



# Atlantic States Marine Fisheries Commission

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*Spud Woodward (GA), Chair*

*Joe Cimino (NJ), Vice-Chair*

*Robert E. Beal, Executive Director*

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*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

## MEMORANDUM

July 27, 2022

TO: Commissioners; Proxies; American Lobster Management Board; Atlantic Herring Management Board; Atlantic Menhaden Management Board; Atlantic Striped Bass Management Board; Executive Committee; Horseshoe Crab Management Board; ISFMP Policy Board; Sciaenids Management Board

FROM: Robert E. Beal *REB*  
Executive Director

RE: ASMFC Summer Meeting: August 2-4, 2022 (TA 22-016)

The Atlantic States Marine Fisheries Commission's Summer Meeting will be held August 2-4, 2022 at **The Westin Crystal City** (Telephone: 703.486.1111), 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 (both in-person and remote) to allow for remote participation by Commissioners and interested stakeholders. Meeting materials are available on the Commission website at <http://www.asmfc.org/home/2022-summer-meeting>. Supplemental materials will be posted to the website on Wednesday, July 27, 2022.

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.

Board meeting proceedings will be broadcast daily via webinar beginning Tuesday, August 2 at 9 a.m. and continuing daily until the conclusion of the meeting (expected to be 1:30 p.m.) on Thursday, August 4. The webinar will allow registrants to listen to board deliberations and view presentations and motions as they occur. 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 wish 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.

To register for the webinar, please go to <https://attendee.gotowebinar.com/register/7218217294868422923> (Webinar ID: 822-004-851). If you are joining the webinar but will not be using VoIP, you can may also call in at +1 (415) 655-0060, access code 636-403-362. 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.

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

Enclosures: Final Agenda, Hotel Directions, TA 22-016, and Travel Reimbursement Guidelines



# Atlantic States Marine Fisheries Commission

## Summer Meeting

August 2-4, 2022

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 (July 11) have been included in the briefing materials.
2. Comments received by 5:00 PM on Tuesday, July 26<sup>th</sup> will be included in supplemental materials.
3. Comments received by 10:00 AM on Friday, July 29<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

(revised 7/27/2022)

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

## Tuesday, August 2

9:00 – 10:30 a.m.

### **Atlantic Herring Management Board**

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

*Other Members:* NEFMC, NMFS

*Chair:* Ware

*Other Participants:* Zobel, Brown, Deroba, Cieri, Cournane

*Staff:* Franke

1. Welcome/Call to Order (*M. Ware*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from October 2021
3. Public Comment
4. Review 2022 Atlantic Herring Management Track Assessment and Peer Review Report (*J. Deroba*)
5. Update on Portside Sampling Program (*M. Cieri*)
6. Update from New England Fishery Management Council (*J. Cournane*)
7. Other Business/Adjourn

10:45 a.m. – 12:30 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, Lynch, Murphy

*Staff:* Starks

1. Welcome/Call to Order (*J. McNamee*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from March 2022
3. Public Comment
4. Update on Judge James Boasberg Ruling in the US District Court for the District of Columbia in Center for Biological Diversity versus Secretary Raimondo and the Maine Lobstermen's Association (*C. Lynch*)
5. Discuss Implications of Proposed Measures of Draft Addendum XXVII on Increasing Protection of Spawning Stock Biomass of the Gulf of Maine/Georges Bank Stock (*J. McNamee*) **Possible Action**
6. Update from NOAA Fisheries on Ongoing Actions Related to North Atlantic Right Whales
7. Progress Update on Jonah Crab Benchmark Stock Assessment (*J. Kipp*)
8. Update on Federal Rulemaking to Implement Effort Control Measures and Harvester Reporting (Addenda XXI, XXII, and XVI Provisions) (*A. Murphy*)
9. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**



10. Elect Vice-Chair **Action**
11. Other Business/Adjourn

**12:30 – 1:30 p.m.                      Lunch Break**

**1:30 – 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:* Hoffman, Blanchard  
*Staff:* Franke

1. Welcome/Call to Order (*M. Gary*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from May 2022
3. Public Comment
4. Consider Fishery Management Plan Review and State Compliance for the 2021 Fishing Year (*E. Franke*)  
**Action**
5. Progress Update and Board Guidance on 2022 Stock Assessment Update
  - Technical Committee Report (*K. Drew*)
  - Provide Guidance to Technical Committee for Management Options to Consider if the Assessment Indicates Reduction is Needed for Rebuilding
  - Discuss Timeline for Responding to the Assessment
6. Consider Next Steps for Draft Addendum I on Quota Transfers (formerly Draft Addendum VII) **Possible Action**  
*Motion from October 2021: Move to defer until May 2022 consideration by the Atlantic Striped Bass Board of Draft Addendum VII to Amendment 6 to allow further development and review of the transfer options.*
7. Other Business/Adjourn

**6:00 – 7:30 p.m.                      2022 Annual Awards of Excellence Reception**

**Wednesday, August 3**

**8:00 – 10:00 a.m.                      Executive Committee**  
Breakfast will be served at 7:45 a.m.                      (*A portion of this meeting may be a closed session for Committee members and Commissioners only*)  
*Members:* Abbott, Bell, Burgess, Cimino, Clark, Davis, Fegley, Gilmore, Keliher, Kuhn, McKiernan, McNamee, Miller, Patterson, Plumlee, Rawls, Woodward  
*Chair:* Woodward  
*Staff:* Leach

1. Welcome/Call to Order (*S. Woodward*)
2. Committee Consent
  - Approval of Agenda
  - Approval of Meeting Summary from May 2022
3. Public Comment
4. CARES Act Update

5. Report of *De Minimis* Work Group
6. Consider Approval of Updated Investment Policy **Action**
7. Review Letter of Support for Resilient Coasts and Estuaries Act
8. Discuss State Support for the Responsible Offshore Science Alliance
9. Review Updates to the Appeals Process
10. Other Business/Adjourn

**10:15 – 11:45 a.m. Horseshoe Crab Management Board**

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

*Other Members:* NMFS, PRFC, USFWS

*Chair:* Clark

*Other Participants:* Ameral, Couch, Hoffmeister

*Staff:* Starks

1. Welcome/Call to Order (*J. Clark*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from May 2022
3. Public Comment
4. Consider Draft Addendum VIII on the Implementation of Recommended Changes from 2021 Adaptive Resource Management Revision and Peer Review Report for Public Comment (*C. Starks*) **Action**
5. Update on Plan Development Team Review of Biomedical Mortality, Biologically-based Options for Setting the Threshold, and Best Management Practices for Handling Biomedical Collections (*C. Starks*)
  - Technical Committee Recommendations (*N. Ameral*)
  - Advisory Panel Report (*B. Hoffmeister*)
6. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
7. Elect Vice-Chair **Action**
8. Other Business/Adjourn

**11:45 a.m. – 12:45 p.m. Lunch Break – Buffet lunch will be provided**

**11:45 a.m. – 12:45 p.m. Legislators and Governors' Appointee Luncheon**

**12:45 – 1:15 p.m. Presentation on NOAA Atlantic Sturgeon Bycatch Work Group Draft Action Plan**

Presenter: Spencer Talmage, NOAA Fisheries

**1:30 – 5:00 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, Kersey, Schueller

*Staff:* Boyle

1. Welcome/Call to Order (*M. Bell*)

2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from May 2022
3. Public Comment
4. Consider Fishery Management Plan Review and State Compliance for 2021 Fishing Year (*J. Boyle*) **Action**
5. Consider Draft Addendum I to Amendment 3 on Commercial Allocations, Episodic Event Set Aside Program, and Incidental Catch/Small-scale Fisheries for Public Comment (*J. Boyle*) **Action**
6. Review 2022 Atlantic Menhaden Single-species Stock Assessment Update (*A. Schueller*)
7. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
8. Other Business/Adjourn

**Thursday, August 4**

**8:00 – 9:30 a.m.**

**Sciaenids Management Board**

*Member States:* New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida

*Other Members:* NMFS, PRFC

*Chair:* Batsavage

*Other Participants:* Franco, Paramore, Rickabaugh, Hodge, Latour

*Staff:* Bauer

1. Welcome/Call to Order (*C. Batsavage*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from May 2022
3. Public Comment
4. Review Traffic Light Analysis for Spot and Atlantic Croaker (*D. Franco/H. Rickabaugh*) **Possible Action**
  - Technical Committee Recommendations
  - Discuss Spot Addendum III Management Measures
5. Review Development of a Spatial Model of Spot Abundance and Mortality (*R. Latour*)
6. Consider Atlantic Croaker and Red Drum Fishery Management Plan Reviews and State Compliance for 2021 Fishing Year (*T. Bauer*) **Action**
7. Progress Update on 2022 Black Drum Benchmark Stock Assessment (*J. Kipp*)
8. Elect Vice-Chair **Action**
9. Other Business/Adjourn

**9:45 a.m. – 1:15 p.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

*Other Participants:* Benjamen, Densmore, Groves, Hare, Bromilow

*Staff:* Kerns

1. Welcome/Call to Order (*S. Woodward*)
2. Board Consent
  - Approval of Agenda
  - Approval of Proceedings from May 2022

3. Public Comment
4. Executive Committee Report (*S. Woodward*)
5. Consider Changes to the Appeals Policy (*R. Beal*) **Final Action**
6. Report from the *De Minimis* Work Group (*T. Kerns*) **Possible Action**
7. Update on East Coast Climate Change Scenario Planning (*T. Kerns*)
8. Review of NOAA Fisheries' Climate Ecosystem Fisheries Initiative (*J. Hare*)
9. Update on the Risk and Uncertainty Policy (*J. McNamee*)
10. NorthEast Area Monitoring and Assessment Program Report (*N. Lengyel Costa*)
11. Committee Reports
  - Legislative (*B. Hyatt*)
  - Habitat (*L. Havel*) **Action**
  - Atlantic Coast Fish Habitat Partnership (*L. Havel*)
  - Assessment Science (*S. Murray*) **Action**
12. Consider Providing Comments to NOAA Fisheries on Atlantic Sturgeon Bycatch Work Group Draft Action Plan, if Necessary (*T. Kerns*) **Possible Action**
13. Review of Blue Catfish Science in the Chesapeake Bay (*M. Bromilow, C. Densmore, M. Groves*)
14. Review of NOAA Fisheries' Draft Equity and Environmental Justice Strategy (*S. Benjamin*)
15. Review Noncompliance Findings (if necessary) **Action**
16. Other Business/Adjourn

**1:15 – 1:30 p.m.**

**Business Session**

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

*Chair:* Woodward

*Staff:* Beal

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

*August 2, 2022  
9:00 – 10:30 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/Call to Order ( <i>M. Ware</i> )   | 9:00 a.m.  |
| 2. Board Consent <ul style="list-style-type: none"><li>• Approval of Agenda</li><li>• Approval of Proceedings from October 2021</li></ul> | 9:00 a.m.  |
| 3. Public Comment   | 9:05 a.m.  |
| 4. Review 2022 Atlantic Herring Management Track Assessment and Peer Review Report ( <i>J. Deroba</i> )                                   | 9:15 a.m.  |
| 5. Update on Portside Sampling Program ( <i>M. Cieri</i> )  | 9:55 a.m.  |
| 6. Update from New England Fishery Management Council ( <i>J. Cournane</i> )  | 10:20 a.m. |
| 7. Other Business/Adjourn   | 10:30 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

# MEETING OVERVIEW

## Atlantic Herring Management Board

August 2, 2022

9:00 a.m. – 10:30 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: October 18, 2021
Voting Members: ME, NH, MA, RI, CT, NY, NJ, NMFS, USFWS (9 votes)		

### 2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 2021

**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 2022 Atlantic Herring Management Assessment and Peer Review Report (9:15-9:55 a.m.)

#### Background

- The Management Track Assessment was completed in May and peer-reviewed in late June 2022 (**Supplemental Materials**).
- The New England Fishery Management Council's (NEFMC) Scientific and Statistical Committee (SSC) is scheduled to meet [August 4](#) to develop recommendations for 2023-2025 fishery specifications, which will be considered at the NEFMC September meeting.

#### Presentations

- Presentation of management track assessment by J. Deroba

### 5. Update on Portside Sampling Program (9:55-10:20 a.m.)

#### Background

- The Maine Department of Marine Resources' (DMR) portside sampling program collects and processes samples from Atlantic herring commercial landings along the coast, which informs stock assessments and management.
- ACCSP funding for the Maine DMR portside sampling program will expire in 2023.

**Presentations**

- Presentation of portside sampling program by M. Cieri

**6. Update from New England Fishery Management Council (10:20-10:30 a.m.)****Background**

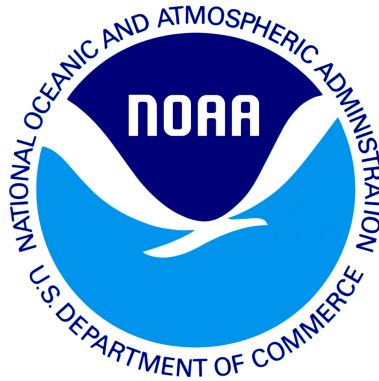
- The New England Fishery Management Council (NEFMC) discussed three issues related to Atlantic herring during its June 2022 meeting (**Supplemental Materials**).
- In July 2022, the final rule was published for [Framework 9](#) to the federal Atlantic Herring Fishery Management Plan, which establishes a herring rebuilding plan, adjusts accountability measure catch threshold triggers, and revises and clarifies existing regulations.

**Presentations**

- Presentation of NEFMC update (J. Cournane)

**6. Other Business/Adjourn (10:30 a.m.)**

*draft working paper for peer review only*



## Atlantic Herring

# *2022 Management Track Assessment Report*

U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Northeast Fisheries Science Center  
Woods Hole, Massachusetts

Compiled May 2022

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*This assessment of the Atlantic Herring (*Clupea harengus*) stock is a management track assessment of the existing 2020 management track assessment conducted using the ASAP model. Based on the previous assessment, the stock was overfished but overfishing was not occurring. This assessment updated fishery catch data, survey indices, life history parameters (e.g., weights-at-age), and the ASAP assessment model and reference points (BRPs) through 2021. Several notable changes were made and these were described more thoroughly below.*

**State of Stock:** The methods used to derive BRPs and conduct short-term projections were changed as part of this management track assessment. Briefly, two notable changes were made to the methods used to calculate BRPs: 1) as recommended in the previous management track, long-term projections used to define BRPs accounted for mortality from the fixed gear fishery. The fishing mortality equaled the average of the estimated fishing mortalities from the most recent 10 years. 2) The recruitment stanza used to define BRPs was 1992-2019. The sequence of poor recruitments at the end of the time series suggested an unprecedented situation that made continued use of the entire time series (i.e., beginning 1965) untenable. It is likely that some combination of spawning stock size and environmental conditions are driving recruitment. A changepoint analysis (Killick and Eckley 2014) was applied to the recruitment and recruits/spawner time series to disentangle these effects. The analysis identified a changepoint in 1992 in the recruits/spawner time series that was not identified in the recruitment time series, suggesting a shift in environmental conditions effecting recruitment happened at that time. Thus the range of years used to define BRPs was 1992-2019 (2020-2021 estimates were not used due to uncertainty, as in previous assessments). Based on this management track assessment, the Atlantic Herring (*Clupea harengus*) stock is overfished and overfishing is not occurring (Figures 1-2). Retrospective adjustments were necessary (SSB Mohn’s rho = 0.447 and F Mohn’s rho = -0.21). Spawning stock biomass (SSB) in 2021 was estimated to be 39,091 (mt) which is 21% of the biomass target ( $SSB_{MSY} proxy = 185,750$ ; Figure 1). The 2021 average fishing mortality for ages 7-8 (fully selected ages for the mobile fleet) was estimated to be 0.153 which is 31% of the overfishing threshold proxy ( $F_{MSY} proxy = 0.5$ ; Figure 2).

Table 1: Catch and status table for Atlantic Herring. All weights are in mt, recruitment is in 000s, and  $\bar{F}_{7-8}$  is the average fishing mortality on ages 7 to 8, which are fully selected by the mobile fleet. Model results are from the current updated ASAP assessment and the values in this table are not adjusted for the retrospective pattern.

	2014	2015	2016	2017	2018	2019	2020	2021
	<i>Data</i>							
US Catch	93,084	81,204	62,597	48,796	45,527	12,792	8,076	5,202
Canadian Catch	1,465	146	4,132	2,133	13,036	5,821	6,041	2,663
Total Catch	94,549	81,350	66,729	50,929	58,563	18,613	14,117	7,865
	<i>Model Results</i>							
Spawning Stock Biomass	292,370	228,600	145,350	105,790	65,529	53,441	51,749	56,566
$\bar{F}_{7-8}$	0.48934	0.48842	0.50347	0.53369	0.7291	0.3394	0.19665	0.1207
recruits (age1)	1,316,100	704,910	343,530	859,750	692,800	1,571,000	863,790	2,144,500

Table 2: Comparison of reference points estimated in an earlier assessment and from the current assessment. An  $F_{40\%}$  proxy was used for the overfishing threshold, and the biomass proxy reference point was based on long-term, stochastic, projections. 95% CI were reported in parentheses.

	2020	2022
$F_{MSY}$ proxy	0.54	0.5
$SSB_{MSY}$ (mt)	269,000 (155,699 - 444,290)	185,750 (91,100 - 355,800)
MSY mt	99,400 (62,644 - 151,814)	68,980 (37,390 - 120,154)
Median recruits (age 1)	3,430,614 (915,478 - 10,132,087)	2,820,600 (578,900 - 10,441,500)
<i>Overfishing</i>	No	No
<i>Overfished</i>	Yes	Yes

**Projections:** The short-term projections presented here differed from the previous assessment in that they assumed recruitment followed an autoregressive process (AR(1)) rather than random draws from the cumulative distribution of estimated recruitments. The parameters defining the AR process were estimated using recruitment estimates from 1992-2019 using the R package *arima* (R Core Team 2020). The AR process was initiated using the rho adjusted 2021 recruitment estimate (i.e., 1,483,061). The projection results included here should be considered preliminary and subject to change based on future assessment and management decisions. This example projection applied the harvest control rule described in Amendment 8 of the herring Fishery Management Plan to the mobile fleet. The fixed gear catches are assumed constant during the projection period and equaled 4,238 mt. This fixed gear catch equals the sum of the ten year (2012-2021) averages of the Canadian (4,220 mt) and US (18 mt) fixed gear catches. The US fixed gear catches are those from stop seines, weirs, and pound nets. The reported  $\bar{F}_{7-8}$  are those for the mobile fleet.

Table 3: Projection results. See above and supplementary document for details.

Year	Catch mt	SSB (mt)	$\bar{F}_{7-8}$
2022	8,767	61,645	0.097

Year	Catch mt	SSB (mt)	$\bar{F}_{7-8}$
2023	16,649	79,231	0.232
2024	23,409	76,795	0.327
2025	28,181	103,645	0.313

### Special Comments:

- What are the most important sources of uncertainty in this stock assessment? Explain, and describe qualitatively how they affect the assessment results (such as estimates of biomass, F, recruitment, and population projections).

*A definitive explanation for the continued poor recruitment has not been identified. While identifying a causal mechanism for poor recruitment would be immensely beneficial, finding explanations for patterns in recruitment have been elusive in fisheries science for decades. Another uncertainty in this assessment is natural mortality. In this assessment, natural mortality was assumed constant among ages and years. Justifications for including age- or time-varying natural mortality in previous assessments have quickly deteriorated. Uncertainty in natural mortality affects the scale of abundance and fishing mortality estimates, but is unlikely to be related to the recent poor recruitments. Stock structure, particularly mixing with Nova Scotian herring, is also an uncertainty. Migration can be conflated with changes in mortality and contribute to retrospective patterns. Again, however, this is unlikely to explain recent poor recruitment.*

- Does this assessment model have a retrospective pattern? If so, is the pattern minor, or major? (A major retrospective pattern occurs when the adjusted SSB or  $\bar{F}_{7-8}$  lies outside of the approximate joint confidence

region for SSB and  $\bar{F}_{7-8}$ ).

*This assessment model had a retrospective pattern that could be classified as major and required adjustments. While recent assessments have not had major retrospective patterns, these assessments also suggested that the lack of a retrospective pattern could be due to structural changes in the model (e.g., splitting the NMFS BTS survey in 2009 when the R/V Bigelow came into service; NEFSC 2018) and so the reemergence of a retrospective pattern was not surprising.*

- Based on this stock assessment, are population projections well determined or uncertain? If this stock is in a rebuilding plan, how do the projections compare to the rebuilding schedule?

*The projections are uncertain, especially in regards to recruitment. The lack of 2020 survey data, and the fact that neither indices of abundance or the fishery consistently harvest age-1 herring, made estimation of the most recent two years of recruitment impossible without the addition of a likelihood penalty. Without other information about recruitment, the likelihood penalty has the effect of pulling the more recent recruitment estimates (i.e., 2020 and 2021) upwards towards the median. The upward increase in recent recruitments was partially offset in projections by applying a retrospective adjustment. Furthermore, assumptions about terminal year recruitment do not have much effect on projection results for 3 or more years because herring are 50% selected by the mobile fleet at about age-4, which causes a delay in the effect of terminal year recruitment assumptions. Just the same, recruitment is a significant uncertainty. Based on the projections done during this management track, the stock is behind the rebuilding schedule (See Framework 9 table 26). The rebuilding plan suggested the population would have a 43% chance of rebuilding by 2025, but this assessment projects only an 11% chance in that year. The rebuilding plan, however, used the full time series of recruitments when defining reference points and projections, which makes them more optimistic than the shortened time frame of recruitments and the AR(1) process applied in this assessment. A sensitivity using an AR(1) process was done during development of the rebuilding plan, but even those projections were more optimistic (25% chance of rebuilding in 2025) than those done during this assessment.*

- Describe any changes that were made to the current stock assessment, beyond incorporating additional years of data and the effect these changes had on the assessment and stock status.

*NMFS bottom trawl indices of abundance since 2009 were calculated using tow-specific measured tow distance, instead of an assumed constant for all tows. This change had a negligible effect. The methodology used to calculate Canadian catches, age composition, and weights at age was revised, resulting in entirely new time series, but the effect on the assessment was negligible. The age composition of the NEFSC shrimp survey was previously based on an average of the NMFS spring and fall age-length keys. Three years of age data collected during this survey replaced the use of borrowed age-length keys, and this had a negligible effect on the assessment. The addition of a likelihood penalty on recruitment became necessary given the lack of information about recent cohort sizes (i.e., missing 2020 survey data). The likelihood penalty had the effect of increasing the estimates of recent recruitments toward the median level. The two most recent recruitments were still relatively poor, however, and were excluded when calculating BRPs and when estimating parameters of the AR(1) process used in short-term projections. Thus, the overall effect of the penalty on the assessment and stock status was negligible. An attempt was made to avoid using the likelihood penalty by deriving an age-1 recruitment index from seabird diet data. While an assessment that included such an index did not require a likelihood penalty, the model did not fit the index well (e.g., patterned residuals). Concerns about non-linearity between the seabird index and herring recruitment, and a lack of time to understand this novel data source, precluded its use in this assessment. An index derived from seabird diet data has promise, however, and could be pursued in the future.*

- If the stock status has changed a lot since the previous assessment, explain why this occurred.

*The stock status has not changed a lot since the previous assessment.*

- Provide qualitative statements describing the condition of the stock that relate to stock status.

*Continued poor recruitment is the main issue driving stock status. Management decisions that reduced US catches had the effect of avoiding overfishing.*

- Indicate what data or studies are currently lacking and which would be needed most to improve this stock assessment in the future.

*Studies related to stock structure and movement would be beneficial, as this has been proposed as a possible explanation for retrospective patterns. While an explanation for drivers of recruitment would be beneficial, it would not directly effect the assessment, and as noted, such explanations are difficult to identify. An index of age-1 recruitment based on seabird diet data was attempted in this assessment, but was ultimately not included. This index could be especially informative because the fishery and indices based on bottom trawls do not consistently capture age-1 herring, and information on recent recruitments in this assessment was especially lacking due to the absence of 2020 bottom trawl surveys. The seabird diet data are collected by multiple entities (National Audubon Society, USFWS, University of New Brunswick, and University of New Hampshire). Collating this data and developing the index was a tremendous undertaking, only made possible by willing collaborators that collect the data and a volunteer student (Sean Hardison, University of Virginia). Continued consideration of this data would benefit from more formal and streamlined sharing agreements with NMFS.*

- Are there other important issues?

*No other important issues were identified.*

#### **References:**

NEFSC (Northeast Fisheries Science Center). 2018. 65<sup>th</sup> Northeast Regional Stock Assessment Workshop (65<sup>th</sup> SAW) Assessment Report. US Dept. of Commerce, NEFSC Ref. Doc. 18-11.

Killick, R. and I.A. Eckley. 2014. changepoint: an R Package for Changepoint Analysis. Journal of Statistical Software 58(3).

R Core Team. 2020. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/> (last accessed 20 March 2020).

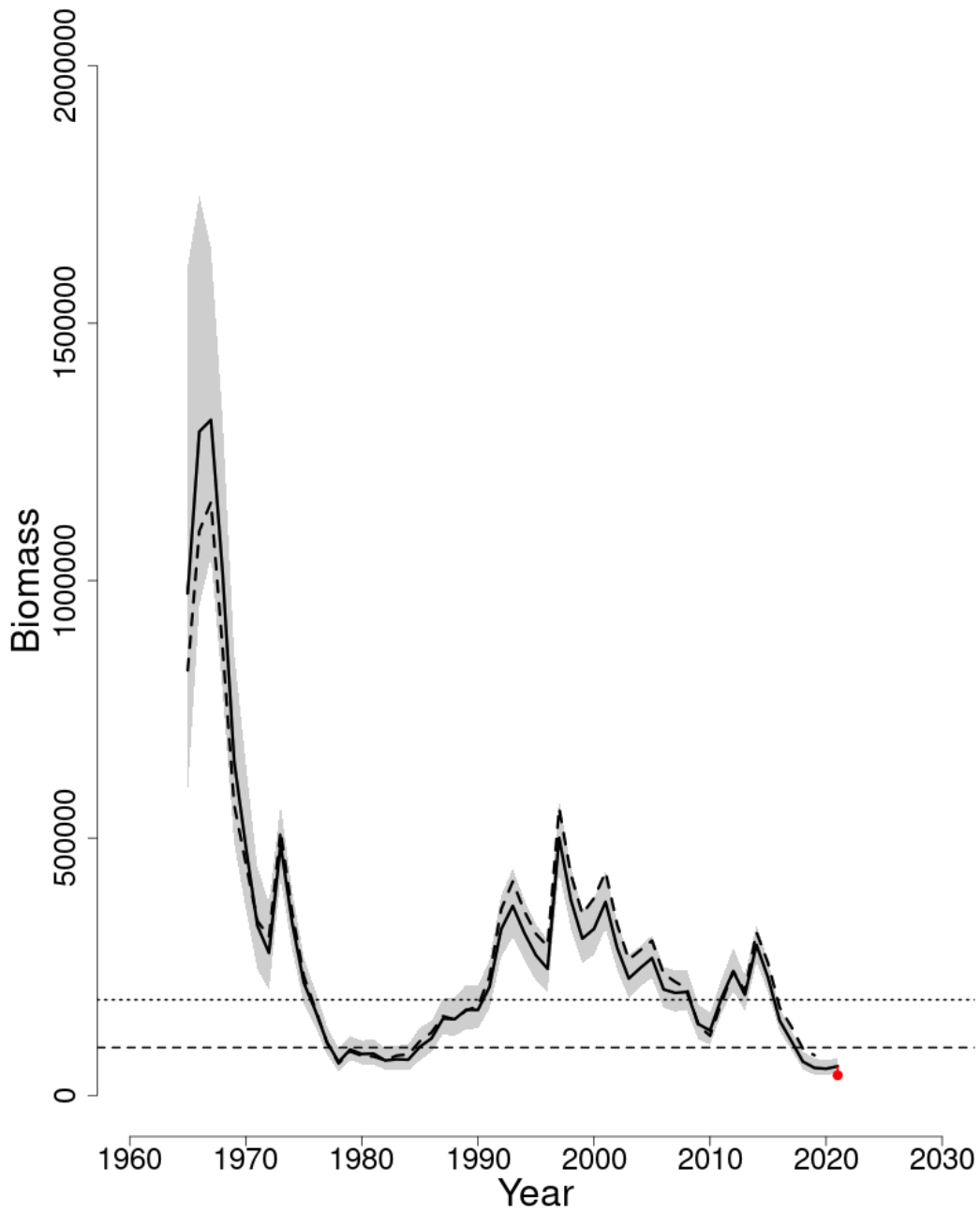


Figure 1: Trends in spawning stock biomass of Atlantic Herring between 1965 and 2021 from the current (solid line) and previous (dashed line) assessment and the corresponding  $SSB_{Threshold}$  ( $\frac{1}{2} SSB_{MSY}$  proxy; horizontal dashed line) as well as  $SSB_{Target}$  ( $SSB_{MSY}$  proxy; horizontal dotted line) based on the 2022 assessment. The approximate 90% confidence intervals are shown.

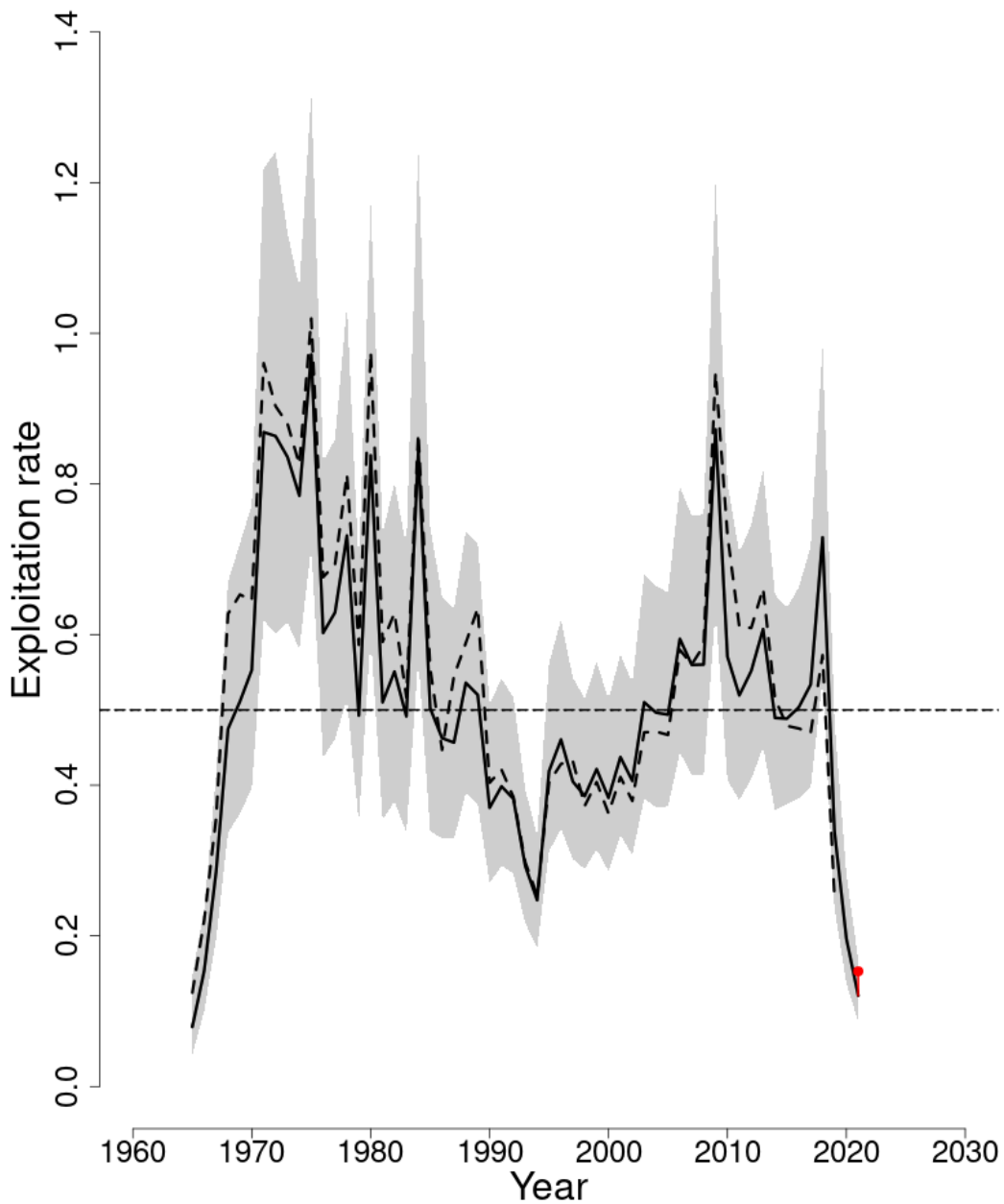


Figure 2: Trends in the average fishing mortality rate for ages 7-8, which are fully selected by the mobile fleet ( $\bar{F}_{7-8}$ ), between 1965 and 2021 from the current (solid line) and previous (dashed line) assessment and the corresponding  $F_{Threshold}$  ( $F_{MSY proxy}=0.5$ ; horizontal dashed line). The approximate 90% confidence intervals are shown.

