additional Recommendations***

Some AP members noted additional recommendations regarding the quota transfer process:

- If the Board does allow transfers, 3 AP members recommend the Board eliminate the 45-day provision that would allow transfers to occur up to 45 days after the calendar year ends. This type of provision could lead to states being less careful about exceeding their quota since they could cover a quota overage after the year ends through a transfer.

- 3 AP members recommend that if transfers are permitted, transfers should be permitted only for states that allow commercial fishing; states that prohibit commercial fishing (ME,NH,CT,NJ) should not be able to transfer their quota.
- 1 AP member recommends revising the quota utilization calculation to exclude states that do not have commercial fisheries. Currently, the percent quota utilization is calculated incorporating those states (e.g., Maine landed 0% of their quota), which seems wrong since those states have chosen not to allow commercial fishing.

If the Board maintains status quo and doesn't allow transfers through this addendum, AP members were split on whether transfers should/shouldn't be considered in the future:

- Some AP members support revisiting the issue of quota transfers in the future after the stock is rebuilt, as that would be more appropriate timing.
- Some AP members don't support revisiting the transfer issue in the future (i.e., transfers should not be allowed in any case) because transfers are not an appropriate tool for the striped bass fishery.
- Some AP members noted uncertainty about whether transfers should be considered in the future. When the stock is rebuilt, quota transfers could be a tool to respond to climate change and shifting stocks along the coast, but only if controlled and regulated properly.

Some AP members noted recommendations regarding the commercial quota system in general:

- 3 AP members recommends the Board re-examine the overall commercial quota system since it is based on outdated data from the 1970s; science has advanced since then and the quota system should be re-evaluated.
- 1 AP member recommends the Board take a broader perspective and re-examine the contribution/value of each sector (commercial and recreational) and their contribution to the striped bass fishery overall.

# Atlantic States Marine Fisheries Commission

## Executive Committee

*February 1, 2023*

*8 – 9:30 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/Introductions ( <i>S. Woodward</i> )   | 8:00 a.m. |
| 2. Committee Consent <ul style="list-style-type: none"><li>• Approval of Agenda</li><li>• Approval of Meeting Summary from November 9, 2022</li></ul> | 8:05 a.m. |
| 3. Public Comment   | 8:10 a.m. |
| 4. CARES Act Update ( <i>R. Beal/L. Leach</i> )   | 8:20 a.m. |
| 5. Discussion on Stipends for Legislator and Governors Appointee Commissioners ( <i>R. Beal</i> )   | 9:00 a.m. |
| 6. Discuss Collection of Sharks for Scientific and Educational Purposes ( <i>J. Clark</i> )   | 9:10 a.m. |
| 7. Discuss Distribution of Fishery Disaster Funding in FY2023 Omnibus Spending Bill ( <i>R. Beal</i> )  | 9:20 a.m. |
| 8. Other Business/Adjourn   | 9:30 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

# **Commissioner Stipend Discussion Paper**

Atlantic States Marine Fisheries Commission

January 24, 2023

## **Background**

During the 80<sup>th</sup> Annual Meeting in New Jersey, the Executive Committee and the ISFMP Policy Board discussed the potential to pay a stipend to Legislative and Governors' Appointee Commissioners for their participation in Commission activities beyond the quarterly meetings. To date, the Commission has not provided a stipend to Commissioners for participation. In contrast, the Magnuson-Stevens Act establishes a daily compensation rate (GS 15, Step 7, currently \$540/day) for Federal Fishery Management Council members when engaged in Council activities.

## **Options for Providing a Stipend to Legislative and Governors' Appointee (LGA) Commissioners**

### Option 1 – Status Quo

The LGA Commissioners will continue to serve on a volunteer basis and not receive a stipend from the Commission.

### Option 2 – A Stipend will be provided only for extraordinary meetings

The LGA Commissioners will receive a stipend for meetings that are outside of the four quarterly Commission meetings and the joint meetings with one of the three Federal Fishery Management Councils. Examples of these meetings include NEFMC Atlantic Herring Committee meetings, Recreational Fisheries Summit, Scenario Planning Summit, etc.

Approximate Financial Impact: 13 Person days X \$540 Stipend = \$ 7,020

### Option 3 – A Stipend will be provided for meetings outside of the Commission Quarterly Meetings

The LGA Commissioners will receive a stipend for meetings that are outside of the four quarterly Commission meetings including joint meetings with one of the three Federal Fishery Management Councils and other extraordinary meetings.

Approximate Financial Impact: 82 Person days X \$540 Stipend = \$44,280

## **Other Considerations**

If a stipend is provided to LGA Commissioners, consideration should be given to the following items:

- Stipend for Proxies
- Virtual Participation
- LGA Eligibility to Receive Stipend
- Travel Days
- Partial Days
- Administrative Burden
- Other





January 24, 2023

To: The Executive Committee, Atlantic States Marine Fisheries Commission

From: The Southeastern Massachusetts Pine Barrens Alliance

Re: Request for a review of the Horseshoe Crab Management Board

Dear Members of the Atlantic States Marine Fisheries Commission Executive Board:

The Southeastern Massachusetts Pine Barrens Alliance (SEMPBA) is writing to request that the Atlantic States Marine Fisheries Commission Executive Committee initiate a review of the Horseshoe Crab Management Board.

SEMPBA is an all-volunteer nonprofit organization dedicated to conserving the globally rare Coastal Pine Barrens Ecoregion, which includes coastal habitats. SEMPBA volunteers have participated in the Massachusetts Division of Marine Fisheries Spawning Horseshoe Crab Survey since 2019 at Long Beach, Plymouth.

SEMPBA believes the Horseshoe Crab Management Board has failed to implement the Interstate Fishery Management Plan for Horseshoe Crab they themselves created in 1998, and as a result has failed to improve or restore horseshoe crab populations to numbers anywhere near the levels seen in the 1990s.

The goals of the Fishery Management Plan for horseshoe crabs were to:

Conserve and protect the horseshoe crab resource to maintain sustainable levels of spawning stock biomass to ensure its continued role in the ecology of coastal ecosystems, while providing for continued use over time. Specifically, the goal includes management of horseshoe crab populations for their continued use by:

- current and future generations of the fishing and non-fishing public;
- migrating shorebirds; and,
- other dependent wildlife, including federally listed sea turtles.

SEMPBA is of the opinion that the goals set forth in the management plan have been reduced to ensuring that the biomedical industry has an ample supply of horseshoe crab blood. For example, last year the Board adopted Addendum VIII, which granted permission to continue the unsustainable harvest of horseshoe crabs, even though hundreds of scientists and conservationists argued against the Addendum and called instead for full transparency in the biomedical harvest of horseshoe crabs, research into the effects of repeated bleeding on female horseshoe crabs, the implementation of statistically significant surveys coast wide and greater conservation measures.

The Horseshoe Crab Management Board was established to collect information to assist in management decisions and coordinate a comprehensive standardized monitoring plan throughout the Atlantic Coast that includes:

Mandatory monthly reporting, continuing existing benthic sampling programs, establishing pilot programs to survey spawning horseshoe crabs and egg density, evaluating post-release mortality of horseshoe crabs used by the biomedical industry, and identifying potential horseshoe crab habitat in each state.

Furthermore, the Management Plan states:

State fisheries agency(s) must actively intervene to the extent of its authority to ensure that federal, state, and local regulatory agencies are aware of the potential loss in horseshoe crab productivity associated with water quality degradation and habitat loss.

Where are the reports that show progress in habitat management?

The public relies on and expects the ASMFC and the Horseshoe Crab Advisory Board to manage horseshoe crabs responsibly—with conservation as their primary charge. We perceive a board with a bias that benefits the multi-billion-dollar pharmaceutical industry, a board focused more on supplying horseshoe crabs for industry rather than on the coordination of conservation measures.

We urge you to review the Horseshoe Crab Management Board before their next meeting and recommend changes that will turn the Board back toward its original purpose.

Sincerely,



Sharl Heller, President

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

**The Ocean Place Resort  
Long Branch, New Jersey  
Hybrid Meeting**

**November 9, 2022**

Draft Proceedings of the Atlantic Menhaden Management Board Hybrid Meeting  
November 2022

**TABLE OF CONTENTS**

Call to Order, Chair Mel Bell .....	1
Approval of Agenda .....	1
Approval of Proceedings from August 3, 2022.....	1
Public Comment .....	1
Set Specifications for 2023 .....	2
Review Technical Committee Report of Stock Projections.....	2
Consider Addendum I to Amendment 3 on Commercial Allocations, Episodic Event Set Aside Program, and Incidental Catch/Small-scale Fisheries for Final Approval.....	15
Review Public Comment Summary .....	15
Atlantic Menhaden Advisory Panel Report.....	18
Consider Final Approval of Addendum I .....	19
Adjournment .....	47

These minutes are draft and subject to approval by the Atlantic Menhaden 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 of August 3, 2022** by Consent (Page 1).
3. **Main Motion**  
**Move to set the total allowable catch for 2023 through 2025 at 259,500 MT** (Page 6). Motion by John Clark; second by Pat Geer. Motion amended.

**Motion to Amend**

**Move to amend to replace 259,500 MT with 233,550 MT** (Page 6). Motion by Megan Ware; second by Cheri Patterson. Motion passes without objection (Page 10).

**Main Motion as Amended**

**Move to set the total allowable catch for 2023 through 2025 at 233,550 MT**

**Motion to Amend**

**Move to amend to replace 233,550 with 213,840 MT** (Page 10). Motion by Robert LaFrance; second by Allison Colden. Motion failed (5 in favor, 13 opposed) (Page 12).

**Main Motion as Amended**

**Move to set the total allowable catch for 2023 through 2025 at 233,550 MT**

**Motion to Amend**

**Move to amend to replace 233,550 MT with 225,000 MT** (Page 13). Motion by Lynn Fegley; second by Loren Lustig. Motion failed (7 in favor, 11 opposed) (Page 13).

**Main Motion as Amended**

**Move to set the total allowable catch for 2023 through 2025 at 233,550 MT.** Motion carried unanimously (Page 14).

4. **Main Motion**  
**Move to approve a modified version of Option B of Section 3.1.1 allocation. Step 1 so that the following states are at 0.25%: PA, SC, GA, CT, DE, NC, FL and the remaining states will all receive a base allocation of 0.5%** (Page 21). Motion by Doug Haymans; second by Chris McDonough. Motion amended.

**Motion to Amend**

**Move to amend that Pennsylvania moves from 0.25% to 0.01%** (Page 23). Motion by Cheri Patterson; second by Roy Miller. Motion carried (12 in favor, 2 opposed, 1 null, 3 abstentions) (Page 23).

**Main Motion as Amended**

**Move to approve a modified version of Option B of Section 3.1.1 allocation. Step 1 so that the following states are at 0.25%: SC, GA, CT, DE, NC, FL; that PA is at 0.01%; and the remaining states will all receive a base allocation of 0.5%.** Motion carried (15 in favor, 1 opposed, 2 abstentions). (Page 24).

**Motions (continued)**

5. **Main Motion**  
**Move to approve under Section 3.1.2 Timeframe Option 3A: Combination, sub-option 1:25/75** (Page 24). Motion by John Clark; second by Pat Geer.  
  
**Motion to Substitute**  
**Move to substitute Option 4B moving average: provision to limit states' moving average landings if total landings exceed the total allowable catch** (Page 25). Motion by Megan Ware; second by Cheri Patterson. Motion failed (8 in favor, 10 opposed) (Page 31).  
  
**Main Motion**  
**Move to approve under Section 3.1.2 Timeframe Option 3A: Combination, sub-option 1:25/75.**  
  
**Motion to Substitute**  
**Move to substitute Option 2: 2018, 2019, 2021** (Page 32). Motion by Nichola Meserve; second by Jim Gilmore. Motion carried (8 in favor, 7 opposed, 3 abstentions) (Page 34).  
  
**Main Motion as Substituted**  
**Move to approve Section 3.1.2 Option 2: 2018, 2019, and 2021.** Motion carried (12 in favor, 3 opposed, 3 abstentions) (Page 34).
6. **Move to approve overage payback Option 2** (Page 34). Motion by Nichola Meserve; second by Jim Gilmore. Motion carried without objection (Page 35).
7. **Move to approve Option 1 (status quo) under Section 3.2.1** (Page 35). Motion by Cheri Patterson; second by Joe Cimino. Motion carried unanimously (Page 35).
8. **Move to approve under Section 3.3.1 Option 2 (States may split quota by sector/fishery/gear type)** (Page 35). Motion by Joe Cimino; second by Pat Geer. Motion carried unanimously (Page 36).
9. **Main Motion**  
**Move to adopt Option 2 in Section 3.3.2 (No purse seines, all other small-scale and non-directed gears maintained)** (Page 36). Motion by Nichola Meserve; second by Lynn Fegley.  
  
**Motion to Substitute**  
**Move to substitute to maintain purse seines in IC/SSF with a reduced trip limit of 4,000 lbs. for purse seines only** (Page 36). Motion by Megan Ware; second by Dennis Abbott. Motion tabled.  
  
**Move to table until after the Board addresses Section 3.3.4** (Page 41). Motion by Adam Nowalsky; second by Eric Reid. Motion carried unanimously (Page 41).
10. **Move to approve under Section 3.3.3 Option 1 (status quo)**. (Page 42). Motion by Jim Gilmore; second by John Clark. Motion carried unanimously (Page 43).

**Motions (continued)**

11. **Move to adopt Option 2A Sub-option 1 and 2B Sub-option 1 in Section 3.3.4 (to evaluate incidental catch and small-scale fishery landlines annually against the coastwide total allowable catch and to allow the modification of the daily trip limit and/or gear types included in the incidental catch/small-scale fisheries provision via Board action)** (Page 43). Motion by Allison Colden; second by Doug Grout. Motion carried unanimously (Page 45).

**Main Motion**

**Move to adopt Option 2 in Section 3.3.2 (No purse seines, all other small-scale and non-directed gears maintained).** Motion by Nichola Meserve; second by Lynn Fegley

**Motion to Substitute**

**Move to substitute to maintain purse seines in IC/SSF with a reduced trip limit of 4,000 lbs. for purse seines only** (Page 36). Motion by Megan Ware; second by Dennis Abbott. Motion failed (5 in favor, 9 opposed, 3 abstentions, 1 null) (Page 46).

**Main Motion**

**Move to adopt Option 2 in Section 3.3.2 (No purse seines, all other small-scale and non-directed gears maintained).** Motion by Nichola Meserve; second by Lynn Fegley. Motion carried (14 in favor, 1 opposed, 3 abstentions) (Page 46).

12. **Move to approve the Addendum as modified today and have the allocations be effective January 1, 2023 and the remaining measures will be effective May 1, 2023. Implementation plans will be submitted by January 1, 2023 and reviewed by the Board at the Winter Meeting 2023** (Page 47). Motion by Cheri Patterson; second by Jim Gilmore. Motion carried unanimously (Page 47).
13. **Motion to adjourn** by consent (Page 47).

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**ATTENDANCE**

**Board Members**

Megan Ware, ME, proxy for Pat Keliher (AA)	G. Warren Elliott, PA (LA)
Steve Train, ME (GA)	John Clark, DE (AA)
Cheri Patterson, NH (AA)	Roy Miller, DE (GA)
Doug Grout, NH (GA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Lynn Fegley, MD, AA (Acting)
Nichola Meserve, MA	Russell Dize, MD (GA)
Raymond Kane, MA (GA)	Allison Colden, MD, proxy for Del. Stein (LA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Pat Geer, VA, proxy for J. Green (AA)
David Borden, RI (GA)	Bryan Plumlee, VA (GA)
Conor McManus, RI, proxy for J. McNamee (AA)	Chris Batsavage, NC, proxy for K. Rawls (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Jerry Mannen, NC (GA)
Matt Gates, CT, proxy for J. Davis (AA)	Mel Bell, SC (AA)
Rob LaFrance, CT, proxy for B. Hyatt (GA)	Malcolm Rhodes, SC (GA)
Sen. Craig Miner, CT (LA)	Chris McDonough, SC, proxy for Sen. Cromer (LA)
Jim Gilmore, NY (AA)	Doug Haymans, GA (AA)
Emerson Hasbrouck, NY (GA)	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)	Max Appelman, NMFS
Kris Kuhn, PA, proxy for T. Schaeffer (AA)	Rick Jacobson, USFWS
Loren Lustig, PA (GA)	

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

**Ex-Officio Members**

Joshua Newhard, Technical Committee Chair	Meghan Lapp, Advisory Panel Chair
Scott Simmons, Law Enforcement Committee Rep.	

**Staff**

Bob Beal	Lindsey Aubart	Dustin Colson Leaning
Toni Kerns	James Boyle	Adam Lee
Madeline Musante	Emilie Franke	Mike Rinaldi
Tina Berger	Chris Jacobs	Julie DeFilippi Simpson
Kristin Anstead	Jeff Kipp	

**Guests**

Mike Armstrong, MA DMF	Jeff Brust, NJ DEP	Nicole Lengyel Costa, RI DEM
Vincent Balzano	Mike Celestino, NJ DEP	Caitlin Craig, NYS DEC
John Bello	Benson Chiles, Chiles Consulting	Robert Crockett
Alan Bianchi, NC DENR	Matt Corbin, MD DNR	Jessica Daher, NJ DEP
Jesse Bisette	Blaine Chocklett	Maureen Davidson, NYS DEC
Kurt Blanchard, RI DEM	Matt Cieri, ME DMR	Monty Deihl, Ocean Fleet Svcs.

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**Guests (continued)**

Taylor Deihl, Omega Protein	Chip Lynch, NOAA	Alexei Sharov, MD DNR
Everett Eaton, VA Media	Shanna Madsen, VMRC	Ethan Simpson, VMRC
Arissa Edwards, CBF	Joshua McGilly, VMRC	Melissa Smith, ME DMR
AJ Erskine	Patrick McGrath, VIMS	Somers Smott, VMRC
Tony Friedrich, SGA	Dan McKiernan, MA (AA)	Rene St. Amand, CT DEP
Alexa Galvan, VMRC	Kevin McMenamin	Terry Stockwell, Southport, ME
Lacie Gaskins, Omega Protein	John Maniscalco, NYS DEC	David Stormer, DE DFW
Shaun Gehan, Gehan Law	Drew Minkewicz, KDW	Mary Beth Tooley
Lewis Gillingham, VMRC	Steve Minkinen, US FWS	Chris Uranek, ME DMR
Angela Giuliano, MD DNR	Chris Moore, CBF	Beth Versak, MD DNR
Kurt Gottschall, CT DEEP	Kelly Mosca, CT DEEP	Mike Waive, ASA
Jamie Green, VA (AA)	Brandon Muffley, MAFMC	Jesica Waller, ME DMR
Pam Lyons Gromen, Wild Oceans	Kirby Rootes-Murdy, USGS	Craig Weedon, MD DNR
Marin Hawk, MSC	Brian Neilan, NJ DEP	Ben Whalley
Helen Takade-Heumacher, US FWS	Derek Orner, NOAA	Holly White, NC DENR
Jaclyn Higgins, TRCP	Lucas Pensinger, NC DENR	Ritchie White, CCA NH
Peter Himchak, Omega Protein	Will Poston, SGA	Kate Wilke, TNC
Harry Hornick, MD DNR	Dale Prentice	Angel Willey, MD DNR
Jesse Hornstein, NYS DEC	Jill Ramsey, VMRC	Josh Winger, NC DENR
Bill Hyatt, CT (GA)	Story Reed, MA DMF	Chris Wright, NOAA
Jeff Kaelin, Lund's Fisheries	Jeff Renchen, FL FWC	Steven Zalesak
Adam Kenyon, VMRC	Harry Rickabaugh, MD DNR	Jordan Zimmerman, DE DFW
John Kravchak	Jason Rock, MD DNR	Erik Zlokovitz, MD DNR
Ben Landry, Omega Protein	Brandi Salmon, NC DMF	Renee Zobel, NH F&G
Mike Luisi, MD DNR	Ross Self, SC DNR	
	McLean Seward, NC DENR	

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The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in The Monmouth I Room in The Ocean Place Resort via hybrid meeting, in-person and webinar; Wednesday, November 9, 2022, and was called to order at 1:30 p.m. by Chair Mel Bell.

**CALL TO ORDER**

CHAIR MEL BELL: Welcome everyone to the Menhaden Board Meeting. I'm the Chair, Mel Bell. I'll be working us through this today. We actually have a fairly light agenda, only two items on the agenda, really. I'm very proud of the Shark Board, we got through that fairly quickly. We do have some important stuff to deal with. We'll take the time needed to do it.

**APPROVAL OF AGENDA**

CHAIR BELL: First item would be Approval of the Agenda. Are there any additions to the agenda? Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Sorry to interrupt, Mr. Chair. There is nothing to do with the agenda, but somebody left a cell phone upstairs at lunch, it's an older iPhone with a home button, so I don't know whose it is.

MS. TONI KERNS: But you are my friend, because I have a home button.

EXECUTIVE DIRECTOR BEAL: Your technology level is equal with Toni's, but if anyone is missing a phone, let me know. There was a missed call from 410, which I believe is a Maryland number, so I don't know if that is a clue or not. But if anyone is missing a phone, let me know.

CHAIR BELL: If you are missing a phone let Bob know. That's okay, no that's an important thing. It might go off. Back to the agenda. Any additions to the agenda? I don't see anything, so the agenda will stand approved.

**APPROVAL OF PROCEEDINGS**

The Approval of Proceedings of the August, 2022 meeting, any edits, modifications needed to the August, 2022 minutes? I don't see any hands. Okay, no objection then the minutes will stand approved from the August, 2022 meeting.

**PUBLIC COMMENT**

CHAIR BELL: That takes us to Public Comment, and this will be public comment related to items not on the agenda. We can do this in person first, and then roll to the virtual folks. Would anyone here like to make public comment to the Board related to anything not on the agenda? I don't see any hands or anybody moving. If you've got people online, and I would like to try to limit it to like three minutes if we could, just so we can move along.

MS. KERNS: We'll put a timer up. Okay, go ahead, Phil Zalesak.

MR. PHIL ZALESAK: Chairman Bell, my name is Phil Zalesak. First a statement that Atlantic menhaden are not overfished, and overfishing is not occurring in the Chesapeake Bay, is not supported by the Commission's own data. On the contrary, this statement has been shown to be false by more recent scientific research.

Second, a statement there is no scientific proof of localized depletion of Atlantic menhaden in the Chesapeake Bay is also false. Finally, the statement that only a few individuals are concerned about the status of Atlantic menhaden in the Chesapeake Bay is also false. Regarding the Commission's own data, 95 survey site locations were used for Atlantic menhaden data collection.

These locations were shown on Page 472 of the SEDAR 69 Benchmark Stock Assessment Report for Atlantic menhaden dated January 2020. The Northeast Area Monitoring Assessment Program, NEAMAP was the official fisheries and stock management activity for the Commission, surveyed 88 of 95 locations, none in the Chesapeake Bay, none.

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Even if one wishes to count the seven industry sites, only two of those were in the Bay. Given the lack of data from Chesapeake Bay locations, no conclusion can be made about the localized depletion of Atlantic menhaden in the Chesapeake Bay, using this dataset. The claimed lack of scientific proof of localized depletion of Atlantic menhaden in the Chesapeake Bay is also false.

On the contrary, proof of localized depletion is contained in Michael Academia's research study, which was previously forwarded to the Board. It concludes there are insufficient Atlantic menhaden in the mainstem of the Chesapeake Bay to sustain the osprey population. Regarding the statement that only a few individuals are concerned about the status of Atlantic menhaden in the Chesapeake Bay.

A letter signed by 22 national and local organizations, was sent to Governor Youngkin, calling for the ending of reduction fishing in the Chesapeake Bay, until the science demonstrates that industrial menhaden fishing can be done without negatively affecting the broader Bay ecosystem. In addition, petitions in support of this letter were presented to Governor Youngkin's office on October 24, with more than 11,000 signatures.

Finally, this Board could resolve issues by simply passing a motion, which states that Atlantic menhaden reduction fishery shall be limited to federal waters, the Atlantic Ocean. That is outside Virginia waters and east of the three nautical mile western boundary or the Exclusive Economic Zone of the Atlantic Coast. In fact, Mr. Chairman, you have the authority to call for such a motion at this meeting. I hope you do. I thank you for your time.

CHAIR BELL: No further public comment right now. Good, well then, we'll get at it.

### **SET SPECIFICATIONS FOR 2023**

The first item for business for us on the agenda would be to set the 2023 Specifications, and we felt that doing this first would help us kind of establish, you know folks that have a picture in their mind of what things might look like. That helped with the

decision-making process a little bit later, as we get into Addendum I. I'm going to turn this over to Josh Newhard.

### **REVIEW TECHNICAL COMMITTEE REPORT OF STOCK PROJECTIONS**

MR. JOSH NEWHARD: I'm going to go over the projection number that was provided to the Board last month, I believe. Some brief background on TAC specifications. The coastwide TAC has typically been set at an annual or multiyear level, based on Board action. The Board has used best available science, which is historically or more recently been projection analysis that uses the data from the most recent accepted stock assessment model.

The history of previous TACs is listed there, ranging from you know minimum of around 170,000 metric tons up to 216,000 metric tons. As I may say a few times throughout the presentation, in setting a TAC the Board should consider what level of risk they are willing to accept. As I get into the projections and the associated uncertainty, hopefully you'll be able to decide what level of risk you're comfortable with.

The latest projection memo was based off the 2022 stock assessment update that was presented to the Board at the August meeting. At that time the Board requested that the TC examine a suite of TACs and their associated risk to reference points. The two main asks were, what were the TACs associated with a 40 to 60 percent probability of exceeding the ERP target.

Those were looked at in 5 percent increments. Then bringing it down a little bit more, the Board asked the TC to look at what the TAC might be with a single TAC from '23 to 2025, or as separate years, so a varying TAC across the same timeframe. Then the other ask was, what is the percent risk of exceeding the ERP target, given a plus or minus 10 percent increase or decrease in the current TAC.

Again, looking at that in 5 percent increments, and also including the status quo. Just as a refresher. The current reference points, the ERP target is the

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maximum fishing mortality on Atlantic menhaden that sustain striped bass at their biomass target, when striped bass are fished at their fishing mortality target.

Similarly, the ERP threshold is the maximum fishing mortality on menhaden that keep striped bass at their biomass threshold, when they are fished at their F target. This is from the 2022 update. The current status of menhaden fishery is that it is below the F target, the ERP target. You can see on the graph on the left there, ERP target is 0.19. We are above the fecundity target.

Again, the target is the solid line, ERP threshold is the dash line. That is based on the 2022 update. These figures are from the 2022 update as well. We have recruitment on the left and biomass on the right. Then you can see this is going to be a topic that I'll bring up later when we talk about uncertainty, but I just wanted to bring it to the Board's attention now that you can see that we have two strong year classes estimated in the model, 2019 and 2020. We also have some relatively high recruitment estimates for 2018 and 2021 as well.

Then based on those really strong year classes, 2019 and 2020, that is kind of what is driving this increase in biomass on the right-hand graph as well that you can see just in the recent time series as well. In the projections we use Monte Carlo boot strap runs of the BAM, the Beaufort Assessment Model. Again, that's based on the 2022 update. It's the same method as the benchmark, just with updated data, more recent fishery data. Uncertainty is accounted for using the best scientific methods available. Just as a reminder, similar with all other projections, they are highly uncertain, and they are subject to all the same assumptions that are built into the assessment model. There is no change in the fishing effort, there is no seasonality that's modeled, there is no structural model of uncertainty. All the same model caveats that apply to the assessment also apply to the projections. More specifically, and as was kind of brought up in the presentation of the 2022 update. There are some additional uncertainties

that surrounds the impact of the data quality or essential lack thereof, due to the pandemic in 2020 and 2021.

Several surveys that were used in the BAM had missing datapoints. Some of the larval surveys were actually not used in the 2022 update, and similarly there was reduced commercial sampling, so we're potentially missing some lengths and ages across the sampling coverage. That's an additional source of uncertainty that is built into the model, and of course that uncertainty is going to extend out into the projections as well.

Additional uncertainty, we noticed in the 2022 update, and we also saw in the 2019 benchmark, there is a retrospective pattern observed. What you can see here, if we look at the 2019 benchmark in the yellow or gold line, you can see the terminal year of the benchmark was 2019, with a 2017 terminal year, data wise.

At the end of that benchmark, we saw some very high recruitment classes as well. You can see that in the gold. But then if you compare that to the 2022 update, which used newer data, you can see that those were essentially revised to not be quite as high as was predicted in the 2019 benchmark.

The TC discussed this, especially in light of we're seeing these high recruitment years again at the end of the time series as well. If you couple that with the decrease in the amount of data that we had available to use, that there is some concern that, are we seeing that same pattern again. It appears that way.

You know we can't say for certain one way or another. Just to potentially get ahead of a question that may come up. The 2019 benchmark used 2017 data as the terminal year. However, it was used to set the TAC in 2020 to 2021. Those high year classes from the 2019 benchmark that you see in 2015 and 2016, essentially weren't really available when setting a TAC for 2020 and 2021.

This year, the high recruitment classes from the 2022 update are from 2020 and 2019. Those fish

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will be available for setting the TAC in '23 and 2024. That is an additional source of uncertainty that the TC wanted to bring up to the Board's attention. In terms of that retrospective pattern that we saw, and it also occurred in the benchmark. We believe that especially in the terminal year the model is underestimating fishing mortality, and we are overestimating fecundity, and that we considered adjusting for just projections based on two accepted methods.

Essentially what happened was one method told us not, don't adjust the projections it was fine. The other suggested that we should adjust. The TC met to discuss it, and we felt that we did not recommend adjustment projections at this time, and as I believe it was brought to the Board's attention in August, or maybe it was during the call. But the Assessment Science Committee should consider a policy for retrospective adjustments to not only help guide the Menhaden TC, but all the other TCs and SASs as well. I believe that they are going to look at that, I may be mistaken there. Again, but given all this uncertainty, the Board may want to adjust their risk tolerance as needed. This is a key to the graphs that are presented in the projection memo. I'm not going to go over all the graphs, but I did want to provide a key, so people can just refamiliarize yourself with them. As we click through and just describe what each arrow is pointing too. That solid line there in the landings, that is whatever TAC is projected.

This example is the status quo, so you can see that. We're around 194,000 metric tons, and that's not changed from year to year. We click through once it should go to the orange line, that's our target. The blue line is the threshold. Then within each graph, when there is uncertainty. If you click through, you'll see that the solid line is the 95th and 5th quantile.

The dotted line is the 25th and 75th quantile, and then the dashed line is the median for the whatever scenario. If we want to click through, we can actually get into what the projections look like. This table shows that the first range, where we're looking at what within 40 to 50 percent of

probability of exceeding the ERP target. What are the associated TACs?

That's in the first column. The second column is a static TAC, if you will, so a TAC that is set for one TAC for the 2023 to 2025, and then the other three columns are with just a TAC set for each specific year and changing over time. You'll note that the TAC associated for the single TAC for 2023 to 2025 is essentially the minimum TAC over the same timeframe.

If you look at 40 percent probability of exceeding the ERP target, note that the smallest TAC for the time varying period is the same as, excuse me, the single TAC for 2023 to 2025, if that makes sense. Then at the bottom there you can see what the recent TACs are from the past two years, so 215,000 metric tons from 2018 to 2020, and then our current TAC, 194,400.

Then these are the TACS with plus or minus 10 percent from status quo. Status quo is in the middle. That first column goes from a 10 percent reduction, and then in 5 percent increments up to a 10 percent increase over a current TAC. Those first three columns are the probability of exceeding the ERP target for each TAC year that was requested.

Then you can see in the last three columns, those are the probability of exceeding the ERP threshold across all years of the projection. You can see those, no projection within this scenario had a chance of exceeding the ERP threshold. I think that's it. With that we can take any questions.

CHAIR BELL: Good presentation. I appreciate you all responding to the tasking from the Board back in August. Thank you. Questions for Josh. Yes.

MR. ROBERT LaFRANCE: Hey, it's Robert LaFrance from Connecticut here. I just wanted to ask about the data that you had, in terms of COVID and some of the uncertainty that might have got around that. I just want to make certain I am understanding it. It sounds to me like we just had less data overall in the model. I was just wondering if you could speak to how much less data we had.

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MR. NEWHARD: That might be a better question if Katie or Kristen want to weigh in on. You know I don't know if we even can quantify that exactly.

DR. KRISTEN ANSTEAD: We did have fewer commercial sampling, so that affects kind of the making space for catch at age and some of the data going into the commercial data. It wasn't zero, but it was less than we've had before during those two COVID years. Additionally, for fishery independent data, several surveys were not running.

The model can accommodate missing data, and we did come up with our regional indices that kind of patched over some of the holes. But it did have greater error associated then with those point estimates on both sides, fishery dependent and independent we had some data gaps.

MR. LaFRANCE: Thank you, and I guess just as sort of a follow up to that. Does that calculate into your risk analysis, the fact that the data isn't as robust as it was in the past?

MR. NEWHARD: I'm sure (muffled) assessment, you know it would have just resulted in some more uncertainty around the estimates. Then that would be carried over into the projections.

CHAIR BELL: Lynn.

MS. LYNN FEGLEY: Thank you so much for this presentation, it is very helpful. This is a hindsight is 20/20 question, and probably should have been asked at the last Board meeting. But because the quota is associated with 40, 45, 50 percent probability of exceeding the target, it tends to be significantly higher than the ones where we're looking at 5 and 10 percent. Do you have any sense on let's say for the 40 percent chance of exceeding the target, what sort of chance we have of exceeding the threshold? If you don't that's okay, I'm just curious.

MR. NEWHARD: Yes, I don't have that offhand. I'm trying to look at the projecting graph. I don't think we looked at that exactly, and I don't have that. We looked at 60 percent that's in the memo, so I can't

really say that it relates to 40, unless other staff has thoughts.

CHAIR BELL: I think that's it. They don't have that available right now. They may be able to find that, give them a second. Yes, Adam.

MR. ADAM NOWALSKY: We've all dealt with probabilities of overfishing and kind of had a standard of 50 percent. But that's been in a single species world. Is there any type of basis for the 50 percent probability of overfishing in an ERP target or threshold world? Has there ever been any legal challenge of anything like that? Do we have any basis to treat that as a standard, the way we've treated it in single species management?

DR. KATIE DREW: I don't think there is any kind of legal precedent or a regulatory precedent. This is really one of the first times we've ever actually had a quantitative ERP, we or anybody else has had a quantitative reference point to try to do these types of projections with. In theory, we are sort of accounting for the benefit around forage fish when we set the ERP target and threshold. Whereas before you might have accepted, in a single-species world you might have accepted a lower percent probability or a lower risk, because of not accounting for that ecosystem services. We're trying to account for that here with these reference points. However, I don't think there is any kind of scientific justification to say 50 percent is exactly right. I think this comes back to the Board's perception of risk and uncertainty about what they value between the risk of exceeding the CRP target, versus the benefits of being riskier, from a socioeconomic perspective. But we are, I think, in somewhat uncharted waters, in terms of exact numbers and best practices around those numbers.

CHAIR BELL: Thanks, Adam, good question. Other questions. Pat.

MR. PAT GEER: This kind of leads up similar to what Lynn was saying. I was just wondering, I know the TC was only tasked at looking at the TAC in 5 percent increments, and looking at the probability of exceeding the target and the threshold of those.

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Was there any work done looking at 15 percent increase or 20 percent increase, or 15 percent decrease at all?

DR. ANSTEAD: We didn't look at anything except for the Board tasking.

MR. GEER: Okay, thank you.

CHAIR BELL: All right, other questions. They gave us exactly what we asked for. Thank you for that. My kids never did that. Any other questions at this point? We're going to have to choose a TAC. Right now, we're at 194,400. If we want something other than that we're going to have to decide. Yes, John Clark.

MR. JOHN CLARK: Are you ready for a motion, Mr. Chair, just to get the discussion started?

CHAIR BELL: Yes, it seems like we're kind of out of questions here, so let's get this thing rolling.

**MR. CLARK: I sent a motion, the motion is to move to set the TAC for 2023 to 2025 at 259,500 metric tons, and if I can get a second, I'll speak to it.**

CHAIR BELL: Second by Pat Geer. All right, discussion of the motion.

MR. CLARK: I'll just say that based on the information we've received, the probability of exceeding the ERP target is 40 percent for this, which is a much lower probability than we have right now. I know we are facing a very difficult situation coming up here of reallocating the commercial quota, which invariably can cause a lot of dislocation and problems for communities that are on the side that might be getting less TAC in the near future. I think this gives us a buffer to work through some of these problems coming up, without risking exceeding the TAC. I think it's, as I said a good point to start the discussion of where we should set the TAC.

CHAIR BELL: All right, Pat, as the seconder, do you have anything to add to that?

MR. GEER: I agree with what John said. You all remember being in Bar Harbor. It was a little bit colder, not much more. But several years ago, when we were doing a TAC, we went back and forth with nine different motions that all failed. I agree with John. This is a starting point for our discussion, starting higher and working from there. Having this discussion start from this point and work from there.

CHAIR BELL: You've got the motion, you've heard the rationale for the motion, discussion of that. Yes.

**MS. MEGAN WARE: I'm going to make a motion to, I guess it would be to amend, and it would be move to amend the 259,500 to 233,550, and if I get a second, I will explain.**

CHAIR BELL: You have a motion to amend, does Megan have a second for that? Yes, Cheri, second. Motion seconded, rationale.

MS. WARE: I think it is important to describe kind of how I got to this number. I think in our discussion today we're probably going to hear two key themes, one of them is uncertainty in the model, and the other is uncertainty with herring biomass. I wanted to try and address both of those with this TAC.

Regarding the assessment, I think we heard a really good presentation today about some of the uncertainties that COVID has created in our sampling and surveying. Then it also sounds like we have a mild retrospective pattern that I think we need to acknowledge, and potentially consider that in our risk tolerance.

But I also want to balance that with saying, this is a very robust stock assessment. This certainly represents best available science. It's showing a very healthy stock. That led me to a 40 percent risk of exceeding the ERP target, which is actually the 259,500 number. But I then wanted to address herring, and I know a few years back we had analysis from the ERP Workgroup, which looked at that relationship between striped bass and herring.

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At first it looks like there was a pretty strong relationship there. But we had some follow up analysis that suggested it was really seasonality that could be playing a role there. It may not be truly reflecting the ecosystem dynamics. But I do want to acknowledge that is a source of uncertainty. I wanted to account for that, and in the ERP Workgroup memo, they actually suggested one way to do that is via a buffer.

I took them up on that suggestion, and I applied a 10 percent buffer, and that's how I got the 233,550. I think this Board has prided itself on being conservative for menhaden management, and I think that this TAC follows that. I mean we're putting a very low risk of exceeding the F target. We are addressing herring biomass, and this is all within a very conservative ERP framework.

CHAIR BELL: I thank you, Megan. Cheri, do you have anything to add to that as a seconder?

MS. CHERI PATTERSON: No, Megan covered it quite well, but I am concerned about leaning more towards the conservative aspect of the uncertainties that we have realized with lack of data over the last two COVID years.

CHAIR BELL: I think I saw, yes Robert, your hand first and then back over to Steve.

MR. LaFRANCE: I have a question. I also was interested in putting forward a motion that would amend that motion. Is now the appropriate time for that? My motion would be to go to the 10 percent, which is 213,480.

CHAIR BELL: Since we had another hand, let's maybe have just a tad more discussion and come back to that.

MR. LaFRANCE: No problem at all, absolutely, thanks, Mr. Chair.

CHAIR BELL: Yes, did you have something?

MR. STEPHEN TRAIN: I would say as a fisherman, this is probably the second most important species

to me on the East Coast, and I could support the original motion. But I would have still had a little knot in my stomach on it, because we've done a very good job with this species. If we go up to the max every time and something goes wrong, it's risky. It seems to me the amended motion allows us to increase tonnage landed, while still decreasing fishing mortality, and that is a dream scenario to me in fisheries management. I think that the amendment is a much better choice.

CHAIR BELL: Any other comments on the amended motion right now? Dennis.

MR. DENNIS ABBOTT: I more have a point of order in that we have a motion and an amendment, then that is where we're supposed to stop at the moment, and we would have to vote on the amendment, and then whatever the main motion is at that time, that is open to further amendments. We can't have amendments on top of amendments.

CHAIR BELL: Right, thanks, Dennis, I appreciate that and I've seen that happen where you put an amendment through an amendment. Yes, it's crazy, but that is procedurally, I think correct. Discussions on the current amended motion. Are there thoughts, pro/con? As Dennis points out, what we would need to do is deal with this motion and then go back. Anything else here, Bob?

EXECUTIVE DIRECTOR BEAL: Procedurally, one of the things you can do is just sort of go around the table and see where people are, instead of a whole bunch of up and down motions and that sort of thing. You know, do you like this number? Do you have another number in your head? You know just sort of do it through dialogue, and then I think people have a good sense of what the universe you're operating in is. Then you can get into the motions. It's sometimes a good idea just to see generally where folks stand, if you're up to that, Mr. Chair.

MR. BELL: Yes, this is some high-level wheeling and dealing here. Okay, good point. Are we, just get a sense, it's a large room to read the room, but in

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terms of the number right now, are we kind of thinking that's reasonable? Nichola.

MS. NICHOLA MESERVE: I'll get on the record then and say that I support the amended number there, 233,550 metric tons. I appreciated the Technical Committee's memo, and their recommendation to look at our risk tolerance, and I agree that sticking with a 50 percent probability that we used in the last TAC setting should be revised here to the 40 percent. On top of that I can support Megan's 10 percent buffer, given the larger ecosystem situation now, with herring and mackerel as well. That's where I am, thanks.

CHAIR BELL: Joe, you had your hand up and then Eric.

MR. JOE CIMINO: Yes, if it helps, I'll jump in. We asked folks to do a lot of work and they have. They've given us some really great information. But I really appreciate how much thought Megan put into this, and the comments to the amended motion. I think I'm ready to support that. I have concerns of playing it even more conservative.

To me it starts to play that we are just going to walk away from all the hard work we asked people to do. I'm seeing a lot of fisheries independent surveys, and we're all seeing a lot of fish off the beaches here. I honestly have concerns about very large fish kills next year. I think probably New York would too.

CHAIR BELL: Eric.

MR. ERIC REID: I do have concerns, being from New England, about both herring and mackerel. I support the motion to amend for all the comments before me, and I would not support a motion to further amend to a number like 10 percent.

CHAIR BELL: Allison.

DR. ALLISON COLDEN: I just wanted to speak to the 10 percent that Rob LaFrance had put forward. Megan is exactly right that I think a lot of the discussion here today is going to focus on our

uncertainty as it relates to the model, and the fact that our ERP target and threshold don't currently reflect the best state of our knowledge with respect to Atlantic herring.

I do want to just throw it out there for us to consider as well. You know some of the arguments so far have also referenced this Board's past action, and how we have been successful in being conservative in managing this very important forage species. I went and took a look at some of the changes that we have made over the years since 2012, when we first put in a coastwide quota, and 10 percent has been the largest increase from year to year that this Board has taken in the past.

It just feels like to jump from 194 to 233, or even anything further beyond that, seems like a really large increase. Our next action to reallocate the quota amongst our states means we also don't really have a good idea of how well that is going to move things around. Is the capacity going to be where it needs to be to catch all of those fish if we set our quota that high?

I'm a little bit concerned going all the way to 2025, with an increase of a magnitude this size, that when we get our ERP assessment update in 2025, if there is something that changes, because of the incorporation of herring data or other changes to the assessment. We could have a little bit of regulatory whiplash if we need to cut back really quickly, having taken such a large increase. I just wanted to throw that out there for people to consider, with respect to a smaller number.

CHAIR BELL: There is an opinion for a little more conservative approach. Back to the number we have. Would anyone else like to speak to comfort level to this? Robert.

MR. LaFRANCE: Yes, I just want to speak to it. I really would align myself with what Allison said. I mean, if you take a look historically, you've been between 170,000 and 216,000 metric tons. We've only moved 10 percent up or down in any individual year. This is significantly bigger movement, in a model that we know has some uncertainty, a model

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that we know has additional uncertainty as a function of some of the COVID issues that we have.

It seems to me that it makes sense at this time, when we're doing reallocation, to actually utilize some additional fish to help make it easier for different jurisdictions to deal with some of the changes they're going to have. But I don't know that I'm comfortable, based upon what I've heard about the model and I'm learning about the model, specifically with regard to other species, as to whether or not that risk tolerance at 40 percent is in fact something we want to be at.

I feel, and I saw this the other day. There are a ton of fish out there. It seems like some of the stripers are coming back. It seems like there is an ample amount of fish. Where they are located and how we learn about that. We still have a number of years before we're really going to be able to look at this spatially.

I guess I'm really looking at a risk cup, and trying to make you keep it very, very conservative. That's why I'm trying to keep it within the realm that we've had in the past, but also recognize that we're going to make accommodations to a number of the states, because they will be getting some additional fish.

CHAIR BELL: Thank you. That's a little bit more conservative again. John.

MR. CLARK: I made the original motion. I also think that Megan's motion makes a lot of sense. One of the other things that these increases will help us with is one of the problems that has been there since we've gone to the allocations we have now, is the harvest coming in from small scale, the episodic event, those type of things.

Having a bigger allocation to spread around right now, could help us get away from some of those other methods we're using now to allow states to catch more menhaden. That is kind of in a gray area right now, and this would make it everything, hopefully make it more accountable also, the quotas.

CHAIR BELL: There is again the maker of the original motion, kind of more comfortable with the lower number, perhaps. Yes, Warren.

MR. G. WARREN ELLIOTT: We would be supportive of the amended motion. We would also be open to discussing Rob's this far as well.

CHAIR BELL: Dennis.

MR. ABBOTT: I think at the root of all of this is the desire for some states to increase their percentage of quota. But I have concerns. I will go along with this number, I will say. However, it concerns me that under the original motion, under the allocations presently enforced, that Virginia would see an increase of 40,000 metric tons.

Under this proposal, Virginia would get about 30,000 metric tons, while the New England states would be, again as I said in previous meetings, picking up crumbs by comparison. Somehow, in this whole process, we should be looking to achieve some form of equity, understanding that there has been a shift in the population.

There is a desire and a need for northern states, particularly in New England to actually prosecute the menhaden fishery to a greater degree. Well again I'm in favor of this, but I do have questions about increasing quota in the Commonwealth of Virginia by 30,000 metric tons. Can Omega Protein under their present regime even handle an extra 30,000 tons, you know whatever? Again, that is my real concern at this point in time.

CHAIR BELL: Yes, Matt.

DR. MATT CIERI: I think some of the retrospective issues, and the TAC projections being based on a single species model, without sort of accounting for some of prior increases and the state of the Atlantic herring. I would certainly support the substitute motion, and maybe perhaps even the 10 percent option.

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CHAIR BELL: All right, sounds like we're reading folks are comfortable with less than the original motion. Yes, Loren.

MR. LOREN W. LUSTIG: I likewise speak in support of the 10 percent proposal that we heard from Allison and Rob. I think it demonstrates not only wisdom, but prudence and caution. That is where my desires would be.

CHAIR BELL: If I'm kind of reading things correctly, and I understand procedurally what we need to do. Perhaps what we should do is go ahead and vote on the amendment, see how that goes and then we need to dispatch perhaps the original, and then that takes us to a fresh number that we can have some further discussion, if that's conservative enough, perhaps. Any other comments about the amended motion right now?

Any discussion on it? All right, what I would like to do is vote on it. Is that something that we would need to caucus for? Two minutes, does that work? Okay, let's take a two-minute caucus, and we'll come back and vote on it. Okay, everybody has had time to caucus, I assume, so we will go ahead and vote on this. Toni, you're going to stand by.

First of all, is there any objection to the motion? Okay good, you saved us some time, thank you. To the amended motion, I'm sorry. **This is the amended motion. The amended motion, which would take it to 233,550. Any objection to that right now? I don't see any hands, so then that motion passes without objection. Then that motion now becomes the main motion.** Yes, Robert.

MR. LaFRANCE: I think procedurally I can make a motion to amend at this point. Sure, no, no, take your time. Mr. Chair, I just wanted to get my hand up.

CHAIR BELL: You see before you, now this is the main motion. Move to set the TAC for 2023 to 2025 at 233,550 metric tons. That is now the main motion. Discussion of the main motion.

4 MR. LaFRANCE: Mr. Chairman, I basically still feel that that is probably too high, from where I'm sitting. I do think that the 10 percent is within the realm and the range that we've had historically. Given that there is a lot of uncertainty, which we've heard for different species, regionality, a whole bunch of other factors.

**I would like to make a motion to amend that to the 10 percent level, which would be the number of 213,840 metric tons for the TAC. That basically would result in a 2025 probability of exceeding the ERP target of 14 percent, so it's not without risk. It's not like some of the others where we have a zero.**

There is some risk associated with that, and I feel that that is at least, since there is some risk in the out years, and I've noted that the data also tends to show in some of the probabilities that the TAC has to go down in the future. I guess I'm really offering the idea of being particularly cautious in this particular motion.

CHAIR BELL: Okay, thank you, so we have a motion to amend again, a little bit more conservative, down to 213,840. Is there a second to that? Allison seconds. All right, now further discussion of the sort of more conservative approach, perhaps. Allison.

DR. COLDEN: Yes, so I'll just reiterate some of the points from before, and be a little bit more specific too with respect to some of the uncertainty. In the presentation I did notice, with respect to the fecundity and the F that our conclusions in the most recent assessment about not being overfished and overfishing not occurring. Those are in the terminal year, and it was sort of in between in the years preceding that.

That terminal year is the one that we're talking about having the most uncertainty associated with it. In the projections, talking about where the projections were coming from, being based on the year class of 2019 and 2020 moving through the fishery. Again, those are the years where we have

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the least amount of data to constrain our conclusions about what the projections may be.

Projections are always uncertain; models always have uncertainty. That is nothing that this Board or this Commission is not used to dealing with, and dealing with in a responsible way. But I just personally feel like there are some additional sources of uncertainty with respect to this species at this time that warrant this approach, and warrant the 10 percent increase.

CHAIR BELL: All right, thank you. We've heard from kind of both sides of the table there for a rationale for that. Pat.

MR. GEER: I just want to point out that the 10 percent that has been mentioned before has historically been the increases or decreases, where before the ecological reference points were put into play. You're pointing out, you're saying it's a very, very conservative estimate. I agree with what Mr. Cimino said. It's almost too conservative, in my opinion, so I'm going to oppose this.

CHAIR BELL: All right, Eric.

MR. REID: I'm really having a hard time, why we can't get our head wrapped around success. I mean we spent yesterday talking about being flexible, and when things go up, we need to be flexible. I'm pretty darn sure that when things go down, we're not all that flexible, because the conversation would have been over if these numbers were reversed.

I support the underlying motion. I said that before. There is no reason to worry about 233,550. I realize uncertainty is some concern, but uncertainty is built into this model as well. I realize that it's only anecdotal information. But if you go out on that boardwalk, there is menhaden as far as you can see, and that is the case from Maine to Virginia, and that works for me.

CHAIR BELL: Okay, we've heard some support, some opposed to that. Yes.

MR. RAYMOND W. KANE: I can't support the amended motion to the motion on the board right now. Understanding that ecological reference points, this is really the first species that we're managing. It's relatively new, and I agreed with ecological reference point management. I appreciate the work the Technical Committee has done, and I'm wondering, what's the probability? At 233,000 metric ton, what is the probability, 30 percent?

But also, we have to keep in mind the harvesters in this nation. Because we failed managing Atlantic Sea herring properly, and we have failed managing mackerel properly. This is the one forage species left in the ocean for both the ecosystem and for the harvesters to use for bait. I can't support the amended motion. I can support 233,500.

CHAIR BELL: Yes, Jim.

MR. JAMES J. GILMORE JR.: I also cannot support the amended motion, and back to what Pat said before. Remember, we went through a painful exercise of getting ecosystem-based reference points, and that was to make this more predictable. New management and we're going to try new things now.

I think the 10 percent is way too conservative, based upon the effort we put in with ecosystem reference points. I think we need to take something, and it's still not very risk averse. I mean I think we're talking about maybe in the 20 percent chance of exceeding the target, so it's still pretty low. On top of that, just to everyone, and I hope we agree at the table.

Then we get down to say two or three years, and then suddenly we maybe erred a little bit. We may be doing big cuts back at that time. That's, I think, the way we need to start managing now is that the new tools we're using, we should be utilizing our success, as Eric said. If it turns out that they're not working, well then, we should take equal measures at a future date.

CHAIR BELL: Robert.

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MR. LaFRANCE: I just want to respond to that particular argument. That is exactly why I would like to see the 10 percent. I don't want to see us trying to, like overstate and overshoot targets or TACs every year. By trying to do it in a predictable way, trying to move the TAC from one level to another, in sort of a predictable way at 10 percent.

I recognize it is exceedingly conservative. But I also recognize it sends a signal to the fishermen that yes, if we continue to manage the species like this, we can continue to see increases over time. But to do it, put it way up and then have to pull it back, I think that we're going to be in trouble if we have to do that going forward, which is why I'm supporting the 213,840 metric ton.

CHAIR BELL: I'm starting to get kind of a sense of the room. I think we're at a point where this is going to be a crucial vote. What I would suggest, if there is any other comment from anyone at the table at this point, let me know. But what I would like to do is get a little public comment on it before we vote. Then that will probably be an important vote. Anyone else want to comment on the amended motion, so we're down to the 213 level? I don't see any hands. Yes, we could go ahead and take one now.

MS. KERNS: It's Jeff Kaelin online.

CHAIR BELL: Yes, go ahead, Jeff.

MR. JEFF KAELIN: Yes, thank you, Mr. Chair, Jeff Kaelin with Lund's. Sorry I couldn't be with you today. Just very briefly, I don't support the amended motion. At 10 percent, I'll just point out that wouldn't even put us back to the 2016,000 where we were in 2020, when we took the 10 percent cut, which I think in retrospect wasn't necessary.

This is an important fishery. You're going to discuss allocations. We're all concerned we're going to lose access to the resource, you know that we've earned over time through our history and so forth. I think the 10 percent motion is needlessly conservative, and a reasonable place for the Board to end up

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today is with the underlying motion 233,550, which in and of itself is extremely conservative.

I guess offline I'm looking forward to talking more about the herring buffer. You know we've been in the herring business a long time. I just heard yesterday that striped bass is at 75 percent certainty that it will be recovered by 2019, and remember, we were leaving enough menhaden in the water for that to happen, according to this earth model. The herring buffer was pretty hard to accept, but then I will support the 233,550 as a reasonable compromise, and I appreciate the opportunity to speak.

CHAIR BELL: That's it for public. What we'll do, need to caucus again, or do you want to just go for it? All right, let's just go for it. Oh, I'm sorry. Let's just go ahead and vote on this. Do you need to caucus before we vote on this? No, okay. **Then we have the amended motion here, amend the main motion from 233,550 down to 213,840. That is the motion on the table. I assume there are objections to the motion, so we'll go ahead and vote. Do you want to call state by state?**

MS. KERNS: Will do, Mr. Chair. We'll start with those states in favor. Please, leave your hands raised until I call your state name. Connecticut, Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, and no hands online. Oh, Erika, did you put your hand up? Can you raise it again if you did?

All right, and Florida. Thank you, Erika. Those against the motion, raise your hand. Rhode Island, Massachusetts, New York, New Jersey, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, Potomac River Fisheries Commission, Maine and New Hampshire.

**CHAIR BELL: Are there any abstentions, and then null votes. What is the final tally there? Okay, 5 for 15 against, 13 against, yes, we got some extra states. All right, so that motion fails, so the original motion is still the motion we have.**

All right, so that takes us back to the original motion. Clean slide, there is the motion in front of

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us now. Any further discussion of this motion? Yes, Lynn.

MS. FEGLEY: I have trepidation here. I feel I'm obligated to say something, because our delegation was split on that last motion. I do agree that the 10 percent number is too low, and that we need to manage this appropriately so we're not seeing fish killed. We've been down this road before. **I'm just going to try one time here to amend this motion to replace the 233,550 with 225,000 metric tons as a compromise between being too low and too high.**

CHAIR BELL: Let's get that down there. Was that 225,000, Lynn, even?

MS. FEGLEY: Two hundred and twenty-five thousand metric tons, 225,000.

CHAIR BELL: There is a motion to amend to 225,000 metric tons, I need a second. Loren does second, Loren Lustig seconds. All right, a new number for you to ponder, based on it's not quite as conservative as the 10 percent approach, but it's a little more conservative, sort of something in the middle. Thoughts about that. Joe and then Robert.

MR. CIMINO: This is with all due respect to Lynn, who is a friend and a colleague, and I think she knows it's with all due respect. You know there was a comment about sending a message to fishers. We're sending a message to the scientific community that we would rather do this arbitrarily, because we know better somehow, then what is coming out of the best available science. I think Megan had a very well-reasoned move to get us to the 233. This is kind of a shame. I mean all the press releases that went out in support of this approach. To just walk away from it now. I'm a little flustered, I'm sorry.

CHAIR BELL: Robert.

MR. LaFRANCE: I just wanted to thank Lynn for putting forward the motion. I think it definitely moves us closer to being conservative. I recognize people are back and forth about what level of risk we are willing to take. I feel that this is a very

reasonable approach. It's a significant increase from where we're at. It's not like we're not listening to the science. We're just not maybe moving as quickly as it might recommend.

CHAIR BELL: All right, other comments on this amendment approach? Yes, Megan.

MS. WARE: Yes, I'm going to support the underlying motion of 233,550. I think, thinking back to the framework for our ecosystem reference points. We consistently chose to set ourselves up for a conservative framework, and I think we did that by assuming the maximum demand of striped bass on menhaden in the assumptions that we made.

I think we set ourselves up conservatively. I think I agree with the comment before made from Joe that I get a little nervous about deviating too strongly from the guidance that we're being provided, particularly when this is a very healthy stock. I think, once again to echo Joe. You know last night he said we need to learn how to celebrate the wins. I think this is a potential in here.

CHAIR BELL: Any other comments, or discussion of the amendment before us, anything new? I don't see any hands. Let's go ahead and vote. **All in favor of the amended motion here to reduce down to 225,000 raise your hands.**

**MS. KERNS: Again, keep your hands up, I'm going to raise the names. I have Florida, Connecticut, U.S. Fish and Wildlife Service, NOAA, Pennsylvania, PRFC and Maryland.**

**CHAIR BELL: All right, all opposed to the amended motion.**

MS. KERNS: Rhode Island, Massachusetts, New York, New Jersey, Georgia, South Carolina, North Carolina, Virginia, Delaware, Maine and New Hampshire.

**CHAIR BELL: Okay that was 6 in favor, 11 against, so the motion fails. We didn't have, any abstentions? I don't think we nulled. Okay, no abstentions.** That takes us back again to the

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original motion we have up there. It was 7 to 11. All right, so this is the motion before us again. I don't know if we need any additional discussion of it. Anything new?

MR. ABBOTT: Not really, but we've narrowed the numbers down as 225 being too low and 233 agreed upon number. It seems like we would only be working between 233 and 225. I think it's time to call the question.

CHAIR BELL: That's why I was asking for anything new. I think you're right. We've kind of honed down a little bit there. Let's go ahead and vote on this. Do you need to caucus on this motion? No, okay. **Then the motion we're voting on is to move to set the TAC for 2023 to 2025 to 233,550 metric tons. That is the motion.** All in favor of the motion, raise your hand, and hold them up so we can count.

MS. KERNS: Rhode Island, Massachusetts, Connecticut, New York, New Jersey, Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, Florida, Georgia, South Carolina, North Carolina, Virginia, Potomac River Fisheries Commission, Maryland, Delaware, Maine and New Hampshire.

**CHAIR BELL: Thank you, all opposed to the motion, raise your hand. Oh, okay. All right, thank you, so the motion carries unanimously.** We have a new TAC established, thank you. That's it for Item one on the two-item agenda. You're halfway there. Does anybody need to take a break at this point? We good? We'll roll into the next item then. We have a multi-level presentation up here, so James will start and then relay, and we'll just work through this whole thing. We'll have his presentation first. James. We're just loading the presentation. Yes, Roy.

MR. ROY W. MILLER: Before we move on, I was wondering if I could request a calculation of the percent associated with the motion that we just passed. In other words, was it 25 percent, 20 percent or what? If we could get that calculation. Thank you.

CHAIR BELL: Yes, hang on. Let's take five and we'll get things set up here, and then we'll deal with that question too, Roy.

DR. ANSTEAD: Hey Roy, just a clarification. Are you asking for how much percent increase of the overall TAC or the error associated?

MR. MILLER: The percent probability.

DR. ANSTEAD: We can probably give you a range but not a specific, because we only ran the specific ones that were included in the memo. But we can give you a range.

CHAIR BELL: Take a break and talk amongst yourselves for a few minutes.

(Whereupon a recess was taken.)

CHAIR BELL: All right, we're going to get started here, three o'clock. Now we're going to get into Addendum 1 to Amendment 3. James has got a presentation first.

MR. JAMES BOYLE: Are you going to deal with Roy?

CHAIR BELL: Oh yes, going to deal with Roy's question. Sorry.

DR. ANSTEAD: Roy, you're interested in knowing what the percent risk of exceeding the ERP target is associated with the new TAC that was just set at 233,550.

MR. MILLER: Yes, that is correct. I would like to see it in the meeting record if it can be calculated. I understand it may take additional time.

DR. ANSTEAD: Yes, that's correct. Just based on the memo we can only give you the range somewhere between 14 and 40 percent, but if you would like to task us with calculating it, we'll send it back to Amy and get a number for you.

MR. MILLER: Well, I would like to see the number. I don't want to make an assignment just based on my opinion. But that is my opinion. Thanks.

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**CONSIDER ADDENDUM I TO AMENDMENT 3 ON  
COMMERCIAL ALLOCATIONS, EPISODIC EVENT SET  
ASIDE PROGRAM, AND INCIDENTAL  
CATCH/SMALL-SCALE FISHERIES  
FOR FINAL APPROVAL**

MR. BOYLE: Thank you, Mr. Chair, and good afternoon, everybody. As mentioned, I'll be reviewing the options in Draft Addendum I and the associated Public Comments. For this presentation I'm going to start with a very quick overview and recap of the process that the document has gone through until this point.

Then I'll move on to covering the contents of the Draft Addendum. Unlike in previous meetings where we took one section at a time, due to how interconnected these sections are, I'm going to go through the entire document and all the comments, followed by the presentation from the AP Chair, and before taking questions and moving on to motions altogether.

The goal of today's meeting is to choose the final options for implementation in 2023. Here is a quick recap of the process. The Board initiated the development of Draft Addendum I in August last year, 2021. The document went through a few iterations before it was approved for public comment in August of this year.

**REVIEW PUBLIC COMMENT SUMMARY**

Public comments were accepted from September 1st through September 30th, and summarized for the Board to consider for final approval at today's meeting. There were 10 total hearings ranging from Maine to North Carolina. These included 2 webinars, 6 in person and 2 hybrid hearings, 246 members of the public attended the hearings in total, not including state or Commission staff, or Commissioners or their proxies, although some people did attend and comment at multiple hearings.

Electronic polls and show of hands, or show of hands were used at most hearings for some of the options. From the written comments a total of 121

comments were received with 34 coming from 3 different form letters, and 23 organizations commenting across 9 different letters, which left 64 individual comments.

This slide shows a summary of all the major options. I'm going to present the options in order of the document, so I'll begin with the two steps of the allocation, as shown at the top of the slide, followed by the episodic event set aside options or ESA, and then ending with the 4 sections of the incidental catch and small-scale fishery.

We're starting with the allocation. The objective of the options in this section are to align with the recent availability of the resource, enable states to maintain current directed fisheries with minimal interruptions during the season, reduce the need for quota transfers, and to fully use the annual TAC, but without going over.

For Step 1, to set the minimum allocation to each state, most comments favored Option B, to use a 3-tier minimum system that aims to reduce the amount of TAC that was reserved for minimum allocation, while still allowing for states to acquire the necessary allocation when combined with Step 2. Many of the comments in support of Option B expressed concern that giving quota to states that do not use it, only reduces the quota to state for the greater economic reliance on the menhaden fishery, when a quota is already designated for a potential harvest.

Comments in support of the status quo is Option A of a 0.5 percent fixed minimum. Often felt that it was most equitable to assign the minimums equally, and wanted states with smaller or no menhaden fishery to have a greater ability to reserve quota for other ecological purposes. Moving on to Step 2, to determine the timeframe used to assign the remainder of the coastwide TAC.

Most comments favored Option 2, to use landings from the average landings from 2018, '19, and 2021. Comments in support of that option often refer to increased availability and economic need in

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the northeast, in particular, and a desire for quotas to align more closely with that availability.

A number of comments of those who preferred Option 2 also gave a secondary preference for Option 3A, Sub-option 1, which would use both historical and recent landings, while giving recent landings a greater weight at a 75/25 split. The second most popular option was Option 3A, Sub-option 2, which weights the historic and recent landings equally in a 50/50 split, and supporters of this option often said that the system is more equitable to benefit longstanding fisheries.

Another significant minority of comment support is some version of the moving average in Option 4, either 4A or 4B or didn't specify. To update the timeframe to always be the most recent three years, and those commenters generally noted the changing nature of the fishery, and wanted to see the quota distribution be equally dynamic over time.

After the August Board meeting, staff added the two options for the overage paybacks to the end of the allocation section, as we discussed at that meeting, to allow for overage paybacks in the second year after an overage, due to the timing of when we have our most accurate understanding of the previous year's landings.

However, to further streamline and simplify the options being presented in the public hearings, this section was omitted very early in the hearing process, although there was one vote for Option 2 in the written comments. Moving on to the episodic even set aside, the options in this section, their objective is to ensure sufficient access to episodic changes and regional availability, in order to minimize in season disruptions, and reduce the need for quota transfers and incidental catch or small-scale fisheries landings.

The only two options in this section, most comments were in favor of Option 2, which would have the ESA increase somewhere between 1 and 5 percent. Although the vast majority of those commenters did not specify a sub-option. Of the

supporters that chose a sub-option, most supported Option 1 for the Board to set the new percentage statically at this meeting. Many comments in support of some version of Option 2 also expressed support for the increase to be to the maximum of 5 percent. Supporters of Option 1, to maintain the ESA at 1 percent, sometimes opposed the ESA generally, as a way for a small group of states to fish over their quota, or believe that it is sufficient to achieve its goal already at 1 percent. Lastly, we have the incidental catch and small-scale fishery section. The objective of these options is to sufficiently constrain landings to achieve overall management goals of meeting the needs of existing fisheries, reducing regulatory discards, and indicating when landings can occur, and if those landings are part of the directed fishery.

This first section is about when is a state allowed to enter into the incidental catch provision. Most comments supported Option 1, the status quo. Although it is notable that Option 2 achieves the same goal, which maintains the ability for states to divide their quota by sector, and for sectors to enter into the incidental catch small-scale fishery provision at different times.

Supporters of this current system frequently cited the benefits of flexibility for different states, and some referred to the success of the sector divisions that are currently utilized in New Jersey and Virginia. Supporters of Option 3, which would make it uniform along the coast that states cannot enter into the provision until the entire state allocation is met, expressed concern that the system may be manipulated to get fisheries into the incidental catch provision earlier in the fishing season.

Section 2 is concerning the permanent gear types in the incidental catch provision. Most comments favored Option 1, to maintain the current list of permitted gear types. The primary concern for many commenters was that by removing purse seines in either Option 2 or 3, they would lose the ability to release menhaden over the trip limit, and non-target species alive, especially if the pivot was to gillnets.

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Along with the bycatch mortality, some commenters cited the economic and physical tole of removing purse seines, as they felt gillnets were less efficient and harder on fishing crews, as well as the concern of adding more line to the water, should they transition to a stationary gear.

As a reminder, the sub-options of Option 1, which were also omitted from the hearing presentations for clarity, give the Board the ability to choose the status quo, while changing the classifications of one or both of fyke and trammel nets to better reflect their uses, as we discussed at the previous meeting.

Opponents to Option 1, whether they supported Option 2, to remove only purse seines or Option 3 to remove all small-scale directed gears, frequently felt that purse seines specifically do not conform to the goals or the perceived goals of the incidental catch small-scale fishery provision, as either small scale or nondirected. Section 3 concerns the trip limits for those permitted gear types.

The majority of commenters favored the status quo for directed trip limits, which would maintain the 6,000 pound per trip per day limit, often inciting the relatively small percentage of incidental catch small-scale fisheries landings when compared to directed landings, and believing that lowering the trip limit would make the incidental catch and small-scale fishery economically unviable, thereby enhancing the burden specifically on small fishers. Options 2 and 3 would reduce the trip limit to 4,500 pounds and 3,000 pounds respectively, only for the small-scale directed gear if they are listed at the bottom of the slide, which are the same gear that would be removed from the provision entirely under Option 3 of the previous Section 3.3.2. Similarly, to the previous section, fyke and trammel nets have been removed from the directed gear category for Options 2 and 3.

This last section is discussing whether or not incidental catch and small-scale fisheries landings should count as part of the total coastwide quota. Most comments supported Option 1, to continue the current system where those landings are not counted against the TAC. Similar to other sections

of this provision, some commenters believe the incidental catch small-scale fisheries landings to be a small percentage of the overall landings, and that imposing limits on it puts an undue burden on small fishers.

When counted together, all of the different versions of Option 2 represent a very significant minority, who largely expressed the view that incidental catch and small-scale fisheries landings should be counted equally to directed landings, in order to limit the overall use of the provision. While few people chose an option regarding the Board response, there was an even split between those who support modifying just trip limits and those who support a hybrid approach, and modifying both trip limits and gear types.

As a reminder, the Sub-option 1 under both 2A and 2B would give the Board the ability to make a modification through Board action. But the Board may always choose to use adaptive management to make a change, regardless of whether those sub-options are selected. There were some additional comments that were received that were either tangentially related to the topics in the Addendum, or regarding other topics altogether.

Related to allocation, a number of commenters expressed concern over the distribution of coastwide quota, particularly in the concentration in the reduction fishery. Many commenters also raised concerns regarding the size of menhaden that are landed, and how spawning stocks may be affected by juveniles being harvested.

Related to the incidental catch and small-scale fisheries provision, some commenters did not select a specific option, but they expressed general concern that without more restrictive limits on menhaden fishing, the stock will follow the same decline as was seen in Atlantic herring. Additionally, many commenters were concerned about incidental catch and small-scale fisheries landings specifically being used in the allocation timeframes, leading to a greater increase of quota, relative to other states, for states that utilize provision more.

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Additional topics that were raised, while this is not an exhaustive list, here are some of the comments received that were not specifically related to the Addendum. There was general concern about the spatial concentration of menhaden harvest along the coast, and the effects on local ecosystems, especially in sensitive areas such as Chesapeake Bay, Boston Harbor, and Narraguagus Bay.

There was general concern about the complexity of Addendum I and the quota system overall, and its ability to understand. A number of comments also concerned state regulations that do not pertain to the Commission here, but may be of interest to the Commissioners.

#### **ATLANTIC MENHADEN ADVISORY PANEL REPORT**

With that I will pass it over to AP Chair Megan Lapp, who is on the webinar to provide the Atlantic Menhaden Advisory Panel Report.

MS. MEGAN LAPP: Thank you, James. The Menhaden Advisory Panel met on November 1st, with 8 AP members in attendance and with 1 AP member providing written comments, which are incorporated into the summary. As you can imagine, a lot of the AP input was split based on geographic location of the AP members, which will come as no surprise to the Board, with a few exceptions, which I'll try to point out.

The three-tiered fixed minimum was supported by 7 AP members with no opposition from any AP members, so I would encourage the Board to take note of that. There were different rationales and differing opinions that led to this support, but wide support for this option. For this on allocation timeframe there was more of a split opinion.

Four AP members supported Option 2, the recent years of 2018, '19, and 2021, to support the recent menhaden distribution. But 2 of those also stated that they could support Option 3A, Sub-option 1, the 75/25 weighting as a backup, in case the Board did not accept Option 2. There were also 3 AP members who supported Option 3A, Sub-option 2, the 50/50 weighting of years.

I would note that there was no support for the Option 4 moving average option. In fact, 2 AP members specifically opposed these actions. I would encourage the Board to take note of that as well. As far as allocation from the AP, the main takeaways were a lot of support for the three-tiered fixed minimum, and no support for the moving average option.

Moving on, episodic events. Three AP members supported Option 1, the status quo of 1 percent with the rationale that allocation options already address increasing quota in the northeast, and 1 percent is a lot of fish. Two AP members supported Option 2, increasing episodic events between 1 and 5 percent, to suit the objectives of episodic events to address northern influx of fish. For incidental catch small-scale fisheries, as far as timing, 2 AP members supported status quo, 1 AP member commented that their state does not separate quota by sector.

But they would not oppose Option 2 if that helps other states. Regarding gear types under this provision, 1 AP member supported Option 1, status quo, emphasizing that it is important for the Maine Lobster industry, and noted that the large turnout and public hearings in Maine, were to support this option. We had some discussion about how purse seines are important for the Maine lobster fishery.

Three AP member supported Option 2, removing purse seines from the approved gear type. Two of these 3 preferred Option 2, but would accept Option 1. These 2 AP members were strongly opposed to Option 3, because it would eliminate the incidental catch small-scale fishery in the state of New York if it were adopted.

One AP member was more strongly supportive of Option 2, and did not believe that purse seines conformed to the goal of the provision, and noted that they have a 50-fathom size description placed on purse seines currently in this provision, as nondirected gear is the same size limit imposed by the state of New Jersey for directed gear. Regarding trip limit, 4 AP members supported Option 1, status quo, and there was no support by

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the AP for changing that at all. I would encourage the Board to note that. As far as catch accounting, 1 AP member supported Option 1, status quo, with meaning that the landings don't count against the TAC.

One AP member supported Option 2, to account for the landings against the TAC, but did not specify a sub-option. An additional issue that did come up in the discussion was the desire of 1 AP member to consider beach seines separately from haul seines, due to differences in those gear types in the New York fishery. That was all I had, Mr. Chair.

**CONSIDER FINAL APPROVAL OF ADDENDUM I**

CHAIR BELL: At the end of the day, everybody is probably not going to be happy, but you need to be content enough with what we've got to move forward. That's the thing here. I don't think anybody will walk away from the table 100 percent happy. But that is natural in this type of process. We've had a good bit of public input through the hearings, through the written comments that you've seen, a couple hundred pages of that.

We've got the AP input. You've obviously given this a lot of thought, because I've heard from a number of you, and I know we have some motions that have been submitted that we can tee up at the appropriate point when we come to that. What I would like to do is just work through this, and hone it down to something that is acceptable. Yes, Doug.

MR. DOUG HAYMANS: Mr. Chair, before we move on anything, could I ask sort of a procedural question?

CHAIR BELL: Sure.

MR. HAYMANS: In Step 1, right, we've got 2 options, and the second option being a three tier. We're realizing that 3 states were included in the lower end of the three tiers. But if we wanted to move, or at least one of those states wanted to move into the other tier, is that doable within the realm of the public comment that we've already put out there?

CHAIR BELL: Yes, would that be enough of a change that it would fall outside of what we've sort of scoped through the public.

MS. KERNS: Give me one minute.

CHAIR BELL: The trick is obviously as you move through these things, you can't get outside, sort of the box that we've created. As long as you make adjustments that kind of fall within the box of the parameters that we've scoped, we've taken to public hearing, and we analyzed. That is probably where your wiggle room is, and that's the question is this that particular concept something that we could adjust?

MR. HAYMANS: Yes. What I'm looking at is if the three states are 0.01 percent level would be interested in joining the other states at 0.25, especially in light of the increased quota, because I don't know that 47,000 pounds would ever allow a state to develop a small-scale fishery. But I would like to see us move up one, and that is not one of the options that was put out there.

CHAIR BELL: We're just trying to get an interpretation here, hang on.

MS. KERNS: Doug, I want to confirm with Bob on one piece of it. That is why I'm pausing, and waiting for him to come back. But I would note that, I know you said that you only get, I think it's 47,000 or roughly pounds. But we do say in the draft that it's just the initial portion of your allocation. You will get whatever else, or I guess you don't have any landings history, so you won't get anything else, so never mind, sorry.

CHAIR BELL: Should we come back to that?

MS. KERNS: Can we continue on with discussions and I'll get back to the Board?

CHAIR BELL: Okay. Just to move it along here. I'm kind of moving through the document, and dealing with the first, and I'm actually using the document, Page 12 to 13. You've got two options to deal with; status quo or the three-tiered fixed. Maybe that

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kind of gets to your, yes, we're right there. Maybe we should move past that one to the next.

Okay, yes, since you asked that question, Doug, we're not really prepared to probably deal with that one just yet. Well, while we're waiting on Bob's interpretation, we can at least just discuss that, I guess. Doug, you brought that point up. If others would like to weigh in on that as well, they certainly can, or discussion on it. Yes, Chris.

MR. CHRIS McDONOUGH: I would just like to echo Doug's point. I have the same concerns, as far as the way the three-tiered system is set up, and whether or not it can be adjusted.

CHAIR BELL: John.

MR. CLARK: Just from the way I read this is, if for right now three tiers, what went out to the public was pretty concise and clear as to what it said. Based on the concerns they are raising; wouldn't that be something that could be done by an addendum after this addendum?

CHAIR BELL: Possibly. I'm kind of waiting on the Bob thing too. My interpretation is probably a little more strict. Whatever you took to the public that's the way it is. That's just my interpretation. Yes, Emerson.

MR. EMERSON C. HASBROUCK: Perhaps my memory isn't as good as it used to be, or maybe we're talking about something different. But my recollection is that at the meeting where we approved this document for public hearing, we had an extensive debate about the three-tier fixed minimum, in terms of what states were going to be in which tier. We've already discussed and debated that, at least that's my recollection.

CHAIR BELL: Any other recollections of that? Doug.

MR. HAYMANS: As we have seen, states do have the right to change their minds, right?

CHAIR BELL: Certainly. Yes, Robert.

MR. LaFRANCE: I just want to point out the last sentence in the document, because I do think it speaks of what we're talking about at some level. It does say, the total TAC assigned to this option, and it breaks out three states, four states and nine states. It seems to me that all of those percentages could be altered, you would just have to make certain that you change the percentage.

CHAIR BELL: Okay, thanks a lot. Yes, Malcolm.

DR. MALCOLM RHODES: Just thinking back on other documents that went out for public review, where we may have had a suite of levels. We've moved within, we hadn't accepted the 1 or 2 or 3 or 5 options, we may have had an Option 6, as long as it was within that area. The 3 states, or all the states in the third tier, Option A, would allow up to 0.5 percent if we took it. You go up to the 0.25 instead of the 0.01, I think would be within a range of values that had been vetted and sent out to the public.

It's not saying, well we want to go up to 3 percent. It's not like we are exceeding a number that has already been sent out to the public. I know in the past we have moved to numbers that weren't exactly in the documents that were sent out. I don't see where moving up a little bit. I mean we're talking about 0.45 percent of the TAC, to move the 3 states up to 0.25.

CHAIR BELL: Any other thoughts on that? There is an argument for, we've kind of got a range that we've technically shown the public from 0.5 down to 0.01. Lynn.

MS. FEGLEY: I just wanted to say for the record, just if it puts any of this in perspective, that under the new TAC that we just developed, that 0.01 level I believe would set those states just over 51,000 pounds of quota if I did the math right. I think it's 51,489. Just so we understand the poundage that we're talking about here.

CHAIR BELL: This is somewhere around 50,000. Yes, Toni.

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MS. KERNS: To answer Doug's question. You are asking if we can move those states into the 0.25 category. That is turning us into a 2-tiered approach. I think that is within the realm, because if you are currently at 0.5, then it is within the range of what went out for public comment, in that sense. The Board did remove a 2-tiered option before, but that 2-tiered was 0.01, and 0.5 were the 2 tiers. It's not exactly the same.

CHAIR BELL: Okay, so then if we go with the 3-tiered approach, do we have to identify then specifically what level or state, or can that come later, in that range?

MS. KERNS: Correct, it would be a modified version of Option B, I wouldn't necessarily call it a 3-tiered approach anymore, because you would not have 3 tiers, to keep it clear.

CHAIR BELL: Okay, so far, we're just having questions and talking about this, but yes, Toni.

MS. KERNS: That's my interpretation. If the Board does not agree with my interpretation, that is the prerogative of the Board.

CHAIR BELL: There is no specific motion or anything at this point, unless we want to.

MR. HAYMANS: If you would like a motion.

CHAIR BELL: Well, that might help us kind of focus on some action here, Doug.

MR. HAYMANS: I would move that the states of South Carolina, Georgia and Pennsylvania be moved from 0.01 percent to the 0.25 percent allocation. If there is a better way to word that I am happy to hear it.

CHAIR BELL: Yes, we're going to try to capture that. Everybody heard that. What Doug was saying was a move from 0.01 to 0.25. No, this isn't one you have. Let us put it up there for you. Doug, go ahead.

**MR. HAYMANS: Mr. Chairman, I would like to modify my motion before it gets a second, if that's okay. I'll wait until we're ready. If I can read my shorthand. Mr. Chairman, I would move a modified version of 3.1.1 allocation, Step 1, so that the following states are at 0.25, Pennsylvania, South Carolina, Georgia, Connecticut, Delaware, North Carolina and Florida. Each would be receiving the 0.25 percent share. Do I need to read the 0.5?**

CHAIR BELL: Yes, let them get that down. Is that all the states?

MR. HAYMANS: Yes, and then the remaining states would each receive a 0.5 percent of the TAC.

CHAIR BELL: Okay, so this is a proposed modification of Option B there on Page 13, 3-tiered approach.

MR. HAYMANS: I believe it is a modified version of Option B of 3.1.1. I'll get this right.

**CHAIR BELL: The motion is, move to approve a modified version of Option B of Section 3.1.1 allocation. Step 1, so that the following states are at 0.25%, PA, SC, GA, CT, DE, NC, FL, and the remaining states will all receive a base allocation of 0.5 %. That's the motion.**

MR. HAYMANS: Yes.

CHAIR BELL: Is there a second for that motion? Chris McDonough. Okay, discussion of the motion. Doug, do you want to lead off, since you made the motion?

MR. HAYMANS: Certainly, just a little more. I realize that we don't have an active fishery today, but we certainly have menhaden in the state of Georgia. We do use an awful lot of menhaden in the state of Georgia for our bait for our crab fishery. It all comes from the Mid-Atlantic.

I am very surprised that at some point that someone hasn't developed a fishery to supply our own bait. If we were left at the 0.01, I don't think

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that option would ever be there. I currently feel like my fishermen feel when I talk to them and try to restrict things. They always accuse me of taking but never giving back. I sort of feel that way now. Rather than taking, I mean this is the 0.25 level is about 800,000 pounds, roughly, depending on metric or English. It's several hundred thousand pounds less than we're allocated now. It leaves us about 1.1 million pounds for a fishery developing if it could. We're certainly willing to horse trade as we have done over the past several years, if needed.

CHAIR BELL: All right, Chris, do you have any comments as seconder of the motion?

MR. McDONOUGH: No, I think Doug covered everything pretty well.

CHAIR BELL: All right, John Clark.

MR. CLARK: Just a couple questions. I mean first of all, if you did develop a fishery, Doug, we still will likely have the incidental catch small-scale fishery, which I know we were using that before the allocations changed. Then is there any need to bring Pennsylvania into that also, since they might get a menhaden in Pennsylvania state waters once every five, six years?

MR. HAYMANS: I brought Pennsylvania in to be all inclusive. That is certainly the direction our nation is headed in these days is to be all inclusive.

CHAIR BELL: Okay, Jim Gilmore, passed. Any other? Nichola and then Steve.

MS. MESERVE: I do support the ability for us to provide flexibility with this provision for the possibility of the growth in a state. I'm a bit hesitant to do that for a state that I don't think has any prospect of a commercial fishery in the future. Looking at the table of commercial landings that was in Amendment 2, and Pennsylvania is not even a column in there, of course. I think I could support this if Pennsylvania were to stay in the lower tier, and that way we would be maintaining a 3-tiered approach, and would just be moving two states.

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CHAIR BELL: Thanks. Steve and then Joe Cimino.

MR. TRAIN: I understand what's going on here, and it kind of ties back to what my good friend, Dennis Abbott said earlier. You know as this resource builds up and there was more fish available, we didn't think all the increase in quota would go to all the states that already had all the quota. I think almost everybody around here sees that. I think there is an issue to deal with here, but it might be a bigger issue. I think we're going to deal with some of it in a little bit, but it may be bigger than what we already have on our table. It may be a future addendum or amendment.

CHAIR BELL: Okay, Joe and then back to Dennis.

MR. CIMINO: Yes, I appreciate what Doug is trying to do and why. I'm just going to go on record to say I'm opposed to the motion for a couple reasons. I think we have ways to get you quota when needed. We're trying to utilize the TAC. That is one of the things that we say we're going to deal with. To hold stuff aside for future fisheries, I don't think is the way to do that. I think we're missing our problem statement in that approach. As John pointed out. You know I've been in several states, and I know that a 6,000-pound trip limit, there are very few gears that are going to hit their head, and not being able to come in what that amount of fish.

CHAIR BELL: Dennis.

MR. ABBOTT: A question I would start off with is, I sees that 7 states would be at 0.25 percent. What is the aggregate change in total quota? Are we looking at a decrease for those combined 7 states of 1 percent? If that is my quick math, okay 1.2 million pounds. Whatever it is, that is less quota that those states will have for borrowing, number one.

Of that, if the figure is right, 1.2 million pounds, under the present circumstance, again 75 percent of that, would it not be reallocated to the Commonwealth of Virginia? Where does that reduction in quota go? It doesn't, in my mind solve the problem. Also, if there is any decrease, that is less poundage that those 7 states will have to loan

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out to the 4 states that borrowed most of the quota, transferred the quota, not borrowed the quota if they are not paying it back later.

The state of Maine had 20 percent of the quota transfers. New Hampshire had 20 percent of the quota transfers. Massachusetts had 20 percent of the quotas, and ironically, again the Commonwealth of Virginia got 20 percent of the quota transfers. You know the whole system really; I said it before and I'm going to say it again. It's broken.

We're not solving the problem of being able to catch menhaden where menhaden are available. Again, I'm not sure if I want to support this, because simply put, if 7 states have less quota to provide to Maine, New Hampshire and Massachusetts, I don't see the benefit. Unless somehow in the long run, the effected states see their quotas rise dramatically.

CHAIR BELL: Do you have any comments on this? All right, I don't see any hands. Do you need to caucus on this before we vote on it? Okay, let's take a 2-minute caucus then, if we could. All right that's two minutes. We'll go ahead and vote on this if you've had time to caucus. All right you see the motion, I won't read it again, I read it once already. All in favor, yes, Ma'am.

MS. PATTERSON: Is it too late to throw an amendment up there?

CHAIR BELL: Well, I don't think so.

**MS. PATTERSON: I would just like to amend that Pennsylvania get put at the 0.1 percent, and all the other states at 0.25 percent. Just pull Pennsylvania out of those under the 0.25 percent.**

CHAIR BELL: Okay, there is a proposed amendment to the motion to basically take Pennsylvania out and leave them at 0.01. Motion got a second? Okay, got a second from Roy Miler. Discussion of that. Rationale, Cheri.

MS. PATTERSON: Well, as what was already mentioned, Pennsylvania really has no fishery at

this point in time, whereas the other states have an ability to have small-scale fisheries.

CHAIR BELL: Okay, so the logic there is that Pennsylvania doesn't have the fish. Basically, we just pull them out of the original motion. That's what would happen, so that is the amendment, the proposed amendment. Further discussion to that. Need to caucus about that? You can. Well, let's vote on that amendment. **Okay, so we have the amendment to the main motion.** Take a minute. Motion, what you see up there. All right, all in favor of the amended motion raise your hand.

MS. KERNS: Florida, Massachusetts, Connecticut, New York, New Jersey, Georgia, South Carolina, Virginia, Potomac River Fisheries Commission, Maryland, Delaware, and New Hampshire.

CHAIR BELL: Oh, okay, all opposed.

MS. KERNS: Pennsylvania, North Carolina.

CHAIR BELL: Okay, so two opposed. Nulls.

MS. KERNS: Maine.

CHAIR BELL: Abstentions.

MS. KERNS: Rhode Island, NOAA Fisheries and Fish and Wildlife Service.

**CHAIR BELL: Twelve in favor, 2 against, 3 abstentions, 1 null. Now we're back. That is the main motion now. Let us reword this. Malcolm.**

DR. MALCOLM RHODES: Just trying to do the Eric Smith thing. Would it be to move to approve Option B, with the 3-tiered fixed minimum approach with Georgia and South Carolina receiving 0.25 percent instead of 0.01 percent. Basically, it's just moving those two states in the original motion.

CHAIR BELL: Toni.

MS. KERNS: The motion was already the property of the Board, so to rewrite an amended motion

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would not be the best procedure under Robert's Rules.

**CHAIR BELL:** If this now is one way of phrasing it. I'll read; the motion now is that we're considering. ***Move to approve a modified version of Option B of Section 2.1.1 allocation. Step 1, so that the following states are at 0.25%, South Carolina, Georgia, Connecticut, Delaware and North Carolina, Florida.***

***That Pennsylvania is at 0.01%, and the remaining states will all receive a base allocation of 0.5%. That is the motion.*** Do you need to caucus on that? I don't see any head nods, let's vote on it. Is there any objection to that motion? Okay, I see one, so I guess we vote on it then. All right, so all in favor of the motion.

MS. KERNS: Florida, Rhode Island, Connecticut, New York, Massachusetts, New Jersey, Pennsylvania, Georgia, South Carolina, Virginia, Potomac River Fisheries Commission, Maryland, Delaware, Maine and New Hampshire.

CHAIR BELL: All right, all opposed to the motion.

MS. KERNS: North Carolina.

CHAIR BELL: Okay, abstentions.

MS. KERNS: NOAA Fisheries and Fish and Wildlife Service.

**CHAIR BELL:** **Okay that's it, 15 in favor, 1 against, 2 abstentions. The motion carries.** Now we have a modified B, and we have the original A, and we need to pick. Is this where we choose options? That was all about changing B, right? Got you, okay, I'm sorry, my fault. We're good. What we did was we approved a modified Option B, and that's what it looks like. Step 2.

We have options under timeframes, the base allocation, this is on Page 13 if you're using the document. We have Options 1, 2, 3, 3A, Option 4. All right, so we're moving into consideration of

options under 3.1.2. Does anybody want to start some discussion there? Yes, John Clark.

**MR. CLARK:** **Well, we might as well move this along, Mr. Chair. I would like to put out there that we approve Option 3A, Sub-option 1, the combination 25% of the historic and 75% of the 2018, 2019, 2021.**

CHAIR BELL: All right, before anything gets up there, so following along there it is move to approve Option 3A, Sub-option 1 in your document. Is there a second to that? Yes, Pat Geer seconds. All right, discussion of that motion. We'll get it up there.

MR. CLARK: May I say?

CHAIR BELL: Yes, yes, John, go ahead.

MR. CLARK: Right, I think that this one is a nice compromise. It allows more of the stock to be allocated to states where the menhaden have been moving to. At that same time, it does preserve historic menhaden fisheries that a lot of states depend on, even when they are not actually landing a lot of menhaden like our state.

I think as was just brought up in the public comment, this was the option that the majority of the public comment favored. As we heard from the Advisory Panel, this was also the option that was favored by the majority of the Advisory Panel also. I think it moves us in the direction we need to go, without moving erratically, and it doesn't cause the dislocations that could be done by a larger shift.

CHAIR BELL: Thank you. Pat, do you have anything to add to that as the seconder?

MR. GEER: Yes, Mr. Chairman. Even though back in February I kind of lost my mind over this. You all remember, I usually don't get very angry. But I realize the importance of trying to have more of the more recent data. But I think as John said, this is a good compromise. It has some of the historical data, but it also has the newer data as well. I'm willing to accept this as well.

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CHAIR BELL: All right, you've heard the rationale for the motion. Megan.

**MS. WARE: I would like to move to substitute. I would move to substitute for Option 4B, which is the moving average with the provision to limit states' moving average landings if total landings exceed the TAC. If I get a second, I'll provide rationale.**

CHAIR BELL: Okay that's a move to substitute by Megan. Is there a second for that? Second by Cheri. Megan, do you want to explain your rationale there?

MS. WARE: Yes, thank you. I thought long and hard about this and kind of have a lot to say, but I will try and be succinct. I think the long and the short of it is that I truly believe this is the best long-term option for this Board. I think first and foremost we need to acknowledge that we are managing a dynamic resource.

If we work off of that collective understanding, then we can't keep trying to chase a moving target with a static solution. This is the only option before the Board today which provides the opportunity to proactively incorporate both our dynamic resource and our changing environment into our policies.

It was less than 24 hours ago that we collectively sat around this table and we had a discussion on climate change scenario planning. The phrases I heard from Commissioners about what we need is we need something that is nimble, we need something that is flexible, we need something that is proactive.

I also heard a commissioner talk about changes in trends over time, and the challenges that this creates for management. This is exactly the type of situation that the moving average thrives. This is a scenario where we know change is occurring, but our ability to predict the direction of that change is imperfect.

I think if we're going to put stock into things like the climate change conversation we had yesterday, we

also need to start investing in the solutions, and the moving average is the solution before the Board today. I think a really unique characteristic about the moving average is that unlike the other options, it's the only one that doesn't make quota increases permanent, and it doesn't make quota decreases permanent.

But importantly, this fluidity is bounded, and it is bounded because a state can never go below its fixed minimum. I think that provides a really critical safety net for many states around this table. I just want to address two concerns that I've heard with this. First, I do want to acknowledge that there are many states that rely on Virginia for bait. Based on the TAC we just implemented, I think Virginia's quota is increasing, and at this point maybe 45 million pounds. That is a pretty significant increase for Virginia, and that quota increase is kind of collectively what the New England states will be allocated under this option. The second is that I've heard concern about including episodic landings under the moving average, and that will solely advantage the northern states. I would highlight that the moving average works, because you have to have levers that move quota around.

If you don't have levers, we're losing the moving part or the moving average. I would also note that this Board actually considered a moving average option, which did not include episodic landings or incidental catch small scale fishery landings, and the PDT recommended removal of that option, because it wouldn't achieve the goals and objectives of this Addendum.

That said, 2023 landings aren't incorporated into the moving average until 2025, so we actually have two years to have a discussion about the episodic set aside, and if that needs to be modified in light of the moving average, I am happy to have that discussion. But I think this is the best option for the Board to set.

CHAIR BELL: All right, thank you for that, Megan. Cheri, as the seconder do you have anything to add?

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MS. PATTERSON: Megan touched upon just about everything that I was going to touch upon as well. Again, I just want to reiterate that we did have a climate change scenario discussion yesterday, where we had this exact discussion, this exact issue presented to us, and we had a different view than what we have right now. I think that in the spirit of this, that this is the spirit of why we got this Addendum initiated, is to make sure that we're following the fish, and not necessarily following history past or politics.

CHAIR BELL: Thanks, Cheri, other comments, so Lynn and then over to Jim.

MS. FEGLEY: I think, you know I love the idea of a moving average. I think that it is a very clever way to address this issue of stocks that flux back and forth from the north to the south. But the problem that we have with the moving average as it's written that I don't think that we fully understood, was that the levers to pull really falls within the episodic set aside, which is only acceptable to a small portion of the states.

If I may lay out a scenario, we have now increased our quota. The landings are going to be aligned. I believe that our largest players, which now are the states of Maine, New Jersey and Virginia, will be fully capable of landing the quota that they will receive. They will be able to land that. The state of Maryland, we're a tiny state.

We have incidental catch. Between the years of 2004 and 2013, luckily, we landed over 8 million pounds on average, with a high of 13 million pounds. Under this new quota, and under the rolling average, I think the state of Maryland will receive something like 6 million pounds. The option binds us to the TAC.

Here we are, we've aligned to the quota to how it can be caught. If the coastal quota is achieved, and Maryland uses the incidental catch, because we have 13 million pounds of fish in the Bay, we have no mechanism to add that into our average. We can't get those fish back. I hope that makes sense, but I think that there are pieces of this. I

understand the climate change, I understand the dynamics. I understand, I think it's a great way forward.

But I would just say that there are pieces that we haven't thought through, and in my little state it scares us a little bit, because we don't have a way to access that extra to get it back. If the episodic, if that set aside quota was equally accessible to all of us, I think it would make more sense, so thank you for listening.

CHAIR BELL: Thank you, Lynn, Jim Gilmore.

MR. GILMORE: I'm opposed to the substitute. The main reason is, and I agree with Lynn and you guys. It's a good way to go, in terms of where are we going for the future. But there is one thing that is inconsistent. Not all our fisheries are the same. Most of the other states are pursuing the fishery. We wait for it to come into the Peconic's.

Last couple of years, yes, I guess it was in 2018, 2019, we got 3 or 4 million fish, 2020, which we're not including we had 4 million. This year nothing came in. I start throwing zeros into that average, I get back to quite likely violating the reason that we had this Addendum was that we wanted to maintain the fisheries. Now, if I'm having a declining quota because of this moving average, which I can have, it's really going against the intent of it.

The moving average scares me also, because I could have a couple of good years and maintain it, then a couple of bad years when nothing comes into the Peconic's, and then suddenly my average is cut in half, or my quota is cut in half, or my allocation is cut in half. Again, that is eliminating a New York fishery, so I really can't support this motion.

CHAIR BELL: All right, so we've heard for, we've heard a couple against. Nichola.

MS. MESERVE: I too support the substitute motion. Megan really covered all the reasons for it very well, and I don't want to be repetitive with that. But I do want to respond to the concern about how the ESA

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plays into it as one of the levers that is pulled, and note that the other provisions have been a much stronger player in that dynamic over the last ten years, at just 1 percent.

If that's not what has been driving the change in the three years of an average that we see in the table in the document. I do think that by changing the allocations, we will likely see a different dynamic as to what states may need to opt into the episodic even set aside. It might not be the tool that we needed, if the underlying allocations change.

I'm also going to put out now that I'm going to be supporting the removal of purse seines from the small scale and incidental catch provision, because that has really driven how the landings have changed. I think that would be an important sidebar in the adoption of the moving average approach. Transfers are still another option that all states have access to, and we have maintained some percentages for nearly every state now. There is going to be some quota available through transfers still, less than before, but I think that will also counteract which states have access to the episodic set aside.

CHAIR BELL: Adam and somebody over here. Adam, you're next.

MR. NOWALSKY: I am also going to be in opposition to the motion to substitute. I appreciate the comments about nimbleness, but history does matter, period. Beyond that, I would call our addendum process largely nimble. In less than a year we could go ahead and modify these baseline years, if we need to in the future.

I would also offer as a thought that if a future addendum does look to modify the baseline years, using something that are either fixed years or a better version of a moving average. Perhaps we could look at something that is more adaptive, that allows us on an annual basis through specifications or something to choose those years, so we don't have to continue to go through an addendum process moving forward.

I don't view this as an endpoint. I agree and very much appreciate the comments about the moving average being a nimble approach. But in this instance history matters. We have an approach through the addendum process that allows us future changes, and I would continue to support our looking at these moving forward, and not treat this as a, put it away for a decade before we look at it again.

CHAIR BELL: Steve.

MR. TRAIN: I agree that history matters, and when we set the original quotas up, we ignored 30 years of menhaden fishing in the state of Maine for a more recent time period. Now we've got a chance to take a more dynamic approach that has the most recent time period.

The trouble with quota management is nobody wants to give up what they've got, even if they don't got it anymore. I support this, because I think it is the most dynamic and effective way to allocate quota, based on the current status of the fishery, and it will continually change. It's adaptive, it's what we talked about yesterday.

CHAIR BELL: Doug Grout.

MR. DOUG GROUT: I certainly can understand the concerns that some of the states have about going to this nimble approach, if you looked at it by itself. There would be flaws in that from my perspective. However, we have already approved one section of this that we have to look at this new rolling average as one way to try and reallocate to where the fishery is.

But the other thing that is there is still the minimum, every state gets a minimum, and you can transfer quota. This makes this a very, very useful way of distributing quota, because we're looking at the last three years average, the way menhaden move around. That is not perfect, because next year or two years from now, menhaden could be gone from New Hampshire for a few years, and pretty soon our quota would go to zero, if we were using a three-year average. But then they would

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come back. They may come back. Again, during those years when we have low or zero quota, we would have to talk to the states where the fish aren't, and try to transfer things back in. I think you have to look at the package here. I think the package that we're putting forward here provides the nimble approach, yet also we have mechanisms to address the concerns that you were pointing out, Jim, about your state. I would support something like this.

CHAIR BELL: Other comments? Yes, Conor.

MR. CONOR McMANUS: I just wanted to convey my support for the substitute motion, just being brief, building on what others have said. When I think about the purpose of the Addendum and why we're here today talking about reallocation. It's trying to be reflective of where the fish are, and providing opportunity where it's needed. I understand the concerns about the moving average, but I also want to echo that it's a moving average.

The idea of the moving average is to provide slower change, but also response to change in the system. Innately having a moving average acknowledges the fact that there is some variability from year to year. There is some history that gets carried through time with that approach. I just want folks to think about that when we think about the moving average. It's not necessarily an abrupt change from year to year, it's trying to account for change over time in a more dynamic way.

CHAIR BELL: All right, we have Dennis and then Jim.

MR. ABBOTT: Briefly, the first motion, the original motion says in essence in plain English, let's count some old years where people weren't catching anything in our calculations. But Jim Gilmore has a fear that in the future if he has zeros, he's afraid of what that will do to his average. I think we've got to keep apples and apples and features and features together. You know we can't live in the past. I think that Megan Ware gave such a good explanation of why the substitute motion is the way we should go.

CHAIR BELL: Jim.

MR. GILMORE: I've heard all that. Let me just break it down in practical terms. The reason we were doing this Addendum was to maintain the states directed fishery. We were also to reduce transfers. Right now, I'll just cut to the chase. I need, and this is based upon the last few years, 1 percent. That is what I need to maintain my fishery.

The last episode we just exercised, we went through, I'm at 0.5 percent. I'm already looking down the barrel probably at getting transfers. I'm going to need more transfers. Then this essentially can even reduce my allocation further if I get zero years, and I have a zero year this year, so I'm going to be getting more transfers.

Then later on, if we talk about gears, and suddenly that small scale fishery gear disappears, I'm going to be doing my entire fishery is going to be based on transfers. This is kind of supporting, and I understand the long-term goal, and trust me, if we were talking about fluke, I would be the happiest guy in the world right now that we're going to take the last three averages of what was in our particular landings, because this is what we tried to change over a long time. Yes, we need to get past history. But I like the original motion, because it's a stepwise towards getting it with using 75 percent of recent years. Adam's right, this part of it I think is a good idea, but maybe a couple years down the road after we get this built. Right now, this will impact New York's fishery, and against what the Addendum was trying to get at.

CHAIR BELL: All right, Matt.

DR. CIERI: I'll be really brief. Just speaking to support this option, the substitute. Just to say that this species has proved itself to move in the past. It's moved north in the past, it's moved south in the past. I think having a dynamic approach is just this is the species to try it with.

CHAIR BELL: All right, Lynn.

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MS. FEGLEY: I'm just going to repeat. I'm going to pile on a little bit with Jim. It is dynamic if the playing field is level. But right now, we are going to do this on a playing field that is not level where our fisheries are operating differently. I'm going to be right in there, I'm going to have to arm wrestle Jim for transfers. Our past does say that we can harvest many more menhaden than we're harvesting now.

If those fish return back to the south, which they may do, we are going to really struggle under this construct to add that back into our averages, if the coast meets its quota. We can't pull that back in, because we'll be over the quota, and 4B binds us to the TAC, which is a good thing. I just wanted to repeat that. It's a great idea. I just think we have a few things we need to think through.

CHAIR BELL: Megan, and then Emerson.

MS. WARE: Thanks, I just wanted to respond to a few of these comments. I think people are concerned that their quota is going to go to zero, or they are not going to have a fishery. Based on the quotas I'm looking at under this option, I don't see how people are coming to that conclusion. Specifically, I'll just put this out there for context, 0.5 percent right now. I'm getting that to be over 2.5 million fish. Right, so that Maryland and New York, you guys can't go below that, right.

What the moving average is saying is it's weighing a state's landings against its quota. If you are landing your full quota, you will be rewarded in the moving average, it's demonstrating a need for growth. That is what this option is saying. This option is providing the opportunity for growth, whether you have 0.25 percent of quota or over 75 percent of quota. I think this is the right option today.

CHAIR BELL: All right, I had several hands, I had Emerson then Max, and then Eric.

MR. HASBROUCK: I'm opposed to the substitute for the reasons that Jim gave and the reasons that Lynn gave. But the other thing that I want to point out is that there is really no public support for this option. I mean we take this document out to the public

hearing, so that we can get public input. Whenever it was, an hour and a half ago, James gave us, no Megan actually gave the report from the AP. In the AP there was no support at all for any of the Option 4, any of the three different things in Option 4, two different items in Option 4. No AP support whatsoever. Then in the public hearings there was very minimal support for Option 4B, hardly any at all. I think we also need to listen to the public.

CHAIR BELL: All right, Max Appelman and then back to Eric.

MR. MAX APPELMAN: I'm going to speak in support of the substitute, for a lot of the reasons that have been said already. I'm not going to repeat them all. But I think importantly to me, it's a process to allocations that aligns very well with what feels like our collective policies and positions and recommendations for managing fisheries in the face of climate change.

It's adaptive, it's innovative, I think I'm comforted that there is going to be a gut check a few years down the road, two, three years. That seems to be the pattern with menhaden allocations right now, and I'm not expecting it to be completely perfect. But I agree with the position and the posture that it presents, it provides.

CHAIR BELL: Eric Reid.

MR. REID: I would really like to ask Mr. Geer that if he finds his brain would you please look for mine, because it's probably in the same place as yours. I can't really decide whether or not we're talking about where fish are or where fish aren't in this discussion. A little while ago we redid the TAC at a very conservative number, to protect the resource so the resource keeps building.

I'm reasonably comforted in that, although I agree with Mr. Gilmore that it is a risk. But because of our earlier action, where we're conserving the fishery, pretty heavily really, we could have gone to 300,000 tons, you know, 300,000 or bust, I suppose, but we didn't. I'm reasonably comforted in the fact that we've already done something to protect the

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resource that would allow for the geographic spread of these fish.

Rhode Island, we're at risk. But I'm willing to take that risk, given our earlier actions, and the way the ecosystem is changing. You know it gives states who are not in double digits of quota, to build history and build quota, which means growth, which means jobs. I like that. A lot of people like that. I support the substitute for those reasons, but I know it's a risk, but I'm willing to accept that risk.

CHAIR BELL: Anyone else who hasn't? A lot of good back and forth, both sides of this argument. Cheri.

MS. PATTERSON: Emerson, could I just get some clarification on what you just indicated. Were you just talking about the AP, or are you talking about the public response, in regards to the public did not? I may have misunderstood, and I'm sorry if I did. Are you saying that the public does not like the moving average?

CHAIR BELL: Go ahead, Emerson.

MR. HASBROUCK: I said that in the report that we got from Megan earlier, the AP did not support Option 4A or 4B. There was no support out of the AP for either of those.

MS. PATTERSON: Okay.

MR. HASBROUCK: In the summary of public comments, there was very minimal support of Option 4B.

MS. PATTERSON: Okay, thank you.

MR. HASBROUCK: Second and third lowest support of any of the options.

CHAIR BELL: Anything else. Lynn.

MS. FEGLEY: I hesitate to do this, but I really just want to pose this in the form of a question, so that if I'm not understanding, somebody can help me understand. Under this option, I think that Maryland's quota would land somewhere between

5 and 6 million pounds. I'm not concerned about our quota going to zero.

But what I'm concerned about is those years that weren't too long ago, when we had a lot more menhaden arriving in our nondirected gear. If my quota now is at 5 million pounds, and we suddenly get fish back in the Bay, and we're landing 8 to 13 million pounds, right? That's 3 plus over our quota, and we used the incidental catch to get there, and simultaneously, the coast harvests the quota.

My question is, how do we get that extra fish into our average? How do we do it? If I can't get a transfer, because I have been slow on the uptick, our fish come in the fall, the transfers are already gone. If my quota is 5 million pounds, and we are capable of landing 8 million pounds. How do I get that fish back into my average, if we hit the coastal quota? If someone can answer that for me, I'm all good.

CHAIR BELL: Anyone? Anything new? Adam then Joe.

MR. NOWALSKY: Some of these comments that I've heard here, again, I have a ton of respect for everyone who supports this idea of looking forward, I do. But another concern I have with this approach is essentially what we're doing, and I've heard the comments about, hey fishermen go out, get landings, they'll be rewarded in the future. We're going to incentivize fishermen to create landings for themselves, to be rewarded in the future?

That's just bad management. I don't think we would support that in any other case. That is essentially what I see this doing, is telling people, go out, land as much as you can in the near term, and that's how you will be rewarded. Again, I'm all for nimble, I'm all for looking forward, I'm all for getting landings where they need to be done. I just don't think 4B is there yet. But I look forward to continuing to work on the problem moving forward.

CHAIR BELL: Okay, Joe.

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MR. CIMINO: I think there is another problem that I guess I haven't heard come up. I think New Jersey has a lot of fishing power. I think we could do well under this. We were able to harvest in the fall. If there was a lot of quota left on a high TAC year, and we're trying to utilize that.

States would have a real disincentive to transfer that quota to New Jersey, when they are capable of catching it in the fall, because that would just increase our three-year average, and we would be this whole new player. I can see states instead sitting on their quota, not allowing those transfers, because the three-year moving average would just keep us going.

CHAIR BELL: Anything else? We've talked this back and forth, and you've all done a good job of making your points. It's a tough one. This is one of the central things we knew we would be dealing with. Yes, Nichola.

MS. MESERVE: Just in response to Joe. Unless I am misinterpreting what you're saying. If states are sitting on their quota, not catching it and not transferring it, then they're going to lose that quota, slowly, in the moving average. I'm not as concerned about what he just raised.

CHAIR BELL: Ray.

MR KANE: You know we went through this whole Climate Change Scenario yesterday, three- or four-hour class on climate change. Menhaden are now in a historical range, and this moving average will benefit states that didn't have access to menhaden in years past. Everything we've done with menhaden so far has been a new direction in management. I support this moving average.

I mean, it was the first stock that we went with ERPs on and the Technical Committee came back with a higher number than what this Board was comfortable with, so we reduced it. But I don't see losers in this. When I hear people sit at the table and say well, you know, we can catch so many pounds, and what happens if we catch more. Well, that is exactly what has happened to a number of

states over the years in the northern region, because once again menhaden, they are in their historical range now.

CHAIR BELL: Anything else? Jim.

MR. GILMORE: This last comment, it's following up on what Adam said, that incentivizing is a good point. I guess what's going to happen in New York is we're going to have guys saying, well we've been keeping it as a small-scale fishery in the Peconic's, let's start fishing the ocean. Let's start getting our quota.

We can take, and if you looked at what we had off the south shore of Long Island, I probably could have taken 15 million pounds this year. If that's what we think this is going to help out, we're actually doing the exact opposite. We're going to be harvesting more, because exactly what Adam said. Now we've got people saying hey, if you can get your quota, you can get more of this. I think it's a bad idea at this point.

CHAIR BELL: Anything else? You all talked this one through pretty good. **I would like to go ahead and try to move this along, so what we're dealing with here is a substitute for the original motion.** I assume we're going to need to caucus, so let's take two. We'll caucus and then we'll vote on it. All right, thank you for that. We've had time to caucus, we're going to go ahead and vote on this. What we're voting on is the motion to substitute. All in favor of the motion to substitute, Option 4.B, raise your hand.

MS. KERNS: Rhode Island, Massachusetts, Connecticut, Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, New Hampshire, Maine. This is opposed. New York, New Jersey, Georgia, South Carolina, North Carolina, Virginia, Potomac River Fisheries Commission, Maryland and Delaware and Florida.

**CHAIR BELL: Any nulls or abstentions, 8 for, 10 against. Motion fails. Back to the original motion becomes the main motion here. Yes, John.**

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MR. CLARK: Just a question. I'm just curious. The Services typically don't vote on state allocation issues. I'm just curious as to why you're both voting on this issue.

CHAIR BELL: Yes, Max.

MR. APPELMAN: Well, the comments I made, those are obviously part of my rationale. But I think when we approach any vote at the Commission there are a lot of different factors and variables that were taken into account. You know if it's a state allocation, it's happening within the realms of the state that's one variable.

But we support process, we support science, and any other variables that might be part of whatever specific action is at hand. You know it's a case-by-case basis, and in this one, you know I really felt that it was the right option for Atlantic menhaden. It aligned very well, like I said, with our broader policies and positions towards adaptive management with changing ocean conditions and stock distribution changes and all that. That's what I'll offer there.

CHAIR BELL: Dennis.

MR. ABBOTT: With all respect to Mr. Clark. We've sat around this table over the years numerous times, I know that I have and some of my colleagues, questioning how the Services have voted on a particular issue. I don't think that we should publicly question their motives or their reasoning for voting, any more than we should do that to any individual member. Sometimes we may agree with where they go, sometimes we don't. But I don't think we have a hard and fast policy of what they should do, nor do I think they owe us an explanation for their vote.

CHAIR BELL: John, do you want to respond to that?

MR. CLARK: Yes, I wasn't trying to put them on the spot, Dennis. I'm just saying that typically when we deal with state allocation issues. Just by tradition I know that the Services just abstain, so I was just curious as to why they voted. I wasn't trying to call

them out. Like I said, it's just different. They typically do not vote on allocation.

MR. ABBOTT: Yes, I understand, John. But again, their motivations are whatever they are.

MR. CLARK: Point taken.

CHAIR BELL: That brings us back to the original motion. Nichola.

**MS. MESERVE: I'm going to try one more time to move to amend to Option 2. Substitute if you prefer. Yes, move to substitute with Option 2. If I get a second, I'll speak to my rationale.**

CHAIR BELL: Okay it's a motion to substitute Option 2 for the original motion. Is there a second to that? Jim Gilmore. Go ahead, Nichola.

MS. MESERVE: I'll just reflect on another comment I heard at the climate workshop yesterday was that we need to stop looking in the rearview mirror and look to the front. We just decided we're not going to look forward, but if we're going to keep looking in the rearview mirror, we need to make it the most recent years here, or else we are going to not meet the objectives of this Addendum to reduce quota transfers, and reliance on the other provisions in the plan right now. I think this is the only option that will meet those objectives at this point.

CHAIR BELL: All right, Jim, you seconded. Do you have anything to add to that?

MR. GILMORE: No, Nichola captured it fine, thanks.

CHAIR BELL: Okay, you heard the rationale for this particular substitute. Any thoughts, further discussion of that? Doug and then Adam.

MR. HAYMANS: I don't want to necessarily weigh in on this, but I do view the 25/75 as more of a forward looking. I mean everything I've been used to is a 50/50 split, viewing past and most recent. This does give a nod to the most recent, without it being all most recent. I'm in favor of the original motion.

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CHAIR BELL: You're in favor of the original motion, okay. Adam.

MR. NOWALSKY: We are talking about an addendum to Amendment 3, but I think we can all agree that the amendment process is typically something that we would call more deliberative and contemplative. Both of the last two amendments to this fishery, Amendment 2 and Amendment 3, recognize the importance of the 2009 to 2011 years, as part of the history in this fishery. That is important.

Having the ability, again to go ahead and move 75 percent into those recent years. We spent a lot of time going through multiple motions at the first part of this Board meeting. Oh, there was another agenda item today, and we wound up with a compromise position. I would hope all Board members can look at themselves now, and again look for the compromise position between history and what's current and moving forward, and the original motion does that. I'll again have to not support the substitute.

CHAIR BELL: All right, Jim.

MR. GILMORE: The concept of the split makes sense. But just from history, if you recall back in 2009 through 2011, not all states were recording landings. New York was one of them. We had no mandated tracking of what the landings were. Our quota back then was 250,000 pounds. Until we did rulemaking and passed, and then essentially got two or three years in, we actually had no history.

When we go back to this, we were probably landing what we do now, and probably 2 to 3 million pounds. But based upon our history, and what's on record, we only had 250,000 pounds. It really doesn't accurately reflect what the fishery was doing back in 2009 through '11. I don't know if New York was the only state, but we definitely were one of them, and I think there were a couple of others. Just the reality of what the numbers were saying back then.

CHAIR BELL: All right, Megan.

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MS. WARE: I'm going to support the substitute. In kind of comparing these two options here, I think the substitute does a better job of achieving our goals today that are outlined in the document. We had four objectives today. The first objective is, align with the availability of the resource. I think the substitute does that better.

Objective 2 was, enable states to maintain current directed fisheries with minimal interruption. I think we achieve that with the substitute, and I'll note that once again Virginia is going to have more pounds to land than they did this past year. The third one was, reduce the need for quota transfers. The substitute is going to do a better job on that. The fourth is fully use the annual TAC without overage, and again I think the substitute does a better job of that. I'm in favor of the substitute.

CHAIR BELL: Pat Geer.

MR. GEER: I've kept my mouth shut until this point. As Mr. Abbott, you know Virginia is the big bad wolf in the room in this. But we have 125-year history of the menhaden fishery in our state. To just ignore that, just for the most recent years. I can't fathom that. I just can't see that. I thought it was a good compromise. I fought hard back in February to have a 50/50 split.

I thought that was the most fair and equitable. I thought the 25/75 was a good compromise. You got more of the more recent data in there, but it's still accounting for some of the historical data. Now we're just throwing it out the window, and not even regarding what's happened in the past. I just can't support that at all.

CHAIR BELL: Other comments, thoughts? **Again, this is looking at the Option 2 versus the original motion up there.** All right, we've had enough discussion. We're going to vote. Do you need to caucus? Yes, take two. **Is the move to substitute Option 2, or the original motion at the top?** All in favor of the substitute motion, raise your hand.

MS. KERNS: Rhode Island, Massachusetts, Connecticut, New York, Pennsylvania, Maryland,

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Maine, and New Hampshire. This is opposed. Florida, New Jersey, Georgia, South Carolina, North Carolina, Virginia, and Delaware.

CHAIR BELL: Any null votes? Any abstentions?

MS. KERNS: Potomac River Fisheries Commission, NOAA Fisheries, and Fish and Wildlife Service.

**CHAIR BELL: Eight in favor, 7 against, 3 abstentions, so it passes. Okay, so the substitute motion becomes the main motion.** We'll clear the board here. All right, we're going to move on this now, get some momentum here. This is now the main motion we're considering. Any further discussion of this motion, which is move to approve Section 3.1.2, Option 2, 2018, '19, and '21. That is the original motion we started with earlier. Oh no, this is the substitute, I'm sorry. This is now the main motion though, any further discussion of this motion? Adam.

MR. NOWALSKY: Just hypothetically, should this motion fail, we would be able to go back to something else that we had prior to this, should this fail?

CHAIR BELL: If it already failed, you couldn't go back to it, I don't believe.

MR. NOWALSKY: Well, so I mean this was a motion to substitute that became a main motion. If this now failed as the main motion, we could go back to one of the motions that hadn't been voted on, because they had been substituted.

CHAIR BELL: Is this Robert's advice? Okay, Dennis.

MR. ABBOTT: Adam, I think what you're saying could be done. A motion to, again going through my experience with Robert's Rules or Mason's Rules in the Legislature. A motion could be made to reconsider our previous action. But that motion has to be made by someone who is on the prevailing side. If we voted for reconsideration and it passed, then you could go back to that motion. But it's not a normal thing. Am I correct, Bob, in my reasoning?

CHAIR BELL: Thanks for that.

MR. ABBOTT: I hope we don't do that, because we'll be here forever, Adam.

CHAIR BELL: Okay, remember I mentioned pizza. Any further discussion of now the main motion before you? Do you need to caucus on this? If you do that's okay, just say so. Okay, guess not. We've probably already caucused. All right well, then let's go. All in favor of this motion as you see it there, raise your hand.

MS. KERNS: Rhode Island, Massachusetts, Connecticut, New York, Pennsylvania, Georgia, South Carolina, North Carolina, Maryland, Maine, New Hampshire and Florida.

CHAIR BELL: Okay, all opposed, raise your hand.

MS. KERNS: New Jersey, Virginia, Delaware.

CHAIR BELL: Any abstentions?

MS. KERNS: Potomac River Fisheries Commission, NOAA Fisheries, and U.S. Fish and Wildlife Service.

**CHAIR BELL: I don't think there are any nulls. It's 12 in favor, 3 against, 3 abstentions. It passes.** That takes us to ESA discussions, 3.2.1. It's in your document. If you're looking at that it would be Page 21, Page 22 under increase in set aside, and we have options there. Would anybody like to begin discussion in this section? Jim Gilmore.

MR. GILMORE: Just a procedural thing. Overage paybacks, are we supposed to be doing something on overage paybacks?

CHAIR BELL: Yes, on Page 15. Sorry, getting ahead. Yes, Page 15, Page 16 of the document, you've got a decision point there, two options related to overage paybacks. One was status quo, one second year after overage. Discussion in this section. Nichola.

**MS. MESERVE: To my understanding of this issue, it's really just a data availability issue. While I prefer that overages be paybacks the next year, I**

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**understand the issue here. I'll move to approve overage payback Option 2.**

CHAIR BELL: There is a motion for Option 2, is there a second to that. Jim seconds it. Okay, we'll get that on the board. That would be Option 2 on Page 16 of your document. Any discussion of that motion? Nichola, you want to, you already covered it, okay. Any further discussion? Is there any objection to that motion?

**This is for Option 2. I don't see any hands for objection. Then it passes unanimously.** That takes us back then to under 3.2.1. We have under increase the set aside we have options there on Page 22. Any discussion of this section? Any ideas, thoughts? Cheri.

**MS. PATTERSON: Okay, I'll jump out of the gate here. I would like to move that the Board consider status quo, Option 1.**

CHAIR BELL: That's a motion for Option 1, status quo, is there a second for that? Joe Cimino. All right, discussion of that motion. It's on Page 22, Option 1, status quo under 3.2.1. Lynn.

MS. FEGLEY: I believe that we will support this motion, but I also want to go on the record to say that now that we have realigned the quota. I know that this Board elected not to place an option for a 0 ESA in the document, but I just want to go on the record that I think it's time that we start to consider eliminating some of these programs.

CHAIR BELL: Thanks, Lynn, and Cheri, I apologize, would you like to explain this, why you like status quo.

MS. PATTERSON: I think at this point in time we're dealing with a lot of compromise, and we're going to be visiting, I have no doubt we're going to be visiting episodic in a couple years. I think we just need to stay at the status quo as a compromise at this point.

CHAIR BELL: Joe, did you have anything to add to that as the seconder? Okay, thanks. Further

discussion of the motion? I don't see any hands. **We'll vote on it. Any objection to the motion? I don't see any hands. The motion passes unanimously.** Thank you. That takes us to under 3.3, 3.3.1 timing of incidental catch in the small-scale fishery provision. That is on Page 23, right off the top there. There are three options there under that. Any ideas? Joe Cimino.

**MR. CIMINO: I would like to make a motion for Option 2, when sector allocation is met.**

CHAIR BELL: Okay there is a motion for Option 2, is there a second? Second by Pat Geer. All right, Joe, you want to explain why you like that one?

MR. CIMINO: Yes, I think it speaks to the intent of incidental catch for two states that were named specifically, the two that made and seconded this motion. What we would have, so New Jersey has an ITQ for the larger portion of the fishery, and if we had to force our gillnet fisheries and our pound net fishery to wait for those ITQ, folks to catch their quota then. All summer long they would have to be throwing dead menhaden over.

CHAIR BELL: Okay, Pat, did you have anything to add to that?

MR. GEER: Just the same thing. Our quota is separated into three sectors, that's allocated out where the same situation would occur.

CHAIR BELL: All right, you've heard the rationale for the motion. Comments on that. Allison.

DR. COLDEN: I believe I made some comments on this before we approved it to go out to public comment. I totally understand, especially with New Jersey and Virginia in particular, why this is an attractive option, and why it may help with the concern of regulatory discards. I just want to point out that there is an opportunity, I think with this motion and this option as written, for there to be some sidestepping of what we're trying to achieve with the incidental catch fishery.

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Right now, there is nothing in the document that would prevent a state from setting a sector or gear type allocation extremely low, and having that fishery, and for the incidental catch fishery pretty early on in the season. There are obviously some benefits to that from an administrative standpoint it's just the daily trip limit, and things are monitored outside of a directed quota allocation. I just want to put that concern on the record, and make sure that it's something we as a Board can continue to look out for as we move through this new allocation process. Because I think, depending upon on how things fall with other parts of this document, there may be some incentives that are counter to what we're trying to achieve in the incidental catch and small-scale fisheries provision, in terms of reducing those landings, and getting back to sort of our original intent in Amendment 3. I just wanted to make sure that that was reflected on the record.

CHAIR BELL: Thank you for that, some concerns of the caution about wording and intentions. Any other comments or thoughts on this motion for Option 2? I don't see any hands going up. **Let's vote. Any objection to the motion? I don't see any hands there. Then the motion carries, unanimous.** Thank you. Now something simple, on to 3.3.2 on Page 23, and carrying over with your various options onto 24. This is under permitted gear types within that fishery. Any thoughts there? Nichola.

**MS. MESERVE: I will move to approve in Section 3.3.2 Option 2, to remove purse seines from the incidental catch small scale fishery provision.**

CHAIR BELL: Okay, motion to adopt Option 2, is there a second. Second from Lynn Fegley. Nichola, do you want to provide some rationale?

MS. MESERVE: Yes, thank you, Mr. Chairman. We've seen in the last year, and I believe this year as well that the use of this gear type under the provision has led to the TAC being exceeded. I think that's a credibility issue with the public, as is calling a purse seine a small-scale gear. It's really an outlier, and the group of what we call small scale, based on the capacity of the gear. I think this is the

right time to make this change, now that we have changed the allocation, so that states that have relied on it in the past have more access now under their quota.

CHAIR BELL: All right, Lynn, did you have anything to add as the seconder? Okay. That is the motion, further discussion. Megan.

MS. WARE: I sent a motion to staff on this topic. It was a little long, but I would like to make that motion now. Yes, this will be a substitute.

CHAIR BELL: Yes, I figured. Let us just find that and get it up there.

MS. WARE: I don't believe that was the motion I had submitted. Spoiler alert.

CHAIR BELL: Yes, we're just dealing with a little technical issue here. We'll get this. Whenever they have that there, if you would just read your motion, then that will be your motion.

MS. WARE: Yes. Thanks for everyone's patience. **Move to substitute to maintain purse seines in incidental catch/small scale fishery provision with a reduced trip limit of 4,000 pounds for purse seines only.** Should the TAC be exceeded by landings under the incidental catch/small scale fisheries provisions, the Board can modify permitted gear types via Board action.

CHAIR BELL: All right that's the motion by Megan Ware, is there a second? Okay, second from Emerson. We have a motion; do you want to explain rationale?

MS. WARE: Yes. I think removing purse seines today is treating the symptom and not necessarily the cause. The reason that we've had so many landings under the incidental catch/small scale fishery provision is because that was the only way for us to have a viable fishery. I think given the allocation changes we just made today, the pressure on this provision is substantially less, if not eliminated. It feels a little premature to remove purse seines.

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I do think purse seines have several advantages, in terms of sustainability that were raised in the public comment. Purse seines have been critical in maintaining low dead discards in Maine, because you can release fish alive. They also have very low bycatch. I am concerned that if for any reason this encourages folks towards gillnets in any way, that we will be increasing bycatch of things like striped bass, bluefish, sturgeon, and probably most concerning is.

You know most of us next week are going to be on a Take Reduction Team meeting, which is specifically focused on right whales and interactions with big scale fisheries. I would hate to have an unintended consequence of this type of motion be increased vertical lines and interactions in the water. This motion is intended to acknowledge that there is some room between a full yes and a full no on purse seines. That is my rationale.

CHAIR BELL: Emerson, did you have anything to add to that?

MR. HASBROUCK: No, I agree with Megan. I think it's also a good compromise between status quo and eliminating purse seines.

CHAIR BELL: All right thanks, that's rationale. I've got Eric and then Adam.

MR. REID: Just a question for the maker and the seconder. At this point we allow, if there are two licenses on a vessel you've got two trip limits at a time. Is that your intent here?

MS. WARE: It's not permitted in Maine. It's been a straight 6,000-pound fishery, and this would be a straight 4,000-pound trip limit.

MR. REID: The motion addresses the whole coast, so I guess that's my question.

MS. WARE: It does address the whole coast, but it is just reducing the trip limit for purse seines only, none of the other gear types.

MR. REID: Okay, but if you have two licenses onboard you can still have 8,000, if you're not.

MS. WARE: I believe that's only for stationary multispecies gear types, it is not for all of the gear types in the small-scale fishery provision.

MR. REID: Okay, well I guess all right.

CHAIR BELL: Adam.

MR. NOWALSKY: Given that 3.3.2 deals with nondirected gear, this would maintain purse seine as a nondirected gear, correct? I'm seeing a nod. Then I've got a follow up question, assuming the answer is yes.

MS. WARE: I think 3.3.2 is permitted gear types in the incidental catch/small-scale fishery provision. This would maintain purse seines in the incidental catch and small-scale fishery provision.

MR. NOWALSKY: Okay, so given that 3.3.2 does not include anything that contemplates trip limits in 3.3.2. Are we comfortable with now adding trip limits to 3.3.2, when there was nothing in this section about a trip limit associated with these gears previously?

EXECUTIVE DIRECTOR BEAL: Yes, Adam, this is kind of a hybrid 3.3.2, if I have my numbers right. As you said, what gears are permitted in the small-scale fishery/incidental catch. Then the next section is the trip limit, so it's kind of hybridizing those two different sections, and putting a more restrictive measure on one gear type that is being retained in the fishery.

We have done this in the past. We take sort of mixing together different options from different pieces of a document, and come up with a hybrid option. The Board has done it in the past, and it is sort of within the range of things that are brought out to public hearing, gear type and trip limits.

CHAIR BELL: Adam, follow up.

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MR. NOWALSKY: This will mitigate any need for further discussion on 3.3.3?

EXECUTIVE DIRECTOR BEAL: Not necessarily. If the Board wants to change all other gear types to 5,000 pounds, for example. That discussion still can happen next.

CHAIR BELL: I had Allison then Max and then back to Lynn.

DR. COLDEN: I did want to specifically touch on one point that Megan made, and a point that I also noted in the public comment related to this provision specifically. I read many times about purse seines being banned, about moving to gillnets as an alternative fishery. I want to make very clear that removing purse seines from incidental catch and small-scale fisheries does not ban the use of purse seines in any way.

It simply moves the landings recorded by that gear into a different bucket of a state's directed landings. We've gone through the majority of this document at this point. We've made decisions on the allocation timeline that shift quota to the more northern states, reflecting the biomass distribution.

We've significantly increased the overall coastwide quota, to reflect everyone's opinion of the best available science, and the ecological reference points target. There was a lot of discussion earlier about, you know if we adopted these ERP targets, we should work with those ERP targets. What I am trying to ensure here is that we are actually going to be accountable to the TAC set on the ERP target. We all know incidental catch and small-scale fisheries landings at this point in the document are not accounted for against our total allowable catch, based on that ERP.

If we're going to be consistent with the arguments that this Board made earlier, in increasing our total allowable catch, then it should follow that we follow the objective of this section as listed in the Addendum to minimize these landings. Purse seines have been responsible for almost 90 percent of the increase in landings since 2017, in the

adoption of Amendment 3, and I think we need to stick to the objective and remove purse seines.

CHAIR BELL: I've got Max Appelman next.

MR. APPELMAN: Yes, just a process also, building on what Adam was saying. How will this affect the decision points under 3.3.4? Also, is that guidance the same about combining options and sort of hybridizing? Are we still going to cover the accountability or accounting part?

CHAIR BELL: Toni.

MS. KERNS: The 3.4 is determining whether or not the incidental catch counts against the TAC or not, right? Therefore, these landings, if the Board let's say says we're going to count the incidental catch landings towards the TAC, then they'll count towards the TAC. I don't understand where you are.

MR. APPELMAN: Yes, let me try to clarify. Part of this motion says that should the TAC be exceeded by landings under the incidental catch/small-scale fisheries provision, that is a specific decision point, I believe under 3.3.4 as well, right? The different options that the Board could have available to them to respond in that scenario.

CHAIR BELL: Yes, to that, Allison.

DR. COLDEN: Yes, I'm sorry, quick follow up, Mr. Chair. I had a similar question to Max, also because I believe in the later section 3.3.4, which it looks like the second half of this motion, is attempting to address with respect to changing permitted gear types be a Board action. The language in this motion appears to be less stringent than what is in 3.3.4, which requires the Board to take action, rather than allowing the Board to take action. I would be interested in sort of revisiting those other pieces as well down the line.

CHAIR BELL: Megan, to that point.

**MS. WARE: Yes, I'm sorry for causing confusion here. I think in the motion I had sent to staff I had**

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**listed out what options this includes. I think maybe for ease I'll just read that so people know what options are getting combined here. For 3.3.2 it's Option 1, maintain purse seines. For 3.3.3, I chose 4,000 pounds that was within the range that went out for public comment. In 3.3.4, my intent was to include catch accounting via Option 2. Excuse me, Option 2B, Sub-option 1, which allows the Board via catch accounting to evaluate permitted gear types, and take action to eliminate a gear type should landings exceed the TAC. Hopefully that helps.**

CHAIR BELL: That was the original wording that you had, which included the other section. Actually, you were next anyway, Lynn.

MS. FEGLEY: You know with all due respect to my friends from Maine. I think this is asking to have your cake and eat it too. I really do. You know we have realigned the quota, and I think looking at the numbers, absent the re-jittering of a tier, the state of Maine will have in excess of 20 million pounds to work with.

I went back and read the 2012 proceedings for when we first did allocation for menhaden in Baltimore. I would actually encourage everybody to go back and read those proceedings, because it was a long, thoughtful conversation, and we talked about this bycatch allowance for hours. It was a very specific problem.

Let me rephrase that. It was a very specific solution to solve a very specific problem about these non-directed stationary multispecies gears. We have twisted it now to a point where it's arguably changed the dynamics of menhaden harvest along the coast, and clearly the fish have moved.

But to this point, I also want to say that we need to really start thinking in these conversations about how we are impacting the economics of fisheries in our states, because we don't all fish in a vacuum. We move our fish up and down the state. I have a lot of concern for my fishermen in Maryland. I shouldn't say my fishermen, Maryland's fishermen, who really worry about the impact on their market

when we're transferring fish out of the Bay, or when we're reallocating.

I think we have worked really hard today to realign the quota. That was our Number one objective, and now we're considering taking a directed gear and allowing it to harvest under a provision that was fully intended to solve the problem for these nondirected multispecies gears that could result in significant amounts of regulatory discards. I apologize for getting a little hot under the collar, but thank you for listening.

CHAIR BELL: Okay, thanks, Lynn. I have several people already lined up. Erika Burgess is online, and then I had Allison and then Doug, and then Adam.

MS. ERIKA BURGESS: Mr. Chair, thank you for recognizing me. I have to say first off, I'm very uncomfortable by a motion that takes three different actions that's in a document and puts it together. I can more easily see how the motion about moving tiers within the base allocation is within the range of options within the document that went out to the public.

But here, I feel like each of these is a separate item, and we might make one decision for purse seines, and we still have to revisit each of the three actions for other gears. But it is the state of Florida's opinion that a purse seine is not a small scale nor a nondirected gear for menhaden, and so for that reason we'll not be supporting this motion, and will be supporting the original motion.

CHAIR BELL: Allison, did you have your hand up earlier?

DR. COLDEN: Sorry, Mr. Chair, that was my follow up to Max's question. I'm good.

CHAIR BELL: Got you, thanks. Doug, Adam.

MR. HAYMANS: I was just trying to alert you, Mr. Chairman to Erika's need, had her hand up.

CHIAR BELL: Okay, Adam.

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MR. NOWALSKY: I would just like to go back to my question and Max's follow up, whereby I had suggested that the motion to substitute would mitigate the need to take action on 3.3. Max asked about 3.3.4. The clarification in italics now seems to suggest that should we vote for the substitute, and vote for it as a main motion, that we would in fact mitigate the need for action on 3.3.3 and 3.3.4.

I think we need clarification as to what is the motion we're voting for. Are we voting for the motion that has a second to it, and then we still need to take action on 3.3.3 and 3.3.4, or is what is in italics the actual motion, and what is on the board should reflect that? That is my opinion as a member of the caucus sitting here around the table.

CHAIR BELL: Toni.

MS. KERNS: Adam, I think that the Board has the ability to take action on all three sections still. This motion is pulling out purse seines and giving it a specific trip limit and a specific reaction to how that trip limit can be changed if the TAC is exceeded. If the Board wants to take action on any of the other gear types that were listed, they can still do that.

They can put a trip limit restriction on it, and then they can put a reaction for those gear types on if the TAC is exceeded. The Board also still has the ability to vote on whether or not to use incidental catch and small-scale landings count against the TAC or not.

CHAIR BELL: This was meant to be purse seine specific.

MS. KERNS: This is meant to be purse seine specific.

CHAIR BELL: Adam.

MR. NOWALSKY: Can I hear that from the maker and seconder of the motion to reflect that, because again, I heard something different from the maker, and what's up there in italics says to me, their motion to substitute includes options for those other sections.

MS. WARE: Yes, I guess, I'm kind of processing this. One part is very easy. The trip limit is purse seine specific. In the second part of the motion, I was choosing options in 3.3.4 that I think are as written, so you would have incidental catch landings evaluated against the TAC. Not realizing that that is confounding this discussion here. Maybe the best way to proceed, and I'll look to Toni here just to chat, is to withdraw this motion. I'll just make a motion to substitute to maintain purse seines with a 4,000-pound trip limit, leave out the catch accounting. We'll deal with that later to simplify this. I get the confusion you're having, Adam, I apologize.

MS. KERNS: You can do that, Megan, but the Board has to agree to withdraw it. It's the property of the Board.

MS. WARE: Would I Have to make a motion to withdraw?

MS. KERNS: Or the Chair can ask if there is an objection.

CHAIR BELL: Is there any objection, since we own the motion. Is there any objection? Megan is proposing withdrawal. I don't see any hands so it's no opposition to that, so withdraw the motion. Yes, Roy.

MR. MILLER: Can you withdraw a motion without the approval of the seconder?

CHAIR BELL: Well, that's a good point.

MR. HASBROUCK: Yes, I'm fine with it, Mr. Chairman.

CHAIR BELL: Okay, so we have the motion maker, the seconder, thank you, Roy, and then we agreed, since we owned the motion that that's fine, we withdraw the motion.

**MS. WARE: With the Board's indulgence I will try again, and it will be move to substitute to maintain purse seines in the incidental catch/small-scale fisheries with a reduced trip limit of 4,000 pounds**

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**for purse seines only.** If I get a second, my rationale I said before still stands.

CHAIR BELL: Now we've kind of simplified that. Is there a second to the motion as Megan just made it? Dennis Abbott. Okay, seconded, discussion. You've already kind of explained the rationale, I guess. Any further discussion of the motion as now it's presented? Yes, Steve.

MR. TRAIN: A little bit of discussion. I support the motion, but I also want to explain something about our fishery in the state of Maine. These are lobster boats 32 to 45 feet that fill a small seine, maximum size 150 fathom by 8 fathom. It's not an industrial fishery. It's not a fleet that runs up and down the coast.

You leave your mooring and shoot to the other side of the cove, make a set and go home. It's like a fish trap that you take out of the water every day, and it is not an incidental catch, it's a small-scale fishery. We're offering to reduce the 4,000 pounds. Hey, a dead fish is a dead fish, I don't care what it went into. This is our small-scale fishery.

CHAIR BELL: All right, thank you. Adam and then Jim.

**MR. NOWALSKY:** I'm okay with this. I sat on enough docks this summer in the state of Maine, and watched the bait come up on the dock, and I support Maine's fishermen for this. However, I can't vote for this motion, until I know that as Allison suggested that it is being directly attributed to the CAP, and not just skating free. **I'm going to make a motion to table this until after we address Section 3.3.4.**

CHAIR BELL: Lynn, to that?

MS. FEGLEY: I was just going to speak in opposition to this. If the Board will indulge me. You know we had a conversation about this. I'm just going to quote the venerable Jack Travelstead, for those who remember him. When we talked about this in 2012, and he talked specifically about purse seine,

he says, purse seine is a directed gear. Nobody would argue with that.

We are talking about pound nets and gillnets. I also want to say that we have a drift gillnet fishery in Maryland. We don't have people rushing to gillnet for menhaden, because of our restriction. Pound nets are a big gear, but they are a stationary gear. We have lots of small-scale fisheries in Maryland that we manage to quota. I just think that this is a little bit over the top, and thank you for indulging me.

CHAIR BELL: Procedural thing here, sorry. Adam made a motion to table. That needs a second, and then we would be restricted to only vetting the time at which it would end. Is that a second, Eric?

MR. REID: Yes, it is, and the motion has basically a time. It says until after we address 3.3.4.

CHAIR BELL: That's what I was wondering. Okay, so that is all we can talk about now. Yes, Bob.

EXECUTIVE DIRECTOR BEAL: The way motions to table work is the only thing you can really talk about is when the Board will get back to this, so tabled, and that's the only part you can talk about. But now where the Board is, we should figure out if you want to table or not, not discuss the previous motion about the 4,000 pounds and the purse seine, and then move into 3.3.4.

**CHAIR BELL: Okay, so we need to deal with this motion then. Any opposition right now to the motion to table? All right, so no opposition so that passes.** Then we go ahead and flip to the next.

EXECUTIVE DIRECTOR BEAL: Then you move to Section 3.3.4 for that conversation, and there are no motions in play right now.

CHAIR BELL: Got it, okay. Let's get to 3.3.4. Part of the motion was to go to 3.3.4. Yes, Bob.

EXECUTIVE DIRECTOR BEAL: Actually, you could go to 3.3.3 or 3.3.4, but what this means is if the Board deals with 3.3.3 they can't come back to the

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motion, they've got to go all the way through 3.3.4 before they can come back to the tabled motion. You could maintain the order of 3.3.3 then 3.3.4 to be consistent with the document.

CHAIR BELL: I'm starting to get hands here. Hang on a second. I've got Erika and Jim, and Allison, I think. All right, Erika, what did you have?

MS. BURGESS: I would like to go into 3.3.3 first, because I believe that will also inform the rest of the discussion. But I have a request for information about the statement that was brought up about some states allowing a vessel with two licenses onboard to have double the vessel limit. If I could know which states that applies to and which gears, and whether it counts towards the TAC or not.

CHAIR BELL: Okay, if I remember the question, that was kind of between Eric and you brought up the question about whether or not a boat could have two different licenses or more.

MR. REID: Yes, the question was particular to that particular motion. There are in some cases. Actually, I might not be the one to answer this question. But my understanding it is that in certain cases on certain gear types that if you have two licensed fishermen onboard, you can have two trip limits. In Rhode Island, for example, our floating fish traps, we allow two licensed captains to bring in two trip limits on the same trip. Whether that is specific to Rhode Island or floating fish traps only, I am uncertain of that.

CHAIR BELL: Toni.

MS. KERNS: Mr. Chair, I think you're looking at what I'm looking at. Under the incidental catch/small-scale fishery provision of Amendment 3 it allows for two authorized individuals working from the same vessel for stationary, multispecies gear. They can work together and land up to 12,000 pounds from a single vessel. It has to be from a stationary multispecies gear type. That can be any state that is within the FMP, Erika. I know that Maryland does prosecute that, but I am not aware of other states that do besides Rhode Island.

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CHAIR BELL: Did that answer the question?

MS. BURGESS: Yes, thank you.

CHAIR BELL: Jim, I think you had your hand up.

**MR. GILMORE: Yes, I was going to try just to maybe do this quick. I was just going to put a motion up for Section 3.3.3 to approve Option 1 that would change the trip limit status quo.**

CHAIR BELL: Motion by Jim Gilmore under 3.3.3 to approve Option 1, seconded by John Clark. Rationale, Jim.

MR. GILMORE: Again, this is critical for us in our fall fishery we've been having, as I mentioned at the last meeting. That's the time of the year in the Peconic's we're having significant fish kills. If we can't land those fish quickly and get them with the market, they end up dying and going to a landfill at significant cost to the local towns. That 6,000-pound trip limit has saved us the last few years, and we would like to make it again.

CHAIR BELL: Hey, John, anything to add to that?

MR. CLARK: I do not, Mr. Chair.

CHAIR BELL: We have a motion by Jim Gilmore, second by John Clark. Move under Section 3.3.3. Option 1 (status quo). Discussion of the motion. Okay, Lynn.

MS. FEGLEY: My question is, if we do this, then we wouldn't be able to change the trip limit for purse seine, right? Is that how this would work?

CHAIR BELL: Yes, Toni.

MS. KERNS: Lynn, I would say that you could, because the motion that has been tabled, the provision is specific to purse seines and it is a specific trip limit for that. You're giving a different trip limit to purse seines.

CHAIR BELL: Okay, I follow you there. Other discussion of this motion. I don't see a lot of hands.

**Is there any objection to this motion under 3.3.3 to adopt Option 1 (status quo)? I don't see any objections, so that motion passes.** Then that would take us to 3.3.4, Page 25, which would be catch accounting in this fishery. Any thoughts there? Allison.

DR. COLDEN: I provided staff a motion for this section, which they graciously perfected for me, and kept the red in free.

CHAIR BELL: That looks like it? Would you like to read that?

**DR. COLDEN: Sure. Move to adopt Option 2A, Sub-option 1, and Option 2B, Sub-option 1 in Section 3.3.4 to evaluate incidental catch and small-scale fisheries landings annually against the coastwide total allowable catch, and to allow the modification of the daily trip limit and/or gear types included in the incidental catch/small-scale fisheries provision via Board action.**

CHAIR BELL: Is there a second to that motion? All right, Doug Grout. We have a motion second, Allison, do you want to explain your rationale?

DR. COLDEN: Sure, thank you, Mr. Chair. I think this is going to be critically important, especially with respect to the motion that we still have on the table. I mentioned earlier, and I'll reiterate here that we have an ERP target for this important fishery species, and I think we need to be responsible to managing to that target.

Our total allowable catch right now, and of course we obviously have overages and payback provisions on a state-by-state basis. But if we go over on a coastwide basis there is no accountability to that number at this point. I think it's important, and shows the intent of this Board that we really do intend to manage to that number, and manage to that goal of ecological reference point, that we have some sort of catch accountability. With respect to the sub-options, I just wanted to touch on that quickly. Right now, obviously, we have the option to modify these types of things via Board action. As we sit here today, working on an Addendum that

has been 18 months or more in the making, we know that those things don't move very quickly.

I think that this would give us the opportunity to react to trends like we saw with the addition of purse seines into the small-scale fisheries. We saw that increasing year over year over the past four years. It took four years for us to step in and take action. In the spirit of being nimble and flexible, I think that this would give us the opportunity to more quickly and directly address any of those issues that we see.

If there are particular gears or sectors that are contributing to continued exceedances of the TAC. Our goal was to get closer to reduce the amount of latent quota. As we move closer and closer via allocations to using all of our coastwide TAC, this becomes more important.

CHAIR BELL: Doug, did you have anything to add to that?

MR. GROUT: Just a simple reiteration that we need to have these start being included under the TAC.

CHAIR BELL: Thank you, so you have a motion you have a second. Further discussion? Adam.

MR. NOWALSKY: This makes it clear that this is covered under the TAC. Option 1 specifically stated that the landings do not count against a state allocation. Option 2 specifies that the landings are evaluated against the TAC, but is silent on the issue of counting against a state allocation. Where does this leave those landings, with regards to counting against the state allocation with Option 2A?

CHAIR BELL: Thinking, Toni.

MS. KERNS: It would come off the top. It would not count against a state's allocation.

CHAIR BELL: Adam.

MR. NOWALSKY: Okay, would staff agree or disagree with the sentiment that a modification to this motion that would clarify that it would go

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against the state's allocation be allowable within the options in the document?

CHAIR BELL: Processing here.

MR. NOWALSKY: I'll go so far as if it helps staff at all, that I think as it's relevant and the gear type of concern, with regards to the motion that we tabled. That I would go so far, if I was to make that motion to amend at this point, to specify specifically that it would be the purse seine gear type that is the type that should be addressed relative to the state allocation, if that helps.

CHAIR BELL: Yes, Bob.

EXECUTIVE DIRECTOR BEAL: It gets tricky, because the way this incidental catch/small-scale fishery works is you are allowed to access that fishery once your state quota is landed. Your state quota is landed in one year, now you initiate your small-scale/incidental catch fishery. All those landings by definition are over your state quota.

They would have to come off. Essentially, anything you catch this year is going to come off next year's quota, because you've automatically already had an overage. That is the difficult part is you can't access this fishery until you end your state quota, or a subsector of that state quota.

CHAIR BELL: Lynn.

MS. FEGLEY: I just feel like we're spiraling into madness, I really do. The purpose of the incidental catch was to allow fisheries that encounter menhaden, and it's really out of their control, to access those fish and not have it repeatedly counted directly against their quota. By including the purse seines in the incidental catch, as Bob just said, by default it is going to come off the top. By default, it won't be counted against the state.