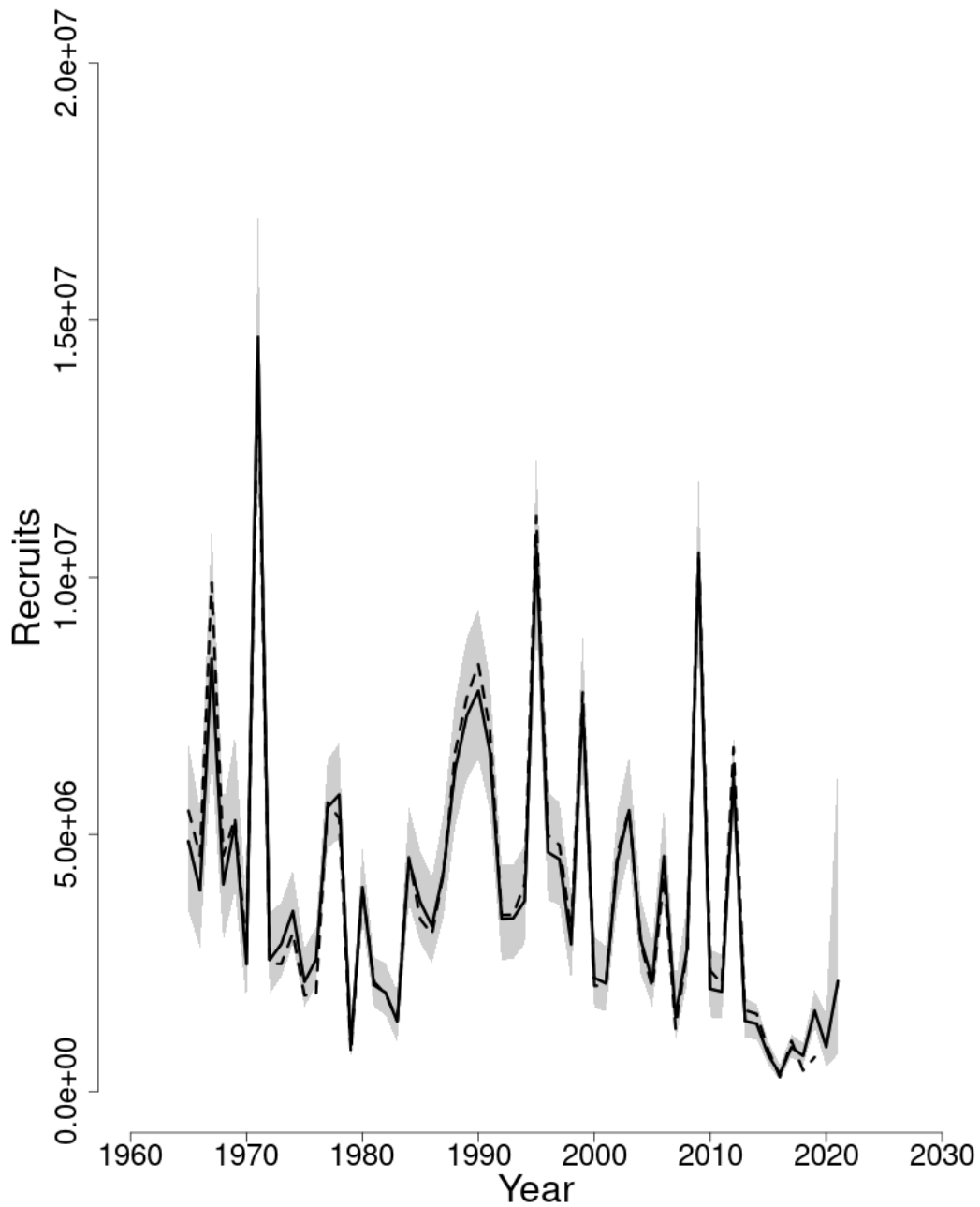


Figure 3: Trends in recruits (age-1)(000s) of Atlantic Herring between 1965 and 2021 from the current (solid line) and previous (dashed line) assessment. The approximate 90% confidence intervals are shown.

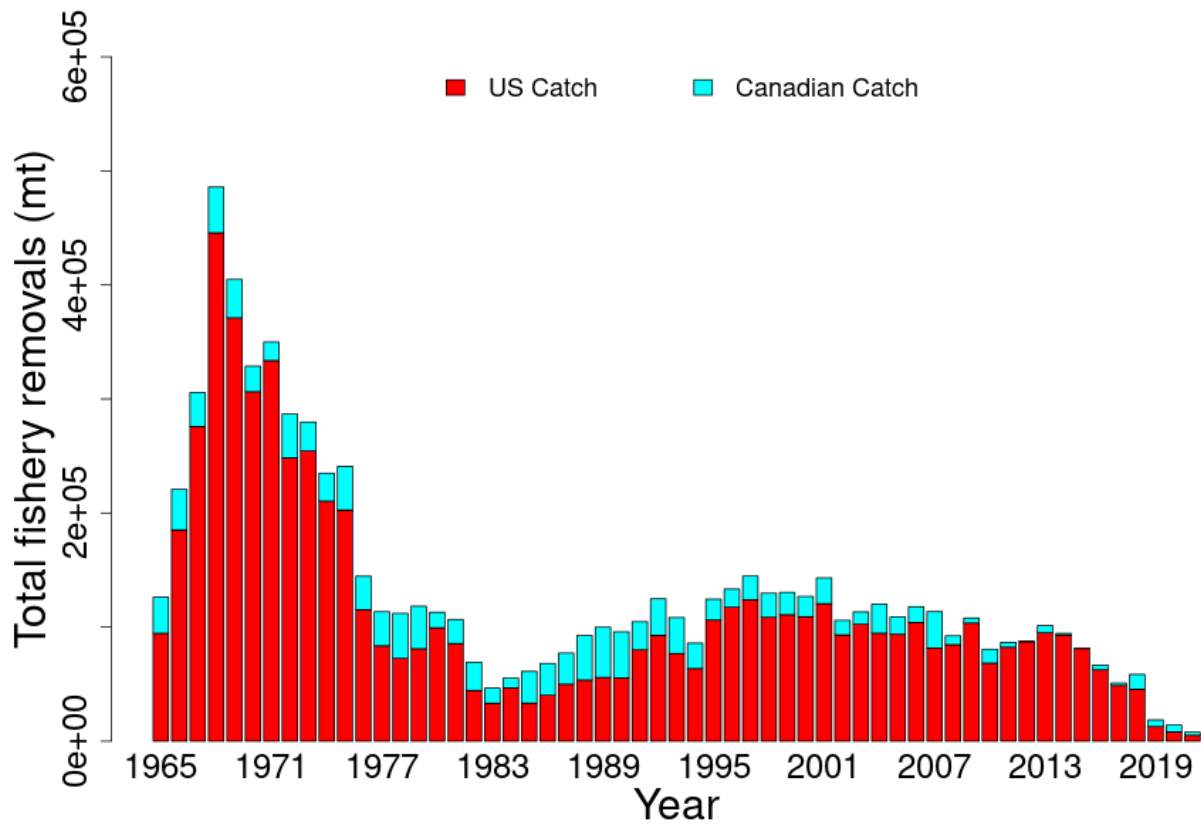


Figure 4: Total catch of Atlantic Herring between 1965 and 2021 by US and Canadian fleets.



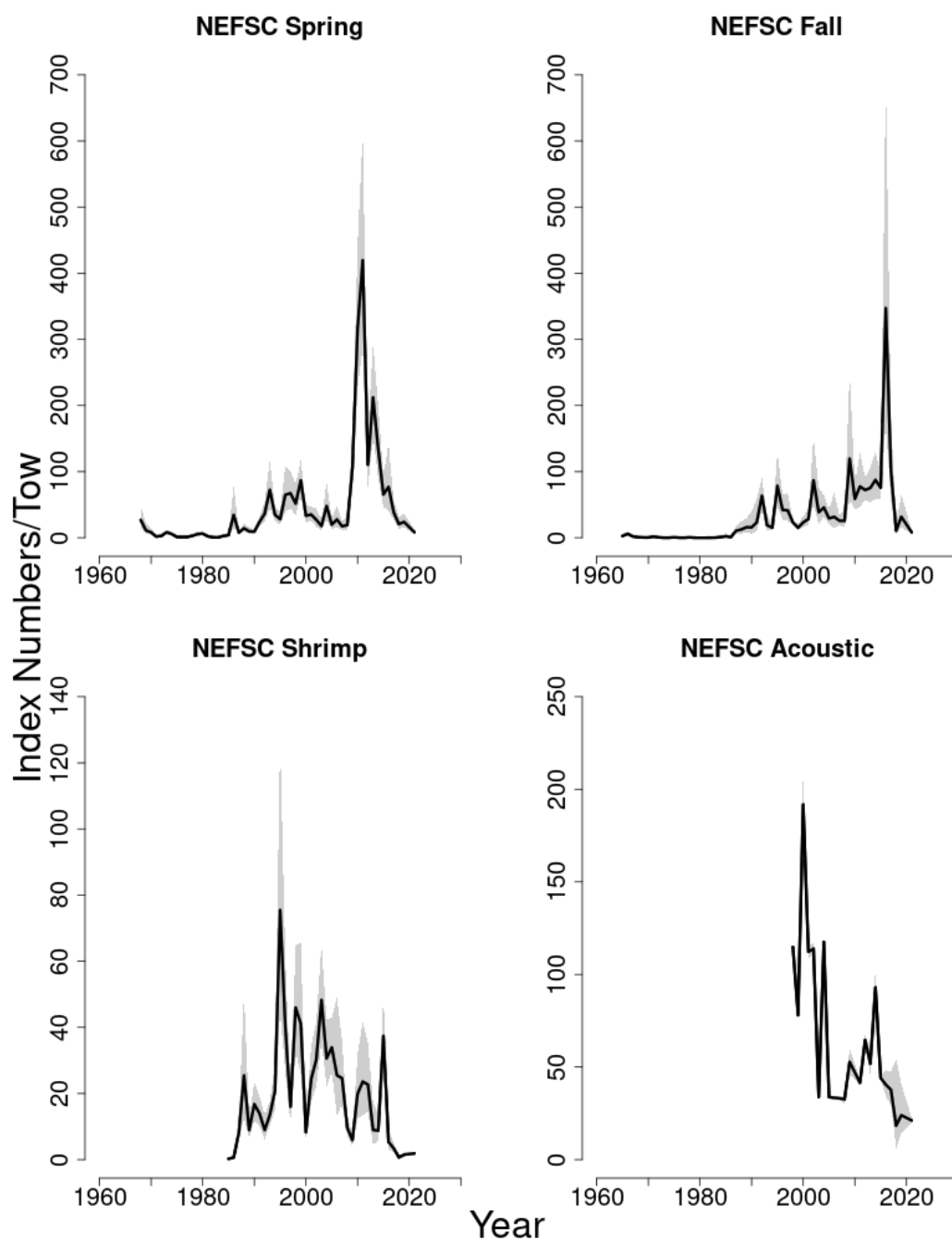


Figure 5: Indices of abundance for Atlantic Herring between 1965 and 2021 for the Northeast Fisheries Science Center (NEFSC) spring, fall, and shrimp bottom trawl surveys. The NEFSC acoustic index is collected during the fall bottom trawl survey and is in units of acoustic backscatter, not absolute numbers. The approximate 90% confidence intervals are shown.



# New England Fishery Management Council

FOR IMMEDIATE RELEASE  
July 12, 2022

PRESS CONTACT: Janice Plante  
(607) 592-4817, [jplante@nefmc.org](mailto:jplante@nefmc.org)

## Atlantic Herring: Council Receives Update on 2023-2025 Specs; Discusses Status of Framework 7, Industry-Funded Monitoring

The New England Fishery Management Council covered [three issues](#) related to Atlantic herring when it met [June 28-30, 2022](#) for a hybrid meeting in Portland, Maine.

**SPECIFICATIONS:** The Council received a brief update on 2023-2025 herring specifications, which are under development. The Herring Plan Development Team (PDT) is working on the action, and the Council's Scientific and Statistical Committee will develop the overfishing limit (OFL) and acceptable biological catch (ABC) recommendations at an [August 4, 2022](#) meeting. The annual catch limit (ACL), area-specific sub-ACLs, and other fishery specifications will flow from the ABC. The Herring Advisory Panel and Herring Committee will meet later this summer to review the specifications and recommend preferred alternatives for Council consideration. The Council will take final action during its [September 27-29, 2022](#) meeting.

The specifications will be informed by the peer reviewed results of the [June 2022 Herring Management Track Assessment](#), which was conducted immediately preceding the start of the Council meeting. Herring was last assessed in [2020](#) and was determined to be overfished, although overfishing was not occurring. Results from the new 2022 assessment are being finalized, but it does not appear the status of the resource has changed much from the previous assessment.

**FRAMEWORK ADJUSTMENT 7:** The Council initiated [Framework 7](#) in 2019. The [current focus](#) is to protect spawning adult herring on Georges Bank and Nantucket Shoals. The Council agreed to pause further PDT work on the framework for the summer. At its next meeting, the Herring Committee will take up a [tabled motion](#) about whether Framework 7 should be discontinued given: (a) very little fishing is presently occurring in offshore areas, and the limited activity is occurring outside of the spawning season; and (b) much more work is needed to develop spawning protections that can be effectively monitored.



**INDUSTRY-FUNDED MONITORING (IFM):** The Council considered whether to revise the [IFM program](#) for herring but opted not to initiate an action considering: (1) the IFM program will be on hold after April 2023 unless federal funds are identified to administer the program; and (2) a program review is required in 2023.

# Atlantic States Marine Fisheries Commission

## American Lobster Management Board

August 2, 2022  
10:45 a.m. – 12:30 p.m.  
Hybrid Meeting

### Draft Agenda

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

1. Welcome/Call to Order (*J. McNamee*) 10:45 a.m.
2. Board Consent 10:45 a.m.
  - Approval of Agenda
  - Approval of Proceedings from March 2022
3. Public Comment 10:50 a.m.
4. Update on Judge James Boasberg Ruling in the US District Court for the District of Columbia in Center for Biological Diversity versus Secretary Raimondo and the Maine Lobstermen’s Association (*C. Lynch*) 11:00 a.m.
5. Discuss Implications of Proposed Measures of Draft Addendum XXVII on Increasing Protection of Spawning Stock Biomass of the Gulf of Maine/ Georges Bank Stock (*J. McNamee*) **Possible Action** 11:20 a.m.
6. Update from NOAA Fisheries on Ongoing Actions Related to North Atlantic Right Whales 11:40 a.m.
7. Progress Update on Jonah Crab Benchmark Stock Assessment (*J. Kipp*) 12:00 p.m.
8. Update on Federal Rulemaking to Implement Effort Control Measures and Harvester Reporting (Addenda XXI, XXII, and XVI Provisions) (*A. Murphy*) 12:10 p.m.
9. Review and Populate Advisory Panel Membership (T. Berger) **Action** 12:20 p.m.
10. Elect Vice-Chair (*J. McNamee*) **Action** 12:25 p.m.
11. Other Business/Adjourn 12:30 p.m.

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

# MEETING OVERVIEW

## American Lobster Management Board

August 2, 2022

10:45 a.m. – 12:30 p.m.

Webinar

Chair: Dr. Jason McNamee (RI) Assumed Chairmanship: 02/22	Technical Committee Chair: Kathleen Reardon (ME)	Law Enforcement Committee Representative: Rob Beal
Vice Chair: VACANT	Advisory Panel Chair: Grant Moore (MA)	Previous Board Meeting: March 31, 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 March 31, 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. Update on Judge James Boasberg Ruling in the US District Court for the District of Columbia in Center for Biological Diversity versus Secretary Raimondo and the Maine Lobstermen’s Association (11:00-11:20 a.m.)

#### Background

- U.S. District Court Judge James E. Boasberg’s ruling in Center for Biological Diversity versus Secretary Raimondo and the Maine Lobstermen’s Association was released in the [July 8, 2022 opinion](#).
- The ruling concluded that that NMFS violated the Endangered Species Act by failing to satisfy the Marine Mammal Protection Act’s (MMPA) “negligible impact” requirement before setting the authorized level of lethal take in its incidental take statement, and that NMFS breached the time requirements mandated by the MMPA in the 2021 Final Rule. The Court held the 2021 Biological Opinion and the 2021 Final Rule to be invalid.

#### Presentations

- Judge Boasberg Ruling in US District Court for the District of Columbia in Center for Biological Diversity versus Secretary Raimondo and the Maine Lobstermen’s Association by C. Lynch

**5. Discuss Implications of Proposed Measures of Draft Addendum XXVII on Increasing Protection of Spawning Stock Biomass of the Gulf of Maine/Georges Bank Stock (11:20-11:40 a.m.) Possible 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 Board approved Draft Addendum XXVII for public comment in January 2022. 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.
- Considering upcoming information on stock condition, the need for additional time for the Lobster Board to better understand current or new right whales rules that could benefit the resiliency of the lobster stock, and the importance of giving the states the opportunity to safely hold in-person scoping meetings with their lobster industry ahead of any Commission public hearing, the ISFMP Policy Board delayed further action on the Draft Addendum. Additionally, Board members have noted concerns regarding the potential implications of the management proposed measures in the Draft Addendum for international trade.

**Presentations**

- Implications of Draft Addendum XXVII for Public Comment by C. Starks

**Board Actions for Consideration at the Meeting**

- Determine next steps for development of Draft Addendum XXVII

**6. Update from NOAA Fisheries on Ongoing Actions Related to North Atlantic Right Whales (11:40 a.m.-12:00 p.m.)**

**Background**

- NOAA Fisheries has been working on several actions related to the conservation of endangered North Atlantic Right Whales.

**Presentations**

- Ongoing Actions Related to North Atlantic Right Whales

**7. Progress Update on Jonah Crab Benchmark Stock Assessment (12:00-12:10 p.m.)**

**Background**

- Work on the first Jonah crab benchmark stock assessment was initiated in early 2022.
- A Data Workshop was held virtually on June 13-15, 2022.
- The assessment is scheduled for completion in the fall of 2023.

### Presentations

- Progress Update on Jonah Crab Benchmark Stock Assessment by J. Kipp.

### 8. Update on Federal Rulemaking to Implement Effort Control Measures and Harvester Reporting (Addenda XXI, XXII, and XVI Provisions) (12:10-12:20 p.m.)

#### Background

- On July 11, 2022, NOAA fisheries released proposed rule [87 FR 41084](#). Based on the Atlantic States Marine Fisheries Commission's recommendations, NOAA Fisheries is proposing to establish individual and aggregate trap caps in Lobster Conservation Management Areas 2 and 3, and institute mandatory coastwide electronic harvester reporting for all Federal lobster vessels. The proposed ownership caps and trap cap reduction measures are intended to reduce fishing exploitation and latent effort in the trap fishery by scaling the fishery to the size of the Southern New England lobster stock. The proposed harvester reporting requirement is intended to improve the spatial resolution of harvester data, and improve and expand the collection of fishery effort data.
- This action is necessary to ensure fishery regulations for the lobster fishery in Federal waters remain compatible with the intent of the Commission's Interstate Fishery Management Plan for American Lobster and consistent with the Atlantic Coastal Fisheries Cooperative Management Act. **(Supplemental Materials)**.

#### Presentations

- Update on Federal Rulemaking to Implement Effort Control Measures and Harvester Reporting by A. Murphy

#### Board Actions for Consideration at the Meeting

- Consider whether the Commission should submit public comment on federal rulemaking

### 9. Review and Populate Advisory Panel Membership (12:20-12:25 p.m.) Action

#### Background

- Massachusetts has submitted two nominations to the Advisory Panel: Eric Lorentzen, a commercial harvester, and Todd Alger, recreational diver. Maine submitted a nomination for Chris Welch, a commercial trap fisherman **(Briefing Materials)**.

#### Presentations

- Nominations by T. Berger

#### Board actions for consideration at this meeting

- Approve Advisory Panel Nominations

### 10. Elect Vice-Chair

### 11. Other Business/Adjourn



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** American Lobster Management Board  
**FROM:** Caitlin Starks, Senior FMP Coordinator  
**DATE:** July 25, 2022  
**SUBJECT:** Federal Rulemaking for LCMA 2 and 3 Fisheries and Coastwide Harvester Reporting

### Introduction

NOAA Fisheries [published a rule](#) on July 11, 2022 proposing measures for Lobster Conservation Management Areas (LCMA) 2 and 3, and coastwide harvester reporting using the electronic vessel trip report for all federal vessels. This action is intended to complement measures included in Addenda [XXI](#), [XXII](#), and [XXVI](#) to Amendment 3 to the Interstate Fishery Management Plan for American Lobster. The purpose of this memo is to summarize the proposed rule and highlight the differences between the proposed measures and those included in the addenda so that the Board may expeditiously develop any necessary comments.

NOAA Fisheries is requesting comment on this action by August 10, 2022, one week after the Lobster Board meets on August 2, 2022. It is requested that Board members provide any comments for inclusion in a Commission letter no later than the Friday, July 26<sup>th</sup>, so that they can be compiled for the Lobster Board Meeting.

### LCMA 2 Measures

The rule proposes an ownership cap that would restrict entities with LCMA 2 permits to 800 active LCMA 2 traps, effective on May 1, 2024. It also proposes to allow entities who currently exceed this limit to retain their current trap allocations, but would prevent these entities from ownership in additional permits and traps. These proposed measures are responsive to the Commission's Addendum XXI recommendations for an aggregate ownership cap and the sunset provision.

The rule did not include measures related to the single ownership cap nor trap banking. Banking was envisioned to be implemented in conjunction with the annual 2016-2021 trap cuts, allowing permit holders to activate banked traps to maintain their vessel's former allocation of fishable traps, without incurring a repeated 10-percent conservation tax associated with the trap transfer program

As the LCMA 2 allocations were reduced by annual 2016-2021 trap cuts, the permit holder could activate these excess or 'banked' traps to maintain their vessel's former allocation of fishable traps, without incurring a repeated 10-percent conservation tax associated with the trap transfer program (although the 10-percent conservation tax would nevertheless apply

when initially purchased). Given that the annual 2016-2021 trap reductions are complete, the rule identified that these trap ‘banking’ provisions of Addendum XXI are no longer necessary.

**LCMA 3 Measures**

The rule proposes to implement a reduction to the LCMA 3 maximum trap cap from 1,945 traps to 1,548 traps, over 3 years. It also proposes to implement an aggregate ownership cap equal to 5 times the active trap cap. These measures are summarized in the table below:

Fishing Year	Maximum Trap Cap	Aggregate Ownership Cap
2021 (current limits)	1,945	n/a
2023	1,805	9,025
2024	1,629	8,145
2025	1,548	7,740

Similar to the LCMA 2 measures, the rule also proposes to allow entities who currently exceed this limit to retain their current trap allocations, but would prevent these entities from ownership in additional permits and traps.

Again, the rule did not include measures related to the individual permit cap nor trap banking. This would have allowed a permit to be allocated an additional 15% traps, and the aggregate ownership cap would have been assessed at five times the individual permit cap. With the 2016-2020 annual trap reductions complete, the rule identified trap ‘banking’ provisions of Addendum XXII as no longer necessary.

Finally, Addendum XXI recommended that the maximum trap cap reduction take place over 5 years. The proposed rule has accelerated that schedule to 3 years. It would implement the Commission’s recommendation for years 2, 4, and 5 and skip cap recommendations for years 1 and 3.

For comparison, the active trap caps, individual permit caps, and aggregate permit caps that were proposed in Addendum XXII are included in the table below:

Addendum XXII Trap and Permit Caps			
Year	Active Trap Cap	Individual Permit Cap	Aggregate Permit Cap (5x Individual Permit Cap)
Year 0	2,000	2,333	11,665
Year 1	1,900	2,216	11,080
Year 2	1,805	2,105	10,525
Year 3	1,715	2,000	10,000
Year 4	1,629	1,900	9,500
Year 5	1,548	1,800	9,000



The aggregate permit cap proposed in this rule differs from what was proposed under Addendum XXII; Addendum XXII specified that the aggregate permit cap would be equal to five times the individual permit cap, whereas this rule proposes it would be equal to five times the active trap cap.

### **Harvester Reporting**

The rule proposes to require all Federal lobster vessels to complete and submit electronic vessel trip reports (eVTRs), within 48 hours of the completion of a trip, beginning no earlier than January 1, 2023. This aligns the reporting and submission requirements for Federal lobster permit holders with all other fisheries permitted by GARFO. The rule also proposes to collect several new lobster trap/pot-specific data elements, including:

- Total number of traps hauled by chart area;
- Number of traps in chart area fished;
- Average number of traps per string hauled in the chart area fished;
- Number of buoy lines in the chart area fished; and
- Total number of buoy lines in the water.

These proposed measures include many, but not all of the measures included in Addendum XXVI. Addendum XXVI also included recommendations for expanded fishery dependent (port and sea sampling) and independent sampling. Specifically for Federal waters, the Addendum recommended a targeted lobster sea sampling program. The rule does not include proposed measures based on these recommendations.

Additionally, the proposed rule did not include all additional data elements recommended by the Board. Addendum XXVI also recommended the collection of:

- Trip Length;
- 10-minute square; and
- Lobster Conservation Management Area.

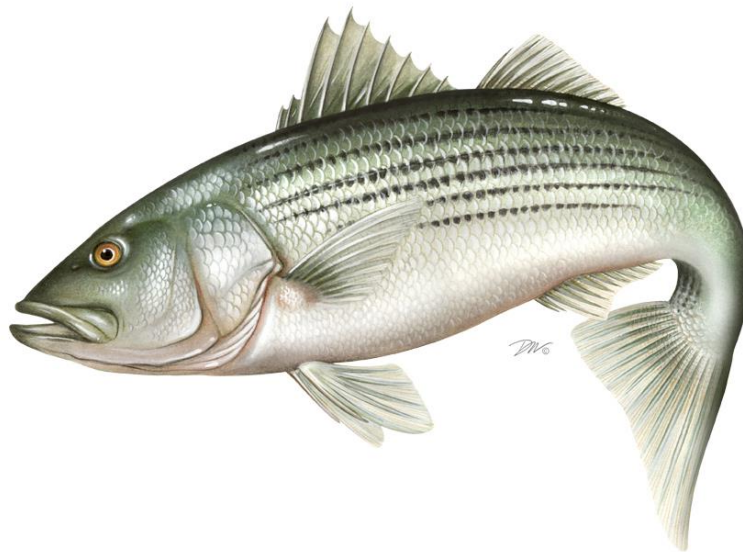
These data elements were not proposed, as they were identified to be duplicative with data elements already on the eVTR. The proposed rule indicated that trip length could be derived using the difference between date/time landed and date/time sailed. Similarly, 10-minute square and Lobster Conservation Management Area could be derived using the latitude/longitude information already collected. NOAA Fisheries proposed to make this derived information available to the ACCSP data warehouse. The proposed rule specifically requests comment on the utility of these data elements and on the proposal to not collect these data elements.

**ATLANTIC STATES MARINE FISHERIES COMMISSION**

**REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN**

**FOR ATLANTIC STRIPED BASS**  
*(Morone saxatilis)*

**2021 FISHING YEAR**



Prepared by the Plan Review Team

Draft for Board Review  
July 26, 2022



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

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## I. Status of the Fishery Management Plan

<u>Date of FMP Approval:</u>	Original FMP – 1981
<u>Amendments:</u>	Amendment 1 – 1984 Amendment 2 – 1984 Amendment 3 – 1985 Amendment 4 – 1989; Addendum I – 1991, Addendum II – 1992, Addendum III – 1993, Addendum IV – 1994 Amendment 5 – 1995; Addendum I – 1997, Addendum II – 1997, Addendum III – 1998, Addendum IV – 1999, Addendum V – 2000 Amendment 6 – 2003; Addendum I – 2007, Addendum II – 2010, Addendum III – 2012, Addendum IV – 2014, Addendum VI -2019 Amendment 7 – 2022
<u>Management Unit:</u>	Migratory stocks of Atlantic striped bass from Maine through North Carolina
<u>States With Declared Interest:</u>	Maine - North Carolina, including Pennsylvania
<u>Additional Jurisdictions:</u>	District of Columbia, Potomac River Fisheries Commission, National Marine Fisheries Service, United States Fish and Wildlife Service
<u>Active Boards/Committees:</u>	Atlantic Striped Bass Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Tagging Subcommittee, Plan Review Team, and Plan Development Team

### Original FMP and Amendments 1-5

The Atlantic States Marine Fisheries Commission (Commission) developed a Fisheries Management Plan (FMP) for Atlantic Striped Bass in 1981 in response to poor juvenile recruitment and declining landings. The FMP recommended increased restrictions on commercial and recreational fisheries, such as minimum size limits and harvest closures on spawning grounds. Two amendments were passed in 1984 recommending additional management measures to reduce fishing mortality. To strengthen the management response and improve compliance and enforcement, the Atlantic Striped Bass Conservation Act (P.L. 98-613) was passed in late 1984. The Striped Bass Act<sup>1</sup> mandated the implementation of striped bass regulations passed by the Commission and gave the Commission authority to recommend to the Secretaries of Commerce and Interior that states be found out of compliance when they failed to implement management measures consistent with the FMP.

The first enforceable plan under the Striped Bass Act, Amendment 3, was approved in 1985, and required size regulations to protect the 1982 year class – the first modest size cohort since the

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<sup>1</sup> The 1997 reauthorization of the Striped Bass Act also required the Secretaries of Commerce and Interior provide a biennial report to Congress highlighting the progress and findings of studies of migratory and estuarine Striped Bass. The ninth such report was recently provided to Congress (Shepherd et al. 2017).

previous decade. The objective was to increase size limits to allow at least 95% of the females in the 1982 year class to spawn at least once. Smaller size limits were permitted in producer areas than along the coast. Several states, beginning with Maryland in 1985, opted for a more conservative approach and imposed a total moratorium on striped bass landings for several years. The amendment contained a trigger mechanism to relax regulations when the 3-year moving average of the Maryland juvenile abundance index (JAI) exceeded an arithmetic mean of 8.0 – which was attained with the recruitment of the 1989 year class. Also, in 1985, the Commission determined the Albemarle Sound-Roanoke River (A-R) stock in North Carolina contributed minimally to the coastal migratory population, and was therefore allowed to operate under an alternative management program.