I really think that it might be a small-scale fishery. I mean these guys are catching bait for their lobster fishery. I think that's great. I completely support that. But this is not a provision where they belong. It is absolutely not. They can go find the fish; they

may not travel miles. Our largest boat in Chesapeake is probably what, Russel, maybe 60 feet at max, probably more like 40 would be the average, down to 25.

We have big water in the Chesapeake Bay. But those guys in those boats, they can take a mobile gear and go pretty far, and do some fishing. I just want to repeat that you know when we thought through this Addendum, I think we thought through it really well. Now we're just going back to make it more complicated, and just more serpentine. We're going to start to lose credibility here.

CHAIR BELL: All right, we answered Adam's question. Further discussion of the motion? Not seeing any hands. Yes, Rob.

MR. LaFRANCE: I think we've come full circle, and I'm just wondering how we get out of it. I mean I think as I look at this, we basically said, purse seines are a directed fishery. They should be accounted for in your allocation, and the allocation that we've been working on as a group. That was the original motion.

But in order to help make an accommodation to Maine, so they can kind of get out of that over time, we put purse seines back in. Now we're trying to figure out how to move forward. I guess where I come out is, it seemed pretty clean when we started this to just take purse seines out, so that's where I'm leaning.

In the meantime, I'm sort of playing a little game of chicken with these motions, to know kind of what I heard Adam talking about is, he wanted to make certain we understood where we were. I think this dialogue has been helpful to me. I guess I just wanted to put on the record that I still feel strongly that the purse seine should come out, because we've made all these other accommodations.

MR. APPELMAN: Yes, I support this motion. I particularly appreciate the combination of the sub-options here creating sort of a tool box should any gear type or overages continue, even after this

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reallocation has taken place. I just wanted to voice my support for the motion.

CHAIR BELL: All right, we've got some support, some opposition. Further discussion? Let's go ahead and vote on this one way or the other. Need to caucus on it, since it's kind of unique? Yes, go ahead and take at least two here. I'm assuming you're caucused out here, let's go ahead and vote on this. I won't read the entire motion again before you. You can see it, you just caucused. All in favor of the motion before you raise your hand.

MS. KERNS: Rhode Island, Florida, Massachusetts, Connecticut, New York, New Jersey, U.S. Fish and Wildlife Service, NOAA Fisheries, Pennsylvania, Georgia, South Carolina, North Carolina, Virginia, Potomac River Fisheries Commission, Maryland, Delaware, Maine, and New Hampshire.

**CHAIR BELL: How did that happen? Okay that would be unanimous, there is nobody left. Everybody voted, right? Nobody voted twice. Okay, so that passes.** Yes, that allows us to go back to Adam's motion to table. Now that is automatically off the table, because that was the condition that was placed to table the motion, which takes us back to 3.3.2.

That was where we left off. Where we left off here, we had this motion to substitute. We were just involved in the discussion of the motion to substitute. That is where we would pick up, right? Further discussion where we left off on the motion to substitute. Adam.

MR. NOWALSKY: I've got to look to Maine for some help here, because I want to help. I want to be part of the solution here, not part of the problem. Where I need to be is, I need to see purse seine landings, it's a small-scale fishery continue as part of the state allocation. We've addressed one issue, where it's part of the overall TAC. We've addressed that. We now know it's going to count against the overall TAC. But I am in the position that I feel that the right thing is for these purse seines as a directed fishery, needs to count against the state's allocation.

At the same time, I recognize that once the state's allocation is hit, if the fishery gets shut down, lobstermen are going to be without a bait source. I am sensitive to that. I get it. That is the bridge I need to cross, in order for the purse seine fishery to keep going, I need to know what you can do in Maine to not reach that point, where your purse seines have to stop operating.

But it's going to count against the state allocation. I don't know if there is any other, maybe I'm all alone with this problem here. You know I don't know if there are any other Board members that share the concern. But I'm of the opinion that the purse seine catch has to count against the state allocation, but we need some way to keep your fishermen in bait at the same time.

CHAIR BELL: All right thanks, I understand your point. Lynn.

MS. FEGLEY: Yes, and I'm sorry, because this is Maine's to field, but I just want to respond on our end the reason that this delegation supported the three most recent years was exactly for that. To move that quota up there, so that they would be able to support that lobster fishery.

CHAIR BELL: Yes, Megan.

MS. WARE: I felt like a question was directed at me, so I want to try and answer it. I think it gets to what the provision is, Adam. This provision, it kicks in after you catch your state's quota. Based on what we just voted on with catch accounting, it's saying if Maine catches its full state quota, and we move to this incidental catch/small-scale fishery provision, and purse seines are allowed at 4,000 pounds, then those will be counted against the TAC. But this provision occurs after a state reaches its state's quota.

CHAIR BELL: All right, thanks, Megan, any other hands, any other discussion of this motion to substitute? All right, do you need to caucus on that? Yes, okay. Let's caucus. Take two. Everybody's had a chance to caucus. All right, we're going to head and vote on this. **All right, we're**

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**voting on the motion to substitute right before you there. All in favor of the motion to substitute raise your hand.**

MS. KERNS: New York, South Carolina, Pennsylvania, and Maine and New Hampshire.

CHAIR BELL: All opposed to the motion raise your hand.

MS. KERNS: Florida, Rhode Island, Massachusetts, Connecticut, Virginia, North Carolina, Potomac River Fisheries Commission, Georgia and Maryland.

CHAIR BELL: Any abstentions?

MS. KERNS: NOAA Fisheries and Fish and Wildlife Service and Delaware.

CHAIR BELL: Okay, anybody null out on that? Had one null.

MS. KERNS: New Jersey.

**CHAIR BELL: Got you, 5 in favor 9 against, 3 abstentions, 1 null. All right, so motion fails.** That takes us back again to the **original motion at the top of the screen, which was to move to adopt Option 2 in Section 3.3.2.** We're back to the main motion. Further discussion of the main motion. I don't see any hands, we can vote. Does anybody need to caucus on this? Don't think so. Okay, let's go ahead and vote. The motion before you, all in favor raise your hand.

MS. KERNS: Florida, Rhode Island, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Georgia, South Carolina, North Carolina, Virginia, Potomac River Fisheries Commission, Maryland, New Hampshire.

CHAIR BELL: All right, all opposed raise your hand please.

MS. KERNS: Maine.

CHAIR BELL: Abstentions.

MS. KERNS: Delaware, NOAA Fisheries and Fish and Wildlife Service.

**CHAIR BELL: Okay, 14 in favor, 1 opposed and 3 abstentions, so the motion passes.** I think that's it. I told you guys, yes, Warren, you have a question?

MR. ELLIOTT: Well, just a comment, I know it's late. Thank you, Mr. Chairman. On behalf of Loren and myself, our State Director, Chris Kuhn couldn't be here for this meeting, because of a family emergency. Just sitting here, it would be hard to make an argument to increase a menhaden quota, given Pennsylvania's lack of a commercial fishery or any realistic probability of starting one.

Further, we didn't want to be an obstructionist from other states advancing their quota. With that said, there are menhaden in Pennsylvania waters, and we believe in conserving the resource, and we've been open to in the past transferring quota. We're optimistic that ecological reference points will be effective, and we look forward to continuing to work with all of you on this Board going forward for sound management practices. I just wanted to add that. Thank you.

CHAIR BELL: Thanks, Warren, appreciate that. Okay, remember I said everybody wasn't going to be happy. But you guys did a great job. Toni.

MS. KERNS: Remind the Board that we need a motion to approve the document as modified today, as well as an effective date.

CHAIR BELL: Do we have such, or do we need to actually?

MS. KERNS: We need to make one. Cheri.

**MS. PATTERSON: Yes, I would like to move to approve the Addendum as modified, and the measures will become effective January 1, 2023.**

CHAIR BELL: Do I have a second for that? Jim Gilmore. Discussion of the motion. Yes, Nichola.

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MS. MESERVE: We can move pretty fast in Massachusetts, but I don't think I can make any changes to the measures by January 1. I was thinking more along the lines of, you know implementation plans maybe being due in mid-January. The Board has to approve them at the winter meeting, and then their making implementation deadline of April 1 or May 1, to allow the states their processes. But I wanted to bring that up as a discussion not a motion, to see if that aligned with the other state's abilities to act on new regulations.

CHAIR BELL: Well, that's good, we all have our ways of doing this, but Toni.

MS. KERNS: Nichola, is your intention it's for the quota to be effective January 1?

MS. MESERVE: Yes.

MS. KERNS: Then we would need to craft a split effective date.

MS. MESERVE: I'll throw out May 1, but I was hoping if there was any discussion about that, certainly willing to discuss it.

CHAIR BELL: We're trying to find something that works for everybody with their systems, and we don't want to get anybody crossways here. In the discussion right now, would May 1 be acceptable? Okay, and so in terms of modifying this so the maker and the seconder of the motion are okay with the tinkering of the wording, I guess we're still tinkering. All right.

MS. KERNS: Nichola added date for implementation plans, and I think we should include those in the motions as well. You suggested.

MS. MESERVE: January 15 for implementation plans being due, and then the Board would take action on them at the winter meeting. If that provides enough time for PRT review and what not.

CHAIR BELL: Let's get this up here and we'll make sure you fully understand what you're signing off on.

MS. KERNS: Indulge me, Mr. Chair. The Commission meeting is the very last week in January. If you want the PRT to provide comments to the state implementation plans we would need them sooner than January 15.

MS. MESERVE: January 1.

MS. KERNS: Yes. That will be in supplemental materials or a report at the meeting, just to prepare the Board for that.

CHAIR BELL: Is that settled out now? Cheri.

**MS. PATTERSON: Jim, are you okay? Okay. I would like to reiterate my motion. Move to approve the Addendum as modified today, and have the allocations be effective January 1, 2023, and the remaining measures will be effective May 1, 2023. Implementation plans will be submitted by January 1, 2023, and reviewed by the Board at the Winter Meeting 2023.**

CHAIR BELL: All right, that's the motion. Everybody good with that? Questions. **Discussion of the motion. Opposition to the motion. I don't see any hands, so the motion passes unanimously.**

#### ADJOURNMENT

CHAIR BELL: Thank you very much. Is there any other business to come before the Menhaden Board? Okay, seeing none, the Menhaden Board is adjourned. Thanks again, you guys have done a lot of work, and staff and everybody, thank you.

(Whereupon the meeting adjourned at 5:45 p.m. on Wednesday, November 9, 2022)





# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** Atlantic Menhaden Management Board  
**FROM:** James Boyle, FMP Coordinator  
**DATE:** January 24, 2023  
**SUBJECT:** PRT Review of Addendum I to Amendment 3 Implementation Plans

At the November meeting, the Atlantic Menhaden Management Board (Board) took final action on Addendum I to Amendment 3 to the Interstate Fishery Management Plan for Atlantic Menhaden. Based on Board action, jurisdictions must implement regulations by May 1, 2023.

The Plan Review Team (PRT) met to review the state implementation plans and their consistency with the Addendum. The PRT determined that each jurisdiction has fulfilled the requirements of Addendum I, with the exception that the PRT is still in the process of reviewing the Potomac River Fisheries Commission plan.

The PRT found other notable features:

1. In Maryland and Delaware, regulatory language does not include a list of permitted gears because the gear types used by state fishers already conform to the IC/SSF provision. The PRT recommends adding language either through the regulatory or public notice process that lists the permitted gears to preclude the possibility of a loophole where new gears can be introduced.
2. For Pennsylvania, South Carolina, and Georgia, the implementation plans are consistent with the Addendum while no directed fishery exists. Should a fishery develop, the PRT recommends the state(s) develop a new implementation plan.



JANET T. MILLS  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF MARINE RESOURCES  
21 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0021

PATRICK C. KELIHER  
COMMISSIONER

**TO:** James Boyle, Menhaden FMP Coordinator  
**FROM:** Megan Ware, Maine Dept. of Marine Resources  
**DATE:** December 21, 2022  
**SUBJECT:** Implementation Plan for Addendum I to Amendment 3

**1. Implementation Timeframe**

The Maine Department of Marine Resources (ME DMR) is scheduled to undergo rulemaking to adopt changes from Atlantic Menhaden Addendum I in January 2023. The rulemaking process in Maine includes a 30-day public comment period and public hearing. As a result, ME DMR anticipates publishing a proposed rulemaking on January 18<sup>th</sup> and having the comment period open until February 19<sup>th</sup>. All regulatory change must be approved by the DMR Advisory Council, and we anticipate that meeting will occur in early-to-mid-March. As a result, ME DMR should conclude its rulemaking process by late-March, well before the start of the 2023 menhaden fishing season. For reference, in FY2022, Maine had a June 13<sup>th</sup> start date for the menhaden fishery. We anticipate continuing to have a start date for the Maine menhaden fishery in 2023 as this aides with quota monitoring and enforcement. Thus, Maine should be in full compliance with Addendum I prior to the start of the 2023 fishery.

**2. Commercial Fishery Management Measures**

a) Maine does not specify its yearly quota in state regulation. Instead, our regulations reference the quota that Maine is allocated by ASMFC. An excerpt of our existing regulations which speaks to this point is below.

**41.30 Commercial Menhaden Fishery Management Program**

**1. State Allocation Fishery**

**A. Notice**

*The state allocation fishery is open until such time as the Department has landings information that the quota assigned to Maine by the Atlantic States Marine Fisheries Commission has been reached or could be exceeded. At that time, the Department will notify commercial menhaden license holders by public notice in a newspaper circulated in the area affected, and on the Department's publicly accessible website, of the closing date for the state allocation fishery. It is unlawful to fish for menhaden after the closing date of the state allocation fishery, unless the Department has opened the episodic event fishery, or the incidental catch and small scale fishery.*

- b) Maine has not divided its jurisdictional quota by sector or gear type in previous years and does not plan to do so for 2023.

Maine will need to modify its regulatory language to reflect changes to the permitted gear types in the incidental catch/small-scale fishery (IC/SSF) provision. Maine is proposing to replace its existing language on gears in the IC/SSF provision with language directly from Addendum I. Below is our current regulatory language along with a proposed change to adopt text from Addendum I. This change will remove purse seines from the IC/SSF provision.

#### ***41.30 Incidental Catch and Small Scale Fishery***

*An incidental catch and small scale fishery for menhaden may occur following the full utilization of the state allocation of menhaden or following the full utilization of both the state allocation and an episodic event fishery.*

#### ***C. Gear Restrictions***

*It is unlawful during the Incidental Catch and Small Scale Fishery to use any gear type other than the following: small-scale directed gears which include cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets; and non-directed gears which include pound nets, anchored/staked gillnets, trammel nets, drift gill nets, trawls, fishing weirs, fyke nets, and floating fish traps. ~~when targeting menhaden: cast nets, traps, pots, haul seines, fyke nets, hook and line, bag nets, hoop nets, hand lines, trammel nets, bait nets and purse seines which are smaller than 150 fathom long and 8 fathom deep. The depth of the net will be determined by taking the average size of 20 meshes and then counting the total number of meshes by depth.~~*

### **3. Monitoring Requirements**

Maine is not proposing any changes to our biological monitoring plan for menhaden. We plan to continue to follow the requirements for biological monitoring outlined in Amendment 3.

A copy of our 2022 fishing year regulations is appended to this implementation plan for reference. As a note, ME DMR did undertake two emergency regulations during the 2022 season to amend the attached regulations. Those included:

- June 21<sup>st</sup> emergency rulemaking to reduce the trip limit in the episodic events set aside fishery to 6,000 pounds. The regulation packet can be found [HERE](#)
- August 28<sup>th</sup> emergency rulemaking to close the commercial menhaden fishery. The regulation packet can be found [HERE](#).

## **DEPARTMENT OF MARINE RESOURCES**

### **Chapter 41: MENHADEN**

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#### **41.05 Prohibitions**

1. It is unlawful to fish for, take, possess, or land menhaden except from Maine's territorial waters.
2. It is unlawful to fish for or take Atlantic menhaden by vessels rigged with a midwater, otter or beam trawl net in Maine territorial waters.
3. It is unlawful to use a vessel to fish for or take menhaden that exceeds 50 feet overall length as shown on the vessel's current USCG documentation or State registration.
4. It is unlawful for any vessel other than the harvester vessel that made the set to remove fish from the seine or net. If more than one vessel is used to set the seine or net, only the vessel from which the seine or net was removed may take or possess menhaden from the seine or net.

#### **41.10 Suspension of Rules**

The Commissioner has the authority to suspend all regulations in the event of a potential fish kill upon consultation with industry and Marine Patrol. Notice of rule suspension and duration shall be provided via the internet on the Department's web site and by email and/or text notice to industry members.

#### **41.20 Reporting**

##### **1. Commercial Menhaden Fishing License**

All harvesters must report daily landings to the Department via an approved electronic reporting option by 11:59 PM the day of landing. If no landings occurred on a calendar day, a negative landing report is required.

Exception: Daily reporting is not required for the Incidental Catch and Small Scale Fishery as described in 41.30(3). Weekly electronic reporting remains a requirement. Daily reports are due weekly by 11:59 pm Sunday.

##### **2. Noncommercial Menhaden Fishing License**

All harvesters must report daily landings to the Department via an approved electronic reporting option once per week no later than 11:59 pm Sunday. If no landings occur during the week (Monday 12:01 am through Sunday 11:59 pm), a negative landing report is required.

Harvesters: See Chapter 8.20(M) for reporting requirements.

Dealers: See Chapter 8.10 Landings Program for reporting requirements.

## 41.25 Definitions

- A. Hogshead: one hogshead equals 17.5 lb bushels.
- B. Bushel: one bushel equals 70 lbs of menhaden.
- C. Barrel: one barrel equals 55 liquid gallons; or, 5 bushel of menhaden.
- D. Truck: one truck equals 40,000 lbs of menhaden.
- E. Fish tote: a standard fish tote (tray), measuring 28 inches long x 16 inches wide x 11 inches deep, when level full, equals 1/3 barrel.
- F. Crate: a crate equals two and one half bushels or 175 pounds of menhaden.
- G. Landing: to come to shore, float or a dock and offload menhaden.
- H. Harvester vessel: the vessel that deploys the net to fish for, take and possess menhaden. A harvester vessel is in possession of fish once the net encircles and traps the fish.
- I. Set: To place from a harvester vessel a purse seine or a bait gillnet in the coastal waters of the state for the purpose of taking menhaden.

## 41.30 Commercial Menhaden Fishery Management Program

### 1. State Allocation Fishery

#### A. Notice

The state allocation fishery is open until such time as the Department has landings information that the quota assigned to Maine by the Atlantic States Marine Fisheries Commission has been reached or could be exceeded. At that time, the Department will notify commercial menhaden license holders by public notice in a newspaper circulated in the area affected, and on the Department's publicly accessible website, of the closing date for the state allocation fishery. It is unlawful to fish for menhaden after the closing date of the state allocation fishery, unless the Department has opened the episodic event fishery, or the incidental catch and small scale fishery.

The Commissioner may extend or reopen the State Allocation Fishery at any time with notice to commercial menhaden license holders, should a quota increase or quota transfer of menhaden be received via allocation adjustments of the Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for Atlantic Menhaden.

#### B. Effort restrictions

It is unlawful to harvest menhaden prior to the opening of the state allocation fishery on Monday, June 13, 2022 at 12:01 AM. Following the opening of the state allocation fishery on Monday, June 13, 2022 at 12:01 AM and prior to the

closure of the state allocation fishery, it is unlawful to fish for or land menhaden except between 12:01 AM to 11:59 PM on Mondays and Thursdays each week. It is unlawful to fish for, take or possess more than 23,800 pounds or 68 barrels per harvester vessel per week. It is unlawful for a harvester vessel to sell, give or transfer menhaden they have taken to any other vessel while at sea. It is unlawful to receive menhaden from a harvester vessel while at sea. It is unlawful to complete more than one landing per calendar day. For the purpose of enforcing these limitations, the Department shall use the definitions provided in 41.25.

Exception: Fishing weirs, stop seines, and pound nets are not subject to the harvest schedule detailed above and may land fish seven days a week. However, weekly landing limits still apply.

**C. Storage Requirement**

All menhaden must immediately be stored in barrels, crates or fish totes, or a combination thereof, upon harvest. All menhaden must be contained in barrels, crates or fish totes on both the harvester vessel and the dory towed by the harvester vessel, if utilized.

A dory is a boat with no mechanical means of propulsion that is towed to and from the fishing grounds by the harvester vessel.

**2. Episodic Event Fishery**

Following authorization by the Atlantic States Marine Fisheries Commission, the Department may open an episodic event fishery following the closing of the state allocation fishery.

**A. Notice**

The Department will notify commercial menhaden license holders by public notice in a newspaper circulated in the area affected, and on the Department's publicly accessible website, of the opening date for the episodic event fishery. When the Department receives notice from the Atlantic States Marine Fisheries Commission that the quota for the episodic event fishery has been reached or may be exceeded, the Department will notify commercial menhaden license holders by public notice in a newspaper circulated in the area affected, and on the Department's publicly accessible website, of the closing date for the episodic event fishery.

**B. Effort restrictions**

Following the opening of an episodic event fishery and prior to the closure of the episodic event fishery, it is unlawful to fish for or land menhaden except between 12:01 AM to 11:59 PM on Tuesdays and Fridays each week. It is unlawful to fish for, take or possess more than 14,000 pounds or 40 barrels per harvester vessel per week. It is unlawful for a harvester vessel to sell, give or transfer, menhaden they have taken to any other vessel while at sea. It is unlawful to receive menhaden from a harvester vessel while at sea. It is unlawful to complete more

than one landing per calendar day. For the purpose of enforcing these limitations, the Department shall use the definitions provided in 41.25.

Exception: Fishing weirs, stop seines, and pound nets are not subject to the harvest schedule detailed above and may land fish seven days a week. However, weekly landing limits still apply.

### **C. Storage Requirement**

All menhaden must immediately be stored in barrels, crates or fish totes, or a combination thereof, upon harvest. All menhaden must be contained in barrels, crates or fish totes on both the harvester vessel and the dory towed by the harvester vessel, if utilized.

A dory is a boat with no mechanical means of propulsion that is towed to and from the fishing grounds by the harvester vessel.

## **3. Incidental Catch and Small Scale Fishery**

An incidental catch and small scale fishery for menhaden may occur following the full utilization of the state allocation of menhaden or following the full utilization of both the state allocation and an episodic event fishery.

### **A. Notice**

The Department will notify commercial menhaden license holders by public notice in a newspaper circulated in the area affected, and on the Department's publicly accessible website, of the opening date for the incidental catch and small scale fishery.

### **B. Effort Restrictions**

It is unlawful to fish for, take, possess or land more than 6,000 pounds per vessel per day. It is unlawful to fish for or land menhaden except between 12:01 AM to 11:59 PM on Mondays, Wednesdays, and Fridays each week. It is unlawful for a harvester vessel to make more than one landing per calendar day. For the purpose of enforcing these limitations, the Department shall use the definitions provided in 41.25, except that it is unlawful during the incidental catch and small scale fishery for a harvester vessel to sell, give or transfer, menhaden they have taken to any other vessel while at sea. It is unlawful to receive menhaden from a harvester vessel while at sea.

Exception: Fishing weirs, stop seines, and pound nets are not subject to the harvest schedule detailed above. However, daily and weekly landing limits still apply.

### **C. Gear Restrictions**

It is unlawful during the Incidental Catch and Small Scale Fishery to use any gear type other than the following when targeting menhaden: cast nets, traps, pots,



haul seines, fyke nets, hook and line, bag nets, hoop nets, hand lines, trammel nets, bait nets and purse seines which are smaller than 150 fathom long and 8 fathom deep. The depth of the net will be determined by taking the average size of 20 meshes and then counting the total number of meshes by depth.

**D. Storage Requirement**

All menhaden must immediately be stored in barrels, crates or fish totes, or a combination thereof, upon harvest. All menhaden must be contained in barrels, crates or fish totes on both the harvester vessel and the dory towed by the harvester vessel, if utilized.

A dory is a boat with no mechanical means of propulsion that is towed to and from the fishing grounds by the harvester vessel.

**41.40 Noncommercial Menhaden Fishing**

The following limitations apply to individuals holding a noncommercial menhaden license issued under 12 MRS §6502-C.

**A. Season**

The holder of a noncommercial menhaden license may fish for, take or possess menhaden from May 1 to December 31.

**B. Effort Restrictions**

(1) It is unlawful to fish for, take, possess or land more than 1,050 pounds or 3 barrels per harvester and per vessel, per day.

(2) It is unlawful to make more than one landing per calendar day.

(3) It is unlawful to transfer menhaden they have taken to any other vessel.

(4) It is unlawful to receive menhaden from a harvester vessel while at sea.

**C. Gear Restrictions**

It is unlawful to use any gear type other than the following when targeting menhaden: bait gillnets, hand seines, and cast nets.

**41.50 Recreational Fishing**

An individual may fish or take, by either speargun, harpoon, minnow trap, hand dip net or hook and line, up to 25 menhaden per day for personal use only without a license.

EFFECTIVE DATE:

May 2, 1982 – Section 41.01 with December 31, 1983 sunset provision

AMENDED

July 20, 2009 – Section 05

September 20, 2010 – Section 30

July 23, 2012 - Section 30

June 6, 2013 – Section 30 EMERGENCY (expires September 4, 2013)

July 25, 2013 – Section 30

July 31, 2016 – Section 30 EMERGENCY

August 5, 2016 – Section 30 (1) EMERGENCY (expires November 3, 2016)

August 15, 2016 – Section (30) EMERGENCY (expires November 13, 2016)

June 3, 2017 -Section 41.30 repealed and replaced (EMERGENCY)

June 8, 2017 -Chapter repealed and replaced (EMERGENCY)

July 3, 2017 - Section 41.30 (EMERGENCY)

September 30, 2017 – Section 41.30 (EMERGENCY)

April 28, 2018 – Sections 41.05, & 41.30

September 15, 2018-Section 41.03(B) EMERGENCY

March 13, 2019-Section 41.10, 41.20 and 41.30

July 14, 2019-Section 41.30(3) EMERGENCY

July 21, 2019-Section 41.30(2) EMERGENCY

November 13, 2019-Section 41.20(1)&(2)

March 15, 2020-41.15, 41.20, 41.30

June 27, 2020-41.30, Open EESA (Emergency)

July 2, 2020-41.30, EESA Reduction (Emergency)

November 9, 2020, Restructuring of entire chapter and addition of noncommercial/commercial license types.

April 27, 2021– Sections 41.05, 41,20, 41.25, 41.30, 41.40, 41.50

April 26, 2022-Section 41.30(1)(B)

May 31, 2022-Section 41.30(1)(B), Section 41.40(B)(2)



# New Hampshire Fish and Game Department

11 Hazen Drive, Concord, NH 03301-6500  
Headquarters: (603) 271-3421  
Website: [www.WildNH.com](http://www.WildNH.com)

TDD Access: Relay NH 1-800-735-2964  
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Scott R. Mason  
Executive Director

January 15, 2023

James Boyle  
ASMFC FMP Coordinator  
Atlantic States Marine Fisheries Commission  
1050 N. Highland Street, Suite 200A-N  
Arlington, VA 22201

Dear James,

Below is New Hampshire's (NH) Implementation Plan to conform to Addendum I to Amendment 3 to the Interstate Fishery Management Plan for Atlantic Menhaden. The only change to NH's rules to comply with Addendum I is to remove purse seines from the "small-scale gear" definition in Fis 603.21 Atlantic Menhaden. See Appendix A for Fis 603.21 rules that indicate the change to be conducted.

## Addendum I Implementation:

### 1. Implementation Timeline

*New Hampshire will have the conforming measures implemented by April 1, 2023.*

### 2. Commercial Fishery Management Measures

a) If your jurisdiction includes its yearly menhaden quota in its regulations, please include the changes in language.

*NH doesn't include the yearly menhaden quota in Fis 603.21 - see Appendix A, which only refers to NH's quota as the "annual state quota established by the Atlantic States Marine Fisheries Commission (ASMFC)" under Fis 603.21 (k).*

b) A mechanism for an incidental catch and small-scale fishery provision following the harvest of your jurisdiction's quota and closure of the directed fisheries.

*See Fis 603.21 (o)*

#### **REGION 1**

629B Main Street  
Lancaster, NH 03584-3612  
(603) 788-3164  
FAX (603) 788-4823  
email: [reg1@wildlife.nh.gov](mailto:reg1@wildlife.nh.gov)

#### **REGION 2**

PO Box 417  
New Hampton, NH 03256  
(603) 744-5470  
FAX (603) 744-6302  
email: [reg2@wildlife.nh.gov](mailto:reg2@wildlife.nh.gov)

#### **REGION 3**

225 Main Street  
Durham, NH 03824-4732  
(603) 868-1095  
FAX (603) 868-3305  
email: [reg3@wildlife.nh.gov](mailto:reg3@wildlife.nh.gov)

#### **REGION 4**

15 Ash Brook Court  
Keene, NH 03431  
(603) 352-9669  
FAX (603) 352-8798  
email: [reg4@wildlife.nh.gov](mailto:reg4@wildlife.nh.gov)

I I. Indicate if your jurisdiction divides quota by sector, fishery, or gear type, and provide regulatory language.

*NH does not divide quota by harvest type.*

II II. Provide regulatory language to account for changes in IC/SSF permitted gear types. Under Addendum I, small-scale gears include: cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets. Non-directed gears include: pound nets, anchored/stake gillnets, drift gill net, trawls, fishing weirs, fyke nets, trammel nets, and floating fish traps.

*NH will change the non-directed gears provision of Fis 603.21 (b) by adding trammel net and will be deleting fyke net, trammel net, and purse seine from the small scale gear definition in Fis 603.21 (c), See Appendix A.*

### **3. Monitoring Requirements**

a) If your jurisdiction is proposing changes to your biological monitoring program, please include the proposed changes.

*NH is not proposing to change conditions of the biological monitoring program.*

**Appendix A: New Hampshire's Atlantic Menhaden rules and proposed change to be in compliance with Addendum I to Amendment 3 to the Interstate Fishery Management Plan for Atlantic Menhaden.**

Fis 603.21 Atlantic Menhaden.

(a) No person shall take, land, possess, or transfer possession of Atlantic menhaden (*Brevortia tyrannus*) while on or leaving the waters under the jurisdiction of the state except in accordance with the licensing and permit requirements of this section.

(b) For the purpose of this section, "non-directed gear" means a pound net, anchored or stake gillnet, drift gill net, fishing weir, fyke net, **trammel net**, or floating fish trap.

(c) For the purpose of this section, "small-scale gear" means a cast net, trap other than a floating fish trap, pot, haul seine as defined in Fis 602.05, **fyke net**, **hook and line**, **and hand line**, **and trammel net**, **purse seines which are no larger than 600 feet wide and 48 feet deep or bait net**.

(d) For purposes of this section, "land" means to transfer or attempt to transfer the catch of fish from any vessel to any other vessel or onto any land, pier, wharf, dock or other artificial structure.

(e) For the purpose of this section, a "menhaden dealer" is:

(1) Any person or business who:

- a. Is a New Hampshire licensed wholesale marine species dealer, pursuant to RSA 211:49-aa or 211:49-c; and
- b. As first point of contact, purchases, ships, consigns, transfers, transports, barters, accepts or packs Atlantic menhaden directly from a commercial harvester for resale; or

(2) Any person or business who:

- a. Has applied for and received a New Hampshire commercial saltwater license, pursuant to 211:49-a or 211:49-b;
- b. Has notified the department in writing of an intent to sell Atlantic menhaden taken under the license as a New Hampshire menhaden dealer; and
- c. Harvests, and then sells, ships, consigns, transfers or barters their own catch of Atlantic menhaden to any other person or business.

(f) Any person who possesses a recreational saltwater license pursuant to RSA 214:9, XVI, may take, land and possess any quantity of Atlantic menhaden by rod and reel with hook and line or hand line for personal use as bait for angling purposes, and not for the purpose of sale.

(g) Any person who possesses a lobster license pursuant to RSA 211:18 may possess any quantity of Atlantic menhaden while in the normal conduct of tending lobster and crab pots.

(h) A holder of a commercial saltwater license engaged in the take of Atlantic menhaden for the purpose of sale shall be subject to the following requirements and restrictions:

- (1) The licensee shall obtain a harvest permit in accordance with Fis 609.01;
- (2) The licensee shall report all harvest information to the department in accordance with Fis 608.02;
- (3) No licensee shall transfer any portion of a catch of Atlantic menhaden while at sea;
- (4) No licensee shall sell, ship, cosign, transfer or barter their own catch of Atlantic menhaden to any person other than an end user or another menhaden dealer;
- (5) A licensee must report any entanglement of gear used to take Atlantic menhaden with other gear types or marine mammals or any release of Atlantic menhaden from a purse seine to Fish and Game Department dispatch at 271-3361 within 12 hours of the interaction; and
- (6) Fishing gear used in the taking of Atlantic menhaden may only be fished between sunrise and one hour after sunset.

(i) No licensee shall deploy a gill net seeking the take of Atlantic menhaden in state waters except in accordance with the following restrictions:

- (1) The waters of the Great Bay estuarine system inland of the Memorial Bridge in Portsmouth, Little Harbor and its tributaries inland of its most seaward jetty, Rye Harbor and its tributaries inland of its most seaward jetty, and inland of the Hampton Harbor Bridge shall be subject to the restrictions contained in Fis 602.06(e);
- (2) Each gill net shall have a high flier buoy or an A-2 or larger orange Gloucester buoy, marked with the name of the licensee, at each end of the net;
- (3) Each gill net shall at all times have an identification tag with the licensee's name attached to the head rope at the junction with the vertical line at one end of the net;
- (4) No gill net shall have a mesh size larger than 4 inches;
- (5) No gill net shall be longer than 300 feet, or have a depth of more than 20 feet;
- (6) No more than 2 gill nets shall be deployed by a licensee at any one time in state waters;

- (7) The 2 gill nets of a licensee shall be either fished separately or tied together so long as the total length of the nets tied together does not exceed 600 feet;
  - (8) Each sink gill net shall be deployed at a location that is within the unaided eyesight of the licensee. Unaided eyesight means unaided by devices such as binoculars or spotting scope;
  - (9) A sink gillnet shall only be weighted with a lead line for a foot rope, and an anchor or weight at only one end of the gill net;
  - (10) A surface gill net shall have a headrope sufficiently buoyant to remain exposed at the water's surface while fishing, and must be fished with one line attached to the vessel at all times; and
  - (11) All gill nets shall be in compliance with the weak link requirements in Fis 602.09(b)(6).
- (j) No licensee shall deploy a purse seine seeking the take of Atlantic menhaden in state waters except in accordance with the following restrictions:
- (1) For the purpose of this section, the vessel that the purse seine net is deployed from shall be the "primary purse seine vessel".
  - (2) For the purpose of this section, the vessel that draws the purse seine net around a school of Atlantic menhaden and returns control of the deployed net back to the primary purse seine vessel shall be the "assisting vessel".
  - (3) No purse seine shall be larger than 600 feet wide and 48 feet deep;
  - (4) Any purse seine deployed must be pursed and retrieved by hand without the aid of hydraulic, electrical, gas or diesel powered devices;
  - (5) No purse seine shall be set or retrieved in the waters landward of 72 COLREGS demarcation line, landward of the Rye harbor approach channel as defined in RSA 211:19-a, III or landward of the outer most jetty at the Hampton harbor entrance;
  - (6) No purse seine shall be set or retrieved from a vessel that is more than 50 feet in length;
  - (7) No more than one additional vessel shall assist another vessel with the take of Atlantic menhaden with a purse seine, nor shall the assisting vessel be more than 50 feet in length;
  - (8) No purse seine shall be set or retrieved on the days of Saturday or Sunday;

(9) Atlantic menhaden shall not be removed from a purse seine with a power assisted pumping device;

(10) All marine species other than Atlantic menhaden shall be released immediately from a purse seine; and

(11) The primary purse seine vessel shall be responsible for reporting all information required under Fis 608.02, including any Atlantic menhaden landed by the assisting vessel.

(k) Except as provided in this section, no holder of a commercial saltwater license or wholesale marine species license shall take, land, or possess Atlantic menhaden for the purpose of sale while on or leaving the waters under the jurisdiction of the state whenever the executive director has projected that 98 percent of the annual state quota established by the Atlantic States Marine Fisheries Commission (ASMFC) has been taken.

(l) A closure date shall be announced via notice by the executive director at least 2 days prior to the closure being enacted.

(m) Until the state's Atlantic menhaden quota has been taken and a closure date announced, any menhaden dealer shall electronically report all menhaden landing transactions daily, providing the following information consistent with the minimum data requirements of the Standard Atlantic Fisheries Information System (SAFIS):

- (1) Name of dealer, or properly licensed person;
- (2) The dealer's wholesale marine species or commercial saltwater license number;
- (3) Week of reporting period;
- (4) Commercial harvester's trip start date;
- (5) Vessel name;
- (6) State of vessel registration and number or coast guard number;
- (7) Commercial harvester's first name, last name, date of birth, and license number;
- (8) Number of trips for commercial harvester per day;
- (9) Species purchased;
- (10) Pounds of species purchased;
- (11) Disposition of species purchased;



- (12) Ex-vessel value or price of purchased species;
- (13) Port, county and state where species were landed;
- (14) Date species unloaded from commercial harvester's vessel;
- (15) Grade and market size of purchased species;
- (16) Gear used to harvest species; and
- (17) Dated signature of the dealer, signed subject to the penalties for unsworn false statements under RSA 641:3.

(n) Once the state Atlantic menhaden quota has been taken and a closure date announced, all menhaden dealers shall electronically report all Atlantic menhaden landing transactions on a weekly basis with the information defined in Fis 603.21(k). The reporting week shall be Sunday through Saturday.

(o) Notwithstanding the above restrictions and requirements, any holder of a commercial salt water license or harvest permit may take, land and possess up to a maximum of 6,000 pounds per day of Atlantic menhaden during a closure period provided that:

- (1) The fish have been taken by non-directed or small-scale gears;
- (2) No licensee shall land Atlantic menhaden more than once per calendar day.

Source. #10375, EXEMPT, eff 7-17-13; ss by #12540, EXEMPT, eff 5-31-18; ss by #12754, EXEMPT, eff 4-10-19



# The Commonwealth of Massachusetts

## Division of Marine Fisheries

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KARYN E. POLITO  
Lt. Governor

BETHANY A. CARD  
Secretary

RONALD S. AMIDON  
Commissioner

DANIEL J. MCKIERNAN  
Director

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### MEMORANDUM

TO: James Boyle, ASMFC FMP Coordinator for Atlantic Menhaden  
FROM: Nichola Meserve, MA DMF Fishery Policy Analyst *NM*  
DATE: December 8, 2022  
SUBJECT: Massachusetts Implementation Plan for Atlantic Menhaden Addendum I

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#### Overview

The Atlantic States Marine Fisheries Commission approved Addendum I to Amendment 3 of the Atlantic Menhaden Interstate Fishery Management Plan on November 9, 2022, with an effective date of January 1, 2023 for the revised state allocations and May 1, 2023 for the remaining measures. State implementation plans are due by January 1, 2023. Herein, please find the Massachusetts Division of Marine Fisheries' plan to implement the changes in commercial state allocations and the incidental catch and small-scale fishery (IC/SSF) provision for compliance with Addendum I.

#### Timeline

In addition to the regulatory changes needed to comply with Addendum I (as described in more detail below), the Division is considering discretionary modifications to update the state's quota management design in response to the addendum's direct and indirect effects and address other pre-existing management, enforcement, and compliance issues. These may include changes to trip limits, carrier vessel allowances and requirements, the open fishing season, or other measures identified through public scoping and comment.

Accordingly, the Division is proceeding with the following timeline: a public scoping meeting to inform DMF proposal development in mid-January; a public comment period and hearing(s) on DMF proposed regulatory changes in late February/early March; a Massachusetts Marine Fisheries Advisory Commission meeting for approval of DMF recommended measures in late March/early April; and lastly, rule implementation by May 1, 2023. Please note that the potential for delays in executive approval for final rulemaking is elevated given a new incoming administration in January. However, a meaningful impact from belated compliance would not arise until the onset of the IC/SSF, which is not anticipated to occur until mid-season given the state's 2023 commercial quota and intended management approach. Additionally, permit conditions could be issued to restrict purse seines from the IC/SSF upon its commencement if necessary.

#### Proposed Regulatory Changes for Compliance with Addendum I

Commercial Allocation: Under Addendum I, Massachusetts' commercial allocation changes from 1.27% to 2.12% (based on a 0.5% minimum allocation and 2018/2019/2021 landings). No change is needed to the state's regulations as they define the quota as that established annually by ASMFC

rather than a specific percentage or amount (refer to 322 CMR 6.43 (2)). This definition also accounts for overage paybacks, which under Addendum I will be accounted for two years after an overage.

Episodic Event Set-aside Program: Status quo was selected; no rule change is needed.

Timing of IC/SSF Provision: Under Addendum I, it was clarified that a sector, fishery, or gear type within a state that is allocated a sub-quota of a state's allocation may land catch under the IC/SSF provision when its sub-quota is reached. Massachusetts does not divide its commercial menhaden quota among any sectors, fisheries, or gear types; the IC/SSF begins once 100% of the state's allocation is reached. No rule change will be made at this time.

Permitted Gear Types of the IC/SSF Provision: Under Addendum I, purse seines are now excluded from the IC/SSF provision. Massachusetts will need to make a rule change for compliance with this measure. Our draft regulatory language adds definitions for "directed small-scale gear" and "non-directed gear" consistent with Addendum I and then makes the IC/SSF provision specific to these gear types (refer to drafted language at 322 CMR 6.43 (2) and (4)(b)). Massachusetts does not provide any exceptions to the 6,000-pound IC/SSF limit and thus will not be defining stationary multi-species gears at this time. Massachusetts' regulation specifies that the IC/SSF limit is per trip or calendar day, whichever is longer; the Division will take this opportunity to also clarify that no vessel may land more than once per day under the IC/SSF provision.

Trip Limit for Directed Small-scale Fisheries of IC/SSF Provision: Status quo was selected; no rule change is needed.

Catch Accounting of IC/SSF Provision: Under Addendum I, IC/SSF landings will be evaluated against the annual Total Allowable Catch, and if these landings cause the TAC to be exceeded, the Board must modify the trip limit or eliminate from the provision one or more permitted gear types and may do so by Board action. Massachusetts will continue to report IC/SSF landings in its Annual Compliance Report to enable this catch accounting measure. No rule change is needed.

### **Massachusetts Regulations with Proposed Revisions**

*(Note that additional discretionary management changes are being considered for 2023; these are not reflected below and their eventual inclusion may result in alterations to wording or placement of the drafted rule changes needed to comply with the FMP.)*

#### **322 CMR 6.43: Atlantic Menhaden Management**

(1) Purpose. The purpose of 322 CMR 6.43 is to comply with the Atlantic States Marine Fisheries Commission's Interstate Fishery Management Plan for Atlantic Menhaden to manage the Atlantic menhaden fishery in a manner that is biologically, economically, socially and ecologically sound, while protecting the resource and those who benefit from it.

(2) Definitions.

Atlantic Menhaden means that species known as *Brevoortia tyrannus* or commonly referred to as pogey or bunker.

Bait Dealer means any person issued a bait dealer permit in accordance with 322 CMR 7.01(3)(g): *Bait Dealer*.

Barrel means a standard cylindrical container with a liquid capacity of 55 gallons or a volume of 7.35 cubic feet.

Commercial Fisherman means any person fishing under the authority of a permit issued in accordance with 322 CMR 7.01(2): *Commercial Fisherman Permits*.

Declare means to file an advisory notification with the Massachusetts Register and publish it via the Marine Fisheries electronic mailing list and website.

Director means the Director of the Division of Marine Fisheries.

Episodic Events Set Aside means the 1% of the total allowable catch of Atlantic menhaden that is set aside for use by the states of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut and New York when certain conditions exist as established in the Interstate Fishery Management Plan.

Fish Tote means a standard rectangular container measuring 28 inches by 16 inches by 11 inches.

Land means to transfer or attempt to transfer the catch of fish from any vessel to any other vessel or onto any land, pier, wharf, dock or other artificial structure, or for a fishing vessel with any fish onboard to tie up to any dock, pier or other artificial structure.

**Non-directed Gear means pound nets, anchored/stake gillnets, trammel nets, drift gill net, trawls, fishing weirs, fyke nets, and floating fish traps.**

Quota means the Commonwealth of Massachusetts annual commercial Atlantic menhaden quota adopted by the Atlantic States Marine Fisheries Commission and amended by required paybacks and authorized quota transfers and rollovers.

**Small-scale Directed Gear means cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets.**

Trip means the time period that begins when a vessel departs from any land, pier, wharf, dock or other artificial structure to carry out commercial fishing operations, including the at-sea transfer and transport of fish, and that terminates with a return to any land, pier, wharf, dock or other artificial structure.

(3) Regulated Fishery Permit Endorsement Requirement. It shall be unlawful for any fisherman or vessel to take, land, or possess Atlantic menhaden in excess of 6,000 pounds per trip or per calendar day, whichever duration is longer, without a regulated commercial fishery permit endorsement for Atlantic menhaden issued by the Director, in accordance with 322 CMR 7.01(4)(a): *Regulated Fishery Permit Endorsement* and managed pursuant to 322 CMR 7.06: *Limited Entry Permits*.

(4) Commercial Fishing Limits.

(a) Quota Managed Fishery.

1. Limited Entry Fishery. Commercial fishermen who have been issued a regulated Atlantic menhaden fishery permit endorsement, in accordance with 322 CMR 6.43(3) and 322 CMR 7.01(4)(a): *Regulated Fishery Permit Endorsement*, shall adhere to the following trip limits:

a. Until the Director declares that 85% of the commercial menhaden quota has been landed, it shall be unlawful to possess or land more than 125,000 pounds of menhaden in the coastal waters of the Commonwealth per trip or calendar day, whichever period of time is longer; and

b. Once the Director has declared that 85% of the commercial menhaden quota has been landed, it shall be unlawful to possess or land more than 25,000 pounds of menhaden in the coastal waters of the Commonwealth per trip or calendar day, whichever period of time is longer.

2. Open Access Fishery. Commercial fishermen who have not been issued a regulated Atlantic menhaden fishery permit endorsement in accordance with 322 CMR 6.43(3) and 322 CMR 7.01(4)(a): *Regulated Fishery Permit Endorsement* may participate in an open access fishery for menhaden. For commercial fishermen participating in this fishery, it shall be unlawful to retain, possess, land, sell, barter, or exchange or offer for sale, barter,

or exchange more than 6,000 pounds of Atlantic menhaden per trip or calendar day, whichever period of time is longer.

3. Season. Prior to June 1<sup>st</sup>, the possession, retention, and landing of menhaden in excess of the open access fishery limit at 322 CMR 6.43(4)(a)2. is prohibited. This prohibition shall not apply to the possession, retention, or landing of menhaden caught in lawfully-set fisher weirs by a commercial fisherman with a fish weir regulated fishery permit endorsement issued by the Director pursuant to 322 CMR 7.01(4)(a).

4. Quota Closure. Except as provided at 322 CMR 6.43(4)(b) and (c), it shall be unlawful to catch, retain, or land Atlantic menhaden once the Director has determined that 100% of the menhaden quota has been reached. The quota closure will be enacted and announced in accordance with the procedure set forth at 322 CMR 6.41(2)(c).

(b) Incidental Catch and Small-scale Fishery. When the Quota Managed Fishery is closed, commercial fishermen **using small-scale directed gear or non-directed gear as defined at 322 CMR 6.43(2)** may possess and land up to 6,000 pounds of Atlantic menhaden per trip or calendar day, whichever duration is longer; **it shall be unlawful to retain, possess, or land Atlantic menhaden using any other gear when the Quota Managed Fishery is closed. No vessel may land menhaden more than once in a single calendar day.**

(c) Episodic Event Set Aside Fishery.

1. Annual Process to Participate in the Episodic Event Set Aside Fishery. When the Quota Managed Fishery is closed, Massachusetts may apply to the Atlantic States Marine Fisheries Commission to participate in the Episodic Events Set Aside Program, as provided for in the Interstate Fishery Management Plan. If Massachusetts is approved by the Atlantic States Marine Fisheries Commission to participate in the Episodic Events Set Aside Program, the Director shall notify commercial fishermen and dealers via the Division's e-mail listserv, posting notice on the agency's website, and filing a legal notice with the Massachusetts Register. Once the Atlantic States Marine Fisheries Commission determines that the Episodic Event Set Aside is exhausted, the closure of the Episodic Event Set Aside Fishery will be enacted and announced in accordance with the process set forth at 322 CMR 6.41(2)(c).

2. Commercial Fishing Activity during the Episodic Event Set Aside Fishery. The following restrictions shall apply during the Episodic Event Set Aside Fishery:

a. Commercial fishermen who have been issued a regulated Atlantic menhaden fishery permit endorsement, in accordance with 322 CMR 6.43(3), and 322 CMR 7.01(4)(a): *Regulated Fishery Permit Endorsement*, may possess and land up to 120,000 pounds of Atlantic menhaden per trip or calendar day, whichever duration is longer.

b. All other commercial fishermen may possess and land up to 6,000 pounds of Atlantic menhaden per trip or calendar day, whichever duration is longer.

c. All commercial fishermen participating in the Episodic Event Set Aside Fishery shall only harvest menhaden from the waters under the jurisdiction of the Commonwealth and shall only land in Massachusetts ports.

d. All commercial fishermen participating in the Episodic Event Set Aside Fishery shall be subject to the daily catch reporting requirements set forth at 322 CMR 6.43(5).

e. In accordance with M.G.L. c. 130, § 80, and 322 CMR 7.01(7), the Director may establish commercial fishing permit conditions as necessary to manage the Episodic Event Set Aside.

(d) Additional Requirements to Comply with 6,000-pound Possession Limits. The following requirements shall apply to any fishery for menhaden regulated at 322 CMR 6.43(4)(a) through (c) that is subject to a 6,000-pound possession and landing limit.

1. Storage. All menhaden shall be brought aboard the vessel, and upon retention, be immediately stored in level filled barrels or fish totes.

2. Volumetric Equivalency. A level filled fish tote shall be the equivalent of 117 pounds of menhaden and a level filled barrel shall be the equivalent of 350 pounds of menhaden. 51 level filled fish totes or 17 barrels of menhaden shall be equivalent to the 6,000 pound trip limit.

3. Maximum Purse Seine Dimensions. It shall be unlawful to use a purse seine to catch menhaden that exceeds 450 feet long by 48 feet deep. The depth of the net will be determined by taking the average size of 20 meshes and counting the total number of meshes by depth.

(5) Daily Catch Reporting. All regulated Atlantic menhaden fishery limited entry permit endorsement holders and all commercial fishermen participating in the Episodic Event Set Aside Fishery shall obtain a Bait Dealers permit, as defined at 322 CMR 7.01(3): *Bait Dealer*, and report to the Division of Marine Fisheries their commercial Atlantic menhaden landings in the Commonwealth on a daily basis on forms provided by the Director.

## **3.24 Menhaden**

### **3.24.1 Recreational**

- A. Minimum size: No minimum size
- B. Season: January 1 through December 31
- C. Possession limit:
  - 1. Less than or equal to four inches (4"): Unlimited
  - 2. Greater than four inches (4"): Two hundred (200) fish per person per day

### **3.24.2 Commercial**

- A. Menhaden Management Area:
  - 1. Opening and closure of fishery:
    - a. Fishery opening – possession limit:
      - (1) Biomass Floor: On an annual basis in the spring, the DEM shall conduct regular estimates of the standing stock of menhaden utilizing approved scientific monitoring methods. On the basis of those estimates, DEM shall open the commercial fishery at an initial possession limit of one hundred twenty thousand (120,000) pounds per vessel per calendar day when the estimated weekly standing stock reaches two million (2,000,000) pounds.
    - b. Fishery closure:
      - (1) Biomass Ceiling: When fifty percent (50%) of the estimated standing stock of menhaden, above the minimum threshold amount of one million five hundred thousand (1,500,000) pounds, is harvested, the DEM shall close the menhaden fishery until further notice.
      - (2) If at any time the stock estimate drops below one million five hundred thousand (1,500,000) pounds, the DEM shall close the commercial fishery and the incidental catch fishery will be in effect until further notice.
    - c. Fall opening in the Menhaden Management Area:
      - (1) Beginning September 1, the area south of a line extending from the Jamestown and Newport Bridges, and the area

south of a line extending from Fogland Point to Sandy Point in the Sakonnet River, to the southern extent of the Management Area, will be open to the harvest of menhaden by purse seine provided that the State's quota has not been exhausted or if the Episodic Event Set Aside Program has been enacted in Rhode Island.

- (2) Possession limit: Twenty-five thousand (25,000) pounds per vessel per day

2. Commercial vessel restrictions:

- a. This section does not apply to small scale fisheries as defined in § 3.24.2(D)(1)(b) of this Part, or floating fish traps.
- b. The use of purse seines shall be permitted only in accordance with the following terms and conditions:
  - (1) All nets shall be less than one hundred (100) fathoms (six hundred feet (600')) in length and less than fifteen (15) fathoms (ninety feet (90')) in depth.
  - (2) All nets shall be marked with fluorescent-colored float buoys, distinguishable from the other float buoys on the net, at intervals of fifty feet (50').
  - (3) Annually, prior to use, all nets shall be inspected and certified as being in conformance with the provisions of this section by the DEM Division of Law Enforcement (DLE). Once inspected and certified, a net may be used throughout the duration of the calendar year in which it was inspected, provided that it is not altered with regard to any of the provisions of this section. Any net that is altered with regard to any of the provisions of this section must be re-inspected and recertified prior to use.
- c. The possession or taking of menhaden by a fishing vessel engaged in the commercial menhaden fishery is prohibited in the following areas:
  - (1) Providence River: Described as the waters north of a line extending from Rocky Point to Conimicut Light in the city of Warwick, and further extending to Nayatt Point in the town of Barrington.
  - (2) Greenwich Bay: Described as the waters of Greenwich Bay west and north of a line extending from the flagpole on Warwick Point to Sandy Point in the city of Warwick.



- d. The possession or taking of menhaden by a fishing vessel engaged in the commercial menhaden fishery is prohibited on any Saturday, Sunday, official State holiday, or prior to sunrise or following sunset.
- e. Fish storage capacity: A fishing vessel engaged in the commercial menhaden fishery may not have a useable fish storage capacity greater than one hundred twenty thousand (120,000) pounds. Prior to the commencement of fishing, for any vessel not previously certified through this process, each vessel must be inspected by a certified marine surveyor and assessed with regard to its fish storage capacity. Such certification must be kept aboard the vessel at all times. Vessels must either be certified as having a useable storage capacity of one hundred twenty thousand (120,000) pounds or less, or for vessels with a fish storage capacity greater than one hundred twenty thousand (120,000) pounds the excess capacity is rendered unusable in accordance with the specifications set forth in the assessment.

B. Possession of Menhaden in Rhode Island under State Quota Program:

- 1. Possession limit: One hundred twenty thousand (120,000) pounds per vessel per day
- 2. Once the quota has been reached, the fishery will close for directed fisheries, including but not limited to purse seine operations, and the incidental catch fishery will be in effect.
- 3. All commercial menhaden operations conducted in the Management Area, prior to and after the State's quota has been reached, are subject to the provisions of § 3.22.2(A) of this Part.
- 4. The transiting provision in § [1.9\(A\)\(2\)](#) of this Subchapter does not apply to the commercial menhaden fishery. Any vessel transiting State waters must abide by the current State possession limit.

C. Episodic Event Set Aside Program:

- 1. After the State's quota has been reached, if Rhode Island is approved to participate in the Episodic Event Set Aside Program for menhaden, as established by the ASMFC, the possession limit for menhaden will be one hundred twenty thousand (120,000) pounds per vessel per day, until the Set Aside quota has been exhausted, as determined by the ASMFC and/or the DEM, at which time the program will end and the directed fishery will close. Vessels that target and land menhaden in Rhode Island under this program must harvest only from Rhode Island waters and, if operating in the Management Area, must adhere to all the provisions as specified in § 3.24.2(A) of this Part.

2. The Episodic Event Set Aside Program will end on October 31, or when the Set Aside quota has been harvested, whichever first occurs.

D. Incidental Catch Fishery

1. ~~Upon closure of the commercial menhaden fishery~~After the State's quota has been reached, an incidental catch fishery will be in effect as follows:
  - a. Possession limit:
    - (1) Six thousand (6,000) pounds per vessel per day for non-directed and small-scale gears
    - (2) Twelve thousand (12,000) pounds per vessel per day for two (2) commercially licensed individuals harvesting from the same vessel, fishing stationary multi-species gear
  - b. Gear Types:
    - (1) Non-directed: Anchored/stake gillnets, trawls, fyke nets, and floating fish traps
    - (2) Small-scale: Cast nets, pots, hook and line, hand lines, ~~trammel nets~~, and bait nets
    - (3) Stationary multi-species: Anchored/stake gillnets, floating fish traps, and fyke nets

E. Commercial Vessel Reporting Requirements

1. This section does not apply to small scale fisheries as defined in § 3.24.2(D)(1)(b) of this Part, or floating fish traps.
2. Any fisher intending to engage in the commercial menhaden fishery in the Management Area shall notify the DLE at (401) 222-3070 prior to taking or possessing menhaden. At the time that a fisher advises the DLE of his/her intent to harvest menhaden, the DLE shall notify said fisher of any modification which may have been established in the possession limit for menhaden.
3. Each person engaging in the commercial menhaden fishery shall contact the DEM at (401) 423-1940 at the end of each day to report the area fished and the amount of menhaden in possession by the fisher in pounds.

F. Prohibition on the harvesting of menhaden for reduction processing: The taking of menhaden for reduction (fish meal) purposes is prohibited in Rhode Island waters. A vessel will be considered in the reduction (fish meal) business if any portion of the vessel's catch is sold for reduction.

- G. No person may transfer or attempt to transfer at sea, from one (1) vessel to another, any finfish identified in these Regulations.
- H. Possession limit compliance: It shall be unlawful for any commercial menhaden operation to land more than one (1) possession limit per day.

1. Implementation Timeline

Rhode Island will have the Addendum I implemented before May 1. The associated regulatory process will start approximately early February and a rule effective date just prior to May 1 2023.

2. Commercial Fishery Management Measures

- a. If your jurisdiction includes its yearly menhaden quota in its regulations, please include the changes in language.

Not applicable.

- b. A mechanism for an incidental catch and small-scale fishery provision following the harvest of your jurisdiction's quota and closure of the directed fisheries.

- i. Indicate if your jurisdiction divides quota by sector, fishery, or gear type, and provide regulatory language.

Not applicable.

- ii. Provide regulatory language to account for changes in IC/SSF permitted gear types. Under Addendum I, small-scale gears include: cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets. Non-directed gears include: pound nets, anchored/stake gillnets, drift gill net, trawls, fishing weirs, fyke nets, trammel nets, and floating fish traps.

Please see attached proposed regulations, with red text indicating changes reflected the modifications based on Addendum I.

3. Monitoring Requirements

- a. If your jurisdiction is proposing changes to your biological monitoring program, please include the proposed changes.

Not applicable.



## **Declaration of Regulation Change 22-10**

Under the authority of section 26-159a-22 of the Regulations of Connecticut State Agencies (RCSA), the Commissioner of Energy and Environmental Protection (Commissioner) is authorized to establish or adjust, by declaration, length limits, creel limits, trip limits and trip limit adjustment values in order to comply with interstate fishery management plans adopted by the Atlantic States Marine Fisheries Commission or the U.S. Department of Commerce.

Under authority of Section 26-102 of the Connecticut General Statutes (CGS), the Commissioner is authorized to establish prescribed conditions for the operations of commercial fishing activity for any species of fish threatened with undue depletion.

In accordance with the aforementioned authorities, the following sections of departmental regulations are amended as specified on pages 2 through 15 of this Declaration.

- 26-142a-8a. Species restrictions
- 26-159a-8. Winter flounder
- 26-159a-9. Bluefish (*Pomatomus saltatrix*)
- 26-159a-10. Summer flounder (*Paralichthys dentatus*)
- 26-159a-13. Tautog (Blackfish) (*Tautoga onitis*)
- 26-159a-15. Scup (porgy) (*Stenotomus chrysops*)
- 26-159a-16. Black sea bass (*Centropristis striata*)
- 26-159a-19. Spiny dogfish (*Squalus acanthius*)

In addition, this Declaration establishes regulatory measures for commercial fishing of Atlantic menhaden and weakfish, as well as commercial and recreational fishing of Jonah crab.

This declaration supersedes Declaration 22-07, shall be effective 10 days after signing, and shall remain in effect for 120 days or until amended or superseded by subsequent action.

12/16/2022

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**Katherine S. Dykes**  
**Commissioner**

**Date**

## 26-142a-8a. Species restrictions

(b) **Minimum Legal Length.** No person shall possess any fish taken by any commercial fishing gear or for commercial purposes less than the lengths specified below measured from the tip of the snout to the end of the tail and, notwithstanding section 26-159a-4 of the Regulations of Connecticut State Agencies, no person shall buy, sell, offer for sale or possess in a place where fish are offered for sale, any of said species less than the minimum legal length stated herein.

- (1) Atlantic tomcod (frostfish) (*Microgadus tomcod*) - 7 inches
- (2) Tautog (blackfish) (*Tautoga onitis*) - ~~14~~ 16 inches
- (3) Scup (porgy) (*Stenotomus chrysops*) - 9 inches
- (4) Black sea bass (*Centropristis striata*) - 11 inches
- (5) Winter flounder (*Pseudopleuronectes americanus*) - 12 inches
- (6) Bluefish (*Pomatomus saltatrix*) - 9 inches
- (7) Summer flounder (fluke) (*Paralichthys dentatus*) - 14 inches
- (8) Atlantic cod (*Gadus morhua*) - ~~[22-inches]~~ the length specified in 50 CFR § 648.83(a)
- (9) Weakfish (*Cynoscion regalis*) - 16 inches
- (10) Yellowtail flounder (*Pleuronectes ferrugineus*) - ~~[13-inches]~~ the length specified in 50 CFR § 648.83(a)
- (11) Haddock (*Melanogrammus aeglefinus*) - ~~[22-inches]~~ the length specified in 50 CFR § 648.83(a)
- (12) Pollock (*Pollachius virens*) - ~~[19-inches]~~ the length specified in 50 CFR § 648.83(a)
- (13) Witch flounder (*Glyptocephalus cynoglossus*) - ~~[14-inches]~~ the length specified in 50 CFR § 648.83(a)
- (14) American plaice (*Hippoglossoides platessoides*) - ~~[14-inches]~~ the length specified in 50 CFR § 648.83(a)
- (15) Redfish (*Sebastes marinus*) - ~~[9-inches]~~ the length specified in 50 CFR § 648.83(a)
- (16) American eel (*Anguilla rostrata*): 9 inches;**

Any of said species less than the minimum legal length taken by any commercial fishing gear shall, without avoidable injury, be returned immediately to the water from which taken. No person on board any vessel engaged in commercial fishing or landing species taken by commercial fishing gear shall possess any summer flounder fillet less than the minimum total length for the species unless the carcass of the fish from which the fillet was removed has been retained and meets the minimum length. This subsection shall not be construed to prevent filleting of fish on shore or at the dockside.

**26-159a-8. Winter flounder:** modified by the addition of the following specifications.

**(a) Commercial Fishery Possession Limit.**

- (1) No person engaged in commercial fishing shall possess or land winter flounder in excess of 50 pounds or 38 fish, unless such fish were taken in federal waters under a federal commercial fisheries northeast multispecies permit.
- (2) The possession and landings limits specified in subdivision (1) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession and landing limits shall apply per trip or per day, whichever is the longer period of time. Transfer of winter flounder between vessels at sea is prohibited. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
- (3) Any winter flounder taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

**26-159a-9. Bluefish (*Pomatomus saltatrix*):** subsections (c) Open Commercial Fishing Season and (d) Commercial Fishery Possession Limit are superseded by the following specifications.

(c) **Open Commercial Fishing Season.** The open commercial fishing season begins January 1<sup>st</sup> each year and ends December 31<sup>st</sup> or such sooner date as one hundred percent of the Connecticut quota of bluefish as set forth in subsection (e) of this section has been landed.

**(d) Commercial Fishery Possession Limit.**

- (1) No person engaged in commercial fishing shall possess or land bluefish in excess of the following possession limits that are based on Connecticut's annual bluefish quota specified in the Bluefish Fishery Management Plan of the Atlantic States Marine Fisheries Commission:
  - (A) during the winter one period defined herein as the period between January 1 and April 30, inclusive, the possession and landing limit shall be **1,200** pounds, except as provided in subparagraphs (D), (E) and (F) of this subdivision, and the period target quota shall be 33% of Connecticut's annual quota;
  - (B) during the summer period defined herein as the period between May 1 and October 31, inclusive, the possession limit shall be **1,200** pounds, except as provided in subparagraphs (D), (E) and (F) of this subdivision, and the period target quota shall be 84% of Connecticut's annual quota, cumulatively;
  - (C) during the winter two period defined herein as the period between November 1 and December 31, inclusive, the possession limit shall be **1,200** pounds, except as provided in subparagraphs (D), (E) and (F) of this subdivision, and the period target quota shall be 100% of Connecticut's annual quota, cumulatively;
  - (D) during each period the department shall monitor weekly landings and may periodically adjust the possession limit if less than or more than the period target quota specified in subparagraphs (A), (B) and (C) of this subdivision

is projected to be landed. Except as provided in subparagraph (E) of this subdivision, the adjusted possession limit shall be calculated as (Q / T / W), rounded to the nearest 100 pounds, where Q is the amount of Connecticut's annual quota remaining in the period and T is the projected number of fishing trips per week landing bluefish during the weeks remaining in the period and W is the number of weeks remaining in the period;

- (E) the possession limit shall not exceed **1,500** pounds at any time.
  - (F) when 100% of Connecticut's annual quota is landed the possession limit shall be zero pounds.
- (2) The possession limits specified in subdivision (1) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession limits shall apply per trip or per day whichever is the longer period of time. Transfer of bluefish between vessels at sea is prohibited. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
  - (3) Any bluefish taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

**26-159a-10. Summer flounder (*Paralichthys dentatus*):** subsection (c) Commercial Fishery Possession Limit is superseded by the following specifications.

(c) **Summer Flounder Commercial Fishery Possession Limit.**

- (1) No person engaged in commercial fishing shall possess or land summer flounder in excess of the following possession limits that are based on Connecticut's annual summer flounder quota specified in the Summer Flounder Fishery Management Plan of the Atlantic States Marine Fisheries Commission:
  - (A) during the winter one period defined herein as the period between January **1** and **April 30**, inclusive, the possession and landing limit shall be **12,000 pounds per bi-weekly period**, except as provided in subparagraphs **(D) and (E)** of this subdivision, and the period target quota shall be **35%** of Connecticut's annual quota. **If the period target quota is met before April 30, the possession limit shall be 50 pounds;**
  - (B)** during the summer period defined herein as the period between May 1 and October 31, inclusive, the possession limit shall be **1,000** pounds, except as provided in subparagraphs **(D) and (E)** of this subdivision, and the period target quota shall be 95% of Connecticut's annual quota, cumulatively;
  - (C)** during the winter two period defined herein as the period between November 1 and December 31, inclusive, the possession limit shall be **10,000 pounds per weekly period**, except as provided in subparagraph **(D)** of this subdivision, and the period target quota shall be 100% of Connecticut's annual quota;
  - (D)** during each period the department shall monitor weekly landings and periodically adjust the possession limit if less than or more than the period target quota specified in subparagraphs (A), (B), and **(C)** of this subdivision



is projected to be landed. The adjusted possession limit shall be calculated as  $(Q / T / W)$ , rounded to the nearest 25 pounds, where Q is the amount of Connecticut's annual quota remaining in the period and T is the projected number of fishing trips per week landing summer flounder during the weeks remaining in the period and W is the number of weeks remaining in the period;

- (E)** when 100% of Connecticut's annual quota is landed the possession limit shall be zero pounds.
- (2) The possession limits specified in subdivision (1) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession limits shall apply per trip or per day whichever is the longer period of time. Transfer of summer flounder between vessels at sea is prohibited. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
  - (3) Any summer flounder taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.
  - (4) When a weekly landing or possession limit specified in subdivision (1) of this subsection is in effect, no person engaged in commercial fishing shall possess or land summer flounder more than the stated weekly limit during each weekly period that begins Sunday morning at 0001 hours and ends the following Saturday night at 2359 hours.
  - (5) **When a biweekly landing or possession limit specified in subdivision (1) of this subsection is in effect, no person engaged in commercial fishing shall possess or land summer flounder more than the stated biweekly limit during each two week period that begins Sunday morning at 0001 hours and ends on the following second Saturday night at 2359 hours.**
  - (6) When a weekly **or biweekly** landing or possession limit specified in subdivision (1) of this subsection is in effect, the commercial fishing vessel operator shall: (A) prior to departure on any trip in which summer flounder will be possessed, inform the Department Energy and Environmental Protection Environmental Conservation Police of the vessel's departure and provide information that shall include, but not be limited to, the vessel's name, vessel operator's name, departure date and time, estimated return date and time and the port of landing, (B) prior to offloading summer flounder inform the Environmental Conservation Police of the vessel's name, vessel operator's name, port of landing, and estimated weight of summer flounder on board.

**26-159a-13. Tautog (Blackfish) (Tautoga onitis):** superseded by the following specifications.

- (a) **Closed Season.** No person engaged in commercial fishing shall possess or land any tautog, wherever taken, except from April 1 to April 30, July 1 to August 31, and October 8 to December 24, all dates inclusive.

(b) **Commercial Fishery Possession Limit.** No person engaged in commercial fishing shall possess or land tautog in excess of the following possession limits that are based on Connecticut's annual tautog target harvest limit adopted under Amendment 1 to the Tautog Fishery Management Plan of the Atlantic States Marine Fisheries Commission.

- (1) The possession limit shall be 10 fish for a person engaged in commercial fishing under a limited access license issued by the Commissioner.
- (2) The possession limit shall be 3 fish for a person engaged in commercial fishing under either a restricted commercial fishing license or a restricted lobster pot fishing license issued by the Commissioner.
- (3) The possession and landing limits specified in this subsection shall apply to the vessel, regardless of how many persons are on board. Possession and landing limits shall apply per trip or per day, whichever is the longer period of time. No person shall transfer tautog between vessels at sea. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
- (4) At any time when 100% of the annual target harvest limit is landed the possession limit shall be zero pounds.
- (5) Any tautog taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

(c) Commercial Tautog Tagging Program. Any person engaging in commercial fishing for tautog or possessing tautog with the intent to sell, barter, or trade tautog must abide by the following provisions for commercial tautog tagging adopted under Amendment 1 to the Tautog Fishery Management Plan of the Atlantic States Marine Fisheries Commission.

- (1) No person engaged in commercial fishing may land or offload tautog without first affixing a commercial tautog tag issued by the Department of Energy and Environmental Protection (department) to the left opercula bone (gill plate) of all tautog to be landed or offloaded, such that the identifying number on the commercial tag is clearly visible.
- (2) Commercial fishermen may only land or offload tautog affixed with commercial tautog tags issued by the department during the same calendar year as the landing or offloading event.
- (3) No tautog shall be sold, purchased, bartered, or traded in Connecticut unless it bears a commercial tautog tag as defined in Amendment 1 to the Tautog Fishery Management Plan of the Atlantic States Marine Fisheries Commission.
- (4) No person shall transfer commercial tautog tags between individuals or fish.
- (5) Any person issued commercial tautog tags by the department in any calendar year must return any unused tags and submit a report of tag use to the department by February 15 of the following calendar year. Failure by any person to return unused tags, submit required reports, or account for disposition of tags issued previously may result in loss of future privilege to obtain commercial tautog tags.

(6) Any tautog tagged with a commercial tautog tag must remain tagged until it reaches the final consumer. Processed or fileted tautog shall be packed with the commercial tautog tag originally affixed to that tautog. Tags must be retained with processed or fileted tautog and be available for inspection until the processed or fileted tautog is sold to the final consumer.

**26-159a-15. Scup (porgy) (*Stenotomus chrysops*):** subsections (b) Commercial Fishing Moratorium and (c) Commercial Fishery Possession Limits are superseded by the following specifications.

**(b) Commercial Fishing Moratorium.**

(1) From May 1 through September 30 inclusive, no holder of a license or registration issued under authority of Section 26-142a of the Connecticut General Statutes shall possess, or shall have possessed scup unless said person:

(A) is in immediate possession of a 2003 Scup License Endorsement Letter for Connecticut Waters, herein referred to as the “2003 Scup License Endorsement Letter,” issued by the Commissioner pursuant to this section which attests that:

- (i) the license holder held a 1997 Scup License Endorsement Letter or a 1994 Summer Flounder License Endorsement Letter as specified in subsection (a) of section 26-159a-10 of the Regulations of Connecticut State Agencies and made qualifying landings during the qualifying period and reported said landings to the department in accordance with section 26-157b-1 of the Regulations of Connecticut State Agencies; or
- (ii) the vessel owner held a 1997 Scup License Endorsement Letter or a 1994 Summer Flounder License Endorsement Letter as specified in subsection (a) of section 26-159a-10 of the Regulations of Connecticut State Agencies and purchased, or was constructing or rerigging a commercial fishing vessel between January 1, 2000 and May 31, 2003 for purposes of fishing with qualifying fishing gear, to be based on more than one form of verifiable written proof of such activity, provided said vessel owner has or will have made and reported qualifying landings with that vessel no later than 12 months immediately succeeding the effective date of this regulation; or
- (iii) the vessel owner held a 1997 Scup License Endorsement Letter or a 1994 Summer Flounder License Endorsement Letter as specified in subsection (a) of section 26-159a-10 of the Regulations of Connecticut State Agencies and an operator of that vessel made qualifying landings with the vessel during the qualifying period and said landings were reported to the department in accordance with section 26-157b-1 of the Regulations of Connecticut State Agencies; or
- (iv) the license holder is the recipient of a license transferred under section 26-142b of the Connecticut General Statutes, such license

was transferred with a 1997 or 2003 Scup License Endorsement Letter issued under this section or a 1994 or 2003 Summer Flounder License Endorsement Letter issued under section 26-159a-10 of the Regulations of Connecticut State Agencies, and such license holder made qualifying landings during the qualifying period and reported said landings to the department in accordance with section 26-157b-1 of the Regulations of Connecticut State Agencies or has or will have made and reported qualifying landings in the 12 months immediately succeeding the date of the license transfer, whichever is later; or

(B) is operating a vessel owned by a license holder who has qualified for an endorsement letter under subparagraph (A) of subdivision (1) of this subsection. During the operation of such vessel, said endorsement letter shall remain on such vessel as authorization of the operator to possess scup and shall not be used to authorize the possession of scup on any additional vessel, except that said license holder shall be allowed to use said endorsement letter to authorize possession of scup on any vessel said license holder owned prior to January 1, 1997 and that said license holder still owns; or

(C) is engaged in the hauling of lobster pots under the authority of section 26-142a of the Connecticut General Statutes and is in possession of lobsters;  
or

(D) is engaged in commercial fishing under a restricted commercial fishing license issued by the Commissioner under authority of Section 26-142a of the Connecticut General Statutes.

(2) 2003 Scup License Endorsement Letters will automatically be issued without application. Any person who does not receive a 2003 Scup License Endorsement Letter, or is denied said endorsement letter, may appeal in writing to the Commissioner. The only grounds for appeal is that the Commissioner erred in concluding that the license holder did not meet the criteria in subclause (i), (ii), (iii) or (iv) of subparagraph (A) of subdivision (1) of this subsection.

(3) No person shall take scup with a trawl net if the qualifying landings for which the 2003 Scup License Endorsement Letter was issued and under which that person is fishing did not indicate the taking of summer flounder or scup by trawl net.

(4) No person who has transferred a commercial fishing license according to the provisions of section 26-142b of the Connecticut General Statutes, with an endorsement letter issued under this section, shall qualify for a 2003 Scup License Endorsement Letter based on the landings history for which the transferred endorsement letter was issued.

(c) **Commercial Fishery Possession and Landing Limits.**

(1) No person engaged in commercial fishing shall possess or land scup in excess of the following possession limits that are based on the coast wide scup quota and Connecticut's summer period scup quota as specified in the Scup Fishery Management Plan of the Atlantic States Marine Fisheries Commission:

- (A) during the winter one period defined herein as the period between January 1 and April 30, both dates inclusive, the possession limit shall be the same as the federal waters possession limit for this period as specified by NOAA;
  - (B) during the summer period defined herein as the period between May 1 and September 30, both dates inclusive, the possession limit shall be 2,500 pounds except as provided in subparagraph (D) of this subdivision, and the period target quota shall be 100% of Connecticut's summer period quota;
  - (C) during the winter two period defined herein as the period between October 1 and December 31, both dates inclusive, the possession limit shall be the same as the federal waters possession limit for this period as specified by NOAA;
  - (D) during the summer period the department shall monitor landings weekly and periodically adjust the possession limit if less than or more than 100% of Connecticut's summer period quota is projected to be landed. The adjusted possession limit shall be calculated as  $(Q / T / W)$ , rounded to the nearest 50 pounds, where Q is the amount of Connecticut's summer period quota remaining and T is the projected number of fishing trips per week landing scup during the weeks remaining in the period and W is the number of weeks remaining in the period, except that:
    - (i) in the lobster pot fishery when in possession of lobsters, the possession limit shall be 10 fish;
    - (ii) a person engaged in commercial fishing under a restricted commercial fishing license issued by the Commissioner, but not in possession of a quota managed species endorsement for scup, the possession limit shall be the lesser of 60 fish or ten percent of the adjusted possession limit as calculated by the department in this subparagraph, expressed in equivalent numbers of fish and rounded to the nearest 10 fish;
    - (iii) at any time during the summer period, when 100% of Connecticut's summer period quota is landed the possession limit shall be zero pounds for all gear types.
- (2) The possession and landing limits specified in subdivision (1) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession limits shall apply per trip or per day, whichever is the longer period of time. No person shall transfer scup between vessels at sea. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
  - (3) Any scup taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

**26-159a-16. Black sea bass (*Centropristis striata*):** subsections (b) Commercial Fishing Moratorium and (c) Commercial Fishery Possession Limits are superseded by the following specifications.

**(b) Commercial Fishing Moratorium.**

(1) No holder of a license or registration issued under authority of section 26-142a of the Connecticut General Statutes shall possess, or shall have possessed black sea bass unless said person:

(A) is in immediate possession of a 2003 Black Sea Bass License Endorsement Letter for Connecticut waters, herein referred to as the “2003 Black Sea Bass License Endorsement Letter,” issued by the commissioner pursuant to this section which attests that:

(i) the license holder made qualifying landings during the qualifying period and said landings were reported to the department in accordance with section 26-157b-1 of the Regulations of Connecticut State Agencies; or

(ii) the vessel owner purchased, or was constructing or riggering a commercial fishing vessel between January 1, 2000 and May 31, 2003 for purposes of fishing with qualifying fishing gear, to be based on more than one form of verifiable written proof of such activity, provided said vessel owner has or will have made and reported qualifying landings with that vessel no later than 12 months immediately succeeding the effective date of this regulation; or

(iii) the vessel made qualifying landings during the qualifying period and said landings were reported to the department in accordance with section 26-157b-1 of the Regulations of Connecticut State Agencies; or

(iv) the license holder is the recipient of a license transferred under section 26-142b of the Connecticut General Statutes, such license was transferred with a 2003 Black Sea Bass License Endorsement Letter, and such license holder made qualifying landings during the qualifying period and reported said landings to the department in accordance with section 26-157b-1 of the Regulations of Connecticut State Agencies or has or will have made and reported qualifying landings in the 12 months immediately succeeding the date of the license transfer, whichever is later; or

(B) is operating a vessel owned by a license holder who has qualified for an endorsement letter under subdivision (1)(A) of this subsection. During the operation of such vessel said endorsement letter shall remain on such vessel as authorization of the operator to possess black sea bass and shall not be used to authorize the possession of black sea bass on any additional vessel, except that said license holder shall be allowed to use said endorsement letter to authorize possession of black sea bass on any vessel said license holder owned prior to May 31, 2003 and that said license holder still owns.; or

- (C) is engaged in the hauling of lobster pots under the authority of section 26-142a of the Connecticut General Statutes and is in possession of lobsters.
  - (2) 2003 Black Sea Bass License Endorsement Letters will automatically be issued without application. Any person who does not receive a 2003 Black Sea Bass License Endorsement Letter, or is denied said letter, may appeal in writing to the commissioner. The only grounds for appeal is that the commissioner erred in concluding that the license holder did not meet the criteria in subclause (i), (ii),(iii) or (iv) of subdivision (1)(A) of this subsection.
  - (3) No person shall take black sea bass with a trawl net if the qualifying landings for which the 2003 Black Sea Bass License Endorsement Letter was issued and under which that person is fishing did not indicate the taking of black sea bass by trawl net.
  - (4) No person who has transferred a commercial fishing license according to the provisions of section 26-142b of the Connecticut General Statutes, with an endorsement letter issued under this section, shall qualify for a 2003 Black Sea Bass License Endorsement Letter based on the landings history for which the transferred endorsement letter was issued.
- (c) **Commercial Fishery Possession Limits.**
- (1) No person engaged in commercial fishing shall possess or land black sea bass in excess of the following possession limits that are based on Connecticut’s annual black sea bass quota as specified in the Black Sea Bass Fishery Management Plan of the Atlantic States Marine Fisheries Commission:
    - (A) during the winter one period defined herein as the period between January 1 and April 30, inclusive, the possession and landing limit shall be 3,500 pounds per bi-weekly period, except as provided in subparagraphs (D) and (E) of this subdivision, and the period target quota shall be ~~33%~~25% of Connecticut’s annual quota;
    - (B) during the summer period defined herein as the period between May 1 and October 31, inclusive, the possession limit shall be 600 pounds, except as provided in subparagraphs (D) and (E) of this subdivision, and the period target quota shall be ~~84%~~95% of Connecticut’s annual quota, cumulatively;
    - (C) during the winter two period defined herein as the period between November 1 and December 31, inclusive, the possession limit shall be 2,000 pounds per weekly period, except as provided in subparagraphs (D) and (E) of this subdivision, and the period target quota shall be 100% of Connecticut’s annual quota, cumulatively;
    - (D) during each period the department shall monitor weekly landings and periodically adjust the possession limit if less than or more than the period target quota specified in subparagraphs (A), (B) and (C) of this subdivision is projected to be landed. The adjusted possession limit shall be calculated as  $(Q / T / W)$ , rounded to the nearest 10 pounds or equivalent number of fish, where Q is the amount of Connecticut’s annual quota remaining in the period and T is the projected number of fishing trips per week landing black sea bass during the weeks remaining in the period and W is the number of

weeks remaining in the period, except that in the lobster pot fishery when in possession of lobsters, the possession limit shall be ~~10 fish~~ **60 pounds**.

(E) When 100% of the Connecticut quota is landed the possession limit shall be zero pounds for all gear types.

**(F) When the target quota for a quota period is met the possession limit shall be zero pounds for the remainder of that quota period.**

(2) The possession and landing limits specified in subdivision (1) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession limits shall apply per trip or per day, whichever is the longer period of time. No person shall transfer black sea bass between vessels at sea. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.

(3) Any black sea bass taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

**(4) When a weekly landing or possession limit specified in subdivision (1) of this subsection is in effect, no person engaged in commercial fishing shall possess or land black sea bass more than the stated weekly limit during each weekly period that begins Sunday morning at 0001 hours and ends the following Saturday night at 2359 hours.**

**(5) When a biweekly landing or possession limit specified in subdivision (1) of this subsection is in effect, no person engaged in commercial fishing shall possess or land black sea bass more than the stated biweekly limit during each two week period that begins Sunday morning at 0001 hours and ends on the following second Saturday night at 2359 hours.**

**26-159a-19. Spiny dogfish (*Squalus acanthius*):** is superseded by the following specifications.

**(a) Commercial Fishery Possession Limits**

(1) No person engaged in commercial fishing shall possess or land spiny dogfish in excess of the following possession limits that are based on the northern region spiny dogfish quota as specified in the Spiny Dogfish Fishery Management Plan of the Atlantic States Marine Fisheries Commission:

(A) between May 1 and October 31, both dates inclusive, the possession limit shall be **7,500** pounds, except as provided in subparagraph (C) of this subdivision;

(B) between November 1 and April 30, both dates inclusive, the possession limit shall be **7,500** pounds, except as provided in subparagraph (C) of this subdivision.

(C) when 100% of the northern region quota is landed the possession limit shall be zero pounds.

(2) The possession and landing limits specified in subdivision (1) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession



limits shall apply per trip or per day, whichever is the longer period of time. No person shall transfer spiny dogfish between vessels at sea. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.

- (3) Any spiny dogfish taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

### Atlantic Menhaden (*Brevoortia tyrannus*)

#### (a) Commercial Fishery Possession Limits.

- (1) No person engaged in commercial fishing shall possess or land Atlantic menhaden in excess of the following possession limits that are based on Connecticut's annual Atlantic menhaden quota specified in the Atlantic Menhaden Fishery Management Plan of the Atlantic States Marine Fisheries Commission. Beginning January 1, the possession limit shall be 120,000 pounds until 75% of the annual quota has been landed, at which time the possession limit shall be 20,000 pounds until 90% of the annual quota has been landed, at which time the possession limit in the directed fishery shall be 0 pounds. Directed fishing means fishing for or landing of Atlantic menhaden with gears other than small scale or non-directed gears as defined in Amendment 3 of the Atlantic Menhaden Fishery Management Plan of the Atlantic States Marine Fisheries Commission.
- (2) No person engaged in commercial fishing in Connecticut state waters shall possess or land Atlantic menhaden in excess of the following possession limits. Beginning January 1, the possession limit shall be 12,000 pounds until 90% of the annual quota specified in subdivision (1) has been landed, at which time the possession limit in the directed fishery shall be 0 pounds.
- (3) No person engaged in commercial fishing with small scale non-directed gears as specified in Amendment 3 of the Atlantic Menhaden Fishery Management Plan of the Atlantic States Marine Fisheries Commission shall possess or land Atlantic menhaden in excess of 6,000 pounds once 90% of the annual quota specified in subdivision (1) has been landed.
- (4) The possession and landing limits specified in subdivisions (1), (2) and (3) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession limits shall apply per trip or per day, whichever is the longer period of time. The transfer of more than 6,000 pounds per day of menhaden between vessels at sea is prohibited. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
- (5) Any Atlantic menhaden taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

- (6) When in possession of more than 6,000 pounds of Atlantic menhaden as specified in subdivision (1) and subdivision (2) of this subsection, the commercial fishing vessel operator shall:
  - (A) prior to departure on any trip in which Atlantic menhaden will be possessed, inform the Department of Energy and Environmental Protection Marine Fisheries Program of the vessel's departure and provide information that shall include, but not be limited to, the vessel's name, vessel operator's name, departure date and time, estimated return date and time and the port of landing; and
  - (B) prior to offloading Atlantic menhaden inform the Marine Fisheries Program of the vessel's name, vessel operator's name, port of landing, and estimated weight of Atlantic menhaden on board.
- (7) The department shall monitor weekly landings and periodically adjust the possession limit if less than or more than the annual quota is projected to be landed before the end of the fishing season. The adjusted possession limit shall be calculated as  $(Q / T / W)$ , rounded to the nearest 500 pounds, where Q is the amount of Connecticut's annual quota remaining and T is the projected number of fishing trips per week landing Atlantic menhaden and W is the number of weeks remaining in the season.

#### Jonah Crab (*Cancer borealis*)

##### (a) Commercial Fishery.

- (1) No person engaged in commercial fishing by use of a pot or trap shall take Jonah crab except by lobster pot or trap meeting the requirements set forth in Sections 26-157c-2 and 26-157c-4 of the Regulations of Connecticut State Agencies.
- (2) No person engaged in otter trawl fishing including scallop dredge fishing shall possess or land Jonah crabs in excess of 1,000 crabs.
- (3) The possession and landing limits specified in subdivision (2) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession limits shall apply per trip or per day, whichever is the longer period of time. Transfer of Jonah crabs between vessels at sea is prohibited. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
- (4) No person engaged in commercial fishing or acting as a seafood dealer shall possess or land Jonah crab:
  - (A) less than 4.75 inches carapace width; or
  - (B) with ova or spawn attached or from which the ova or spawn has been removed; or
  - (C) with claws detached from the body of the crab, unless also in possession of the body and not more than two claws per body are possessed.

##### (b) Recreational Fishery.

- (1) No person engaged in sport fishing for Jonah crab, including by personal use lobster pot fishing, shall possess or land:

- (A) more than 50 crabs per day or per trip whichever is the longer period of time; or
- (B) crabs with ova or spawn attached or from which ova or spawn has been removed.

Weakfish (*Cynoscion regalis*)

(a) Commercial Fishery Possession Limits.

- (1) No person engaged in commercial fishing shall possess or land weakfish in excess of 100 pounds.
- (2) The possession and landing limits specified in subdivision (1) of this subsection shall apply to the vessel, regardless of how many persons are on board. Possession limits shall apply per trip or per day, whichever is the longer period of time. Transfer of weakfish between vessels at sea is prohibited. In any instance when there is a violation of the possession limit on board a vessel carrying more than one person when the catch is commingled, the violation shall be deemed to have been committed by the owner of the vessel, or the operator of the vessel, if the owner is not on board.
- (3) Any weakfish taken contrary to this section shall, without avoidable injury, be returned immediately to the water from which taken.

## Justification

Measures applying to American eel, Atlantic menhaden, black sea bass, bluefish, Jonah crab, scup, spiny dogfish, summer flounder, tautog, weakfish and winter flounder are necessary to maintain compliance with the mandatory provisions of the Atlantic States Marine Fisheries Commission (ASMFC) fishery management plans adopted for these species under the Atlantic Coastal Fisheries Cooperative Management Act. Measures applying to minimum lengths of northeast groundfish species (pg. 2) are adopted consistent with Northeast Multispecies (groundfish) federal fishery management plans adopted under the Magnuson-Stevens Fishery Conservation and Management Act.

These measures are also required to effectively manage Connecticut's annual adjusted commercial fishery allocations of summer flounder, scup, black sea bass, bluefish and Atlantic menhaden and the New England region allocation of spiny dogfish. These measures provide Connecticut-based commercial fishermen the fullest opportunity afforded under ASMFC and federal fishery management plans.

Under 16 U.S.C. Chapter 17 - Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA) Section 5106, states are required to implement and enforce ASMFC fishery management plans. If ASMFC finds that a state has failed to implement mandatory measures of a Commission plan, the Secretary of Commerce is required to impose a moratorium on fishing for that species within the waters of the noncomplying state and prohibit landings of that species regardless where taken.

### Special Comment:

The federal commercial minimum legal lengths for northeast multispecies and redfish are incorporated by reference as we currently do for some recreational northeast multispecies fisheries. Incorporating the new minimum sizes by reference to the CFR will eliminate the need to revisit these measures with each subsequent change in federal rules for species that rarely occur in state waters.

### Management Background:

**Winter flounder:** Stocks in southern New England are in an overfished state. The low possession limit in this Declaration is mandated by ASMFC and is intended to eliminate targeted fishing, but prevent waste by allowing unavoidable bycatch to be landed. The possession limit was reviewed and reaffirmed by ASMFC in November, 2015.

**State Quota-Managed Species:** The **Summer Flounder, Scup and Black Sea Bass** Management Board and the **Bluefish** Management Board of the Atlantic States Marine Fisheries Commission, the Mid-Atlantic Fishery Management Council and NOAA Fisheries establish annual state specific commercial quotas for summer flounder, black sea bass and bluefish. Scup quotas are managed differently by season with January through April (Winter 1) and October-December (Winter 2) being managed on a coastwide basis whereas in May through September (Summer) scup quota is allocated by ASMFC on a state specific basis.

To allow equitable fishing opportunity for all participants in these commercial fisheries, to maximize the economic return of the fish landed, and to ensure that Connecticut does not exceed

its quota allocation, the department is compelled to implement adjustments to the possession limits for summer flounder, scup, black sea bass and bluefish. For the summer 2022 black sea bass fishery (starting May 1, 2022), the department elevated the possession limit for black sea bass in the lobster pot fishery to 60 pounds (previously 10 fish), to provide additional opportunity for lobster pot license holders given the substantial elevation of Connecticut's black sea bass quota for 2022 (increase from 1% to 3.67% of coastwide quota) resulting from implementation of Addendum XXXIII to the ASMFC Black Sea Bass FMP.

**Tautog:** Under ASMFC Addendum VI of the Interstate FMP for Tautog, each state was required to reduce both recreational and commercial harvest from 2008-2009 levels by 39%, which resulted in just 12,613 pounds or 2,913 fish as Connecticut's target commercial harvest quota. The 10 fish possession first applied in 2012 produced landings less than half of the harvest target in 2013 and 2014, and slightly over half of the harvest target in 2015. When the open access Restricted Commercial Fishing License was implemented in 2016, the department established a 4-fish possession limit for that license. The strategy was to provide some opportunity that was comparable to the prevailing recreational possession limit, yet fairly preserve opportunity for long time participants in the limited-access commercial fisheries. The 4-fish possession limit applied to the new Restricted Commercial Fishing License appeared to add negligibly to the 2016 landings. Amendment 1 to the Tautog FMP was implemented in October 2017 and required the states of Connecticut and New York to make a further combined 23% reduction in commercial harvest. The reduction to a 3 fish possession limit for holders of a Restricted Commercial Fishing License was a component of an appeal made by CT to the ASMFC Tautog Management Board at their May 1, 2018 meeting to forego the full reduction required under Amendment 1, while at the same time keeping the possession limit for the restricted commercial license in line with the recreational fishery, which was reduced from a 4 fish limit to a 3 fish limit during the fall season. Amendment 1 also mandated the implementation of a coast-wide commercial tautog tagging program to combat unreported and illegal harvest, particularly in the live fish market. Illegal harvest of tautog is widely considered to be a problem for effective management of the species, and is of particular concern in Long Island Sound due the overfished condition of the Long Island Sound tautog stock.

**Spiny dogfish:** This species is managed under multiple jurisdictions with ASMFC having its own FMP and management measures while NOAA Fisheries establishes management measures through FMPs of both the New England and Mid-Atlantic Fishery Management Councils. Under ASMFC the coastwide quota is divided into northern (ME-CT), southern (NY-VA) and North Carolina regions. In August 2016, NOAA Fisheries increased the possession limit in federal waters to 6,000 pounds. This action triggered a conforming change in the ASFMC possession limit for state waters, and in October 2019, ASFMC maintained a 6,000 pound possession limit for 2019. In 2022, ASMFC took action to increase the possession limit to 7,500 pounds to conform to a corresponding increase to the federal waters possession limit.

**Weakfish:** This stock is depleted likely from a combination of natural causes and overfishing. Low possession limits mandated by ASMFC are intended to eliminate targeted fishing, but prevent waste by allowing unavoidable bycatch to be landed.

**Atlantic Menhaden:** In December 2012, ASMFC adopted state by state quota management for this species effective April 15, 2013. The 6,000 pound commercial possession limit for small scale, non-directed gears established in this Declaration equals the "bycatch limit" maintained by ASMFC. In November 2017, ASMFC passed Amendment 3 to the Atlantic menhaden

management plan, which resulted in Connecticut receiving a fixed minimum allocation of 2.4 million pounds, a substantial increase from previous quota allocations (approx. 70,000 pounds). Connecticut prohibits the use of purse seines, the gear most commonly used in targeted menhaden fishing, and historically, with rare exceptions, virtually all menhaden trip landings in Connecticut were at or below the bycatch limit. The substantial increase in menhaden quota allocation to Connecticut in 2018 therefore created the potential for a substantial change in the character of the State's menhaden fishery. The Marine Fisheries Program held a public informational meeting in Hartford, CT on March 26, 2018 to receive input on management goals for the Connecticut menhaden fishery. Additional comments were received from industry during a Lobster Conservation Management Team meeting held in Old Lyme, CT on March 29, 2018. Subsequently, Connecticut implemented a tiered possession limit plan for the 2018 menhaden fishing year: 120,000 pounds until 50% of the annual quota is landed, then 80,000 pounds until 75% of the annual quota is landed, then 20,000 pounds until 90% of the annual quota is landed, at which time the directed fishery would be closed (landings of up to 6,000 pounds would still be permitted indefinitely under the bycatch limit). Additionally, possession limits for trips prosecuted in state waters were set at 12,000 pounds, and vessels intending to possess more than 9,000 pounds of menhaden were required to notify the Marine Fisheries Program via phone call prior to departure and offload. This management approach was intended to allow opportunity for utilization of Connecticut quota by vessels prosecuting the menhaden fishery outside of state waters, avoid localized depletion of menhaden within state waters, provide a conservative approach to tiered possession limit reductions given uncertainty around the rate at which landings would accumulate, and allow ample opportunity for law enforcement inspection of vessels landing menhaden. Based on the performance of the fishery in 2018, Connecticut is adopting a revised tiered possession limit plan for 2019 and maintained this management scheme for 2020: 120,000 pounds until 75% of the annual quota is landed, then 20,000 pounds until 90% of the annual quota is landed, at which time the directed fishery will be closed (landings of up to 6,000 pounds would still be permitted indefinitely under the bycatch limit). In addition, the threshold for phone call notifications has been reduced to 6,000 pounds, to correspond with the bycatch limit. These changes are intended to reduce the administrative burden of quota monitoring while still allowing for ample precaution against quota overages, as well as facilitate law enforcement inspection of vessels landing menhaden.

**Jonah Crab:** The ASMFC Lobster Board approved a fishery management plan for Jonah crab effective January 1, 2016. The mandatory conservation elements of that plan are included in this declaration. Jonah crabs are rare in Long Island Sound. A few thousand pounds are taken annually, some from the eastern Sound and most from Block Island Sound.

#### **Public Input/Notice:**

Public hearings were held at the time ASMFC mandated the measures pertaining to American eel, American lobster, Atlantic menhaden, black sea bass, bluefish, Jonah crab, scup, spiny dogfish, summer flounder, tautog, weakfish and winter flounder.

On December 14, 2022, the Department held a meeting at Marine District Headquarters in Old Lyme, CT to receive input on how best to achieve the quota management goals outlined above for summer flounder, scup, black sea bass and bluefish in 2023 (see State Quota- Managed Species). Notice of the meetings was provided via Marine Fisheries News list-serve, which has approximately 1,000 subscribers including fishermen, media outlets and environmental groups.

The public meeting was also announced and posted on the DEEP Fisheries web page. Attendees at the meeting, primarily quota-managed species endorsement holders and seafood dealers, developed and were in consensus with the proposed measures.

Regarding the minimum lengths for species managed under the Northeast Multispecies FMP, all public input and notice to date has occurred through the federal fisheries management process, via both the New England Fisheries Management Council and NOAA Fisheries. The Northeast multispecies fish species affected by this Declaration (Atlantic cod, yellowtail flounder, haddock, pollock, witch flounder, American plaice and redfish) do not normally occur in Connecticut waters. Therefore the regulations promulgated for these species pursuant to the federal fisheries management process will have no impact on state-water fisheries or fishermen. Federal permit holders receive direct notice of these changes from NOAA Fisheries.

## **Declaration Authority**

### **Regulation 26-159a-22. Compliance with Interstate Fishery Management Plans.**

(a) The Commissioner may, by declaration, establish and adjust closed seasons, length limits, creel limits, trip limits, and trip limit adjustment values in order to comply with interstate fishery management plans and emergency actions adopted by the Atlantic States Marine Fisheries Commission or the U.S. Department of Commerce.

(b) The Commissioner shall inform the public of all such changes at least 10 days prior to the effective date by placing posters at state boat launch areas, by issuing news releases, by mailing notices to bait and tackle shops and by mailing notices to all affected license holders.

(c) Any declaration made under this section shall be for a period not more than 120 days provided, if notice of intent to amend regulations has been published under Chapter 54, such declaration shall remain in effect until said regulations have been adopted, but not longer than 240 days.

**Connecticut General Statutes Section 26-102. Fish spawning areas and refuges.** The commissioner may establish fish spawning areas and refuges on any waters; and he may establish closed areas and safety zones on public lands and waters and, with the consent of the owner, on private lands and waters, and close any such area to fishing and trespassing. The commissioner shall have emergency authority to declare a closed season on any species of fish threatened with undue depletion from any cause and, the provisions of section 26-116 notwithstanding, if such cause is any person, firm or corporation engaged in commercial fishing activity, the commissioner shall have the additional emergency power to establish prescribed conditions for the operation of such commercial fishing activity, or suspend or prohibit the right of such person, firm or corporation to operate within such waters for such period of time as the commissioner deems necessary. The commissioner may, if he deems it necessary, close any waters, or portions thereof, in the inland district to fishing for limited periods of time.

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## Division of Marine Resources

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## **Atlantic Menhaden Addendum I to Amendment 3 Implementation Plan, New York**

### **1. Implementation Timeline**

Since New York's current regulations already cover the requirements set forth in Addendum I to Amendment 3, regulations will be in place by the May 1, 2023 deadline.

### **2. Commercial Fishery Management Measures**

a) If your jurisdiction includes its yearly menhaden quota in its regulations, please include the changes in language.

New York's regulations give the Department of Environmental Conservation authority to set the yearly quota based on the harvest limits established in the ASMFC's Fishery Management Plan for Atlantic menhaden. No changes will be necessary in New York's regulatory language. See current language below:

*6 NYCRR Part 40 (Marine Fish),*

*(x) Atlantic menhaden commercial fishing - special regulations.*

(2) Quota harvest and trip limits.

(i) The total annual harvest of menhaden may not exceed that amount annually allocated to New York State by the Atlantic States Marine Fisheries Commission (ASMFC) for the period January 1st through December 31st. Annual harvest limits for menhaden are based on the Fishery Management Plan (FMP) for menhaden as adopted and approved by the ASMFC pursuant to the Atlantic Coastal Fisheries Cooperative Management Act, 16 U.S.C., section 5101, *et seq.*

b) A mechanism for an incidental catch and small-scale fishery provision following the harvest of your jurisdiction's quota and closure of the directed fisheries.

I. Indicate if your jurisdiction divides quota by sector, fishery, or gear type, and provide regulatory language.

New York does not divide the Atlantic menhaden quota by sector, fishery or gear type. Regulatory language relating to the division of quota amongst sectors does not currently exist based on how New York manages its menhaden quota.

II. Provide regulatory language to account for changes in IC/SSF permitted gear types. Under Addendum I, small-scale gears include: cast nets, traps (excluding floating fish



traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets. Non-directed gears include: pound nets, anchored/stake gillnets, drift gill net, trawls, fishing weirs, fyke nets, trammel nets, and floating fish traps.

New York's current regulations do not explicitly state which gear types are considered non-directed for the IC/SSF; however, the regulations give the department authority to permit or prohibit the use of certain gear types in the fishery. See current language below:

*6 NYCRR Part 40 (Marine Fish),*

*(x) Atlantic menhaden commercial fishing - special regulations.*

(3) Fishery closures.

(i) If the department determines that the maximum allowable harvest of menhaden will take place before the end of any period, the directed harvesting of menhaden for commercial purposes will be prohibited, except that the department may allow a bycatch of menhaden in non-directed fisheries, not to exceed 6,000 pounds daily per vessel trip. Directed harvest may be prohibited for all license holders, or for users of specific gear types as directed by the department upon 72 hours written notice to all license holders referenced in paragraph (1) of this subdivision. If the department closes the period, but unanticipated events result in the quota not being landed by the projected date, then the department may reopen the period for a specified time and a specified trip limit upon 72 hours written notice to all license holders referenced in paragraph (1) of this subdivision.

### **3. Monitoring Requirements**

a) If your jurisdiction is proposing changes to your biological monitoring program, please include the proposed changes.

There are no proposed changes to New York's biological monitoring program for Atlantic menhaden.

**New Jersey Atlantic Menhaden Implementation Plan  
For Addendum 1 to Amendment 3  
January 13, 2023**

**Introduction**

The Atlantic States Marine Fisheries Commission passed Addendum 1 to Amendment 3 to the Atlantic Menhaden Fishery Management Plan in November 2022. The addendum implemented changes to state commercial harvest allocations, as well as certain aspects of the episodic event set aside fishery and incidental/small scale fishery. At the same meeting, ASMFC increased the annual commercial quota for 2023. Aside from approving the quota for 2023, New Jersey's menhaden regulations allow for the changes incorporated into Addendum 1 with no action required by NJ Marine Fisheries. A summary of how Addendum 1 requirements will be implemented is provided below. Complete text of appropriate sections of NJ menhaden regulations are attached for reference.

**1. Implementation timeline**

The measures approved in Addendum 1 are already captured in NJ menhaden regulations (Attachment 1) and require no additional action for implementation. The NJ Marine Fisheries Council was informed of, and approved, the quota change during their meeting on Thursday, January 5, 2023.

**2. Commercial fishery management measures**

- a) NJ's menhaden quota is not specified in our regulations, so no regulatory changes are required.
- b) NJAC 7:25-22.3(b) specifies that 95% of NJ's quota is allocated to the purse seine fishery, with the remaining 5% allocated to all other authorized gears. If a given sector's quota is reached before the end of the year, NJ DEP will close the fishery for that sector pursuant to 7:25-22.3 (c)-(e). Section (f) of the same rule allows for an incidental catch following closure of a sector's fishery. The regulations allow participation in the IC/SS fishery "as established by the Atlantic States Marine Fisheries Commission," so no changes are required to the gears allowed under the IC/SS fishery.

**3. Monitoring requirements**

NJ is not proposing any changes to its biological monitoring plan for menhaden.

## New Jersey Administrative Code

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### N.J.A.C. 7:25-22.3

#### Copy Citation

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[NJ - New Jersey Administrative Code](#) [TITLE 7. ENVIRONMENTAL PROTECTION](#) [CHAPTER 25. DIVISION OF FISH AND WILDLIFE RULES](#) [SUBCHAPTER 22. MENHADEN](#)

#### § 7:25-22.3 Atlantic menhaden annual quota and season

**(a)** The Commissioner, with the approval of the New Jersey Marine Fisheries Council, may modify the annual quota as determined by the Atlantic States Marine Fisheries Council, seasons, annual quota allocation, including modifying gear categories and the quota allocation by gear-type, incidental catch allowance, application of the incidental catch allowance to the annual quota, reporting requirements, trip limits, or gear marking requirements specified in this subchapter by notice in order to maintain consistency with any fishery management plan approved by the Atlantic States Marine Fisheries Council or to maintain consistency with fishery management plan approved by the Mid-Atlantic Fishery Management Council, the New England Fishery Management Council, or the South Atlantic Fishery Management Council and adopted by the National Marine Fisheries Service to provide for the optimal utilization of any quotas specified in this section. The Commissioner will review the catch rate in relation to the season quota and, if harvest data indicate that upward adjustments in harvest control measures are warranted to maximize utilization of the available quota within a specific season for a specific fishery, may adjust the above specified control measures to achieve optimal utilization of the total allowable catch. The Department shall publish notice of any such modification in the New Jersey Register, on the Department's website, through email to every menhaden license holder, and in the Division's commercial regulation publication. All such notices shall be effective when the Department files the notice with the Office of Administrative Law, or as specified otherwise in the notice.

nets, gill nets, trawls, bait nets, and other authorized gear being allocated the remaining five percent, combined. If the quota for any gear type is exceeded, the overharvested amount shall be deducted from the following year's quota.

**1.** The season for fishing and landing menhaden in the State shall be:

- i.** January 1 to December 31 for licensees taking menhaden, or landing menhaden taken, by purse seine;
- ii.** January 1 to December 31 for licensees taking menhaden, or landing menhaden taken, by gill net;
- iii.** January 1 to December 31 for licensees taking menhaden, or landing menhaden taken, by pound net or wire pound net;
- iv.** January 1 to December 31 for licensees taking menhaden, or landing menhaden taken, by trawl;
- v.** January 1 to December 31 for licensees taking menhaden, or landing menhaden taken, by bait net; and
- vi.** January 1 to December 31 for licensees taking menhaden, or landing menhaden taken, by other authorized gear not otherwise specified above.

**2.** The daily trip limits during the open season for menhaden in the State shall be:

- i.** The daily trip limit shall be unlimited for licensees taking menhaden, or landing menhaden taken, by purse seine;
- ii.** The daily trip limit shall be unlimited for licensees taking menhaden, or landing menhaden taken, by gill net;
- iii.** The daily trip limit shall be unlimited for licensees taking menhaden, or landing menhaden taken, by pound net or wire pound net;
- iv.** The daily trip limit shall be unlimited for licensees taking menhaden, or landing menhaden taken, by trawl;
- v.** The daily trip limit shall be unlimited for licensees taking menhaden, or landing menhaden taken, by bait net; and
- vi.** The daily trip limit shall be unlimited for licensees taking menhaden, or landing menhaden taken, by other authorized gear not otherwise specified above.

**(c)** The Department shall close the menhaden season for each respective gear type, by giving not less than two days' notice of the projected date that the year's quota for that gear type will be landed.

**(d)** If the Commissioner, or his or her designee, has closed the season and if unanticipated events result in the quota not being landed by the projected date stated in the closure notice, then the Commissioner, or his or her designee, may reopen the season for a specified period of time upon two days' public notice.

**(e)** Public notice shall be provided by a posting on the Department's website and by email sent to all licensees under this subchapter. Each licensee shall, at the time of licensure, provide the Department with the licensee's email address to facilitate the provision of notice pursuant to this section.

**(f)** If the season for a particular gear type is closed because the quota amount allocated to that gear type has been harvested and landed, then:

- 1.** The holder of a Menhaden Landing License for that gear type or the holder of a Menhaden Personal Use and Limited Sale License may continue to land an incidental catch as established by the Atlantic States Marine Fisheries Commission, or by the Mid-Atlantic Fishery

Document:

N.J.A.C. 7:25-22.3

2. The holder of a Menhaden Dealer License may continue to accept incidental catch from the holder of a Menhaden Landing License or the holder of a Menhaden Personal Use and Limited Sale License, as established by a fishery management plan for menhaden; and
3. The incidental catch allowance shall be applied to the annual menhaden catch quota as provided by a fishery management plan for menhaden.

## History

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### HISTORY:

New Rule, R.2021 d.142, effective December 20, 2021.

See: 53 N.J.R. 297(a), 53 N.J.R. 2139(a)."

Former N.J.A.C. 7:25-22.3, Taking of Atlantic menhaden for bait, was recodified to N.J.A.C. 7:25-22.4.

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## James Boyle

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**From:** Kuhn, Kristopher <kkuhn@pa.gov>  
**Sent:** Wednesday, January 18, 2023 11:28 AM  
**To:** James Boyle  
**Subject:** FW: [External] Menhaden Addendum I State Implementation Plans  
**Attachments:** M22-126\_Addendum I Implementation Template.pdf

James,

See below for Pennsylvania's implementation plans for Addendum I to Amendment 3 and let me know if you need anything further.

### **Pennsylvania Amendment 3, Addendum I Implementation Plan for Atlantic Menhaden**

**Implementation Timeline** – In effect immediately upon ASMFC implementation.

**Commercial Fishery Management Measures** – There are no directed commercial fisheries in the Pennsylvania waters of the Delaware River and Estuary.

**Monitoring Requirements** – Pennsylvania does not conduct directed fishery independent monitoring for Atlantic Menhaden. Data regarding species occurrence, relative abundance, and seasonality of Atlantic menhaden are collected if encountered during non-targeted fisheries monitoring.

Thanks,

Kris

**Kristopher M. Kuhn** | Director  
Pennsylvania Fish and Boat Commission | Bureau of Fisheries  
595 E. Rolling Ridge Dr. | Bellefonte, PA 16823  
Office Phone: 814-359-5115 | Mobile: 814-571-4872  
[www.fishandboat.com](http://www.fishandboat.com)

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**From:** James Boyle <JBoyle@asmfc.org>  
**Sent:** Friday, December 16, 2022 4:11 PM  
**To:** ATLANTIC MENHADEN BOARD <atlmen\_bd@asmfc.org>  
**Subject:** [External] Menhaden Addendum I State Implementation Plans

***ATTENTION:** This email message is from an external sender. Do not open links or attachments from unknown senders. To report suspicious email, use the [Report Phishing button in Outlook](#).*

Good afternoon Atlantic Menhaden Management Board,

Please find attached a memo with a template for the state implementation plans for Addendum I to Amendment 3. As



STATE OF DELAWARE  
**DEPARTMENT OF NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL**

DIVISION OF FISH & WILDLIFE  
RICHARDSON & ROBBINS BUILDING  
89 KINGS HIGHWAY  
DOVER, DELAWARE 19901

FISHERIES  
SECTION

PHONE  
(302) 739-9914

## **Atlantic Menhaden Addendum I to Amendment 3 Implementation Plan**

December 19, 2022

### 1. Implementation Timeline

Delaware is already in compliance with the management measures in Addendum I under our current Atlantic Menhaden regulations and fishery management system.

### 2. Commercial Fishery Management Measures

- a. Delaware's current Atlantic Menhaden regulation allows its TAC to be changed whenever Delaware is required to do so under Addendum I to Amendment 3.
- b.
  1. Delaware does not divide its TAC by sector, fishery, or gear type.
  2. No regulation change required as the gears Delaware uses in its Atlantic Menhaden commercial fishery are still included in the Addendum I IC/SSF permitted gear types.

### 3. Monitoring Requirements

Delaware is not planning to change its current Atlantic Menhaden fishery monitoring.

## Maryland's Implementation Plan for Addendum I to Amendment 3 of the Interstate Fishery Management Plan for Atlantic Menhaden

January 3, 2023

### 1. Commercial Fishery Management Measures

- a) A mechanism to close the directed commercial fisheries in Maryland is already in place, and can be found in section C(2) of the current regulation (see below).
- b) A mechanism to adjust Maryland's yearly quota as required by ASMFC is already in place, and can be found in section A (1) of the current regulation (see below).
- c) A mechanism to enable the transfer of unused quota between states, if warranted, and the ability to adjust Maryland's quota as it relates to the transfer of quota is in place through section A (1) of the current regulation (see below).
- d) A mechanism allowing pound-for-pound pay back to reduce the subsequent year's quota to account for any overharvest of Maryland's current year quota is already in place, and can be found in section A(2) of the current regulation (see below).
- e) A mechanism for an incidental catch and small-scale fishery provision following the harvest of Maryland's quota and closure of the directed fisheries are already in place. The closure and bycatch limits would be announced through a public notice as established in sections B and F of the attached regulation (see below). The landing limits by gear in i. through iv. below will be established via public notice if Maryland's quota is met.

i. Maryland will allow pound net fishermen to apply for a Menhaden Bycatch Landing Permit, which will allow the harvest of up to 6,000 pounds per day. Details of requirements and limitations of the permit are set forth in section D of current regulation (see below). All other gear, and non-permitted pound net fishermen, will be restricted to a 1,500 pound per day limit after the open season closes. All gear currently being used for menhaden in Maryland are in either the small scale or non-directed category (purse seining is not legal in Maryland).

ii. Only multiple fishermen with a Menhaden Bycatch Landing permit harvesting from one vessel will be allowed to utilize the 12,000 pound limit provision, and only pound net fishermen may apply for the permit.

iii. During the bycatch period harvesters will be limited to landing menhaden once per day or trip, whichever is longer.



- v. The use of multiple carrier vessels to land more than the established limits by one harvester will not be permitted.
- f) Maryland is not eligible to participate in the episodic events set aside program, which sets aside 1% of the coast wide TAC for the New England states (Maine - New York) because they have sporadic availability of menhaden in their waters. This allows access to the fish in years when fish are present.
- g) The Chesapeake Bay reduction fishery harvest cap only applies to Virginia, since Maryland does not have a reduction fishery.

## **2. Monitoring Requirements**

- a) Maryland currently has a timely reporting system for monitoring the quota in place through section E within the current regulation (see below).
- b) Maryland currently has a timely reporting system for monitoring the bycatch fishery in place through section E within the current regulation (see below).
- c) Maryland will continue to collect age and length samples through the existing Maryland Onboard Pound Net Survey, and supplement this sampling with fish dealer sampling when necessary to meet the one 10 fish sample per 200 metric tons of menhaden landed requirement.
- d) Maryland will continue to require pound net fishermen to report the number of nets fished and the pounds of menhaden landed per day

### Maryland's current Atlantic Menhaden Regulation

#### [COMAR 08.02.05.07](#)

##### .07 Atlantic Menhaden.

##### A. Quota.

(1) The annual total allowable landings of Atlantic menhaden for the commercial fishery is set by the Atlantic States Marine Fisheries Commission and shall be published through a public notice issued in accordance with §F of this regulation.

(2) Any annual overages of the quota will be deducted from the subsequent year's quota.

B. Seasons. A public notice shall be issued in accordance with §F of this regulation when the quota and season are approved by the Atlantic State Marine Fisheries Commission.

##### C. Commercial Catch Limits.

(1) Prior to the State quota in §A of this regulation being met or exceeded, there is no catch limit for Atlantic menhaden.

(2) Upon the State quota being met or exceeded, the catch limit for Atlantic menhaden and the harvest rate at which an Atlantic menhaden bycatch allowance landing permit is required shall be established and may be modified through a public notice issued in accordance with §F of this regulation.

##### D. Atlantic Menhaden Bycatch Allowance Landing Permits.

(1) An individual may apply for an Atlantic menhaden bycatch allowance landing permit if, as of February 18, 2013, the individual had a pound net site registered with the Department.

(2) An individual may be issued only one Atlantic menhaden bycatch allowance landing permit.

(3) A permittee shall have in possession the Atlantic menhaden bycatch allowance landing permit when engaged in permitted activities.

(4) Operators.

- (a) An operator means an individual who is not a permittee and acts as an agent of a permittee.
- (b) The only person a permittee may use as the operator of their Atlantic menhaden bycatch allowance landing permit is the individual the permittee has designated as the authorized user of the permittee's commercial fishing license in accordance with Natural Resources Article, §4-701(k)(7), Annotated Code of Maryland.
- (c) An operator may only fish the pound nets that the permittee has:
  - (i) Registered in the permittee's name; and
  - (ii) Notified the Department as being active in accordance with Regulation .01C of this chapter.
- (d) When engaged in permitted activities, an operator shall be:
  - (i) In possession of the permittee's tidal fish license and Atlantic menhaden bycatch allowance landing permit; and
  - (ii) On the vessel named on the permittee's tidal fish license.
- (5) Atlantic menhaden bycatch allowance landing permits may not be transferred and are valid only for the named individual on the permit card or their operator as described in §D(4) of this regulation.
- (6) A permittee or a permittee's operator shall be on board any boat harvesting Atlantic menhaden under an Atlantic menhaden bycatch allowance landing permit.

#### E. Reporting.

(1) Reporting Requirements. In addition to the requirements of Natural Resources Article, §4-206, Annotated Code of Maryland:

- (a) Any Atlantic menhaden harvested from a pound net must be reported on the day of harvest in the manner specified by the Department; and
- (b) An Atlantic menhaden bycatch allowance landing permittee shall report in the manner specified by the Department.

#### (2) Reporting Penalties.

- (a) The Department may suspend the holder of an Atlantic menhaden bycatch allowance landing permit from participation in the menhaden fishery for up to 90 days per violation for failing to comply with §E(1)(b) of this regulation.
- (b) In addition to any other penalty, the Department may deny an application for an Atlantic menhaden bycatch allowance landing permit for failing to comply with §E(1) of this regulation during the previous season.
- (c) Prior to suspending a permit under this regulation or denying an application for a permit, the Department shall give the licensee notice of its intended action and an opportunity to appear at a hearing conducted in accordance with the contested case procedures set forth in State Government Article, Title 10, Subtitle 2, Annotated Code of Maryland, and COMAR 08.01.14.

#### F. General.

- (1) When the menhaden quota, established by the Atlantic States Marine Fisheries Commission, has been met, the Secretary may issue a public notice on the Fisheries Service website to modify the season and catch limits in compliance with the Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan.
- (2) The Secretary shall make a reasonable effort to disseminate a public notice issued under this section through various other media so that an affected individual has a reasonable opportunity to be informed.
- (3) A violation of the restrictions set by the Secretary in accordance with section is a violation of this regulation.

**COMMISSIONERS:**

JOSH KURTZ  
(PROXY: LYNN FEGLEY) (MD)  
Chairman Pro Tem

WAYNE FRANCE, (VA)  
Vice Chairman

PHIL L. LANGLEY (MD)  
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MARYLAND - VIRGINIA  
"Potomac River Compact of 1958"

**Potomac River Fisheries Commission**

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[www.prfc.us](http://www.prfc.us)



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**MEMORANDUM**

Date: January 23, 2023

To: ASMFC via James Boyle

From: PRFC via Martin L. Gary, Executive Secretary

Subject: Atlantic Menhaden Addendum I Implementation Template

1. Implementation Timeline: The Potomac River Fisheries Commission adopted PRFC Order 2023-06 on December 8, 2022 with an implementation date of January 1, 2023. This Order adoption brings PRFC into compliance with ASMFC's Atlantic Menhaden Addendum 1 fishery management parameters for PRFC's quota under the addendum.

2. Commercial Fishery Management Measures

a) If your jurisdiction includes its yearly menhaden quota in its regulations, please include the changes in language. PRFC Order 2023-06 is found below.

b) A mechanism for an incidental catch and small-scale fishery provision following the harvest of your jurisdiction's quota and closure of the directed fisheries.

The mechanism for implementation and monitoring of a small-scale fishery is included in PRFC Order 2023-06.

I. Indicate if your jurisdiction divides quota by sector, fishery, or gear type, and provide regulatory language.

The PRFC quota is not divided by sector or gear type. >99% of harvest comes from PRFC's pound net fishery.

II. Provide regulatory language to account for changes in IC/SSF permitted gear types. Under Addendum I, small-scale gears include: cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets. Non-directed gears include: pound nets, anchored/stake gillnets, drift gill net, trawls, fishing weirs, fyke nets, trammel nets, and floating fish traps.

### 3. Monitoring Requirements

Are included in PRFC's Order 2023-06.

updating the order date

**ORDER #2023-06**

## **COMMERCIAL ATLANTIC MENHADEN CATCH LIMITS AND RESTRICTIONS**

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**THE POTOMAC RIVER FISHERIES COMMISSION**, having found it necessary to comply with certain provisions of the Atlantic States Marine Fisheries Commission (ASMFC) Amendments 2 and 3, and Addendum I to the Interstate Fishery Management Plan (ISFMP) for Atlantic Menhaden and the provisions of Regulation I, Section 7(a)(2):

**HEREBY DECLARES AND ORDERS:** the catch limit for Atlantic menhaden provided for in Regulation III, Section 10(a) shall be 5,547,430 pounds. A weekly menhaden harvest call-in program will be imposed when 70 percent of the catch limit is projected to be landed. When the PRFC Atlantic menhaden catch limit is reached, all commercial fisheries shall be closed to all gear types.

**BE IT FURTHER DECLARED AND ORDERED:** When the commercial fisheries for Atlantic menhaden are closed, subject to the provisions of the ASMFC Amendment 2 and Addendum I to the IFMP for Atlantic Menhaden, PRFC commercial fishermen using stationary multi-species gear are permitted to possess and/or land no more than 6,000 pounds of Atlantic menhaden for a single vessel per day, which must be harvested by the licensee from his licensed net(s). In this case, stationary multi-species gears are defined as pound nets, anchored/staked gill nets, and fyke nets. Exception – a single vessel may land/possess no more than 12,000 pounds of Atlantic menhaden per day when there are two PRFC pound net licensees physically on board who each have at least one of their pound nets set and fishing and prior to the fishery being closed and the by-catch provisions being implemented, no more than 6,000 pounds of Atlantic menhaden are harvested from either of the licensees' nets.

**AND IT IS FURTHER DECLARED AND ORDERED:** this Order #2023-06 shall become effective January 1, 2023 shall supersede and repeal Order #2022-08 and remain in effect until December 31,-2023.



# COMMONWEALTH of VIRGINIA

*Marine Resources Commission*

*380 Ferwick Road*

*Building 96*

*Fort Monroe, VA 23651*

Travis A. Voyles  
Acting Secretary of Natural and  
Historic Resources

Jamie L. Green  
Commissioner

December 20, 2023

## MEMORANDUM

**TO:** James Boyle, FMP Coordinator  
*Atlantic States Marine Fisheries Commission*

**FROM:** Shanna Madsen, Virginia Technical Committee Representative  
*Virginia Marine Resources Commission*

**RE:** Addendum I to Amendment 3 Implementation Plan

The attached document describes the planned Virginia regulation change for Atlantic menhaden according to the Atlantic States Marine Fisheries Commission (ASMFC) Fishery Management Plan (FMP) for Atlantic Menhaden.

*An Agency of the Natural and Historic Resources Secretariat*

[www.mrc.virginia.gov](http://www.mrc.virginia.gov)

Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD

## 1. Implementation Timeline

Proposed changes to the regulation will be discussed at a public hearing at a Commission meeting in Virginia on February 28, 2023. If approved, the amended regulation will be effective as of March 1, 2023. Virginia's two largest sectors, the purse seine bait sector and the purse seine reduction sector are unable to begin fishing until May so the new quotas will take effect before those fisheries are open.

## 2. Commercial Fishery Management Measures

- a. The proposed regulation will include Virginia's new allocation percentage: 75.21%. The proposed language is below subject to Commission approval and edits.

### **4 VAC 20-1270-30. Total allowable landings for menhaden; allocation, accountability, overages, restrictions, closures, state-to-state transfers, and transfers between sectors.**

*A. Total allowable commercial landings for menhaden shall be equivalent to 75.21% of the annual total allowable catch (TAC) set by the Atlantic States Marine Fisheries Commission.*

- b. Virginia's quota is divided into three sectors: purse seine reduction, purse seine bait, and non-purse seine bait (includes non-directed and directed small-scale fisheries). The allocation percentages through those sectors are 90.04%, 8.38%, and 1.58%, respectively. The mechanism for closures is explained below in section F.

### **4 VAC 20-1270-30. Total allowable landings for menhaden; allocation, accountability, overages, restrictions, closures, state-to-state transfers, and transfers between sectors.**

*B. Total amount of allowable commercial landings in subsection A of this section shall be allocated as quotas among three sectors of the menhaden fishery in proportion to each sector's share of average landings from 2002 through 2011, as described in subdivision 1, 2, and 3 of this subsection.*

*1. The purse seine menhaden reduction sector shall be allocated a quota that is 90.04% of the allowable commercial menhaden landings.*

*2. The purse seine menhaden bait sector shall be allocated a quota that is 8.38% of the allowable commercial menhaden landings.*

*3. The non-purse seine menhaden bait sector shall be allocated a quota that is 1.58% of the allowable commercial menhaden landings.*

....

*F. It shall be unlawful to harvest or land in Virginia, any menhaden after the Commissioner of the Marine Resources Commission (commissioner) projects and announces that 100% of the total allowable landings for any sector has been taken. The commissioner may reopen a fishery sector if, after all reports as described in 4VAC20-1270-60 have been received, the portion of the total allowable catch has not been harvested by that sector.*

*1. The commissioner shall announce the date of closure when the total allowable landings for the purse seine menhaden reduction sector is projected to be taken.*

*2. The commissioner shall announce the date of closure when the total allowable landings for the purse seine menhaden bait sector is projected to be taken.*

*3. The commissioner shall announce the date of closure when the total allowable commercial landings for the non-purse seine menhaden bait sector is projected to be taken. Once this closure is announced, any person licensed in the non-purse seine menhaden bait sector may possess and land up to 6,000 pounds of menhaden per calendar day as bycatch. Any two persons licensed in the non-purse seine menhaden bait sector may possess and land up to 12,000 pounds of menhaden bycatch when working together from the same vessel using stationary multi-species gear per the Atlantic States Marine Fisheries Commission incidental catch provision.*

- c. There are no regulatory adjustments needed for the changes in the permitted gear types.

**3. Monitoring Requirements**

- a. There are no regulatory adjustments needed for the monitoring requirements.



ROY COOPER  
*Governor*

ELIZABETH S. BISER  
*Secretary*

KATHY B. RAWLS  
*Director*

## NORTH CAROLINA REPORT FOR THE IMPLEMENTATION OF ADDENDUM I TO AMENDMENT 3 TO THE INTERSTATE FISHERY MANAGEMENT PLAN FOR ATLANTIC MENHADEN

January 1, 2023

### Introduction

This report details the implementation plan for North Carolina to meet the Atlantic States Marine Fisheries Commission (ASMFC) requirements of Addendum I to Amendment 3 to the Interstate Fishery Management Plan for Atlantic Menhaden. Addendum I requires each state to submit implementation plans by January 1, 2023. Addendum I will be fully implemented on May 1, 2023, however all menhaden landings for the 2023 calendar year will count toward the quota allocation beginning January 1, 2023. The TAC will be managed on a jurisdictional allocation basis. The 2023 quota allocation for North Carolina is 859.93 mt (1,895,817 lb) and makes up 0.37 percent of the total coastwide TAC of 231,214.50 mt (M22-122\_Revised).

### 1. Implementation Timeline

- a. North Carolina will implement management under Addendum I to Amendment 3 effective January 1, 2023. Many of the requirements for Addendum I are currently being met for North Carolina through the Amendment 3 Implementation Plan (2018).

### 2. Commercial Fishery Management Measures

- a. North Carolina does not include its yearly menhaden quota in its regulations. The mechanism to close the directed commercial bait fishery is through the rule 15A NCAC 03M .0512 which will be used to close (via proclamation) once 90% of the quota allocation is reached. A notice of closure will be submitted to the ASMFC at the time if occurs and will be documented in the North Carolina annual compliance report.
- b. The mechanism to manage for a 6,000 lb trip limit per calendar day for non-directed and small-scale fisheries following the harvest of the state's quota allocation and closure of directed fisheries will be through proclamation authority provided by 15A NCAC 03M .0512, allowing the Division director to set a trip limit per fishing operation per day including authorization of two individuals, working stationary multispecies gear from the same vessel, to work together and land a 12,000 lb limit per calendar day. It will be made clear in this proclamation that the vessel is part of the operation, and it is unlawful to make multiple trips in one calendar day. The 6,000 lb trip limit will also be applied through 15A NCAC 03M .0512 for operations of the haul seine fishery that does employ carrier



vessels. The mechanism to close the directed commercial bait fishery is through the rule 15A NCAC 03M .0512 which will be used to close (via proclamation) once 90% of the quota allocation is reached. A notice of closure will be submitted to the ASMFC at the time it occurs and will be documented in North Carolina annual compliance report.

- i. North Carolina will not divide menhaden quota by sector, fishery, or gear type.
- ii. The mechanism to implement IC/SSF permitted gear types under Addendum I will be through proclamation authority from 15A NCAC 03M .0512. Small-scale gears include cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets. Non-directed gears include pound nets, anchored/state gill nets, drift gill net, trawls, fishing weirs, fyke nets, trammel nets, and floating fish traps.

### **15A NCAC 03M .0512 COMPLIANCE WITH FISHERY MANAGEMENT PLANS**

(a) In order to comply with management requirements incorporated in Federal Fishery Management Council Management Plans or Atlantic States Marine Fisheries Commission Management Plans or to implement state management measures, the Fisheries Director may, by proclamation, take any or all of the following actions for species listed in the Interjurisdictional Fisheries Management Plan:

- (1) Specify size;
- (2) Specify seasons;
- (3) Specify areas;
- (4) Specify quantity;
- (5) Specify means and methods; and
- (6) Require submission of statistical and biological data.

(b) Proclamations issued under this Rule shall be subject to approval, cancellation, or modification by the Marine Fisheries Commission at its next regularly scheduled meeting or an emergency meeting held pursuant to G.S. 113-221.1.

*History Note: Authority G.S. 113-134; 113-182; 113-221; 113-221.1; 143B-289.52;*

*Eff. March 1, 1996;*

*Amended Eff. October 1, 2008.*

*Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. January 9, 2018*

### **3. Monitoring Requirements**

- a. North Carolina is not proposing any changes to its biological monitoring program.

## James Boyle

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**From:** Mel Bell <BellM@dnr.sc.gov>  
**Sent:** Tuesday, January 3, 2023 12:15 PM  
**To:** James Boyle  
**Cc:** CHRIS MCDONOUGH; BEN DYAR  
**Subject:** [External] RE: Menhaden Addendum I State Implementation Plans

Good morning James,

I hope you were able to enjoy some time off for the holidays, and not freeze to death. We had a bit of a cold snap here but are back to a more normal weather pattern for the moment. Just playing catch-up today on a number of things.

Since SC has no directed commercial fishery for Atlantic menhaden at this time, and no specific State Laws or Regulations pertaining to menhaden, our implementation of new Addendum I requirements is very simple, and already in place. Let me know if this is sufficient for us.

Thanks.  
mb

### **South Carolina Amendment 3, Addendum I Implementation Plan for Atlantic Menhaden**

**1. Implementation Timeline** – In effect immediately upon Commission implementation

**2. Commercial Fishery Management Measures** – No directed commercial fishery. Incidental commercial landings are captured through existing Commercial Wholesale Dealer reporting system or Commercial Bait Dealer reporting system if they occur.

**3. Monitoring Requirements** – No directed fishery independent data collection efforts in place. Data regarding abundance, size, seasonality, etc. of menhaden possible when encountered through any existing fisheries monitoring/research projects if menhaden are collected.

---

**From:** James Boyle <JBoyle@asmfc.org>  
**Sent:** Friday, December 16, 2022 4:11 PM  
**To:** ATLANTIC MENHADEN BOARD <atlmen\_bd@asmfc.org>  
**Subject:** Menhaden Addendum I State Implementation Plans

Good afternoon Atlantic Menhaden Management Board,

Please find attached a memo with a template for the state implementation plans for Addendum I to Amendment 3. As a

## James Boyle

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**From:** Knowlton, Kathy <Kathy.Knowlton@dnr.ga.gov>  
**Sent:** Tuesday, January 10, 2023 1:02 PM  
**To:** James Boyle  
**Subject:** [External] RE: Menhaden Addendum I State Implementation Plans

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi James. Apologies as this is a day later getting to you than I intended. We had a biologist out of office yesterday that I wanted to double check wording with. My leadership has approved the sentences below. Do you need them in a letterhead memo? Thank you!

### Georgia Amendment 3, Addendum I Implementation Plan for Atlantic Menhaden

**1. Implementation Timeline** – In effect immediately upon Commission implementation.

**2. Commercial Fishery Management Measures** – There is no directed commercial fishery in Georgia. Incidental commercial landings would be captured through existing commercial landings reports.

**3. Monitoring Requirements** – There are no directed fishery independent data collection efforts in place in Georgia. Data regarding abundance, size, seasonality, etc. of menhaden are collected when menhaden are encountered through existing fisheries monitoring/research projects.

Kathy Knowlton  
Fisheries Management & Programmatic Support  
[Coastal Resources Division](#)  
(912) 264-7218 | D: (912) 262-3122  
[Facebook](#) • [Twitter](#) • [Instagram](#)  
[Buy a hunting or fishing license today!](#)

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*A division of the*  
GEORGIA DEPARTMENT OF NATURAL RESOURCES

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**From:** James Boyle <JBoyle@asmfc.org>  
**Sent:** Friday, January 6, 2023 4:41 PM  
**To:** Knowlton, Kathy <Kathy.Knowlton@dnr.ga.gov>  
**Subject:** FW: Menhaden Addendum I State Implementation Plans

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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**From:** Mel Bell <[BelLM@dnr.sc.gov](mailto:BelLM@dnr.sc.gov)>  
**Sent:** Tuesday, January 3, 2023 12:15 PM  
**To:** James Boyle <[JBoyle@asmfc.org](mailto:JBoyle@asmfc.org)>

## Florida Implementation Plan for Addendum I to Amendment 3 of the ISFMP for Atlantic Menhaden

### 1. Implementation Timeline

*Currently implemented. No regulatory changes are needed to implement the provisions of Addendum I in Florida's state waters.*

### 2. Commercial Fishery Management Measures

a) If your jurisdiction includes its yearly menhaden quota in its regulations, please include the changes in language.

*N/A.*

b) A mechanism for an incidental catch and small-scale fishery provision following the harvest of your jurisdiction's quota and closure of the directed fisheries.

I. Indicate if your jurisdiction divides quota by sector, fishery, or gear type, and provide regulatory language.

*Florida does not divide the state quota into sector or gear type allocations, but can monitor commercial landings by gear type.*

II. Provide regulatory language to account for changes in IC/SSF permitted gear types. Under Addendum I, small-scale gears include: cast nets, traps (excluding floating fish traps), pots, haul seines, hook and line, bag nets, hoop nets, hand lines, and bait nets. Non-directed gears include: pound nets, anchored/stake gillnets, drift gill net, trawls, fishing weirs, fyke nets, trammel nets, and floating fish traps.

*In Florida, all entangling nets, such as trammel nets and gillnets, are prohibited in Florida's state waters.*

*Fyke nets or pound nets are not permitted gears for the harvest of saltwater fish in Florida's state waters.*

*Purse seines are legal gear in Florida's state waters; however, purse seines used within nearshore and inshore Florida waters (inside a line 3 miles seaward of the coast along the Gulf of Mexico or one mile seaward of the coast along the Atlantic Ocean) may contain no more than 500 square feet of mesh area. Purse seines with more than 500 square feet of mesh area may only be used within state waters outside of inshore and nearshore waters. While Florida's regulations do not specifically prohibit the use of a purse seine as a harvesting gear in the small-scale directed fishery, this gear restriction could be incorporated into an Executive Order closing the directed fishery if the quota is projected to have been met.*

*Relevant rule language is attached.*

### 3. Monitoring Requirements

a) If your jurisdiction is proposing changes to your biological monitoring program, please include the proposed changes.

*No changes are required to Florida's biological monitoring programs to implement the changes in Addendum I.*

# Florida State Regulations and Laws Relevant to Implementation of Addendum I to the Interstate Fishery Management Plan for Atlantic Menhaden

## Trammel net regulations

### **68B-4.0081 Statewide Net Gear Specifications; Soaking Requirements; Definitions; Cast Net Specifications**

(2)(a): The use or placement in the water of any gill or entangling nets of any size is prohibited.

### **68B-4.002 Gear Definitions**

(3) “Entangling net” means a drift net, trammel net, stab net, or any other net which captures saltwater finfish, shellfish, or other marine animals by causing all or parts of heads, fins, legs, or other body parts to become entangled or ensnared in the meshes or in pockets of the net. This term does not include a cast net.

## Purse seine regulations

### **68B-4.0083 Food Fish: Gear and Other Restrictions; Use of Explosives to Kill Fish Prohibited; Certain Uses of Frame Nets Prohibited; Stop Netting Prohibited; Possession of Certain Proscribed Nets Prohibited; Use of Chemicals Prohibited.**

(1)(c) No person may take food fish within or without the waters of the state with a purse seine, purse gill net, or other net using rings or other devices on the lead line thereof, through which a purse line is drawn, or pound net, or have any food fish so taken in his or her possession for sale or shipment. The provisions of this paragraph shall not apply to shrimp nets or to pound nets or purse seines when used for the taking of tuna or menhaden fish only.

### **68B-4.0081 Statewide Net Gear Specifications; Soaking Requirements; Definitions; Cast Net Specifications.**

(2)(c) No person shall take or harvest, or attempt to take or harvest, any marine life in Florida waters with any net that is larger than 500 square feet in mesh area that has not been authorized by rule of the Commission. The use of a shrimp trawl, purse seine, jellyfish paired trawl, or calico scallop otter trawl that is larger than 500 square feet in mesh area, outside nearshore and inshore waters, shall be considered so authorized for purposes of this paragraph.

...

(3) The following net gear specifications shall apply in nearshore and inshore Florida waters:

(a) No person shall fish with, set, or place in the water any net with a mesh area greater than 500 square feet.

### **68B-2.001 General Definitions.**

As used in Division 68B, F.A.C.:

(17) “Nearshore and inshore Florida waters” means all Florida waters inside a line three nautical miles seaward of the coastline along the Gulf of Mexico and inside a line one nautical mile seaward of the coastline along the Atlantic Ocean.

## Fyke net regulations

### **68B-4.020 Saltwater Fish Traps.**

(1) It is unlawful for any person to fish with, set, or place in the waters of the state any trap other than those listed in this subsection.

(a) A blue crab trap authorized by and used according to the requirements of Rule Chapter 68B-45, F.A.C.

- (b) A spiny lobster trap authorized by and used according to the requirements of Rule Chapter 68B-24, F.A.C.
- (c) A stone crab trap authorized by and used according to the requirements of Rule Chapter 68B-13, F.A.C.
- (d) A black sea bass trap authorized by and used according to the requirements of paragraph 68B-14.005(1)(b), F.A.C.
- (e) A shrimp trap authorized by and used according to the requirements of paragraph 68B-31.007(2)(e), F.A.C.
- (f) A pinfish trap not exceeding 2 feet in any dimension, with a throat or entrance not exceeding 3 inches in height by 3/4 inch in width.
- (g) A trap authorized for the harvest of freshwater fish by Rule Chapter 68A-23, F.A.C.
- (2) It is unlawful for any person to land, take, sell, or offer for sale any saltwater fish caught in state waters by any trap other than a trap specified in subsection (1).

*Rulemaking Authority Art. IV, Sec. 9, Fla. Const. Law Implemented Art. IV, Sec. 9, Fla. Const. History—New 3-1-05.*

## Executive Order Authority

### Section [120.81](#), Florida Statutes: Exceptions and special requirements; general areas.—

(5) HUNTING AND FISHING REGULATION.—Agency action which has the effect of altering established hunting or fishing seasons, or altering established annual harvest limits for saltwater fishing if the procedure for altering such harvest limits is set out by rule of the Fish and Wildlife Conservation Commission, is not a rule as defined by this chapter, provided such action is adequately noticed in the area affected through publishing in a newspaper of general circulation or through notice by broadcasting by electronic media.

### Rule [68-1.009](#), Florida Administrative Code: Delegations of Authority to the Executive Director

Under paragraph 22 of the Delegations of Authority [incorporated by reference](#) in Rule 68-1.009, Florida Administrative Code, the Executive Director of the Florida Fish and Wildlife Conservation Commission may issue executive orders to manage or regulate fish and wildlife in exigent circumstances. Relevant regulatory language follows:

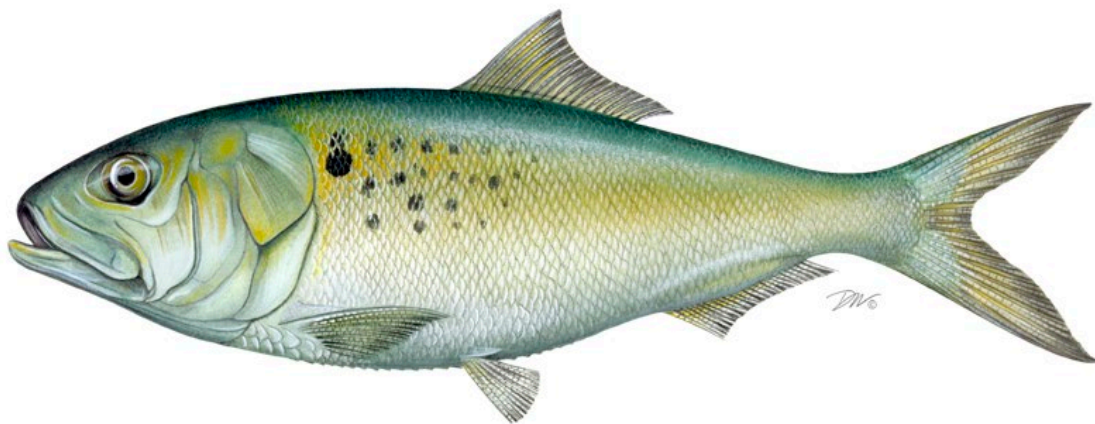
22. The Executive Director may perform other administrative actions, such as, but not limited to, issuing executive orders pursuant to section 120.81(5), F.S., issuing executive orders when necessary to manage or regulate fish and wildlife in exigent circumstances, issuing executive orders in response to declarations of emergency by the Governor, and other administrative actions as may be necessary to supervise, direct, conduct, and administer the operations of the Commission pursuant to its duties under Article IV, Section 9, Florida Constitution, or as authorized or required by law.

# Atlantic States Marine Fisheries Commission

Technical Addendum I

to

## ADDENDUM I TO AMENDMENT 3 OF THE ATLANTIC MENHADEN INTERSTATE FISHERY MANAGEMENT PLAN



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

February 2023



## INTRODUCTION

At the November 2022 Atlantic Menhaden Board (Board) meeting, the Board approved Addendum I to Amendment 3 to the Interstate Fishery Management Plan for Atlantic Menhaden, which allocates a baseline quota of 0.01% to Pennsylvania; 0.25% to South Carolina, Georgia, Connecticut, Delaware, North Carolina, and Florida; and 0.5% to Maine, New Hampshire, Massachusetts, Rhode Island, New York, New Jersey, Maryland, Potomac River Fisheries Commission, and Virginia; and then allocates the rest of the Total Allowable Catch (TAC) based on landings from 2018, 2019, and 2021. However, Addendum I inadvertently did not include text to amend the time period used to redistribute relinquished quota.

## STATEMENT OF THE PROBLEM

Section 4.3.2 (Quota Allocation) of Amendment 3 includes language which specifies how quota is distributed when a state relinquishes quota before the start of the fishing year. Specifically, it states:

*States, on an annual basis, have the option to relinquish part, or all, of their fixed minimum quota. States must declare, to the FMP Coordinator, any relinquished quota by December 1<sup>st</sup> of the preceding fishing year and the amount that is being relinquished. Any quota that is relinquished by a state will be redistributed to the other jurisdictions (i.e. those which have not relinquished quota) based on landings from 2009-2011.*

Section 3.1 (Commercial Allocation) of Addendum I replaces Amendment 3 Section 4.3.2, but inadvertently did not include language to update the time period used to redistribute relinquished quota from 2009-2011 to 2018, 2019, and 2021, as is the guidance in Amendment 3. The November 2017 Atlantic Menhaden Board proceedings, where Amendment 3 was approved, clearly state the Board's intention was for relinquished quota to be redistributed according to whichever timeframe was selected in section 4.3.2. The following motion was approved at that meeting:

*Move that states must declare any relinquished quota by December 1st of the previous year. States have the ability to declare how much of their quota to relinquish. Any quota that is relinquished by a state is redistributed to the other jurisdictions based on historic landings from the time period selected by the Board in this Amendment (Page 110). Motion by Pat Keliher; second by David Borden. Motion carried (Page 111).*

Because the Board did not consider a new method to allocate the relinquished quota in Addendum I, the time period used to redistribute relinquished quota should have automatically changed to the new timeframe approved by the Board in section 4.3.2.

## **PROPOSED MANAGEMENT MEASURES**

The following paragraph replaces the third paragraph in Section 3.1.2 of Addendum I to Amendment 3 (*Timeframe to base allocating the remaining TAC*):

*States, on an annual basis, have the option to relinquish part, or all, of their fixed minimum quota. States must declare, to the FMP Coordinator, any relinquished quota by December 1<sup>st</sup> of the preceding fishing year and the amount that is being relinquished. Any quota that is relinquished by a state will be redistributed to the other jurisdictions (i.e. those which have not relinquished quota) based on landings from 2018, 2019, and 2021.*

## **COMPLIANCE**

This Technical Addendum will become effective on \_\_\_\_\_.



# Atlantic States Marine Fisheries Commission

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703.842.0740 • 703.842.0741 (fax) • [www.asmf.org](http://www.asmf.org)

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## MEMORANDUM

**TO:** Atlantic Menhaden Management Board  
**FROM:** James Boyle, FMP Coordinator  
**DATE:** January 24, 2023  
**SUBJECT:** Recommendation for Technical Addendum to Amendment 3

Addendum I to Amendment 3 to the Interstate Fishery Management Plan for Atlantic Menhaden allocates a baseline quota of 0.01% to Pennsylvania; 0.25% to South Carolina, Georgia, Connecticut, Delaware, North Carolina, and Florida; and 0.5% to the remaining jurisdictions, and then allocates the rest of the Total Allowable Catch (TAC) based on landings from 2018, 2019, and 2021.

However, Addendum I did not include language to modify the redistribution of relinquished quota from the timeframe specified in Amendment 3, which was 2009-2011. Based on the proceedings from the November 2017 Board Meeting, where Amendment 3 was approved, the Board's intention was for relinquished quota to be redistributed according to whichever timeframe was selected in section 4.3.2. Therefore, Staff is recommending a technical addendum to revise the oversight and redistribute relinquished quota according to the updated allocation timeframe from Addendum I. Per the ISFMP Charter, a technical addendum can be used to make technical corrections to an approved FMP, amendment, or addendum without use of the public review process. This flexibility is for the correction of accidental omissions, erroneous inclusions, and/or to address non-substantive editorial issues.

For questions, please contact me at [jboyle@asmfc.org](mailto:jboyle@asmfc.org) or (703)-842-0740.

M23-11

# Atlantic States Marine Fisheries Commission

## MEETING OVERVIEW

### Shad and River Herring Management Board

February 2, 2023

8:30 a.m. – 9:30 a.m.