Amendment 4, implemented in 1989, aimed to rebuild the resource rather than maximize yield. The amendment allowed state fisheries to reopen under a target fishing mortality (F) of 0.25, which was half the estimated F needed to achieve maximum sustainable yield (MSY). The amendment allowed an increase in the target F once spawning stock biomass (SSB) was restored to levels estimated during the late 1960s and early 1970s. The dual size limit concept was maintained (coastal versus producer areas), and a recreational trip limit and commercial season was implemented to reduce the harvest to 20% of that in the historic period of 1972-1979. A series of four addenda were implemented from 1990-1994 to maintain protection of the 1982 year class.

In 1990, to provide additional protection to striped bass and ensure the effectiveness of state regulations, NOAA Fisheries passed a final rule (55 Federal Register 40181-02) prohibiting possession, fishing (catch and release fishing), harvest, and retention of Atlantic striped bass in the Exclusive Economic Zone (EEZ), with the exception of a defined transit zone within Block Island Sound. Atlantic striped bass may be transported through this defined area provided that the vessel is not used to fish while in the EEZ and the vessel remains in continuous transit, and that the fish were legally caught in adjoining state waters.

In 1995, the Atlantic striped bass migratory stock was declared recovered by the Commission (the A-R stock was declared recovered in 1997) and Amendment 5 was adopted to increase the target F to 0.33, midway between the existing F target (0.25) and  $F_{MSY}$ . Target F was allowed to increase again to 0.40 after two years of implementation. Regulations were developed to achieve the target F (which included measures to restore commercial harvest to 70% of the average landings during the 1972-1979 historical period) and states were allowed to submit proposals to implement alternative regulations that were deemed conservationally equivalent to the Amendment 5 measures. From 1997-2000, a series of five addenda were implemented to respond to the latest stock status information and adjust the regulatory program to achieve each change in target F.

#### Amendment 6

In 2003, Amendment 6 was adopted to address five limitations within the existing management program: 1) potential inability to prevent the Amendment 5 exploitation target from being exceeded; 2) perceived decrease in availability or abundance of large striped bass in the coastal migratory population; 3) a lack of management direction with respect to target and threshold biomass levels; 4) inequitable effects of regulations on the recreational and commercial fisheries, and coastal and

producer area sectors; and 5) excessively frequent changes to the management program. Accordingly, Amendment 6 completely replaced the existing FMP for Atlantic striped bass.<sup>2</sup>

The goal of Amendment 6 is “to perpetuate, through cooperative interstate management, migratory stocks of striped bass; to allow commercial and recreational fisheries consistent with the long-term maintenance of a broad age structure, a self-sustaining spawning stock; and also to provide for the restoration and maintenance of their essential habitat.” In support of this goal, the following objectives are included:

1. Manage striped bass fisheries under a control rule designed to maintain stock size at or above the target female spawning stock biomass level and a level of fishing mortality at or below the target exploitation rate.
2. Manage fishing mortality to maintain an age structure that provides adequate spawning potential to sustain long-term abundance of striped bass populations.
3. Provide a management plan that strives, to the extent practical, to maintain coastwide consistency of implemented measures, while allowing the States defined flexibility to implement alternative strategies that accomplish the objectives of the FMP.
4. Foster quality and economically viable recreational, for-hire, and commercial fisheries.
5. Maximize cost effectiveness of current information gathering and prioritize state obligations in order to minimize costs of monitoring and management.
6. Adopt a long-term management regime that minimizes or eliminates the need to make annual changes or modifications to management measures.
7. Establish a fishing mortality target that will result in a net increase in the abundance (pounds) of age 15 and older striped bass in the population, relative to the 2000 estimate.

Amendment 6 modified the F target and threshold, and introduced a new set of biological reference points (BRPs) based on female SSB, as well as a list of management triggers based on the BRPs. The coastal commercial quotas were restored to 100% of the states’ average landings during the 1972-1979 historical period, except for Delaware’s coastal commercial quota which remained at the level allocated in 2002<sup>3</sup>. In the recreational fisheries, all states were required to implement a two-fish bag limit with a minimum size limit of 28 inches, except for the Chesapeake Bay fisheries, North Carolina fisheries that operate in the A-R, and states with approved alternative regulations. The Chesapeake Bay and A-R regulatory programs were predicated on a more conservative F target than the coastal migratory stock, which allowed these states/jurisdictions (hereafter states) to implement separate seasons, harvest caps, and size and bag limits as long as they remain under that F target. No minimum

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<sup>2</sup> While NOAA Fisheries continues to implement a complete ban on the fishing and harvest of striped bass in the EEZ, Amendment 6 includes a recommendation to consider reopening the EEZ to striped bass fisheries. In September 2006, NOAA Fisheries concluded that it would be imprudent to open the EEZ to striped bass fishing because it could not be certain that opening the EEZ would not lead to increased effort and an overfishing scenario.

<sup>3</sup> The decision to hold Delaware’s commercial quota at the 2002 level is based on tagging information that indicated F on the Delaware River/Bay stock is too high, and uncertainty regarding the status of the spawning stock for the Delaware River/Bay.

size limit can be less than 18 inches under Amendment 6. The same minimum size standards regulate the commercial fisheries as the recreational fisheries, except for a minimum 20 inch size limit in the Delaware Bay spring American shad gillnet fishery.

States are permitted the flexibility to deviate from these regulations by submitting conservation equivalency proposals to the Plan Review Team (PRT). All proposals are subject to technical review and approval by the Atlantic Striped Bass Management (Board). It is the responsibility of the state to demonstrate through quantitative analysis that the proposed management program is equivalent to the standards in the FMP, or will not contribute to the overfishing of the resource.

Five addenda to Amendment 6 have been implemented. Addendum I, approved in 2007, established a bycatch monitoring and research program to increase the accuracy of data on striped bass discards and recommended development of a web-based angler education program. Also in 2007, President George W. Bush issued an Executive Order (E.O. 13449) prohibiting the sale of striped bass (and red drum) caught within the EEZ. Addendum II was approved in 2010 and established a new definition of recruitment failure such that each index would have a fixed threshold rather than a threshold that changes annually with the addition of each year's data. Addendum III was approved in 2012 and requires all states with a commercial fishery for striped bass to implement a uniform commercial harvest tagging program. The Addendum was initiated in response to significant poaching events in the Chesapeake Bay and aims to limit illegal harvest of striped bass.

Addendum IV was triggered in response to the 2013 benchmark assessment, which indicated a steady decline in SSB since the mid-2000s. The Addendum established new F reference points, and changed commercial and recreational measures to reduce F to a level at or below the new target. Chesapeake Bay fisheries were required to implement lower reductions than coastal states (20.5% compared to 25%) since their fisheries were reduced by 14% in 2013 based on their management program. The addendum maintained the flexibility to implement alternative regulations through the conservation equivalency process. This practice has resulted in a variety of regulations among states. All states promulgated regulations prior to the start of their 2015 seasons.

Addendum VI was initiated in response to the 2018 benchmark assessment which indicated the stock is overfished and experiencing overfishing<sup>4</sup>. Approved in October 2019, the Addendum aimed to reduce total removals by 18% relative to 2017 levels in order to achieve F target in 2020. Specifically, the Addendum reduced all state commercial quotas by 18%, and implemented a 1 fish bag limit and a 28" to less than 35" slot limit for ocean fisheries and a 1 fish bag limit and an 18" minimum size limit in Chesapeake Bay to reduce total recreational removals by 18% in both regions. The Addendum's

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<sup>4</sup> In February 2017, the Board initiated development of Draft Addendum V to consider liberalizing coastwide commercial and recreational regulations. The Board's action responded to concerns raised by Chesapeake Bay jurisdictions regarding continued economic hardship endured by its stakeholders since the implementation of Addendum IV and information from the 2016 stock assessment update indicating that F was below target in 2015, and that total removals could increase by 10% to achieve the target F. However, the Board chose to not advance the draft addendum for public comment largely due to harvest estimates having increased in 2016 without changing regulations. Instead, the Board decided to wait until it reviews the results of the 2018 benchmark stock assessment before considering making changes to the management program.

measures were designed to apply the needed reductions proportionally to both the commercial and recreational sectors, although states were permitted to submit alternative regulations through conservation equivalency that achieve an 18% reduction in total removals statewide. The Board reviewed and approved management options for 2020 on a state-by-state basis in February, and all states promulgated regulations by April 1.

Addendum VI also required the mandatory use of circle hooks when fishing with bait to reduce release mortality in recreational striped bass fisheries. States are encouraged to promote the use of circle hooks through various public outreach and education platforms to garner support and compliance with this important conservation measure. In October 2020, the Board approved state implementation plans for circle hook requirements, with the caveat that no exemptions to Addendum VI mandatory circle hook requirements will be permitted. Circle hook regulations were required to be implemented no later than January 1, 2021. In March 2021, the Board approved a clarification on the definition of bait and methods of fishing<sup>5</sup> that require circle hooks, which must be implemented by states as part of Addendum VI compliance. Per Commission standards, states could implement more restrictive measures. The Board also approved guidance on how to address incidental catch of striped bass when targeting other species with non-circle hooks with bait attached. This guidance was not a compliance criterion since incidental catch was not originally part of Addendum VI.

#### Amendment 7

Amendment 7 was approved in May 2022, and consolidates Amendment 6 and its associated addenda into a single document. The purpose of Amendment 7 is to update the management program to align with current fishery needs and priorities given the status and understanding of the resource and fishery has changed considerably since implementation of Amendment 6 in 2003. Amendment 7 builds upon the Addendum VI to Amendment 6 action to address overfishing and initiate rebuilding in response to the overfished finding from the 2018 stock assessment, requiring the Board to rebuild the stock by 2029. Amendment 7 establishes new requirements for the following components of the FMP: management triggers, conservation equivalency, additional measures to address recreational release mortality, and the stock rebuilding plan.

For management triggers, Amendment 7 establishes an updated recruitment management trigger that is more sensitive to low recruitment than the previous trigger, and it requires a specific management response to low year class strength. The response requires reevaluation of the fishing mortality management triggers to account for low recruitment. If one of those triggers trips after reevaluation, the Board is required to take action to reduce fishing mortality. Amendment 7 also updates the spawning stock biomass triggers by establishing a deadline for implementing a rebuilding plan. The Board must implement a rebuilding plan within two years of when a spawning stock biomass trigger is tripped.

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<sup>5</sup> Definition of Bait and Methods of Fishing: Circle hooks are required when fishing for striped bass with bait, which is defined as any marine or aquatic organism live or dead, whole or parts thereof. This shall not apply to any artificial lure with bait attached.



For conservation equivalency (CE), Amendment 7 does not allow CE to be used for most recreational striped bass fisheries when the stock is overfished. Amendment 7 also provides constraints around the use of Marine Recreational Information Program data for CE proposals and defines the overall percent reduction/liberalization a proposal must achieve, including required uncertainty buffers. These restrictions are intended to minimize the risks due to uncertainty when CE is used for non-quota managed striped bass fisheries.

For recreational release mortality, Amendment 7 establishes a new gear restriction which prohibits gaffing striped bass when fishing recreationally. This is in addition to the existing circle hook requirement when fishing recreationally with bait. Additionally, Amendment 7 requires striped bass caught on any unapproved method of take (e.g., caught on a J-hook with bait) must be returned to the water immediately without unnecessary injury. This provision, which is related to incidental catch, was previously a recommendation in Addendum VI to Amendment 6.

For stock rebuilding, Amendment 7 addresses the upcoming 2022 stock assessment and how it will inform efforts to meet the 2029 stock rebuilding deadline. Given concerns about recent low recruitment and the possibility of continued low recruitment, Amendment 7 requires the 2022 stock assessment's rebuilding projections to use a low recruitment assumption to conservatively account for that future possibility. Amendment 7 also establishes a mechanism for the Board to respond more quickly to the 2022 assessment results if action is needed to achieve stock rebuilding by 2029.

All provisions of Amendment 7 are effective May 5, 2022 except for gear restrictions. States must implement new gear restrictions by January 1, 2023. Amendment 7 also maintains the same recreational and commercial measures specified in Addendum VI to Amendment 6, which were implemented in 2020. As such, all approved Addendum VI conservation equivalency programs and state implementation plans are maintained until such measures are changed in the future. A stock assessment update is expected in October 2022, which will determine whether management measures need to be changed to achieve stock rebuilding by the 2029 deadline.

#### Pending Action

In August 2021, the Board initiated Addendum VII to Amendment 6 to consider allowing the voluntary transfer of commercial striped bass quota between states/jurisdictions that have commercial quota. The Board deferred consideration of Draft Addendum VII until August 2022, and given the recent approval of Amendment 7, this draft addendum is now referred to as Draft Addendum I to Amendment 7.

## **II. Status of the Stocks**

The 2018 benchmark stock assessment for Atlantic striped bass was peer-reviewed at the 66<sup>th</sup> Northeast Regional Stock Assessment Workshop (SAW)/Stock Assessment Review Committee (SARC) meeting in November 2018. The assessment addressed several of the recommendations from the 57<sup>th</sup> SAW/SARC, including developing new maturity-at-age estimates for the coastal migratory stock and evaluating stock status definitions relative to uncertainty in biological reference points (NEFSC 2018a). The assessment also made progress on developing a spatially and temporally explicit catch-at-age

model incorporating tag-based movement (migration) information. Although the Peer Review Panel did not accept the migration model for management use, it recommended continued work to improve the model for future assessments.

The accepted model is a forward projecting statistical catch-at-age (SCA) model which uses catch-at-age data and fishery-dependent and -independent survey indices to estimate annual population size and fishing mortality (NEFSC 2018b). Indices of abundance track relative changes in the population over time while catch data provide information on the scale of the population size. Age structure data (numbers of fish by age) provide additional information on recruitment (number of age-1 fish entering the population) and trends in mortality.

The biological reference points (BRPs) currently used for management are based on the 1995 estimate of female spawning stock biomass (SSB). The 1995 estimate of female SSB is used as the SSB threshold because many stock characteristics (such as an expanded age structure) were reached by this year and the stock was declared recovered. The SSB target is equal to 125% of SSB threshold. To estimate the associated fishing mortality (F) threshold and target, population projections were made by using a constant F and changing the value until the SSB threshold or target was achieved. For the 2018 benchmark, the BRP values have been updated. The benchmark incorporates the newly calibrated recreational catch estimates based on the Marine Recreational Information Program's (MRIP) Fishing Effort Survey (FES), resulting in higher estimates of SSB and therefore higher estimates for the SSB threshold and target (refer to *Section III* for more information). The SSB threshold is estimated at 91,436 metric tons (202 million pounds), with an SSB target of 114,295 metric tons (252 million pounds). The new MRIP estimates did not have a large effect on the estimates of fishing mortality, and the updated F threshold and target values are very similar to the previous F reference points. The F threshold is estimated at 0.24, and the target is estimated at 0.20

Based on the results of the 2018 benchmark, Atlantic striped bass is overfished and experiencing overfishing. In 2017, female SSB was estimated at 68,476 metric tons (151 million pounds) which is below the SSB threshold (Figure 1). Female SSB declined steadily since the time series high in 2003 and has been below threshold since 2013. The recent decline in female SSB appears to be attributed to a period of low recruitment since about 2005 (Figure 1). However, the 2011, 2014, and 2015 year classes (representing the 2012, 2015, and 2016 age-1 recruitment estimates) were above average. Total F was estimated at or above F threshold in 13 of the last 15 years, and was estimated above threshold in 2017 at 0.31 (Figure 2).

A stock assessment update is expected in October 2022 with a terminal year of 2021. As specified in Amendment 7, the 2022 assessment will use a low recruitment assumption for the stock rebuilding projections (rebuilding deadline of 2029).

### III. Status of the Fishery in the Ocean and Chesapeake Bay

#### Total Removals

In 2021, total Atlantic striped bass removals (commercial and recreational, including harvest, commercial discards and recreational release mortality) was estimated at 5.1 million fish, which is about the same as removals in 2020 (less than 1% increase relative to 2020) (Table 3; Figure 5). The recreational sector accounted for 86% of total removals by number (Table 4). It should be noted that the recreational catch estimates reported here reflect the new, improved MRIP mail-based survey and are not directly comparable to FMP Review reports published prior to 2019.

#### Commercial Fishery

The commercial fishery harvested 4.29 million pounds (577,363 fish) in 2021, which is an 18% increase by weight relative to 2020 (9% increase by number; Tables 5-6). Notably, the ocean commercial quota utilization increased from 55% in 2020 to 76% in 2021. This is the highest ocean quota utilization in the past five years and is similar to the ocean quota utilization in 2017 (74%). Each state that allows commercial harvest utilized 87-99% of their ocean quota in 2021, with the exception of North Carolina which had zero ocean harvest.

In the Chesapeake Bay, quota utilization slightly increased from 76% in 2020 to 81% in 2021. In the past five years, 2020 and 2021 were the two lowest quota utilization years for the Chesapeake Bay, with utilization between 88-91% from 2017-2019.

Quota utilization is important to consider when calculating reductions in commercial removals. The projections for Addendum VI assumed the same quota utilization rate as 2017. As quota utilization changes from year to year, the realized reduction in commercial removals will change.

The PRT notes there are several factors that could have contributed to the 2021 increases in commercial harvest relative to 2020. Year class availability could be a factor, particularly in the ocean, with the relatively strong 2014 and 2015 year classes becoming more available to ocean fisheries. If stock abundance is increasing overall, that could also contribute to more fish being available. Availability also depends on when and how long striped bass stay within state waters (vs. offshore in the EEZ) during the season. Another factor is the impacts of COVID-19, which could have been more detrimental to the commercial industry in 2020 as compared to 2021; however, the PRT recognizes the impacts of COVID-19 on striped bass commercial fisheries likely varied among states, varied between 2020 and 2021, and varied depending on timing within the season.

Commercial harvest from Chesapeake Bay accounted for 57% of the 2021 total commercial harvest by weight. Of total commercial harvest (combined ocean and Chesapeake Bay) by weight, Maryland landed 33%, Virginia landed 20%, and Massachusetts landed 17% (Table 6; Figure 6). Additional harvest came from New York (15%), PRFC (10%), Delaware (3%), and Rhode Island (3%). The proportion of commercial harvest coming from Chesapeake Bay is much higher in numbers of fish; roughly 81% in 2021 (Table 7). This is because fish harvested in Chesapeake Bay have a lower average weight than fish

harvested in ocean fisheries. In 2021, coastwide commercial dead discards were estimated at 85,676<sup>6</sup> fish, which accounts for <2% of total removals in 2021 (Table 3).

Overall, average commercial harvest in 2020-2021 (under Addendum VI quotas) was 16% lower than the average commercial harvest from 2015-2019 (under Addendum IV quotas). This average decrease relative to 2015-2019 commercial harvest levels aligns with the 18% reduction in commercial quota implemented through Addendum VI in 2020, although some states implemented a less than 18% reduction in their commercial quotas through approved state conservation equivalency plans.

### Recreational Fishery

Total recreational catch (harvest and live releases) coastwide was estimated at 30.4 million fish in 2021, which is a 6% decrease from 2020 (Table 8). This overall coastwide decrease was a combination of an increase in harvest offset by a decrease in live releases.

Total recreational harvest (A+B1) in 2021 is estimated at 1.82 million fish (15.7 million pounds), and represents a 6% increase relative to 2020 (5% increase by weight) (Tables 9-10). New Jersey landed the largest proportion of recreational harvest in number of fish<sup>7</sup> (42%), followed by Maryland (32%), Massachusetts (10%), and New York (8%) (Table 10). The proportion of recreational harvest in numbers from Chesapeake Bay was estimated at 35% in 2021, compared to 46% in 2020.

The vast majority of recreational striped bass catch is released alive either due to angler preference or regulation (i.e., undersized or already caught the bag limit) (Figure 7). The assessment assumes, based on previous studies, that 9% of fish that are released alive die as a result of being caught. In 2021, recreational anglers caught and released an estimated 28.6 million fish, of which 2.6 million are assumed to have died (Table 8). This represents a 7% decrease in live releases coastwide from 2020.

The PRT notes that the ocean and Chesapeake Bay regions experienced different changes in recreational catch in 2021 relative to 2020. The ocean region saw an increase in both recreational harvest (29% increase in numbers of fish) and live releases (7% increase) relative to 2020. On the other hand, the Chesapeake Bay experienced a decrease in both recreational harvest (19% decrease, primarily in Maryland) and live releases (46% decrease) relative to 2020.

According to MRIP, the coastwide number of trips directed at striped bass (primary and secondary target) slightly decreased from 2020 to 2021 by about 2% (Table 12a). However, the trend again differs between the ocean and Chesapeake Bay regions (Table 12a).

In the ocean, the number of directed striped bass trips in 2021 increased slightly by 1% relative to 2020. The number of ocean trips in 2021 is similar the number of trips in 2019. In 2020, most ocean fisheries switched from a minimum size to the Addendum VI slot limit, which likely contributed to

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<sup>6</sup> Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added.

<sup>7</sup> By weight, New Jersey had the largest proportion of recreational harvest (53%), followed by Maryland (17%), Massachusetts (12%), and New York (10%) (Table 8).

decreased harvest in 2020 and may have changed angler behavior (alongside COVID-19 impacts). The slight increase in ocean trips (and increase in harvest) from 2020 to 2021, under the same regulations, could be attributed to a number of factors discussed later in this section. At the state-specific level, this ocean trend is not the same for each state. Tables 12b and 12c show striped bass directed trips by state for 2019-2021 along with each state's size/bag limit during those years.

Unlike in the ocean, the number of striped bass trips in the Chesapeake Bay increased by 36% from 2019 to 2020 before decreasing by 18% in 2021. Chesapeake Bay regulation changes through Addendum VI in 2020 were a decreased bag limit for Maryland private anglers and summer no-targeting closures in Maryland and the Potomac River. While these regulations may have contributed to decreased harvest, changes in effort could again be attributed to a variety of factors, recognizing different impacts in the Bay as compared to the ocean region.

The PRT notes several factors that likely contributed to trends in recreational catch and effort, including year class availability, overall stock abundance, nearshore availability, and angler behavior. The relatively strong 2014 and 2015 year classes moving out of the Chesapeake Bay and into the ocean could have contributed to increased catch in the ocean and decreased catch in the Bay in 2021. COVID-19 likely had continued impacts in 2021 and affected recreational sectors differently. For-hire trips may have been limited due to restrictions on the number of people permitted on vessels at different times throughout the season; however, anecdotally, shore and private trips may have increased at certain times. For example, license sales in Maryland increased in 2020 followed by a decrease in 2021, which could reflect some impact of COVID-19 increasing participation and effort in the Chesapeake Bay during the first year of the pandemic in particular. It is important to recognize that impacts from COVID-19 were likely not uniform across states or sectors.

#### **IV. Albemarle Sound and Roanoke River Management Area**

##### **Fishery Management Plan**

While striped bass in North Carolina's ocean waters are managed under the Interstate FMP, Addendum IV to Amendment 6 formally defers management of the A-R stock to the state of North Carolina using A-R stock-specific BRPs approved by the Board (NCDMF 2013, 2014).

Estuarine striped bass in North Carolina are currently managed under Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan (FMP) and its subsequent revision and recent supplement (NCDMF 2013, 2014, 2019). It is a joint plan between the North Carolina Marine Fisheries Commission (NCMFC) and the North Carolina Wildlife Resources Commission (NCWRC). Amendment 1, adopted in 2013, lays out separate management strategies for the Albemarle Sound-Roanoke River (A-R) stock and the estuarine (non-migratory) Central and Southern striped bass stocks in the Tar-Pamlico, Neuse, and Cape Fear rivers. Management programs in Amendment 1 for the A-R stock utilize annual total allowable landings (TAL), daily possession limits, open and closed harvest seasons, gill net mesh size and yardage restrictions, seasonal small mesh gill net attendance requirements, single barbless hook requirements in some areas, minimum size limits, and a no-harvest slot limit in the Roanoke River to maintain a sustainable harvest and reduce regulatory discard mortality in all sectors.

Amendment 2 to the North Carolina Estuarine Striped Bass FMP is in the final stages of development. Amendment 2 would maintain for the A-R stock the use of a TAL to manage harvest as informed by stock assessments, and also includes consideration of a new 18-25” harvest slot limit in the Albemarle Sound to protect larger striped bass. At the North Carolina Marine Fisheries Commission’s May 2022 business meeting, draft Amendment 2 preferred management options were selected. The NCDEQ Secretary reported progress to the appropriate legislative bodies and the review period has ended. The Marine Fisheries Commission will consider adopting Amendment 2 at its August 2022 business meeting.

In 2021, striped bass fisheries in the Atlantic Ocean of North Carolina were managed under ASMFC’s Amendment 6 and subsequent addenda to the Interstate FMP for Atlantic Striped Bass. As of May 2022, striped bass fisheries in the Atlantic Ocean of North Carolina are now managed under ASMFC’s Amendment 7 to the Interstate FMP. North Carolina is required to inform the Commission of changes to striped bass management in the A-R System.

*Status of the Albemarle Sound-Roanoke River Striped Bass Stock*

The most recent A-R stock assessment a forward-projecting fully-integrated, age-structured statistical model to estimate population parameters and reference points for the A-R striped bass stock for 1991-2017 (Lee et al. 2020). The model was peer reviewed by an outside panel of experts and approved for management use by the Board in May 2021. The A-R stock is managed using reference points for female spawning stock biomass (SSB) and fishing mortality (F) with threshold values based on 35% spawning potential ratio and target values based on 45% spawning potential ratio. The 2020 assessment estimated female SSB in 2017 (terminal year) was 78,576 pounds (35.6 metric tons), which is below the SSB threshold of 267,390 pounds (121 metric tons). The assessment estimated F in 2017 was 0.27, which is above the F threshold of 0.18. These results show that the stock is overfished and overfishing is occurring (Figures 3 and 4).

	<b>Target</b>	<b>Threshold</b>	<b>Terminal Year (2017) Estimate</b>
<b>Female SSB</b>	350,371 lbs.	267,390 lbs.	78,576 lbs.
<b>Fishing Mortality (F)</b>	0.13	0.18	0.27

Based on the assessment results, North Carolina implemented a 2020 Revision to Amendment 1 that lowers the annual TAL for Albemarle Sound and Roanoke River management areas for 2021 and 2022 in order to reduce F to the target level. The new TAL is 51,216 pounds, which is a 57% reduction from 2017 landings (NCDMF 2020). A stock assessment update with data through 2021 is currently being performed.

*Albemarle Sound and Roanoke River Atlantic Striped Bass Fisheries*

In 2021, total commercial and recreational harvest in the Albemarle Sound Management Area (ASMA) and the Roanoke River Management Area (RRMA) was 63,733 pounds (16,649 fish).

Commercial harvest in the ASMA was 27,930 pounds (6,596 fish). There is no commercial harvest in the RRMA. Recreational harvest in the ASMA was 8,257 pounds (2,258 fish), and recreational harvest in the RRMA was 27,546 pounds (7,795 fish).

## **V. Status of Research and Monitoring**

Amendment 6 and its Addenda I-VI set the regulatory and monitoring measures for the coastwide striped bass fishery in 2021. Amendment 6 requires certain states to implement fishery-dependent monitoring programs for striped bass. All states with commercial fisheries or substantial recreational fisheries are required to define the catch and effort composition of these fisheries. Additionally, all states with a commercial fishery must implement a commercial harvest tagging program pursuant to Addendum III to Amendment 6.

Amendment 6 also requires certain states to monitor the striped bass population independent of the fisheries. Juvenile abundance surveys are required from Maine (Kennebec River), New York (Hudson River), New Jersey (Delaware River), Maryland (Chesapeake Bay tributaries), Virginia (Chesapeake Bay tributaries), and North Carolina (Albemarle Sound). Spawning stock sampling is mandatory for New York (Hudson River), Pennsylvania (Delaware River), Delaware (Delaware River), Maryland (Upper Chesapeake Bay and Potomac River), Virginia (Rappahannock River and James River), and North Carolina (Albemarle Sound-Roanoke River). Amendment 6 requires NOAA Fisheries, USFWS, Massachusetts, New York, New Jersey, Maryland, Virginia, and North Carolina to continue their tagging programs, which provide data used to determine survivorship and migration patterns.

## **VI. Status of Management Measures and Issues**

### *Ocean Commercial Quota*

In 2021, the ocean commercial quota was 2,411,154 pounds and was not exceeded. Table 11 contains final 2021 quotas per Addendum VI and approved conservation equivalency programs and harvest that occurred in 2021.

### *Chesapeake Bay Commercial Quota*

In 2021, the Chesapeake Bay-wide quota was 3,001,648 pounds and was allocated to Maryland, the PRFC, and Virginia based on historical harvest. In 2021, the Bay-wide quota was not exceeded. Table 11 contains jurisdiction-specific quotas and harvest that occurred in 2021 for Chesapeake Bay<sup>8</sup>. In 2021, commercial harvest from Chesapeake Bay accounted for 57% of total commercial landings by weight, a slight decrease from 63% in 2020. From 2015-2019 (under Addendum IV quotas), the Chesapeake Bay averaged 61% of total commercial landings.

### *Chesapeake Bay Spring Harvest of Migrant Striped Bass*

Historically, recreational fishermen in Chesapeake Bay are permitted to take adult migrant fish during a limited seasonal fishery, commonly referred to as the Spring Trophy Fishery. From 1993 to 2007 the fishery operated under a quota. Beginning in 2008, the Board approved non-quota management until

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<sup>8</sup> Maryland commercial landings for 2021 are considered preliminary.

stock assessment indicates that corrective action is necessary to reduce F on the coastal stock. The Spring Trophy Fishery is currently managed via bag limits and minimum sizes. The Commonwealth of Virginia closed the spring trophy season beginning in 2019.

The 2021 estimate of migrant fish harvested during the Maryland trophy season was 6,016 fish (1,764 fish by charter boats; 4,252 fish by private anglers), which is a 15% decrease compared to 2020.

#### Wave-1 Recreational Harvest Estimates

Evidence suggests that North Carolina, Virginia, and possibly other states have had sizeable wave-1 (January/February) recreational striped bass fisheries beginning in 1996 (NEFSC 2018b). MRIP, formerly the Marine Recreational Fisheries Statistics Survey (MRFSS), has sampled for striped bass in North Carolina during wave-1 since 2004 (other states are not currently covered during wave-1). Virginia harvest in wave-1 is estimated for stock assessment via the ratio of landings and tag returns in wave-6 and regression analysis (refer to the methods described in NEFSC 2018a for more detail).

However, based on fishery-independent data collected by NCDMF, ASMFC and USFWS, striped bass distributions on their overwintering grounds during December through February has changed significantly since the mid-2000s. The migratory portion of the stocks has been well offshore in the EEZ (>3 miles) affecting both Virginia's and North Carolina's striped bass winter ocean fisheries in recent years. Furthermore, North Carolina has reported zero recreational striped bass harvest during wave-1 and wave-6 in the ocean for 2012-2021, and Virginia has reported zero recreational ocean harvest for seven of the last eight years. Similarly, North Carolina's commercial fishery has reported zero striped bass landings from the ocean since 2013.

#### Addendum III to Amendment 6: Commercial Fish Tagging Program

Addendum III to Amendment 6 includes compliance requirements for monitoring commercial fishery harvest tagging programs. In 2021, all states implemented commercial tagging programs consistent with the requirements of Addendum III. Table 18 describes commercial tagging programs by state. One state (New York) reported issues with delays in fishermen receiving tags from the tag company, as well as issues with incorrect printing and issuing of tags. New York noted these were likely a small percentage of the total number of tags issued but could be an issue if the issue consistently occurs.