Hybrid Meeting

Chair: Lynn Fegley (MD) Assumed Chairmanship: 2/23	Technical Committee Chair: Brian Neilan (NJ)	Law Enforcement Committee Representative: Thomas Burrell (PA)
Vice Chair: Vacant	Advisory Panel Chair: Pam Lyons Gromen	Previous Board Meeting: November 8, 2022
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 November 8, 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. Consider North Carolina American Shad Sustainable Fishery Management Plan Update (8:40-8:55 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.
- North Carolina submitted an updated SFMP for TC review and Board consideration at the 2023 Winter Meeting (**Supplemental Materials**).
- The TC reviewed this SFMP update and recommendation the plan for Board approval (**Supplemental Materials**).

#### Presentations

- American Shad Sustainable Fishery Management Plan Update for Board Consideration by B. Neilan

#### Board Actions for Consideration

- Consider approval of updated SFMP for North Carolina

#### 5. Update on 2023 River Herring Benchmark Stock Assessment (8:55-9:05 a.m.)

##### Background

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

##### Presentations

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

#### 6. Consider Fishery Management Plan Review and State Compliance for the 2021 Fishing Year (9:05-9:20 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 fishing year, state compliance reports, and *de minimis* requests

#### 7. Review and Populate Advisory Panel Membership (9:20-9:25 p.m.)

##### Background

- There are two new nominations to the Shad and River Herring Advisory Panel from Connecticut—Stephen Gephard, a recreational angler and retired CT DEEP biologist (**Briefing Materials**), and William Lucey, the Long Island Soundkeeper for Save the Sound (**Supplemental Materials**).

##### Presentations

- Nomination by T. Berger

##### Board Actions for Consideration

- Approve Shad and River Herring Advisory Panel Nominations

#### 8. Elect Vice-Chair

#### 9. Other Business/Adjourn

## **Shad & River Herring Technical Committee Meeting Summary**

January 19, 2023

**Technical Committee Members:** Brian Neilan (Chair, NJ), Wes Eakin (Vice-Chair, NY), Brad Chase (MA), Ingrid Braun (PRFC), Jeremy McCargo (NC), Ken Sprankle (USFWS), Patrick McGee (RI), Ruth Haas-Castro (NOAA), Matthew Jargowsky (MD), Patrick McGrath (VA), Jim Page (GA), Conor O'Donnell (NH), Holly White (NC), Joe Swann (DC), Johnny Moore (DE), Ted Castro-Santos (USGS)

**ASMFC Staff:** James Boyle and Katie Drew

The TC met via conference call on January 19, 2023 to review an update to the North Carolina Sustainable Fishery Management Plan (SFMP) for American shad and to consider a proposal from New Hampshire to reopen its river herring fishery.

The next SFMPs to be reviewed are from Connecticut (Shad) and the Potomac River Fisheries Commission (Shad).

### **1. North Carolina Sustainable Fishery Management Plan (SFMP) for American shad**

Holly White presented the North Carolina SFMP for American shad, which proposed updates to some sustainability metrics and harvest seasons. Some notable changes include updating the Albemarle Sound-Roanoke River Female CPUE and relative fishing mortality (F) metrics to align with Independent Gill Net Survey methodology, and adding recreational harvest data to the relative F measurements in the Tar-Pamlico, Neuse, and Cape Fear Rivers. Additionally, a Juvenile Abundance Index was added to the Albemarle Sound-Roanoke River system sustainability metrics, which will trigger management if it exceeds the threshold for three consecutive years and is based on a fixed time series of 1996 to 2021. A full summary of the changes is included in Table 1. **The TC recommended the updated plan for approval by consensus.**

### **2. New Hampshire Proposal to Reopen the River Herring Fishery**

Conor O'Donnell presented the proposal to reopen the river herring fishery, which was closed in 2021 due to low spawning run counts in 2019 and 2020. The proposal gives three reasons for the low run counts:

- 1) Low water temperatures during the early part of spawning season. Once water temperatures reached favorable levels river flows were significantly decreased.
- 2) Equipment failure and fishway modifications at the Cocheco River fishway led to loss of efficiency and decreased river herring passage. Many more river herring were observed in the

fishway but could not be accurately counted due to poor flow within the modified fishway, resulting in inaccurate electronic fish counting equipment.

3) Fish passage counts at the Pickpocket Dam fishway on the Exeter River were low despite thousands of ascending river herring observed in the vicinity of the former head-of-tide Great Dam and fishway (removed in 2016). The Pickpocket Dam is located 13.4 km upstream of the former Great Dam location. The reasoning behind such low counts is that the majority of river herring are utilizing restored spawning habitat between the former Great Dam and Pickpocket Dam and not accessing the habitat above Pickpocket Dam fishway where the electronic counting station was installed.

In response, New Hampshire changed the monitoring method on the Exeter River to use time series counts at the former Great Dam location and restored the Cocheco River fishway to a previous version, which resulted in the fishery-independent target being exceeded in 2021 and 2022.

The TC noted their recommendation to maintain fishery closures until the sustainability metrics have been met for five consecutive years. However, the TC requested that the New Hampshire SFMP be updated to include the new monitoring methods on the Exeter River with the intention of reevaluating the proposal when the TC can review the procedure in greater detail. **The TC plans to evaluate the revised proposal for Board consideration later in 2023.**

Table 1. Summary Changes to Sustainability Parameters by System from Prior NC SFMP (2018–2022) and Proposed NC SFMP(2023–2027).

<b>System/Sustainability Parameter</b>	<b>Prior SFMP (2018–2022)</b>	<b>Proposed SFMP (2023–2027)</b>	<b>Trigger Management?</b>
<b><u>Albemarle Sound-Roanoke River</u></b>			
IGNS Female CPUE (changed slightly additional data included)	Uses all mesh sizes, float and sink nets, female shad only Jan–May, Zone II only.	Changes: Sink nets dropped to match new IGNS methodology.	Yes, by itself if exceeds threshold 3 consecutive years. Threshold based on fixed time series 2000–2017.
Relative F (combines commercial landings and IGNS CPUE) (changed slightly additional data included)	Used only gill net landings and only IGNS meshes equivalent to commercial sector, IGNS same months as commercial harvest season (e.g. 2014–2022 IGNS used March data only).	Changes: Uses all commercial female roe landings from all gears, IGNS now all meshes females, Jan–May, Zone II, float nets only to match new IGNS methodology.	Yes, by itself if exceeds threshold 3 consecutive years. Threshold based on fixed time series 2002–2017.
Roanoke River Electrofishing (no change)	Female CPUE from WRC Roanoke River electrofishing survey.	No change.	No. Must be used in conjunction with a second index for triggering management action. Threshold based on fixed time series 2001–2017.
Juvenile Abundance Index (new metric)	Did not have one.	New since 2020 coastwide assessment.	Yes, by itself if exceeds threshold 3 consecutive years. Threshold based on fixed time series 1996–2021.
<b><u>Tar-Pamlico and Neuse Rivers</u></b>			
WRC Electrofishing index female only spawning grounds	Female CPUE from WRC electrofishing survey on Tar-Pamlico and Neuse rivers.	No change.	Yes, by itself if exceeds threshold 3 consecutive years. Threshold based on fixed time series 2000–2017.
Relative F (combines commercial landings and electrofishing CPUE) (changed slightly additional data included)	Female CPUE from WRC electrofishing survey on Tar-Pamlico and Neuse rivers with commercial landings.	Changes: Added recreational harvest to the commercial landings. Relative F unit represented as number of fish not pounds.	Yes, by itself if exceeds threshold 3 consecutive years. Threshold based on fixed time series 2012–2022.
<b><u>Cape Fear River</u></b>			



WRC Electrofishing index female only spawning grounds (changed slightly dropped sampling site from CPUE calculation)	Female CPUE from WRC electrofishing survey on Cape Fear River.	Changes: Dropped sampling site at LD-3 from analysis.	Yes, by itself if exceeds threshold 3 consecutive years. Threshold based on fixed time series 2001–2017.
Relative F (combines commercial landings and electrofishing CPUE) (changed slightly additional data included)	Female CPUE from WRC electrofishing survey on Cape Fear River with commercial landings.	Changes: Added recreational harvest to the commercial landings. Dropped sampling site from WRC electrofishing CPUE. Relative F unit represented as number of fish not pounds.	Yes, by itself if exceeds threshold 3 consecutive years. Threshold based on fixed time series 2011–2022, no value for 2012.
<b>Harvest Season</b>	<b>Prior SFMP (2018–2022)</b>	<b>Proposed SFMP (2023–2027)</b>	<b>Purpose for Change?</b>
<b><u>Albemarle Sound-Roanoke River</u></b>			
Commercial	Mar 3–Mar 24	Feb 15–Apr 14 for 2023. Could be allowed anytime Jan 1–April 14 depending on striped bass regulations and JAI, IGNS CPUE, and relative F metric. Work group still sets season annually depending on review of metrics.	Additional harvest days due to shortened season b/c of striped bass quota being met. Allows harvest from gears (pound net runaround gill net) other than float nets. Float nets still allowed ONLY Mar 3–Mar 24. Stock status Albemarle Sound is not overfishing and not depleted based on 2020 ASMFC stock assessment.
Recreational	1-fish American shad within 10-fish shad aggregate	No change in possession limit	Recreational harvest insignificant. No reliable estimate of recreational harvest.
<b><u>Tar-Pamlico and Neuse Rivers</u></b>			
Commercial	Feb 15–April 14	Feb 15–Apr 14 for 2023. Could be allowed anytime Feb 15–April 14 depending on CPUE, and relative F metric performance. Work group still sets season annually depending on review of metrics.	Provides language for management flexibility.

Recreational	Tar-Pam 10-fish American shad or in aggregate, Neuse 1-fish within 10-fish shad aggregate	No change	
<b><i>Cape Fear River</i></b>			
Commercial	Feb 20–April 11	Feb 20–Apr 11 for 2023. Could be allowed anytime Feb 20–April 11 depending on IGNS CPUE, and relative F metric performance. Work group still sets season annually depending on review of metrics.	Provides language for management flexibility.
Recreational	5-fish American shad within 10-fish aggregate	No change	
<b><i>Pee Dee River</i></b>			
Recreational	10-fish American shad or in aggregate	No change	Complements SC management.
<b><i>All Other Internal Waters</i></b>			
Commercial	Feb 15–April 14	Feb 15–Apr 14 for 2023. Could be allowed anytime Feb 15–April 14 depending on review of metrics.	Provides language for management flexibility.
Recreational	10-fish American shad or in aggregate	1-fish American shad limit within 10-fish shad aggregate	Mirrors 1-fish limit in inland waters. WRC rule implemented 2019.

# **North Carolina American Shad Sustainable Fishery Plan**

## **2023**

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## EXECUTIVE SUMMARY

In accordance with the guidelines provided in Amendment 3 to the Atlantic States Marine Fisheries Commission's Interstate Fishery Management Plan for Shad and River Herring, North Carolina submits the following American shad Sustainable Fishery Plan (SFP) for consideration by the Shad and River Herring Management Board (Board) to continue commercial and recreational fisheries in North Carolina. North Carolina's first SFP for American shad (*Alosa sapidissima*) was approved by the Board in May 2012 for 2013 through 2017. The second plan was approved in March 2018 and subsequently amended in October 2020 allowed sustainable harvest from 2018 through 2022. The purpose of the 2023 SFP is to update and modify sustainable management measures to allow for sustainable fisheries and continue the maintenance and rebuilding of American shad populations in North Carolina from 2023 through 2027. North Carolina proposes that reproduction and recruitment of American shad in all North Carolina waters be measured by indices of juvenile abundance (Albemarle Sound-Roanoke River system only), relative abundance, and relative fishing mortality (relative  $F$ ) from the Albemarle Sound-Roanoke River, Tar-Pamlico River, Neuse River, and Cape Fear river systems.

New additions to the 2023 SFP include sustainability parameters for juvenile abundance in the Albemarle Sound-Roanoke River and female relative  $F$  based on the combined commercial and recreational harvest for the Tar-Pamlico, Neuse, and Cape Fear river systems. Previously, relative  $F$  was computed for these systems using only information from the commercial harvest of roes (females), in pounds of fish. Commercial harvest of American shad has continued to decline due to management regulations and reduced participation in the fishery in these areas. The addition of recreational data to the relative  $F$  calculation has shortened the time-series, but the estimates are more informative of total removals from the Tar-Pamlico, Neuse, and Cape Fear river systems. Thresholds have been established for indices in each system to define levels needed to reduce mortality and avoid diminishing potential stock reproduction and recruitment. Fisheries in each system will be determined sustainable if indices remain within their respective thresholds.

North Carolina requests recreational and commercial fisheries in all coastal rivers and will use the management measures laid out in this SFP to ensure sustainability of these fisheries. This plan is submitted jointly by the North Carolina Division of Marine Fisheries (NCDMF) and the North Carolina Wildlife Resources Commission (NCWRC) for management of American shad in North Carolina waters.

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## **1. INTRODUCTION**

American shad (*Alosa sapidissima*) are currently managed under Amendment 3 to the Atlantic States Marine Fisheries Commission (ASMFC) Interstate Fishery Management Plan for Shad and River Herring (ASMFC 2010). Amendment 3 imposed a coastwide harvest moratorium on commercial and recreational fisheries for American shad unless states and jurisdictions develop sustainable fishery plans (SFP), which are reviewed by the ASMFC Shad and River Herring Technical Committee (TC) and approved by their Board. North Carolina's first American Shad SFP (2013 SFP) was approved by the ASMFC Shad and River Herring Management Board in May 2012 and allowed harvest from 2013 through 2017 (NCDMF and NCWRC 2012). The second plan (2018 SFP) approved in March 2018 and subsequently amended in October 2020, allowed for sustainable harvest from 2018 through 2022 (NCDMF and NCWRC 2020). The purpose of the 2023 SFP is to update and modify sustainable management measures that allow for sustainable fisheries and continue the maintenance and rebuilding of American shad populations in North Carolina from 2023 through 2027. This plan is submitted jointly by the North Carolina Division of Marine Fisheries (NCDMF) and Wildlife Resources Commission (NCWRC) for management of American shad in North Carolina waters.

The most recent stock assessment of American shad stated that adult populations in the Albemarle Sound are sustainable and not overfished, whereas a determination of stock status could not definitively be assigned for the Tar-Pamlico, Neuse, and Cape Fear rivers due to limited information (ASMFC 2020). The Neuse River total mortality rates suggested those fisheries were sustainable; however, status of the stock with respect to depleted or not depleted could not be determined. It should be noted that areas south of Albemarle Sound are in a zone where stocks transition from iteroparity (spawn multiple times over a lifetime) to semelparity (spawn only once followed by death), which can also impact the ability to determine stock status. However, for stock assessment purposes, American shad north of the Cape Fear River are iteroparous and the river systems from the Cape Fear River to Florida are considered to be semelparous.

Updates of monitoring programs supporting the 2023 SFP and performance of associated sustainability parameters will continue to be reported in annual compliance reports to the ASMFC. Annual reports are jointly submitted by the NCDMF and the NCWRC.

## **2. REQUEST FOR FISHERIES**

North Carolina requests that the ASMFC Shad and River Herring Management Board consider this request to approve a SFP for American shad in the state of North Carolina. This plan includes a request for approval of both recreational and commercial harvest within the state waters. North Carolina justifies this request based on analysis of historical trends in fishery-independent and fishery-dependent data for the Albemarle Sound-Roanoke River, Tar-Pamlico River, Neuse River, and Cape Fear River systems.

## **3. DEFINITION OF SUSTAINABILITY**

A sustainable fishery is defined in Amendment 3 as one that demonstrates shad stocks could support commercial and/or recreational harvest that will not diminish future stock reproduction and recruitment. North Carolina proposes that reproduction and recruitment of American shad in all North Carolina waters be measured by indices of relative abundance and relative fishing mortality (relative  $F$ ) from the Albemarle Sound-Roanoke River, Tar-Pamlico River, Neuse River, and Cape Fear River systems. Additionally, American shad in the Albemarle Sound-Roanoke River should be measured by an index of juvenile abundance. Thresholds have been established for indices in

each system to define levels needed to reduce mortality and avoid diminishing potential stock reproduction and recruitment. Fisheries for each system will be determined sustainable if indices remain within their respective thresholds. Exceedance of a threshold or a suite of thresholds for three consecutive years will necessitate system specific management action.

The 2023 SFP has built upon the improvements of the 2018 SFP for relative  $F$  by incorporating recreational and commercial harvest data (numbers of fish) into the calculation of sustainability parameters for the Tar-Pamlico, Neuse, and Cape Fear river systems. Previously, relative  $F$  was computed for these systems using only information from the commercial harvest of roes (females), in pounds of fish. Commercial harvest of American shad has continued to decline due to increased gear restrictions and reduced participation in the fishery in these areas. Harvest from the recreational sector has nearly equaled or exceeded commercial harvest in recent years, except for the Albemarle Sound-Roanoke River where recreational harvest is unknown but is assumed low compared to commercial landings. The addition of recreational data to the relative  $F$  calculation has shortened the time-series for these systems, but the estimates are more informative of total removals for the Tar-Pamlico, Neuse, and Cape Fear river systems as commercial harvest continues to decline due to gear restrictions (described in Section 4.2) and reduced participation in the commercial fishery.

Newly proposed for the 2023 SFP, is an Albemarle Sound sustainability parameter monitoring juvenile abundance. During the 2018 SFP an Albemarle Sound index of juvenile abundance for American shad was developed through the 2020 Benchmark Stock Assessment for American shad (ASMFC 2020). Using the same subset of stations and time-series from the assessment, a sustainability parameter for juvenile relative abundance, expressed as a catch-per-unit-effort (CPUE), has been added to the 2023 SFP for the Albemarle Sound.

The updated sustainability parameters are described below for each system and summarized in Table 1. The selected sustainability parameters will be reported in annual compliance reports and any management actions will be noted. Potential management actions are included in Section 14 to eliminate repetition within each of the river system sections, although any action or suite of actions could be specific to and independent of each system.

### **3.1 Previous Sustainable Fishery Plans**

In the 2013 SFP, a suite of potential sustainability parameters was considered, and it was decided to develop individual sustainability parameters for the Albemarle Sound-Roanoke River, Tar-Pamlico River, Neuse River, and Cape Fear River systems based on female relative abundance and female relative fishing mortality rate (relative  $F$ ). Relative abundance was calculated using available fisheries-independent survey data that were considered appropriate for measuring the abundance of American shad and were expressed in terms of CPUE. Relative  $F$  is calculated by dividing landings, in this case female (roe) landings, by a fisheries-independent index of relative abundance (Sinclair 1998). Relative  $F$  was computed by using a centered 3-year average, resulting in the first and last year of the time series based only on two years of data. A 3-year average was chosen to dampen the noise of the survey index in place of point estimates in the denominator. Sustainability parameter thresholds (75th and 25th percentiles) were not fixed and changed with the addition of new data.

The 2018 SFP used the same female sustainability parameters of relative  $F$  and abundance indices as the 2013 SFP, except relative  $F$  was computed by dividing commercial landings by a hind cast 3-year average of a survey index whereas the previous plan used a centered 3-year average. The hind cast 3-year average ensures the value of the final year in the time series (which can trigger

management action) remains unchanged once calculated. Indices of relative abundance and estimates of relative  $F$  were calculated for each system through 2017. Thresholds (75th and 25th percentiles) for sustainability parameters were fixed using available survey data from 2000 or 2001 (system specific survey time-periods) through 2017 and remained fixed through the 5-year management period.

#### **4. FISHERY MANAGEMENT PROGRAM**

American shad are jointly managed by the North Carolina Marine Fisheries Commission (NCMFC) and the NCWRC. The NCDMF implements NCMFC rules for American shad in the Atlantic Ocean as well as the Coastal Fishing Waters of North Carolina, while the NCWRC Inland Fisheries Division manages American shad in Inland Fishing Waters. Both commissions share management authority for recreational fishing for American shad in Joint Fishing Waters of the state, while the NCMFC has authority over commercial fishing for American shad in Joint Fishing Waters. The known extent of American shad in North Carolina river systems is shown in Figure 1. This plan is developed by the American Shad Working Group (ASWG) which consists of biologists from both NCDMF and NCWRC. The ASWG meets annually to review sustainability parameters and develop associated actions for the management of American shad in North Carolina's Inland, Joint, and Coastal Fishing Waters.

##### **4.1 Commercial Seasonal Restrictions (statewide)**

From the 1950s to 1965, a January 1 through May 1 commercial season existed in Coastal Fishing Waters, while a January 1 through June 1 season existed in Inland Fishing Waters throughout the state. From 1966 through 1994, no seasonal restrictions existed for the commercial fishery. Since 1995, a commercial season of January 1 through April 14 has been in place in Coastal and Joint Fishing Waters although the fishery is rarely opened prior to February 1 each year. Implementation of this seasonal restriction reduced harvest, as a large portion of the commercial American shad harvest historically occurred after April 14 and into May. The ocean intercept fishery for American Shad was closed to all harvest January 1, 2005 (ASMFC 2002). On July 1, 1996, NCWRC designated American shad as a game fish in Inland Fishing Waters; the game fish designation prohibited sale of American shad thereby ending any commercial harvest in Inland Fishing Waters of the state.

In 2013, under the first year of the North Carolina American shad SFP, the commercial seasons were restricted to February 15 through April 14 in all systems except for the Cape Fear River (Table 1). In the Cape Fear River, the commercial season was restricted to February 20 through April 11. Following the 2013 season, thresholds in the Albemarle Sound-Roanoke River system were exceeded for three consecutive years (2011, 2012, and 2013) triggering further management action; as a result, the commercial season was reduced to March 3 through March 24 to constrain harvest. This reduced season has remained in place for the Albemarle Sound-Roanoke River system since 2014.

##### **4.2 Commercial Gear Restrictions**

###### **4.2.1 Albemarle Sound-Roanoke River**

In the Roanoke River the use of anchored gill nets has been closed since 1991 and drift gill nets have been prohibited since 1993. These measures greatly reduced the harvest of American shad.

Since 1987, western Albemarle Sound (also referred to as Batchelor Bay) has been closed to the use of gill nets from February through mid-November. While the purpose of the closure was for striped bass (*Morone saxatilis*) conservation, it also provided additional protection for American

shad. From 1988 through 1990, yardage limits of 1,000 to 2,000 yards were implemented for large mesh ( $\geq 5.25$ -inch stretch mesh) gill nets in Albemarle Sound, and nets could only be set five days per week. In April 2016, the NCMFC adopted a permanent rule implementing yardage restriction for nets with a mesh length of 4.0-inch stretched mesh or greater, the maximum length of gill net shall not exceed 2,000 yards per vessel in all Internal Coastal Fishing Waters regardless of the number or individuals involved. In 2019, the NCMFC reduced the maximum amount of large mesh gill net allowed to 1,500 yards through adoption of Amendment 2 of the N. C. Southern Fishery Management Plan (FMP; NCDMF 2019a).

From 1998 through 2020, commercial gear restrictions in Albemarle Sound have been consistent and include a prohibition on the use of anchored gill nets with a mesh size of 3.5–5.0 inches stretched mesh and a limit of 1,000 yards on the use of 5.25-inch and greater (floating) stretched mesh during the open shad season. When the shad season closed, these floating shad nets are removed from the water.

During the 2021 open shad season (March 3–March 24), anchored, floating gill nets 5.25-inch and greater remained limited to 1,000 yards. However, these nets were removed from the water prior to the close of the shad season on March 18, 2021. The closing date for this gear occurred when the Albemarle Sound Management Area (ASMA) striped bass harvest quota was met to prevent additional striped bass discards.

During the 2022 open shad season (March 3–March 24), anchored, floating gill nets 5.25-inch and greater were allowed only in portions of the Albemarle Sound and limited to 700 yards per commercial operation. Area closures and yardage limits were aimed at reducing striped bass discards but also greatly reduced American shad landings from these gears. These nets were subsequently removed on March 15, 2022, when the ASMA striped bass harvest quota was met to prevent additional striped bass discards.

While there are restrictions on how gear can be used, there are no restrictions on what gear can legally be used to harvest American shad during the open season. Anchored, floating gill nets are the primary gear type used to harvest shad commercially in the Albemarle Sound. From 2013 to 2022, 95.6% of American shad harvested in the Albemarle Sound were from anchored, floating gill nets. Other commercial gear types contributing to shad harvest, include run around gill nets, drift gill nets, and pound nets. These other gear types are harvesting American shad as bycatch while pursuing other fisheries like catfish (run around, drift) and bait (pound net).

#### **4.2.2 Tar-Pamlico and Neuse Rivers**

Since 2016, a statewide rule limits the amount of large mesh (4.0-inch and greater) gill net set in internal Coastal Fishing Waters to no more than 2,000 yards per vessel. Prior to 2016, a former rule was suspended in most internal Coastal Fishing Waters as a result of sea turtle conservation measures to institute no more than 2,000 yards per vessel of 4.0–6.5-inch gill net in the Tar-Pamlico and Neuse systems. In 2019, the maximum amount of large mesh gill net allowed was reduced to 1,500 yards under Amendment 2 of the N. C. Southern FMP (NCDMF 2019a). Additionally, in certain sections of the Tar-Pamlico and Neuse rivers, gill nets with a mesh size less than 5.0-inch must be attended at all times.

Also, it is unlawful to use gill nets of any mesh size in designated Joint Fishing Waters from midnight on Friday to midnight on Sunday each week (except for portions of Albemarle and Currituck sounds). These existing gill net measures have likely reduced American shad harvest

since they have remained in effect since the spring 2012 fishing season and will remain in effect indefinitely.

Effective March 18, 2019, the use of all gill nets upstream of the ferry lines from the Bayview to Aurora Ferry in the Tar-Pamlico River and the Minnesott Beach and Cherry Branch Ferry in the Neuse River was prohibited. This gill net prohibition, directed by the NCMFC in response to Supplement A to Amendment 1 to the N. C. Estuarine Striped Bass FMP, was intended to reduce striped bass fishing mortality but also greatly reduced American shad landings in these systems by removing gill nets from the primary fishing grounds for American shad in the Tar-Pamlico and Neuse rivers (NCDMF 2019b).

Any legal commercial gear type can be used to harvest American shad during the open season. Anchored, floating gill nets are the primary gear type used to harvest shad commercially in the Tar-Pamlico and Neuse rivers. From 2013 to 2022, 99.4% and 97.6% of American shad harvested in the Tar-Pamlico and Neuse rivers were from anchored, floating gill nets, respectively. Other commercial gear types contributing to shad harvest include run around gill nets, drift gill nets, and fyke nets. In 2018, hook-and-line gear was used to harvest 76 pounds of American shad from the Neuse River.

#### **4.2.3 Cape Fear River**

Gill net restrictions in the Cape Fear system are different than those described above for the Tar-Pamlico and Neuse river systems. Large mesh anchored gill nets, when allowed, are limited to lengths no greater than 100 yards with at least a 25-yard space between each individual length of net. Only single overnight sets are allowed; and nets can only be set one hour prior to sunset and must be retrieved within one hour of sunrise. Set gill nets are not allowed on Friday or Saturday evenings, and the maximum yardage allowed was reduced from 1,000-yards per vessel to 750-yards in May 2019 (NCDMF 2019a). It is unlawful to use gill nets of any mesh size on weekends in the Cape Fear River system.

Effective February 15, 2017, anchored large mesh gill nets (4.0–6.5-inch) are prohibited in the Cape Fear River (north of the Railroad Bridge) and Northeast Cape Fear River (north of I-40 bridge) north of Wilmington, NC. Run-around, strike, drop, trammel, and drift gill nets between 4.0–6.5 inches are allowed in these areas of the Cape Fear River and Northeast Cape Fear River, but they must be set and immediately retrieved or be actively fished from deployment through retrieval as the net is moved along by water current. Run-around, strike, drop, and trammel gill net commercial operations are limited to 800 yards per commercial fishing operation while drift gill nets are limited to 2,000 yards. Starting in 2020, drift gill nets were limited to 1,500 yards per commercial fishing operation in accordance with Amendment 2 to the N. C. Southern Flounder FMP (NCDMF 2019a). These gill net gears are also exempt from gill net construction and setting time requirements required for anchored large mesh gill nets. Since 2020, with the implementation of Amendment 2 to the N. C. Southern Flounder FMP, anchored large mesh gill nets have not been allowed during the commercial shad season in the Cape Fear River. Following the removal of anchored large mesh gill nets above the Railroad Bridge in 2017, drift gill nets are the primary gear used for commercial harvest of American shad in the Cape Fear River.

Any legal commercial gear type can be used to harvest American shad during the open season. Drift gill nets are the primary gear type used to harvest American shad commercially in the Cape Fear River. From 2013 to 2022, 99.4% of American shad harvest in the Cape Fear River were from drift gill nets. Other commercial gear types contributing to shad harvest include run around gill nets and hook-and-line.



#### **4.2.4 All Other Internal Joint and Coastal Fishing Waters**

There are no restrictions on the commercial gear type used to harvest American shad during the open season. Anchored gill nets (large and small mesh) are the primary gear type used to harvest American shad commercially in all other Coastal Fishing Waters. From 2013 to 2022, 97% of American shad harvested from other areas were from anchored gill nets. Large mesh gill nets ( $\geq 5$ -inch stretched mesh) account for 47% of the harvest, while small mesh gill nets ( $< 5$ -inch stretched mesh) account for 50%. Other commercial gear types contributing to shad harvest include run around gill nets, drift gill nets, fyke nets and pound nets.

#### **4.3 Recreational Restrictions**

Prior to 1995, no recreational harvest restrictions existed for American shad and hickory shad (*Alosa mediocris*). Beginning in 1995, it became unlawful to take American shad and hickory shad by any method except hook-and-line from April 15–December 31 in Coastal Fishing Waters. Additionally, from 1995 through 1998, there was a recreational season during January 1 through April 14. Beginning in 1999, statewide rules implemented by NCDMF and NCWRC made it unlawful to possess more than 10 American shad and hickory shad in the aggregate in all Coastal and Inland Fishing Waters. On August 1, 2019, NCWRC amended the statewide rule for harvesting shad in Inland Fishing Waters to include no more than one American shad in the 10-shad aggregate except for Inland Fishing Waters of the Tar-Pamlico (5-American shad), Pee Dee (10-American shad), and Cape Fear river systems (10-American shad). Effective August 23, 2022, NCMFC readopted a rule with amendments that removed the fixed season and creel limit requirements for American shad in Coastal Fishing Waters, while retaining in rule the requirement making it unlawful to take or possess American shad from the Atlantic Ocean. Prior to this modification, changes to the season and creel limit for American shad could only occur if portions of the existing rule were suspended and a new season or creel limit was implemented via the NCDMF Director’s proclamation authority. Removing the fixed season and creel limit from rule allows for management in accordance with the SFP to be implemented statewide in Coastal Fishing Waters using the NCDMF Director’s proclamation authority without first having to suspend portions of this rule, reducing confusion.

In addition to Coastal Fishing Waters managed by the NCMFC and Inland Fishing Waters managed by NCWRC, Joint Fishing Waters are those areas where NCMFC and NCWRC have overlapping management authority. For these areas the NCMFC and the NCWRC adopted joint rules to effectively manage fisheries resources. Both the NCMFC and NCWRC have adopted rules that make it unlawful to possess more than 10 American shad and hickory shad in the aggregate. The NCWRC readopted this rule April 14, 2022. The NCMFC readopted this rule June 23, 2022, and it is pending review by the N. C. General Assembly in 2023 for an unrelated requirement. The current version of the NCMFC rule that is in force is substantively identical to the pending version. A portion of the current NCMFC rule is suspended by the NCDMF Director, and a proclamation is issued to set the shad creel limits in Joint Fishing Waters consistent with the SFP. The NCWRC does not have proclamation authority, so there is currently an inconsistency in the regulations for Joint Fishing Waters between these two management authorities.

The recreational changes noted here have been implemented via rule in Inland Fishing Waters by the NCWRC and via proclamation and rule in Coastal and Joint Fishing Waters by NCDMF and NCMFC.

#### **4.3.1 Albemarle Sound-Roanoke River**

In 2008, the NCWRC implemented a 1-fish American shad limit within the 10-fish shad aggregate creel limit for American and hickory shad in the Inland Fishing Waters of the Roanoke River basin. In 2013, under the first year of the North Carolina American shad SFP, a 1-fish American shad limit within the 10-fish shad aggregate creel limit was implemented by NCDMF in the Joint and Coastal Fishing Waters of the Albemarle Sound drainage including Currituck Sound, Roanoke River and all tributaries thereof. All Inland Fishing Waters of the Albemarle Sound drainage except the Roanoke River remained under the statewide rule of 10 American shad and hickory shad in the aggregate until the statewide rule for Inland Fishing Waters was changed by NCWRC to one American shad per day on August 1, 2019.

Due to the size of the Albemarle Sound, there is no recreational effort for American shad in the sound itself, and little to no effort is concentrated in the tributaries of the Albemarle Sound. Most recreational effort occurs in the Roanoke River where the focus of angler effort is on striped bass and hickory shad; American shad catch is primarily incidental. In Virginia, the Meherrin, Nottaway, and Blackwater Rivers drain into the Chowan River, the system where a substantial portion of the spawning stock entering the Albemarle Sound ascend to spawn. Recreational effort in these Virginia systems is not taken into consideration under this plan. While the impact of recreational harvest in Virginia waters is unknown, the creel limit in Virginia portions of these rivers was a 10-fish aggregate for American and hickory shad until Virginia established a statewide moratorium for American shad harvest on January 1, 2019.

#### **4.3.2 Tar-Pamlico River**

No more than 10 American and hickory shad in the aggregate may be possessed throughout the waters of the Tar-Pamlico River and its tributaries.

#### **4.3.3 Neuse River**

A NCWRC rule implementing a 1-fish limit for American shad within the 10-fish shad aggregate creel limit for American and hickory shad in the Inland Fishing Waters of the Neuse River became effective in August 2012. NCDMF complemented the 1-fish limit in Joint and Coastal Fishing Waters in 2013 under the first iteration of the North Carolina American Shad SFP. American shad harvest in Inland Fishing Waters of the Neuse River basin was incorporated into the statewide rule for Inland Fishing Waters on July 1, 2019.

#### **4.3.4 Cape Fear River**

In November 2013, the NCWRC implemented a 5-fish limit for American shad within the 10-fish shad aggregate creel limit in the Inland Fishing Waters of the Cape Fear River basin. NCDMF complemented the 5-fish limit in Coastal and Joint Fishing Waters in 2013.

#### **4.3.5 Pee Dee River**

No more than 10 American and hickory shad in the aggregate may be possessed throughout the waters of the Pee Dee River and its tributaries, which are all Inland Fishing Waters.

#### **4.3.6 Atlantic Ocean**

Possession of American shad is prohibited.

#### **4.3.7 All Other Internal Waters**

Recreational catch or harvest of American shad is very rare in internal waters other than those internal waters described above. However, a daily recreational harvest limit of up to 1-fish limit of

American shad within the 10-fish shad aggregate is allowed in all internal waters not specified above.

## **5. STOCK MONITORING PROGRAMS**

The following descriptions represent the entirety of stock monitoring programs used to assess the health of American shad populations in North Carolina. All programs are included in annual compliance reports and as noted in the program descriptions, specific details can be found in past compliance reports.

### **5.1 Fishery-Independent Monitoring**

#### **5.1.1 Juvenile Seine Survey**

The NCDMF does not have a dedicated juvenile (age-0) survey for American shad, but conducts two juvenile beach seine surveys in the Albemarle Sound area using an 18.5 m (60 ft) bag seine (Figure 2). Although the surveys were designed to monitor river herring [blueback herring (*Alosa aestivalis*) and Alewife (*Alosa pseudoharengus*)] and striped bass, both surveys capture American shad. The river herring beach seine survey has been conducted in the Chowan River and Albemarle Sound area to monitor blueback herring and Alewife abundance since 1972. The survey established 11 stations in the near-shore nursery areas of the Chowan River and Albemarle Sound, sampled twice a month. The striped bass beach seine survey has been conducted in the western Albemarle Sound to monitor juvenile striped bass since 1993. This survey was designed to determine the critical point (egg, larval, or early juvenile stage) that was limiting spawning success resulting in near zero catches in the juvenile trawl surveys for striped bass. The survey established nine stations in the near-shore nursery areas of the western Albemarle Sound, where early-stage juvenile striped bass would be settling after larval metamorphosis from spawning grounds on the Roanoke River. The stations are sampled once a week, for six weeks (starting the first week in June). Following the six weeks of sampling, the stations are sampled bimonthly through October. American shad captured are recorded but not consistently until 1995.

During the ASMFC 2020 benchmark stock assessment for American shad (ASMFC 2020) a combination of seine stations from the river herring survey (five stations) and the striped bass survey (nine stations), including all sampling events, were selected to determine a juvenile abundance starting in 1996 (zero catches in 1995). A Zero-inflated Negative Binomial (ZINB) generalized linear model (GLM) model was determined as the best recommended predictor of relative annual abundance. Water temperature, salinity, month, and cloud cover were all shown to significantly impact catch rates and presence. The best performing model was Counts ~ Year + water temperature + salinity | salinity + cloud cover + month. Updates to annual trends in abundance are included in this SFP expressed as arithmetic mean, in lieu of updating the ZINB model annually. Juvenile Abundance Indices (JAI) for American shad were calculated for the 14 stations sampled from 1996 through 2022. The JAI value for 2022 is preliminary and subject to change. One unit of effort is equal to one haul of the seine or sampling event. Samples were sorted by species and 30 randomly selected individuals of each target species present were measured. Other species present were also noted. Water temperature, salinity, and other environmental characteristics were measured and recorded.

No juvenile abundance indices exist for the Tar-Pamlico, Neuse and Cape Fear river systems at this time.

## 5.1.2 Adult Stock Monitoring

### 5.1.2.1 Spawning Area Survey (electrofishing)

An annual spawning stock survey and representative sampling for biological data is required from the Albemarle Sound and its tributaries, Tar-Pamlico, Neuse, and Cape Fear river systems for American shad. Sampling in these areas was initiated by the NCWRC in 2000. Restrictions due to the Covid-19 pandemic prevented most sampling programs during 2020.

NCWRC personnel collect American shad from the Roanoke, Tar-Pamlico, Neuse and Cape Fear river systems annually during February–June. A boat-mounted electrofishing unit (pulsed DC; 60–120 Hz; 3,000–8,000 peak watts) is used (1 or 2 dip netters) to capture fish during daylight hours, and electrofishing times are recorded in seconds. To minimize size selection during sampling in all river systems, shad are netted as they are encountered regardless of size. Relative abundance of each year-class is indexed by CPUE expressed as the number of fish captured per hour of electrofishing. However, CPUE is converted to fish per minute for sustainability indices described below. American shad broodstock collections are usually excluded from calculations of CPUE unless collections occur during regular sampling activities. Total length (mm), weight (g), and sex are recorded for all captured fish. Sampling protocols are unique to each river system and have been refined throughout the survey period. River-specific descriptions of spawning area surveys are provided in the following sections.

#### 5.1.2.1.1 Roanoke River

American shad surveys have been conducted in the Roanoke River from 2001 through 2022. The surveys occur in the mainstem Roanoke River near the Gaston Boating Access Area at river kilometer (rkm) 225. The survey area encompasses the most upstream American shad spawning habitat in the Roanoke River, and further migration beyond the survey area is blocked by Roanoke Rapids Dam at rkm 227. During 2000–2007, sampling was concurrent with striped bass surveys in the same sample area and was restricted to April and May. Beginning in 2008, sampling was started earlier in March when water temperatures approach 10°C and continued weekly until low-flow conditions restrict boat navigation or until spawning appears complete (typically end of May or first of June). One dip netter was used 2000–2004 and 2010–2011, whereas two dip netters were used 2005–2009 and 2012–2022. Also, in earlier years (2000–2012), two or three shoreline sample sites approximately 1-km each were sampled per week. In 2013–2022, however, samples were conducted at nine sampling sites once per week during the survey period. Electrofishing commenced at the upstream portion of each 500-m site and continued downstream the entire transect. Sites were randomly selected from shoreline and mid-channel habitats along the 3-km stretch downstream of the Hwy 48 bridge. Total electrofishing effort increased from previous years, but the new sample protocol still occurs in the same area as previous years.

#### 5.1.2.1.2 Tar-Pamlico River

American shad spawning area surveys have been conducted on the mainstem Tar-Pamlico River from 2000 through 2022. Survey protocols have changed relatively little throughout the survey period. One dip netter is used to capture fish during daylight hours. Electrofishing samples are typically conducted weekly during March–May. Sampling begins when water temperatures approach 10°C. Sample sites are located within one of three approximately 15-km segments that encompass most of the American shad spawning habitat in the Tar-Pamlico River. Segment 1 contains the river stretch from Rocky Mount Mill Dam downstream to the Dunbar Boating Access Area (BAA). Segment 2 includes the river stretch from Dunbar BAA downstream to the Bell's Bridge BAA. Segment 3 continues from the Bell's Bridge BAA downstream to the Tarboro town

ramp. Normally, one sample of approximately 30 minutes of electrofishing time is conducted within a segment during a sample day. Typically, only one 30-minute sample is conducted per week, yet, depending on flows, attempts are made to conduct another 30-minute sample in a different segment, or at least in a different site of the same segment, during that same week. Sample sites within a segment vary from week to week and are selected from areas that appear to have preferred American shad habitat. Angling activity is avoided. Flows and water temperature determine which segment is sampled on a particular day. Moderate to high flows and warmer water temperatures tend to cause American shad to move further upstream into segment 1. There are certain minimum river levels required to allow access to the river for electrofishing, yet the majority of American shad sampling is concentrated in segment 1 when flows are greater than 300 cfs. Flooding often prevents access to the river for sampling, but high water subsides quickly in the Tar-Pamlico River and at least one sample site per week is usually possible.

#### 5.1.2.1.3 Neuse River

American shad electrofishing surveys have been conducted in the Neuse River from 2000 through 2022, and one dip netter is used to capture fish during daylight hours. Electrofishing samples are conducted weekly during March–May. Sampling begins when water temperatures approach 10°C and ends when spawning appears to be complete. Sampling is conducted near known spawning areas at Goldsboro, NC (rkm 240) and Raleigh, NC (rkm 350). Sampling begins at the downstream Goldsboro location in March, and the Raleigh location is added to the weekly sampling regime once 30–40 American shad are collected in one day at the Goldsboro location. Weekly sampling locations are contingent upon water levels because low flows limit navigability. The Raleigh location is only accessible at moderate to high flows and is dropped from weekly sampling when flows are not adequate for safe and effective sampling. When conditions improve, sampling is resumed at the Raleigh location. Sampling locations have been consistent throughout the survey period, but sampling protocols at each location have varied over time. In early years of the survey, two sample sites were sampled at each location. The sample sites were 2–3 km long and took over one hour of electrofishing time to complete. Since 2015, two or three sample sites are sampled at each location, but the sites have been shortened to around 1-km and electrofishing effort has been reduced. Nevertheless, the same areas have been consistently sampled throughout the survey.

#### 5.1.2.1.4 Cape Fear River

Sampling for American shad has occurred in the Cape Fear River from 2001 through 2022. Sampling occurs at the base of Lock and Dams 1, 2, and 3. In most years, one dip netter was used to collect American shad, but two dip netters were used 2015–2017 to avoid gear saturation caused by increases in American shad abundance. In all survey years, sampling occurred at three fixed sample sites adjacent to the base of each of three locks and dams found on the river. Since 2010, sampling efforts have been standardized by electrofishing for 30 minutes downstream of each lock and dam–15 minutes from the middle of each dam down each shoreline. Sampling at each site is attempted weekly during March–May when water temperatures approach 10°C and is ended when spawning appears complete or when high fish densities cause high catch rates and increased sampling-induced mortality. Prior to 2010, however, sampling was more sporadic and did not always occur at each site every week. Other areas in the Cape Fear River upstream of the locks and dams (Buckhorn Dam and Smiley’s Falls) are occasionally sampled, but data from sites other than the locks and dams are not included in annual relative abundance analyses. Sampling at the locks and dams is possible under most flow conditions, but flood events can periodically prevent sampling.

#### 5.1.2.2 Albemarle Sound Independent Gill Net Survey (IGNS)

Since 1990, NCDMF has been conducting an independent gill net survey throughout the Albemarle Sound area. The survey was designed for striped bass data collection and occurs November through May each year. However, American shad are captured during the survey and size, age and sex data are collected. Forty-yard segments of gill net from 2.5- through 7.0-inch stretched mesh, in half-inch increments, as well as 8.0, and 10.0-inch stretched mesh are utilized. The sound is divided into zones and random grids are selected within these zones (Figure 3). Within each grid lines of float and sink nets are set in both shallow and deep strata if they are present in the grid. Areas fished, sampling effort and sampling frequency vary seasonally. Each unit of effort is one 40-yard net, fished for 24-hours. Gill nets are fished in 40-yard shots totaling 960 yards per set (24 units of effort). The survey as described above was suspended February 2020 due to protected species interactions and resumed, under a modified sampling design in November 2021.

In November 2021, the Albemarle Sound Independent Gill Net Survey (IGNS) expanded from six to eight zones and reduced soak time from 24-hours to 12-hours. Additionally, in March 2022, sink gill nets were removed from the survey, reducing effort to 480 yards per set (12 units of effort). Additional zones were added to meet NCDMF research priorities to expand the spatial coverage of the survey. Soak times were reduced and sink nets were removed to reduce interactions with endangered species through ongoing consultation with the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Association (NOAA Fisheries). It should be noted that with such a major change in survey design, the index derived from this survey starting in November 2021 will not be directly comparable to the prior historical time series. When calculating sustainability parameters using historical IGNS data, all sink gill nets were removed. It is important to note that most American shad intercepted in the IGNS survey are from float gill nets. Therefore, the removal of sink gill nets from the data set did not significantly impact the relative abundance estimates of American shad from the survey. It is not possible to determine how reducing from 24-hour to 12-hour soak times will impact comparison of American shad catches across the time series.

#### 5.1.2.3 Pamlico Sound and Rivers Independent Gill Net Survey (IGNS)

The IGNS in the Pamlico Sound area began 2001, while the rivers (including Pamlico, Pungo and Neuse rivers) began in 2003. The Cape Fear River was added in 2007 and Core Sound in 2018. The survey runs from mid-February through mid-December and utilizes a different methodology than that conducted in the Albemarle Sound. Thirty-yard segments of gill net are used, ranging from 3.0-inch stretched mesh through 6.5-inch stretched mesh in half-inch increments. The catch across a gang of nets (all mesh sizes) comprises a single sample, unlike the Albemarle Sound where each individual net and mesh size is tallied as an individual unit of effort. A gang of nets is fished in both shallow and deep strata for each sample grid selected, and grids are preselected at random from within regional strata set up within each system of the survey.

American shad intercepts from the Pamlico Sound and River IGNS are low due to survey location. Indices of abundance for American shad using this survey could not be developed. Therefore, these data have not been incorporated into sustainability parameters.

#### 5.1.2.4 Albemarle Sound American Shad Mixed-Stock Analysis

The Roanoke River and Chowan River tributaries are known spawning rivers for American shad entering Albemarle Sound. Despite the restoration efforts and research that has occurred in the Roanoke River, the proportion of American shad migrating up either the Chowan River or Roanoke River remains uncertain although a recent study suggests most are ascending up the Chowan to spawn. The NMFS and NCDMF partnered together to conduct an acoustic telemetry study to

determine migratory patterns of Albemarle Sound American shad. The objective of this study was to determine which river basins are used by adult American shad during the spawning run in 2013, 2014, 2016, 2017, 2018, and 2019. During the study acoustic receiver coverage was available through receivers maintained and operated by NCDMF, NCWRC, and Dominion Energy to track movement of Atlantic sturgeon, striped bass, and American eel. The study area encompassed the Albemarle Sound, and its associated sounds (Croatan and Currituck) and rivers: North, Pasquotank, Little, Perquimans, Chowan, Roanoke, Scuppernong, and Alligator in northeastern North Carolina and the Meherrin, Nottaway, and Blackwater in southeastern Virginia. Adult American shad were captured in gill nets with mesh sizes ranging from 4.5–6.0 inches at locations north and south of the western side of North Carolina Highway 32 bridge. This area is a funneling point for American shad that have entered the Albemarle sound to reach spawning grounds on either the Chowan River (north) or the Roanoke River (south). American shad were implanted with VEMCO V9-2x-A69-1601 coded acoustic transmitter and a PIT tag (only in 2013). Tagged fish were measured and assigned sex if possible. Fish were tagged by inserting the tag through the esophagus into the stomach. Fin clips were taken in 2016 through 2019 to determine hatchery contribution from Roanoke River stocked fish. The acoustic transmitter released a frequency every 90 seconds and tag life was expected to be around two years.

A total of 266 American shad have been tagged from 2013 through 2019. Table 10 shows the numbers of fish tagged, detected, and those that made spawning runs up the Roanoke or Chowan Rivers. The fish that were detected but did not make spawning runs, either demonstrated strong fall-back behavior and presumably left the sound or are thought to have died. Of the 62 fish that made detectable migrations during the six study years, 55 fish (89%) ascended the Chowan River, while only five ascended the Roanoke River and two entered other rivers. Shad movement data gathered by this study suggest that a large portion of the spawning stock entering the Albemarle Sound ascend the Chowan River to spawn. In 2021, results of the “Use of Acoustic Telemetry to Identify Spawning River and Spawning Migration Patterns of American Shad in the Albemarle Sound, North Carolina” were published in the *North American Journal of Fisheries Management* (Mack et al. 2021).

Staff with NCWRC evaluated population level genetics to determine potential genetic differences between Chowan River and Roanoke River spawning stocks. In 2019, American shad fin clips collected from Chowan River tributaries (Nottaway River and Blackwater River in Virginia) and from spawning grounds in the Roanoke River were analyzed using Program STRUCTURE. The analysis found no difference between the baseline population structure of the rivers sampled, and one genetic population was also supported by low  $F_{st}$  values (Evans and McCargo 2021). Using the suite of microsatellite markers available, it appears the populations of American Shad in the Chowan and Roanoke rivers are genetically similar. However, further evaluation using other microsatellite markers or SNPs is necessary to definitively conclude the status of genetic differences in the Albemarle Sound region.

## **5.2 Size, Age and Sex Determination**

### **5.2.1 Spawning Area Survey (electrofishing)**

Sex is determined for each captured fish by applying directional pressure to the abdomen toward the vent and observing the presence of milt or eggs. Each fish is measured for total length in millimeters. Scales are removed from the left side of each fish between the lateral line and the dorsal fin. To determine age, scales are examined at 33X magnification on a microfiche reader and annuli are counted. Spawning marks are recorded separately. Scales were used for ageing in all

spawning area surveys from 2000 through 2010, but beginning in 2011, NCWRC staff switched to otoliths for assessing age of American shad collected during spawning area surveys. A subsample of fish (up to 10 per 10-mm size group) was used for ageing in most systems, and otoliths from broodstock were aged when available because broodstock are sacrificed when hatchery spawning is complete. Otoliths were not taken in all systems in all years to limit mortality of spawning adults. In years when otoliths are not collected, ages are assigned with river-specific age-length keys from previous years. Otoliths were not collected in the Roanoke River in 2016; the Tar-Pamlico River in 2015–2018 and 2021; the Neuse River in 2016, 2018, and 2022; and the Cape Fear River in 2015, 2016, 2018, and 2022. Additionally, ages of stocked fish determined using PBT analysis were used for ageing analysis of Roanoke River American shad in 2017–2022.

### **5.2.2 Independent Gill Net Survey**

Each fish is measured for fork length and total length in millimeters. Starting in 2004, sex is determined for all fish captured from IGNS. Each fish is sexed by applying directional pressure to the abdomen toward the vent and observing the presence of milt or eggs or by dissection if dead. Scales are collected from the left side of each fish between the lateral line and the dorsal fin. Scales are prepared and aged according to the Cating (1953) method.

### **5.3 Total Mortality Estimates**

Survival estimates are calculated using the Robson and Chapman (1961) method. Robson and Chapman showed that estimates of annual rates of survival can be made from the catch curve of a single season if the population is exposed to unbiased fishing gear beyond the age of recruitment and if year-class strength and survival rate remain constant from year to year. Annual mortality rates are calculated based on observed samples of individuals at age. Only age groups that are fully recruited to the gear are included in the calculations and the resulting estimates only apply to the fully recruited individuals.

### **5.4 Hatchery Evaluation**

#### **5.4.1 Roanoke River American shad Restoration Project**

Nearly 78 million American shad fry were stocked in the Roanoke River between 1998 and 2018 (Table 8). The restoration stocking project was begun as mediation for highway construction that impacted spawning habitat on the upper Roanoke River and later was incorporated into the Federal Energy Regulatory Commission (FERC) relicensing of the Gaston and Roanoke Rapids hydropower projects. The goals of the project were to enhance the existing American shad population in the Roanoke River and to evaluate escapement of American shad stocked upstream of reservoirs to determine the benefits of future fish passage efforts. The majority of stocking occurred at Weldon, NC, which is downstream of all three mainstem dams, and fry were also stocked upstream of Kerr Dam (US Army Corps of Engineers), Gaston Dam (Dominion Power) and Roanoke Rapids Dam (Dominion Power).

In the early years of the restoration project, NCWRC followed protocols of other states involved in American shad restoration efforts and obtained broodfish for fry production from nearby rivers having adequate shad stocks. American shad broodfish were collected by electrofishing from the Tar-Pamlico, Neuse, Cape Fear, and Roanoke rivers from 1998–2010. From 2011 through 2018, only broodfish collected from the Roanoke River were utilized for production. Upon collection, broodfish were placed in circular tanks with oxygen and continuously circulating water onboard the electrofishing boats and were transferred to large circular, trailer-mounted tanks for transport to the



hatcheries. Hormone injection was used to initiate spawning in the hatchery from 1998 to 2008 but was not used to induce spawning from 2009 through 2018.

Annual contribution of hatchery-origin American shad to the Roanoke River population was evaluated for multiple cohorts of returning adults during the spring spawning runs and for out-migrating juveniles during fall of the stocking year. Evaluations were conducted using oxytetracycline (OTC) marks from 1998–2009. Subsequent testing proved OTC marking procedures and analyses were unreliable, and the NCWRC initiated use of genetic microsatellite markers for parentage-based tagging (PBT) methods in 2010. With the PBT method, each spawning tank contains a genetically discrete batch of broodfish, from which the progeny can be uniquely identified. Daily OTC marking techniques were not used after the switch was made to PBT analysis. Fin clips from adult American shad were collected during spawning stock surveys, and broodfish were also cross-referenced for potential hatchery contribution of stockings from previous years. Broodfish fin clips combined with fin clips collected during weekly samples were collectively referred to as at-large adults

Parentage-based-tagging efforts were initiated in 2010, but the early results (i.e., 2010–2014) could not capture potential hatchery contribution from year classes before 2010. Hatchery contribution of adult American shad collected on the Roanoke River spawning grounds was only 0.3% in 2012, 4.9% in 2013, and 12.7% in 2014. Hatchery contribution was underestimated and should be considered a minimum because few PBT cohorts were in the population prior to 2015.

Hatchery contribution increased as multiple cohorts of American shad that could be identified with PBT recruited into the population. Hatchery contribution of returning adults was 42.9% in 2015, 56.1% in 2016, 65.7% in 2017, and 71.3% in 2018. Staff from NCWRC were concerned about the increasing contribution of stocked fish that were produced by only a few broodfish each year. In addition to the high hatchery contribution, there were also population genetics concerns evidenced by decreasing effective population size estimates (Evans and McCargo 2019). Therefore, NCWRC staff decided to stop American Shad stocking in the Roanoke River after 2018. Hatchery contribution of returning adults was 64.2% in 2019 and decreased to 43.8% in 2021. Samples were not collected in 2020. Evaluations of returning adults will continue until stocked cohorts from 2010–2018 age out of the population or stocking resumes.

Hatchery contribution of adult samples from the Albemarle Sound was lower when compared with hatchery contribution on the spawning grounds. Only 3.4% of 2016 and 4.0% of 2017 samples were hatchery produced fish indicating that Roanoke River spawning fish do not make up the majority of the Albemarle stock and most of the fish tested were likely from the Chowan River. Additionally, contribution of stocked fish to outmigrating juveniles collected in the lower Roanoke River was also lower than the returning adults collected on the spawning grounds. From 2010 through 2018, hatchery contribution of juvenile collections ranged from 2.7% (2012) to 44.8% (2014). The results suggest that juveniles produced outside of the Roanoke River (most likely from the Chowan River) may be migrating into the lower Roanoke River and mixing with stocked and wild Roanoke River juvenile American shad.

#### **5.4.2 Neuse River American Shad Restoration Project**

The NCWRC began an American shad restoration stocking program in the Neuse River in 2012. The goal of the Neuse River American shad stocking program was to supplement the wild population by stocking fry produced from one spawning tank of approximately 100 broodfish each year. American shad broodfish were collected from the Neuse River near Goldsboro, NC, and were transported to Edenton National Fish Hatchery where they spawned in a large recirculating tank.

American shad fry were stocked at approximately 7-days of age in the Neuse River near Goldsboro, NC. Evaluation of hatchery contribution to the Neuse River American shad population is conducted using the same PBT methods as described for the Roanoke River restoration program. A total of 5,563,088 American shad fry were stocked in the Neuse River at the NC Hwy 117 bridge near Goldsboro, NC, from 2012–2018 (Table 9). Hatchery contribution to out-migrating juvenile samples was low (0–13%). Hatchery contribution to returning adults was also low (<10%). In 2016, which was the first-year hatchery fish were potentially available as age-4 adults, only 9 of 411 (4%) adults tested with PBT analysis were of hatchery-origin. Hatchery contribution increased slightly to 7.8% in 2017 and 9.3% in 2018 but decreased in 2019 (8.1%), 2020 (6.7%) and 2021 (4.3%). The fry stocking program was stopped after the 2018 stocking year. It appears the stocking program contributed very little to the overall American shad population in the Neuse River, and contribution of stocked fish should continue to decrease as stocked fish age out of the population.

## **6. FISHERY-DEPENDENT MONITORING**

### **6.1 Commercial Fishery**

#### **6.1.1 Total Catch, Landings and Effort**

American shad landings data are collected through the North Carolina Trip Ticket Program (NCTTP). The number of participants by gear utilized and the total number of positive trips can be determined. For the Albemarle Sound area, the following assumptions are made: (1) trips landing over 100 pounds of shad are considered directed trips, and (2) the maximum yardage used in directed trips is specific to the area and is described in Section 4.2. The total yardage for each area is determined by multiplying the number of directed trips by the maximum yardage per area. The catch-per-yard (CPY) is determined by dividing the number of pounds harvested by the total yardage estimate of gill nets fished. Multiplying by maximum yardage for each area will result in the pounds landed per targeted trip in that area. Catch estimates for other areas are determined similarly. For specific information regarding catch estimates, please see previous compliance reports.

#### **6.1.2 Size, Age and Sex Composition of Catch**

Commercial landings from all four systems (Albemarle Sound, Tar-Pamlico River, Neuse River and Cape Fear River) are sampled to obtain size, age, sex and repeat spawning information. A target of 200 samples from each system has been in place since 1999. For specific information regarding exact number of samples collected per area, please see previous compliance reports.

### **6.2 Recreational Fishery**

#### **6.2.1 Recreational Commercial Gear License Catch, Landings and Effort**

The North Carolina Fisheries Reform Act of 1997 required the NCMFC to establish limits on recreational use of commercial fishing gear. An individual holding a Recreational Commercial Gear License (RCGL) can use limited amounts of specified commercial gear to catch seafood for personal consumption or recreational purposes. RCGL gill nets are limited to a maximum length of 100 yards (two or more RCGL holders may possess up to 200 yards) and must comply with all proclamations with respect to this gear. The holder of the RCGL must comply with the recreational size and creel limits, and RCGL catch cannot be sold. During 2002, NCDMF began a RCGL survey to estimate the harvest by these license holders. The survey was discontinued in 2009 due to budget reductions. The total number of RCGLs issued has been on a steady decline since first established in 2001 (6,356 RCGL sold). Total sales in 2021 (2,143 RCGL sold) are well below

total sales from the early 2000s (NCDMF 2021). Landings from this gear are unknown but are assumed minimal.

RCGL general guidelines and rules summary can be found here: [NCDMF RCGL General Guidelines and Rules Summary May 12, 2020](#).

### **6.2.2 Roanoke River Catch, Landing, and Effort**

An annual creel survey occurs on the Roanoke River each year. The survey targets striped bass catch and effort but also collects information on American shad and other species, although American shad catch is low due to the fishing method. Therefore, these data have not been incorporated into sustainability parameters for the Albemarle Sound-Roanoke River. Additional information with respect to this creel survey can be found in Section 7.3.

### **6.2.3 Central Southern Management Area Catch, Landings, and Effort**

The Tar-Pamlico, Neuse and Cape Fear rivers are collectively known as the Central Southern Management Area (CSMA). The CSMA was originally established for purposes of estuarine striped bass management and includes all Internal Coastal, Joint, and contiguous Inland Fishing Waters of North Carolina south of a line from Roanoke Marshes Point across to Eagle Nest Bay to the South Carolina state line. A comprehensive creel survey to identify and estimate recreational American shad and hickory shad effort and catch was initiated in 2012 within the Tar-Pamlico River and Neuse River and in 2013 within the Cape Fear River. Prior to 2012, creel surveys were conducted on these systems on a rotating basis with only one river basin surveyed each spring. The 2023 SFP proposes sustainability parameters utilizing the confirmed harvest estimates of American shad (numbers of fish) from the CSMA creel survey for the Tar-Pamlico River, Neuse River, and Cape Fear river systems.

The Neuse River basin drains over 6,200 square miles of land with over 3,000 miles of streams and rivers. The mouth of the main channel is six miles across – the widest in the United States. Over 1.3 million residents reside within this river basin. Major tributaries include Crabtree, Swift, and Contentnea creeks, along with the Eno, Little, and Trent rivers. Survey points included 45 boat ramps and fishing access points from Milburnie Park in East Raleigh to Lee’s Landing on Broad Creek. The river was divided into three segments, with all access points in Goldsboro and above classified as the upper zone, sites on Contentnea Creek and downstream from Goldsboro to Core Creek were considered the middle zone, and those downstream from Core Creek, the lower zone. Prior to 2012, the Neuse River was comprised of only two zones with all sites above Contentnea Creek considered the upper.

The Tar-Pamlico River watershed drains over 5,500 square miles with over 2,400 miles of streams and rivers. Major tributaries include Cokey Swamp, Swift, Fishing, and Tranters creeks, and the Pungo River—a 30-mile tributary in the lower basin near Belhaven, North Carolina. Access points surveyed on the Tar-Pamlico River include 19 boat ramps and access sites from Battle Park in Rocky Mount to the Quarterdeck Marina in Bath, NC. This system was divided into upper and lower zones, with sites upstream of Greenville, North Carolina considered the upper zone. The Pungo River was surveyed at the Leechville ramp (NC-264 bridge), the Belhaven NCWRC ramp, Wrights Creek NCWRC ramp, and Cee Bee Marina on Pungo Creek.

The Cape Fear River is the southernmost river within the CSMA and flows approximately 199 miles from its confluence of the Deep and Haw rivers to the Atlantic Ocean. The Cape Fear River basin, the largest watershed entirely in North Carolina, encompasses 9,300 square miles. In addition to the Deep and Haw rivers, other major tributaries include the Black River and Northeast

Cape Fear River. Creel surveys were conducted by NCWRC personnel to estimate recreational fishery statistics for American shad in 2002 and 2011, and NCDMF staff assumed responsibility for annual creel surveys in 2013. Estimates from the NCWRC survey in 2011, prior to the implementation of the full survey in 2013, were used in the calculation of relative  $F$  described in Section 9.4.2. In 2002 and 2011, boat and bank anglers were interviewed from March through May only at the three lock and dam access points during the NCWRC creel surveys. In 2013, the creel survey was expanded from the lock and dams to include five boat ramps and access sites, with a sixth site added in 2014 surveyed from February–March. Access points surveyed now include nine sites from Castle Hayne, NC on the Northeast Cape Fear River to Fayetteville, NC, the upper most site on the Cape Fear River.

#### 6.2.3.1 Sampling Procedures

Recreational fishing statistics from the CSMA were calculated through a non-uniform stratified access-point creel survey (Pollock et al. 1994). Site probabilities were set in proportion to the likely use of the site according to time of day, day of the week, and season. Probabilities for this survey were assigned based on both boat and bank angler effort for fishermen targeting shad. For the creel survey in the Roanoke River probabilities were based on boat angler use due to the low level of bank angling during the spring months. It should be noted, however, that the Roanoke River angler survey is designed to specifically target striped bass effort and catch, therefore survey estimates are not considered for the shad fishery and are simply observations.

For the CSMA, probabilities were adjusted during the survey period according to angler counts to provide more accurate estimates. Morning and afternoon periods were assigned unequal probabilities of conducting interviews, with each period representing half a fishing day. A fishing day was defined as the period from one hour after sunrise until one hour after sunset. Monthly sampling periods for each river and zone were stratified accordingly, and all weekend and holiday dates along with two randomly selected weekdays were chosen from each week for sampling.

Anglers in the upper zone of the Tar-Pamlico River were interviewed throughout the spring months (January–May), while anglers in the lower zone were interviewed year-round based on the evidence of a year-round fishery and no seasonal closures. Two creel clerks were assigned to this river, with one surveying the upper zone January through May and one clerk surveying the lower zone from January through December. The three zones within the Neuse River were covered with one creel clerk per zone. The lower zone was surveyed from January to December while middle zone surveys were conducted January–May and the upper zone surveys from February–May. The Pungo River was surveyed throughout the year with one creel clerk. Beginning in 2013, the Cape Fear River was included in the survey from February–March with one creel clerk.

Returning fishing parties were interviewed by a creel clerk at the selected access point to obtain information regarding party size, effort, total number of fish harvested and/or released, primary fishing method, and location. Harvested fish were identified, counted, measured to the nearest mm fork length (converted to centerline length and total length for appropriate species), and weighed to the nearest 0.1 kg, while information on discarded fish was obtained from the angler to acquire the number and status of discarded individuals. The age structures were given to the Fisheries Management section of NCDMF for age determination. Creel clerks also obtained socioeconomic information from the angler, including age, state and county of residence, sex, ethnic background, marital status, number of individuals within household, and trip information and expenditures

#### 6.2.3.2 Analysis

#### 6.2.3.2.1 Effort and Catch Estimations

A fishing day was defined as the period from one hour after sunrise until one hour after sunset. The effort calculation was made by calculating estimates for each day sampled by day type (week and weekend day). This is accomplished by summing the total number of targeted shad species trips for the sample day and dividing by the selection probability for the site. The mean estimates for each day type are expanded to the final estimate by dividing the total number of days by the number of days sampled. For this survey, effort was calculated from those anglers indicating “American shad, hickory shad, and miscellaneous shad (non-specific shad) as a target species.

Samples were reduced to shad species effort and catch only. Results were stratified by river, access point, and time of day. Catch was defined as the sum of harvested fish and discarded fish. Discarded fish equaled the sum of fish caught in excess of creel limits (over-creel), legal-sized fish caught and released, and sub-legal fish returned to the water. Daily effort and catch for each river were calculated by expanding observed numbers by the sample unit probability (time of day probability divided by access area probability). Total catch estimates for the CSMA and catch estimates for each zone and type of day were calculated based on the Horvitz-Thompson estimator (NCDMF 2021).

Estimated CPUE values were obtained by dividing estimated catch by estimated shad spp. trips as well as angler hours in order to identify trends in fishing pressure and angler success. Size structure of shad spp. in harvests was described for each zone using length-frequency distributions of observed samples. Fishing party characteristics and methods used during shad spp. trips reported by anglers were documented by river and day type.

A database was created using Access© and statistical analyses were performed with SAS 9.1©. Beginning in 2012, the NCWRC Portal Access to Wildlife Systems (PAWS) was used to house these data and estimate effort and catch. NCDMF and NCWRC staff have been verifying calculations to ensure consistency with the previous work. Recreational creel survey estimates of shad species for the Tar-Pamlico, Neuse, and Cape Fear river systems from 2012–2022 (2013–2022, Cape Fear) are listed in Table 2, Table 4, and Table 6 of this document.

#### 6.2.3.2.2 Angler Demographics and Economic Analysis

The CSMA Creel Survey socioeconomic questionnaire included questions to identify characteristics of the shad spp. angling population. Demographics of anglers were reported according to age, residency, gender, ethnic background, marital status, and expressed as a percentage of the total angling population throughout the CSMA. Mean values were calculated. Results were further grouped by river and day type. Anglers were considered to be local, regional, or out-of-state residents. Local anglers resided within the county, while regional anglers resided elsewhere in North Carolina. The socioeconomic questionnaire also included questions regarding trip length, distance traveled, party size, and expenses on lodging, food, ice, bait, equipment rental, and boat fuel and oil. Mean weighted expenditures per trip were reported by river and day type. Lodging and rental expenses were rarely encountered and therefore are not included within this report. The weighted mean of each expenditure was totaled to provide an average trip cost.

### 6.3 Bycatch and Discards

Bycatch and discard information are not currently collected on commercial trip tickets. The only mechanism that exists to capture commercial bycatch and discards of American shad in other fisheries is an observer program conducted by NCDMF primarily to monitor sea turtle and sturgeon interactions in gill nets, as required under the Incidental Take Permits (ITP) for both. A state-wide sea turtle ITP was approved in September 2013 followed by an Atlantic Surgeon ITP in

July 2014. Prior to the approval of the Sturgeon ITP there was limited observer coverage in the Western Albemarle Sound and the rivers when the directed American shad fishing season occurs. Observer coverage has increased in recent years in the American shad fishery, under the Sturgeon ITP because encounters with sturgeon in these areas and times of year are more common. Even though observer coverage has historically been limited where American shad are typically targeted, gear, area, and seasonal restrictions are thought to have kept shad discards relatively low.

Recreational creel surveys capture discard and release information of American shad, hickory shad, and non-target species, but hook-and-line discard mortality is not estimated. Please see previous ASMFC compliance reports for this information.

## **7. ALBEMARLE SOUND-ROANOKE RIVER**

### **7.1 Stock Status**

The 2020 ASMFC benchmark stock assessment stated American shad stocks in the Albemarle Sound were not experiencing overfishing, as the terminal year fishing mortality in 2017 was 0.49 (90% CIs of 0.30-0.67), which is below the  $F_{40\%}$  threshold (1.71). The stock is not overfished, as the terminal year spawning stock abundance in 2017 was 48 metric tons (90% CIs of 39.6-66.0 metric tons) which is above the  $SSB_{40\%}$  threshold (42 metric tons).

### **7.2 Commercial Fisheries**

The Albemarle Sound area has traditionally accounted for the largest proportion of the state's commercial harvest (Figure 4). Since 2001, American shad landings from the Albemarle Sound area accounted for over 50% of the total American shad harvest in North Carolina. Landings from gill nets comprised over 90% of the overall harvest across the same time period. The commercial fishery primarily occurs in Albemarle Sound and within the Chowan River tributary. Commercial effort and harvest are minimal in the Roanoke River. From 1994 to 2022 only 72 pounds of American shad were landed from commercial fisheries in the Roanoke River, with no reported harvest since 2017. Commercial harvest from the Roanoke River is limited to pound nets because - anchored and drift gill nets have been prohibited since 1991 and 1993 respectively.

### **7.3 Recreational Fisheries**

Recreational fisheries for striped bass and hickory shad have existed on the Roanoke River for many years, but little effort, catch or harvest of American shad have been documented in annual creel surveys. However, creel surveys conducted by the NCWRC have traditionally focused on striped bass effort and harvest; therefore, estimates of American shad harvest could be underestimated. The spring 2006 Roanoke River creel report estimated a directed harvest of 103 American shad and release of 541 fish, but the harvest estimate was expanded from only seven observations (McCargo et al. 2007). Annual estimates of American shad harvest have not been calculated for the Roanoke River fishery since 2006 when the ASMFC suspended the recreational harvest reporting requirements. Additionally, little to no focused recreational effort for American shad occurs in the Albemarle Sound or tributaries, including the Roanoke River, as most effort is focused on striped bass. American shad are most likely targeted by bank anglers in the Roanoke River, however anecdotal evidence from NCWRC biologists and enforcement officers indicates American shad catch and harvest on the Roanoke River is minimal. NCWRC has not been able to expand the Roanoke River creel survey to include bank anglers due to limited staff availability and funding. The existing creel survey conducted by NCDMF in the Albemarle Sound and tributaries other than the Roanoke River also targets striped bass anglers, but recreational American shad harvest is rarely documented. Despite the shortcomings of North Carolina creel surveys for

estimating American shad effort and harvest, directed recreational effort for American shad is minimal because most recreational fisheries occur on the spawning grounds, most of which occur in Virginia portions of Chowan River tributaries. Recreational harvest from these tributaries, including Virginia portions of the Meherrin, Nottaway, and Blackwater rivers, that drain into the Chowan River is unknown. Through recent tagging data (see Section 5.1.2.4 for additional detail) we know that a large portion of American shad are ascending the Chowan River, instead of the Roanoke River, to reach spawning grounds located in these Virginia systems. Additional cooperation between both Virginia and North Carolina is needed to properly evaluate the impact of the recreational fishery to the Chowan River spawning stock, but recreational harvest has been prohibited since January 1, 2019, in all waters of Virginia.

#### **7.4 Sustainability Parameters**

The sustainability parameters selected for Albemarle Sound-Roanoke River were juvenile abundance index, female CPUE based on the IGNS, female CPUE based on the electrofishing survey and female relative  $F$  based on the IGNS. Data used in the development of sustainability parameters for the Albemarle-Roanoke River system include juvenile data collected by NCDMF (Section 5.1.1), IGNS data collected by NCDMF (Section 5.1.2.2), electrofishing data collected by NCWRC (Section 5.1.2.1.2), and commercial harvest data collected through the NCTTP (Section 6.1).

Relative  $F$  based on the IGNS was chosen over relative  $F$  based on the electrofishing survey because the electrofishing survey is limited to the Roanoke River and was not considered representative of Albemarle Sound as a whole and as previously noted, most American shad in this system are likely ascending the Chowan River. The IGNS occurs in the same areas of the Albemarle Sound as the commercial fishery, the calculation of relative  $F$  based on the IGNS rather than the electrofishing index was determined to be more appropriate. Exceeding the threshold for three consecutive years for Juvenile Abundance, Female CPUE (IGNS), or Female Relative  $F$  (IGNS) will trigger management action. Female CPUE (electrofishing survey) will be used in conjunction with a second index for triggering management action (see Section 14 for additional detail).

Results from recent telemetry studies indicate a substantial portion of American shad tagged in the Albemarle Sound migrate up the Chowan River and into the Meherrin and Nottaway rivers, with no tag detections in the Blackwater River (Mack et. al. 2021). American shad are collected in all three Chowan River tributaries during electrofishing surveys conducted by Virginia Department of Wildlife Resources staff, but the infrequent nature of the surveys prevents development of sustainability parameters with the data. While more research into the contribution from these systems is needed, it appears the Chowan River tributaries are important spawning areas for American shad entering the Albemarle Sound (See Section 5.1.2.4 for additional detail).

##### **7.4.1 Juvenile Abundance**

*Juvenile Abundance:* The relative abundance index of juvenile American shad, expressed as CPUE, based on the NCDMF Juvenile Seine Survey, is calculated as the number of fish per haul using data collected from 14 individual stations from June through October in the western Albemarle Sound (Figure 5).

- Time series: 1996–2022
- Index Value: annual, arithmetic mean

- **Threshold:** 25th percentile (where 75% of all values are greater) from the fixed time series 1996–2021
- **Trigger:** Three consecutive years of values below the threshold.

The juvenile abundance index has been above the threshold since 2013 (Figure 5). This index has demonstrated an overall increase since 2014 which corresponds to the management action taken under the 2013 SFP reducing commercial harvest from the Albemarle Sound. Index value for 2022 is preliminary.

#### 7.4.2 Female CPUE (electrofishing survey)

*Female CPUE (electrofishing survey):* The female CPUE index based on the NCWRC electrofishing survey was calculated as the number of fish per minute using data collected from March through May in the Roanoke River (Figure 6).

- **Time series:** 2001–2022 (no survey data available for 2020)
- **Index Value:** annual, ratio estimator
- **Threshold:** 25th percentile (where 75% of all values are greater) from the fixed time series 2001–2017.
- **Trigger:** Three consecutive years of values below the threshold. Does not trigger management unless coupled with another sustainability parameter.

Electrofishing surveys for American shad were incomplete in 2020 due to limitations resulting from the Covid-19 pandemic and resumed as usual in 2021. The ASWG reviewed the data and recommended retaining the baseline fixed time-series of 2001–2017, established in the 2018 SFP, to determine the threshold value for the sustainability parameter.

The female abundance index derived from the electrofishing survey was above the threshold throughout most of the time series, except for 2006, 2010, and 2016 (Figure 6). This index demonstrated an increase from 2006 to 2008, decreased slightly in 2009 and dropped below the threshold in 2010. The index then increased through 2014 to the highest value of the time series, before declining to below the threshold in 2016, and increasing again in 2017. The index has remained above the threshold since 2017.

#### 7.4.3 Female CPUE (IGNS)

*Female CPUE (IGNS):* The female CPUE index based on the Albemarle Sound IGNS was calculated as the number of fish per haul using data collected from float gill nets fished in Zone II, January through May (Figure 7).

- **Time series:** 2000–2022. Although the IGNS has been conducted since 1991, use of the 2000–2022 time series will allow for more consistent comparison with the female CPUE index from the Roanoke River electrofishing survey, which has been conducted annually since 2000. See explanation below, IGNS data not available for 2020 or 2021.
- **Index Value:** annual, arithmetic mean
- **Threshold:** 25th percentile (where 75% of all values are greater) of the index (January–May, float gill nets, Zone II) from the fixed time series 2000-2017.
- **Trigger:** Three consecutive years of values below the threshold.

The Albemarle Sound IGNS was suspended in February 2020 due to a combination of factors including the Covid-19 pandemic and initiation of consultation to update ESA permit requirements described Section 5.1.2.2. Sampling resumed in November 2021. The ASWG reviewed the data



and recommended retaining the baseline fixed time-series of 2000–2017, established in the 2018 SFP, to determine the threshold value for the sustainability parameter.

The IGNS index of female relative abundance for Albemarle Sound has shown slight variation over time and was below the threshold starting in 2011 for three consecutive years, triggering management action in 2014. Since 2013, the index has been below the threshold for two, non-consecutive years (2017 and 2022) (Figure 7).

#### 7.4.4 Female Relative $F$ (IGNS)

*Female Relative  $F$  (IGNS)*: Female relative  $F$  (pounds) based on the Albemarle Sound IGNS was calculated using commercial harvest data of roe shad, all gear types, from the Albemarle Sound (February through April, 2000-2013; March, 2014–2022) and the female CPUE index (January–May, float gill nets, Zone II) from the Albemarle Sound IGNS (Figure 8).

- Time series: 2002–2022. Same time series disruption in 2020 and 2021 described for female CPUE (IGNS) above apply to Female Relative  $F$ .
- Index Value: Calculated by dividing annual commercial landings by a hind cast 3-year average of a survey index (current year + previous two years).
- Threshold: 25th percentile (where 75% of all values are greater) from the fixed time series 2002–2017.
- Trigger: Three consecutive years of values above the threshold.

Relative  $F$  is computed by dividing annual commercial landings by a hind cast 3-year average of a fishery independent index (Albemarle Sound IGNS). Whereas the 2013 SFP used a centered 3-year average, the hind cast 3-year average ensures the value of the final year in the time series (which can trigger management action) remains unchanged once calculated. A 3-year average was chosen to dampen the noise of the survey index in place of point estimates in the denominator. Indices of relative abundance and estimates of relative  $F$  were calculated for each system through 2022. Thresholds (75th and 25th percentiles) for sustainability parameters were fixed using survey data through 2017. The ASWG reviewed the data and recommended retaining the baseline fixed time-series of 2002–2017, established in the 2018 SFP, to determine the threshold value for the sustainability parameter.

Estimates of female relative  $F$  derived from the Albemarle Sound IGNS have varied with time. The index was above the threshold in 2003, 2007, 2012, and 2013. Relative  $F$  could not be estimated in 2020 and 2021 because of the Albemarle Sound IGNS survey suspension. To calculate the 2022 relative  $F$ , data from 2018 and 2019 IGNS were used in the hind cast 3-year average as a proxy for 2020 and 2021. Under the 2023 SFP, the relative  $F$  threshold has not been above the threshold for three consecutive years. This is attributed to reducing the variability in the point estimates for relative  $F$  from the fishery-independent index. The 2023 SFP relative  $F$  does not constrain the Albemarle Sound IGNS (fishery-independent index) to the mesh size and season of the commercial fishery. Unlike previous SFPs, relative  $F$  for the Albemarle Sound is now calculated using the female CPUE index, which is also a sustainability parameter, and commercial harvest of roes from all gear types. These modifications were necessary to capture the change in the commercial fishery due to management restrictions as well as changes in sampling methodology to the Albemarle Sound IGNS (removal of sink gill nets). The modifications to the relative  $F$  calculation are more representative of the American shad abundance observed in the fishery-independent and fishery-dependent data.

In the 2013 SFP, the Albemarle Sound IGNS for the Albemarle Sound-Roanoke River was truncated to represent the commercial season, February through April (2000–2012) and data only from the 5.0, 5.5, and 6.0 inch stretched mesh sizes. The mesh sizes selected most accurately reflect those used by the commercial gill net fleet, harvest of American shad from other gears were not incorporated into relative  $F$ . In 2014 management action was triggered under this SFP and the commercial season was reduced to March 3 through March 24. This season has been maintained through 2022.

The 2018 SFP, maintained the female relative  $F$  calculation based on the Albemarle Sound IGNS subset to the season and mesh sizes of the commercial gill net fleet. The Albemarle Sound IGNS was subset to the month of March for female relative  $F$  calculation from 2014 to 2022. This has increased the variability in the point estimates for relative  $F$  and reduced the sample size used in the IGNS index. The index exceeded the threshold in 2011 through 2014 and remained below the threshold from 2015 through 2022. However, for 2020 and 2021 relative  $F$  was not estimated due to lack of a survey index. The 2022 relative  $F$  value is calculated using 2018 and 2019 survey index data as a proxy for 2020 and 2021 due to lack of survey index.

### **7.5 Areas Covered by Sustainability Parameters**

Monitoring and sustainability parameters in the Albemarle Sound-Roanoke River are representative of the entire Albemarle Sound, and all its tributaries. Principal tributaries of the Albemarle Sound include the Chowan River basin (Meherrin, Nottoway, and Blackwater rivers) and the Roanoke River basin including the Cashie and Eastmost rivers. Monitoring in the Albemarle Sound-Roanoke River is also representative of the Currituck, Roanoke, and Croatan sounds and the tributaries thereof. The Currituck Sound connects to the Albemarle Sound from the northeast near the coast and includes Northwest and North Landing rivers. Croatan and Roanoke sounds join the Albemarle Sound from the southeast, which joins the Pamlico Sound and empties into the Atlantic Ocean via Oregon Inlet. Remaining tributaries of the Albemarle Sound include Alligator River, Scuppernong River, Mackeys Creek, Salmon Creek, Edenton Bay, Yeopim River, Perquimans River, Little River, Big Flatty Creek and Pasquotank River.

Fishery-independent monitoring is performed throughout the Albemarle Sound, including the western tributaries and the Currituck, Roanoke, and Croatan sound through fishery-independent gill net, trawl, and seine surveys (see Section 5.1.2 for more details). Only fishery-independent data from the western portion of the Albemarle Sound and Roanoke River are used to develop the sustainability parameters. The primary spawning rivers for American shad entering the Albemarle Sound are the Chowan River and Roanoke River systems. Monitoring and sustainability parameters inform management of all tributaries. It is important to note that while fishery-independent monitoring outside of the western Albemarle Sound is not used to calculate sustainability parameters, monitoring of adults and juveniles are occurring in an effort to track trends in abundance. Management measures taken as a result of sustainability plan triggers will be implemented throughout all Albemarle Sound and its tributaries in addition to the Currituck, Roanoke, and Croatan sounds.

Fishery-dependent data are monitored by the NCTTP which collects trip level commercial harvest data for the entire Albemarle Sound. Specific waterbody locations within the Albemarle Sound can be recorded on the trip ticket to monitor if harvest is increasing in a particular area, that may require additional monitoring.

## **7.6 Additional Considerations**

In 2005, state and federal fisheries management agencies in North Carolina and Virginia reached a Settlement Agreement with Dominion North Carolina Power regarding Federal Energy Regulatory Commission (FERC) relicensing of the Gaston and Roanoke Rapids lakes hydroelectric dams in the Roanoke River basin. Among the mitigation measures required by relicensing was a long-term, well-funded, and coordinated program to restore American shad in the Roanoke basin. Measures outlined in this effort included improvements in hatchery production of fry, continued intensive monitoring of fry stocking success upstream and downstream of the mainstem reservoirs, development of techniques to estimate American shad population size, and prescriptions for diadromous fish passage. This restoration effort is coordinated by the Diadromous Fish Restoration Technical Advisory Committee (DFRTAC), which includes representatives from U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Virginia Department of Wildlife Resources (VDWR), NCWRC, NCDMF and Dominion Power. The condition of the license states that Dominion is required to design and implement upstream passage for American shad when population estimates of 20,000 fish have been observed in two years. The target was developed based on a combination of 10% of the projected run size using the 50 shad per acre rule of thumb for riverine habitat between the dam and the river mouth (St. Pierre 1979) and very limited historic landings information. Multiple hydroacoustics research projects have attempted to estimate American shad populations in the Roanoke River. The average run size estimate during 2006–2011 was 39,000 American shad, suggesting the American shad population had reached the target to begin fish passage efforts at Roanoke Rapids Dam (Hightower et al. 2013). Population estimation using the hydroacoustics techniques developed during this research is expensive and labor intensive; the estimates are also imprecise due to the uncertainty involved with assigning species to run count estimates and the difficulty conducting drift gill net studies in the lower Roanoke River. Additionally, evaluations of fry stockings upstream of dams indicate fish spawned upstream would have little contribution to the population because of low downstream passage rates. Consequently, Dominion Power (with support of state and federal partners) has annually petitioned the FERC for a delay of the design of a fish passage program at Roanoke Rapids Dam. The DFRTAC continues to meet and evaluate the status of the Roanoke Rapids Dam FERC license agreement, including provisions for passage of American shad.

The previous plan recommended development of creel survey methods to better estimate effort, catch, and harvest of American shad in the Roanoke River. The existing creel survey conducted each spring on the Roanoke River targets striped bass effort and only estimates effort, catch, and harvest for anglers fishing from boats. Few American shad are encountered each year during the existing Roanoke River creel survey. American shad are most likely targeted by bank anglers; however, due to inadequate funding and staff availability, NCWRC has not been able to expand the Roanoke River creel survey to include bank anglers. Anecdotal evidence from NCWRC biologists and enforcement officers indicates American shad catch and harvest on the Roanoke River is minimal.

## **8. TAR-PAMLICO RIVER**

### **8.1 Stock Status**

Stock status could not be determined for the Tar-Pamlico River based on the 2020 ASFMC stock assessment (ASFMC 2020). Juvenile mortality status was unknown due to lack of data. Adult mortality status was unknown due to lack of data to estimate female mortality in 2017, the terminal year of the assessment. Additionally, the delay-difference model experienced diagnostics problems

and could not be used for status determination. The most recent three-year average of female total mortality was 0.87 in 2007 which is below the  $Z_{40\%}$  threshold (1.07).

## 8.2 Commercial Fisheries

Commercial landings of American shad have declined significantly since the mid-1980s and have remained low and variable without trend since 1994 (Figure 4). Almost all harvest occurs in gill nets upstream of the ferry lines from the Bayview to Aurora Ferry. Since a 2019 prohibition of all gill nets above the ferry lines, commercial harvest from this system has been negligible.

## 8.3 Recreational Fisheries

A recreational fishery does exist and estimates of angler effort and catch are calculated using creel surveys. The recreational daily creel limit for the Tar-Pamlico is 10 American and hickory shad in the aggregate. Before 2012, these surveys rotated among the Tar-Pamlico, Neuse, and Cape Fear rivers. Annual creel surveys coordinated between both NCDMF and NCWRC jurisdictions began in 2012 on the Tar-Pamlico and Neuse rivers, and on the Cape Fear River in 2013. Estimates of angler effort and catch are calculated through creel surveys described in the fishery-dependent, Section 6.2, of this plan.

A confounding factor in the creel survey is that anglers may indicate they targeted “shad” or miscellaneous shad (non-specific shad species), because American and hickory shad co-occur in the Tar-Pamlico River. The confirmed catch of American shad can be estimated based on anglers that confirmed targeting or catching American shad. For example, the 2022 Tar-Pamlico creel survey determined recreational anglers harvested 464 American shad and took 201 targeted trips, 806 hickory shad and took 0 targeted trips, and 111 miscellaneous shad and took 5,444 targeted trips. Trip and effort estimates for specific shad species is calculated from anglers that indicate target species as American shad, hickory shad, or miscellaneous shad. Catch estimates are based on the shad species caught as indicated by the angler or observed by the creel clerk. For 2022, anglers did not indicate targeting of hickory shad, but the catch of hickory shad was either confirmed or observed by the angler, therefore the trip and effort estimates for hickory shad were zero (Table 2).

## 8.4 Sustainability Parameters

The sustainability parameters selected for the Tar-Pamlico River system were the female CPUE index and female relative  $F$ . Exceeding the threshold for any of the selected parameters for three consecutive years will trigger management action (see Section 14 for additional detail).

Data used in the development of sustainability parameters for the Tar-Pamlico system include electrofishing data collected by NCWRC (Section 5.1.2.1.2), commercial harvest data collected through the NCTTP (Section 6.1), and recreational harvest data collect through the CSMA Creel Survey (Section 6.2.3). There is no directed long-term juvenile abundance survey for the Tar-Pamlico system. An IGNS has been conducted consistently in the Tar-Pamlico, Pungo, and Neuse river tributaries of Pamlico Sound since 2004, but these data are not suitable for sustainability parameters due to low catch rates of American shad (Section 5.1.2.3).

### 8.4.1 Female CPUE (electrofishing survey)

*Female CPUE (electrofishing survey):* The female CPUE index based on the NCWRC electrofishing survey was calculated as the number of fish per minute using data collected from March through May (Figure 9).

- Time series: 2000–2022 (no survey data available for 2020)
- Index Value: annual, ratio estimator

- Threshold: 25<sup>th</sup> percentile (where 75% of all values are greater) from the fixed time series 2000–2017.
- Trigger: Three consecutive years of values below the threshold.

Electrofishing surveys for American shad were incomplete in 2020 due to limitations resulting from the Covid-19 pandemic and resumed as usual in 2021. The ASWG reviewed the data and recommended retaining the baseline fixed time-series of 2000–2017, established in the 2018 SFP, to determine the threshold value for the sustainability parameter.

Female relative abundance of American shad derived from the electrofishing survey in the Tar-Pamlico River has been relatively stable over the time series except for two notably high years in 2003 and 2004. The index was below the threshold in 2006, 2007, 2009, 2018, and 2019 but above the threshold in all other years. No index was available in 2020.

#### 8.4.2 Female Relative $F$ (electrofishing survey)

*Female Relative  $F$  (electrofishing survey)*: Female relative  $F$  (fish) based on the NCWRC electrofishing survey was calculated using the combined commercial and recreational harvest from the Tar-Pamlico River and the female CPUE index from the Tar-Pamlico River electrofishing survey (Table 3, Figure 10).

- Time series: 2012–2022 (no survey data available for 2020)
- Index Value: Calculated by dividing annual combined commercial and recreational harvest (fish) by a hind cast 3-year average of a survey index (current year + previous two years).
- Threshold: 75<sup>th</sup> percentile (where 25% of all values are greater) from the fixed time series 2012–2022.
- Trigger: Three consecutive years of values above the threshold.

Relative  $F$  is computed by dividing the combined commercial and recreational harvest (fish) by a hind cast 3-year average of a fishery-independent index (female CPUE, electrofishing survey). A 3-year average was chosen to dampen the noise of the survey index in place of point estimates in the denominator. American shad commercial harvest is reported in pounds whereas the confirmed recreational harvest of American shad is reported in numbers of fish. For the relative  $F$  calculation, commercial harvest data were converted to numbers of fish using average weight data collected by NCDMF from this sector. Indices of relative abundance and estimates of relative  $F$  were calculated for each system through 2022. Thresholds (75<sup>th</sup> and 25<sup>th</sup> percentiles) for sustainability parameters were fixed using survey data through 2022. Note that the 2012 index value is utilizing female CPUE index data from 2010–2012 in the hind cast 3-year average. Under the 2023 SFP, female relative  $F$  estimates were above the threshold in 2012, 2013, and 2017. Since 2018, the index has remained below the threshold. Due to the lack of survey data for 2020, only two years of the survey index are used in the hind cast 3-year average for the relative  $F$  estimates from 2020 through 2022.

To calculate relative  $F$  in numbers of fish, American shad commercial harvest data (pounds) from 2012–2022 for all gears, February through April, were separated into two market grades: roe and buck. Roe includes all market grades except for buck and unclassified (i.e., small, medium, large, jumbo). Roe and buck harvest were combined, and the percent of roe and buck determined. These percentages were applied to the unclassified market grade and added to the total harvest of roe and buck. Individual weight data collected from the Tar-Pamlico River commercial fishery (2000–2017) was used to calculate and average individual fish weight for female (3.711 lb/roe) and male (2.726 lb/buck). These individual weight estimates were applied to the total commercial harvest for each year to obtain the estimated numbers of fish by market grade. The estimated number of fish

for buck and roe were combined, annually, representing the total commercial harvest in numbers of fish. The commercial harvest numbers were added to the recreational harvest numbers (confirmed American shad) to equal the numerator in the calculation of relative  $F$ . The denominator of the relative  $F$  calculation is a hind cast 3-year average of the female CPUE sustainability parameter using 2010–2022 index values. The female CPUE sustainability parameter is being used in the calculation of female relative  $F$  to reduce variability in point estimates, whereas previous SFPs truncated this index.

In the 2013 SFP, the female CPUE for the Tar-Pamlico River was truncated to represent the commercial season, March through April (2000–2017). Truncating the female CPUE to the March through April has increased the variability in the point estimates for relative  $F$  and reduced the sample size. The threshold for this plan was not fixed and changed with a new year of data. In 2017, the terminal year of the 2013 SFP, the female relative  $F$  index was above the threshold in 2000, 2005, 2007, 2009, and 2012.

The 2018 SFP, maintained the female relative  $F$  calculation based on the truncated female CPUE but fixed the time-series of data used to calculate the threshold to 2002–2017. Estimates of relative  $F$  for female American shad derived from the electrofishing survey and commercial harvest were above the threshold during 2007 to 2009. These estimates of female relative  $F$  remained below the threshold through 2022 as the commercial harvest declined. Due to the lack of survey data for 2020, only two years of the survey index are used in the hind cast 3-year average for the relative  $F$  estimates from 2020 through 2022.

### **8.5 Areas Covered by Sustainability Parameters**

Monitoring and sustainability parameters in the Tar-Pamlico River are representative of the entire Tar-Pamlico River basin, including tributaries. Management measures taken as a result of sustainability plan triggers will be applied at the basin level and will include all tributaries.

### **8.6 Additional Considerations**

There is potential to improve upstream passage in this system. The NCWRC, USFWS, Pamlico-Tar River Foundation, and the Albemarle Pamlico National Estuary Partnership have engaged in conversations with the Rocky Mount Mills Dam owner and hydroelectric operator. In addition to interest in providing American shad access to potential spawning habitat upstream of Rocky Mount Mills Dam, concern exists that hydropeaking operations (periodic spikes in flow) at Rocky Mount Mills Dam compromise the quality of existing spawning habitat. The dam owners agreed to cease hydropeaking during the anadromous spawning season. The powerhouse has been out of operation for several years, but the current owners of the dam have intentions to resume hydroelectric operation and are considering fish passage improvements, which would open approximately 3.5 miles of additional spawning habitat. Also, Rocky Mount Mills Dam is a run-of-the river dam with limited storage capacity and is not FERC regulated as it meets certain exemption requirements.

A cooperative effort between NCDMF and NCWRC to improve the frequency and design of recreational creel surveys on the Tar-Pamlico and Neuse rivers began in spring 2012. Creel surveys have occurred annually since that time and include increased coverage on both rivers, which has improved estimates of recreational harvest.

As noted previously, NCDMF develops an annual list of research priorities for commercially and economically important species. One of the top priorities has consistently been expansion of existing surveys to provide accurate juvenile abundance indices (JAI) for all commercially and recreationally important species. In 2019, NCDMF expanded the juvenile seine survey (Program

100) to the Tar-Pamlico, Neuse, and Cape Fear river systems. The survey is operated using the same gear and time frame as described in Section 5.1.1 for the Albemarle Sound. While the seine survey was expanded primarily for striped bass, river herring and shad may also be intercepted as the survey is conducted in known anadromous spawning areas. Due to the short time-series, this data was not evaluated for the 2023 SFP but will be evaluated under the next 5-year SFP.

## **9. NEUSE RIVER**

### **9.1 Status of Stocks**

The overall stock status could not be determined for the Neuse River based on the 2020 ASFMC stock assessment (ASFMC 2020). Juvenile mortality status is unknown due to lack of data. Adult mortality status is considered sustainable as the three-year average catch in 2017 was less than the delay-difference model median total allowable catch (TAC) estimate of 51,600 pounds. Abundance status is unknown due to lack of juvenile data. There have been conflicting trends in adult abundance since 2005, with an increasing trend detected from the electrofishing survey and no trend detected from the commercial harvest.

### **9.2 Commercial Fisheries**

Commercial landings of American shad have declined since 1972. There have been several peaks throughout the time series, but landings have remained low and variable without trend since the early 2000s (Figure 2). Harvest occurred almost entirely from gill nets upstream of the ferry lines from the Minnesott Beach and Cherry Branch ferry. Since the 2019 gill net prohibition above the ferry lines, commercial harvest from this system has been negligible.

### **9.3 Recreational Fisheries**

Estimates of angler effort and catch are calculated through creel surveys noted in the fishery-dependent, Section 6.2, of this plan. Like the Tar-Pamlico River a confounding factor of the Neuse River creel survey is that anglers may indicate they targeted “shad” or non-specific shad species, because American and hickory shad co-occur in the Neuse River. The confirmed catch of American shad can be estimated based off anglers that confirmed targeting or catch of American shad. A 1-fish daily limit on American shad within the aggregate 10-fish recreational creel limit for American and hickory shad has been implemented in Coastal, Joint, and Inland Fishing Waters of the Neuse River. With the 1-fish daily limit most American shad caught in the recreational fishery are harvested. The 2022 Neuse River creel survey determined recreational anglers harvested 36 American shad and took 22 targeted trips, 4,033 hickory shad and took 65 targeted trips, and 0 miscellaneous shad and took 6,129 targeted trips (Table 4). Trip and effort estimates for specific shad species is calculated from anglers that indicate target species as American shad, hickory shad, or miscellaneous shad. Catch estimates are based on the shad species caught as indicated by the angler or observed by the creel clerk.

### **9.4 Sustainability Parameters**

The sustainability parameters selected for the Neuse River system were the female CPUE index and female relative  $F$ . Exceeding the threshold for any of the selected parameters will trigger management action (see Section 14 for additional detail).

Data used in the development of sustainability parameters for the Neuse River system include electrofishing data collected by NCWRC (Section 5.1.2.1.2), commercial harvest data collected through the NCTTP (Section 6.1), and recreational harvest data collect through the CSMA Creel Survey (Section 6.2.3). There is no directed long-term juvenile abundance survey for the Neuse River system. An IGNS has been conducted consistently in the Tar-Pamlico, Pungo, and Neuse

river tributaries of Pamlico Sound since 2004, but these data are not suitable for sustainability parameters due to low catch rates of American shad (Section 5.1.2.3).

#### 9.4.1 Female CPUE (electrofishing survey)

*Female CPUE (electrofishing survey)*: The female CPUE index based on the NCWRC electrofishing survey was calculated as the number of fish per minute using data collected from March through May (Figure 11).

- Time series: 2000–2022 (no survey data available for 2020)
- Index Value: annual, ratio estimator
- Threshold: 25<sup>th</sup> percentile (where 75% of all values are greater) from the fixed time series 2000–2017.
- Trigger: Three consecutive years of values below the threshold.

Electrofishing surveys for American shad were incomplete in 2020 due to limitations resulting from the Covid-19 pandemic and resumed as usual in 2021. The ASWG reviewed the data and recommended retaining the baseline fixed time-series of 2000–2017, established in the 2018 SFP, to determine the threshold value for the sustainability parameter.

Female relative abundance of American shad derived from the electrofishing survey in the Neuse River has been variable and remained above the threshold for ten out of the past 12 years (2011–2022). The index was below the threshold in 2000, 2002, 2006, 2007, 2010, and 2022. The 2022 index may be explained by a relatively dry spring preventing sampling in the Neuse River above Raleigh, NC (T.D. VanMiddlesworth, NCWRC, personal communication).

#### 9.4.2 Female Relative *F* (electrofishing survey)

*Female Relative F (electrofishing survey)*: Female relative *F* (fish) based on the NCWRC electrofishing survey was calculated using the combined commercial and recreational harvest from the Neuse River and the female CPUE index from the Neuse River electrofishing survey (Table 5, Figure 12).

- Time series: 2012–2022 (no survey data available for 2020)
- Index Value: Calculated by dividing annual combined commercial and recreational harvest (fish) by a hind cast 3-year average of a survey index (current year + previous two years).
- Threshold: 75<sup>th</sup> percentile (where 25% of all values are greater) from the fixed time series 2012–2022.
- Trigger: Three consecutive years of values above the threshold.

Relative *F* is computed by dividing the combined commercial and recreational harvest (fish) by a hind cast 3-year average of a fishery-independent index (female CPUE, electrofishing survey) as described in Section 8.4.2 for Tar-Pamlico River system. To convert commercial harvest to numbers of fish, individual weight data collected from the Neuse River commercial fishery (2000–2017) was used to calculate average individual fish weight for female (3.635 lb/roe) and male (2.293 lb/buck). Under the 2023 SFP, female relative *F* estimates were above the threshold in 2012, 2013, and 2014. Since 2015, the index has remained below the threshold. Due to the lack of survey data for 2020, only two years of the survey index are used in the hind cast 3-year average for the relative *F* estimates from 2020 through 2022.

In the 2013 SFP, the female CPUE for the Neuse River was truncated to represent the commercial season, March through April (2000–2017). Truncating the female CPUE to the March through April has increased the variability in the point estimates for relative *F* and reduced the sample size.



The threshold for this plan was not fixed and changed with a new year of data. In 2017, the terminal year of the 2013 SFP, the female relative  $F$  index was above the threshold in 2002, 2003, 2006, and 2007.

The 2018 SFP, maintained the female relative  $F$  calculation based on the truncated female CPUE but fixed the time-series of data used to calculate the threshold to 2002–2017. Estimates of relative  $F$  for female American shad derived from the electrofishing survey and commercial harvest were above the threshold in 2004, Estimates remained below the threshold through 2022 as the commercial harvest declined. Due to the lack of survey data for 2020, only two years of the survey index are used in the hind cast 3-year average for the relative  $F$  estimates from 2020 through 2022.

## **9.5 Areas Covered by Sustainability Parameters**

Monitoring and sustainability parameters in the Neuse River are representative of the entire Neuse River basin, including tributaries. Management measures taken as a result of sustainability plan triggers will be applied at the basin level and will include all tributaries.

## **9.6 Additional Considerations**

Access to American shad spawning habitat is affected by streamflow conditions on the Neuse River, and the variability in timing and strength of streamflow can determine where American shad spawn. The removal of Milburnie Dam (rkm 352) in 2017 opened approximately 25 km of additional spawning habitat to American shad in the mainstem Neuse River. American shad currently have access to more than 90% of the historical habitat extent in the Neuse River (ASMFC 2020). Since the removal of Milburnie Dam, migrating American shad have been documented at the base of Falls Dam (rkm 379) and they no longer congregate at the former dam location (T.D. VanMiddlesworth, NCWRC, personal communication). The lack of migration impediments should benefit the Neuse River American shad population in the future, but further research is needed to determine how habitat selection and spawning success might be related to streamflow. Additionally, changes to survey methods to include upstream habitat need to be evaluated.

As noted in the previous section, an annual creel survey rotation prior to 2012 as well as efforts by NCDMF to expand creel surveys upstream have improved recreational effort and catch/harvest estimates. Annual creel surveys in the Neuse River are anticipated to continue. Expansion of existing surveys to provide accurate JAIs for all commercially and recreationally important species is a NCDMF priority. In 2019, NCDMF expanded the juvenile seine survey (Program 100) to the Tar-Pamlico, Neuse, and Cape Fear river systems. The survey is operated using the same gear and time frame as described in Section 5.1.1 for the Albemarle Sound. While the seine survey was expanded primarily for striped bass, river herring and shad may also be intercepted as the survey is conducted in known anadromous spawning areas. Due to the short time-series, this data was not evaluated for the 2023 SFP but will be evaluated under the next 5-year SFP.

# **10. CAPE FEAR RIVER**

## **10.1 Stock Status**

The overall stock status could not be determined for the Cape Fear River based on the 2020 ASFMC stock assessment (ASMFC 2020). Juvenile mortality status is unknown due to lack of data. Adult mortality status is also unknown, as the delay-difference model experienced diagnostics problems and could not be used for status determination. Abundance status is unknown due to lack of juvenile data. There was an increasing trend in adult abundance since 2005. American shad in the Cape Fear River are semelparous (spawn once followed by death) whereas in the Albemarle Sound system, Tar-Pamlico, and Neuse rivers they are iteroparous (repeat spawners).

## 10.2 Commercial Fishery

From 1972 through 1993, commercial harvest displayed several cyclical peaks (1972, 1982, and 1993) although each successive peak was slightly lower than the previous. Since 1994, harvest from the Cape Fear River has been lower overall compared to 1972–1993 (Figure 4). Harvest from 1994 to 2018 ranged from 6,804 pounds in 1999 to 46,148 pounds in 2014, with an average of 19,000 pounds harvested per year. Harvest in 2014 was the highest since 1993. The increase for this particular year is attributed to a new market opening and extra effort in this fishery. Since the 2014 peak, effort has been reduced, as participants are aging out of the fishery, and anchored gill nets have been removed from the fishing grounds.

As with the other river systems, most American shad are harvested from gill nets in the Cape Fear River. There has been very little harvest from other gears. Since February 15, 2017, anchored large mesh gill nets (4.0–6.5-inch) are prohibited in the Cape Fear River (north of the Railroad Bridge) and Northeast Cape Fear River (north of I-40 bridge) north of Wilmington, NC. Gear restrictions coupled with lack of participants have contributed to a decline in commercial harvest with less than 10,000 pounds of American shad landed from 2019 through 2022.

## 10.3 Recreational Fishery

Estimates of angler effort and catch are calculated through creel surveys noted in the fishery-dependent, Section 6.2, of this plan. The 2022 Cape Fear River creel survey determined recreational anglers harvested 2,666 American shad and took 1,258 targeted trips, 0 hickory shad and took 0 targeted trips, and 0 miscellaneous shad and took 0 targeted trips (Table 6). In 2013, the daily creel limit was reduced to a maximum of 5-fish American shad limit within the 10-fish shad aggregate daily limit. It is important to note that hickory shad are encountered infrequently in the Cape Fear River and most of the recreational effort is focused on American shad. Trip and effort estimates for specific shad species is calculated from anglers that indicate target species as American shad, hickory shad, or miscellaneous shad. Catch estimates are based on the shad species caught as indicated by the angler or observed by the creel clerk.

## 10.4 Sustainability Parameters

The sustainability parameters selected for the Cape Fear River system were the female CPUE index and female relative  $F$ . Exceeding the threshold in three consecutive years for any of the selected parameters will trigger management action (see Section 14 for additional detail).

Data used in the development of sustainability parameters for the Cape Fear River system include electrofishing data collected by NCWRC (Section 5.1.2.1.2), commercial harvest data collected through the NCTTP (Section 6.1), and recreational harvest data collect through the CSMA Creel Survey (Section 6.2.3). There is no directed long-term juvenile abundance survey for the Cape Fear River system. An IGNS has been conducted consistently in the Cape Fear River since 2007, but these data are not suitable for sustainability parameters due to low catch rates of American shad (Section 5.1.2.3).

### 10.4.1 Female CPUE (electrofishing survey)

*Female CPUE (electrofishing survey)*: The female CPUE index based on the NCWRC electrofishing survey was calculated as the number of fish per minute using data collected from March through April at Lock and Dam 1 (LD-1) and Lock and Dam 2 (LD-2, Figure 13). Lock and

Dam 3 (LD-3) was removed from analysis due to concerns that sampling in this area could be artificially inflating abundance estimates due to the lack of passage above LD-3. Additionally, sampling from the month of May was removed from analysis due to inconsistent effort across the time series.

- Time series: 2001–2022 (no survey data available for 2020)
- Index Value: annual, ratio estimator
- Threshold: 25<sup>th</sup> percentile (where 75% of all values are greater) from the fixed time series 2001–2017.
- Trigger: Three consecutive years of values below the threshold.

Electrofishing surveys for American shad were incomplete in 2020 due to limitations resulting from the Covid-19 pandemic and resumed as usual in 2021. The ASWG reviewed the data and recommended retaining the baseline fixed time-series of 2001–2017, established in the 2018 SFP, to determine the threshold value for the sustainability parameter.

Female relative abundance of American shad derived from the electrofishing survey in the Cape Fear River has been variable and remained above the threshold for the past 12 years (2011–2022). The index was below the threshold in 2006, 2008, and 2009.

#### **10.4.2 Female Relative $F$ (electrofishing survey)**

*Female Relative  $F$  (electrofishing survey)*: Female relative  $F$  (fish) based on the NCWRC electrofishing survey was calculated using the combined commercial and recreational harvest from the Cape Fear River and the female CPUE index from the Cape Fear River electrofishing survey (Table 7, Figure 14). Relative  $F$  is not available for 2012 due to lack of recreational data.

- Time series: 2011–2022 (no survey data available for 2020)
- Index Value: Calculated by dividing annual combined commercial and recreational harvest (fish) by a hind cast 3-year average of a survey index (current year + previous two years).
- Threshold: 75<sup>th</sup> percentile (where 25% of all values are greater) from the fixed time series 2011–2022.
- Trigger: Three consecutive years of values above the threshold.

Relative  $F$  is computed by dividing the combined commercial and recreational harvest (fish) by a hind cast 3-year average of a fishery-independent index (female CPUE, electrofishing survey) as described in Section 8.4.2. To convert commercial harvest to numbers of fish, individual weight data collected from the Cape Fear River commercial fishery (2001–2017) was used to calculate average individual fish weight for female (3.567 lb/roe) and male (2.272 lb/buck). Under the 2023 SFP, female relative  $F$  estimates were above the threshold in 2011, 2013, and 2014. Since 2015, the index has remained below the threshold. Due to the lack of survey data for 2020, only two years of the survey index are used in the hind cast 3-year average for the relative  $F$  estimates from 2020 through 2022.

In the 2013 SFP, the female CPUE for the Cape Fear River was truncated to represent the commercial season, March through April (2001–2017). Truncating the female CPUE to the March through April has increased the variability in the point estimates for relative  $F$  and reduced the sample size. The threshold for this plan was not fixed and changed with a new year of data. In 2017, the terminal year of the 2013 SFP, the female relative  $F$  index was above the threshold in 2007, 2008, 2009, and 2010.

The 2018 SFP, maintained the female relative  $F$  calculation based on the truncated female CPUE but fixed the time-series of data used to calculate the threshold to 2003–2017. Estimates of relative  $F$  for female American shad derived from the electrofishing survey and commercial harvest were above the threshold in 2010. Estimates remained below the threshold through 2022 as the commercial harvest declined. Due to the lack of survey data for 2020, only two years of the survey index are used in the hind cast 3-year average for the relative  $F$  estimates from 2020 through 2022.

### **10.5 Areas Covered by Sustainability Parameters**

Monitoring and sustainability parameters in the Cape Fear River are representative of the entire Cape Fear River basin and tributaries, including the Black River and the Northeast Cape Fear River. Fishery-independent monitoring is performed in the Cape Fear River mainstem through adult electrofishing and gill net surveys (see Section 5.1.2 for more details). Fishery-dependent monitoring is performed through NCTTP trip level commercial harvest monitoring and recreational creel sampling. It is important to note that while fishery-independent monitoring outside of the electrofishing survey is not used to calculate sustainability parameters, monitoring of adults and juveniles are occurring in the Cape Fear River mainstem below the lock and dam, in an effort to track trends in abundance. Management measures taken as a result of sustainability plan triggers will be applied at the basin level and will include all of the mainstem Cape Fear River and its tributaries including the Black River and Northeast Cape Fear River.

### **10.6 Additional Considerations**

Collaborative habitat enhancement projects that focus on fish passage and increasing spawning habitat have been implemented on the Cape Fear River in recent years. Each year, NCWRC recommends a locking schedule to the US Army Corps of Engineers to pass anadromous fishes upstream of locks and dams during the spring spawning run. In 2012, a rock arch fishway was constructed below LD-1 to facilitate volitional, upstream fish passage. Telemetry studies conducted to evaluate American shad usage of the rock arch fishway indicate American shad passage efficiency at the LD-1 fishway ranged 53–65% and was consistent with prior estimates from locking procedures (Raabe et al. 2016). Electrofishing surveys corroborate the telemetry studies, as electrofishing catch rates have increased at the upper two locks and dams and decreased at LD-1 over the last five years. These results indicate American shad are readily passing LD-1. With presumed historic spawning grounds, upstream of LD-3, substrate was strategically placed below LD-2 in 2013 to increase the potential spawning habitat for anadromous fish that pass the rock arch fishway but fail to navigate the lockage system. American shad spawning activity was observed by NCWRC staff (Bennett Wynne, NCWRC retired, personal communication), and American shad eggs have been collected just downstream of LD-2 (Dawn York, Cape Fear River Partnership, personal communication). Therefore, fish that migrated to LD-2 but failed to migrate farther upstream could reproduce and benefit from the habitat enhancement efforts. In 2016 and 2017, NCWRC staff collected eggs at all three locks and dams, with the peak catches below LD-3 (Morgeson and Fisk 2018). Locking at LD-1 has ceased since the construction of the rock-arch fishway but continues for LD-2 and LD-3 to facilitate fish passage. However, the lock structures at LD-2 and LD-3 were damaged by Hurricanes Matthew and Florence and have been inoperable since 2018. Inoperable locks at LD-2 and LD-3 have likely reduced the number of American shad migrating upstream in recent years. The Cape Fear River Partnership, including local, state, and federal agencies, as well as private groups, continues to plan fish passage enhancement projects on the remaining locks and dams on the main stem Cape Fear River, and the US Army Corps of Engineers is planning to refurbish the lock chambers to resume fish passage operations in 2023.

Based on the construction efforts and changing conditions, NCDMF and NCWRC recommended a two-year review of the 75<sup>th</sup> percentile threshold for female relative  $F$  in the 2012 SFP as calculation of this parameter was likely to be heavily influenced by drought, floods, and changes in fish passage. There was also concern that restoration efforts might influence electrofishing catch rates due to improvements in fish passage with completion of the rock arch fishway. After review in 2015, no changes were recommended for the Cape Fear system. North Carolina will continue to evaluate American shad relative abundance and sustainability metrics in the context of improvements in habitat and passage benefiting anadromous fishes in the Cape Fear River.

As noted in the previous section, an annual creel survey rotation prior to 2013 as well as efforts by NCDMF to expand creel surveys upstream have improved recreational effort and catch/harvest estimates. Annual creel surveys in the Cape Fear River are anticipated to continue. Expansion of existing surveys to provide accurate JAIs for all commercially and recreationally important species is a NCDMF priority. In 2019, NCDMF expanded the juvenile seine survey (Program 100) to the Tar-Pamlico, Neuse, and Cape Fear river systems. The survey is operated using the same gear and time frame as described in Section 5.1.1 for the Albemarle Sound. While the seine survey was expanded primarily for striped bass, river herring and shad may also be intercepted as the survey is conducted in known anadromous spawning areas. Due to the short time-series, this data was not evaluated for the 2023 SFP but will be evaluated under the next 5-year SFP.

## **11. PEE DEE RIVER**

The Pee Dee River originates in North Carolina before flowing into South Carolina and emptying into Winyah Bay with approximately 25 km of American shad spawning habitat located in the North Carolina portion of the Pee Dee River. Neither NCWRC nor NCDMF have the resources to conduct monitoring activities in this system. However, South Carolina Department of Natural Resources maintains monitoring programs in the Pee Dee River, which is considered a surrogate monitored system to the Little River. Monitoring programs in place for the Pee Dee River run of American shad are considered by the Shad and River Herring TC and Management Board to be adequate and sustainable at current levels. The approved sustainability target for the Pee Dee River run is 3.41 kilograms of American shad per unit of effort (92 meters of gill net per hour). Should the annual metric of catch per unit effort of American shad fall below the sustainability target for three consecutive years, management responses will be applied. Potential management actions may include gear restrictions, season changes, catch limits, or closure. Additional information on the sustainability target for the Pee Dee River can be found in the South Carolina SFP for American shad.

Additionally, Duke Energy began annual electrofishing surveys in 2016 to monitor the American shad population in the North Carolina section of the Pee Dee River downstream of their hydroelectric facility at Blewett Falls Dam. This survey, along with SCDNR monitoring further downstream, will be used to evaluate trends in American shad and could eventually be used to develop sustainability metrics when the time series reaches appropriate length. Commercial and recreational fisheries were approved in the South Carolina SFP issued in 2012. Commercial harvest of American shad is prohibited in the North Carolina portion of the Pee Dee River, but recreational harvest of 10 American shad per day is allowed under an exception to the statewide recreational creel limit of 1-American shad per day, as amended in 2019. This recreational creel limit is consistent with the creel limit in South Carolina. We propose maintaining the recreational fishery in the North Carolina portion of the Pee Dee River and defer American shad management and determination of sustainability to South Carolina. Should metric benchmarks be triggered in the

Pee Dee River, NCWRC will complement management actions in North Carolina waters to maintain consistency with South Carolina when appropriate.

## **12. LITTLE RIVER**

The Little River is a small coastal river that flows primarily through Little River, South Carolina. The river runs the border between North Carolina and South Carolina, before emptying into the Atlantic Ocean at the Little River Inlet, South Carolina. A large portion of the river forms part of the Atlantic Intracoastal Waterway. American shad may travel to the Waccamaw River (South Carolina) through the Little River, but this is not a known spawning river. Neither NCWRC nor NCDMF have the resources to conduct monitoring activities in this system. However, South Carolina Department of Natural Resources maintains monitoring programs in the Pee Dee River, which is considered a surrogate monitored system to the Little River. Monitoring programs in place for the Pee Dee River run of American shad are considered by the Shad and River Herring TC and Management Board to be adequate and sustainable at current levels. Should sustainability metric benchmarks be triggered in the Pee Dee River as determined by SCDNR, complementary management responses will be applied to the Little River in both North Carolina and South Carolina. Potential management actions may include gear restrictions, season changes, catch limits, or closure. Additional information on the sustainability target for the Pee Dee River can be found in the South Carolina SFP for American shad.

## **13. OTHER AREAS**

The areas included in the sustainability parameters submitted for consideration above contain the known American shad spawning populations in North Carolina, and those systems support the only directed recreational and commercial fisheries in the state. However, American shad are incidentally encountered in commercial fisheries prosecuted within other non-spawning rivers and coastal sounds. Commercial harvest from these areas is a very small proportion of annual American shad harvest (Figure 2) and is primarily considered incidental bycatch. For example, commercial harvest from the New and White Oak rivers (two coastal, blackwater rivers) combined averaged only 140 pounds per year between 1994 and 2016. Recreational effort and harvest in areas outside of spawning rivers is most likely non-existent. In the New and White Oak rivers, recreational creel survey intercepts from 2004 to present have not indicated American or hickory shad as target species and no American or hickory shad have been reported in the catch. While there are currently no independent surveys for American shad outside of spawning rivers, surveys for other species rarely encounter American shad. We propose to maintain current harvest seasons (February 15–April 14) to allow commercial harvest of incidental bycatch because these fish will most likely be dead discards and the amount of harvest is minimal. The areas without specified sustainability parameters will fall under statewide management measures listed in Table 11 and Table 12. North Carolina will continue to monitor commercial landings through the North Carolina Trip Ticket Program to ensure landings remain low. Dedicated monitoring programs or area closures will be implemented if sudden increases in landings, indicating targeted effort, occur.

## **14. MANAGEMENT MEASURES**

### **14.1 Potential Management Measures**

The environmental circumstances under which a sustainability threshold may be reached can vary among systems. Therefore, different management measures may be used for each system in addressing the triggers. One or more potential management measures are presented here and may be used singly or in combination:

- Restrictions on length of season to reduce effort (e.g., March 1–April 14) not to extend beyond the estuarine striped bass quotas being filled (avoids waste of striped bass and shad)
- Trip limits (this may result in discards)
- Reduce allowable number of yards for gill nets
- Area/season closure (e.g., area closure at mouth of Roanoke River from February–mid-November since 1988)
- Only allow fishing certain days of the week (lift days)
- Recreational creel reduction
- Commercial harvest quota (although possible, this could be difficult to implement given existing resources)

Management measures taken under this plan, due to three consecutive years exceeding the sustainability parameter(s) threshold(s) established in Sections 7.4, 8.4, 9.4, and 10.4, shall be retained until the threshold(s) have been met for at least five consecutive years. Following this time period, management measures may be removed as long as the sustainability parameter(s) for the area remain within the respective threshold(s) for three out of the five years.

#### **14.2 Management Measures implemented 2013–2017**

Changes in management (season lengths, creel limits) since implementation of the SFP in 2013 have been noted in Section 4 and are summarized for convenience in Table 11 and Table 12. Although harvest is an obvious potential contributor to population declines, significant habitat degradation has also occurred in all the river systems. It is unlikely that American shad populations in North Carolina will recover and expand without considerable resources being dedicated to habitat restoration for this species. Our management goals, however, are intended to sustain population levels as additional habitat is protected or improved through aquatic habitat conservation measures and increased passage opportunities of American shad beyond impediments that block migration to historic spawning grounds.

#### **14.3 Management Measures implemented 2018–2022**

No management action was taken under the 2018 SFP as a result of thresholds being exceeded. Management measures for the Albemarle Sound commercial season, implemented in 2014, were retained from 2018 through 2022.

#### **14.4 Cape Fear River**

At the request of the ASMFC Shad and River Herring TC during development of the 2012 SFP, additional analysis was conducted for the Cape Fear River. This was based on the female relative  $F$  parameter being over the 75<sup>th</sup> percentile threshold for two consecutive years, as well as the female CPUE from the electrofishing survey being very close to the threshold for six consecutive years. An 11% percent reduction in commercial harvest was required to bring female relative  $F$  down to the threshold.

Additional analyses (see Appendix 2 of the 2012 SFP) were conducted to determine the commercial and recreational reductions in harvest that would provide an additional conservation buffer. It was determined that equivalent reductions in harvest for both commercial and recreational sectors would provide the greatest benefit given that commercial and recreational harvest in 2011 were roughly equivalent. Management options that resulted in a 25% reduction in harvest for each sector were calculated, and it was determined that a shortened commercial season and a reduction in the recreational creel limit would best meet the required reductions in harvest. While commercial and recreational harvests have fluctuated somewhat since regulatory changes

were implemented, both the electrofishing index and relative *F* index have remained above and below their respective thresholds since 2012. A commercial season from February 20 through April 11 and a recreational creel limit of five fish within the 10-fish aggregate resulted in the necessary 25% reduction.

#### **14.5 Proposed Management Measures for 2023**

The following management measures are proposed to be effective January 1, 2023.

##### **14.5.1 Recreational**

*Statewide Internal Waters including Albemarle Sound-Roanoke River, Neuse River, except as exempted below*

- It is unlawful to possess more than ten (10) American shad or hickory shad in the aggregate, per person per day taken by hook-and-line or for recreational purposes and only one (1) of the ten (10) may be an American shad.

*Tar-Pamlico River, Pee Dee River*

- It is unlawful to possess more than ten (10) American shad or hickory shad, in the aggregate, per person per day taken by hook-and-line or for recreational purposes.

*Cape Fear River*

- It is unlawful to possess more than ten (10) American shad or hickory shad in the aggregate, per person per day taken by hook-and-line or for recreational purposes and only five (5) of the ten (10) may be an American shad.

##### **14.5.2 Commercial**

*Albemarle Sound Coastal and Joint Fishing Waters*

- For 2023, a commercial season of February 15–April 14 has been established based on sustainability parameters for this system.
- The commercial season may occur anytime between January 1–April 14 for the 5-year tenure of this plan.

*Tar-Pamlico River, Neuse River Coastal and Joint Fishing Waters*

- For 2023, a commercial season of February 15–April 14 has been established based on sustainability parameters for this system.
- The commercial season may occur anytime between February 15–April 14 for the 5-year tenure of this plan.

*Cape Fear River Coastal and Joint Fishing Waters*

- For 2023, a commercial season of February 20–April 11 has been established based on sustainability parameters for this system.
- The commercial season may occur anytime between February 20–April 11 for the 5-year tenure of this plan.

*All Other Internal Coastal and Joint Fishing Waters*



- For 2023, a commercial season of February 15–April 14 has been established based on the Tar-Pamlico River, Neuse River, and Cape Fear River sustainability parameters.
- The commercial season may occur anytime between February 15–April 14 for the 5-year tenure of this plan.

While none of the selected sustainability parameters for any of the river systems have exceeded the triggers for management since 2013, the above measures are considered prudent given the results of the 2020 stock assessment as they pertain to North Carolina. The Albemarle Sound is the only system in North Carolina where abundance status, relative to historic levels, was determined to be not depleted. The overall status for the other areas remains unknown, in large part due to a lack of juvenile data. The Albemarle Sound adult total mortality rate was determined sustainable, and abundance determined to be not overfished. Additionally, the Albemarle Sound juvenile abundance demonstrated an increasing trend from 2005–2017, the selected time period for abundance trends (ASMFC 2020). Given the Albemarle Sound status determination and the management measures in place for striped bass conservation also benefiting American shad (Section 4.2.1), the ASWG elected to expand the potential time frame in which the Albemarle Sound commercial fishery can occur from March 3–24 to January 1–April 14. The expanded time frame allows for flexibility in management to ensure that the fishery remains sustainable while maximizing the opportunity to stakeholders impacted by management restrictions for striped bass in this area. Commercial seasons, for all areas, will be determined after NCDMF and NCWRC jointly review the performance of the plan, annually, to determine management measures for the following season. Future changes to creel limits for American shad in the Inland Fishing Waters of the other river systems will also be complemented by NCDMF for Joint and Coastal Fishing Waters.

## **15. ANCILLARY INFORMATION AND FUTURE CONSIDERATIONS**

The focus on female indices for the sustainability parameters in all systems is based on the conclusion that changes in female abundance combined with impacts from various environmental parameters could prove challenging to stock improvement given that the commercial fishery targets roe shad. Major fluctuations in female abundance could potentially impact future recruitment and landings. The use of sex ratios as a sustainability parameter was considered, but it was determined that the sex ratios from both the IGNS (in the Albemarle system and potentially the other systems) and the electrofishing surveys were more suitable for use as long-term trends rather than short-term (i.e., three year) indicators of stock health due to the impact of environmental variability on the data. The intent of the agencies is to monitor the sex ratios from each of the surveys for trends and use this information to help inform future management.

The use of repeat spawning data was also considered as a potential sustainability parameter and continues to be tracked annually as part of the required monitoring program. Repeat spawning could be used as ancillary information for determining future management but would lag a year behind (current years index values) due to the time required for processing and ageing of scales. Outside of the Albemarle Sound, limited repeat spawning information is available due to decline in commercial fisheries, lack of positive intercepts in NCDMF surveys, and NCWRC use of otoliths for ageing. Additionally, inconsistencies in determination of repeat spawning marks exist coastwide. Therefore, the use of repeat spawning data for sustainability parameter thresholds may be difficult. Should greater confidence in repeat spawning data be attained in the future, they may be considered for developing a formal sustainability parameter.

The ASWG will continue to review the performance of the plan on an annual basis (fall/winter of current fishing year) to determine management measures for the following season. Sustainability parameters will continue to be updated annually in compliance reports, detailing the performance of the plan and implementation of management measures, where necessary.

If appropriate, North Carolina will submit a revised SFP for TC review to allow for inclusions or modifications described above.

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## TABLES

Table 1. North Carolina Sustainable Fishery Plan for American shad summary of management thresholds and triggers for 2023–2027.

<b>System</b>	<b>Index</b>	<b>Threshold Value</b>	<b>Threshold Time Series</b>	<b>Threshold Level</b>	<b>Management Trigger</b>
Albemarle Sound-Roanoke River	Albemarle Sound Juvenile CPUE	0.3849	1996-2021	25 <sup>th</sup> percentile	3 consecutive years below the threshold
Albemarle Sound-Roanoke River	Roanoke River Female CPUE	0.1314	2001-2017	25 <sup>th</sup> percentile	3 consecutive years below the threshold; does not trigger management by itself
Albemarle Sound-Roanoke River	Albemarle Sound Female CPUE	0.0388	2000-2017	25 <sup>th</sup> percentile	3 consecutive years below the threshold
Albemarle Sound-Roanoke River	Female Relative $F$	2,649,747 (lb)	2002-2017	75 <sup>th</sup> percentile	3 consecutive years above the threshold
Tar-Pamlico River	Female CPUE	0.3843	2000-2017	25 <sup>th</sup> percentile	3 consecutive years below the threshold
Tar-Pamlico River	Relative $F$	4,009 (fish)	2012-2022	75 <sup>th</sup> percentile	3 consecutive years above the threshold
Neuse River	Female CPUE	0.1275	2000-2017	25 <sup>th</sup> percentile	3 consecutive years below the threshold
Neuse River	Relative $F$	10,631 (fish)	2012-2022	75 <sup>th</sup> percentile	3 consecutive years above the threshold
Cape Fear River	Female CPUE	0.1161	2001-2017	25 <sup>th</sup> percentile	3 consecutive years below the threshold
Cape Fear River	Relative $F$	44,147 (fish)	2011-2022	75 <sup>th</sup> percentile	3 consecutive years above the threshold

Table 2. Tar-Pamlico River recreational creel survey estimates for trips targeting Shad species (including hickory and American shad) in numbers and pounds of fish, 2012–2022.

		Effort				Catch					
		Trips	PSE	Hours	PSE	Harvest	PSE	Weight (kg)	PSE	Discard	PSE
American	2012	595	44.7	1,495	50.1	899	42.7	776	42.0	4,257	33.7
	2013	105	76.2	122	82.9	2,479	21.1	3,098	24.1	7,053	41.4
	2014	0	0.0	0	0.0	168	65.2	206	65.2	1,314	74.0
	2015	54	100.0	54	100.0	1,006	47.7	1,480	47.7	2,784	78.7
	2016	1,345	31.2	5,798	51.5	1,051	50.1	1,546	50.1	2,820	34.0
	2017	282	84.9	663	97.4	898	68.9	979	68.9	2,217	43.4
	2018	2,502	18.7	5,635	22.1	685	62.2	720	62.3	2,767	42.1
	2019	11	100.0	31	100.0	544	60.7	428	60.7	3,028	47.7
	2020	0	0.0	0	0.0	209	79.5	164	79.5	562	39.8
	2021	860	24.8	3,903	48.4	731	40.8	882	40.8	4,236	43.1
	2022	201	76.0	591	96.2	464	68.0	549	68.0	995	55.2
Hickory	2012	460	58.0	646	52.3	403	59.8	0	0.0	7,384	36.7
	2013	0	0.0	0	0.0	2,247	58.3	1,345	58.4	5,489	55.3
	2014	139	65.0	177	74.5	341	70.1	202	70.1	2,052	56.6
	2015	207	62.0	597	62.0	864	62.0	458	62.8	3,848	53.4
	2016	318	52.3	2,109	68.3	1,409	70.9	718	70.9	11,590	67.2
	2017	0	0.0	0	0.0	1,695	47.1	890	46.7	7,105	49.8
	2018	2,021	32.6	5,396	38.4	925	45.1	521	45.5	6,065	41.3
	2019	58	58.6	268	79.8	4,068	40.1	2,251	40.5	8,502	47.0
	2020	0	0.0	0	0.0	738	54.5	522	53.5	9,058	61.1
	2021	351	45.9	2,125	86.5	5,374	51.7	2,756	51.9	13,896	49.7
	2022	0	0.0	0	0.0	806	44.5	528	43.5	997	42.8
Misc Shad	2012	4,736	19.8	13,251	28.1	88	100.0	0	0.0	420	67.5
	2013	7,309	18.0	16,445	19.9	234	100.0	0	0.0	6,079	34.0
	2014	2,472	22.7	6,855	30.8	0	0.0	0	0.0	38	71.0
	2015	3,521	24.9	9,200	34.5	0	0.0	0	0.0	2,105	88.2
	2016	3,574	26.6	10,216	38.7	0	0.0	0	0.0	0	0.0
	2017	5,893	21.0	16,375	28.7	0	0.0	0	0.0	405	91.5
	2018	1,173	32.8	1,872	47.2	0	0.0	0	0.0	237	69.1
	2019	5,662	18.9	12,925	18.9	180	100.0	0	0.0	1,995	61.2
	2020	5,913	46.8	20,171	49.8	0	0.0	0	0.0	7,016	40.5
	2021	9,035	21.3	17,401	28.9	884	70.6	0	0.0	11,693	49.5
	2022	5,444	27.6	7,632	23.0	111	77.5	0	0.0	3,420	33.3

Table 3. Tar-Pamlico River sustainability parameter for female relative  $F$  (fish) based on the female CPUE index (FI-NCWRC electrofishing survey) and the combined commercial and recreational harvest from the Tar-Pamlico River, 2010–2022. Recreational data for 2010–2011 and FI-NCWRC Survey for 2020 are not available.

Year	Recreational	Commercial		Rec+Comm	FI-NCWRC Survey Index (num/min), female only						Relative $F$ Hind 3-yr Avg.	Threshold 75th Percentile
	Rec (num fish)	Total (lb)	Comm (num fish)	Total (num)	Index	SD	SE	PSE	Fish (num)	Effort	Female (lb)	Female (lb)
2010					0.3828	0.1381	0.0522	13.6	64	167.2		
2011					0.4421	0.2185	0.0892	20.2	63	142.5		
2012	899	6,430	3,101	4,000	0.5200	0.0962	0.0430	8.3	76	146.2	8,923	4,009
2013	2479	7,819.5	2,644	5,123	0.5012	0.1478	0.0467	9.3	129	257.4	10,504	4,009
2014	168	5,176.5	2,026	2,194	0.8200	0.2768	0.1046	12.8	164	200.0	3,575	4,009
2015	1,006	3,173	927	1,933	0.3889	0.1080	0.0382	9.8	105	270.0	3,391	4,009
2016	1,051	742	208	1,259	0.5875	0.1653	0.0585	10.0	141	240.0	2,102	4,009
2017	898	3,565	1,193	2,091	0.4357	0.0702	0.0212	4.9	122	280.0	4,443	4,009
2018	685	1,170	397	1,082	0.2782	0.0791	0.0212	7.6	153	550.0	2,495	4,009
2019	544	0	0	544	0.3533	0.1181	0.0394	11.1	106	300.0	1,529	4,009
2020	209	129	35	244							773	4,009
2021	731	135	16	747	0.7493	0.2424	0.0767	10.2	281	375.0	1,355	4,009
2022	464	463	151	615	0.4145	0.0844	0.0244	5.9	143	345.0	1,056	4,009

Table 4. Neuse River recreational creel survey estimates for trips targeting Shad species (including hickory and American shad) in numbers and pounds of fish, 2012–2022.

		Effort				Catch					
		Trips	PSE	Hours	PSE	Harvest	PSE	Weight (kg)	PSE	Discard	PSE
American	2012	8,315	34.1	17,559	28.7	968	37.5	1,033	37.5	511	46.3
	2013	394	28.0	869	27.0	1,388	47.1	1,325	47.1	2,699	62.2
	2014	426	70.1	1,181	82.1	413	51.2	450	51.2	995	60.3
	2015	214	43.1	683	42.0	94	76.1	133	76.1	132	47.4
	2016	451	28.8	1,481	33.6	252	47.3	193	47.3	1,389	60.6
	2017	389	40.3	783	49.6	518	33.6	602	33.6	2,828	36.5
	2018	43	77.2	35	86.7	112	50.9	130	50.9	356	41.8
	2019	0	0.0	0	0.0	215	57.9	206	57.9	91	70.8
	2020	0	0.0	0	0.0	830	64.8	803	64.8	1,933	66.4
	2021	0	0.0	0	0.0	36	57.9	34	57.9	53	61.6
	2022	22	54.6	92	67.5	36	35.9	56	35.9	170	42.8
Hickory	2012	11,643	28.2	23,148	26.0	10,720	27.9	5,803	28.0	29,038	41.1
	2013	589	40.6	1,564	43.7	12,916	28.3	5,913	26.3	14,286	29.4
	2014	193	67.3	934	61.8	15,278	46.0	7,684	49.6	27,916	39.1
	2015	170	64.2	807	60.9	10,418	35.4	4,621	36.5	12,186	44.0
	2016	225	68.7	415	78.4	10,850	33.1	5,078	36.1	29,225	58.1
	2017	1,359	36.3	7,454	54.5	16,768	26.3	9,158	26.8	69,818	38.0
	2018	260	59.8	822	80.0	17,270	33.0	10,210	35.4	57,497	25.5
	2019	187	86.3	632	84.6	4,107	15.6	2,447	27.5	9,741	23.4
	2020	427	60.9	1,910	56.7	14,133	29.2	8,849	29.5	37,090	28.4
	2021	211	60.6	330	87.1	7,489	30.7	3,963	30.9	19,627	31.8
	2022	65	51.6	238	55.7	4,033	27.1	2,905	30.0	12,800	45.5
Misc Shad	2012	6,620	31.3	14,644	40.2	245	100.0	0	0.0	2,309	97.0
	2013	14,911	14.9	31,332	19.1	0	0.0	0	0.0	798	58.2
	2014	13,117	19.1	31,415	26.1	0	0.0	0	0.0	136	100.0
	2015	7,633	20.3	18,789	26.8	0	0.0	0	0.0	136	75.3
	2016	8,914	18.0	25,316	28.0	0	0.0	0	0.0	898	61.8
	2017	11,318	17.6	41,837	21.5	0	0.0	0	0.0	3,334	71.4
	2018	13,050	17.9	39,956	23.8	0	0.0	0	0.0	448	59.5
	2019	7,531	14.7	22,459	16.9	11	100.0	0	0.0	706	41.4
	2020	10,068	19.6	36,941	24.7	0	0.0	0	0.0	16,017	43.3
	2021	6,370	15.3	19,002	20.9	0	0.0	0	0.0	780	81.1
	2022	6,129	17.5	17,352	25.9	0	0.0	0	0.0	561	50.2



Table 5. Neuse River sustainability parameter for female relative  $F$  (fish) based on the female CPUE index (NCWRC electrofishing survey) and the combined commercial and recreational harvest from the Tar-Pamlico River, 2010–2022. Recreational data for 2010–2011 and FI-NCWRC Survey for 2020 are not available.

Year	Recreational	Commercial		Rec+Comm (num)	FI-WRC Survey Index (num/min), female only						Relative $F$ Hind 3-yr Avg.	Threshold 75th Percentile
	Total (num fish)	Total (lb)	Total (num)		Index	SD	SE	PSE	Fish (num)	Effort	Female (lb)	Female (lb)
2010					0.1087	0.0213	0.0040	3.6	122	1122.6		
2011					0.1460	0.0187	0.0038	2.6	143	979.2		
2012	968	9,222	6,506	7,474	0.2126	0.0383	0.0067	3.1	239	1124.2	47,979	10,631
2013	1,388	12,938	4,871	6,259	0.3104	0.0338	0.0061	2.0	377	1214.6	28,065	10,631
2014	413	2,339	2,819	3,232	0.2578	0.0390	0.0064	2.5	329	1276.1	12,417	10,631
2015	94	2,319	876	970	0.2362	0.0382	0.0064	2.7	157	664.7	3,616	10,631
2016	252	1,997	741	993	0.5181	0.0624	0.0106	2.0	319	615.7	2,944	10,631
2017	518	8,590	3,252	3,770	0.5245	0.0805	0.0140	2.7	361	688.2	8,845	10,631
2018	112	1,684	1,174	1,286	0.2276	0.0271	0.0041	1.8	203	891.9	3,036	10,631
2019	215	1,531	0	215	0.2000	0.0253	0.0039	2.0	157	785.0	677	10,631
2020	830	34	40	870							4,068	10,631
2021	36	10	4	40	0.2213	0.0497	0.0082	3.7	174	786.0	192	10,631
2022	36	228	72	108	0.1003	0.0210	0.0035	3.5	83	827.2	670	10,631

Table 6. Cape Fear River recreational creel survey estimates for trips targeting Shad species (including hickory and American shad) in numbers and pounds of fish, 2011–2016. Creel survey estimates for 2011 from NCWRC alternating CSMA Creel Survey. Survey did not occur in 2012.

Cape Fear River		Effort				Catch					
		Trips	PSE	Hours	PSE	Harvest	PSE	Weight (kg)	PSE	Discard	PSE
American	2011	5,951	11.7	25,706	15.9	14,888	14.2	9,346	13.6	7,425	14.9
	2012										
	2013	0	0.0	0	0.0	18,484	21.1	19,310	20.0	6,154	73.7
	2014	114	84.5	188	88.0	7,256	25.1	10,471	25.4	0	0.0
	2015	0	0.0	0	0.0	4,136	32.7	5,218	32.2	6,125	39.3
	2016	4,525	15.0	18,754	22.5	10,244	22.1	12,879	22.8	10,740	28.6
	2017	1,368	25.0	5,965	28.5	1,352	36.0	1,718	38.5	2,669	75.8
	2018	292	34.2	1,105	38.3	5,384	45.9	5,937	46.6	3,992	44.3
	2019	47	68.7	132	64.6	2,266	39.6	2,624	42.1	1,101	89.4
	2020	1,050	71.3	4,453	74.6	3,582	74.3	3,468	72.1	3,740	81.7
	2021	1,484	24.1	7,325	33.2	2,624	32.0	3,004	31.6	6,914	28.6
	2022	1,258	56.7	3,998	39.9	2,666	79.6	2,768	80.2	953	32.3
Hickory	2011										
	2012										
	2013	0	0.0	0	0.0	13	100.0	0	0.0	152	100.0
	2014	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2015	0	0.0	0	0.0	12	100.0	0	0.0	0	0.0
	2016	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2017	0	0.0	0	0.0	14	100.0	0	0.0	0	0.0
	2018	0	0.0	0	0.0	12	100.0	6	100.0	47	100.0
	2019	0	0.0	0	0.0	0	0.0	0	0.0	20	100.0
	2020	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2021	0	0.0	0	0.0	12	100.0	0	0.0	0	0.0
	2022	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Misc Shad	2011										
	2012										
	2013	12,765	25.2	57,081	25.0	2,036	44.1	1,816	44.1	28,768	40.9
	2014	2,896	18.2	12,253	22.7	196	84.1	175	84.1	11,024	58.7
	2015	3,414	22.2	13,933	26.3	0	0.0	0	0.0	264	71.7
	2016	525	68.2	3,753	71.0	0	0.0	0	0.0	648	79.7
	2017	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2018	2,325	36.4	10,456	43.7	0	0.0	0	0.0	3,949	86.4
	2019	952	26.4	2,823	27.6	6	100.0	0	0.0	2,307	47.5
	2020	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2021	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2022	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 7. Cape Fear River sustainability parameter for female relative  $F$  (fish) based on the female CPUE index (NCWRC electrofishing survey) and the combined commercial and recreational harvest from the Tar-Pamlico River, 2009–2022. Recreational data for 2009–2010, 2012 and FI-NCWRC Survey for 2020 are not available.

	Recreational	Commercial		Rec+Comm	FI-WRC Survey Index (num/min), female only						Relative $F$ Hind 3-yr Avg.	Threshold 75th Percentile
Year	Total (num fish)	Total (lb)	Total (num)	Rec+Comm (num)	Index	SD	SE	PSE	Fish (num)	Effort	Female (num)	Female (num)
2009					0.1052	0.0392	0.0138	13.2	31	294.6		
2010					0.1139	0.0375	0.0108	9.5	41	360.0		
2011	14,888	22,446	6,849	21,737	0.1161	0.0321	0.0080	6.9	54	465.0	194,523	44,147
2012		10,225	3,177	3,177	0.1818	0.0490	0.0219	10.0	60	330.0		44,147
2013	18,484	24,888	7,353	25,837	0.2476	0.0452	0.0160	6.7	104	420.0	142,076	44,147
2014	7,256	46,148	13,674	20,930	0.5623	0.1236	0.0343	7.8	295	524.7	63,315	44,147
2015	4,136	25,039	7,354	11,490	0.5701	0.1075	0.0340	5.9	240	421.0	24,978	44,147
2016	10,244	12,937	3,779	14,023	0.5710	0.0494	0.0149	8.5	210	367.8	24,697	44,147
2017	1,352	11,049	3,339	4,691	0.4343	0.0533	0.0154	9.8	237	545.8	8,933	44,147
2018	5,384	14,931	4,329	9,713	0.3230	0.0779	0.0235	7.4	98	303.4	21,938	44,147
2019	2,266	5,076	0	2,266	0.3931	0.0608	0.0203	5.7	96	244.2	5,909	44,147
2020	3,582	6,038	1,932	5,514							15,399	44,147
2021	2,624	4838	1,430	4,054	0.2240	0.0430	0.0136	10.0	103	459.8	13,138	44,147
2022	2,666	2,899	853	3,519	0.2874	0.0320	0.0101	9.5	158	549.8	13,762	44,147

Table 8. American shad fry stocked into the Roanoke River Basin from 1998–2018. Fry were not stocked in years after 2018. Stockings downstream of the lower-most dam occur at Weldon, NC, stockings upstream of John H. Kerr Dam occur at either Altavista or Clover Landing, VA, stockings upstream of Gaston Dam occur at Bracey, VA, and stockings upstream of Roanoke Rapids Dam occur at Roanoke Rapids, NC. Hatchery evaluation techniques have transitioned from Oxytetracycline (OTC) marks to parentage-based tagging methods using genetic microsatellite markers.

Year	Total Fry Stocked (millions)	Fry Totals (millions) by Stocking Location					Hatchery Evaluation Technique
		Weldon, NC	Altavista, VA	Clover Landing, VA	Bracey, VA	Roanoke Rapids, NC	
1998	0.5	0.5	-	-	-	-	OTC
1999	0.3	0.3	-	-	-	-	OTC
2000	0.8	0.8	-	-	-	-	OTC
2001	2.1	2.1	-	-	-	-	OTC
2002	0.8	0.8	-	-	-	-	OTC
2003	2.3	1.2	1.1	-	-	-	OTC
2004	2.3	1.2	1.1	-	-	-	OTC
2005	2.5	1.3	1.2	-	-	-	OTC
2006	2.4	1.4	1.0	-	-	-	OTC
2007	4.3	2.2	2.1	-	-	-	OTC
2008	8.2	4.3	3.9	-	-	-	OTC
2009	8.6	4.5	4.1	-	-	-	OTC
2010	7.8	6.9	0.9	-	-	-	OTC/PBT
2011	4.4	4.0	-	0.4	-	-	OTC/PBT
2012	4.8	3.8	-	1.0	-	-	OTC/PBT
2013	4.5	2.4	-	1.3	0.8	-	PBT
2014	7.5	3.5	-	1.4	2.6	-	PBT
2015	4.8	2.6	-	0.8	1.5	-	PBT
2016	3.8	1.3	-	-	-	2.5	PBT
2017	2.7	0.3	-	-	-	2.5	PBT
2018	2.3	0.3	-	-	-	2.0	PBT
Total	77.7	45.6	15.4	4.9	4.9	7.0	

Table 9. American shad fry stocked into the Neuse River Basin at NC Highway 117 bridge near Goldsboro and juvenile hatchery contribution based on parentage-based tagging analysis, 2012–2018. Fry were not stocked in years after 2018.

Year	Fry Stocked	Out-migrating Juvenile Hatchery Contribution
2012	573,582	2%
2013	1,184,303	6%
2014	1,377,375	13%
2015	708,045	1%
2016	609,720	0%*
2017	440,161	-
2018	669,902	-
Total	5,563,088	

\*Sample size was only 7 fish

Table 10. American shad movement study results in numbers of fish tagged in the Albemarle Sound and numbers of tagged fish detected on spawning runs in the Roanoke and Chowan River from 2013–2019. \*In 2014, a single fish tagged in 2013 returned.