The PRT notes that in a few states, only about half of issued commercial tags were reported used. The PRT emphasizes the importance of tag accounting to account for unused tags at the end of each fishing year in all states. Due to the early deadlines for commercial tagging reports (60 days before the commercial fishery opens), tag accounting for the previous year is often preliminary or not yet available at that time. To address this, the PRT plans to update the striped bass compliance report template (due in June each year) to request updated tag accounting for unused tags. The PRT recommends that Commission staff work with the Law Enforcement Committee and the PRT to regularly follow-up with all states on tag accounting and other questions about state commercial tagging programs as needed. Additionally, the PRT recommends the Board task the PRT with a specific review of the commercial tagging program at a regular interval (e.g., every 5 years) to review the program components, such as the biological metrics used to allocate tags.



#### Addendum VI to Amendment 6: 18% Reduction in Removals

2021 was the second implementation year of Addendum VI, which implemented measures to reduce total striped bass removals by 18% relative to 2017 levels in order to achieve the fishing mortality target in 2020. Tables 13a-13c list total removals (harvest plus discards/release mortality for commercial and recreational) in numbers of fish for 2017, 2020 and 2021. In 2021, a 27% reduction in total removals coastwide (numbers of fish) was realized relative to total removals coastwide in 2017. This is about the same level of reduction realized in 2020 since total removals were about the same in 2020 and 2021. For the ocean region in 2021, a 23% reduction in total removals (numbers of fish) was realized relative to 2017 removals. For the Chesapeake Bay in 2021, a 35% reduction in total removals (numbers of fish) was realized relative to 2017 removals.

Tables 14 and 15 list the realized change for recreational removals (in numbers of fish) and commercial harvest (in pounds) by state for 2017, 2020, and 2021. Table 14 also includes the predicted reduction in recreational removals from state conservation equivalency plans, where applicable. The PRT notes that differences in performance are influenced by many factors, including changes in effort, fish availability/year classes, and environmental factors. The TC has discussed the challenge of trying to evaluate performance since the effects of different management measures cannot be isolated from the effects of effort changes and fish availability. There is a lot of year-to-year variability even under consistent regulations due to different year classes moving through the stock and variability in effort and angler behavior. During the TC's review of Addendum VI conservation equivalency proposals, the TC noted there is a high level of uncertainty in the percent reductions calculated due to the effect of changes in angler behavior (effort) and the size structure and distribution of the population (availability of legal and sub-legal fish), and these changes are difficult to account for and cannot be accurately quantified.

#### Note on 2020 MRIP Data

The component of the Marine Recreational Information Program (MRIP) that samples dockside catch rate data (Access Point Angler Intercept Survey - APAIS) was interrupted by the pandemic. Due to this interruption, catch rate data were imputed as needed from 2018 and 2019 to generate total catch estimates in 2020. The contribution of imputed data for Atlantic striped bass recreational harvest and release estimates by state ranged from 0-100% (Table 16).

#### Addendum VI to Amendment 6: Circle Hook Requirement

Addendum VI circle hook regulations were required to be implemented by the states in January 2021. In March 2021, the Board approved a clarification on the definition of bait and methods of fishing that require circle hooks, which must be implemented by states as part of Addendum VI compliance.

All states have implemented the Addendum VI circle hook regulations. The PRT notes that New Jersey's rule to implement the circle hook requirements was delayed in the regulatory process and was fully implemented in December 2021.

The PRT notes differences among the definitions of bait implemented by the states (Table 17) with some definitions being more restrictive than the Board-approved definition. A few states have not defined bait, which could be considered more restrictive (per Commission standards, states can

implement more restrictive measures). Additionally, some state regulations are more restrictive by not specifying any exemptions, as compared to the Board-approved exemption for bait on artificial lures.

In March 2021, the Board also approved guidance on how to address incidental catch of striped bass when targeting other species with non-circle hooks with bait attached. Although this guidance is not a compliance criterion for Addendum VI, since incidental catch was not originally part of Addendum VI, several states implemented this guidance in 2021 (Table 17). As part of Amendment 7 approved in May 2022, this provision regarding incidental catch is a requirement that must be implemented by January 1, 2023.

### Juvenile Abundance Index Analysis

The following states are required to conduct striped bass young-of-year juvenile abundance index (JAI) surveys on an annual basis: Maine for the Kennebec River; New York for the Hudson River; New Jersey for the Delaware River; Maryland for the Maryland Chesapeake Bay tributaries; Virginia for the Virginia Chesapeake Bay tributaries; and North Carolina for the A-R stock.

The PRT and the Striped Bass Technical Committee (TC) annually review the JAIs per the recruitment trigger specified in the FMP. As of May 2022, the new Amendment 7 recruitment trigger is effective and reads as follows:

If any of the four JAIs used in the stock assessment model to estimate recruitment (NY, NJ, MD, VA) shows an index value that is below 75% of all values (i.e., below the 25th percentile) in the respective JAI from 1992-2006\* (which represents a period of high recruitment) for three consecutive years, then an interim F target and interim F threshold calculated using the low recruitment assumption will be implemented, and the F-based management triggers will be reevaluated using those interim reference points. If an F-based trigger is tripped upon reevaluation, the striped bass management program must be adjusted to reduce F to the interim F target within one year.

For the 2022 review of JAIs, the analysis evaluates the 2019, 2020, and 2021 JAI values per the Amendment 7 recruitment trigger. One state (Maryland) met the criteria of the Amendment 7 recruitment trigger (Figure 8). Maryland's JAI values for 2019 (1.95), 2020 (1.12), and 2021 (1.65) were below the Maryland JAI trigger level of 4.16. Since this trips the recruitment trigger in 2022, F reference points using the low recruitment assumption will be calculated. Because 2022 is a stock assessment year, that reference point calculation and trigger evaluation will be part of the 2022 assessment update (results expected in October 2022).

New York's JAI (Hudson River) was above its trigger level (11.70) in both 2020 and 2021 with values of 35.39 and 15.89, respectively. New Jersey's JAI (Delaware River) was below its trigger level (1.07) in 2021 with a value of 0.67. A 2020 JAI value for New Jersey is not available due to COVID-19 restrictions. Virginia's JAI was above its trigger level (8.22) in 2020 with a value of 13.89, but fell below the trigger level in 2021 with a value of 6.3.

Maine's JAI (Kennebec River) and North Carolina's JAI (Albemarle-Roanoke) are not part of the recruitment trigger, but are still required monitoring for those states (Figure 9). Maine's JAI was below

the level of recruitment failure in both 2020 and 2021 with values of 0.0 and 0.02, respectively. North Carolina's JAI tripped the previous Amendment 6 recruitment trigger in 2021 based on low index values in 2018, 2019, and 2020. North Carolina's JAI was also low in 2021 with a value of 0.07, the fourth consecutive year below the level of recruitment failure.

#### Law Enforcement Reporting

States are asked to report any law enforcement issues that occurred the previous season in annual compliance reports. The most common violations noted were recreationally harvested fish under or over the legal size limit.

The PRT notes that states' responses to this section of the compliance report are widely varied; some states provide the number of violations, some provide a qualitative overview, and some only identify major enforcement issues. The PRT recommends the Board consult with the Law Enforcement Committee to determine what type of enforcement information would be most helpful to include in compliance reports. The PRT recognizes that states have different enforcement processes and that this type of information is most important immediately following a regulation change.

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

A summary of 2021 fishery regulations by state is provided in Table 1 and Table 2. Each state's commercial tag monitoring program is described in Table 18, and state compliance with fishery-independent and -dependent monitoring requirements are summarized in Table 19.

**Based on annual state compliance reports (ASMFC 2022), the PRT determined that all states in 2021 implemented a management and monitoring program consistent with the provisions of Amendment 6 and Addenda I – VI, with three inconsistencies noted below:**

- As identified in the past two FMP Reviews (ASMFC 2020, 2021), the PRT notes an inconsistency with implementation of the Addendum VI slot limit. New York's recreational regulations state a slot limit of "28" to 35" TL". This does not explicitly indicate whether the upper limit is inclusive or not.
  - The PRT reviewed New York's Addendum VI implementation plan, which predicted a greater than 18% reduction, and confirmed the harvest calculations did not include the upper bound of 35" (assumed harvest up to 34.99"). The PRT calculated what the predicted percent reduction would have been if the slot was inclusive of 35", and confirmed that it still would have been greater than the required 18% reduction.
  - Future reduction calculations will need to recognize this measure as being different from the FMP standard of 28" to less than 35".
- As identified in last year's FMP Review (ASMFC 2021), the PRT notes that Maryland's 2021 summer closure period (no targeting July 16-31) is different from their approved 2020 summer closure period (no targeting August 16-31). At the August 2021 Board meeting, Maryland stated their intent to continue with the July 16-31 closure period.

- The PRT notes that Pennsylvania implemented the circle hook requirement when fishing with bait in the tidal portion of the Delaware River (downstream from the Calhoun St. Bridge), but not in the non-tidal waters upstream from that point. This does align with Pennsylvania’s approved implementation plan, which specified that the use of circle hooks in the non-tidal portion would be a recommendation only. Pennsylvania noted the targeted striped bass fishery in the non-tidal portion of the Delaware River is very limited with low numbers of striped bass utilizing that upriver habitat.

The PRT developed the following **recommendations**:

- As described in the commercial tagging section, the PRT plans to update the striped bass compliance report template to request updated tag accounting for unused tags. The PRT recommends that Commission staff work with the Law Enforcement Committee and the PRT to regularly follow-up with all states on tag accounting and other questions about state commercial tagging programs as needed.
- The PRT recommends the Board task the PRT with a specific review of the commercial tagging program at a regular interval (e.g., every 5 years) to review the program components, such as the biological metrics used to allocate tags.
- As described in the Law Enforcement Reporting section, the PRT recommends the Board consult with the Law Enforcement Committee to determine what type of enforcement information would be most helpful for states to include in compliance reports.

The PRT notes the following **additional comments**:

- As described in the Addendum VI circle hook section, there are differences among the definitions of bait implemented by the states (Table 17), with some more restrictive than others.
- Several states have already implemented the guidance on incidental catch, which is not a compliance criterion for Addendum VI. Per Amendment 7, this incidental catch provision must be implemented by all states by January 1, 2023.
- While the New York spawning stock monitoring program in the Hudson River does meet the FMP’s fishery-independent monitoring requirements, it does not provide an index of relative abundance to characterize the Hudson River stock which was identified as a high priority research recommendation at SAW 66.
- Some fishery monitoring efforts in 2021 were impacted due to the COVID-19 pandemic, but there were fewer survey impacts than in 2020. Table 19 notes which 2021 programs were impacted by COVID-19, as identified by state compliance reports.

## **VIII. Research Recommendations**

Research recommendations were developed by the 2018 Benchmark Stock Assessment Subcommittee and the 66<sup>th</sup> SARC and are listed in the final [stock assessment report](#) starting on report page 569.

## IX. References

- Atlantic States Marine Fisheries Commission (ASMFC). 2020. Review of the Interstate Fishery Management Plan for Atlantic Striped Bass (*Morone saxatilis*): 2019 Fishing Year.
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- NCDMF. 2019. Supplement A to Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan. North Carolina Department of Environment and Natural Resources. North Carolina Division of Marine Fisheries. Morehead City, NC. 40 pp.
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- Northeast Fisheries Science Center (NEFSC). 2018a. 66<sup>th</sup> Northeast Regional Stock Assessment Workshop (66<sup>th</sup> SAW) Assessment Report. US Dept Commer. Northeast Fish Sci Cent Ref Doc. 19-08; 719 p.
- Northeast Fisheries Science Center (NEFSC). 2018b. 66<sup>th</sup> Northeast Regional Stock Assessment Workshop (66<sup>th</sup> SAW) Assessment Summary Report. US Dept Commer. Northeast Fish Sci Cent Ref Doc. 19-01; 45 p.
- Shepherd, G.R., R.W. Laney, M. Appelman, D. Honabarger and C.L. Wright. 2017. Biennial Report to Congress on the Progress and Findings of Studies of Striped Bass Populations --2017. National Marine Fisheries Service, Silver Spring, MD. 11 p.

**X. Tables**

Table 1. Summary of Atlantic striped bass commercial regulations in 2021. Source: 2022 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL). \*Commercial quota reallocated to recreational bonus fish program.

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
<b>ME</b>	Commercial fishing prohibited		
<b>NH</b>	Commercial fishing prohibited		
<b>MA</b>	≥35" minimum size; no gaffing undersized fish. 15 fish/day with commercial boat permit; 2 fish/day with rod and reel permit.	735,240 lbs. Hook & Line only.	6.16-11.15 (or when quota reached); open fishing days of Monday, Tuesday and Wednesday, with Thursday and Friday added on October 1 (if quota remains). Cape Cod Canal closed to commercial striped bass fishing.
<b>RI</b>	Floating fish trap: 26" minimum size unlimited possession limit until 70% of quota reached, then 500 lbs. per licensee per day	Total: 148,889 lbs., split 39:61 between the trap and general category. Gill netting prohibited.	4.1 – 12.31
	General category (mostly rod & reel): 34" min. 5 fish/vessel/day limit.		5.20-6.30; 7.1-12.31, or until quota reached. Closed Fridays, Saturdays, and Sundays during Jul-Dec.
<b>CT</b>	Commercial fishing prohibited; bonus program in CT suspended indefinitely in 2020.		
<b>NY</b>	26"-38" size; (Hudson River closed to commercial harvest)	640,718 lbs. Pound Nets, Gill Nets (6-8" stretched mesh), Hook & Line.	5.15 – 12.15, or until quota reached. Limited entry permit only.
<b>NJ*</b>	Commercial fishing prohibited; bonus program: 1 fish/permit at 24" to <28"	215,912 lbs.	5.15 – 12.31 (permit required)
<b>PA</b>	Commercial fishing prohibited		
<b>DE</b>	Gill Net: 20" min in DE Bay/River during spring season. 28" in all other waters/seasons.	Gillnet: 135,350 lbs. No fixed nets in DE River.	Gillnet: 2.15-5.31 (2.15-3.30 for Nanticoke River) & 11.15-12.31; drift nets only 2.15-28 & 5.1-31; no trip limit.
	Hook and Line: 28" min	Hook and line: 7,124 lbs.	Hook and Line: 4.1–12.31, 200 lbs./day trip limit

(Table 1 continued – Summary of commercial regulations in 2021).

STATE	SIZE LIMITS (TL) and TRIP LIMITS	SEASONAL QUOTA	OPEN SEASON
MD	Chesapeake Bay and Rivers: 18–36” Common pool trip limits: Hook and Line - 250 lbs./license/week Gill Net - 300 lbs./license/week	1,445,394 lbs. (part of Bay-wide quota)	Bay Pound Net: 6.1-12.31 Bay Haul Seine: 1.1-2.28; 6.1-12.31 Bay Hook & Line: 6.1-12.31 Bay Drift Gill Net: 1.1-2.28, 12.1-12.31
	Ocean: 24” minimum	Ocean: 89,094 lbs.	1.1-5.31, 10.1-12.31
PRFC	18” min all year; 36” max 2.15–3.25	572,861 lbs. (split between gear types; part of Bay-wide quota)	Hook & Line: 1.1-3.25, 6.1-12.31 Pound Net & Other: 2.15-3.25, 6.1-12.15 <u>Gill Net</u> : 11.9.2020-3.25.2021 Misc. Gear: 2.15-3.25, 6.1-12.15
VA	Chesapeake Bay and Rivers: 18” min; 28” max size limit 3.15–6.15	983,393 lbs. (part of Bay-wide quota)	1.16-12.31
	Ocean: 28” min	125,034 lbs.	
NC	Ocean: 28” min	295,495 lbs. (split between gear types)	Seine fishery was not opened Gill net fishery was not opened Trawl fishery was not opened

Table 2. Summary of Atlantic striped bass recreational regulations in 2021. Source: 2022 State Compliance Reports. Minimum sizes and slot size limits are in total length (TL).

STATE	SIZE LIMITS (TL)/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
ME	≥ 28" and <35"	1 fish/day	Hook & line only; circle hooks only when using live bait; must release if caught on unapproved hook type	All year, except spawning areas are closed 12.1-4.30 and C&R only 5.1-6.30
NH	≥ 28" and <35"	1 fish/day	Gaffing and culling prohibited; Use of corrodible non-offset circle hooks required if angling with bait	All year
MA	≥ 28" and <35"	1 fish/day	Hook & line only; no high-grading; gaffs and other injurious removal devices prohibited. Inline circle hook requirement when fishing with bait, except with artificial lures; mandatory release of catch on any unapproved method of take	All year
RI	≥ 28" and <35"	1 fish/day	Circle required while fishing recreationally with bait for striped bass (except for artificial lures with bait attached); must release if caught on unapproved method of take	All year
CT	≥ 28" and <35"	1 fish/day	Inline circle hooks only when using whole, cut or live natural bait. Exemption of artificial lures/ release of incidental noncircle hook provision (July1st, 2021). Spearing and gaffing prohibited.	All year
NY	Ocean and DE River: Slot Size: 28 -35"	1 fish/day	Angling only. Spearing permitted in ocean waters. C&R only during closed season. Circle hook requirements.	Ocean: 4.15-12.15 Delaware River: All year
	HR: Slot Size: 18 -28"	1 fish/day	Angling only. Circle hook requirements.	Hudson River: 4.1-11.30
NJ	1 fish at 28 to < 38"	1 fish/day	Circle hooks required when fishing with bait; must release if caught on unapproved method of take	Closed 1.1 – Feb 28 in all waters except in the Atlantic Ocean, and closed 4.1-5.31 in the lower DE River and tributaries



(Table 2 continued – Summary of recreational regulations in 2021).

STATE	SIZE LIMITS/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
PA	Upstream from Calhoun St Bridge: 1 fish/day at ≥ 28" to <35"			All year
	Downstream from Calhoun St Bridge: 1 fish/day at ≥ 28" to <35 (except 4.1-5.31)		Circle hooks required when fishing with bait	All year. 20"-<24" slot from 4.1 – 5.31
DE	≥ 28" and <35"	1 fish/day	Hook & line, spear (for divers) only. Inline circle hooks required when fishing for striped bass using cut or whole natural baits	All year. C&R only 4.1-5.31 in spawning grounds. 20"-25" slot from 7.1-8.31 in DE River, Bay & tributaries
MD	Ocean: ≥ 28" and <35"	1 fish/day	Circle hooks if chumming, live-lining, or bait fishing and targeting striped bass	All year
	Chesapeake Bay and tribs^	C&R only	Circle hook requirement with bait; no eels; no stinger hooks; barbless hooks when trolling; max 6 lines when trolling	1.1-2.28, 3.1-3.31, 12.11-12.31
	Chesapeake Bay: 35" min	1 fish/day	Geographic restrictions apply; Circle hook requirement with bait; no eels as bait	5.1-5.15
	Chesapeake Bay: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish >28"		Geographic restrictions apply; circle hooks if chumming, livelining, or bait fishing and targeting striped bass	5.16-5.31
	Chesapeake Bay and tribs: 1 fish/day, 19" minimum size; 2/fish/day for charter with only 1 fish >28"		All Bay and tribs open; circle hooks if chumming, livelining, or bait fishing and targeting striped bass	6.1-7.15, 8.1-12.10

^ Susquehanna Flats: C&R only Jan 1 – March 31 (circle hooks when bait fishing); 1 fish at 19"-26" slot May 16 – May 31 (circle hooks if chumming, livelining, or bait fishing and targeting striped bass).

(Table 2 continued – Summary of recreational regulations in 2021).

STATE	SIZE LIMITS/REGION	BAG LIMIT	GEAR/FISHING RESTRICTIONS	OPEN SEASON
<b>PRFC</b>	Spring Trophy: 35" minimum size	1 fish/day	No more than two hooks or sets of hooks for each rod or line; no live eel; no high-grading; non-offset Circle Hooks are required when fishing for striped bass using cut or whole natural bait.	5.1-5.15
	Summer and Fall: 20" min	2 fish/day	No more than two hooks or sets of hooks for each rod or line; non-offset Circle Hooks are required when fishing for striped bass using cut or whole natural bait.	5.16-7.6 and 8.21-12.31; closed 7.7-8.20 (No Direct Targeting)
<b>DC</b>	18" minimum size	1 fish/day	Hook and line only	5.16-12.31
<b>VA</b>	Ocean: 28"-36" slot limit	1 fish/day	Hook & line, rod & reel, hand line only. No gaffing. Circle hooks required if/when using live bait	1.1-3.31, 5.16-12.31
	Ocean Spring Trophy: NO SPRING TROPHY SEASON			
	Chesapeake Bay Spring Trophy: NO SPRING TROPHY SEASON			
	Bay Spring/Summer: 20"-28" slot limit	1 fish/day	Hook & line, rod & reel, hand line only. No gaffing. Circle hooks required if/when using live bait.	5.16-6.15
Bay Fall: 20 - 36" slot limit	1 fish/day	Hook & line, rod & reel, hand line only. No gaffing. Circle hooks required if/when using live bait.	10.4-12.31	
<b>NC</b>	≥ 28" and <35"	1 fish/day	No gaffing allowed. Circle hooks required when fishing with natural bait.	All year

Table 3. Total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1991-2021 calendar years. Note: Harvest is from state compliance reports/MRIP (June 2022), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from NC.

Year	Commercial		Recreational		Total Removals
	Harvest	Dead Discards*	Harvest	Release Mortality	
1991	158,491	90,329	798,260	715,478	1,762,557
1992	256,476	189,814	869,779	937,611	2,253,681
1993	314,526	114,317	789,037	812,404	2,030,284
1994	325,401	165,700	1,055,523	1,360,872	2,907,496
1995	537,412	192,368	2,287,578	2,010,689	5,028,047
1996	854,102	257,506	2,487,422	2,600,526	6,199,556
1997	1,076,561	324,445	2,774,981	2,969,781	7,145,769
1998	1,215,219	346,537	2,915,390	3,259,133	7,736,278
1999	1,223,572	347,186	3,123,496	3,140,905	7,835,158
2000	1,216,812	213,863	3,802,477	3,044,203	8,277,354
2001	931,412	175,815	4,052,474	2,449,599	7,609,300
2002	928,085	187,084	4,005,084	2,792,200	7,912,453
2003	854,326	126,274	4,781,402	2,848,445	8,610,447
2004	879,768	156,026	4,553,027	3,665,234	9,254,055
2005	970,403	142,385	4,480,802	3,441,928	9,035,518
2006	1,047,648	152,308	4,883,961	4,812,332	10,896,250
2007	1,015,114	158,078	3,944,679	2,944,253	8,062,124
2008	1,027,824	108,830	4,381,186	2,391,200	7,909,039
2009	1,050,055	133,317	4,700,222	1,942,061	7,825,654
2010	1,031,448	132,373	5,388,440	1,760,759	8,313,020
2011	944,777	82,015	5,006,358	1,482,029	7,515,180
2012	870,684	192,190	4,046,299	1,847,880	6,957,053
2013	784,379	112,620	5,157,760	2,393,425	8,448,184
2014	750,263	114,065	4,033,746	2,172,342	7,070,415
2015	621,952	88,614	3,085,725	2,307,133	6,103,425
2016	609,028	91,186	3,500,434	2,981,430	7,182,077
2017	592,670	98,801	2,937,911	3,421,110	7,050,492
2018	621,123	101,264	2,244,765	2,826,667	5,793,819
2019	653,807	85,262	2,150,936	2,589,045	5,479,050
2020	583,070	58,641	1,709,973	2,760,231	5,111,915
2021	634,552	85,676	1,824,484	2,572,931	5,117,643

\* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added.

Table 4. Proportion of total removals (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish, 1991-2021. Note: Harvest is from state compliance reports/MRIP (June 2022), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from NC.

Year	Commercial		Recreational	
	Harvest	Dead Discards*	Harvest	Release Mortality
1991	9%	5%	45%	41%
1992	11%	8%	39%	42%
1993	15%	6%	39%	40%
1994	11%	6%	36%	47%
1995	11%	4%	45%	40%
1996	14%	4%	40%	42%
1997	15%	5%	39%	42%
1998	16%	4%	38%	42%
1999	16%	4%	40%	40%
2000	15%	3%	46%	37%
2001	12%	2%	53%	32%
2002	12%	2%	51%	35%
2003	10%	1%	56%	33%
2004	10%	2%	49%	40%
2005	11%	2%	50%	38%
2006	10%	1%	45%	44%
2007	13%	2%	49%	37%
2008	13%	1%	55%	30%
2009	13%	2%	60%	25%
2010	12%	2%	65%	21%
2011	13%	1%	67%	20%
2012	13%	3%	58%	27%
2013	9%	1%	61%	28%
2014	11%	2%	57%	31%
2015	10%	1%	51%	38%
2016	8%	1%	49%	42%
2017	8%	1%	42%	49%
2018	11%	2%	39%	49%
2019	12%	2%	39%	47%
2020	11%	1%	33%	54%
2021	12%	2%	36%	50%

\* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added. Note: Percent may not sum to 100 due to rounding.

Table 5. Total harvest of Atlantic striped bass by sector, 1991-2021 calendar years. Note: Harvest is from state compliance reports/MRIP (Query June 2022). Estimates exclude inshore harvest from North Carolina.

Year	Numbers of Fish			Pounds		
	Commercial	Recreational	Total	Commercial	Recreational	Total
1991	158,491	798,260	956,751	966,096	10,640,601	11,606,697
1992	256,476	869,779	1,126,255	1,508,103	11,921,967	13,430,070
1993	314,526	789,037	1,103,563	1,800,176	10,163,767	11,963,943
1994	325,401	1,055,523	1,380,924	1,877,197	14,737,911	16,615,108
1995	537,412	2,287,578	2,824,990	3,775,278	27,072,321	30,847,599
1996	854,102	2,487,422	3,341,524	4,822,864	28,625,685	33,448,549
1997	1,076,561	2,774,981	3,851,542	6,078,566	30,616,093	36,694,659
1998	1,215,219	2,915,390	4,130,609	6,551,623	29,603,199	36,154,822
1999	1,223,572	3,123,496	4,347,068	6,485,079	33,564,988	40,050,067
2000	1,216,812	3,802,477	5,019,289	6,715,044	34,050,817	40,765,861
2001	931,412	4,052,474	4,983,886	6,266,953	39,263,154	45,530,107
2002	928,085	4,005,084	4,933,169	6,152,583	41,840,025	47,992,608
2003	854,326	4,781,402	5,635,728	6,750,799	54,091,836	60,842,635
2004	879,768	4,553,027	5,432,795	7,340,822	53,031,074	60,371,896
2005	970,403	4,480,802	5,451,205	7,120,647	57,421,174	64,541,821
2006	1,047,648	4,883,961	5,931,609	6,780,541	50,674,431	57,454,972
2007	1,015,114	3,944,679	4,959,793	7,047,179	42,823,614	49,870,793
2008	1,027,824	4,381,186	5,409,010	7,190,800	56,665,318	63,856,118
2009	1,050,055	4,700,222	5,750,277	7,217,484	54,411,389	61,628,873
2010	1,031,448	5,388,440	6,419,888	6,996,713	61,431,360	68,428,073
2011	944,777	5,006,358	5,951,135	6,789,792	59,592,092	66,381,884
2012	870,684	4,046,299	4,916,983	6,516,761	53,256,619	59,773,380
2013	784,379	5,157,760	5,942,139	5,819,678	65,057,289	70,876,967
2014	750,263	4,033,746	4,784,009	5,937,949	47,948,610	53,886,559
2015	621,952	3,085,725	3,707,677	4,829,997	39,898,799	44,728,796
2016	609,028	3,500,434	4,109,462	4,848,772	43,671,532	48,520,304
2017	592,670	2,937,911	3,530,581	4,816,395	37,952,581	42,768,976
2018	621,123	2,244,765	2,865,888	4,741,342	23,069,028	27,810,370
2019	653,807	2,150,936	2,804,743	4,284,831	23,556,287	27,841,118
2020	583,070	1,709,973	2,293,043	3,620,031	14,858,984	18,479,015
2021	634,552	1,824,484	2,459,036	4,287,048	15,666,527	19,953,575

Table 6. Commercial harvest by region in pounds (x1000), 1995-2021 calendar years. Source: State compliance reports.

^Estimates exclude inshore harvest.

Year	Ocean								Chesapeake Bay				Grand Total
	MA	RI	NY	DE	MD	VA	NC^	Total	MD	PRFC	VA	Total	
1995	751.5	113.5	500.8	38.2	79.3	46.2	344.6	1,874.0	1,185.0	198.5	517.8	1,901.3	3,775.3
1996	695.9	122.6	504.4	120.5	75.7	165.9	58.2	1,743.2	1,487.7	346.8	1,245.2	3,079.7	4,822.9
1997	784.9	96.5	460.8	166.0	94.0	179.1	463.1	2,244.4	2,119.2	731.9	983.0	3,834.2	6,078.6
1998	810.1	94.7	485.9	163.2	84.6	375.0	273.0	2,286.6	2,426.7	726.2	1,112.2	4,265.1	6,551.6
1999	766.2	119.7	491.8	187.1	62.6	614.8	391.5	2,633.7	2,274.8	653.3	923.4	3,851.4	6,485.1
2000	796.2	111.8	542.7	140.6	149.7	932.7	162.4	2,836.0	2,261.8	666.0	951.2	3,879.0	6,715.0
2001	815.4	129.7	633.1	198.8	113.9	782.4	381.1	3,054.3	1,660.9	658.7	893.1	3,212.6	6,267.0
2002	924.9	129.2	518.6	160.6	93.2	710.2	441.0	2,977.6	1,759.4	521.0	894.4	3,174.9	6,152.6
2003	1,055.5	190.2	753.3	191.5	103.9	166.4	201.2	2,662.1	1,721.8	676.6	1,690.4	4,088.7	6,750.8
2004	1,214.2	232.3	741.7	182.2	134.2	161.3	605.4	3,271.2	1,790.3	772.3	1,507.0	4,069.6	7,340.8
2005	1,102.2	215.6	689.8	173.1	46.9	185.2	604.5	3,017.4	2,008.7	533.6	1,561.0	4,103.3	7,120.6
2006	1,322.3	221.4	688.4	179.5	91.1	195.0	74.2	2,771.8	2,116.3	673.5	1,219.0	4,008.7	6,780.5
2007	1,039.3	240.6	731.5	188.7	96.3	162.3	379.5	2,838.1	2,240.6	599.3	1,369.2	4,209.1	7,047.2
2008	1,160.3	245.9	653.1	188.8	118.0	163.1	288.4	2,817.7	2,208.0	613.8	1,551.3	4,373.1	7,190.8
2009	1,134.3	234.8	789.9	192.4	127.3	140.4	190.0	2,809.1	2,267.3	727.8	1,413.3	4,408.4	7,217.5
2010	1,224.5	248.9	786.8	185.4	44.8	127.8	276.4	2,894.7	2,105.8	683.2	1,313.0	4,102.0	6,996.7
2011	1,163.9	228.2	855.3	188.6	21.4	158.8	246.4	2,862.5	1,955.1	694.2	1,278.1	3,927.3	6,789.8
2012	1,218.5	239.9	683.8	194.3	77.6	170.8	7.3	2,592.0	1,851.4	733.7	1,339.6	3,924.7	6,516.8
2013	1,004.5	231.3	823.8	191.4	93.5	182.4	0.0	2,526.9	1,662.2	623.8	1,006.8	3,292.8	5,819.7
2014	1,138.5	216.9	531.5	167.9	120.9	183.7	0.0	2,359.4	1,805.7	603.4	1,169.4	3,578.5	5,937.9
2015	866.0	188.3	516.3	144.1	34.6	138.1	0.0	1,887.5	1,436.9	538.0	967.6	2,942.5	4,830.0
2016	938.7	174.7	575.0	136.5	19.7	139.2	0.0	1,983.9	1,425.5	537.1	902.3	2,864.9	4,848.8
2017	823.4	175.3	701.2	141.8	80.5	133.9	0.0	2,056.1	1,439.8	492.7	827.8	2,760.3	4,816.4
2018	753.7	176.6	617.2	155.0	79.8	134.2	0.0	1,916.6	1,424.3	449.4	951.0	2,824.7	4,741.3
2019	584.7	144.2	358.9	132.6	82.8	138.0	0.0	1,441.2	1,475.2	417.3	951.1	2,843.6	4,284.8
2020	386.9	115.9	530.5	138.0	83.6	77.2	0.0	1,332.2	1,273.8	400.3	613.8	2,287.9	3,620.0
2021 <sup>+</sup>	732.1	130.3	629.5	140.3	88.7	119.9	0.0	1,840.7	1,305.3	411.3	729.7	2,446.4	4,287.0

+ Maryland commercial landings for 2021 are considered preliminary.