Year	Tagged	Detected	Spawning Run	
			Roanoke	Chowan
2013	7	4		1
2014	53	41	2	8*
2016	55	43		2
2017	74	57	3	23
2018	46	40		12
2019	31	27		10
Total	266	212	5	56

Table 11. Commercial harvest seasons for American shad 2012–2022.

Year	Albemarle Sound- Roanoke River	Tar-Pamlico River	Neuse River	Cape Fear River	All Other Areas
*2012	2/1 - 4/14	2/1 - 4/14	2/1 - 4/14	2/1 - 4/14	2/1 - 4/14
2013	2/15 - 4/14	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2014	3/3 - 3/24	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2015	3/3 - 3/24	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2016	3/3 - 3/24	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2017	3/3 - 3/24	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2018	3/3 - 3/24	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2019	3/3 - 3/24	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2020	3/3 - 3/24	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2021	3/3 - 3/17	2/15 - 4/14	2/15 - 4/14	2/20 - 4/11	2/15 - 4/14
2022	3/3 - 3/15	2/15 - 4/14	2/15 - 4/14	2/21 - 4/12	2/15 - 4/14

\*last year prior to SFP implementation

Table 12. Recreational creel restrictions for American shad 2012–2022. All numbers represent limits within an overall 10-fish aggregate creel limit for American and hickory shad combined.

Year	Albemarle Sound (AS) Roanoke River (RR)	Tar-Pamlico	Neuse	Cape Fear	Statewide
2012*	AS – 10 fish RR – 1 fish	10 fish	1 fish IW 10 fish CJW	10 fish	10 fish
2013	AS-10-fish IW AS-1-fish CJW RR-1-fish	10 fish	1 fish	5 fish	10 fish
2014	AS-10-fish IW AS-1-fish CJW RR-1-fish	10 fish	1 fish	5 fish	10 fish
2015	AS-10-fish IW AS-1-fish CJW RR-1-fish	10 fish	1 fish	5 fish	10 fish
2016	AS-10-fish IW AS-1-fish CJW RR-1-fish	10 fish	1 fish	5 fish	10 fish
2017	**AS-10-fish IW AS-1-fish CJW RR-1-fish	10 fish	1 fish	5 fish	10 fish
2018	**AS-10-fish IW AS-1-fish CJW RR-1-fish	10 fish	1 fish	5 fish	10 fish
2019	**AS-10-fish IW AS-1-fish CJW RR-1-fish	10 fish	1 fish	5 fish	10 fish 1 fish IW
2020	AS-1-fish RR-1-fish	10 fish	1 fish	5 fish	10 fish 1 fish IW
2021	AS-1-fish RR-1-fish	10 fish	1 fish	5 fish	10 fish 1 fish IW
2022	AS-1-fish RR-1-fish	10 fish	1 fish	5 fish	10 fish 1 fish IW

\*last year prior to SFP implementation; IW=Inland Fishing Waters; CJW = Coastal and Joint Fishing Waters, blank=all waters

\*\* All Inland Fishing Waters of the Albemarle Sound drainage except the Roanoke River remained under the statewide rule of 10 American shad and hickory shad in the aggregate until the statewide rule for Inland Fishing Waters was changed by NCWRC to one American shad per day on August 1, 2019.

FIGURES

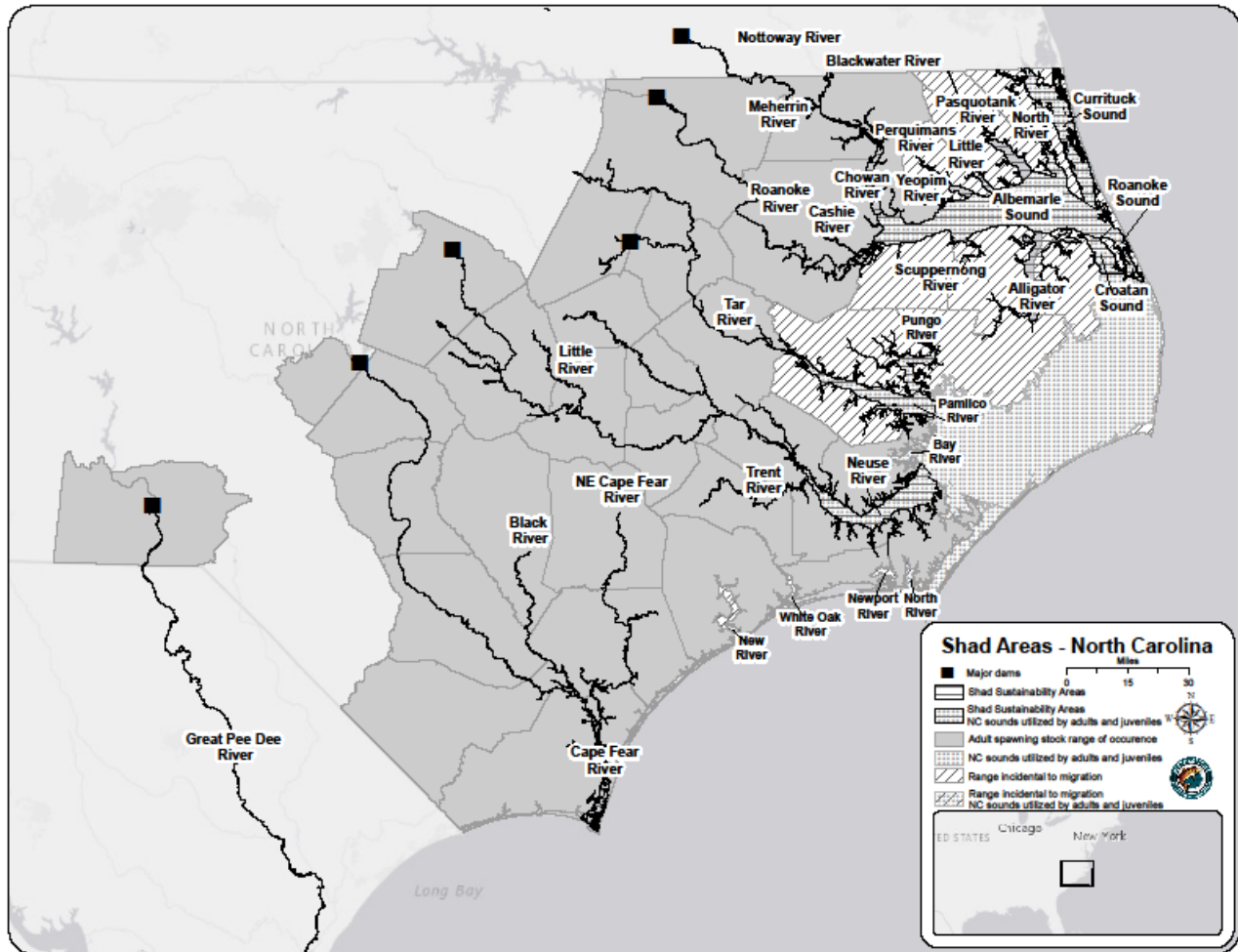


Figure 1. North Carolina river systems depicting the extent of American shad occurrence and habitat use.



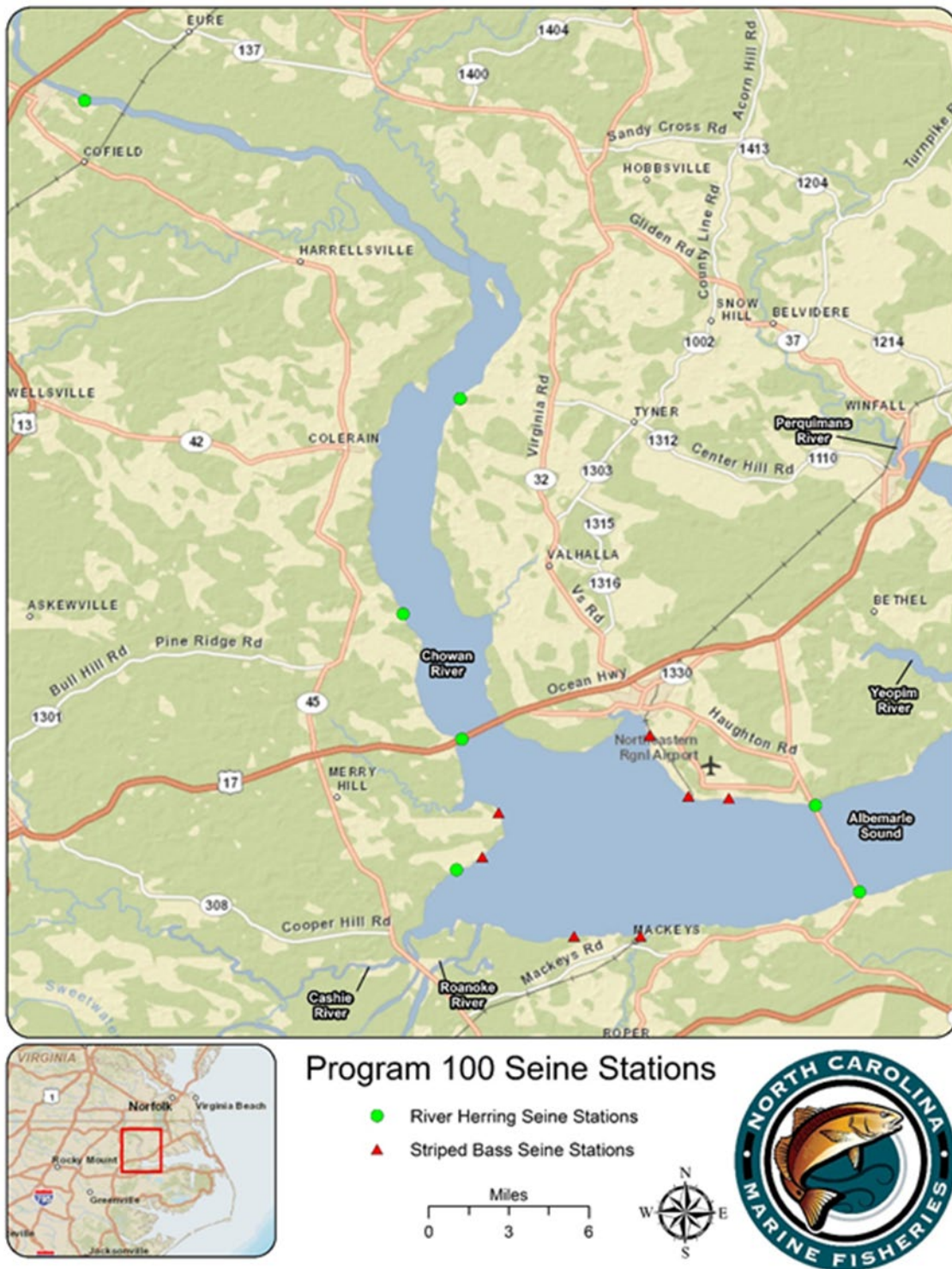


Figure 2. American shad juvenile seine survey sampling sites in the Albemarle Sound Area, 1996-2022.

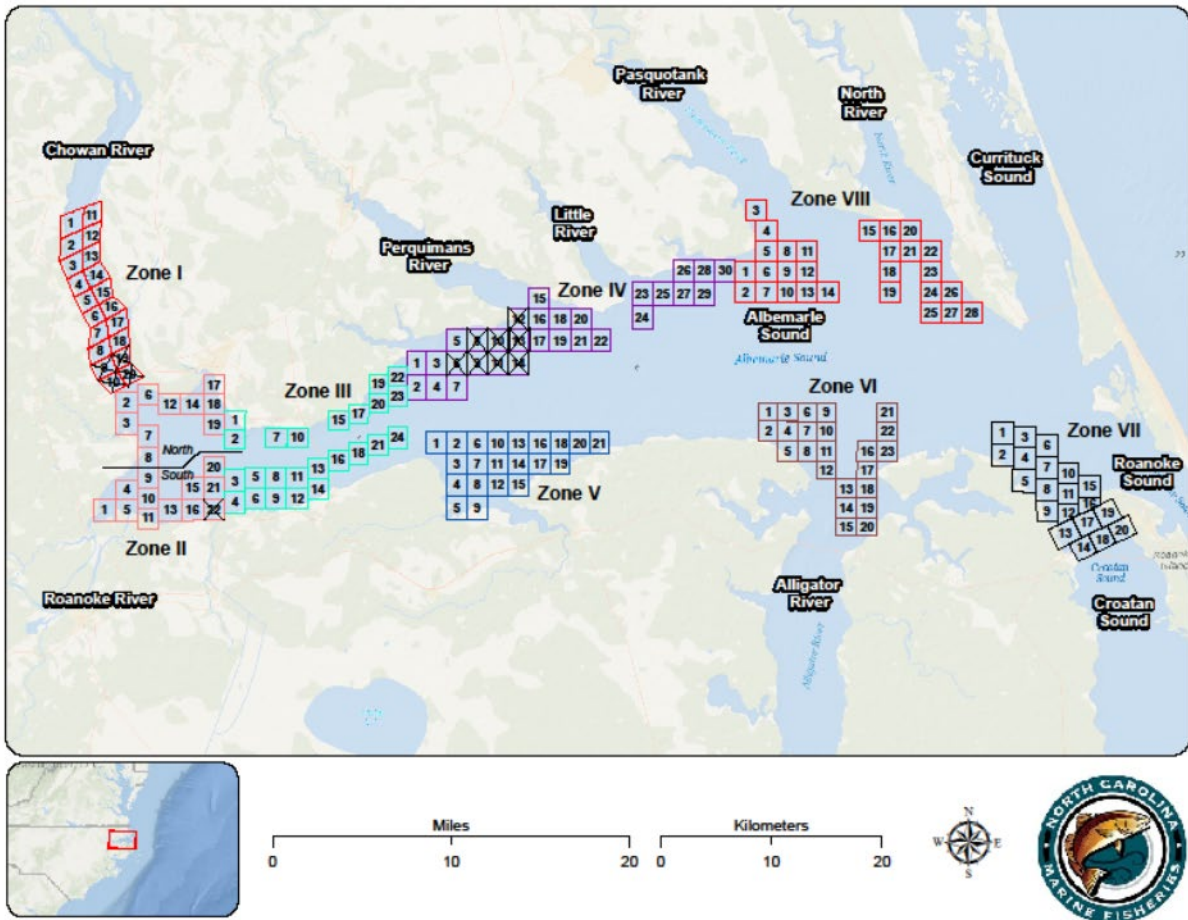


Figure 3. Albemarle Sound Independent Gill Net Survey sampling area. Zones I and VIII added in November 2021.

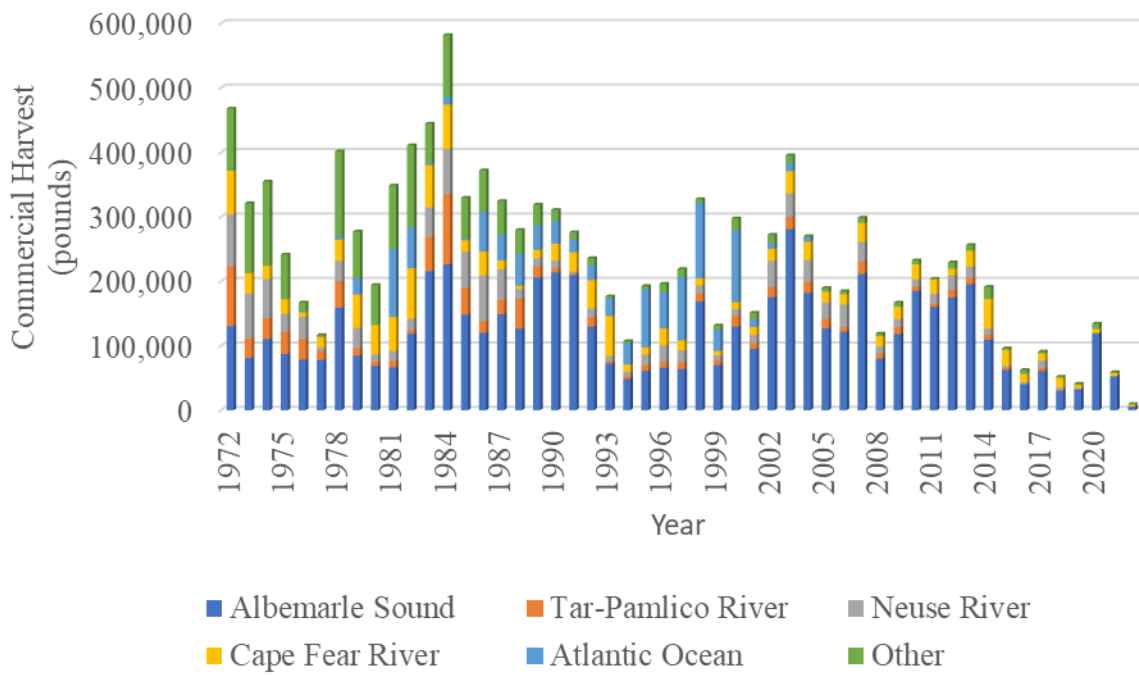


Figure 4. Commercial harvest of American shad from North Carolina by water body, 1972–2022.

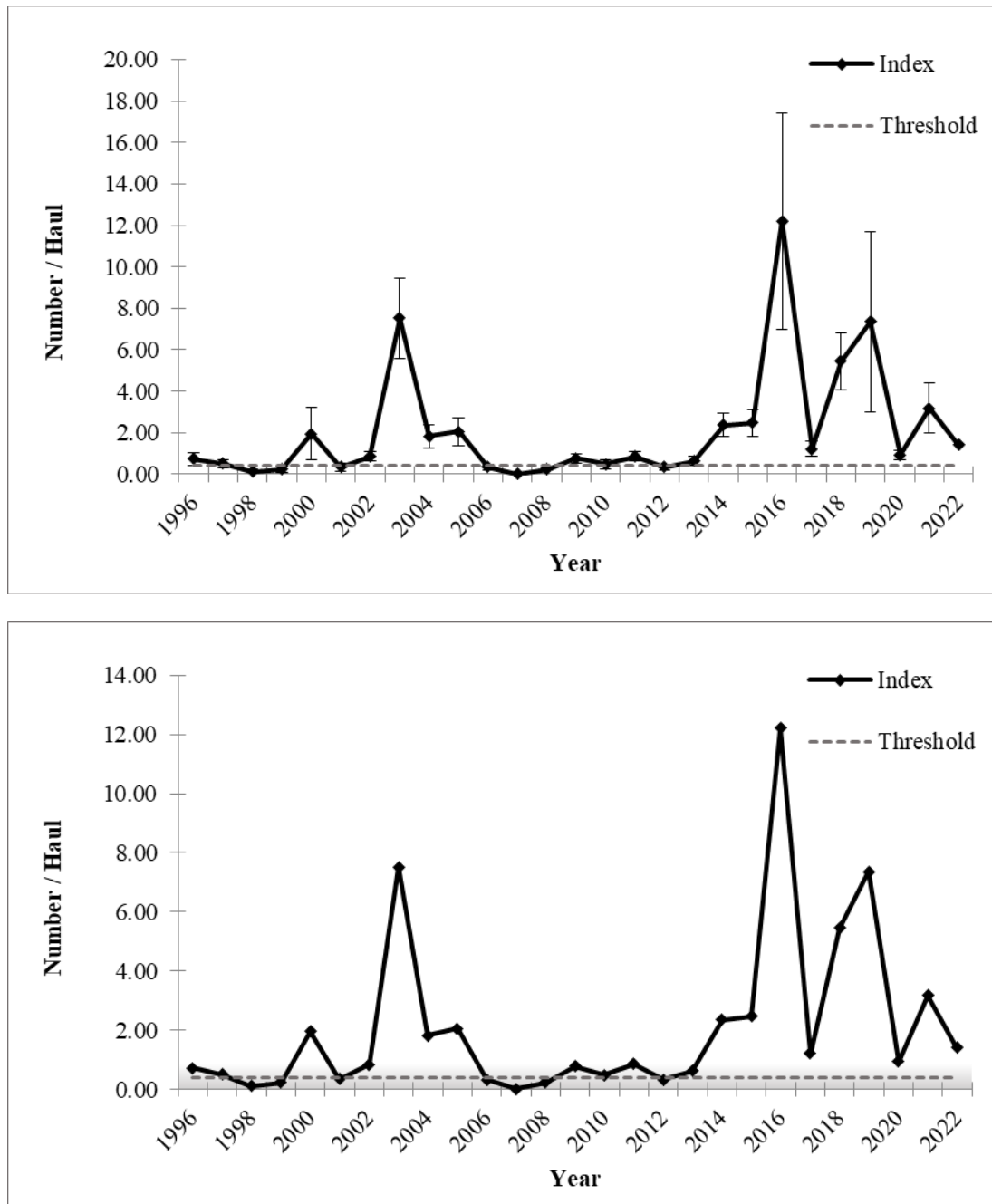


Figure 5. Juvenile abundance index from the NCDMF juvenile seine survey (Jun–Oct) for the Albemarle Sound, 1996–2022. Threshold represents 25<sup>th</sup> percentile (where 75% of all values are greater). Error bars represent  $\pm 1$  standard error (top graph). Index value for 2022 is preliminary, error bars not calculated. Values in gray are below the threshold (bottom graph).

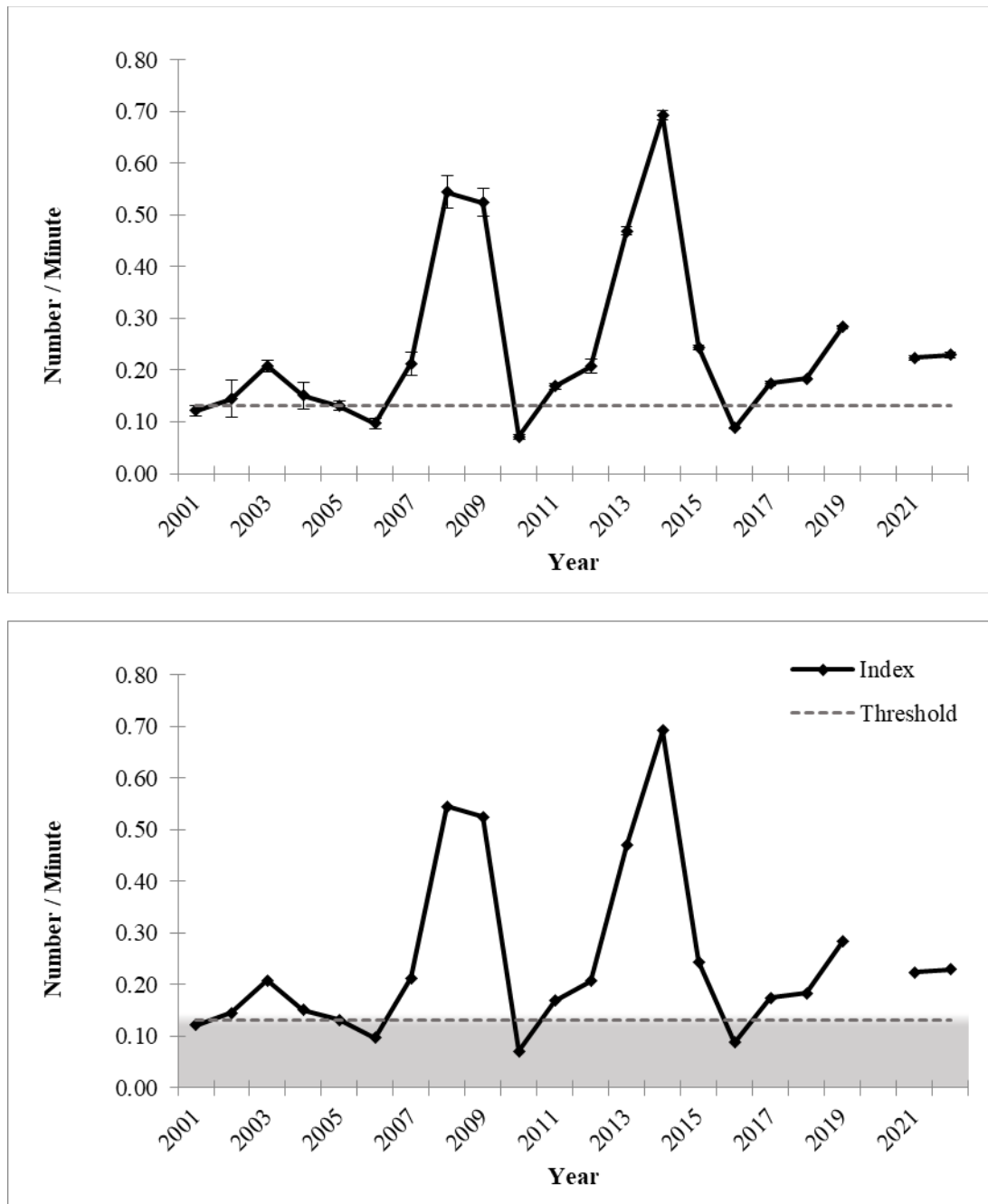


Figure 6. Female index from NCWRC electrofishing survey (March–May) for Roanoke River, 2001-2022. Threshold represents 25<sup>th</sup> percentile (where 75% of all values are greater). Error bars represent  $\pm 1$  standard error (top graph). Values in gray are below the threshold (bottom graph). No survey data available for 2020.

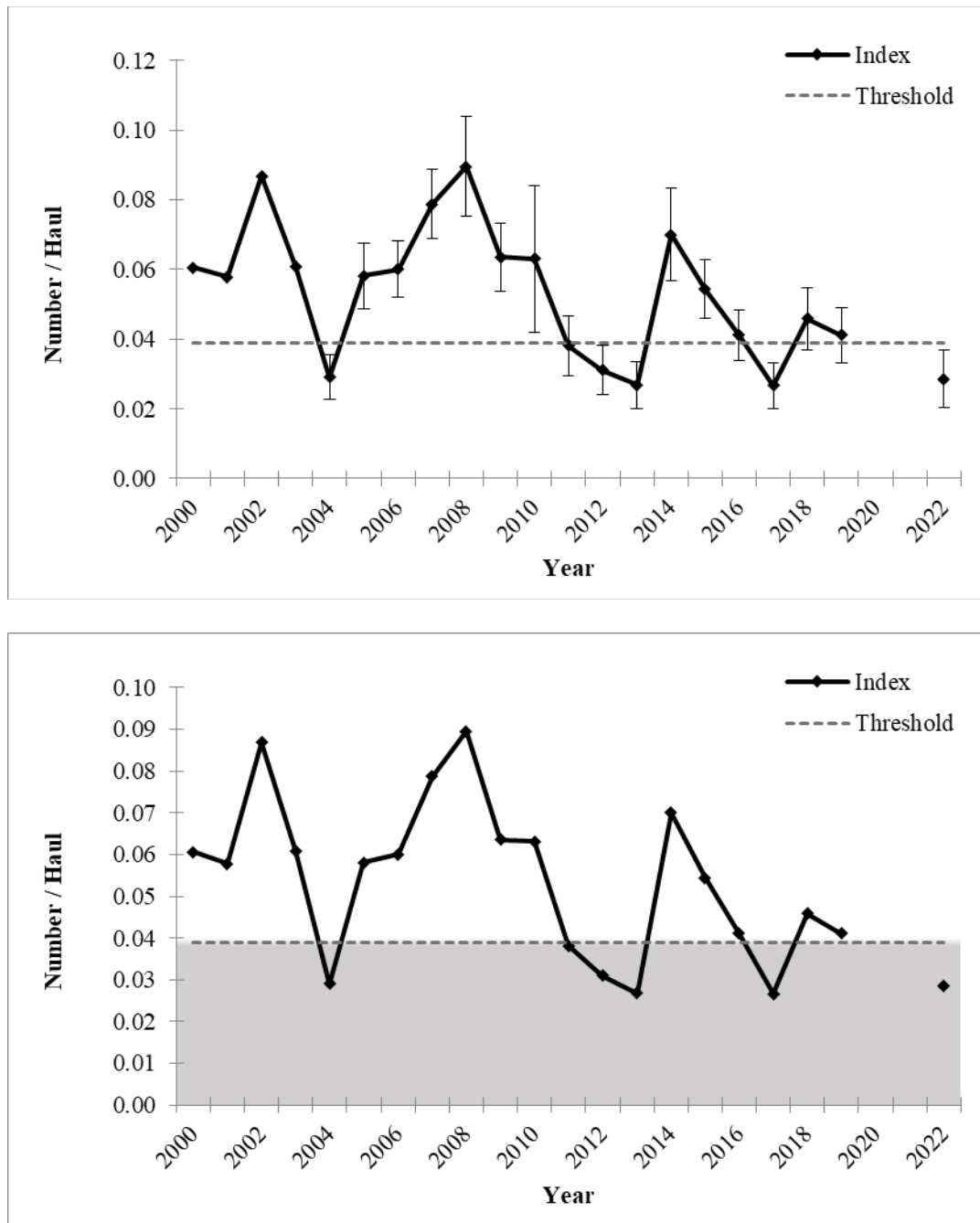


Figure 7. Female index from IGNS (January–May) for Albemarle Sound, 2000–2022. Threshold represents 25<sup>th</sup> percentile (where 75% of all values are greater. Error bars represent  $\pm 1$  standard error (top graph). Values in gray are below the threshold (bottom graph). No survey data available for 2020–2021.

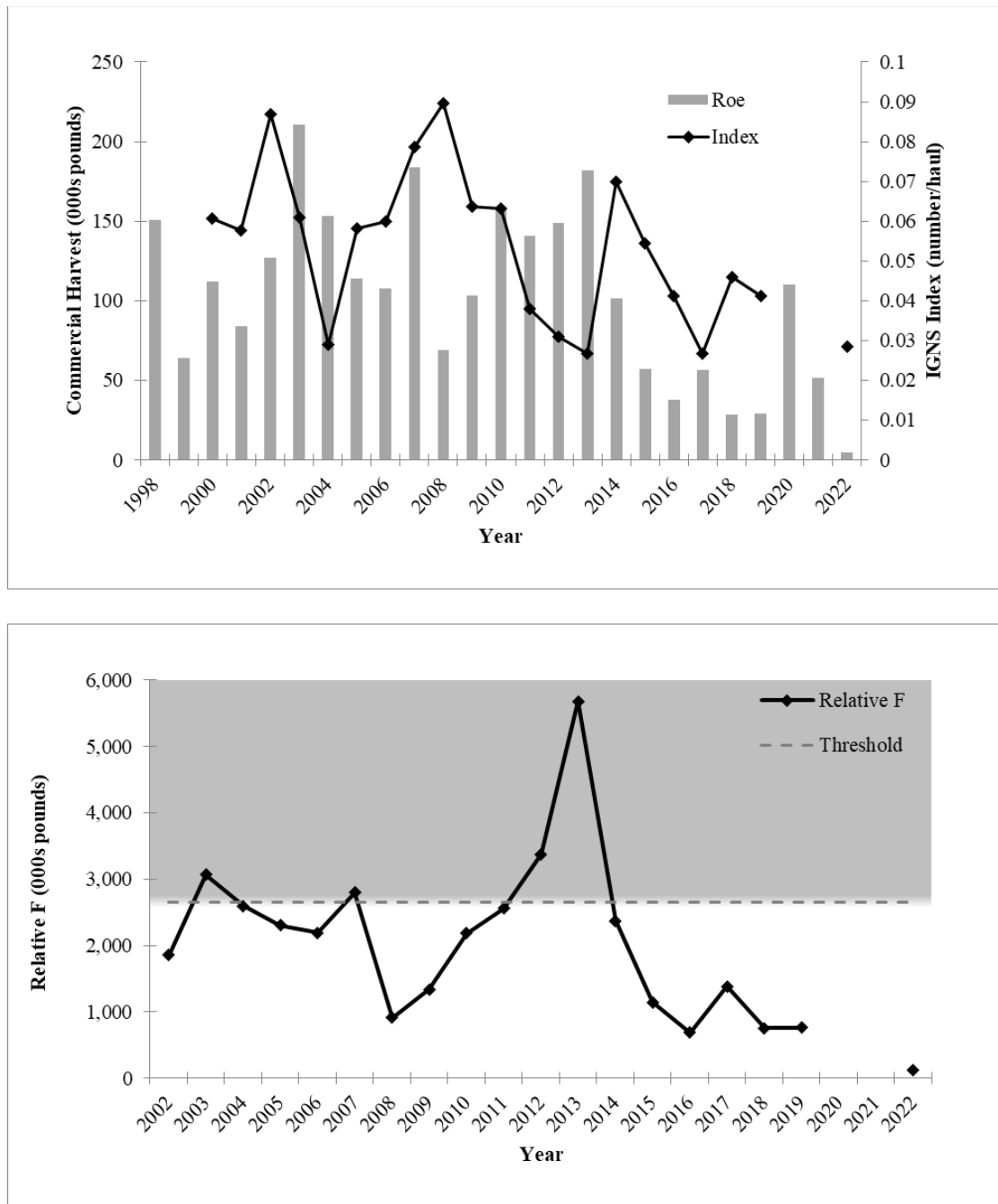


Figure 8. Albemarle Sound commercial harvest of roes by all gear types (1998–2022) compared to the female IGNS index (Jan–May 2000–2022; top graph) and annual estimates of female relative  $F$  based on these data (bottom graph) for Albemarle Sound expressed in pounds of female fish, 2002–2022. The threshold represents the 75<sup>th</sup> percentile (where 25% of all values are greater), values in gray are exceeding the threshold. No survey data available for 2020 and 2021 (top graph). Values for 2020–2022 based on two years of data (bottom graph).

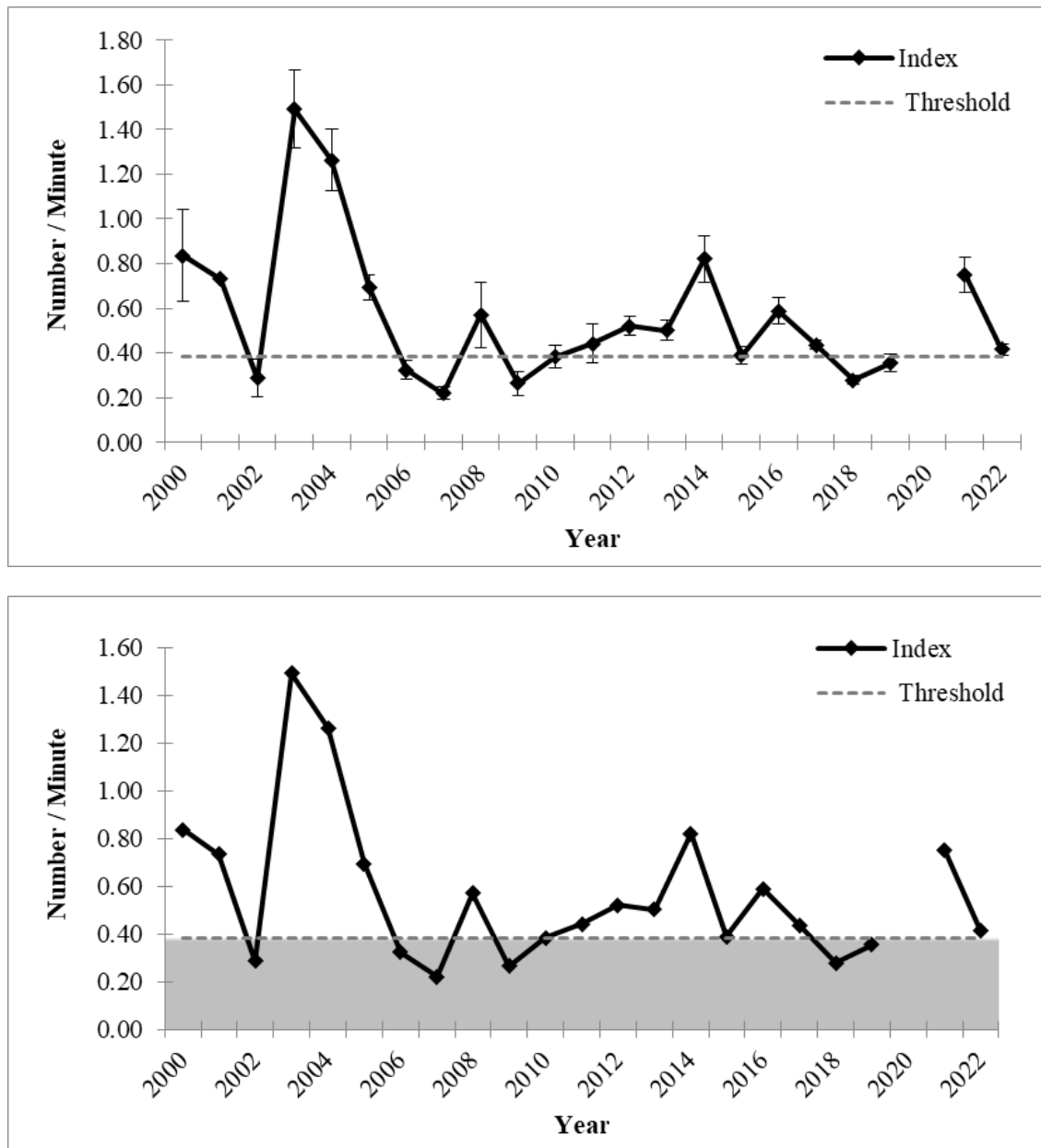


Figure 9. Female electrofishing index (March–May) for the Tar-Pamlico River, 2000–2022. The threshold represents the 25<sup>th</sup> percentile (where 75% of all values are greater). Error bars represent  $\pm 1$  standard error (top graph). Values in gray are below the threshold (bottom graph). No survey data available for 2020.



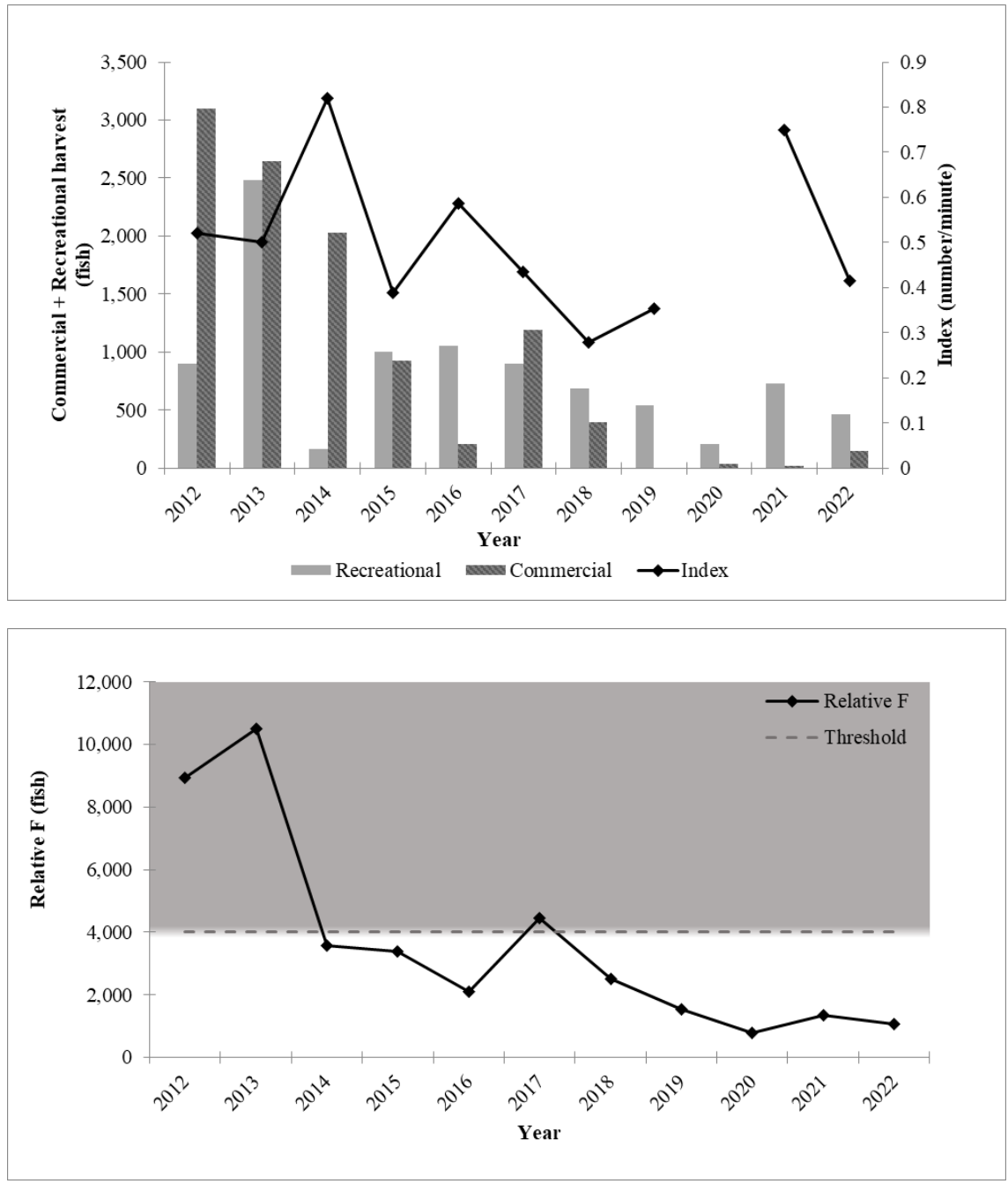


Figure 10. Total recreational and commercial harvest (all gear types and market grades) compared to the female electrofishing index (March–May, 2012–2022; top graph) and annual estimates of total relative  $F$  based on these data (bottom graph) for the Tar-Pamlico River expressed in numbers of fish, 2012–2022. The threshold represents the 75<sup>th</sup> percentile (where 25% of all values are greater), values in gray are exceeding the threshold. No survey data available for 2020 (top graph). Values for 2020–2022 based on two years of data (bottom graph).

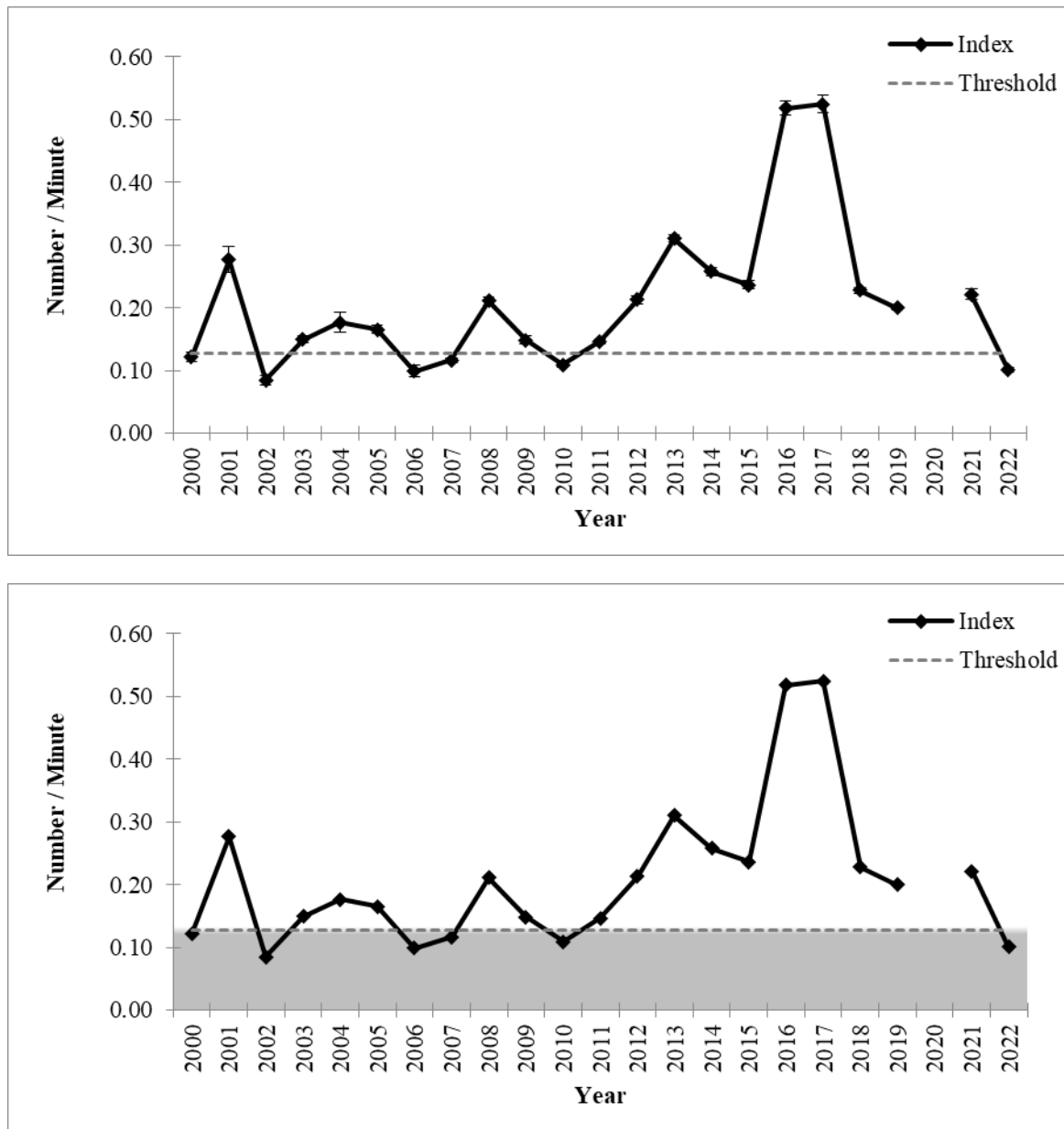


Figure 11. Female electrofishing index (March–May) for the Neuse River, 2000–2022. The threshold represents the 25<sup>th</sup> percentile (where 75% of all values are greater). Error bars represent  $\pm 1$  standard error (top graph). Values in gray are below the threshold (bottom graph). No survey data available for 2020.

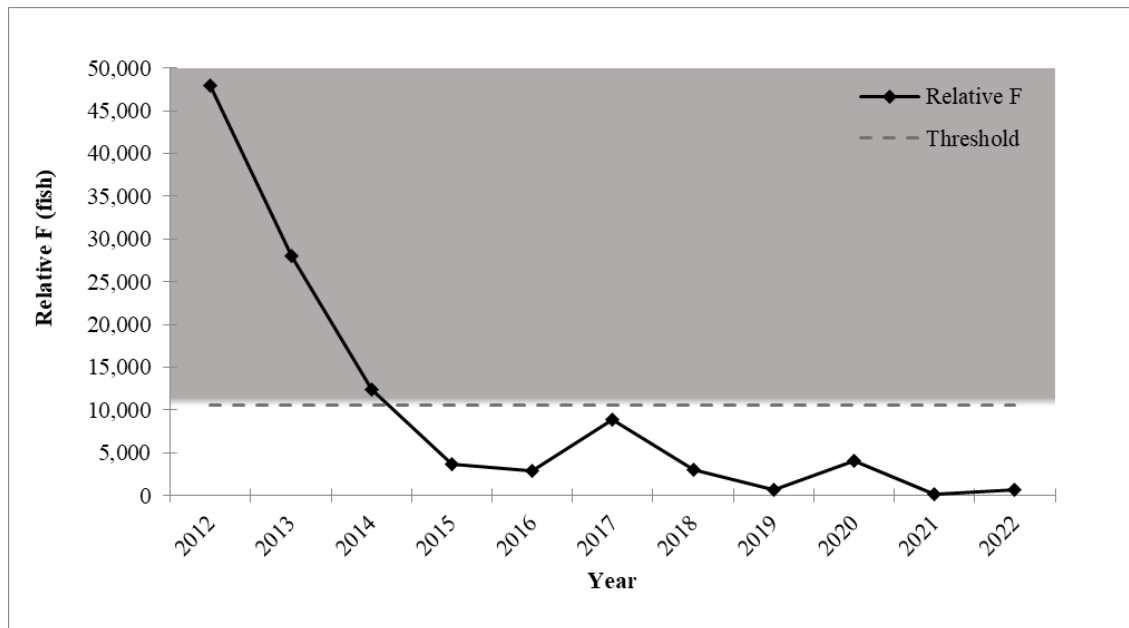
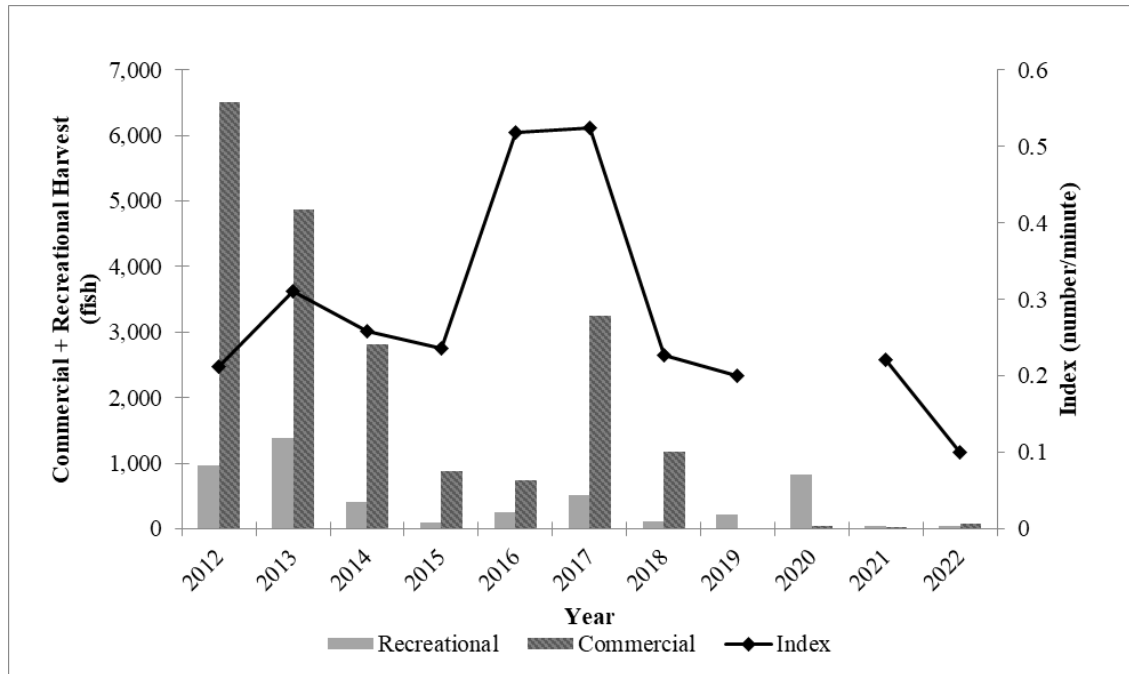


Figure 12. Total recreational and commercial harvest (all gear types and market grades) compared to the female electrofishing index (March–May, 2012–2022; top graph) and annual estimates of total relative F based on these data (bottom graph) for the Neuse River, 2002–2022. The threshold represents the 75<sup>th</sup> percentile (where 25% of all values are greater), values in gray are exceeding the threshold. No survey data available for 2020 (top graph). Values for 2020–2022 based on two years of data (bottom graph).

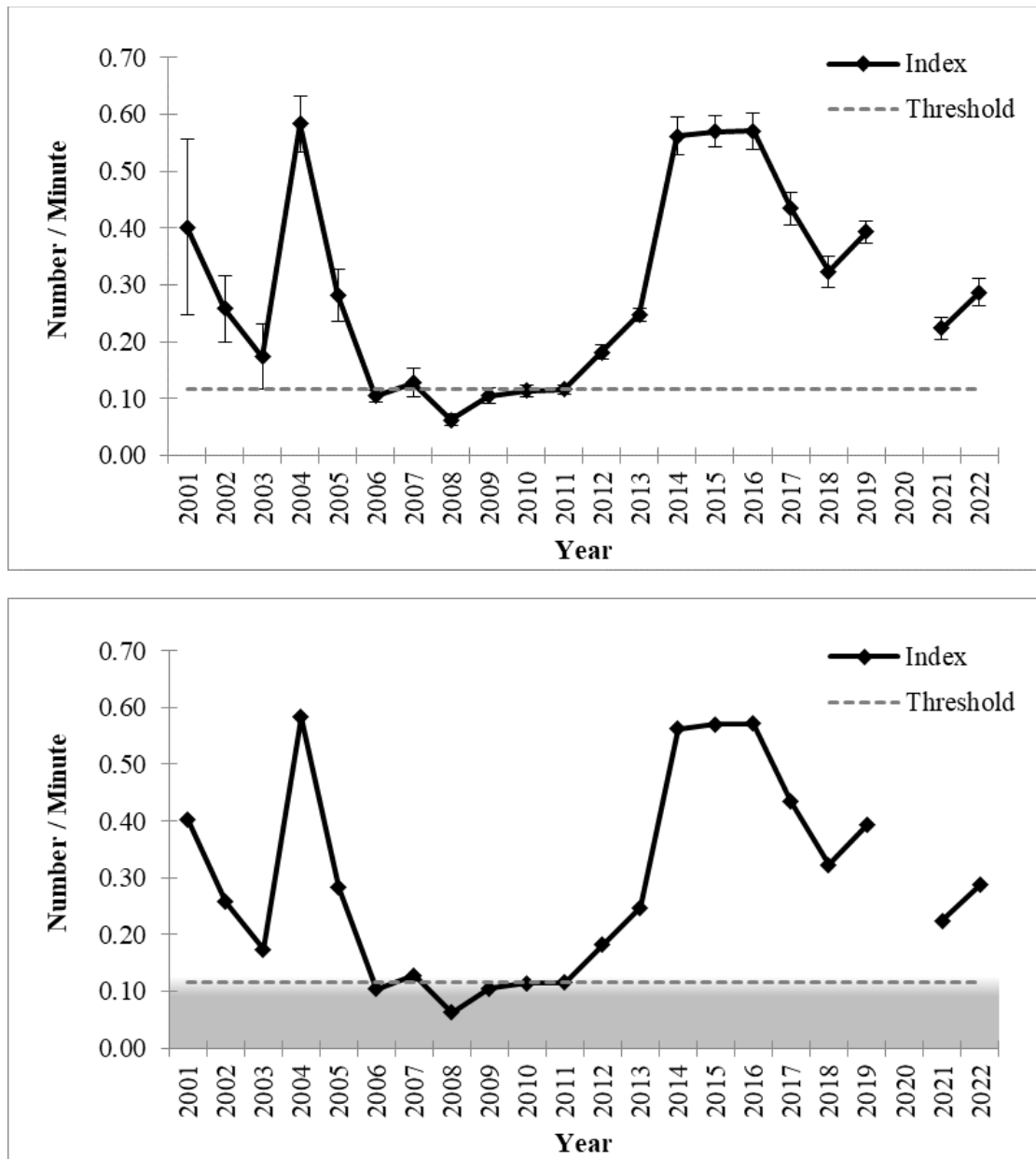


Figure 13. Female electrofishing index (March–May) for the Cape Fear River (LD-1 and LD-2, only), 2001–2022. The threshold represents the 25<sup>th</sup> percentile (where 75% of all values are greater). Error bars represent  $\pm 1$  standard error (top graph). Values in gray are below the threshold (bottom graph). No survey data available for 2020.

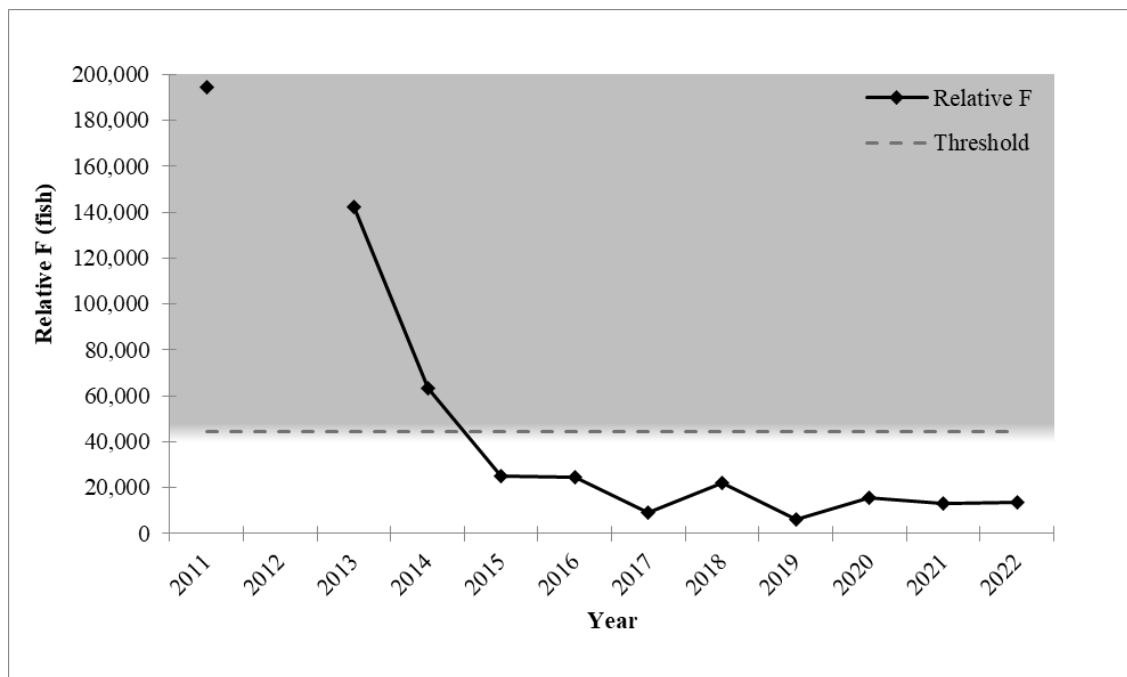
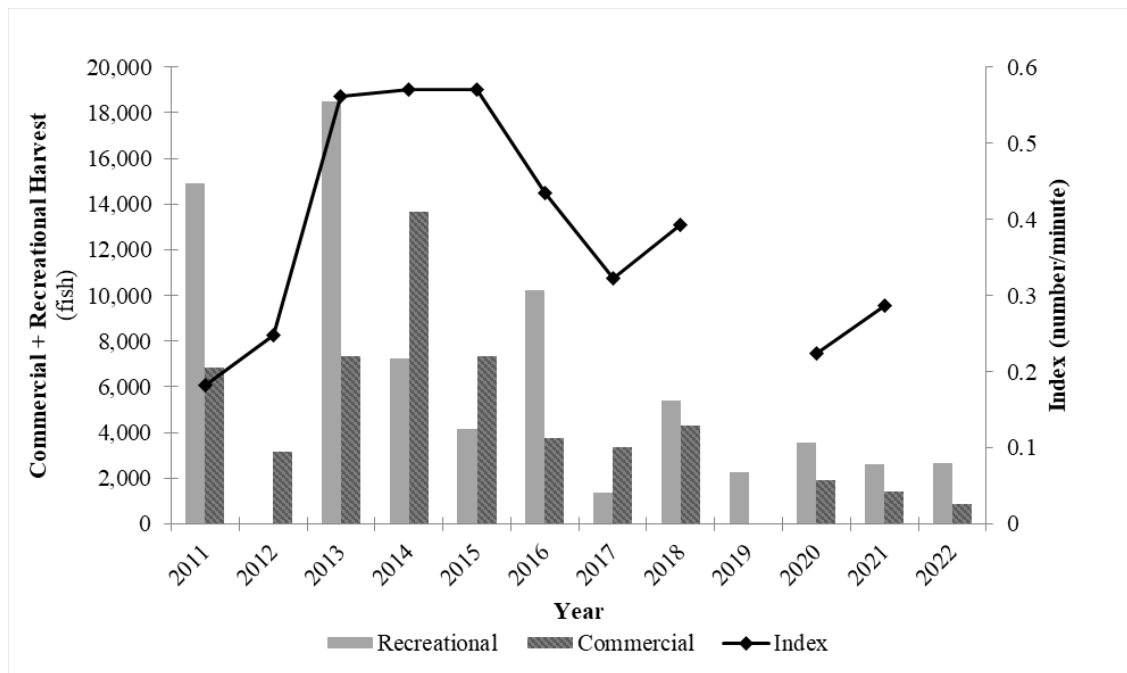
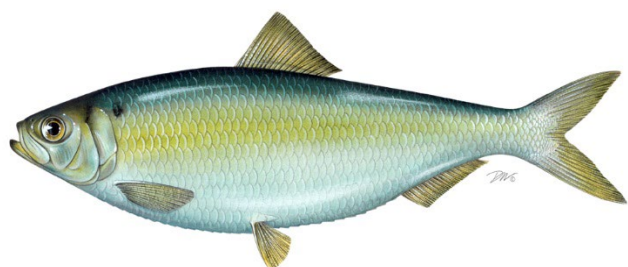
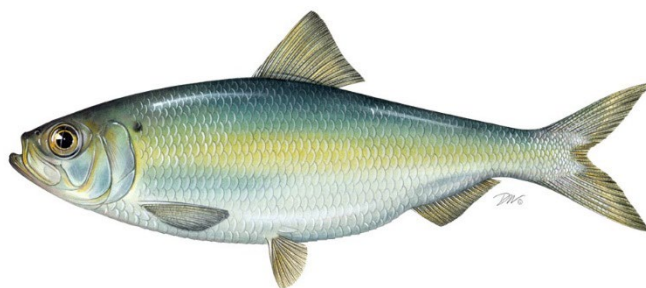
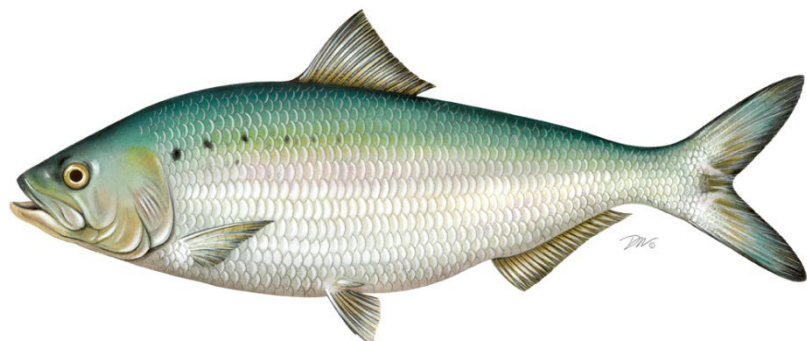


Figure 14. Total recreational and commercial harvest (all gear types and market grades) compared to the female electrofishing index (March–May, 2012–2022; top graph) and annual estimates of total relative F based on these data (bottom graph) for the Cape Fear River, 2011–2022. The threshold represents the 75<sup>th</sup> percentile (where 25% of all values are greater), values in gray are exceeding the threshold. No survey data available for 2020 (top graph). No value for 2012 due to lack of recreational data and values for 2020–2022 based on two years of data (bottom graph).

**REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION  
FISHERY MANAGEMENT PLAN FOR SHAD AND RIVER HERRING  
(*Alosa spp.*) FOR THE 2021 FISHING YEAR**



Shad & River Herring Plan Review Team

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**REVIEW OF THE ASMFC FISHERY MANAGEMENT PLAN FOR  
SHAD AND RIVER HERRING (*Alosa spp.*)**

**I. Status of the Fishery Management Plan**

<u>Date of FMP Approval:</u>	October 1985
<u>Amendments:</u>	Amendment 1 (April 1999) Amendment 2 (August 2009) Amendment 3 (February 2010)
<u>Addenda:</u>	Technical Addendum #1 (February 2000) Addendum I (August 2002)
<u>Management Unit:</u>	Migratory stocks of American shad, hickory shad, alewife, and blueback herring from Maine through Florida
<u>States With Declared Interest:</u>	Maine through Florida, including the Potomac River Fisheries Commission (PRFC) and the District of Columbia
<u>Active Boards/Committees:</u>	Shad & River Herring Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Plan Review Team, Plan Development Team

The 1985 Fishery Management Plan (FMP) for Shad and River Herring was one of the first FMPs developed by the ASMFC. Amendment 1 was initiated in 1994 to require and recommend specific monitoring programs to inform future stock assessments—it was implemented in October 1998. A Technical Addendum to Amendment 1 was approved in 1999 to correct technical errors.

The Shad and River Herring Management Board (Board) initiated Addendum I in February 2002 to change the conditions for marking hatchery-reared alosines; clarify the definition and intent of *de minimis* status for the American shad fishery; and modify and clarify the fishery-independent and dependent monitoring requirements. These measures went into effect on January 1, 2003.

In May 2009, the Board approved Amendment 2 to restrict the harvest of river herring (blueback herring and alewife) due to observed declines in abundance. The Amendment prohibited commercial and recreational river herring harvest in state waters beginning January 1, 2012, unless a state or jurisdiction has a sustainable fishery management plan (SFMP) reviewed by the Technical Committee and approved by the Board. The Amendment defines a sustainable fishery as “a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment.” Catch and release only fisheries may be maintained in any river system without an SFMP. SFMPs have been approved by the Management Board for Maine, New Hampshire, Massachusetts, New York, and South Carolina (Table 1). Amendment 2 also required states to implement fishery-dependent and independent

monitoring programs.

In February 2010, the Board approved Amendment 3 in response to the 2007 American shad stock assessment, which found most American shad stocks at all-time lows. The Amendment requires similar management and monitoring for shad as developed in Amendment 2 (for river herring). Specifically, Amendment 3 prohibits shad commercial and recreational harvest in state waters beginning January 1, 2013, unless a state or jurisdiction has a SFMP reviewed by the Technical Committee and approved by the Board. The Amendment defines a sustainable fishery as “a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment.” Catch and release only fisheries may be maintained in any river system without an SFMP. SFMPs have been approved by the Board for Massachusetts, Connecticut, the Delaware River Basin Fish Cooperative (on behalf of New York, Delaware, New Jersey, and Pennsylvania), PRFC, North Carolina, South Carolina, Georgia, and Florida (Table 1). All states and jurisdictions are also required to identify local significant threats to American shad critical habitat and develop a plan for mitigation and restoration. All states and jurisdictions habitat plans have been accepted and approved.

**Table 1. States/jurisdictions with approved sustainable fishery management plans (SFMPs) for river herring or shad. Includes year of original Board approval and approved updates<sup>1</sup>.**

State	River Herring SFMP	Shad SFMP
<b>Maine</b>	Approved (2010, 2017, 2020)	Approved (2020)
<b>New Hampshire</b>	Approved (2011, 2015, 2020)	
<b>Massachusetts</b>	Approved (2016, 2022)	Approved (2012, 2019)
<b>Connecticut</b>		Approved (2012, 2017)
<b>Rhode Island</b>		
<b>Pennsylvania</b>		Approved* (2012, 2017, 2020, 2022)
<b>New York</b>	Approved (2011, 2017, 2022)	Approved* (2012, 2017, 2020, 2022)
<b>New Jersey</b>		Approved* (2012, 2017, 2020, 2022)
<b>Delaware</b>		Approved* (2012, 2017, 2020, 2022)
<b>PRFC</b>		Approved (2012, 2017)
<b>Maryland</b>		
<b>Virginia</b>		
<b>North Carolina</b>		Approved (2012, 2017, 2020)
<b>South Carolina</b>	Approved (2010, 2017, 2020)	Approved (2011, 2017, 2020)
<b>Georgia</b>		Approved (2012, 2017, 2020)
<b>Florida</b>		Approved (2011, 2017, 2020)

\*The Delaware River Basin Fish and Wildlife Management Co-op has a Shad SFMP, though Delaware and New Jersey are only states that have commercial fisheries. All states have recreational measures, with limited to no catch in the upper Delaware River (New York & Pennsylvania).

<sup>1</sup> SFMPs must be updated and re-approved by the Board every five years.



## II. Status of the Stocks

While the FMP addresses four species: two river herrings (blueback herring and alewife) and two shads (American shad and hickory shad)—these are collectively referred to as shad and river herring, or SRH.

The most recent American Shad Benchmark Stock Assessment (ASMFC 2020) indicates American shad remain depleted on a coastwide basis. Multiple factors, such as overfishing, inadequate fish passage at dams, predation, pollution, water withdrawals, channelization of rivers, changing ocean conditions, and climate change are likely responsible for shad decline from historic abundance levels. Additionally, the assessment finds that shad recovery is limited by restricted access to spawning habitat. Current barriers partly or completely block 40% of historic shad spawning habitat, which may equate to a loss of more than a third of spawning adults.

Of the 23 river-specific stocks of American shad for which sufficient information was available, adult mortality was determined to be unsustainable for three stocks (Connecticut, Delaware, and Potomac) and sustainable for five stocks (Hudson, Rappahannock, York, Albemarle Sound, and Neuse). The terms “sustainable” and “unsustainable” were used instead of “not overfishing” and “overfishing” because fishing mortality cannot be separated from other components contributing to total mortality. The assessment was only able to determine abundance status for two stocks: abundance for the Hudson is depleted, and abundance for the Albemarle Sound is not overfished. For the Hudson and coastwide metapopulation, the “depleted” determination was used instead of “overfished” because the impact of fishing on American shad stocks cannot be separated from the impacts of all other factors responsible for changes in abundance.

The status of 15 additional stocks could not be determined due to data limitations, so trends in YOY and adult abundance were provided for information on abundance changes since the 2005 closure of the ocean-intercept fishery. For YOY indices, two systems experienced increasing trends while one system experienced a decreasing trend since 2005. All other systems experienced either no trend (eight systems), conflicting trends among indices (one system), or had no data (11 systems). For adult indices, four systems experienced increasing trends while no systems experienced decreasing trends since 2005. All other systems experienced either no trend (11 systems), conflicting trends among indices (seven systems), or had no data (one system). Trend analyses also indicate a continued lack of consistent increasing trends in coastwide metapopulation abundance since 2005.

Taken in total, American shad stocks do not appear to be recovering. The assessment concluded that current restoration actions need to be reviewed and new efforts need to be identified and applied. Because multiple factors are likely responsible for shad decline, the recovery of American shad will need to address multiple factors including improved monitoring, anthropogenic habitat alterations, predation by non-native predators, and exploitation by fisheries. There are no coastwide reference points for American shad. There is no stock assessment available for hickory shad.

The most recent *River Herring Benchmark Assessment Report* (ASMFC 2012) indicated that of the 24 river herring stocks for which sufficient data were available to make a conclusion, 23 were depleted relative to historic levels and one was increasing. The status of 28 additional stocks could not be determined because the time-series of available data was too short.

Estimates of coastwide abundance and fishing mortality could not be developed because of the lack of adequate data. The “depleted” determination was used instead of “overfished” because of the many factors that have contributed to the declining abundance of river herring, which include not just directed and incidental fishing, but likely also habitat issues (including dam passage, water quality, and water quantity), predation, and climate change. There are no coastwide reference points.

The river herring stock assessment was updated in 2017 (ASMFC 2017) with additional data from 2011-2015, and concluded that river herring remain depleted at near historic lows on a coastwide basis. Total mortality estimates over the final three years of the data time series (2013-2015) were generally high and exceed region-specific reference points for some rivers. However, some river systems showed positive signs of improvement. Total mortality estimates for 2 rivers fell below region-specific reference points during the final three years of the data time series. No total mortality estimates were below reference points at the end of the 2012 stock assessment data time series. Of the 54 stocks with available data, 16 experienced increasing abundance trends, 2 experienced decreasing abundance trends, 8 experienced stable abundance and 10 experienced no discernable trend in abundance over the final 10 years of the time series (2006-2015). The next river herring stock assessment is expected to be completed in 2023.

### **III. Status of the Fisheries**

Shad and river herring formerly supported the largest and most important commercial and recreational fisheries throughout their range. Historically fishing took place in rivers (both freshwater and saltwater), estuaries, tributaries, and the ocean. Although recreational harvest data are scarce, today most harvest is believed to come from the commercial industry. Commercial landings for these species have declined dramatically from historic highs. Details on each fishery are provided below.

#### **AMERICAN SHAD:**

Total commercial landings throughout the 1950s fluctuated around eight million lbs, then declined to just over two million lbs in 1976. A period of moderate increase occurred through the mid-1980s, followed by further declines through the remainder of the time series. Since the closure of the ocean intercept fishery in 2005, landings have been substantially lower, falling below one million lbs. Since 2015, landings have remained below half a million lbs.

The total commercial landings (directed and bycatch) reported in compliance reports from individual states and jurisdictions in 2021 were 195,642 lbs, representing a 39% decrease from landings in 2020 (323,171 lbs) (Table 2). Bycatch landings accounted for approximately 17% of the total commercial landings of American shad in 2021. Landings from North Carolina, South Carolina, and Georgia accounted for 36.2%, 36.8%, and 9.7% of the directed coastwide

commercial fishery removals in 2021, respectively. The remainder of the directed landings came from Connecticut, New Jersey, and Delaware. Maryland commercial fishermen are permitted a bycatch allowance of two fish per day of dead American shad for personal use, provided that shad are captured by gear legally deployed for the capture of other fish species; no sale is permitted. Landings from Virginia, District of Columbia, and PRFC are attributed to limited bycatch allowances for American Shad.

Substantial recreational shad fisheries occur on the Connecticut (CT and MA), Delaware (NY, PA NJ, and DE), Susquehanna (MD), Santee and Cooper (SC), and St. Johns (FL) Rivers. Shad recreational fisheries are also pursued on several other rivers in Massachusetts, District of Columbia, Virginia, North Carolina, South Carolina, and Georgia. Though shad are recreationally targeted in these locations, many fisheries are catch and release only. Hook and line shad catch levels are not well understood; actual harvest and/or effort is only estimated by a few states through annual creel surveys (e.g. Maryland, North Carolina, Georgia, and Florida). Harvest may only amount to a small portion of total catch (landings and discards), but hooking mortality could increase total recreational fishery removals substantially.

Since 2009, recreational harvest data from the Marine Recreational Information Program (MRIP) are generally not provided for American shad due to high proportional standard errors (PSEs). This is a result of the MRIP survey design, which focuses on active fishing sites along coastal and estuarine areas and is unsuitable for capturing inland harvest. However, North Carolina, South Carolina, and Florida reported American shad recreational harvest estimates for 2021 (Table 3).

#### **HICKORY SHAD:**

In 2021, North Carolina, South Carolina, and Georgia reported directed commercial hickory shad landings; New York and Virginia reported bycatch landings. North Carolina accounts for a vast majority of directed landings, contributing 98% of the total. Coastwide commercial and bycatch landings in 2021 totaled 99,419 lbs, representing an 8% increase from 2020 landings (92,023 lbs) (Table 2). North Carolina and Georgia reported recreational harvest of 55,144 lbs and 112 lbs, respectively.

#### **RIVER HERRING (BLUEBACK HERRING/ALEWIFE COMBINED):**

Commercial landings of river herring declined 95% from over 13 million lbs in 1985 to about 733 thousand lbs in 2005. Recent commercial landings continue to increase, despite the closure of the ocean-intercept fishery in 2005 and North Carolina implementing a no-harvest provision for commercial and recreational fisheries of river herring in coastal waters of the state in 2007. In 2021, the coastwide directed commercial river herring landings reported in state compliance reports were 2.11 million lbs, a 12% increase from 2020 (1.88 million lbs). Bycatch landings in 2021 totaled 451 lbs, a 99.7% decrease from the 2020 total of 167,445 lbs (Table 2). Confidential data preclude reporting commercial landings by state. North Carolina, South Carolina, and Florida provided an estimate of recreational river herring harvest in 2021; recreational harvest estimates for Maine and Massachusetts are produced by MRIP but highly uncertain (Table 3).