Table 7. Commercial harvest and discards by region in numbers of fish (x1000), 1995-2021 calendar years. Source: harvest is from state compliance reports, discards is from ASMFC. ^Estimates exclude inshore harvest.

Year	Ocean								Chesapeake Bay				Discards*			Grand Total Removals
	MA	RI	NY	DE	MD	VA	NC^	Total	MD	PRFC	VA	Total	Ocean	Bay	Total	
1995	39.9	19.7	43.7	5.6	4.0	9.9	23.4	146.1	267.0	29.3	95.0	391.3	150.5	41.8	192.4	729.8
1996	37.3	18.6	40.5	20.7	9.0	14.1	3.3	143.5	486.2	46.2	178.2	710.6	165.3	92.2	257.5	1,111.6
1997	44.0	7.1	37.6	33.2	8.4	17.3	25.8	173.4	620.3	87.7	195.2	903.2	237.9	86.5	324.4	1,401.0
1998	44.3	8.8	45.1	31.4	10.3	41.1	14.2	195.2	729.6	93.3	197.1	1,020.1	308.3	38.2	346.5	1,561.8
1999	40.9	11.6	49.9	34.8	10.2	48.7	21.1	217.2	776.0	90.6	139.8	1,006.3	312.5	34.7	347.2	1,570.8
2000	42.1	9.4	54.9	25.2	13.3	54.5	6.5	205.8	787.6	91.5	132.0	1,011.0	183.0	30.9	213.9	1,430.7
2001	45.8	10.9	58.3	34.4	11.1	42.3	25.0	227.7	538.8	87.8	77.1	703.7	140.0	35.8	175.8	1,107.2
2002	49.8	11.7	47.1	30.4	10.2	38.8	23.2	211.3	571.7	80.3	64.7	716.8	142.7	44.4	187.1	1,115.2
2003	56.4	15.5	68.4	31.5	11.6	10.5	5.8	199.6	427.9	83.1	143.7	654.7	91.9	34.3	126.3	980.6
2004	63.6	16.0	70.4	28.4	14.1	10.4	31.0	233.9	447.0	92.6	106.3	645.9	106.5	49.5	156.0	1,035.8
2005	60.5	14.9	70.6	26.3	6.1	11.3	27.3	217.1	563.9	80.6	108.9	753.3	85.3	57.1	142.4	1,112.8
2006	70.5	15.4	73.6	30.2	10.9	11.5	2.7	214.9	645.1	92.3	95.4	832.7	97.1	55.2	152.3	1,200.0
2007	54.2	13.9	78.5	31.1	11.6	10.6	16.8	216.7	587.6	86.5	124.3	798.4	93.4	64.6	158.1	1,173.2
2008	61.1	16.6	73.3	31.9	14.0	10.8	13.4	221.0	580.7	82.0	144.1	806.8	63.1	45.7	108.8	1,136.7
2009	59.4	16.8	82.6	21.8	12.5	8.9	9.0	211.1	605.6	89.6	143.8	839.0	59.2	74.1	133.3	1,183.4
2010	60.4	15.7	82.4	19.8	5.4	9.4	13.7	206.8	579.2	90.6	154.9	824.7	39.2	93.2	132.4	1,163.8
2011	58.7	14.3	87.4	20.5	2.1	12.2	10.9	206.0	488.9	96.1	153.7	738.7	34.1	47.9	82.0	1,026.8
2012	61.5	15.0	67.1	15.7	6.9	10.8	0.3	177.3	465.6	90.7	137.0	693.4	25.1	167.1	192.2	1,062.9
2013	58.6	13.8	76.2	17.7	7.6	10.0	0.0	183.8	391.5	78.0	131.0	600.5	37.3	75.3	112.6	897.0
2014	58.0	10.5	52.9	14.9	8.5	10.0	0.0	154.8	362.2	81.5	151.8	595.5	49.1	65.0	114.1	864.3
2015	42.3	11.3	45.6	11.0	2.6	7.7	0.0	120.4	298.3	71.0	132.2	501.5	37.1	51.5	88.6	710.6
2016	48.0	11.7	51.0	8.8	1.2	7.6	0.0	128.3	284.9	73.7	122.2	480.8	45.1	46.1	91.2	700.2
2017	41.2	10.1	61.6	9.5	3.5	7.6	0.0	133.5	263.6	67.5	128.0	459.2	78.4	20.4	98.8	691.5
2018	37.8	10.1	52.2	11.4	3.5	6.9	0.0	121.9	286.4	64.4	148.4	499.3	56.8	44.5	101.3	722.4
2019	29.6	7.3	29.6	8.2	3.3	6.9	0.0	84.9	356.7	62.6	149.6	568.9	18.2	67.1	85.3	739.1
2020	19.6	5.037	49.3	8.4	3.4	4.42	0.0	90.2	299.9	66.6	126.4	492.9	24.8	33.8	58.6	641.7
2021+	36.9	4.6	58.8	9.2	3.6	6.6	0.0	119.6	300.7	68.0	146.2	514.9	14.0	71.7	85.7	720.2

\* Commercial dead discard estimates are derived via a generalized additive model (GAM), and are therefore re-estimated for the entire time series when a new year of data is added. + Maryland commercial landings for 2021 are considered preliminary.

Table 8. Total recreational catch, releases, and release mortality in numbers of fish by region (x1000), 1995-2021. Source: MRIP (Query June 2022).  
 Estimates exclude inshore harvest from North Carolina.

Year	Harvest (A+B1)			Releases (B2)			Total Catch (A+B1+B2)			Release Mortality (9% of B2)		
	Ocean	Bay	Total	Ocean	Bay	Total	Ocean	Bay	Total	Ocean	Bay	Total
1995	1,260	1,028	2,288	16,587	5,754	22,341	17,847	6,782	24,629	1,493	518	2,011
1996	1,362	1,125	2,487	22,384	6,511	28,895	23,746	7,636	31,382	2,015	586	2,601
1997	1,514	1,261	2,775	22,819	10,178	32,998	24,333	11,439	35,773	2,054	916	2,970
1998	1,647	1,268	2,915	29,294	6,918	36,213	30,941	8,187	39,128	2,637	623	3,259
1999	1,758	1,366	3,123	26,139	8,760	34,899	27,897	10,125	38,022	2,353	788	3,141
2000	2,198	1,604	3,802	25,090	8,734	33,824	27,289	10,338	37,627	2,258	786	3,044
2001	2,758	1,294	4,052	21,073	6,145	27,218	23,831	7,440	31,270	1,897	553	2,450
2002	2,756	1,249	4,005	23,653	7,371	31,024	26,409	8,620	35,030	2,129	663	2,792
2003	3,124	1,658	4,781	20,678	10,971	31,649	23,802	12,628	36,431	1,861	987	2,848
2004	3,078	1,475	4,553	27,868	12,857	40,725	30,946	14,332	45,278	2,508	1,157	3,665
2005	3,182	1,299	4,481	28,663	9,580	38,244	31,845	10,879	42,724	2,580	862	3,442
2006	2,789	2,095	4,884	41,239	12,232	53,470	44,028	14,327	58,354	3,711	1,101	4,812
2007	2,327	1,618	3,945	25,135	7,579	32,714	27,462	9,196	36,659	2,262	682	2,944
2008	3,025	1,356	4,381	21,878	4,691	26,569	24,904	6,046	30,950	1,969	422	2,391
2009	2,898	1,803	4,700	16,740	4,838	21,578	19,638	6,641	26,279	1,507	435	1,942
2010	3,906	1,483	5,388	13,606	5,957	19,564	17,512	7,440	24,952	1,225	536	1,761
2011	3,617	1,389	5,006	12,644	3,823	16,467	16,261	5,212	21,473	1,138	344	1,482
2012	3,071	975	4,046	11,242	9,290	20,532	14,314	10,265	24,578	1,012	836	1,848
2013	3,723	1,435	5,158	19,463	7,131	26,594	23,186	8,565	31,751	1,752	642	2,393
2014	2,276	1,758	4,034	15,107	9,031	24,137	17,382	10,789	28,171	1,360	813	2,172
2015	1,770	1,316	3,086	15,419	10,216	25,635	17,189	11,532	28,721	1,388	919	2,307
2016	1,817	1,683	3,500	17,794	15,333	33,127	19,611	17,016	36,627	1,601	1,380	2,981
2017	1,738	1,200	2,938	28,963	9,050	38,012	30,701	10,249	40,950	2,607	814	3,421
2018	1,195	1,050	2,245	22,739	8,669	31,407	23,933	9,719	33,652	2,046	780	2,827
2019	1,342	809	2,151	21,131	7,636	28,767	22,473	8,445	30,918	1,902	687	2,589
2020	923	787	1,710	22,710	7,959	30,669	23,633	8,746	32,379	2,044	716	2,760
2021	1,189	636	1,824	24,281	4,307	28,588	25,470	4,943	30,413	2,185	388	2,573



Table 9. Recreational harvest by region in pounds (x1000), 1995-2021. Source: MRIP (Query June 2022). ^Estimates exclude NC inshore harvest.

Year	Ocean												Chesapeake Bay			Grand Total
	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC^	Total	MD	VA	Total	
1995	83	127	2,739	1,049	1,331	5,594	8,587	301	0.0	141	232	20,184	3,115	3,773	6,889	27,072
1996	95	183	2,983	1,626	1,405	10,739	3,959	795	0.0	812	392	22,990	2,789	2,847	5,636	28,626
1997	223	538	5,133	1,997	2,263	8,543	2,179	374	0.0	1,096	865	23,211	3,203	4,203	7,405	30,616
1998	305	262	7,359	1,544	1,807	4,889	4,182	645	579	545	636	22,754	3,023	3,826	6,849	29,603
1999	196	181	4,995	1,904	1,327	7,414	9,473	312	3.8	110	339	26,256	2,323	4,986	7,309	33,565
2000	347	109	4,863	2,008	890	7,053	9,768	925	0.0	416	277	26,656	3,503	3,892	7,395	34,051
2001	446	334	7,188	2,044	1,101	5,058	12,314	695	314	382	1,082	30,959	2,928	5,376	8,304	39,263
2002	775	322	10,261	2,708	1,251	5,975	9,621	589	0.0	1,135	998	33,634	2,643	5,563	8,206	41,840
2003	458	466	10,252	4,052	2,666	10,788	12,066	763	14	392	966	42,882	5,246	5,964	11,210	54,092
2004	554	268	9,329	2,460	2,229	6,437	13,303	870	57	1,067	6,656	43,230	4,860	4,941	9,801	53,031
2005	546	384	7,541	3,155	3,133	11,637	14,289	680	7.7	487	3,947	45,808	7,753	3,860	11,614	57,421
2006	610	244	6,787	1,569	2,854	9,845	12,716	586	2.8	921	2,975	39,109	6,494	5,071	11,565	50,674
2007	422	93	7,010	2,077	2,786	10,081	8,390	207	0.0	516	1,965	33,547	5,249	4,027	9,277	42,824
2008	607	182	8,424	970	2,273	18,000	12,407	847	0.0	1,690	750	46,150	5,639	4,877	10,515	56,665
2009	781	222	9,410	2,185	1,458	7,991	17,040	940	138	48	187	40,399	8,672	5,340	14,012	54,411
2010	218	238	9,959	2,102	2,323	18,190	17,454	895	107	206	1,198	52,891	6,482	2,059	8,541	61,431
2011	245	659	11,953	3,066	981	13,151	15,715	605	8.6	308	4,467	51,157	6,220	2,214	8,435	59,592
2012	152	432	14,941	2,096	1,835	13,096	11,551	644	21	1.7	0.0	44,768	3,819	4,670	8,488	53,257
2013	331	831	9,025	4,428	4,236	16,819	19,451	1,073	1,051	67	0.0	57,313	5,137	2,607	7,744	65,057
2014	423	203	7,965	3,402	2,665	13,998	8,886	381	159	0.0	0.0	38,083	8,877	989	9,866	47,949
2015	132	202	7,799	1,394	2,585	8,695	9,982	340	28	0.0	0.0	31,156	7,786	957	8,743	39,899
2016	189	191	3,731	1,776	912	12,053	12,790	86	7.2	0.0	0.0	31,735	10,912	1,024	11,936	43,672
2017	318	394	5,664	1,655	1,560	8,885	10,886	666	0.0	1.8	0.0	30,030	7,309	613	7,922	37,953
2018	142	130	4,925	1,121	1,165	3,453	7,012	33	0.0	0.0	0.0	17,982	4,683	404	5,087	23,069
2019	415	291	2,698	2,300	685	7,072	6,674	44	7.3	0.0	0.0	20,187	3,145	224	3,370	23,556
2020	180	29	776	483	830	2,202	6,584	16	0.0	0.0	0.0	11,100	3,480	280	3,759	14,859
2021	89	36	1,826	597	201	1,492	8,313	132	0.0	0.0	0.0	12,686	2,682	299	2,981	15,667

Table 10. Recreational harvest by region in numbers of fish (x1000), 1995-2021. Source: MRIP (Query June 2022). ^Estimates exclude NC inshore harvest.

Year	Ocean												Chesapeake Bay			Grand Total
	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC^	Total	MD	VA	Total	
1995	4.0	7.4	124.3	70.9	75.8	250.3	671.4	25.8	0.1	13.4	16.5	1,259.8	491.1	536.7	1,027.7	2,287.6
1996	4.1	11.0	156.6	100.6	95.9	511.6	301.2	59.7	0.0	89.6	31.7	1,362.0	564.2	561.3	1,125.5	2,487.4
1997	43.0	29.9	365.6	124.7	149.0	450.5	171.2	29.1	0.0	91.1	60.1	1,514.1	552.4	708.4	1,260.8	2,775.0
1998	65.3	14.8	500.9	91.1	114.1	383.8	289.2	51.0	24.3	71.3	41.2	1,647.0	596.2	672.2	1,268.4	2,915.4
1999	37.5	9.9	327.1	116.6	88.2	450.9	657.1	28.3	1.6	14.1	26.4	1,757.8	530.9	834.8	1,365.7	3,123.5
2000	77.3	6.0	306.2	156.8	84.0	494.6	939.8	88.3	0.0	27.2	18.1	2,198.3	810.9	793.3	1,604.2	3,802.5
2001	91.9	23.5	551.0	149.8	78.2	364.2	1,267.5	70.6	64.1	36.7	60.7	2,758.1	513.3	781.1	1,294.4	4,052.5
2002	135.2	28.1	723.5	181.5	92.5	439.3	957.6	65.7	0.0	76.4	56.3	2,756.1	464.4	784.6	1,249.0	4,005.1
2003	99.7	41.3	797.2	226.4	181.7	678.4	942.8	75.7	0.9	29.3	50.4	3,123.8	816.0	841.6	1,657.6	4,781.4
2004	118.3	22.1	666.7	159.6	134.5	458.1	1,042.1	66.6	11.0	75.9	323.2	3,078.1	657.5	817.4	1,474.9	4,553.0
2005	118.3	35.5	536.1	195.6	202.6	854.6	958.1	48.8	3.6	34.2	194.9	3,182.2	815.5	483.1	1,298.6	4,480.8
2006	140.9	20.9	483.2	129.3	168.3	614.8	972.2	44.5	0.4	80.6	134.2	2,789.0	1,342.0	753.0	2,094.9	4,884.0
2007	95.5	8.1	471.9	135.8	163.9	602.8	722.2	17.2	0.0	28.0	81.8	2,327.1	1,127.3	490.3	1,617.6	3,944.7
2008	133.4	11.9	514.1	73.4	132.8	1,169.9	791.0	67.7	0.0	94.4	36.9	3,025.4	779.7	576.1	1,355.8	4,381.2
2009	146.5	17.3	695.0	138.4	100.3	574.2	1,141.5	64.8	10.2	3.0	6.5	2,897.7	1,094.4	708.1	1,802.5	4,700.2
2010	37.3	21.4	808.2	162.0	170.2	1,449.0	1,091.4	61.4	12.5	25.3	67.1	3,905.9	1,139.3	343.2	1,482.6	5,388.4
2011	48.5	54.2	873.5	202.2	91.1	1,005.3	1,038.9	43.7	0.8	51.2	207.6	3,617.1	1,112.1	277.2	1,389.3	5,006.4
2012	31.4	37.3	1,010.6	130.7	137.1	927.5	742.4	51.3	2.9	0.3	0.0	3,071.5	716.7	258.1	974.8	4,046.3
2013	73.3	63.2	658.7	308.3	269.6	902.5	1,324.2	70.6	48.4	4.4	0.0	3,723.2	1,136.7	297.9	1,434.5	5,157.8
2014	86.4	16.5	523.5	172.0	131.8	804.5	501.9	26.2	12.6	0.0	0.0	2,275.5	1,627.0	131.2	1,758.2	4,033.7
2015	14.4	10.0	485.3	67.0	140.8	406.8	600.3	41.9	3.5	0.0	0.0	1,770.1	1,108.0	207.7	1,315.7	3,085.7
2016	14.2	17.6	230.1	128.4	63.3	697.7	659.6	5.9	0.5	0.0	0.0	1,817.2	1,545.1	138.1	1,683.2	3,500.4
2017	22.0	37.7	392.3	59.8	94.9	477.3	626.4	27.8	0.0	0.1	0.0	1,738.3	1,091.6	108.0	1,199.6	2,937.9
2018	16.0	13.4	389.5	39.2	85.5	181.7	465.3	4.2	0.0	0.0	0.0	1,194.6	993.3	56.8	1,050.1	2,244.8
2019	38.0	14.7	195.6	104.1	67.1	498.0	412.9	10.9	1.0	0.0	0.0	1,342.2	764.1	44.6	808.7	2,150.9
2020	19.0	3.2	67.2	36.9	71.2	203.7	520.1	1.6	0.0	0.0	0.0	922.9	734.8	52.2	787.0	1,710.0
2021	12.7	4.4	179.1	57.7	21.2	137.8	766.2	9.5	0.0	0.0	0.0	1,188.6	583.7	52.2	635.9	1,824.5

Table 11. Results of 2021 commercial quota accounting in pounds. Source: 2022 state compliance reports. 2021 quota was based on Addendum VI and approved conservation equivalency programs.

State	Add VI (base)	2021 Quota <sup>^</sup>	2021 Harvest	Overage
<b>Ocean</b>				
Maine*	154	154	-	-
New Hampshire*	3,537	3,537	-	-
Massachusetts	713,247	735,240	732,071	0
Rhode Island	148,889	148,889	130,308	0
Connecticut*	14,607	14,607	-	-
New York	652,552	640,718	629,491	0
New Jersey**	197,877	215,912	-	-
Delaware	118,970	142,474	140,250	0
Maryland	74,396	89,094	88,652 <sup>+</sup>	0
Virginia	113,685	125,034	119,921	0
North Carolina	295,495	295,495	0	0
<b>Ocean Total</b>	<b>2,333,409</b>	<b>2,411,154</b>	<b>1,840,693</b>	<b>0</b>
<b>Chesapeake Bay</b>				
Maryland	<b>2,588,603</b>	1,445,394	1,305,276 <sup>+</sup>	0
Virginia		983,393	729,736	0
PRFC		572,861	400,414	0
<b>Bay Total</b>		<b>3,001,648</b>	<b>2,435,126</b>	<b>0</b>

Note: North Carolina's fishing year is December-November; PRFC's fishing year for gill nets is November-March.

\* Commercial harvest/sale prohibited, with no re-allocation of quota.

\*\* Commercial harvest/sale prohibited, with re-allocation of quota to the recreational fishery.

<sup>^</sup> 2020 quota changed through conservation equivalency for MA (735,240 lbs), NY (640,718 lbs), NJ (215,912 lbs), DE (142,474 lbs), MD (ocean: 89,094 lbs; bay: 1,445,394 lbs), PRFC (572,861 lbs), VA (ocean: 125,034 lbs; bay: 983,393 lbs).

<sup>+</sup> Maryland commercial landings for 2021 are considered preliminary.

Table 12a. Number of directed trips for Atlantic striped bass (primary and secondary target) from Maine through North Carolina (excluding inshore NC) for 2017-2021. Source: MRIP (Query June 2022).

Year	Ocean	Chesapeake Bay	Coastwide Total
2017	16,794,554	2,634,244	<b>19,428,798</b>
2018	15,686,903	2,650,311	<b>18,337,214</b>
2019	16,189,653	1,967,387	<b>18,157,040</b>
2020	15,859,277	2,678,922	<b>18,538,199</b>
2021	16,017,420	2,183,568	<b>18,200,988</b>

Table 12b. Number of directed trips (x1000) for Atlantic striped bass (primary and secondary target) in the ocean region from Maine through North Carolina (excluding inshore NC) for 2019-2021 with size/bag limits noted each year. Source: MRIP Query June 2022.

Ocean ME-NY and NC								
Year	Size/Bag	ME	NH	MA	RI	CT	NY*	NC
2019	28" min 1 fish	1,216	433	4,366	1,141	1,057	4,003	25
2020	28 to <35" 1 fish	1,498	569	3,203	934	1,278	4,210	3
2021	1 fish	1,340	527	4,252	1,047	1,133	3,296	23

Ocean NJ-VA								
Year	NJ		DE <sup>^</sup>		MD		VA	
2019	28 to <43", 1 fish and ≥43", 1 fish		3,592	28" min (no 38-43") 2 fish	255	28-38"/>44" 2 fish	57	28-36" 1 fish
2020	28" to <38" 1 fish		3,818	28 to <35" 1 fish	254	28 to <35" 1 fish	68	44
2021	1 fish		4,137	1 fish	236	1 fish	23	25
								2

\*NY Hudson River 18-28" 1 fish (or ≥40 in 2019)

<sup>^</sup>DE: 20-25" from 7.1 – 8.31

Table 12c. Number of directed trips (x1000) for Atlantic striped bass (primary and secondary target) in the Chesapeake Bay for 2019-2021 with size/bag limits noted each year. Source: MRIP Query June 2022.

Chesapeake Bay			
Year	MD		VA
2019	Trophy: 35" min, 1 fish Summer/Fall: 19" min, 2 fish (1 over 28")		1,651
2020	Trophy: 35" min, 1 fish Summer/Fall: 19" min, 1 fish		2,279
2021	(2 fish/day charter, 1 over 28")		1,935
			316
			400
			248

Tables 13a-13c. Total removals in numbers of fish (harvest plus discards/release mortality) of Atlantic striped bass by sector in numbers of fish for 2017, 2020, and 2021. Harvest is from state compliance reports/MRIP (Query June 2022), discards/release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina.

Table 13a. Coastwide removals in numbers of fish for 2017 and 2021.

	Commercial		Recreational		Total	
	Commercial Removals	% Change from 2017	Recreational Removals	% Change from 2017	Total Removals	% Change from 2017
2017	691,471	-	6,359,021	-	7,050,492	-
2020	641,711	-7%	4,470,204	-30%	5,111,915	<b>-27.5%</b>
2021	720,228	+4%	4,397,415	-31%	5,117,643	<b>-27.4%</b>

Table 13b. Ocean removals in numbers of fish for 2017 and 2021.

	Commercial		Recreational		Total	
	Commercial Removals	% Change from 2017	Recreational Removals	% Change from 2017	Total Removals	% Change from 2017
2017	211,924	-	4,344,953	-	4,556,877	-
2020	115,044	-46%	2,966,848	-32%	3,081,891	<b>-32%</b>
2021	133,578	-37%	3,373,924	-22%	3,507,502	<b>-23%</b>

Table 13c. Chesapeake Bay removals in numbers of fish for 2017 and 2021.

	Commercial		Recreational		Total	
	Commercial Removals	% Change from 2017	Recreational Removals	% Change from 2017	Total Removals	% Change from 2017
2017	479,547	-	2,014,068	-	2,493,615	-
2020	526,667	+10%	1,503,357	-25%	2,030,024	<b>-19%</b>
2021	586,650	+22%	1,023,491	-49%	1,610,141	<b>-35%</b>

Note: Some states chose a less than 18% commercial quota reduction in exchange for a greater than 18% reduction in recreational removals in their CE plans.

Table 14. Realized percent change in recreational removals in numbers of fish (harvest plus release mortality) of Atlantic striped bass by state relative to 2017 and predicted percent change in recreational removals from approved conservation equivalency plans (where applicable). Harvest is from MRIP (Query June 2022), release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina. NA = Percent reduction not calculated if implementing Addendum VI measure.

State	Realized % Change Recreational Harvest from 2017		Realized % Change Recreational Release Mortality from 2017		Realized % Change Rec. Removals (Harvest + Release Mortality) from 2017		Predicted % Change in Rec. Removals from CE Plan
	2020	2021	2020	2021	2020	2021	
Maine	-14%	-42%	-21%	-25%	-21%	-26%	NA
New Hampshire	-92%	-88%	-37%	-71%	-49%	-75%	NA
Massachusetts	-83%	-54%	-60%	-64%	-66%	-61%	NA
Rhode Island	-38%	-4%	-17%	+91%	-23%	+62%	NA
Connecticut	-25%	-78%	-45%	-41%	-41%	-48%	NA
New York	-57%	-71%	+142%	+13%	+11%	-42%	-23.8%
New Jersey	-17%	+22%	+43%	+237%	-2%	+76%	-25%
Delaware	-94%	-66%	+80%	+11%	-16%	-31%	-20%
Maryland	-33%	-47%	-10%	-50%	-24%	-48%	-20.6%
Virginia	-52%	-52%	-31%	-69%	-41%	-61%	-23.4%
North Carolina <sup>^</sup>	-	-	-100%	+305%	-100%	+305%	NA
<b>Coastwide Total</b>	<b>-42%</b>	<b>-38%</b>	<b>-19%</b>	<b>-25%</b>	<b>-30%</b>	<b>-31%</b>	

<sup>^</sup>Offshore recreational harvest for North Carolina was 0 fish in 2017, 2020, and 2021. Offshore estimated release mortality for North Carolina was 463 fish in 2017, 0 fish in 2020, and 1,875 fish in 2021.

**Note:** Increased recreational releases in NY, NJ, and DE contributed to realized reductions in total recreational removals being less than predicted for those states.

Table 15. Percent change in commercial harvest by weight of Atlantic striped bass by state relative to 2017 and percent change in commercial quota from 2017. Note: Harvest is from state compliance reports. Estimates exclude inshore harvest from North Carolina.

State	% Change in Commercial Harvest by weight from 2017		% Change in Commercial Quota <sup>+</sup>
	2020	2021	Add VI
<b>Ocean</b>			
Maine			
New Hampshire			
Massachusetts	-53%	-11%	-18%*
Rhode Island	-34%	-26%	-18%
Connecticut			
New York	-24%	-10%	-18%*
New Jersey			
Delaware	-3%	-1%	-1.8%
Maryland (ocean)	+4%	+10%	-1.8%
Virginia (ocean)	-42%	-10%	-9.8%
North Carolina <sup>^</sup>	-	-	-18%
<b>Ocean Total</b>	<b>-35%</b>	<b>-10%</b>	
<b>Chesapeake Bay</b>			
Maryland (Ches. Bay)	-12%	-9%	-1.8%
PRFC (Ches. Bay)	-19%	-17%	-1.8%
Virginia (Ches. Bay)	-26%	-12%	-7.7%
<b>Chesapeake Bay Total</b>	<b>-17%</b>	<b>-11%</b>	
<b>Coastwide Total</b>	<b>-25%</b>	<b>-11%</b>	

+ 2020-2021 quota changed through conservation equivalency for MA, NY, NJ, DE, MD, PRFC, VA.

\*MA and NY quotas were based on an 18% reduction from 2017 quota and spawner-per-recruit (SPR) analysis that accounted for changing the commercial size limits.

<sup>^</sup>North Carolina reported no ocean commercial harvest in 2017, 2020 and 2021.

Note: Some states chose a less than 18% commercial quota reduction in exchange for a greater than 18% reduction in recreational removals in their CE plans.

Table 16. Contribution of imputed data to 2020 MRIP estimates for Atlantic striped bass by state.  
 Source: MRIP (Query July 8, 2021).

State	Contribution of Imputed Data to Observed Harvest (A) Rate	Contribution of Imputed Data to Reported Harvest (B1) Rate	Contribution of Imputed Data to Released Alive (B2) Rate
Maine	0%	0%	0%
New Hampshire	12%	100%	7%
Massachusetts	4%	2%	3%
Rhode Island	1%	0%	13%
Connecticut	87%	28%	56%
New York	69%	13%	9%
New Jersey	57%	36%	32%
Delaware	59%	0%	13%
Maryland	9%	8%	7%
Virginia	7%	4%	36%
North Carolina	42%	84%	73%

Note from MRIP: Due to COVID-related disruptions to the Access Point Angler Intercept Survey and subsequent gaps in catch records, 2020 catch estimates are based in part on imputed data. Columns labeled 'Contribution of Imputed Data to {ESTIMATE} rate' represent the weighted percentage of catch rate information that can be attributed to imputed catch data.



Table 17. State circle hook requirements (excerpt from state regulations as of June 2022) as compared to the Board-approved bait definition and incidental catch guidance (listed below) for Addendum VI. Source: State regulations (linked in table).

**Y** = state adopted Board-approved bait definition, exemption for artificial lure with bait attached, and/or incidental catch guidance

**MR\*** = state regulations are more restrictive than the bait definition and/or exemption for artificial lure with bait attached

**N** = state has not adopted incidental catch guidance.

*Definition of Bait and Methods of Fishing: Circle hooks are required when fishing for striped bass with bait, which is defined as any marine or aquatic organism live or dead, whole or parts thereof. This shall not apply to any artificial lure with bait attached.*

*Guidance on Incidental Catch: Striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury.*

*\*The PRT assumes that if bait is not specifically defined, the regulation would be considered more restrictive since circle hooks would be required for any type of bait.*

STATE	CIRCLE HOOK REQUIREMENT	BAIT DEFINITION	METHOD EXEMPT	INCIDENTAL CATCH GUIDANCE
<a href="#">ME</a>	It is unlawful to use any hook other than a non-offset circle hook when using bait...Striped bass incidentally caught on any unapproved hook type must be returned to the water immediately without unnecessary injury. <i>Bait is defined as any marine or freshwater organism live or dead, whole or parts thereof, and earthworms, including but not limited to, night crawlers.</i> <b>Exception:</b> Rubber or latex tube rigs will be exempt from the circle hook restriction as long as they conform with the following: the lure must consist of a minimum of 8" of latex or rubber tubing with a single hook protruding from the end portion of the tubing where bait may be attached.	MR	MR	Y
<a href="#">NH</a>	Non-offset, corrodible circle hooks required if angling with bait.	MR*	MR	N
<a href="#">MA</a>	Mandatory Use of Circle Hooks. Recreational fishermen shall use circle hooks when fishing for striped bass with whole or cut natural baits. This shall not apply to any artificial lure. Striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury. <i>Bait means any marine or aquatic organism, live or dead, whole or parts thereof.</i>	Y	Y	Y

(Table 17 continued – Summary of circle hook regulations).

STATE	CIRCLE HOOK REQUIREMENT	BAIT DEFINITION	METHOD EXEMPT	INCIDENTAL CATCH GUIDANCE
<a href="#">RI</a>	<p>F. Circle hooks: 1. The use of circle hooks is required by any person while fishing recreationally with bait for striped bass.</p> <p>a. <i>Bait is defined as any marine or aquatic organism live or dead, whole or parts thereof.</i></p> <p>b. The circle hook requirement shall not apply to any artificial lure with bait attached.</p> <p>2. Striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury.</p>	Y	Y	Y
<a href="#">CT</a>	<p>No person shall engage in angling for striped bass with natural bait unless such person uses an inline circle hook. Any striped bass taken incidentally by use of natural bait on a hook other than an inline circle hook shall be returned immediately to the waters from which taken. The provisions of this subsection (h) shall not apply to any artificial lure with bait attached, or to the use of a fly...<i>For purposes of this subsection, "natural bait" means any organism, in whole or in part, that is live or dead</i></p>	MR	Y	Y
<a href="#">NY</a>	<p>Recreational anglers are required to use a non-offset (inline) circle hook when fishing for striped bass when using <i>any marine or aquatic organism or terrestrial invertebrate, live or dead, whole or parts thereof</i>. This requirement shall not apply to any artificial lure with any marine or aquatic organism or terrestrial invertebrate, live or dead, whole or parts thereof attached. Striped bass caught on any unapproved method of take must be returned to the water immediately without unnecessary injury.</p>	MR	Y	Y
<a href="#">NJ</a>	<p>Hook and line fishermen are restricted to the use of non-offset circle hooks while fishing with bait. Bait is defined as any marine or aquatic organism live or dead, whole, or parts thereof. This restriction shall not apply to an artificial lure with bait attached. A circle hook is a non-offset hook where the point is pointed perpendicularly back towards the shank. Non-offset means that the point and barb are in the same plane as the shank. Striped bass caught using an unapproved method of take must be returned to the water immediately without unnecessary injury.</p>	Y	Y	Y
<a href="#">PA</a>	<p>It is unlawful to fish with bait for any species of fish in the tidal Delaware Estuary, including tributaries from the mouths of the tributaries upstream to the limit of tidal influence using any hook type other than non-offset (in-line) circle hooks.</p>	MR*	MR	N

(Table 17 continued – Summary of circle hook regulations).

STATE	CIRCLE HOOK REQUIREMENT	BAIT DEFINITION	METHOD EXEMPT	INCIDENTAL CATCH GUIDANCE
<a href="#">DE</a>	It is unlawful for any recreational fisherman to fish for striped bass with bait using any hook other than a non-offset circle hook. This shall not apply to any artificial lure with bait attached. <i>"Bait" means any marine or aquatic organism live or dead, whole or parts thereof.</i>	Y	Y	Y
<a href="#">MD</a>	Chesapeake Bay and Tributaries: (2) When fishing for striped bass, a person recreationally angling in the Chesapeake Bay or its tidal tributaries shall only use a circle hook when <i>using fish, crabs, or worms as bait, or processed bait.</i> Atlantic Ocean: When fishing for striped bass, a person recreationally angling in the Atlantic Ocean, its coastal bays, or their tributaries shall only use a circle hook when <i>using fish, crabs, or worms as bait, or processed bait.</i> <i>"Fish" means finfish, crustaceans, mollusks, and amphibians and reptiles which spend the majority of their life cycle in water, and any part, egg, offspring, or dead body of any of these species.</i>	MR	MR	N
<a href="#">PRFC</a>	Non-offset (inline) Circle Hooks are required to be used when using cut or whole natural bait.	MR*	MR	N
<a href="#">DC</a>	The mandatory use of non-offset circle hooks will be required when fishing for striped bass with bait to reduce release mortality in recreational fisheries. In addition to anglers targeting striped bass, a non-offset circle hook will be required regardless of the targeted species when recreationally fishing with <i>bait of any kind (e.g., fish, worms, shrimp, chicken livers, corn, dough balls)</i> and using a hook size of number two (#2) or greater. <i>Bait – does not include artificial lures (bucktails, crankbaits, rigged soft plastics, etc.), but does include any other fresh, frozen, live, cut, scented moldable offering used to attract fish.</i>	MR	Y	N
<a href="#">VA</a>	Any person fishing recreationally shall use non-offset, corrodible, non-stainless steel circle hooks when fishing with bait. <i>"Bait" means any whole or part of any marine or aquatic organism, live or dead.</i>	Y	MR	N
<a href="#">NC</a>	It is unlawful to fish for or possess striped bass from the Atlantic Ocean for recreational purposes using hook and line gear with natural bait unless using a non-stainless steel, non-offset (inline) circle hook, regardless of tackle or lure configuration. <i>Natural bait is defined as any living or dead organism (animal or plant) or parts thereof.</i>	MR	MR	N

Table 18. Status of Commercial Tagging Programs by state for 2021.

State	Total Participants	Tags Issued	Tags Used	Tags Returned	Tags Not Accounted For <sup>1</sup>	Point of Tag (sale/harvest)	Biological Metric <sup>2</sup> (Y/N)	Year, State and Unique ID on Tag (Y/N)	Size Limit on Tag (Y/N)	Tag Colors	Annual Tag Color Change (Y/N)
MA	131	46,760	36,865	9,061	834	Sale	Y	Y	Y	one tag color	Y
RI	23	15,640	4,606	4,651	6,383	Sale	Y	Y	N	two tag colors by gear	Y
NY	393	67,539	58,831	7,719	555	Harvest	Y	Y	N	one tag color	Y
DE*	239	16,769	9,161	7,608	0	Both	Y	Y	N	Harvest: two tag colors by gear Sale: one color	Y
MD <sup>±</sup>	836	456,200	320,882	tbd	tbd	Harvest	Y	Y	N	three tag colors by fishery and area	Y
PRFC	308	81,076	66,219	10,257	4,600	Harvest	Y	Y	N	five tag colors by gear	N
VA	368	191,900	152,734	32,589	6,577	Harvest	Y	Y	Y	two tag colors by area	Y
NC <sup>^</sup>	25	10,480	6,552	3,919	9	Sale	Y	Y	Y	three tag colors by area	N

<sup>1</sup> Tags not accounted for refers to unused tags that are not returned/not reported as lost or missing.

<sup>2</sup> States are required to allocate commercial tags to permit holders based on a biological metric. Most states use the average weight per fish from the previous year, or some variation thereof. Actual biological metric used is reported in Annual Commercial Tag Monitoring Reports.

\*The number of tags noted in the table for Delaware are the tags issued to and used by harvesters. Tags are also issued to weigh stations where a second tag is attached to each striped bass, such that each fish has two tags. In 2021, 13,000 weigh station tags were issued and 9,161 were used.

± Maryland's audit of unused tags has been delayed by COVID-19 shutdowns.

^ All commercial tags noted in the table for North Carolina were used in the Albemarle Sound management area.

Table 19. Status of compliance with monitoring and reporting requirements in 2021. JAI = juvenile abundance index survey, SSB = spawning stock biomass survey, TAG = participation in coastwide tagging program, Y = compliance standards met, N = compliance standards not met, NA = not applicable, R = recreational, C = commercial.

Jurisdiction	Fishery-independent Monitoring		Fishery-dependent Monitoring		Annual reporting Status
	Requirement(s)	Status	Requirement(s)	Status	
ME	JAI	Y	-	NA	Y
NH	-	NA	-	NA	Y
MA	TAG	Y	composition, catch & effort (C&R), tag program	Y	Y
RI	-	NA	composition (C&R), catch & effort (R), tag program	Y	Y
CT	-	NA	composition, catch & effort (R)	Y	Y
NY	JAI, SSB, TAG	Y	composition, catch & effort (C&R), tag program	Y	Y
NJ	JAI, TAG	Y	composition, catch & effort (R)	Y	Y
PA	SSB	Y	-	NA	Y
DE	SSB, TAG	Y	composition, catch & effort (C), tag program	Y	Y
MD	JAI, SSB*, TAG	Y	composition, catch & effort (C&R), tag program	Y	Y
PRFC	-	NA	composition, catch & effort (C&R), tag program	Y	Y
DC	-	NA	-	NA	Y
VA	JAI, SSB, TAG	Y	composition, catch & effort (C&R), tag program	Y	Y
NC	JAI, SSB*, TAG	Y	composition, catch & effort (C&R), tag program	Y	Y

\*Part or all of the monitoring program could not be conducted due to COVID-19.

**XI. Figures**

Figure 1. Atlantic striped bass female spawning stock biomass and recruitment, 1982-2017. Source: 2018 Benchmark Stock Assessment.

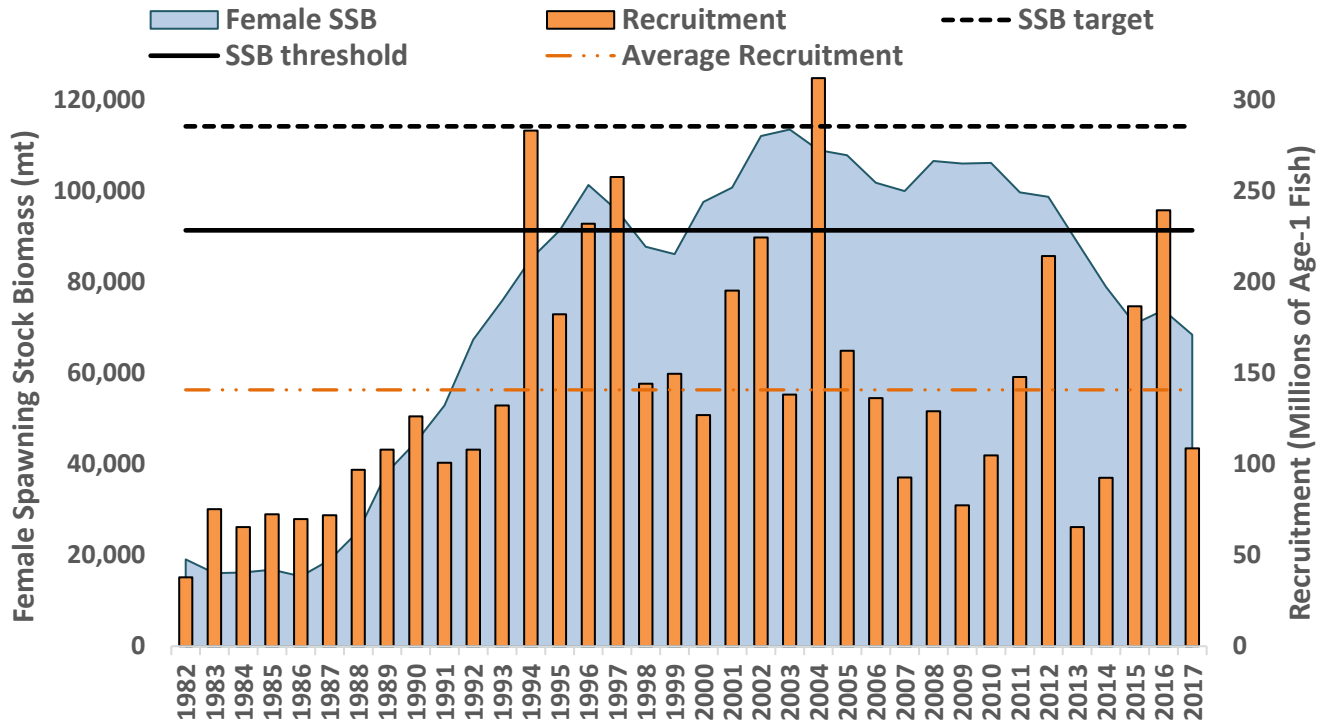


Figure 2. Atlantic striped bass fishing mortality, 1982-2017. Source: 2018 Benchmark Stock Assessment.

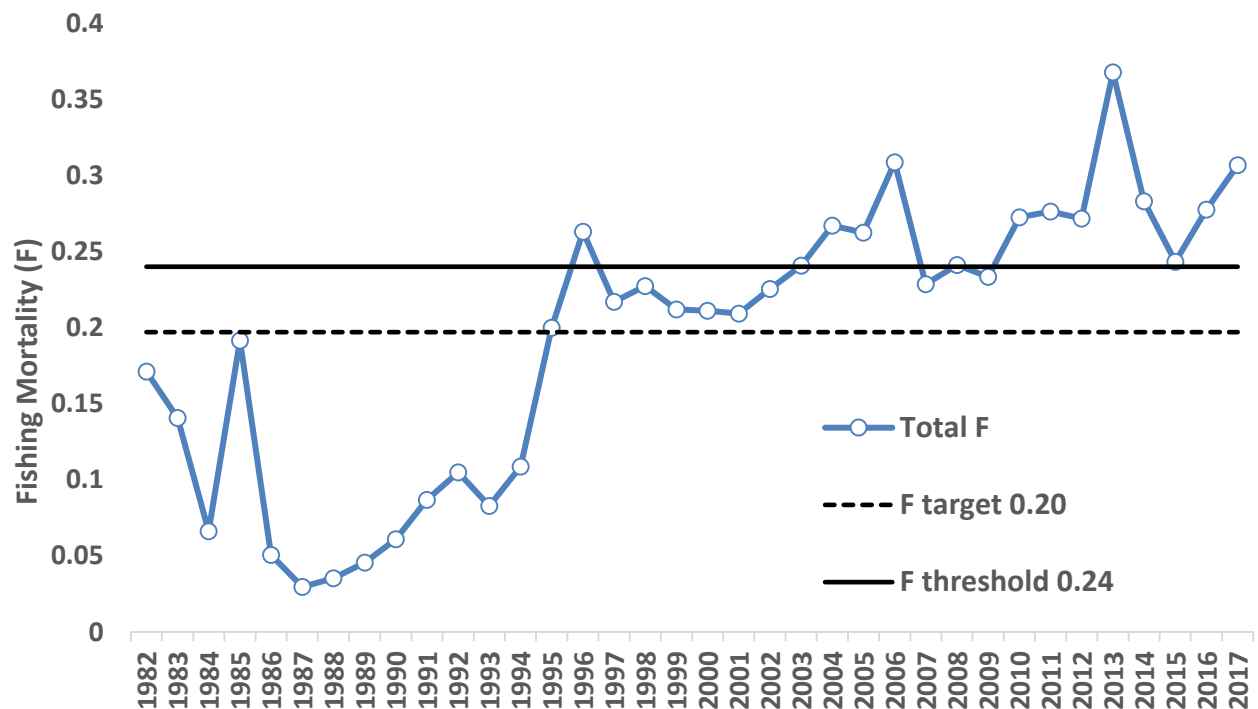


Figure 3. Albemarle Sound-Roanoke River striped bass female spawning stock biomass and recruitment (abundance of age-1), and biological reference points, 1991-2017. Source: 2020 A-R Stock Assessment (Lee et al. 2020).

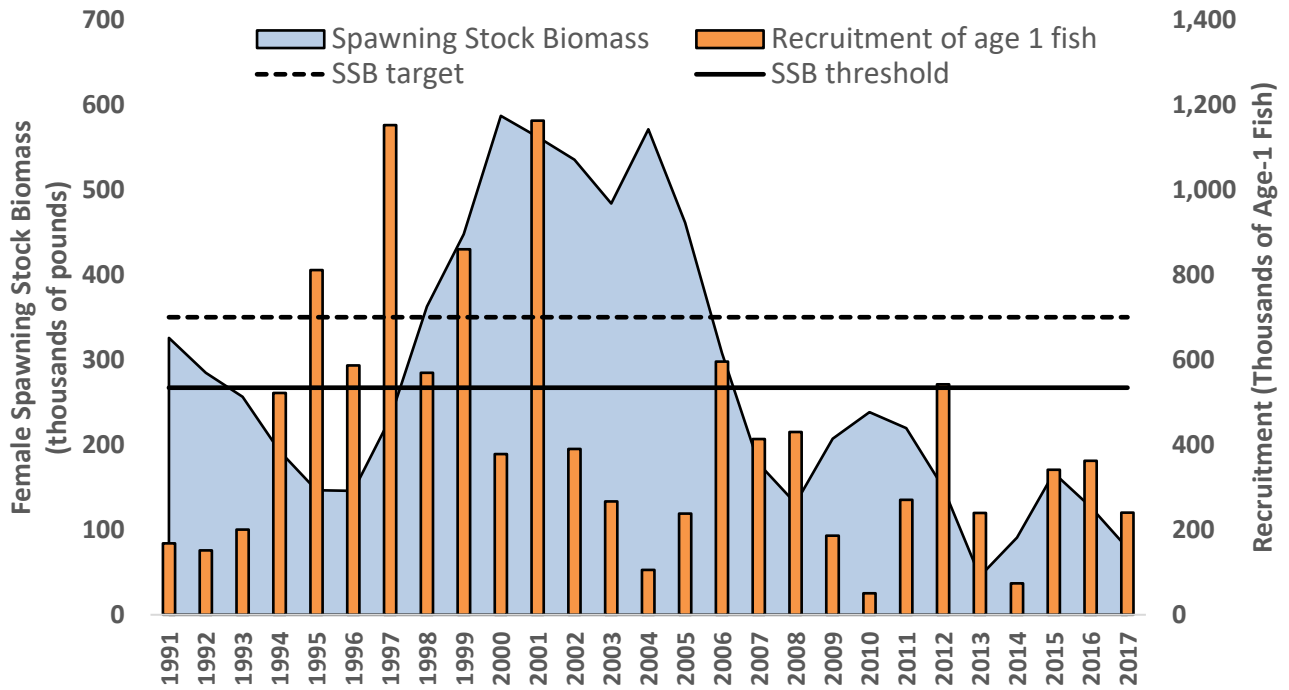


Figure 4. Albemarle Sounds-Roanoke River striped bass fishing mortality (F) estimates, and biological reference points, 1991-2017. Source: 2020 A-R Stock Assessment (Lee et al. 2020).

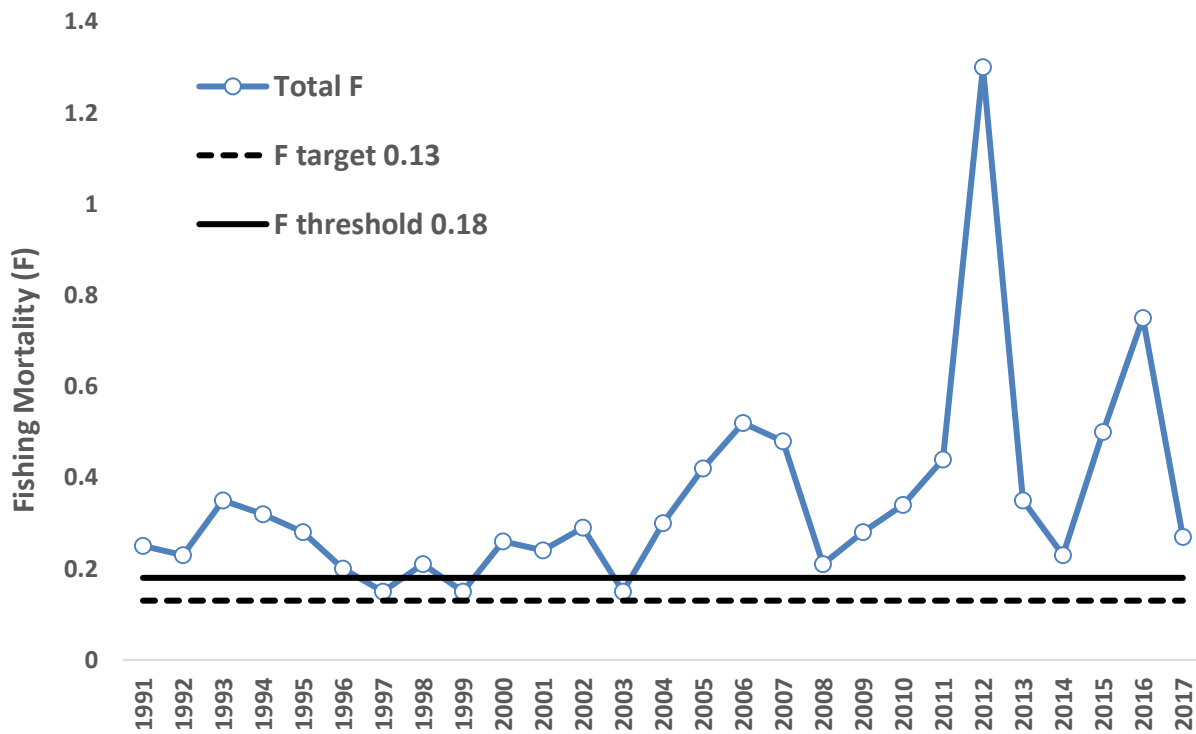


Figure 5. Total Atlantic striped bass removals by sector in numbers of fish, 1982-2021. Note: Harvest is from state compliance reports/MRIP, discards/release mortality is from ASMFC. Estimates exclude inshore harvest from A-R.

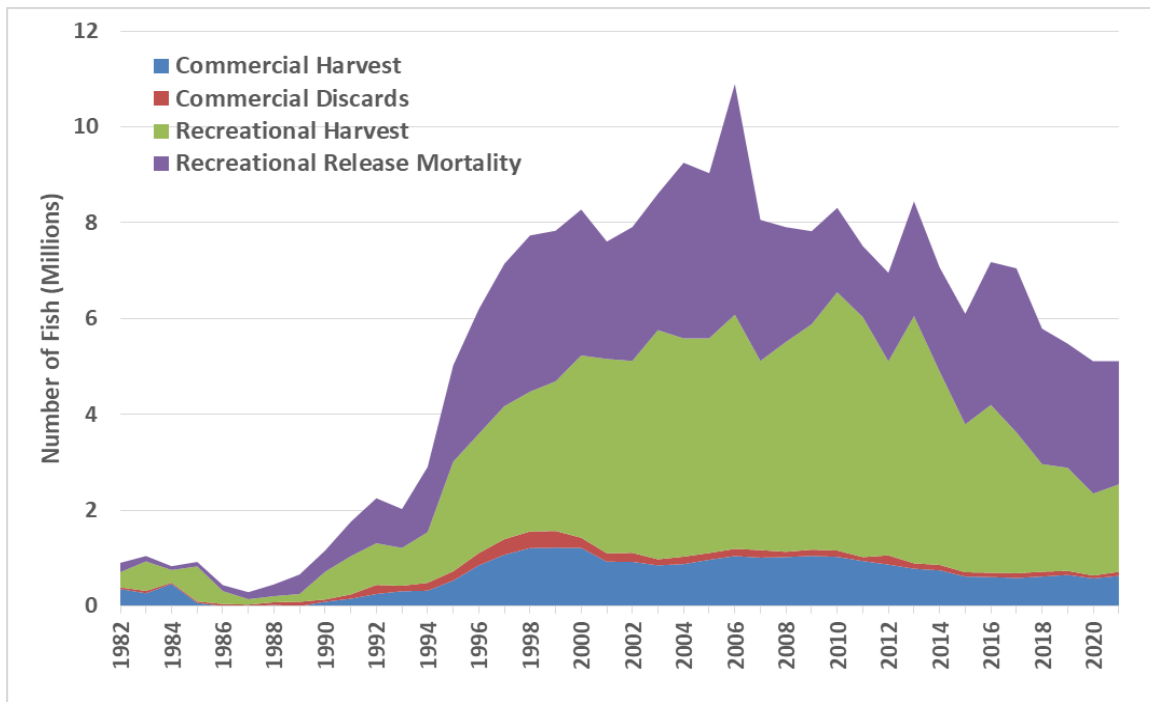


Figure 6. Commercial Atlantic striped bass landings by state in pounds, 1990-2021. Source: State compliance reports. Commercial harvest and sale prohibited in ME, NH, CT, and NJ. NC is ocean only.

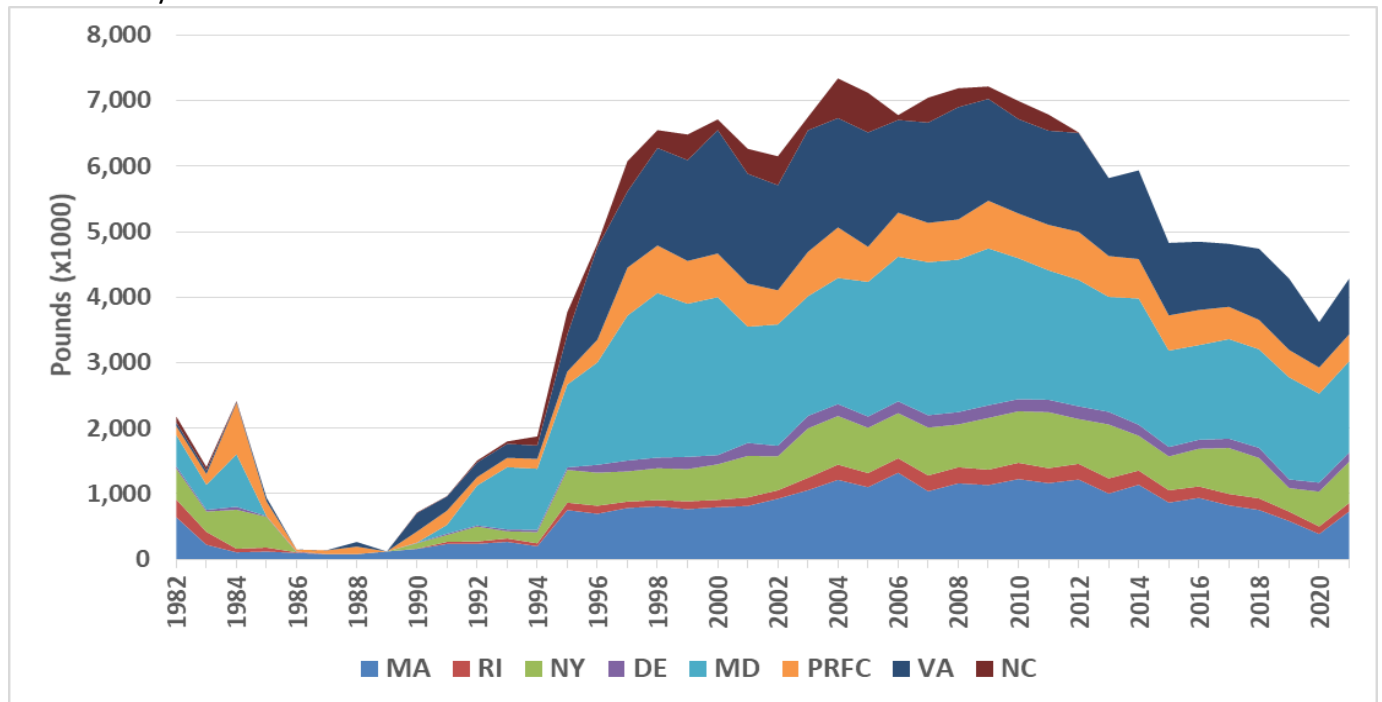




Figure 7. Total recreational catch and the proportion of fish released alive, 1982-2020. Source: MRIP/ASMFC. Estimates exclude inshore harvest from A-R.

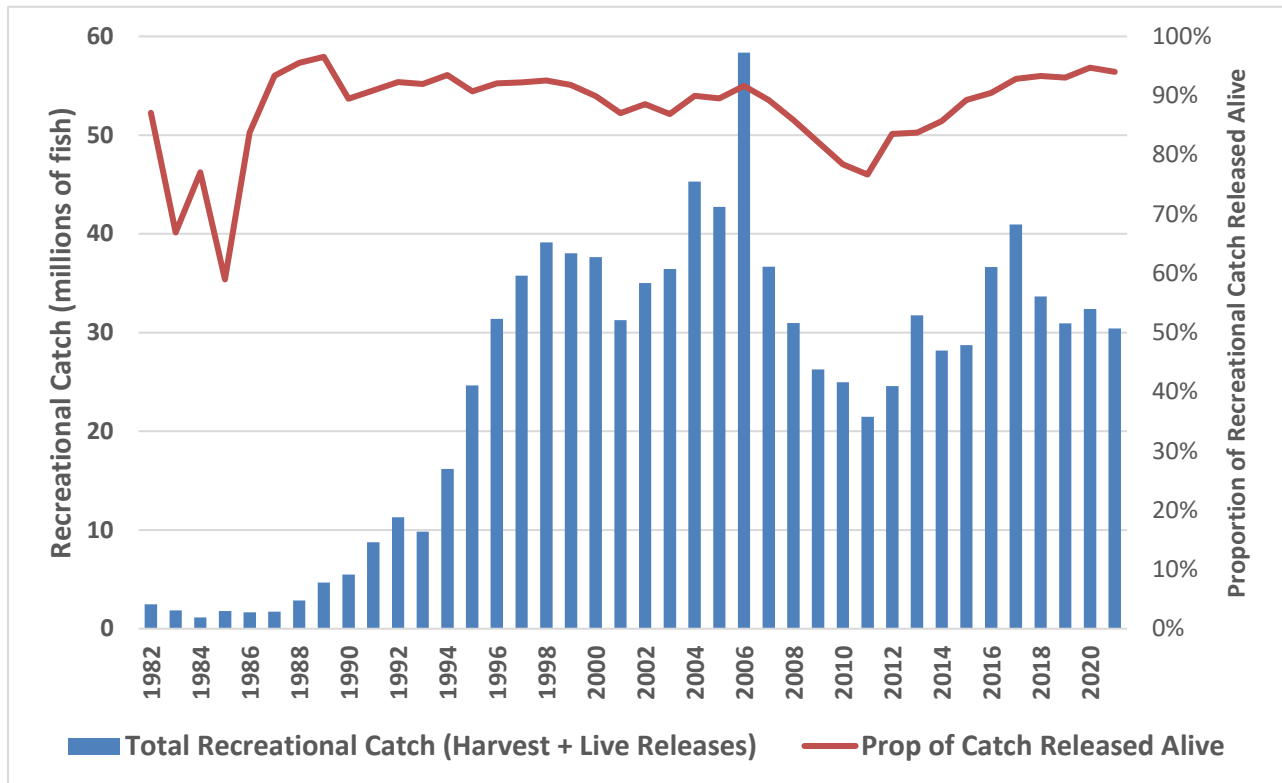


Figure 8. Juvenile abundance indices for New York, New Jersey, Maryland, and Virginia for 1982-2021 with recruitment trigger analysis for 2019-2021. An open circle in the last three years indicates a value below the recruitment trigger level. The recruitment trigger is tripped if a JAI is below the trigger level for three consecutive years. Source: 2022 State Compliance Reports.