**Table 2. Shad and river herring total commercial fishery removals (directed landings and bycatch<sup>1</sup>, in lbs) provided by states, jurisdictions and NOAA Fisheries for 2021.**

	River Herring	American Shad	Hickory Shad
Maine <sup>^</sup>	1,825,855	C	C
New Hampshire	0	0	0
Massachusetts	0	0	0
Rhode Island	0	0	^
Connecticut	0	27,233	0
New York <sup>^</sup>	2,458	1,129	C
New Jersey	0	C	0
Pennsylvania	0	0	0
Delaware	0	C	0
Maryland <sup>^</sup>	0	0	0
D.C.	0	0	0
PRFC	0	11,331	0
Virginia	0	4,246	1,955
North Carolina	0	58,885	95,372
South Carolina	278,801	59,964	C
Georgia	0	15,764	C
Florida	0	0	0
<b>Total Directed</b>	<b>2,106,663</b>	<b>162,822</b>	<b>97,435</b>
<b>Total Bycatch</b>	<b>451</b>	<b>32,820</b>	<b>1,984</b>
<b>Total</b>	<b>2,107,114</b>	<b>195,642</b>	<b>99,419</b>

\*All values for river herring by state are not shown due to confidential data. Confidential values for American shad and hickory shad are indicated by "C." Some values are listed as confidential to protect the confidentiality of other states.

<sup>^</sup>Data not yet available.

**Table 3. Recreational harvest information for river herring and American shad in 2021 from MRIP and state compliance reports.**

State	River Herring Harvest	American Shad Harvest	Source of Estimates
Maine	0	0	MRIP*
New Hampshire	0		Due to failure to meet fishery-independent target in NH's SFP, the recreational river herring fishery was closed in 2021.
Massachusetts	0		MRIP*; No catch recorded
North Carolina		14,589 fish (36,546 lbs)	Recreational creel surveys on the Roanoke, Tar, Neuse, and Cape Fear rivers
South Carolina	12,385 fish (5,239 lbs)	15,200 fish (72,048 lbs)	Creel surveys and mandatory reporting for recreational gill netters.
Florida		47 fish (56kg)	Access point creel survey on St. Johns River

<sup>1</sup> Available information on shad and river herring bycatch varies widely by state. Estimates may not capture all bycatch removals occurring in state waters.

\*MRIP estimate considered highly uncertain. Spatial coverage of MRIP sampling may not align with recreational harvest areas for shad. In Maine, only 3 shad were sampled in 2018 and fewer than 56 shad have been sampled since 1996.

#### **IV. Status of Research and Monitoring**

Amendment 2 (2009) and Amendment 3 (2010), required fishery-independent and fishery-dependent monitoring programs for select rivers. Juvenile abundance index (JAI) surveys, annual spawning stock surveys (Table 4), and hatchery evaluations are required for specified states and jurisdictions. States are required to calculate mortality and/or survival estimates, and monitor and report data relative to landings, catch, effort, and bycatch. States must submit annual reports including all monitoring and management program requirements on or before July 1 of each year.

In addition to the mandatory monitoring requirements stipulated under Amendments 2 and 3, some states and jurisdictions continue important voluntary research initiatives for these species. For example, Massachusetts, Pennsylvania, Delaware, Maryland, District of Columbia, North Carolina, South Carolina, and the United States Fish and Wildlife Service (USFWS) are actively involved in shad restoration using hatchery-cultured fry and fingerlings. All hatchery fish are marked with oxytetracycline marks on otoliths to allow future distinction from wild fish. During 2021, several jurisdictions reared American shad, stocking a total of 16,239,677 American shad, an increase of 11% from the 14,688,667 shad stocked in 2020 (Table 5). In addition, 1,268,795 river herring (both alewife and blueback) larvae were stocked in the James river system in 2021.

#### **V. Status of Management Measures**

All state programs must implement commercial and recreational management measures or an alternative program approved by the Management Board (Table 1). The current status of each state's compliance with these measures is provided in the Shad and River Herring Plan Review Team Report (Table 6).

Amendment 2 (2009) prohibits river herring commercial and recreational harvest in state waters beginning January 1, 2012, unless a state or jurisdiction submits a sustainable fishery management plan and receives approval from the Board. Amendment 3 (2010) also requires the development of a SFMP for any jurisdiction maintaining a shad commercial or recreational fishery after January 1, 2013 (with the exception of catch and release recreational fisheries). States are required to update SFMPs every five years. In 2017, states reviewed their SFMPs and made changes based on fishery performance or observations (e.g., revised sustainability targets) where necessary. At a minimum, states updated data for their commercial and/or recreational fisheries and recommended the current sustainability measures be carried forward in the next plan. To date the Board has reviewed and approved updated SFMPs for all states, with the updated Massachusetts SFMP for shad being approved in February 2019.

Under Amendments 2 and 3 to the FMP, states may implement, with Board approval, alternative management programs for river herring and shad that differ from those required by the FMP. States and jurisdictions must demonstrate that the proposed management program will not contribute to overfishing of the resource or inhibit restoration of the resource. The

Management Board can approve a proposed alternative management program if the state or jurisdiction can show to the Management Board's satisfaction that the alternative proposal will have the same conservation value as the measures contained in the FMP. In August 2020, the Board approved alternative management plans for recreational fishery regulations in South Carolina, Georgia, and Florida.

**Table 4. American shad and river herring passage counts at select rivers along the Atlantic coast in 2021.**

State/River	Shad	River Herring
<b>Maine</b>		
Androscoggin	550	54,906
Saco	2,739	135,198
Kennebec	92	66,008
Sebasticook	7	C
Penobscot	11,581	2,852,037
St. Croix	40	550,123
<b>New Hampshire</b>		
Coheco		2,117
Exeter		167,729
Oyster		9,976
Lamprey		80,567
Winnicut		0
<b>Massachusetts</b>		
Merrimack	47,678	203,399
<b>Rhode Island</b>		
Pawcatuck	65	100,110
Gilbert Stuart		32,760
Nonquit		44,341
Buckeye Brook		122,190
<b>Connecticut River</b>		
Holyoke Dam	237,306	
<b>Pennsylvania</b>		
Schuylkill (Fairmont Dam)	0	*
<b>Pennsylvania/Maryland/Delaware</b>		
Susquehanna (Conowingo)	6,413	27
Susquehanna (Holtwood)	^	^
Susquehanna (Safe Harbor)	^	^
Susquehanna (York Haven)	80	0
<b>South Carolina</b>		
St. Stephen Dam	70,921^^	17,377
<b>Total 2021</b>	<b>291,397</b>	<b>1,160,045</b>
<b>Total 2020</b>	<b>696,556</b>	<b>1,188,067</b>
<b>Total 2019</b>	<b>437,853</b>	<b>6,543,632</b>
<b>Total 2018</b>	<b>642,688</b>	<b>9,404,020</b>
<b>Total 2017</b>	<b>761,386</b>	<b>5,876,375</b>

\*Count not completed due to impacts from COVID-19 pandemic.

\*\*Did not collect data in 2021 due to low stock abundance

^No lift operations; ^^2021 season closed early due to mechanical failure of Gate 1

**Table 5. Stocking of Hatchery-Cultured Alosine Larvae (Fry) in State Waters, 2021.**

State	American Shad	River Herring
<b>Maine</b>		
Androscoggin River	0	0
<b>New Hampshire</b>		
Lamprey River	0	*
<b>Massachusetts*</b>		
Merrimack River	0	0
Nashua River	0	0
<b>Rhode Island</b>		
Pawcatuck River	1,899,929	0
Pawtuxet River	0	0
<b>Pennsylvania</b>		
Susquehanna River	0	0
Lehigh River	0	0
Schuylkill River	0	0
<b>Delaware</b>		
Nanticoke River	603,000	0
<b>Maryland</b>		
Choptank River	1,140,000	0
Patapsco River	200,000	0
<b>Maryland/District of Columbia/PRFC**</b>		
Potomac River	264,100	0
<b>Virginia</b>		
James River	0	1,268,795
<b>North Carolina</b>		
Neuse River	0	0
Roanoke River	0	0
<b>South Carolina</b>		
Santee	12,111,381	0
Edisto River	21,267	0
Wateree River	0	0
<b>Georgia</b>		
Altamaha River	0	0
Oconee River	0	0
<b>Total</b>	<b>16,239,677</b>	<b>1,268,795</b>

\*In Maine and Massachusetts river herring of wild origin are stocked as adult pre-spawning individuals through trap and transfer programs. Similarly, New Hampshire stocked river herring are adults of wild origin. These are not counted toward the total because they are not of hatchery origin.

\*\*Numbers of fry stocked from combined efforts of PRFC, DC, and MD.

## **VI. Prioritized Research Needs**

Due to the large number of research recommendations identified during stock assessments of these alosine species, only research recommendations identified as high priority are presented below. Recommendations are categorized by the expected time frame necessary to complete the recommendation (short term vs. long term). See the most recent benchmark stock assessment of each species (2020 for American shad, 2012 for blueback herring and alewife) for additional important research recommendations.

### **AMERICAN SHAD**

#### **Short Term**

- Otoliths should be collected as the preferred age structure. If collection of otoliths presents perceived impact to conservation of the stock, an annual subsample of paired otolith and scales (at least 100 samples if possible) should be collected to quantify error between structures.
- Error between structures, if scales are the primary age structure collected, and for spawn mark count estimates (either between multiple readers or within reader) should be quantified on an annual basis. A mean coefficient of variation (CV) of 5% and detection of no systematic bias should serve as targets for comparisons.
- Two readers should determine consensus ages and spawn mark counts based on improvements in ageing error in the Delaware system when consensus-based estimates were part of the ageing protocol.

#### **Long Term**

- Develop a centralized repository for agencies to submit and store genetic sampling data for future analysis. The Atlantic sturgeon repository at the United States Geological Survey (USGS) Leetown Science Center should serve as an example.
- Collect genetic samples from young-of-year (YOY) and returning mature adults during spawning runs for future analysis of baseline genetic population structure and site fidelity/straying rates. These data will help define stock structure, identify stock composition from genetic sampling of American shad catch in mixed-stock fisheries, and provide information on recolonization capabilities in defunct American shad systems.
- Conduct annual stock composition sampling through existing and new observer programs from all mixed-stock fisheries (bycatch and directed). Potential methods include tagging (conventional external tags or acoustic tags) of discarded catch and genetic sampling of retained and discarded catch. Mortality rates of juvenile fish in all systems remain unknown and improvement in advice from future stock assessments is not possible without this monitoring. Known fisheries include the Delaware Bay mixed-stock fishery and all fisheries operating in the Atlantic Ocean (U.S. and Canada) that encounter American shad (see Section 4.1.4 in the stock assessment report).
- Implement fishery-independent YOY and spawning run surveys in all systems with open fisheries. Surveys should collect catch rates, length, individual weight, sex (spawning runs), and age (spawning runs) data at a minimum to allow for assessment of stocks with legal harvest. Require these surveys be in operation in systems with requested fisheries before opening fisheries.
- Conduct complete in-river catch monitoring in all systems with open fisheries. Monitoring programs should collect total catch, effort, size, individual weight, and age data at a



minimum. Require these surveys be in operation in systems with requested fisheries before opening fisheries.

- Conduct maturity studies designed to accommodate the unique challenges American shad reproductive behavior (i.e., segregating by maturity status during spawning runs) poses on traditional monitoring programs. This information will also improve understanding of selectivity by in-river fisheries and monitoring programs.
- Conduct fish passage research at barriers with adults for both upstream and downstream migration and movements and with juveniles for downstream as discussed in Section 1.1.9.5 of the stock assessment report.

## **RIVER HERRING**

### **Short Term**

- Analyze the consequences of interactions between the offshore bycatch fishery and population trends in the rivers.
- Continue genetic analyses to determine population stock structure along the coast and enable determination of river origin of incidental catch in non-targeted ocean fisheries.
- Continue to assess current ageing techniques for river herring, using known-age fish, scales, otoliths, and spawning marks.
- Improve reporting of harvest by waterbody and gear.
- Develop and implement monitoring protocols and analyses to determine river herring population responses and targets for rivers undergoing restoration (dam removals, fishways, supplemental stocking, etc.).
- Explore the sources of and provide better estimates of incidental catch in order to reduce uncertainty in incidental catch estimates.

### **Long Term**

- Encourage studies to quantify and improve fish passage efficiency and support the implementation of standard practices.
- Determine and quantify which stocks are impacted by mixed stock fisheries (including bycatch fisheries). Methods to be considered could include otolith microchemistry, oxytetracycline otolith marking, genetic analysis, and/or tagging.
- Validate [better estimate] the different values of natural mortality ( $M$ ) for river herring stocks and improve methods for calculating  $M$ .
- Conduct biannual ageing workshops to maintain consistency and accuracy in ageing fish sampled in state programs.
- Investigate the relation between juvenile river herring production and subsequent year class strength, with emphasis on the validity of juvenile abundance indices, rates and sources of immature mortality, migratory behavior of juveniles, and life history requirements.
- Expand observer and port sampling coverage to quantify additional sources of mortality for alosine species, including bait fisheries, as well as rates of incidental catch in other fisheries.

## **VII. Status of Implementation of FMP Requirements**

In accordance with the Shad and River Herring Fishery Management Plan, the states are required to submit an annual compliance report by July 1<sup>st</sup> of each year. The Plan Review Team

(PRT) reviewed all state reports for compliance with the mandatory measures in Amendments 2 (River Herring) and 3 (American shad). Table 6 provides important information on each state's fisheries, monitoring programs, and compliance issues pertaining to the 2021 fishing year. Table 7 summarizes state reports of protected species interactions.

### ***De Minimis Status***

A state can request *de minimis* status if commercial landings of river herring or shad are less than 1% of the coastwide commercial total. *De minimis* status exempts the state from the sub-sampling requirements for commercial and recreational catch for biological data. The following states have met the requirements and requested continued *de minimis* status in 2021:

- Maine (American shad)
- New Hampshire (American shad and river herring)
- Massachusetts (American shad)
- Georgia (river herring)
- Florida (American shad and river herring)

### ***State Compliance***

All states with a declared interest in shad and river herring management have submitted annual compliance reports.

Most states have regulations in place that meet the intent of the requirements of the Interstate Fisheries Management Plan for Shad and River Herring. The PRT notes the following compliance issues encountered in their review of the state reports:

1. Several states did not report on all monitoring requirements listed under Amendments 2 and 3 (see Table 6). Along with the COVID-19 pandemic, persistent funding and staffing issues prevented states from conducting the required surveys.
  - a. The Delaware COOP has not conducted recreational monitoring for American shad since 2002.
  - b. Massachusetts does not conduct a JAI for American shad in the Merrimack River
  - c. Rhode Island takes river herring samples for mortality/survival estimates but mortality rates have not been updated since 2015.
2. Edisto River was below American shad CPUE sustainability benchmark for three consecutive years (2019-2021), but management action was not triggered.
  - a. Note: 2020 monitoring was suspended after March 19<sup>th</sup>; Management measures are currently being deliberated and will be reviewed by the TC.
3. Maine, DC, and South Carolina did not provide a copy or link to their current fishery regulations.
4. Connecticut did not include a section for hickory shad reporting.

### **VIII. PRT Recommendations**

After a thorough review of the state reports, **the PRT recommends approval of the state compliance reports for the 2021 fishing year and *de minimis* requests.** In order to further streamline the compliance review process, the PRT also recommends moving section VIII B, which provides the results of hickory shad monitoring, to the appendices. This change would allow states that conduct hickory shad monitoring a place to share the results, while removing

optional data from the main body of the compliance report. Additionally, the PRT noted that bycatch losses are inconsistently reported by jurisdictions. Given the importance of this data and the emphasis placed on bycatch by the shad stock assessment and peer review, the PRT will add a section for all states to include their sources of bycatch information to the compliance report template.

**Table 6. Summary of PRT Review of 2021 State Compliance Reports.**

STATE	2021 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
MAINE		Did not provide a copy of state regulations for American shad.
NEW HAMPSHIRE	<p>No known passage of American shad at state monitored fishways in 2021.</p> <p>River herring return to monitored rivers for 2021 was 260,065 fish. Therefore, the NH fishery-independent target was exceeded in 2021</p>	Did not include a section for habitat recommendation implementation.
MASSACHUSETTS		No JAI program; requirement for American shad to develop one in the Merrimack River.
RHODE ISLAND		Samples were taken for mortality/survival estimates for river herring but mortality rates have not been updated since 2015.
CONNECTICUT		<p>Shad: Due to a lack of funding and staff, the spawning stock survey, calculation of mortality/survival estimates, and recreational FD monitoring were not completed. Fishery independent work completed but still processing and analyzing data.</p> <p>River Herring: Unable to collect spawning stock data due to funding and staffing issues.</p> <p>Did not include a section for hickory shad.</p>
NEW YORK		<p>Did not include a section for implementation of habitat recommendations.</p> <p>American shad: Annual spawning stock survey not completed due to COVID-19 restrictions.</p> <p>River herring: Spawning stock assessment, monitoring of recreational landings, and mortality estimates were not completed in 2021 due to funding and COVID-19 constraints.</p>
NEW JERSEY	Did not complete Ocean Trawl in 2021 for shad or river herring.	

**Table 6. Summary of PRT Review of 2021 State Compliance Reports.**

STATE	2021 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
<b>PENNSYLVANIA</b>	Fish passage operations for adult American shad and river herring at Conowingo, Holtwood, and Safe Harbor dams were suspended during 2021 to preclude the upriver range expansion of several invasive fish species.	
<b>DELAWARE BASIN COOP</b>	Seine GLM Index (1988-2015) and Gillnetting CPUE Index (1990-2015) exceeded benchmark but did not trigger management action.  Removal of dams 4 and 6 is planned with the permit applications currently under review. Permits submissions for dam 2 and 4 removal on White Clay Creek in Delaware are currently under review as well. Removal of additional dams on the Paulinskill and Musconetcong River in New Jersey are also being evaluated.	No recreational monitoring for American shad since 2002.  Shad and river herring: NJ Tidal Beach Seine and Delaware River Beach Seine not conducted due to COVID-19; No mortality rates provided.  Did not include section on implementing habitat recommendations.
<b>DELAWARE</b>		Did not include section on implementing habitat recommendations.
<b>MARYLAND</b>	Nanticoke River spawning stock survey resumed in 2021, but was conducted once per week.  Shad: Due to a lack of boat access at the Conowingo Dam, the Susquehanna River/upper Chesapeake Bay spawning stock survey was conducted almost exclusively from shore in 2021, precluding fishery independent CPUE estimates; survey was conducted as normal in 2022. However, annual population estimate was calculated from the number of tagged fish recaptured in fish lifts.	
<b>D.C.</b>		River herring: COVID-19 work restriction prevented the completion of required fishery independent monitoring in 2020. Only an abbreviated JAI seine survey was conducted. No spawning stock survey, adult biological data, or mortality/survival estimates are available for 2020.  Did not provide a copy of fishery regulations.  Did not include a section for habitat recommendation implementation.
<b>PRFC</b>	No hatchery evaluation was conducted because COVID-19 prevented any broodstock collections.	No recreational effort for American shad.  Did not include a section for habitat recommendation implementation.
<b>VIRGINIA</b>	Virginia is stocking prespaw river herring in the headwaters of Herring Brook to increase returns.	Did not include a section for habitat recommendation implementation.

**Table 6. Summary of PRT Review of 2021 State Compliance Reports.**

STATE	2021 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
NORTH CAROLINA		
SOUTH CAROLINA	<p>The commercial fishery in the Black River was closed in 2021. No management actions were triggered in 2021, though the commercial CPUEs for the Pee Dee River Run, Edisto River, and Savannah River, as well as the fishery independent CPUE for The Santee-Cooper Rivers Complex, were all below sustainability benchmark values in 2021. The Pee Dee River Run was also below its sustainability benchmark in 2018 and 2019, and the Edisto River was below its sustainability benchmark in 2019.</p>	<p>Edisto River was below American shad CPUE sustainability benchmark for three consecutive years (2019-2021), but management action was not triggered.</p> <p>Did not provide a copy or link to current fishery regulations.</p>
GEORGIA	<p>Creel surveys on the Altamaha River were not conducted in 2021 due to internal restructuring but resumed in 2022. Effective in 2022, this creel survey is hereafter scheduled to occur every 3 years. All systems currently managed under Georgia's SFMP were above their sustainability targets in 2021.</p> <p>In 2021, no river herring were recorded in the state's juvenile American shad seine surveys.</p>	
FLORIDA	<p>For the 5th year in a row, the St. Johns River E-fish index fell below sustainability threshold, triggering a management review (triggers after 3-consecutive years). The state determined that the minimal harvest in recreational fishery doesn't warrant closure. The state has also not completed ageing, though otoliths were collected.</p> <p>Could not calculate age frequency or mortality estimates for adult blueback in the St. Johns River due to a low sample size.</p>	

**Table 7. Reported protected species interactions (sturgeon species) in shad or river herring fisheries in 2021. Only the states listed below reported interactions.**

Jurisdiction	Atlantic sturgeon		Shortnose sturgeon		Unclassified		Total by State	
	Catch	Mortalities	Catch	Mortalities	Catch	Mortalities	Catch	Mortalities
RI	*						Unavailable*	Unavailable*
CT			C	0			C	0
NJ	**	**	**	**	**	**	**	**
PRFC	4	0					4	0
VA	1	0					1	0
NC	3	1			2	0	5	1
SC	4	0					4	0
GA	20	0	5	0			25	0
<b>Total by Species</b>	32	1	5	0	2	0	<b>39</b>	<b>1</b>

\*Rhode Island reports NOAA NEFOP and ASM data, which is available after the compliance report submission deadline. Therefore, their data lags by one year. Rhode Island reported 4 sturgeon caught in their waters in 2020.

\*\*In 2021 gill netters in New Jersey coastal waters reported discarding 1,666 lbs of sturgeon.



# Atlantic States Marine Fisheries Commission

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703.842.0740 • [www.asmf.org](http://www.asmf.org)

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## MEMORANDUM

January 24, 2023

**To: Shad and River Herring Management Board**

**From: Tina Berger, Director of Communications**

**RE: Advisory Panel Nominations**

Please find attached two new nominations to the Shad and River Herring Advisory Panel – Stephen Gephard, a recreational angler and retired CT 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. Please review these nominations for action at the next Board meeting.

If you have any questions, please feel free to contact me at 703.842.0749 or [tberger@asmfc.org](mailto:tberger@asmfc.org).

Enc.

cc: James Boyle

M23-001



## SHAD & RIVER HERRING ADVISORY PANEL

Bolded names await approval by the Shad & River Herring Management Board

January 24, 2023

### **Maine**

*River Herring:*

Deborah Wilson (conservation)  
374 Bayview Road  
Nobleboro, ME 04555  
Phone: (207)380-6997  
[Deb.wilson1028@gmail.com](mailto:Deb.wilson1028@gmail.com)  
Appt Confirmed 5/3/22

Mike Thalhauser (comm)  
Alewife Harvesters of Maine  
13 Atlantic Avenue  
Stonington, ME 04681  
207.367.2708  
[mthalhauser@coastalfisheries.org](mailto:mthalhauser@coastalfisheries.org)  
Appt. Confirmed 10/30/19

*Shad:*

**Vacancy - shad rec**

### **New Hampshire**

*Shad & River Herring:*

Eric Roach (rec)  
54A Foggs Lane  
Seabrook, NH 03874  
Phone: 603.502.0928  
[Eroach1970@gmail.com](mailto:Eroach1970@gmail.com)  
Appt Confirmed 2/4/21

### **Massachusetts**

*Shad & River Herring:*

Paul Perra (rec)  
5 Candleberry Court  
Bourne, MA 02532  
Phone: 978.381.4746  
[pperra@icloud.com](mailto:pperra@icloud.com)  
Appt Confirmed 11/8/22

Jerry Audet (rec/outdoor writer)  
286 Yew Street  
Douglas, MA 01516  
Phone: 304.906.1298  
[indeepoutdoorswmedia@gmail.com](mailto:indeepoutdoorswmedia@gmail.com)  
Appt Confirmed 11/8/22

### **Connecticut**

*Shad & River Herring:*

**Stephen Gephard (rec)**  
7 High Street  
Deep River, CT 06417  
Phone: 860.966.9344  
[sgephard@gmail.com](mailto:sgephard@gmail.com)

**William Lucey (fish passge)**

68 Titus Coan Road  
Killingworth, CT 06419  
203.854.5330  
[w.g.lucey@gmail.com](mailto:w.g.lucey@gmail.com)

### **New York**

*Shad & River Herring:*

Byron Young  
53 Highview Lane  
Ridge, NY 11961  
Phone: (631) 821-9623  
Cell: (631) 294-9612  
Fax: (631) 821-9623  
Email: [youngb53@optimum.net](mailto:youngb53@optimum.net)  
Appt. Confirmed 5/5/08  
Chair from 1/09- 1/11  
*Confirmed interest in March 2019*

### **New Jersey**

*Shad:*

**Vacancy – recreational**

*Shad & River Herring:*  
Jeff Kaelin (comm. trawl and purse seine)  
Director of Sustainability and Government  
Relations  
Lund's Fisheries, Inc.  
997 Ocean Drive  
Cape May, NJ 08204  
Phone: 207.266.0440  
[jkaelin@lundsfish.com](mailto:jkaelin@lundsfish.com)  
Appt Confirmed 8/20/09  
*Confirmed interest in March 2019*

### **Pennsylvania**

**Vacancy**

## SHAD & RIVER HERRING ADVISORY PANEL

Bolded names await approval by the Shad & River Herring Management Board

January 24, 2023

### **Delaware**

*Shad & River Herring:*  
Dr. Edward Hale  
Delaware Sea Grant  
23 Gosling Drive

Lewes, DE 19958  
Phone: 302.470.3380  
[EHale@udel.edu](mailto:EHale@udel.edu)  
Appt Confirmed 2/4/21

### **Maryland**

*Shad & River Herring:*  
**Vacancy - recreational**

### **Georgia**

*River Herring:*  
Fulton Love (dealer)  
6817 Basin Road  
Savannah, GA 31419  
Phone: (912)925-3616  
FAX: (912)925-1900  
Appt. Confirmed 10/30/95  
Appt. Reconfirmed 9/8/99; 3/19/08  
**No response to Sept 2017 or March 2019 inquiry regarding continuing interest in serving on AP**

### **Virginia**

*Shad & River Herring:*  
**Vacancy**

*Shad:*  
**Vacancy**

### **Florida**

*Shad & River Herring:*  
**2 vacancies**

### **North Carolina**

*River Herring:*  
Louis Ray Brown, Jr. (rec)  
212 Walnut Creek Drive  
Goldsboro, NC 27534  
Phone (day): (919) 778-9404  
Phone (eve): (919) 778-9792  
FAX: (919) 778-1197  
Email: [oldpirate.rb@gmail.com](mailto:oldpirate.rb@gmail.com)  
Appt. Confirmed 5/5/08; 8/18  
*Confirmed interest in March 2019*

### **Potomac River Fisheries Commission**

*River Herring:*  
Kevin L. Gladhill (rec)  
21370 Mount Lena Road  
Boonsboro, MD 21713  
Phone (day): (301)988-6697  
Phone (eve): (301)714-1074  
Email: [KLGladhill@myactv.net](mailto:KLGladhill@myactv.net)  
Appt. Confirmed 5/5/08  
**No response to Sept 2017 or March 2019 inquiry regarding continuing interest in serving on AP**

**Vacancy – commercial**

### **South Carolina**

*Shad:*  
Thomas M. Rowe, Jr. (rec)  
4625 Flounder Lake Drive  
Meggett, SC 29449  
Phone: 843-908-0247  
FAX: 843-549-7575  
Email: [thomasmrowe@hotmail.com](mailto:thomasmrowe@hotmail.com)  
Appt Confirmed 8/3/10  
*Confirmed interest in Sept 2017*

**Vacancy – commercial pound net**

### **District of Columbia**

*Shad:*  
Joe Fletcher (rec)  
1445 Pathfinder Lane  
McLean, VA 22101  
Phone (day): (202)244-0461  
Appt. Confirmed 10/30/95  
Appt. Reconfirmed 9/15/99  
Appt. Reconfirmed 4/21/08  
**No response to Sept 2017 inquiry regarding continuing interest in serving on AP**

**Vacancy – commercial net**



**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: Justin Davis State: Connecticut  
(your name)

Name of Nominee: Stephen Gephard

Address: 7 High Street

City, State, Zip: Deep River, CT 06417

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 860-966-9344

Phone (evening): 860-966-9344

FAX: n.a.

Email: sgephard@gmail.com

.....  
**FOR ALL NOMINEES:**

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

1. Shad and River Herring

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes \_\_\_\_\_ no X

3. Is the nominee a member of any fishermen's organizations or clubs?

yes  no

If "yes," please list them below by name.

Connecticut River Salmon Assoc.

(recreational)

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

Striped Bass

Bluefish

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

Atlantic Salmon

trout

black bass

**FOR COMMERCIAL FISHERMEN:**

1. How many years has the nominee been the commercial fishing business? \_\_\_\_\_ years

2. Is the nominee employed only in commercial fishing? yes \_\_\_\_\_ no \_\_\_\_\_

3. What is the predominant gear type used by the nominee? \_\_\_\_\_

4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? \_\_\_\_\_

**FOR CHARTER/HEADBOAT CAPTAINS:**

1. How long has the nominee been employed in the charter/headboat business? \_\_\_\_\_ years

2. Is the nominee employed only in the charter/headboat industry? yes \_\_\_\_\_ no \_\_\_\_\_

If "no," please list other type(s) of business(es) and/occupation(s): \_\_\_\_\_

\_\_\_\_\_

3. How many years has the nominee lived in the home port community? \_\_\_\_\_ years

If less than five years, please indicate the nominee's previous home port community.

\_\_\_\_\_

**FOR RECREATIONAL FISHERMEN:**

1. How long has the nominee engaged in recreational fishing? >60 years

2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes \_\_\_\_\_ no X \_\_\_\_\_

If "yes," please explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**FOR SEAFOOD PROCESSORS & DEALERS:**

1. How long has the nominee been employed in the business of seafood processing/dealing? \_\_\_\_\_ years

2. Is the nominee employed only in the business of seafood processing/dealing?

yes \_\_\_\_\_ no \_\_\_\_\_ 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? ~50 years

2. Is the nominee employed in the fishing business or the field of fisheries management?  
yes X no \_\_\_\_\_

If "no," please list other type(s) of business(es) and/or occupation(s):

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**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.

The formatting for this space is non-functional. Please see attached addendum.

Nominee Signature:  \_\_\_\_\_

Date: 12/21/2022

Name: **Stephen Gephard**  
\_\_\_\_\_  
(please print)

**COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)**

  
\_\_\_\_\_  
State Director

\_\_\_\_\_  
State Legislator

\_\_\_\_\_  
Governor's Appointee

ADDENDUM TO THE ADVISORY PANEL NOMINATION FORM- Gephard

The nominee holds a BA in Biology and a MS in Fisheries Biology and worked for 42 years with the CTDEEP Fisheries Division as a fisheries biologist, specializing in diadromous fish species. Upon retirement in 2020, he had supervised the CTDEEP's Diadromous Fish program for nearly 20 years. During this time, he was the first chairman of the ASMFC's American Eel Technical Committee. He has extensive technical experience with both Alewife and Blueback Herring as well as knowledge with American Shad. He has co-authored technical publications on these species. He is currently a self-employed fisheries consultant specializing in diadromous fish species and fish passage and remains active in the field. He currently is a member of Steering Committee on development NOAA's River Herring Habitat Conservation Plan.





**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: Justin Davis State: CT  
(your name)

Name of Nominee: William Lucey

Address: 68 Titus Coan Rd.

City, State, Zip: Killingworth, CT 06419

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 203-854-5330 Phone (evening): same

FAX: \_\_\_\_\_ Email: w.g.lucey@gmail.com

**FOR ALL NOMINEES:**

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

1. River Herring and Shad
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes \_\_\_\_\_ no X

3. Is the nominee a member of any fishermen's organizations or clubs?

yes X no \_\_\_\_\_

If "yes," please list them below by name.

CT Fisheries Advisory Committee

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

Black Seabass

Bluefish

Porgy

Blue Crab

Striped Bass

Hickory Shad

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

Pacific Salmon

Spot Prawn

Pacific Halibut

Pacific Herring

Eulachon Smelt

\_\_\_\_\_

**FOR COMMERCIAL FISHERMEN:**

1. How many years has the nominee been the commercial fishing business? 17 years

2. Is the nominee employed only in commercial fishing? yes \_\_\_\_\_ no X

3. What is the predominant gear type used by the nominee? Gillnet, Troll, Longline

4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? Gulf of Alaska 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? 48 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.

Held a number of permits in Alaska in the past

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**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.

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**FOR OTHER INTERESTED PARTIES:**

1. How long has the nominee been interested in fishing and/or fisheries management? 30 years

2. Is the nominee employed in the fishing business or the field of fisheries management?  
yes \_\_\_\_\_ no X \_\_\_\_\_

If "no," please list other type(s) of business(es) and/or occupation(s):

Clean water and fisheries advocate for regional Environmental NGO "Save the Sound, Inc,

Job title is "Long Island Soundkeeper" member of the Waterkeeper Alliance

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**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.

See attached letter

Nominee Signature: s// William Lucey

Date:

Name: William Lucey  
(please print)

**COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)**

Justin Davis

State Director

State Legislator

Governor's Appointee

To: ASMFC review committee,

My interest in joining the River Herring and Shad advisory committee stems from a long career working in natural resource management including diadromous fish. I studied fisheries biology and management at the Universities of Vermont and Oregon State. I began my career in 1988 with the Vermont Fisheries and Wildlife Department and have worked on a variety of projects; stocking Atlantic salmon alevins in in the upper CT River, teaching as a fish aquaculture extensionist in Central America and working in Alaska with both the US Forest Service and as ACMP Coordinator. I have worked extensively with salmon genetic collection, radio telemetry, juvenile salmon weir and spawning escapement counts as well as regulatory proposals for the AK Board of Fish and the AK federal subsistence board. I also worked with eulachon smelt monitoring and Pacific herring spawn mapping for the AK Dept. of Fish and Game.

Currently, I focus on fisheries policy and my parent organization, Save the Sound, is involved in several dam removal and fish passage projects designed to pass river herring. On the most recent project I was able to compare 20 years of daily fish counts, during the spring runs, with daily mean high flows from a nearby USGS gauge to demonstrate lack of efficacy at an existing fish ladder. This led to a local, state and federal partnership to begin the process to remove the dam which will add over 30 miles of high-quality shad, blueback and alewife habitat to CT's watersheds. We have also been tracking the incidental catch rates of river herring in offshore fisheries described in the recent paper by Reid et al. (2022) to better understand the effects on our local populations.

I am very interested in following the river herring stock status updates from NMFS and management proposals for reversing the chronically depressed river herring populations south of Maine. To be transparent, I do not agree with the statements made by NOAA regarding distinct population segments described in the court ordered response to the removal of the New England midwater-trawl buffer zone. The NOAA attorneys asserted that the entire southern New England stock could theoretically be extirpated but that straying rates from other locations such as the CT River would be able to repopulate those rivers. While straying is an important ecological strategy, it is a significant contributor to nearby populations only when those systems are adjacent to robust healthy populations. The current CT River runs do not begin to approach a run strength that matches its historic production capacity. The entire region is depleted and I do not think straying would alleviate extirpation.

We feel that once the current stock status is completed, there will be a clearer picture of what management options are needed to bring runs back to levels that the currently available, and future habitat can support. This should be based on longer times series data, Atlantic MDO cycles along with habitat quality and incidental harvest factors. I would be glad to participate in that process as it develops and work closely with the CT fisheries management staff on solutions.





# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

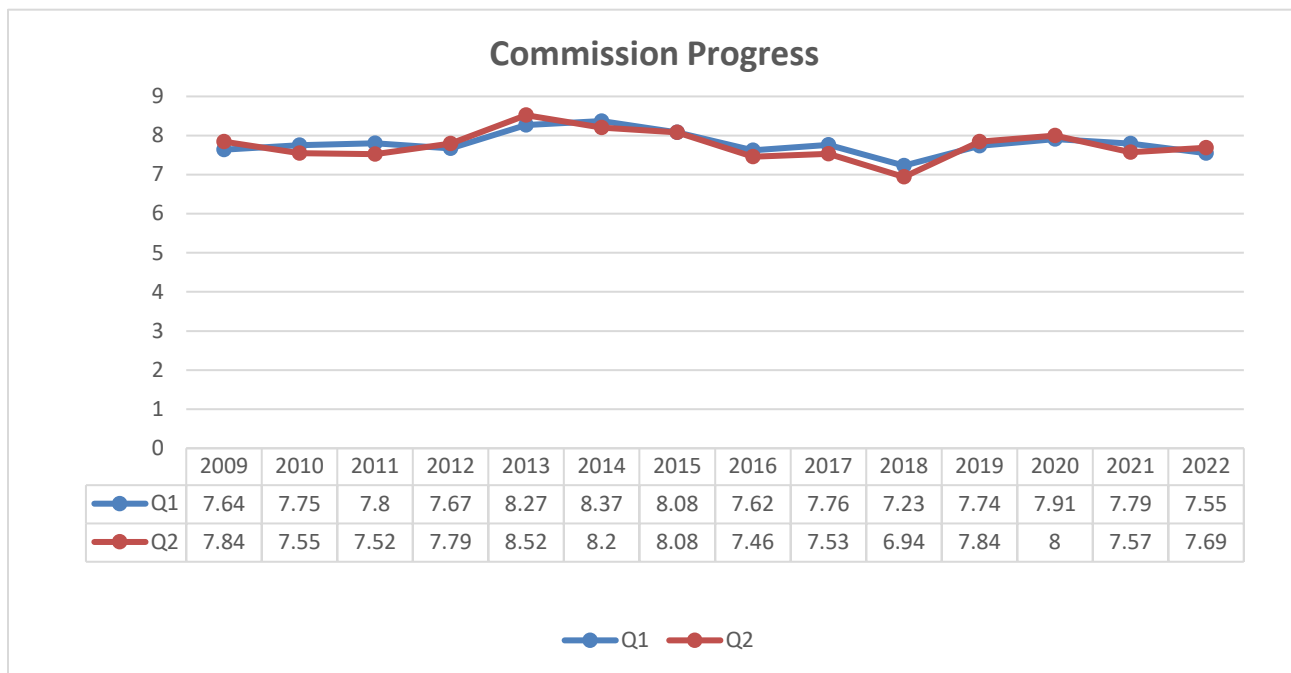
**SUBJECT:** 2022 Commissioner Survey Results  
**TO:** ISFMP Policy Board  
**FROM:** Alexander Law  
**DATE:** January 23, 2022

29 Commissioners and Proxies completed the 2022 ASMFC Commissioner Survey, which is based on the Commission’s 2019-2023 Strategic Plan. Questions 1-16 prompted respondents to rate their answer on a scale of 1 to 10 (ten-point Likert scale) and questions 17-21 prompted respondents to provide a written response. Questions 7, 8, 14 and 15 were new to the 2015 survey and Question 16 was added in 2020.

This memo includes graphs tracking responses for questions 1-16 throughout the time-series (2009-2022), a summary of the five open-ended questions for 2022, and unabridged responses to the five open-ended questions.

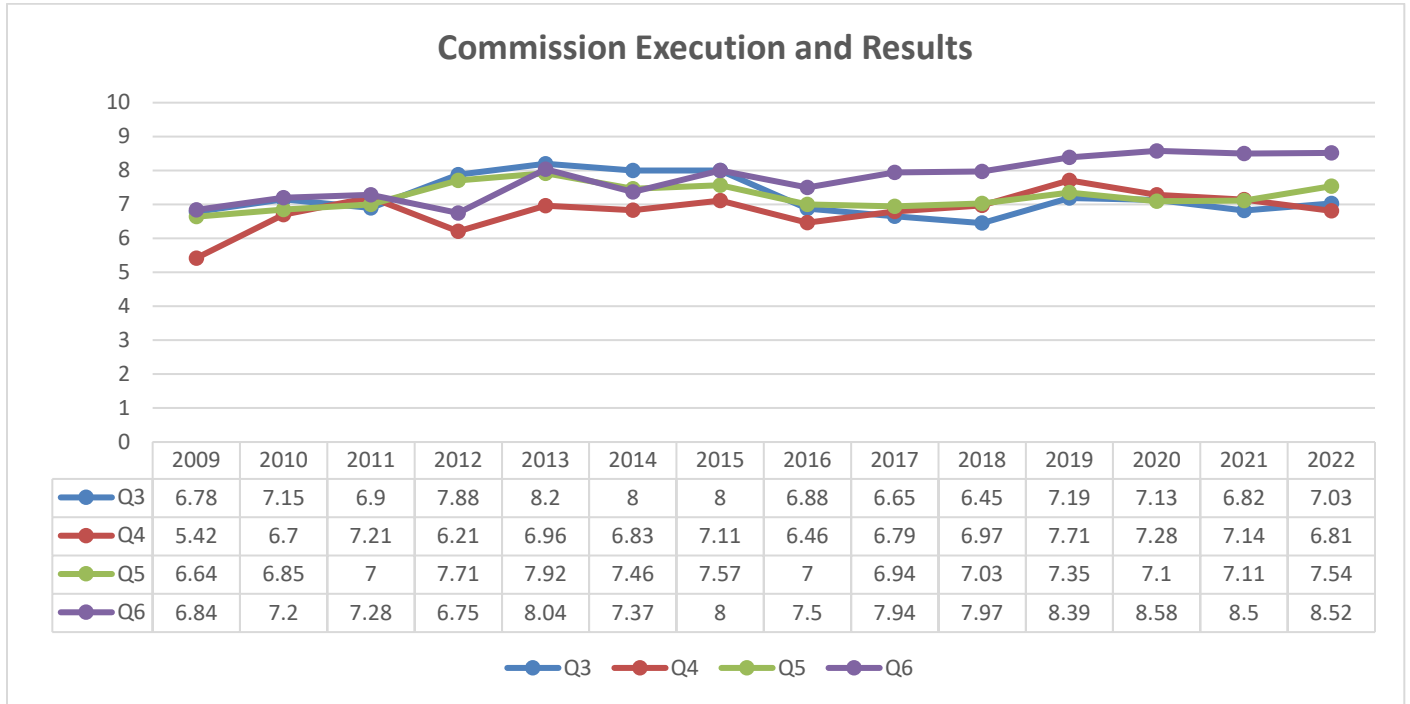
### Commission Progress

1. How comfortable are you that the Commission has a clear and achievable plan to reach the Vision (Sustainably managing Atlantic Coastal Fisheries)?
2. How confident are you that the Commission’s actions reflect progress toward its Vision?



**Commission Execution and Results**

- 3. How satisfied are you with the cooperation between Commissioners to achieve the Commission's Vision?
- 4. How satisfied are you that the Commission has an appropriate level of cooperation with federal partners?
- 5. How satisfied are you with the Commission's working relationship with our constituent partners (commercial, recreational, and environmental)?
- 6. How satisfied are you with the Commission's effort and success in securing adequate fiscal resources to support management and science needs?

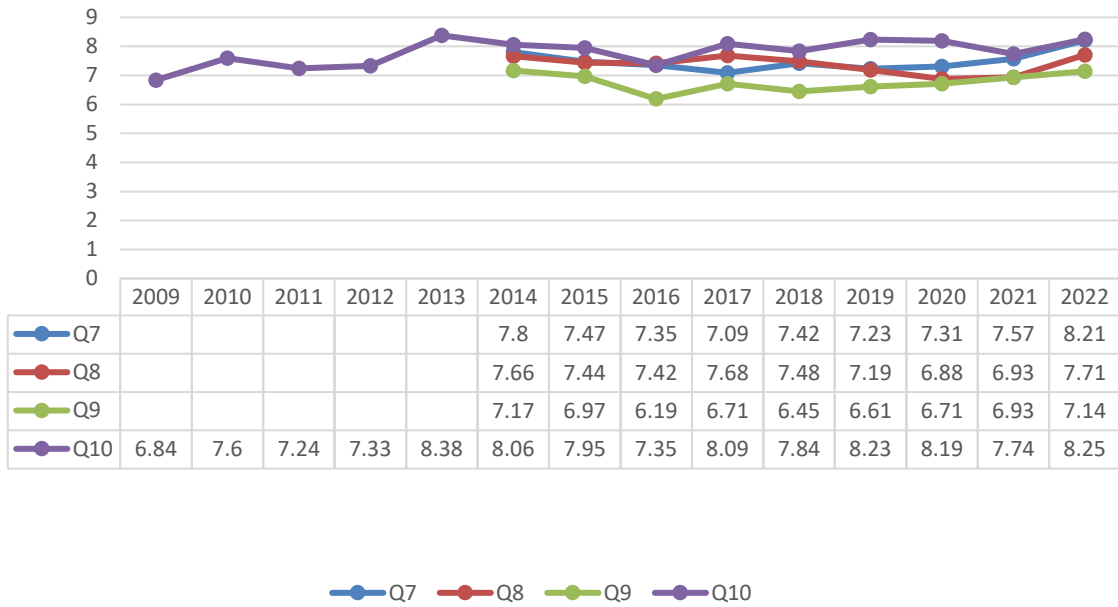


**Commission Progress and Results**

- 7. One of the metrics the Commission uses to measure progress is tracking the number of stocks where overfishing is no longer occurring. Is this a clear metric to measure progress?
- 8. How satisfied are you with the Commission's progress to end overfishing?
- 9. Are you satisfied with the Commission's ability to manage rebuilt stocks?
- 10. How satisfied are you with the Commission's efforts to engage with state legislators and members of Congress?



## Commission Progress and Results



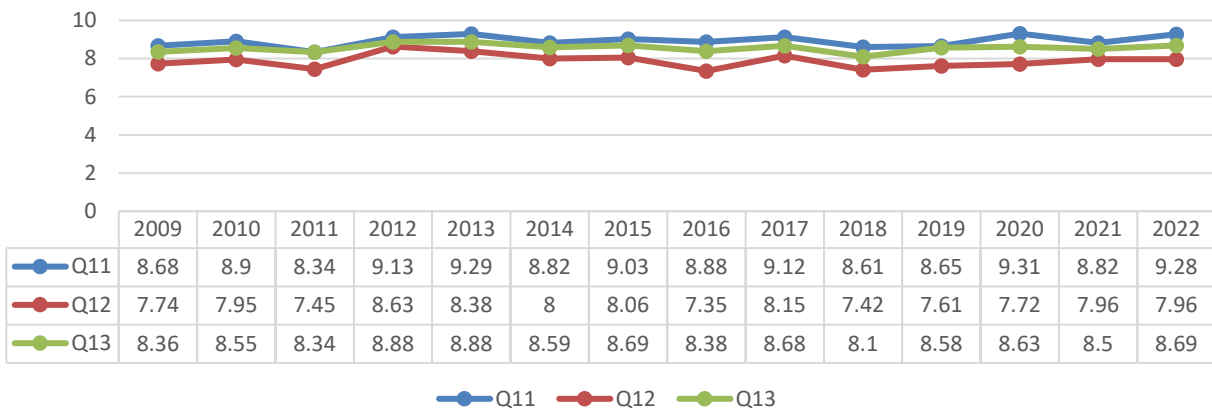
### Measuring the Availability and Utilization of Commission Resources

11. How satisfied are you that the Commission efficiently and effectively utilizes available fiscal and human resources?

12. How comfortable are you with the Commission's performance in reacting to new information and adapting accordingly to achieve Commission Goals?

13. The Commission has a limited scope of authority. How comfortable are you that the Commission spends the appropriate amount of resources on issues within its control?

### Measuring the Availability and Utilization of Commission Resources

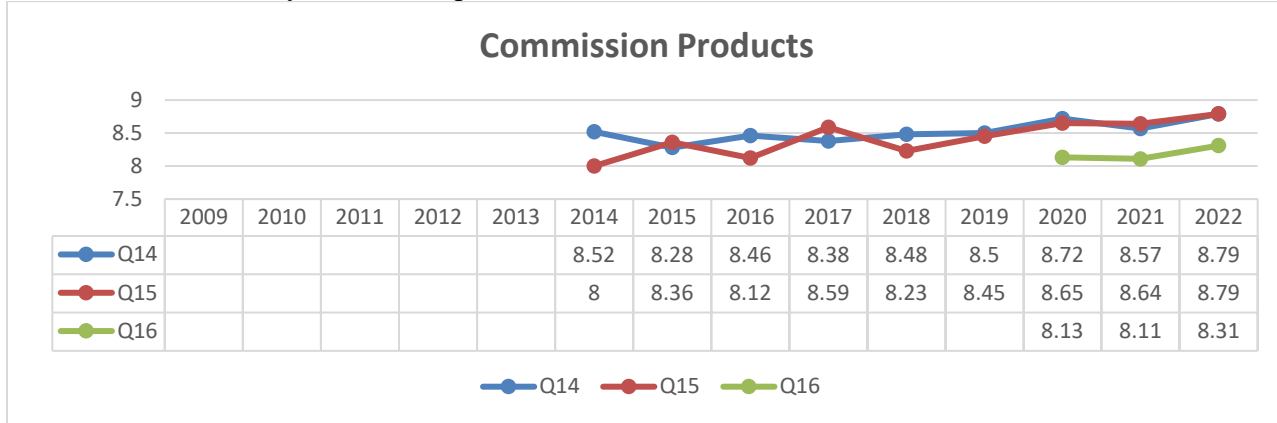


## Commission Products

14. How satisfied are you with the products of the ISFMP Department?

15. How satisfied are you with the products of the Science Department?

16. How satisfied are you with the products ACCSP?



## Discussion Question Summaries

**Obstacles to the Commission's success in rebuilding stocks (Q17)** that were mentioned are known concerns that have been brought up in the past. These include concerns about unpredictable and changing environmental conditions due to climate change, a lack of adaptability when responding to these factors, as well as regulatory impacts. Equitable sacrifice across states and regions, and having those states and regions buy into hard management decisions were also mentioned.

The most **useful products produced by the Commission (Q18)** include staff knowledge and availability; science trainings; meeting materials and summaries; ISFMP and science products (stock assessments, compliance reports, FMPs, and amendments/addenda); and [www.asmfc.org](http://www.asmfc.org).

**Additional products the Commission could provide (Q19)** include earlier access to Meeting Week materials, summaries of lengthy documents, easier access to graphs and tables from Commission products, an archive of past materials, outreach products, regulation summaries, calendar reminders of pertinent events, and Fishery Performance Reports for ASMFC managed species on a frequent basis.

**Issues the Commission should focus on more (Q20)** include: creating new methods for responding to shifting stocks; improving the understanding of recreational fishing data; improving our risk and uncertainty tools; adapting management to changing environmental conditions; cooperating with federal partners; making Commission products concise and easy to understand; conducting more frequent stock assessments for species; improving the efficiency of meetings, even possibly switching to virtual meetings to make better use of resources; real-time science on fish conditions/populations and timely recommendations; engagement with competing uses and protected species issues; ecosystem-based management; need new weakfish and shad/river herring assessments.

## Additional comments (Q21)

Q21 answers shared praise for the work of ASMFC and ACCSP, especially in navigating challenging topics and the ability to weather the pandemic. Some comments reiterated the challenges we must address. These include structural issues in our relationships with Fishery Management Councils and federal partners, sometimes limited participation in the commission, and sluggish management in dynamic environments.

## Unabridged Answers to Questions 17-20

### Q17 What is the single biggest obstacle to the Commission's success in rebuilding stocks?

1. Climate change and other environmental elements that cannot be controlled by fisheries management
2. Environmental factors, both natural and anthropogenic, which affect reproductive success and recruitment.
3. Unknown future environmental conditions
4. States not working for the greater good
5. Trying to plan for and manage around elements out of their control, such as congressional or federal changes in law.
6. Delay in updating stock assessments.
7. Being able to adjust management strategies when stocks do not seem to be responding to current regulatory approaches, and being able to understand and address additional factors that may be driving stock health (other than reducing F).
8. environmental factors influence on year class strength and survival
9. managing competing interests of a wide variety of stakeholders
10. Differences between states needs and cooperation and quick data and assessments
11. Gaining public acceptance for making hard decisions.
12. The effort stress on our stocks. There must be a reduction in effort.
13. Getting exact data
14. Achieving equitable sacrifice across states and regions. In the effort to achieve equitable sacrifice CE is both a valuable tool and a significant challenge.
15. Lack of capacity to complete more frequent and timely stock assessments
16. Education/cooperation between recreational and commercial stakeholders
17. Climate change uncertainty
18. Climate change
19. Our biggest challenge is that there are a multitude of factors which can lead to an overfished stock status but we only have control over one of those factors: fishing. This is not unique to ASMFC, but is a challenge for species which are hampered by changing environments
20. Habitat & water quality issues
21. Environmental conditions
22. "Process is way too cumbersome and is becoming increasingly bureaucratic, as it sometimes involves two or three Councils and NOAA having to adopt similar regulations. If that were not complicated enough, depending on species, 15 states then need to do the same thing. Due to the number of agencies involved, it is sometimes nearly impossible to change regulations, even though logic would dictate a different course of action. If you factor in all the staff time and expense, regulatory process, NOAA time, Council time, state time, etc. likely the cost exceeds the net economic benefit we get from the resource, good example is likely dogfish. Need to get on with a planning project or white paper that develops regulatory alternatives to current system, particularly in light of the rate climate change. Exercise should involve a small subcommittee /work group composed of some State and Federal agencies and recommend actions and legislative changes if needed. Commissioners should receive periodic update. Would be useful to set a deadline for final report.
23. Hard to pick one, but the biggest obstacle seems to be that some stocks don't seem respond to management actions (e.g. weakfish harvest restrictions have been in place for over a decade, yet the stock still hasn't rebuilt).
24. stakeholders pushing back on commissioners to maintain status quo when the science clearly shows action needs to be taken. Politicians influencing commissioners on particularly issues on behalf of those stakeholders.
25. NGOs.
26. The difference in scientific-biological-management approach by GARFO and ASMFC

## 27. Federal partners and climate change

### **Q18 What are the most useful products the Commission produces for you?**

1. The help with relief funding was extremely useful, the help with contracting employees is extremely useful, and the trainings are always an important supplement for staff in the states
2. Stock assessments and updates to fishery management plans
3. Commission meeting prep material.
4. All are useful and appreciated
5. Effectively all of those from the ISFMP and Science Team.
6. Fishery management plans. However, there is much room for improvement as it pertains to timeliness, clarity, and straightforward communication of issues.
7. Easy online access to the robust collection of historical and current materials featured on each species webpage.
8. website and availability of reports/products there
9. meeting prep materials are very helpful and well written.
10. "Staff knowledge, staff availability, assessments"
11. Status of stocks reports that I can understand and download if I need to summarize them for in-state and other groups.
12. Survey data.
13. Regulations on menhaden and striped bass
14. Meeting materials and the info on the website.
15. Public hearings, website, meeting materials
16. Summaries
17. Assessment summaries; weekly Commissioner emails; post-meeting press releases
18. Meeting materials
19. Stock assessments and addenda/amendments to change fishery management plans.
20. Briefing material for meetings, Atlantic Coast Fisheries News, website content
21. Meeting materials/annual report
22. current products are all useful
23. The FMPs, assessments, and meeting archives that are available on the web site are all great resources. The Commission does an excellent job with all of its reports.
24. "Meeting summaries. The overall assistance provided by staff"
25. "Legislative Updates. Stock Assessment Reports."
26. Communication and resolve amongst regional allocations.
27. stock assessment and public hearing documents

### **Q19 What additional products could the Commission create to make your job easier?**

1. Nothing additional I can think of
2. ?
3. Reading materials in farther advance of meetings would be great. But I understand the challenges with being able to do so.
4. Simpler communication of stock status for each species including inclusion of ratios that quantify the extent of overfished or overfishing status.
5. Nothing comes to mind.
6. convenient archive of states' compliance reports
7. existing products are enough
8. More information and contact with congressional processes and meet and greets.
9. Easy access to Power Point presentations presented to the Commission including those produced by partner agencies like the Councils for jointly managed species.
10. Single data point making clear the staff's projection for stock replenishment.
11. ?

12. Outreach products
13. Calendar subscriptions/reminders so we can be informed when TC/PRT/PDT meetings are scheduled
14. Better outlines and summaries
15. ??
16. None - I have appreciated the addition of a link to track quota transfers between states
17. Fishery Performance Reports for ASMFC-only species every 2-3 years if annually is impractical. I think they would provide additional context to the FMP Reviews and possibly improve AP member engagement.
18. regulation summaries by state
19. Maybe more one-page summary sheets of changes in draft Addenda and Amendments for distribution to the public.
20. I am not sure

**Q20 What issue(s) should the Commission focus more attention/time on?**

1. New methods to shift allocations relative to where resources are, continued progress on assessment technology, continued work on how we deal with risk and uncertainty in our decisions (making progress but need to keep development moving forward), development of work to better understand recreational fisheries (data, socio-econ science).
2. I believe the Commission is currently focusing on the priority issues. However, there are a growing number of issues that can't be affected by Commission authority but have tremendous impacts on our ability to successfully prevent overfishing, rebuilt stocks, and have viable fisheries. These include protected species interactions with existing fisheries and competing uses of the estuarine and ocean environment. The Commission must engage in these and other issues when there is an opportunity to effect outcomes that contribute to successful interstate management.
3. Time allocation at meeting and our rules
4. Implementation of some of the endeavors it has been working on, such as the risk and uncertainty policy.
5. Development of cutting-edge stock assessment techniques that allow for quick updates at least every 2 years. Periods that often range five years between updates is agonizingly slow and continues to subject ASMFC to public distrust.
6. Inevitably, incorporating ecobased and climate factors into fisheries resource management considerations is going to need more attention, but also brings a level of complexity to decision making in a world that is still dominated a by single-species, individual stock assessment focus. Big challenge for the future.
7. equity of recreational regulations
8. handling access to fully rebuilt stocks
9. ecosystem management and quicker assessments
10. Figuring out what it will take to restore depleted species as well as overfished species.
11. Regional cooperation. For instance, Virginia and MD with Potomac (for certain species) have not coordinated to the degree they should.
12. Weak Fish River Herring and Shad
13. Habitat and conservation issues and needs that impact coastal fish stocks.
14. Working with federal partners to improve recreational data collection
15. Education
16. Climate change impacts - how to adapt the ASMFC management framework (more nimble) and deal with shifting stocks in Commission work (allocation)
17. Climate change impacts on fisheries management

18. I ranked collaboration with federal partners the lowest of all the questions, but this also goes both ways. I think NOAA could also be a better partner with the Commission, particularly on jointly managed species.
19. Weakfish stock assessment--it's time to get an updated stock status & review management that's been in place for over 10 years.
20. Not sure we are using our collective time efficiently, given the large number of individuals involved and the cost of meeting four times a year. A large portion of meetings is dedicated to reports and technical updates on lower priority species, frequently where there are very limited discussion or questions. Although informative, it might not be good use of our time. Some combination of virtual meetings focused on technical updates, and actual meetings might be better. Clearly the technical updates are critical when involved with major species and changes in management strategy, and should be done in person at a two-day meeting. Importance of two days is it gives Commissioner time to hear the presentation, ask questions directly, discuss it with technical staff, and then discuss it with other Commissioners over dinner.
21. Unfortunately, focusing more attention time on one issue will mean less time on other issues. I think ASMFC does a good job of putting the major focus on managing the ASMFC species, but from climate change to improving MRIP, there sure are a lot of issues that deserve attention.
22. Allocation issues that are fair, equitable, and re-evaluated on a regular basis (3-5 yrs)
23. Sector Separation.
24. putting an end to joint manage plans and look at the way for ASMFC to address EJ issues

#### **Q21 Additional comments.**

1. The Commission is a very effective agency!
2. Nonetheless
3. 2022 was a hard year for the Commission with so many hearings and challenging topics needing to be addressed. I commend the ASMFC team for all that they were able to accomplish, especially as we came out of the pandemic.
4. Can't say enough about the quality of work, professionalism, and cooperative/helpful nature of staff and leadership. Their efforts make the job of a commissioner much easier, and contribute significantly to the success of the Commission.
5. Keep up the good work!
6. Retaining well qualified staff is always a challenge especially given the high caliber of the existing staff at all levels.
7. The continued evolution of our role with the Fishery Management Councils is a challenge for all Commissioners, especially LGAs. Added time commitments and possibly even pay for ASMFC LGAs when dealing with jointly managed species via extra meetings beyond the quarterly ASMFC meeting weeks is a subject that should be deliberated and carefully considered even if it breaks with tradition.
8. The staff has always been excellent. However, participation from the Commissions tends to skew towards a handful. From the political appointee's perspective there appears to be a lack of out of meeting briefing thereby allowing the Commissioners to control the debate. There should be more outreach on at least the most vulnerable species to educate and update the political appointees.
9. When we find a species overfished, we are too slow to react.
10. I think the Commission is in a great place with respect to cooperation between states/jurisdictions. I think there are serious structural problems for some species we co-manage with federal partners (scup, seabass) that are an existential threat to Atlantic coast interstate fisheries management.
11. Looking forward to 2023

12. As always, the staff are great. The ISFMP staff have really performed in 2022 with some big issues, including striped bass Amendment 7 and Menhaden re-allocation. Those are big lifts and were handled very professionally.
13. Keep up the great work!
14. ASMFC from Director to the Administrative Staff all show such dedication to the ASMFC mission. It is a pleasure to work with ASMFC.
15. I am having a hard time accepting that there is no responsibility among many commissioners for shutting the substance and poor anglers from taking legal fish because of regulation



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** Sciaenids Management Board

**FROM:** Atlantic Croaker and Spot Technical Committees and Stock Assessment Subcommittee

**DATE:** January 20, 2023

**SUBJECT:** Draft Terms of Reference and Schedule for the 2024 Atlantic Croaker and Spot Benchmark Stock Assessments

The next Atlantic croaker and spot benchmark stock assessments are scheduled to be completed in 2024. The Technical Committees for both species and the Stock Assessment Subcommittee have recommended the Board consider the following terms of reference for the benchmark stock assessment and peer review panel:

### *Terms of Reference for the Atlantic Croaker and Spot Assessments*

1. Define population structure based on available data. If alternative population structures are used in the models (e.g., coast-wide or regional), justify use of each population structure. Explore possible impacts of environmental change on range shifts.
2. Evaluate new information on life history such as growth rates, size-at-maturation, natural mortality rate, and migrations and review potential impacts of environmental change on these characteristics. Explore possible impacts of environmental change on life history characteristics.
3. Characterize precision and accuracy of fishery-dependent and fishery-independent data used in the assessment, including the following but not limited to:
  - a. Provide descriptions of each data source (e.g., geographic location, sampling methodology, potential explanation for outlying or anomalous data).
  - b. Describe calculation and potential standardization of abundance indices. Consider the consequences of environmental factors on the estimates of abundance or relative indices derived from surveys.
  - c. Discuss trends and associated estimates of uncertainty (e.g., standard errors).
  - d. Justify inclusion or elimination of available data sources.
  - e. Discuss the effects of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, ageing accuracy, sample size) on model inputs and outputs.
4. Develop models used to estimate population parameters (e.g.,  $F$ , biomass, abundance) and biological reference points, and analyze model performance.

M23-08



- a. Briefly describe history of model usage, its theory and framework, and document associated peer-reviewed literature. If using a new model, test using simulated data.
  - b. Clearly and thoroughly explain model strengths and limitations.
  - c. Justify choice of CVs, effective sample sizes, or likelihood weighting schemes.
  - d. Describe stability of model (e.g., ability to find a stable solution, invert Hessian).
  - e. Perform sensitivity analyses for starting parameter values, priors, etc. and conduct other model diagnostics as necessary.
  - f. Perform likelihood profile of key parameters (e.g., stock-recruit relationship parameters) to evaluate robustness of final parameter values.
  - g. If multiple models were considered, justify the choice of preferred model and the explanation of any differences in results among models.
5. State assumptions made for all models and explain the likely effects of assumption violations on synthesis of input data and model outputs. Examples of assumptions may include (but are not limited to):
    - a. Choice of stock-recruitment function.
    - b. No error in the catch-at-age or catch-at-length matrix.
    - c. Calculation of  $M$ . Choice to use (or estimate) constant or time-varying  $M$  and catchability.
    - d. Choice of equilibrium reference points or proxies for MSY-based reference points.
    - e. Choice of a plus group for age-structured species.
  6. Characterize uncertainty of model estimates and biological or empirical reference points.
  7. Perform retrospective analyses, assess magnitude and direction of retrospective patterns detected, and discuss model consistency due to implications of any observed retrospective pattern for uncertainty in population parameters (e.g.,  $F$ , SSB), reference points, and/or management measures.
  8. Recommend stock status as related to reference points (if available).
  9. Compare stock status and management advice from the assessment with the results of the traffic light analysis currently used for management. If outcomes differ, discuss potential causes of observed discrepancies and preferred method.
  10. If a minority report has been filed, explain majority reasoning against adopting approach suggested in that report. The minority report should explain reasoning against adopting approach suggested by the majority.

11. Develop detailed short and long-term prioritized lists of recommendations for future research, data collection, and assessment methodology. Highlight improvements that would be beneficial to the next benchmark.
12. Recommend timing of next benchmark assessment and intermediate updates, if necessary relative to biology and current management of the species.

***Terms of Reference for the Atlantic Croaker and Spot Peer Review***

1. Evaluate the population structure defined by the assessment and used in the models.
2. Evaluate the new information on life history and the influence of environmental change on life history characteristics as presented in the stock assessment.
3. Evaluate the thoroughness of data collection and the presentation and treatment of fishery-dependent and fishery-independent data in the assessment, including the following but not limited to:
  - a. Presentation of data source variance (e.g., standard errors).
  - b. Justification for inclusion or elimination of available data sources.
  - c. Consideration of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, aging accuracy, sample size).
  - d. Calculation and/or standardization of abundance indices.
  - e. Consideration of the potential impacts of environmental change.
4. Evaluate the methods and models used to estimate population parameters (e.g.,  $F$ , biomass, abundance) and biological reference points, including but not limited to:
  - a. Evaluate the choice and justification of the preferred model(s). Was the most appropriate model (or model averaging approach) chosen given available data and life history of the species?
  - b. If multiple models were considered, evaluate the analysts' explanation of any differences in results.
  - c. Evaluate model parameterization and specification (e.g., choice of CVs, effective sample sizes, likelihood weighting schemes, calculation/specification of  $M$ , stock-recruitment relationship, choice of time-varying parameters, plus group treatment).
5. Evaluate the diagnostic analyses performed, including but not limited to:
  - a. Sensitivity analyses to determine model stability and potential consequences of major model assumptions.
  - b. Retrospective analysis.

6. Evaluate the methods used to characterize uncertainty in estimated parameters. Ensure that the implications of uncertainty in technical conclusions are clearly stated.
7. If a minority report has been filed, review minority opinion and any associated analyses. If possible, make recommendation on current or future use of alternative assessment approach presented in minority report.
8. Recommend best estimates of stock biomass, abundance, and exploitation from the assessment for use in management, if possible, or specify alternative estimation methods.
9. Evaluate the choice of reference points and the methods used to estimate them. Recommend stock status determination from the assessment, or, if appropriate, specify alternative methods/measures.
10. Review the research, data collection, and assessment methodology recommendations provided by the SAS and TC and make any additional recommendations warranted. Clearly prioritize the activities needed to inform and maintain the current assessment, and provide recommendations to improve the reliability of future assessments.
11. Recommend timing of the next benchmark assessment and updates, if necessary, relative to the life history and current management of the species.
12. Prepare a peer review panel terms of reference and advisory report summarizing the panel's evaluation of the stock assessment and addressing each peer review term of reference. Develop a list of tasks to be completed following the workshop. Complete and submit the report within four weeks of workshop conclusion.

Proposed 2024 Assessment Schedule for Atlantic Croaker and Spot:

- January 2023: Circulate data request forms to TCs
- Mid-March 2023: Data templates due with a 2022 terminal year
- Mid-April 2023: Landings validated via ACCSP and data contacts
- May 2023: Data Workshop (virtual)
- September 2023: Assessment Workshop I (virtual or in-person)
- February 2024: Assessment Workshop II (virtual or in-person)
- Summer 2024: Peer Review Workshop
- Annual Meeting 2024: Present Assessment and Peer Review Reports to the Sciaenids Management Board



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** Sciaenids Management Board

**FROM:** Red Drum Technical Committee and Stock Assessment Subcommittee

**DATE:** January 20, 2023

**SUBJECT:** Draft Terms of Reference and Schedule for the 2024 Red Drum Benchmark Assessment

The next red drum benchmark stock assessment is scheduled to be completed in 2024. This assessment follows the Simulation Assessment that was completed in 2022. The Red Drum Technical Committee and Stock Assessment Subcommittee have recommended the Board consider the following terms of reference for the benchmark assessment and peer review panel:

### *Terms of Reference for the Red Drum Assessment*

1. Evaluate Simulation Assessment Peer Review Panel recommendations for the simulation-based analyses used to guide assessment approaches in this benchmark assessment.
2. Provide descriptions of each fishery-dependent and fishery-independent data source.
  - a. Describe calculation and potential standardization of abundance indices.
  - b. Discuss trends and associated estimates of uncertainty (e.g., standard errors).
  - c. Justify inclusion or elimination of available data sources.
3. Develop model(s) used to estimate population parameters (e.g., F, abundance) and reference points, and analyze model performance.
  - a. Describe stability of model (e.g., ability to find a stable solution, invert Hessian).
  - b. Justify choice of CVs, effective sample sizes, or likelihood weighting schemes.
  - c. Perform sensitivity analyses for starting parameter values, priors, etc. and conduct other model diagnostics as necessary.
  - d. Clearly and thoroughly explain model strengths and limitations.
  - e. Briefly describe history of model usage, its theory and framework, and document associated peer-reviewed literature.
  - f. If modeling approaches differ from those recommended during the Simulation Assessment, discuss divergence from these recommendations.
4. Discuss the effects of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, aging accuracy, sample size) on model inputs and outputs.

M23-09

5. State assumptions made for all models and explain the likely effects of assumption violations on synthesis of input data and model outputs. Examples of assumptions may include (but are not limited to):
  - a. Choice of stock-recruitment function.
  - b. Calculation of M. Choice to use (or estimate) constant or time-varying M and catchability.
  - c. Choice of reference points.
  - d. Choice of a plus group.
  - e. Constant ecosystem (abiotic and trophic) conditions.
6. Characterize uncertainty of model estimates and reference points.
7. Perform retrospective analyses, assess magnitude and direction of retrospective patterns detected, and discuss implications of any observed retrospective pattern for uncertainty in population parameters (e.g., F, abundance), reference points, and/or management measures.
8. Recommend stock status as related to reference points (if available). For example:
  - a. Is the stock below the biomass threshold?
  - b. Is F above the threshold?
9. Other potential scientific issues:
  - a. Compare trends in population parameters and reference points with current and proposed modeling approaches. If outcomes differ, discuss potential causes of observed discrepancies.
  - b. Compare reference points derived in this assessment with what is known about the general life history of the exploited stock. Explain any inconsistencies.
10. If a minority report has been filed, explain majority reasoning against adopting approach suggested in that report. The minority report should explain reasoning against adopting approach suggested by the majority.
11. Develop detailed short and long-term prioritized lists of recommendations for future research, data collection, and assessment methodology.
12. Recommend timing of next benchmark assessment and intermediate updates, if necessary, relative to biology and current management of red drum.

### ***Terms of Reference for the Red Drum Peer Review***

1. Evaluate responses to Simulation Assessment Peer Review Panel recommendations.

2. Evaluate the thoroughness of data collection and the presentation and treatment of fishery-dependent and fishery-independent data in the assessment, including the following but not limited to:
  - a. Presentation of data source variance (e.g., standard errors).
  - b. Justification for inclusion or elimination of available data sources.
  - c. Consideration of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, aging accuracy, sample size).
  - d. Calculation and/or standardization of abundance indices.
3. Evaluate the methods and models used to estimate population parameters (e.g.,  $F$ , abundance) and reference points, including but not limited to:
  - a. If modeling approaches differ from those recommended during the Simulation Assessment, were these differences warranted and appropriate?
  - b. Evaluate the choice and justification of the preferred model(s). Was the most appropriate model (or model averaging approach) chosen given available data and life history of red drum?
  - c. Evaluate model parameterization and specification (e.g., choice of CVs, effective sample sizes, likelihood weighting schemes, calculation/specification of  $M$ , stock-recruitment relationship, choice of time-varying parameters, plus group treatment).
4. Evaluate the diagnostic analyses performed, including but not limited to:
  - a. Sensitivity analyses to determine model stability and potential consequences of major model assumptions.
  - b. Retrospective analysis.
5. Evaluate the methods used to characterize uncertainty in estimated parameters. Ensure that the implications of uncertainty in technical conclusions are clearly stated.
6. If a minority report has been filed, review minority opinion and any associated analyses. If possible, make recommendation on current or future use of alternative assessment approach presented in minority report.
7. Recommend best estimates of stock biomass, abundance, and exploitation from the assessment for use in management, if possible, or specify alternative estimation methods.
8. Evaluate the choice of reference points and the methods used to estimate them. Recommend stock status determination from the assessment, or, if appropriate, specify alternative methods/measures.
9. Review the research, data collection, and assessment methodology recommendations provided by the TC and make any additional recommendations warranted. Clearly prioritize the activities needed to inform and maintain the current assessment, and provide recommendations to improve the reliability of future assessments.

10. Review the recommended timeframe for future assessments provided by the TC and recommend any necessary changes.
  
11. Prepare a peer review panel terms of reference and advisory report summarizing the panel's evaluation of the stock assessment and addressing each peer review term of reference. Develop a list of tasks to be completed following the workshop. Complete and submit the report within 4 weeks of workshop conclusion.



### Proposed 2024 Red Drum Benchmark Stock Assessment Timeline

- Data request: January 30, 2023
- Data deadline: May 30, 2023
- Data Workshop: June 2023
- Assessment Workshop 1: October 2023
- Assessment Workshop 2 (finalize model results/stock status determination): March 2024
- Assessment report draft finalized by SAS: Mid-May 2024
- Assessment reviewed by TC: Early June 2024
- Assessment report provided to SEDAR for peer review panel: July 1, 2024
- SEDAR Peer Review Workshop: Week of August 12, 2024
- Present Assessment and Peer Review Reports to the Board: Annual Meeting 2024