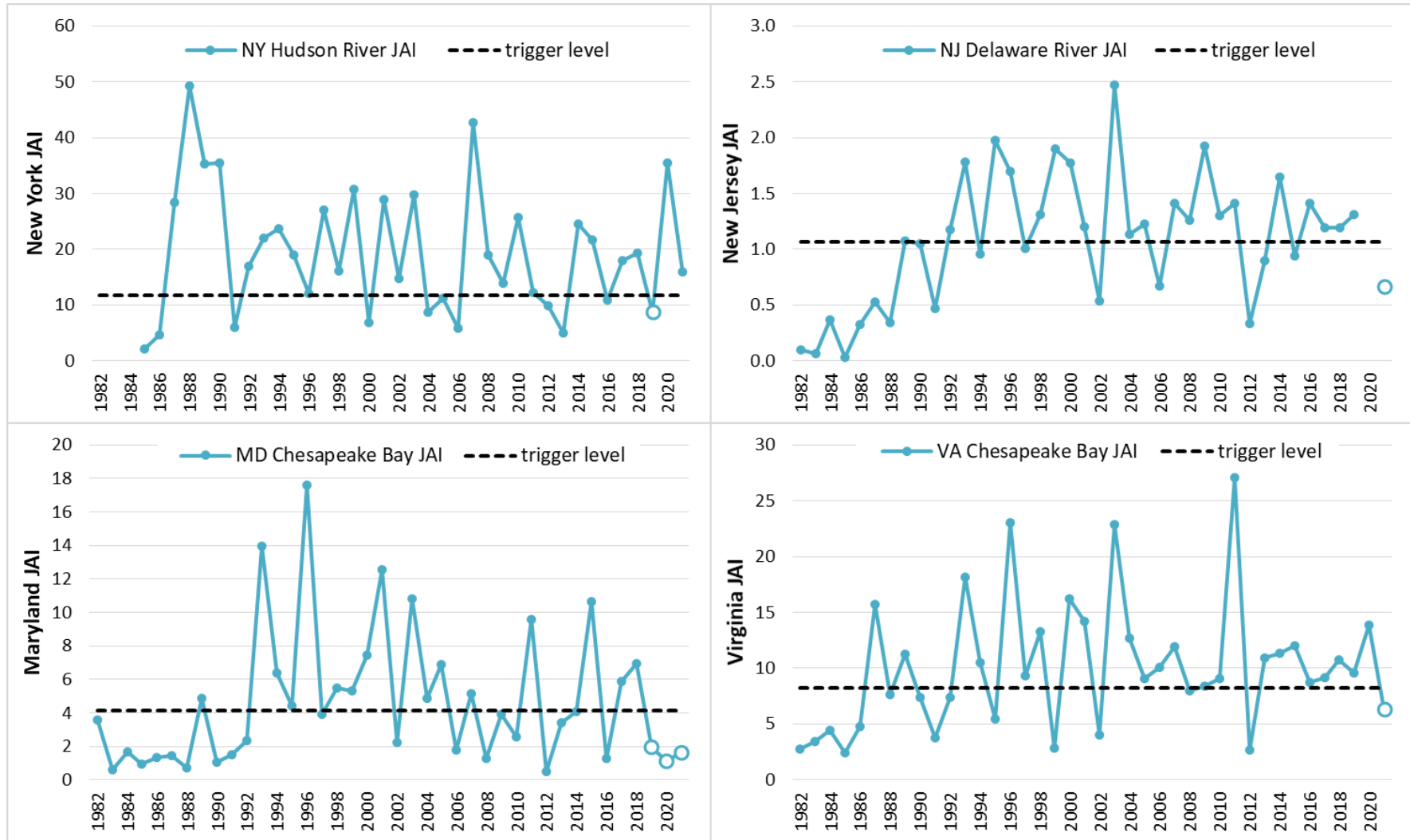
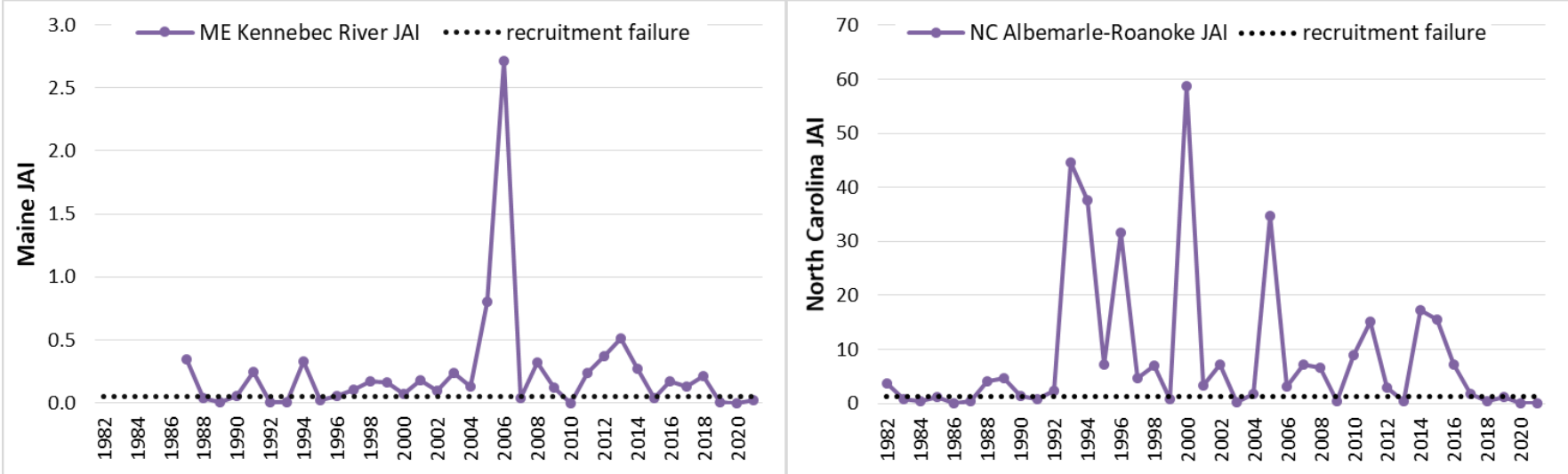


Figure 9. Juvenile abundance indices for Maine and North Carolina from 1982-2021 noting the level of recruitment failure. Source: 2022 State Compliance Reports.



**From:** Allen Delaney <[aedelan76@hotmail.com](mailto:aedelan76@hotmail.com)>  
**Sent:** Wednesday, July 20, 2022 3:55 PM  
**To:** info <[info@asmfc.org](mailto:info@asmfc.org)>  
**Subject:** [External] Stripped Bass regulations for 2023

Good Afternoon,

I would like to add my two cents towards altering the stripped bass (Rockfish) regulations for next year.

I once asked a Maryland DNR officer what I should do if I gut hook a rockfish and it's under-sized. Her advice: Throw it back.

I think that if a rockfish is gut hooked while trolling during the trophy season, it should be kept regardless of size. If the angler is checked by DNR and the officer sees the fish could not be saved, no fine would occur. How many of these fish, which are going to die regardless, are thrown overboard only to die a slow death? I doubt many fishermen would go to the trouble of purposely jamming a lure into the fish's throat to make it appear gut-hooked.

If a 32" fish is gut hooked, keep the fish, but that's your fish for the day.

I hope you take this suggestion seriously.

Sincerely,

Allen Delaney  
Prince Frederick, MD

# Atlantic States Marine Fisheries Commission

## Executive Committee

Wednesday, August 3, 2022

8:00 – 10:00 am

## Draft Agenda

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

1. Welcome/Introductions (*S. Woodward*) 8:00 a.m.
2. Committee Consent 8:05 a.m.
  - Approval of Agenda
  - Approval of Meeting Summary from May 2022
3. Public Comment 8:10 p.m.
4. CARES Act Update 8:15 a.m.
5. Report of *De Minimis* Work Group 8:30 a.m.
6. Consider Approval of Updated Investment Policy **Action** 9:00 a.m.
7. Review Letter of Support for Resilient Coasts and Estuaries Act 9:15 a.m.
8. Discuss State Support for the Responsible Offshore Science Alliance (ROSA) 9:30 a.m.
9. Review Updates to the Appeals Process 9:50 a.m.
10. Other Business Adjourn 10:00 a.m.

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

*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*



# Atlantic States Marine Fisheries Commission

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## De minimis White Paper

August 2022

The Atlantic States Marine Fisheries Commission (Commission) includes *de minimis* provisions in interstate Fishery Management Plans (FMP) to reduce the management burden for states that have a negligible effect on the conservation of a species. The ISFMP Charter includes a definition of *de minimis* and the requirement to include *de minimis* provisions in the FMP.

*Definition: De minimis – A situation in which, under existing conditions of the stock and the scope of the fishery, conservation and enforcement actions taken by an individual state would be expected to contribute insignificantly to a coastwide conservation program required by an FMP or amendment.*

*FMP Provisions: ... and provided that each fishery management plan shall address the extent to which States meeting de minimis criteria may be exempted from specific management requirements of the fishery management plan to the extent that action by the particular States to implement and enforce the plan is not necessary for attainment of the fishery management plan's objectives and the conservation of the fishery.*

The *de minimis* provisions in FMPs vary by species and include a range of requirements for management measures, reporting requirements, and *de minimis* qualification thresholds. This white paper outlines a draft policy that would set *de minimis* standards for Commission FMPs. The draft policy proposes to allow species Boards to deviate from these standards to address unique characteristics of a fishery. It is noted, Federal FMPs do not recognize *de minimis* standards; therefore, any *de minimis* measure implemented in a Commission FMP for jointly managed species could result in inconsistent measures between state and federal waters.

### **Draft De Minimis Policy**

*De minimis* provisions within Commission FMPs are designed to reduce the management burden for states that have a negligible effect on the conservation of a species. This draft policy outlines *de minimis* standards for Commission FMPs. A species board may deviate from these standards to address unique characteristics of a fishery. If a board deviates from the Policy's standards, a rationale will be provided within the FMP.

### **Minimum Standards**

By definition states that meet *de minimis* standards would have a negligible effect on the conservation of a species, therefore those states should not have to change regulations year-to-year to meet FMP requirements. Each FMP will establish a set of measures for *de minimis* states to implement that would not have to change year-to-year. These measures would provide a minimal level of the species conservation as well as prevent regulatory loop holes. These measures could be for both the commercial and recreational fishery or different measures could be set for each fishery.

### **De minimis Fishery Designation**

*De minimis* can apply to commercial or recreational fisheries or both. In some cases, a state could meet *de minimis* requirement for one fishery but not both, and depending on how the FMP defines *de minimis* the state may not meet the requirement and thus would not be considered *de minimis* (e.g. The FMP for species X sets the *de minimis* requirement by looking at total commercial and recreational landings together, state A has a very small commercial fishery but a recreational fishery that brings them above the *de minimis* threshold. If the requirements had been separate, state A would have met *de minimis* for the commercial fishery but not the recreational fishery).

**Option 1:** Each species board will review the *de minimis* provisions to determine how *de minimis* will be considered (both fisheries together, separated or only one sector).

**Option 2:** *De minimis* provisions will be considered separately for commercial and recreational fisheries or for only one sector only.

**Option 3:** *De minimis* provisions will be considered with commercial and recreational fisheries combined.

### **De minimis Thresholds**

*De minimis* thresholds will be based on the average landings from the previous X (see options below) years of landings. The averaging of multiple years of data prevents a state from taking action as a result of a rare event.

Options for the number of years (X) data would be averaged:

**Option 1:** two years of data

**Option 2:** three years of data

A state can be considered *de minimis* if the average landings for the last X years is less than Y % (see options below) of the coastwide landings.

Options for the percent of the coastwide landings (Y):

**Option 1:** Task the species boards to have the technical committee review the *de minimis* thresholds to determine an appropriate level that would have a negligible effect on the conservation of the species.

**Option 2:** less than 1% of the average X years of landings data

**Option 3:** less than 0.5% of the average X years of landings data

### **Sampling Requirements**

*De minimis* states can be exempt from sampling requirements because it may be difficult to meet the sampling requirements of the plan when there are minimal landings. For stock assessments it may be important to have some biological samples on the outer edges of a species range where *de minimis* states often fall. For data poor species, it may be necessary for states to collect biological samples, even with minimal landings. Species boards shall have the stock assessment subcommittee or technical committee review the sampling requirements for *de minimis* states to determine what level, if any, is appropriate.

**Current FMP *De Minimis* Measures**

<b>Species</b>	<b><i>De minimis</i> Qualification (include # of landing years if applicable)</b>	<b>Sector Application: Commercial and/or Recreational; Both (can not split them)</b>	<b>Exemption From:</b>
<b>American Eel</b>	Applicable by life stage if, for the proceeding 2 years, the average commercial landings (by weight) of that life stage constitute less than 1% of coastwide commercial landings for that life stage for the same 2 year period.	Commercial	Having to adopt the commercial and recreational fishery regulatoins for that particular life stage and any fishery-dependent monitoring elements for that life stage and any fishery-dependent monitoring elements for that life stage.
<b>American Lobster</b>	Average of last 2 years commercial landings is not more than 40,000 lbs	Commercial	All FMP requirements except coastwide measures and those deemed necessary by the Board when <i>de minimis</i> is granted
<b>Atlantic Croaker</b>	Average commercial or recreational landings (by weight) constitute <1% of the average coastwide commercial or recreational landings for the most recent three years in which data is available.	Commercial and/or recreational	A state that qualifies for <i>de minimis</i> for commercial and/or recreational fisheries is exempt from implementing management response for the <i>de minimis</i> fishery when the 30% moderate response level from the Traffic Light Approach is triggered.
<b>Atlantic Herring</b>	Average of last three years' combined commercial landings (weight) is < 1% of coastwide for same two years	Commercial	Not specified in Plan
<b>Atlantic Menhaden</b>	A state's bait landings must be less than 1% of the total coastwide bait landings for the most recent two years. State(s) with a reduction fishery are not eligible for <i>de minimis</i> consideration	Commercial (There is no management of the recreational fishery)	If granted <i>de minimis</i> status by the Board, states are exempt from implementing biological sampling as well as pound net catch and effort data reporting.
<b>Atlantic Sturgeon</b>	NA	NA	NA



<b>Black Drum</b>	The average combined commercial and recreational landings (by weight) constitute less than 1% of the average coastwide commercial and recreational landings in the most recent three years in which data is available.	Both	Not specified in Plan
<b>Black Sea Bass</b>	NA	NA	NA
<b>Bluefish</b>	Commercial landings less than 0.1% of the total coastwide commercial landings in the last preceding year for which data is available	Commercial	Allocated 0.1% of commercial quota. Exempt from the Biological Monitoring Program.
<b>Cobia</b>	In order for a state to be considered <i>de minimis</i> for its recreational fishery, its recreational landings for 2 of the previous 3 years must be less than 1% of the coastwide recreational landings for the same time period. In order for a state to be considered <i>de minimis</i> for its commercial fishery, its commercial landings for 2 of the previous 3 years must be less than 2% of the coastwide commercial landings for the same time period.	Commercial and/or recreational	A recreational <i>de minimis</i> state may choose to match the recreational management measures implemented by an adjacent non- <i>de minimis</i> state (or the nearest non- <i>de minimis</i> state if none are adjacent) or limit its recreational fishery to 1 fish per vessel per trip with a minimum size of 33 inches fork length (or the total length equivalent, 37 inches). Commercial <i>de minimis</i> states are subject to the same commercial regulations as the rest of the coastwide fishery but are not required to monitor their in-season harvests. To account for potential landings in <i>de minimis</i> states not tracked in-season against the quota, 4% of the commercial quota or 5,000 pounds, whichever is less, is set aside and not accessible to non- <i>de minimis</i> states.
<b>Horseshoe Crab</b>	For the last 2 years, a state's combined average landings, based on numbers, must be < 1% of coastwide landings for same 2-year period	Commercial	States that qualify for <i>de minimis</i> status are not required to implement any horseshoe crab harvest restriction measures, but are required to implement components A, B, E and F of the monitoring program.

**Current FMP *De Minimis* Measures**

<b>Jonah Crab</b>	States may qualify for <i>de minimis</i> status if, for the preceding three years for which data are available, their average commercial landings (by weight) constitute less than 10 1% of the average coastwide commercial catch	Commercial	States who qualify for <i>de minimis</i> are not required to implement fishery independent and port/sea sampling requirements
<b>Northern Shrimp</b>	NA	NA	NA
<b>Red Drum</b>	The PRT chose to evaluate an individual state's contribution to the fishery by comparing the two-year average of total landings of the state to that of the management unit.	Not specified in Plan	<i>De minimis</i> status does not exempt either state from any requirement; it may exempt them from future management measures implemented through addenda to Amendment 2, as determined by the Board.
<b>Scup</b>	NA	NA	NA
<b>Shad and River Herring</b>	A state can request <i>de minimis</i> status if commercial landings of river herring or shad are less than 1% of the coastwide commercial total.	Commercial	<i>De minimis</i> status exempts the state from the subsampling requirements for commercial biological data.
<b>Spanish Mackerel</b>	The previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch.	Both	Those states that qualify for <i>de minimis</i> are not required to implement any monitoring requirements, as none are included in the plan.
<b>Spiny Dogfish</b>	Commercial landings are < 1% of coastwide commercial landings	Commercial only	State is exempt from the monitoring requirements of the commercial spiny dogfish fishery for the following fishing year. However, must continue to report any spiny dogfish commercial or recreational landings within their jurisdiction via annual state compliance reports.
<b>Coastal Sharks</b>	Not specified in Plan; determined on a case by case basis.	Not specified in Plan	Not specified in Plan, but unnecessary to implement all regulatory requirements in the FMP

<b>Spot</b>	A state qualifies for <i>de minimis</i> status if its past 3-years' average of the combined commercial and recreational catch is less than 1% of the past 3-years' average of the coastwide combined commercial and recreational catch.	Both	A state that qualifies for <i>de minimis</i> for both fisheries is exempt from implementing management response for the <i>de minimis</i> fisheries when the 30% moderate response level from the Traffic Light Approach is triggered.
<b>Spotted Sea Trout</b>	A state qualifies for <i>de minimis</i> status if its previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch.	Both	Those states that qualify for <i>de minimis</i> are not required to implement any monitoring requirements, as none are included in the plan.
<b>Striped Bass</b>	Average of last two years' combined commercial and recreational landings (lbs) is < 1% of coastwide for same two years	Both	State requested requirements that the Board approves (except annual reporting)
<b>Summer Flounder</b>	Landings from the last preceding calendar year which data are available are less than 0.1% of the total coastwide quota for that year	Commercial	State quota will be 0.1 % of the coastwide quota and subtracted from the coastwide quota before allocation to the other states (state waters only)
<b>Tautog</b>	Most recent years commercial landings are < 1% of coastwide commercial landings or less than 10,000 lbs	Commercial	The <i>de minimis</i> state is required to implement the commercial minimum size provisions, the pot and trap degradable fastener provisions, and regulations consistent with those in the recreational fishery (including possession limits and seasonal closures). The state must monitor its landings on at least an annual basis. If granted <i>de minimis</i> status, a state must continue to collect the required 200 age/length samples.
<b>Weakfish</b>	Combined average commercial and recreational landings (by weight) constitute less than 1% of the coastwide commercial and	Both	The recreational or commercial fishing provisions of Amendment 4, except BRD requirements and annual reporting

**Current FMP *De Minimis* Measures**

	recreational landings for the most recent two year period.		
<b>Winter Flounder</b>	Preceding three years landings for which sector data are available average <1% sector coastwide landings	Commercial and/or recreational	Biological monitoring/sub-sampling activities for the sector for which <i>de minimis</i> has been granted

*Atlantic States Marine Fisheries Commission*  
Investment Policy

**I. Objective/Type of Fund**

This Investment Policy applies to the Reserve Fund of the Atlantic States Marine Fisheries Commission (Commission). The purpose of this policy is to ensure the Commission maintains a prudent level of financial resources to protect against reducing service levels or increasing fees because of temporary revenue shortfalls or unpredicted one-time expenditures. The Commission's financial structure maintains an Operating Fund and a Reserve Fund.

This Policy will establish a clear understanding as to the applicable investment objectives and policies of the Reserve Funds. This Policy will:

1. Establish reasonable expectations, objectives and guidelines in the investment of ASMFC assets.
2. Encourage effective communication between the Investment Professional and the Commission.
3. Define and assign the responsibilities for all parties.
4. Offer guidance and limitations to the Investment Professional regarding the investment of assets.
5. Establish the relevant investment horizon for which the Commission's assets will be managed.

This Policy is not a contract. It is intended to be a summary of an investment philosophy that provides guidance for the Commission and its advisors.

**II. Financial Control of the Commission's Assets**

Financial control of the Commission's assets will be vested in the Executive Director, Administrative Oversight Committee and the Executive Committee as defined below. It is anticipated that the Executive Director will delegate many of these responsibilities to the Director of Finance and Administration.

**A. Executive Director**

1. The Executive Director will write and revise the Commission's Investment Policy.
2. The Executive Director will hire and or/replace an Investment Professional.
3. The Executive Director will recommend the dollar amounts to be placed in the different investment pools after consulting the investment professional.

4. The Executive Director will prepare an annual report on the status of the Commission's investments for the Administrative Oversight and Executive Committees.
5. The Executive Director will schedule the maturities of the investments in consultation with the Investment Professional.

B. Administrative Oversight Committee

1. The Administrative Oversight Committee (AOC) will annually review the Investment Policy and recommend changes if needed.
2. The AOC will review the annual investment report.

C. Executive Committee

1. The Executive Committee has final approval of the Investment Policy and any future revisions.
2. The Executive Committee will review annual investment reports and give any guidance it deems appropriate to the Executive Director and the AOC.

***III. Description of Funds***

The Executive Director is responsible to the Commission for the administration of the Operating Fund to accommodate the cash flow needs of the Commission. It is expected that the Director of Finance & Administration will be delegated the responsibility of managing these funds on a day-to-day basis.

A. Operating Fund

The Operating Fund will maintain four months' General & Administrative operating expenses for the Commission.

B. Reserve Fund

1. The purpose of the Long-Term Fund is twofold: 1) to maintain the financial stability of the Commission; and 2) to meet expenses resulting from unanticipated activities of a nonrecurring nature, or a delay in receipt of federal or state funds. This fund should also be used to avoid the need for service level reductions in the event that economic conditions or other circumstances cause revenues to be lower than budgeted.

2. The primary objective of the Reserve Fund is total return to outpace inflation without exposure to undue risk over time.
3. The Reserve Fund will contain anything exceeding the needs of the Operating Fund. The Commission's annual budget shall be used as a guide to calculate the recommended amount in this reserve. The Executive Committee shall determine an appropriate level of funding for this reserve on an annual basis. It is expected that this determination will be made when the Commission's annual budget is adopted.
4. The Reserve Fund will consist of funds expected to be available for investment for 6 months to 3 years.

<u>Asset Class</u> <u>Range</u>	<u>Current Target</u>	<u>Target</u>
Fixed Income/Bonds	20%	15 - 50%
Global Equities	32%	25 - 80%
Real Estate Securities	6%	0 - 15%
Alternative Investments	25%	0 - 30%
Global Allocation/Tactical	15%	0 - 30%
Cash	2%	0 - 30%

5. The Executive Director in consultation with the Commission Chair and the Investment Professional will make investment decisions.
6. The Commission shall retain an Investment Professional who will meet with the AOC on an annual basis. The AOC may grant discretionary authority to the Investment Professional to make investment changes and to rebalance the portfolio within the Asset Class target ranges set forth in these guidelines.

#### **IV. Use of Reserve Funds**

The Commission authorizes the Commission Chair to approve transfers up to \$150,000 from the Reserve Fund to meet immediate obligations of the Commission. This approval must be in writing. The Executive Committee must authorize the use of Reserve funds prior to these funds being used to pay obligations of the Commission when these transfers exceed \$150,000. The Executive Director shall identify the need for the funds and the expected level of funds needed for any requested draw against these reserves.

The Executive Director, with the concurrence of the Commission Chair, is authorized to draw funds from the Reserve Fund if necessary to meet unavoidable expenses if receipt of income is delayed, provided that when the expected income is received (within two months), the funds drawn will be re-paid.

#### **V. Reporting Requirements**

The Executive Director will prepare an annual report on the Reserve Fund, which will contain a schedule of investments, interest income year-to-date, current yield and a maturation schedule. This report will be distributed to the AOC and the Executive Committee. The Reserve Fund report will also contain information regarding performance compared to objectives and performance compared to an appropriate index.





# Atlantic States Marine Fisheries Commission

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703.842.0740 • 703.842.0741 (fax) • [www.asmf.org](http://www.asmf.org)

*A.G. "Spud" Woodward (GA), Chair      Joseph Cimino (NJ), Vice-Chair      Robert E. Beal, Executive Director*

*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

**DATE**

The Honorable Raúl M. Grijalva  
1511 Longworth House Office Building  
Washington, DC 20515-0303

The Honorable Bruce Westerman  
202 Cannon House Office Building  
Washington, DC 20515-0404

Dear Chair Grijalva and Ranking Member Westerman,

The Atlantic States Marine Fisheries Commission (Commission) is pleased to **support** H.R. 7801, the Resilient Coasts and Estuaries Act.

The Commission is a Compact of the 15 Atlantic coastal states that manages nearshore marine fisheries which occupy multiple states' waters. Congress approved the Compact in 1942, and granted the Commission management authority in 1984 and 1993 through the Atlantic Striped Bass Conservation Act and the Atlantic Coastal Fisheries Cooperative Management Act, respectively. Today, the Commission manages 27 of the coast's most productive and iconic fisheries, nine of which are cooperatively managed with our federal partners.

H.R. 7801 would enshrine the Coastal and Estuarine Lands Conservation Program (CELCP) in statute and redesignate it as the Coastal and Estuarine Resilience and Restoration Program (CERRP). CELCP grants have historically provided important resources to state and local governments for property acquisition to protect coastal ecosystems and wetlands. The Commission appreciates the prioritization of projects that will mitigate "the adverse effects of climate change, including through the storage of blue carbon, and to facilitate inland migration of coastal ecosystems in response to sea level rise." Additionally, the Commission supports provisions that would allow the restoration of developed property in vulnerable coastal and estuarine areas.

Seventeen of the 30 designated National Estuarine Research Reserves (NERRS) are located in Commission Member States. The Commission appreciates the cooperative management of the reserves between states, universities, and NOAA's Office for Coastal Management and strongly supports the mandate for long-term coordination, tracking and modeling of the impacts of climate change on estuarine systems.

Modern science demands that state and federal marine resource managers utilize ecosystem level solutions for the sustainable management of marine fisheries, especially for diadromous fish that spend part of their lifecycle in freshwater rivers and part in the marine environment. Incorporating shore-side habitat considerations into marine fisheries management decisions is critical as changing nearshore habitats are increasingly affecting the long-term sustainability of the nation's diadromous fisheries.

L22-**XX**

Both programs considered by H.R. 7801 represent a coordinated approach to marine resource conservation by state, federal, and regional entities – something the Commission has long supported. Finally, the Commission emphasizes that user conflicts should be considered when establishing and defining the boundaries of new National Estuarine Research Reserves in order to best balance the current and future economic benefits of our nation’s marine resources.

I hope you will join us in supporting this important piece of legislation.

Sincerely,

Robert. E. Beal

# ***Atlantic States Marine Fisheries Commission***

## **APPEALS PROCESS**

For Executive Committee consideration on July 26, 2022 and  
ISFMP Policy Board consideration on August 4, 2022.

### **Background**

The Atlantic States Marine Fisheries Commission’s interstate fisheries management process is based on the voluntary commitment and cooperation of the states. The involved states have frequently demonstrated their willingness to compromise and the overall process has proven to be very successful. However, there have been instances where a state/jurisdiction has expressed concern that the Board decisions have not been consistent with language of an FMP, resulted in unforeseen circumstances or impacts, did not follow established processes, or were based on flawed technical information. In order to address these concerns, the ISFMP Policy Board charged the Administrative Oversight Committee with “exploring and further developing an appeals process”.

Under the current management process the primary policy development responsibility lies with species management boards. And, in the case of development of new fishery management plans or amendments the full Commission has final approval authority prior to implementation. The purpose of the appeals process is to provide a mechanism for a state/jurisdiction to petition for a management decision to be reconsidered, repealed or altered. The appeals process is intended to only be used in extraordinary circumstances where all other options have been exhausted. The management boards have the ability to go back and correct errors or address additional technical information through the recently clarified process on “amending or rescinding previous board actions”.

During the December 2003 ISFMP Policy Board meeting, the decision was made to continue to have the Policy Board serve as the deliberative body that will consider valid appeals. This decision is consistent with the language that is included in the ISFMP Charter. However, the Charter does not provide detailed guidance on how an appeal is to be addressed.

This paper details for the Commission appeals process.

**Appeal Criteria** – The intent of the appeals process is to provide a state with the opportunity to have a decision made by a species management board or section reconsidered by the Policy Board. The following criteria will be used to guide what type of decisions can be appealed. In general, management measures established through the FMP/amendment/addendum process can be appealed. However, the appellant must use one of the following criteria to justify an appeal:

1. Decision not consistent with, or is contrary to, the stated goal and objectives of the current

FMP (Goal and Objective Section of FMPs/Amendments or Statement of the Problem Section of Addenda).

2. Failure to follow process as identified in the ISFMP Charter, Rules and Regulations or other ASMFC guiding documents (e.g. conservation equivalency guidance).
3. Insufficient/inaccurate/incorrect application of technical information. Examples can include but are not limited to:
  - a. If for any calculations used in the decision, an error which changes the results was identified after the decision was rendered;
  - b. If any data used as the basis for a decision, undergoes a modification which impacts results after the decision was rendered (i.e. a landings dataset is adjusted significantly due to a recalibration or application of a control rule adjustment);
  - c. If data is incorrectly identified and therefore incorrectly applied, such as a misidentification of landings information as catch information, or incorrectly assigned landings/catch to a jurisdiction;
  - d. If information used as the basis for the decision lacked scientific or statistical rigor, thereby calling in to question the sound basis for the decision;
  - e. If the historical landings, catch, or abundance time series used as a basis for a decision is found to be incorrect.

Any appeal based on criterion 3 may be verified independently by a technical body appointed by the Chair, as needed.

4. Management actions resulting in unforeseen circumstances/impacts that were not considered by the Board as the management document was developed.

The following issues could not be appealed:

1. Management measures established via emergency action
2. Out-of-compliance findings (this can be appealed but, through a separate, established process)
3. Changes to the ISFMP Charter

**Appeal Initiation** – The ISFMP Charter provides that a state aggrieved by a management board action can appeal to the ISFMP Policy Board. Any state can request to initiate an appeal; also a group of states can submit a unified request for an appeal. The states are represented on the Commission by three representatives that have the responsibility of acting on behalf of the states' Executive and Legislative branches of government. Therefore, in order to initiate an appeal all seated Commissioners (not proxies) of a state's caucus must agree that an appeal is warranted and must sign the letter submitted to the Commission. If a multi-state appeal is requested all the Commissioners from the requesting states must sign the letter submitted to the Commission. During meetings where an appeal is discussed proxies will be able to participate in the deliberations. Meeting specific proxies will not be permitted to vote on the final appeal determination, consistent with Commission policy.

A state (or group of states) can request and appeal on behalf of the Potomac River Fisheries Commission, District of Columbia, National Marine Fisheries Service, or the United States Fish and Wildlife Service.

The letter requesting an appeal will be submitted to the Chair of the Commission and include the measure(s) or issue(s) being appealed, the justification for the appeal, and the commitment to comply with the finding of the Policy Board. This letter must also include a demonstration that all other options to gain relief at the management board level have been exhausted. This letter must be submitted via certified mail or email at least **45 days** prior to a scheduled ASMFC Meeting Week. The Commission Chair, Vice-Chair and immediate past Chair will determine if the appeal meets the qualifying guidelines and notify the Policy Board of their decision. If the immediate past chair is no longer a commissioner the Chair will select an alternate from a state that is not affected by the appeal. Also, if the Chair, Vice-Chair or immediate past Chair is a signatory to the appeal, the Chair will select an alternate from a state that is not affected (or minimally affected) by the appeal.

**Convene a “Fact Finding” Committee (optional)** – Upon review of the appeal documentation, the Commission Chair, Vice-Chair and immediate past Chair (or alternate if necessary, as described above) may establish a “Fact Finding” Committee to conduct analyses and/or compile additional information if necessary. This group will be made up of individuals with the technical expertise (including legal, administrative, social, economic, or habitat expertise if necessary) and familiarity with the fishery to conduct the necessary analysis. If such a committee is convened the schedule included in the last section of this document may need to be adjusted to provide time for the Committee to conduct analyses. The Commission Chair, Vice-Chair and immediate past Chair (or alternate if necessary, as described above) may set a deadline for the Committee to complete its work to ensure the appeal is addressed in a timely manner.

**ISFMP Policy Board Meeting** – Following the determination that an appeal has met the qualifying guidelines, a meeting of the Policy Board will be convened at a scheduled ASMFC meeting week. The agenda of this meeting will be set to allow sufficient time for all necessary presentations and discussions. The Chair of the Commission will serve as the facilitator of the meeting. If the Chair is unable to attend the meeting or would like to more fully participate in the deliberations, the Vice-Chair of the Commission will facilitate the meeting. The ISFMP Director will provide the background on the development of the management program as well as a summary of the justification provided in the record for the management board’s action. The ISFMP Director will also present the potential impacts of the appeal on other affected states. The appellant Commissioners will present their rationale for appealing the decision and provide a suggested solution. The Policy Board will then discuss the presentations and ask any necessary questions. **If the Policy Board needs additional technical information to support a decision on an appeal, the Policy Board can request additional analysis from one of the Commission’s technical support groups. This request will be addressed prior to the Commission’s next quarterly meeting and then the Policy Board will be reconvened to take**

action on the appeal. The Policy Board can meet between quarterly meetings if the timing allows. The Policy Board will vote to determine if the management board's action was justified. A simple majority of the Policy Board is required to forward a recommendation to a management board for corrective action. If the Policy Board determines that the existing management program should be modified, it will issue a finding to that effect as well as any guidance regarding corrective action to the appropriate species management board. The referral may be worded to allow the management board flexibility in determining the details of the corrective action. If the Policy Board requires a management board to take specific corrective actions, the scope of potential corrective actions must be consistent with the presentation of management options provided to the public in the Draft Amendment or Addendum.

Upon receipt of the Policy Board's recommendation the management board will discuss the findings and make the necessary changes to address the appeal. The management board is obligated to make changes that respond to the findings of the Policy Board. A simple majority of the management board will be necessary to approve the changes.

If the management board is unable to make the changes necessary to respond to the findings of the Policy Board, the following options are available:

1. The management board can request clarification from the Policy Board on the specifics of the findings. A meeting of the Policy Board will be scheduled to ensure the requested clarification is provided to the management board to take action at the Commission's next quarterly meeting.
2. The management board can inform the Policy Board that it is unable to address the findings and the Policy Board will take action to approve changes to address the appeal.
3. The management board can request additional analyses from the technical committee or other technical support group (e.g. Management and Science Committee, Assessment Science Committee). A meeting of the appropriate technical group will be scheduled to ensure the requested information is provided to the management board to take action at the Commission's next quarterly meeting.

**Appeal Products and Policy Board Authority** – Following the Policy Board meeting a summary of the meeting will be developed. This summary will include a detailed description of the findings and will be forwarded to the appropriate management board and Policy Board upon completion. If the Policy Board determines that changes to the management program are necessary, the summary may include guidance to the management board for corrective action. The report of the Policy Board will be presented to the management board for action at the next scheduled meeting.

**Considerations to Prevent Abuse of the Appeals Process** – The appeals process is intended to be used only in extraordinary situations and is in no way intended to provide a potential avenue to preempt the established board process. The initiation of an appeal will not delay the Commission process for finding a state out of compliance nor delay or impede the imposition of

penalties for delayed compliance.

**Limiting Impacts of Appeal Findings** – If a state is successful in an appeal and the management program is altered, another state may be negatively impacted by the appeals decision. In order to prevent an appeals “chain reaction,” the Policy Board’s recommendation and the resulting management board’s decision will be binding on all states. All states with an interest in the fishery will be obligated to implement the changes as approved by the management board. Upon completion of the appeals process, a state is not precluded from taking further action beyond the Commission process to seek relief.

If the Policy Board supports the appeal and determines that corrective action is warranted, the potential for management changes to negatively impact other states will be evaluated by the Policy Board and the species management board. **In the case of jointly managed species, the Policy Board and the species management board should consider that corrective action could result in inconsistent measures between state and federal waters.**

### **Appeals Process Timeline**

1. Within **15 working days** of receipt of a complete appeal request the Commission Chair, Vice-Chair, and immediate past chair (or alternate) will determine if the state has an appeal which meets the qualifying guidelines.
2. Upon a finding that the appeal meets the qualifying guidelines, the appeal will be included on the agenda of the ISFMP Policy Board meeting scheduled during the next ASMFC Meeting Week (provided an adequate time period is available for preparation of the necessary documentation).
3. Following the finding that an appeal meets the qualifying guidelines, Commission staff and the appellant commissioners will have a minimum of **15 working days** to prepare the necessary background documents.
4. The background documents will be distributed at least **15 days** prior to the Policy Board meeting.
5. If the management board requests additional information from the Policy Board or a technical support group, a meeting of the Policy Board or technical support group will be scheduled as quickly as practical to allow the management board to take action at the Commission’s next quarterly meeting.

A summary of the Policy Board meeting will be developed and distributed to all Commissioners within **15 working days** of the conclusion of the meeting.

# MEETING OVERVIEW

**Horseshoe Crab Management Board Meeting**  
**August 3, 2022**  
**10:15 - 11:45 a.m.**  
**Hybrid Meeting**

Chair: John Clark (DE) Assumed Chairmanship: 10/19	Horseshoe Crab Technical Committee Chair: Natalie Ameal (RI)	
Vice Chair: VACANT	Horseshoe Crab Advisory Panel Chair: Brett Hoffmeister (MA)	Law Enforcement Committee Representative: Nick Couch (DE)
Delaware Bay Ecosystem Technical Committee Chair: Wendy Walsh (FWS)	Adaptive Resource Management Subcommittee Chair: Dr. John Sweka (FWS)	Previous Board Meeting: May 3, 2022
Voting Members: MA, RI, CT, NY, NJ, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (16 votes)		

## 2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 3, 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 Draft Addendum VIII: Implementation of Recommended Changes from 2021 ARM Revision and Peer Review Report for Public Comment (10:30-11:15 a.m.) Action

### Background

- In October 2019, the Board directed the Adaptive Resource Management (ARM) Subcommittee to begin working on updates to the ARM Framework to revisit several aspects of the ARM model to incorporate horseshoe crab population estimates from the Catch Multiple Survey Analysis (CMSA) model used in the 2019 Benchmark Stock Assessment and the most current scientific information available for horseshoe crabs and red knots.
- In January 2022, the Board accepted the ARM Revision and Peer Review for management use, and initiated a Draft Addendum to consider allowing its use in setting annual specifications for horseshoe crabs of Delaware Bay-origin. The Horseshoe Crab PDT met multiple times throughout the spring to develop a draft addendum document for Board consideration (**Briefing Materials**).



**Presentations**

- Overview of Draft Addendum VIII for Board Consideration by C. Starks

**Board actions for consideration at this meeting**

- Approve Draft Addendum VIII for Public Comment

**5. Update on PDT Review of Biomedical Mortality, Biologically-based Options for Setting the Threshold, and Best Management Practices for Handling Biomedical Collections (11:15-11:35 a.m.)****Background**

- In October 2021, The Board tasked the Plan Development Team to review biomedical mortality, discuss biologically-based options for setting the threshold, and consider updates to best management practices for handling biomedical collections.
- The PDT requested advice from the Technical Committee (TC) on this issue. The TC met multiple times to discuss potential strategies for setting a biologically-based threshold for biomedical collections, and to review the 2011 best management practices (BMPs). The TC provided recommendations to the PDT regarding the mortality threshold (**Briefing Materials**) and a process for considering changes to the BMPs (**Supplemental Materials**).
- The AP met in July to consider this Board task and the TC's recommendations, and to provide input on the best management practices for handling biomedical collections (**Supplemental Materials**).

**Presentations**

- Update on Task to Review Biomedical Mortality and Best Management Practices for Biomedical Collections by C. Starks

**6. Review and Populate Advisory Panel Membership (11:35-11:40 a.m.) Action****Background**

- Massachusetts has submitted a nomination to the Horseshoe Crab Advisory Panel: David Meserve, an inshore commercial otter trawler (**Briefing Materials**).
- Delaware has submitted two nominations to the Horseshoe Crab Advisory Panel: Jordan Giuttari, a commercial fisherman and dealer/processor, and Matt Sarver, a conservationist (**Supplemental Materials**).

**Presentations**

- Nominations by T. Berger

**Board actions for consideration at this meeting**

- Approve Advisory Panel Nomination

**7. Elect Vice-Chair****8. Other Business/Adjourn**

**Draft Document for Board Review. Not for Public comment.**

***Atlantic States Marine Fisheries Commission***

**DRAFT ADDENDUM VIII TO THE HORSESHOE CRAB FISHERY  
MANAGEMENT PLAN**

*Implementation of the 2021 ARM Revision*



**This draft document was developed for Management Board review and discussion.  
This document is not intended to solicit public comment as part of the  
Commission/State formal public input process. Comments on this draft document may  
be given at the appropriate time on the agenda during the scheduled meeting. If  
approved, a public comment period will be established to solicit input on the issues  
contained in the document.**

**August 2022**



**Sustainable and Cooperative Management of Atlantic Coastal Fisheries**

**Draft Document for Board Review. Not for Public comment.**

# **Draft Document for Board Review. Not for Public comment.**

## **1.0 Introduction**

The Atlantic States Marine Fisheries Commission's (ASMFC) Horseshoe Crab Management Board (Board) approved the Interstate Fishery Management Plan for Horseshoe Crabs (FMP) in October 1998. The goal of the FMP includes management of horseshoe crab populations for continued use by current and future generations of the fishing and non-fishing public, including the biomedical industry, scientific and educational researchers, migratory shorebirds, and other dependent fish and wildlife, including federally listed sea turtles. ASMFC maintains primary management authority for horseshoe crabs in state and federal waters. The management unit for horseshoe crabs extends from Maine through the east coast of Florida.

Additions and changes to the FMP have been adopted by the Board through seven addenda. The Board approved Addendum I (2000), establishing a coastwide, state-by-state annual quota system to reduce horseshoe crab landings. Addendum I also included a recommendation to the federal government to create the Carl N. Shuster Jr. Horseshoe Crab Reserve. The Board approved Addendum II (2001), establishing criteria for voluntary quota transfers between states. Addenda III (2004) and IV (2006) required additional restrictions on the bait harvest of horseshoe crabs of Delaware Bay-origin and expanded the biomedical monitoring requirements. Addenda V (2008) and VI (2010) extended the restrictions within Addendum IV. The provisions of Addendum VI were set to expire after April 30, 2013. Addendum VII replaced the Addendum VI requirements by establishing a management program for the Delaware Bay Region (i.e., coastal and bay waters of New Jersey and Delaware, and coastal waters only of Maryland and Virginia).

Draft Addendum VIII considers implementing the 2021 Revision to the Adaptive Resource Management (ARM) Framework originally established under Addendum VII.

## **2.0 Overview**

### **2.1 Statement of the Problem**

The Board initiated Draft Addendum VIII in January 2022 to consider use of the recent 2021 Revision of the ARM Framework (ASMFC 2021) in setting annual bait harvest specifications for horseshoe crabs of Delaware Bay-origin. Delaware Bay horseshoe crab management using the ARM Framework was originally established under Addendum VII for use during the 2013 fishing season and beyond. The Framework considers the abundance levels of horseshoe crabs and shorebirds in determining the optimal harvest level for the Delaware Bay states of New Jersey, Delaware, Maryland, and Virginia (east of the COLREGS).

In the past decade, more data has been collected on shorebirds and horseshoe crabs and modeling software and techniques have advanced. Additionally, the original ARM Framework used software that is now antiquated, not supported, does not run on current computer operating systems, and is limited in its capacity to incorporate uncertainty when determining optimum harvest strategies. Thus, the ARM Subcommittee was tasked with revising the ARM

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Framework to address critiques from the previous peer review panel, include newly available data, and transition to new modeling software.

Following the recommendations of the independent peer review panel, which endorsed the ARM Revision as the best and most current scientific information for the management of horseshoe crabs in the Delaware Bay Region, the Board reviewed and accepted the ARM Revision in January 2022. Draft Addendum VIII considers incorporating the recommended changes in the ARM Revision into the management program for bait harvest of Delaware Bay-origin horseshoe crabs.

### **2.2 Background**

The original ARM Framework and Addendum VII were developed in response to public concern regarding the horseshoe crab population and its ecological role in the Delaware Bay. While the stock assessment at that time (ASMFC 2009a) found increases in the Delaware Bay horseshoe crab abundance, the red knot (*rufa* subspecies), one of many shorebird species that feed on horseshoe crab eggs, was at low population levels. To address these concerns, an effort began to develop a multi-species approach to managing horseshoe crabs by employing the tools of structured decision making and adaptive management. In 2007, the Horseshoe Crab and Shorebird Technical Committees met and endorsed the development of a structured decision making (SDM) framework and adaptive management approach. An ARM subcommittee was formed including representatives from state and federal partners, as well as horseshoe crab and shorebird biologists. The subcommittee produced a framework for adaptive management of horseshoe crabs in the Delaware Bay that was constrained by red knots. It was peer-reviewed with a coastwide benchmark stock assessment for horseshoe crab in 2009 (ASMFC 2009a, 2009b).

Addendum VII, approved in February 2012, implemented the Adaptive Resource Management (ARM) Framework for use during the 2013 fishing season and beyond. The Framework considers the abundance levels of horseshoe crabs and shorebirds in determining the optimal harvest level for the Delaware Bay states of New Jersey, Delaware, Maryland, and Virginia (east of the COLREGS). Since 2013, the Board has annually reviewed recommended harvest levels from the ARM Subcommittee, who run the ARM model, and specified harvest levels for the following year in New Jersey, Delaware, Maryland, and Virginia.

### **2.3 Original ARM Framework**

A goal of the ARM Framework is to transparently incorporate the views of stakeholders along with predictive modeling to assess the potential consequences of multiple, alternative management actions in the Delaware Bay Region. The ARM process involved several steps: 1) identify management objectives and potential actions, 2) build alternative predictive models with confidence values that suggest how a system will respond to these management actions, 3) implement management actions based on those predictive models, 4) monitor to evaluate the population response to management actions, validate the model predictions, and provide

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timely feedback to update model confidence values and improve future decision making, 5) as necessary, incorporate new data into the models to generate updated, improved predictions, and 6) revise management actions as necessary to reflect the latest state of knowledge about the ecosystem. The ARM Framework is an iterative process that adapts to new information and success of management actions.

Underlying the original ARM model are population models for both red knots and horseshoe crabs. The optimization routine in the ARM model determines the best choice among five potential harvest packages (numbers of male and females that can be harvested) given the current abundance of each species in order to maximize the long-term value of horseshoe crab harvest. The ARM model values female horseshoe crab harvest only when the abundance of red knots reaches 81,900 birds (a value related to the historic abundance of red knots in the Delaware Bay) or when the abundance of female horseshoe crabs reaches 80% of their predicted carrying capacity (11.2 million assuming a carrying capacity of 14 million; ASMFC 2009b). On an annual basis, the ARM model is used to select the optimal harvest package to implement for the next year given the current year's estimate of horseshoe crab abundance from the swept area estimate from the VA Tech trawl survey and a mark-resight estimate of red knot abundance.

Within this ARM Framework, a set of alternative multispecies models were developed for the Delaware Bay Region to predict the optimal strategy for horseshoe crab bait harvest. These models accounted for the need for red knot stopover feeding during migrations through the region. These models incorporated uncertainty in model predictions and are meant to be updated with new information as monitoring and management progress.

On an annual basis, the ARM model is used to select the optimal harvest package to implement for the next year given the current year's estimate of horseshoe crab abundance from the swept area estimate from the VA Tech trawl survey and a mark-resight estimate of red knot abundance. The current harvest packages for horseshoe crab bait harvest that can be selected by the ARM model are:

- Package 1) Full harvest moratorium on both sexes
- Package 2) Harvest up to 250,000 males and 0 females
- Package 3) Harvest up to 500,000 males and 0 females
- Package 4) Harvest up to 280,000 males and 140,000 females
- Package 5) Harvest up to 420,000 males and 210,000 females

The numbers of horseshoe crabs in the packages listed above are totals for the Delaware Bay Region, and not per state. Since its implementation in 2013, neither the 81,900 red knot threshold nor the 11.2 million female horseshoe crab thresholds have been met and harvest package 3 has been selected every year by the Framework and specified by the Board for the Delaware Bay bait harvest limit.

### **2.4 Allocation of the ARM harvest output**

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The ARM Framework incorporates horseshoe crabs from the Delaware Bay Region as one unit. The modeling and optimization portions of the Framework do not address distribution and allocation of the harvest among the four Delaware Bay states. Allocation of the overall Delaware Bay harvest allowance was established in Addendum VII. Based on tagging and genetic analysis (ASMFC 2019, 2021), there is very little exchange between Chesapeake Bay and Delaware Bay horseshoe crab populations. However, there is movement of horseshoe crabs between coastal embayments (from New Jersey through Virginia) and Delaware Bay.

An allocation model for the four Delaware Bay states was developed to allocate the optimized harvest output by the ARM Framework, which is described in Section 2.4 of Addendum VII, and summarized below.

Each state’s allocation of the total Delaware Bay-origin harvest recommended by the ARM Framework was determined by multiplying the state’s quota under Addendum VI by the proportion of the state’s total harvest that is of Delaware Bay-origin ( $\lambda$ ), then dividing this value by the sum of the values for each of four states (Table 1). The state lambda values established in Addendum VII were based on the genetic data available at the time. Virginia’s quota level and landings refer to those quota and landings that occur east of the COLREGS line, as these crabs have been shown to be part of a mixed stock.

**Table 1. Calculation of State Allocations of Delaware Bay Harvest Established in Addendum VII**

State	Lambda	Addendum VI Quota	Delaware Bay-Origin Quota	Add VII Allocation of Delaware Bay-Origin Quota
NJ	1.00	100,000	100,000	32.4%
DE	1.00	100,000	100,000	32.4%
MD	0.51	170,653	87,033	28.2%
VA (east of COLREGS)	0.35	60,998	21,349	7.0%

Along with the state allocation percentages, Addendum VII also established two additional provisions impacting the state quotas for Maryland and Virginia. First, it established a harvest cap for Maryland and Virginia, which set a maximum limit on the total level of allowed harvest by Maryland and Virginia to provide protection to non-Delaware Bay-origin crabs. The cap is based on Addendum VI quota levels for Maryland and Virginia; the Maryland cap is 170,653 crabs, and the Virginia cap is 60,998 crabs. These caps apply except when the ARM Framework recommends a package that prohibits harvest of female horseshoe crabs. When female harvest is prohibited, a second provision allows for a 2:1 offset of males:females for Maryland and Virginia, which allows the total male harvest of Maryland and Virginia to rise above the cap level. Note again that Virginia’s quota only refers to the number of crabs that can be harvested east of the COLREGS line.

**3.0 Management Options**

Draft Addendum VIII considers two management options:

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- Option A: No action
- Option B: Implement the ARM Revision for setting bait harvest specifications for Delaware Bay-origin horseshoe crabs

Option B includes additional sub-options to specify how annual harvest recommendations will be made based on the output of the ARM model.

**Option A: No Action**

Because the ARM Framework adopted under Addendum VII can no longer be updated due to its obsolete software, under this option, the management program would revert back to the provisions implemented under Addendum VI. These include the following harvest quotas and limitations for New Jersey, Delaware, Maryland, and Virginia.

Addendum VI prohibits directed harvest and landing of all horseshoe crabs in New Jersey and Delaware from January 1 through June 7, and female horseshoe crabs in New Jersey and Delaware from June 8 through December 31. It also limits New Jersey and Delaware’s harvest to 100,000 horseshoe crabs per state per year.

Addendum VI prohibits directed harvest and landing of horseshoe crabs in Maryland from January 1 through June 7 for two years, from October 1, 2006 to September 30, 2008. It also prohibits the landing of horseshoe crabs in Virginia from federal waters from January 1 through June 7.

Addendum VI mandates that no more than 40% of Virginia’s annual quota may be harvested east of the COLREGS line in ocean waters. It also requires that horseshoe crabs harvested east of the COLREGS line and landed in Virginia must be comprised of a minimum male to female ratio of 2:1.

**Table 2. Commercial horseshoe crab bait harvest quotas for the Delaware Bay states under Addendum VI.**

<b>Jurisdiction</b>	<b>Addendum VI ASMFC Quota</b>
<b>NJ*</b>	100,000
<b>DE*</b>	100,000
<b>MD</b>	170,653
<b>VA**</b>	152,495
<b>DELAWARE BAY TOTAL</b>	<b>523,148</b>

\*Male-only harvest

\*\*No more than 40% of Virginia’s annual quota may be harvested east of the COLREGS line in ocean waters. Horseshoe crabs harvested east of the COLREGS line and landed in Virginia must be comprised of a minimum male to female ratio of 2:1.

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### Option B: Implement the ARM Revision for setting bait harvest specifications for Delaware Bay-origin horseshoe crabs

This option would adopt the updates to the ARM Framework recommended in the 2021 Revision and incorporate them into the process for setting specifications for bait harvest of Delaware Bay-origin horseshoe crabs. Changes to the ARM Framework are described in detail in the 2021 Revision to the Adaptive Resource Management Framework and Peer Review Report, and include:

- Catch multiple survey analysis (CMSA) to estimate male and female horseshoe crab population estimates using all quantifiable sources of mortality (i.e., natural mortality, bait harvest, coastwide biomedical mortality, and commercial dead discards) and several abundance indices from the Delaware Bay Region
- Integrated population model (IPM) to quantify the effects of horseshoe crab abundance on red knot survival and recruitment based on data collected in the Delaware Bay
- Transition to new modeling approach which can be implemented through readily available R software and incorporates uncertainty on all life history parameters for both horseshoe crabs and red knots
- Harvest recommendations based on a continuous scale rather than discrete harvest packages as in the previous Framework
- Female harvest decoupled from the harvest of males

#### *Harvest Recommendations*

Harvest recommendations under the ARM Revision are based on a continuous scale rather than the discrete harvest packages in the previous Framework. Therefore, any harvest number between zero and the maximum allowable harvest could be recommended, not just the fixed harvest packages. Harvest of females is decoupled from the harvest of males so that each are determined separately. The maximum possible harvest for both females and males are maintained as in Addendum VII at 210,000 and 500,000, respectively.

Although harvest is treated as continuous in the new ARM Framework, if the continuous harvest recommendations were made public, it would be possible to back-calculate the biomedical mortality input, which is confidential. Therefore, it is necessary to round the continuous sex-specific harvest outputs to obscure the confidential biomedical data, unless the maximum sex-specific harvest is recommended. There are two sub-options for rounding the harvest output from the ARM Framework:

- **Sub-option B1:** Round down continuous optimal harvest recommendation to nearest 25,000 horseshoe crabs. For example, if the continuous optimal harvest recommendation is 135,000 males and 96,000 females, these values would be rounded down to 125,000 males and 75,000 females.



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- **Sub-option B2:** Round down continuous optimal harvest recommendation to nearest 50,000 horseshoe crabs. For example, if the continuous optimal harvest recommendation is 135,000 males and 96,000 females, these values would be rounded down to 100,000 males and 50,000 females.

The Board is seeking public input on the level of rounding of the optimal harvest recommendation. Sub-option B2 would be more conservative, but sub-option B1 would yield harvest levels closer to the optimal harvest.

### *Adaptive management cycle*

Under this option the adaptive management cycle would include three tiers of short and longer term management, update, and revision processes for the ARM Framework, as follows:

1. **Annual management process:** The annual specification of harvest will occur at the ASMFC annual meeting in calendar year  $t$  for the harvest to be implemented the following season (year  $t+1$ ). The CMSA requires multiple indices of abundance and removals from multiple sources. Because the necessary data take time to be finalized, and final data for a given year would not be available by the time of the annual meeting, the results of a run of the CMSA in year  $t$  will be based on data obtained from the previous two years. Inputs to the CMSA will include the Virginia Tech trawl survey that is conducted in the fall of year  $t-2$ ; Delaware and New Jersey trawl surveys from year  $t-1$ ; and removals from year  $t-1$ . To match the abundance estimates of horseshoe crabs with red knot mark-resight population estimates, horseshoe crab abundance estimates from year  $t-1$  and red knot population estimates from year  $t-1$  will be used as input to the ARM Revision harvest policy functions in year  $t$ . Optimal harvest recommendations can then be implemented in year  $t+1$ . The two year time lag between data availability and implementation of optimal harvest was incorporated in the ARM Revision modeling when determining what the optimal harvest would be based on horseshoe crab and red knot abundance.

Each annual step is identified in the timeline below:

- April - July (year  $t$ ) – The ARM workgroup compiles monitoring data to run the CMSA (Virginia Tech trawl survey data from year  $t-2$ , New Jersey and Delaware survey data from year  $t-1$ , removal data from year  $t-1$ ). The ARM workgroup estimates red knot stopover population size from the mark-resight analysis in year  $t-1$ .
- August (year  $t$ ) – The ARM workgroup inputs horseshoe crab and red knot population estimates to the ARM Revision harvest policy functions and calculates the optimal harvest.
- September (year  $t$ ) – The Delaware Bay Ecosystem Technical Committee reviews the ARM Revision results and optimal harvest recommendations.
- ASMFC Annual Meeting (year  $t$ ) – The Management Board reviews the optimal harvest recommendations from the ARM workgroup and decides on the harvest to be implemented in year  $t+1$ .

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2. **Interim update process:** Every three years, an update process would occur in which the model parameters (e.g., red knot survival and recruitment, horseshoe crab stock-recruitment relationship) are updated based on the annual routine data collected in the region.
3. **Revision process:** every 9 or 10 years (or sooner if desired by the Board), the ARM Framework should undergo a revision process similar to what occurred for the 2021 ARM Revision. This amount of time is appropriate given it allows for two updates to occur, and encompasses one generation for horseshoe crabs. This should incorporate the following components:
  - Solicit formal stakeholder input on ARM Framework to be provided to the relevant technical committees
  - Technical committees review stakeholder input and technical components of ARM models and provide recommendations to the Board
  - At the ASMFC Spring Meeting, Board selects final components of the ARM Framework, and tasks technical committees to work with ARM Working Group to run models /optimization
  - Merge with the annual management process
    - In August, ARM Subcommittee runs models/optimization
    - At the ASMFC Annual Meeting, the Board revisits harvest decision

If Option B is selected, implementation of the ARM Framework Revision would likely occur for the 2023 fishing season, with Board review and decision-making likely to occur at the Board’s 2022 annual meeting.

*Allocation of the Delaware Bay-origin harvest recommendation*

Under this option, the allocation methodology established in Addendum VII would be modified to update state lambda values as recommended in the 2021 Revision based on more recent genetic data analysis. Lambda indicates how much of a state’s harvest is of Delaware Bay-origin (i.e., has spawned at least once in Delaware Bay). Lambda shall be assumed to be 1.00 for New Jersey and Delaware and based upon the recent genetics data and analysis (ASMFC 2021), 0.45 for Maryland, and 0.20 for Virginia.

State	Lambda, $\lambda$
NJ	1.00
DE	1.00
MD	0.45
VA	0.20

Allocation values will be calculated using the same formula as Addendum VII. Lambda will be multiplied by the state’s Addendum VI quota. The resulting value will be divided by the sum of values for all four states to provide the percent of the Delaware Bay harvest recommendation that will be allocated to each state. Virginia’s quota level and landings refer to those quota and

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landings that occur east of the COLREGS line, as these crabs have been shown to be part of a mixed stock (Shuster 1985).

<b>State</b>	<b>Allocation of Delaware Bay Harvest (%)</b>
<b>NJ</b>	34.6%
<b>DE</b>	34.6%
<b>MD</b>	26.6%
<b>VA</b>	4.2%

*Harvest cap for Maryland and Virginia*

Under this option the harvest cap for Maryland and Virginia established under Addendum VII will be maintained. The harvest cap places a maximum limit on the total level of allowed harvest by Maryland and Virginia, providing protection to non-Delaware Bay-origin crabs. The cap is based on Addendum VI quota levels for Maryland and Virginia. Note again that Virginia’s quota only refers to the amount able to be harvested east of the COLREGS line.

<b>MD Cap</b>	<b>VA Cap</b>
170,653	60,998

These caps shall apply except when the ARM Framework outputs an optimized harvest that prohibits harvest of female horseshoe crabs. In this situation, female horseshoe crab harvest in Maryland and Virginia will be prohibited but a 2:1 offset of males:females shall apply and allow the total male harvest of Maryland and Virginia to rise above the cap level.

*2:1 Male:female offset for female crabs below the Addendum VI levels*

When a female harvest moratorium output by the ARM Framework restricts female crab harvest in Maryland and Virginia below the Addendum VI quota levels, male harvest would be increased at a 2:1 ratio. These increases are the only allowable increases above the designated harvest cap above. The offsets assume an allowed harvest under Addendum VI in Virginia of 20,333 female crabs and in Maryland of 85,327 female crabs.

*Fallback option if ARM Framework cannot be used*

As part of the 2021 ARM Framework Revision, the models are dependent on annual data sets for the yearly harvest setting, and include the following:

- Horseshoe crab abundance estimates from the Virginia Tech Horseshoe Crab Trawl Survey
- Horseshoe crab relative abundance indices from Delaware and New Jersey fishery-independent surveys
- Total horseshoe crab removals (bait harvest, biomedical mortality, and estimated commercial discards)

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- Horseshoe crab spawning beach sex ratio from the Delaware Bay Horseshoe Crab Spawning Survey
- Red knot abundance estimates, including stopover counts and re-sightings

The absence of these annually-collected data sets could inhibit the use of the ARM Framework depending on which data sets were missing. If model results were not available for the fall harvest decision, the Board, via Board action and after consultation of the relevant Technical Committees and Advisory Panels, may set the next season's harvest by one of the following methods:

- Based upon Addendum VI quotas and management measures for New Jersey, Delaware, and Maryland, and Virginia coastal waters; or,
- Based upon the previous year's ARM Framework harvest level and allocation for New Jersey, Delaware, and Maryland, and Virginia coastal waters. Harvest could be more conservative than the previous year's ARM Framework harvest level and allocation for New Jersey, Delaware, and Maryland, and Virginia coastal waters.

### **4.0 Compliance**

TBD

### **5.0 Literature Cited**

- Atlantic States Marine Fisheries Commission (ASMFC). 2009a. Horseshoe Crab Stock Assessment for Peer Review, Stock Assessment Report No. 09-02 (Supplement A) of the Atlantic States Marine Fisheries Commission. Washington D.C. 122pp.
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**Draft Document for Board Review. Not for Public comment.**

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- United States Fish and Wildlife Service (USFWS). 2011. Horseshoe Crab Tagging Program. Report to the Atlantic States Marine Fisheries Commission Delaware Bay Ecosystem Technical Committee (January 24, 2011). 6 pgs.
- Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2007. Adaptive management: the US Department of the Interior technical guide. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

**Draft Document for Board Review. Not for Public comment.**

**Appendix A. Example Allocation of Delaware Bay Horseshoe Crab Harvest**

**Table 1. Horseshoe crab and red knot population estimates and resulting harvest recommendation for 2017-2019 based on the 2021 ARM Revision.** Coastwide biomedical mortality was used for model development, so actual Delaware-Bay specific values will result in slightly lower population estimates. Source: Supplemental Report for ARM Revision, Table 11.

Year	CMSA Estimates		Red knots	Optimal HSC Harvest (revised ARM)	
	Female HSC	Male HSC		Female	Male
2017	10,967,100	31,664,430	49,405	154,483	500,000
2018	9,735,690	24,715,290	45,221	146,792	500,000
2019	9,357,400	21,897,920	45,133	144,803	500,000

**Table 2. Example allocation of the Delaware Bay optimal horseshoe crab harvest using the 2019 Optimal HSC Harvest (see Table 1).** Top: Example allocation under Option B, sub-option B1. Bottom: Example allocation under sub-option B2. Total quota includes crabs of non-Delaware Bay Origin.

State	DE Bay Origin Quota			Total Quota		
	Sexes Combined	Male	Female	Sexes Combined	Male	Female
DE	216,268	173,014	43,254	216,268	173,014	43,254
NJ	216,268	173,014	43,254	216,268	173,014	43,254
MD	166,080	132,864	33,216	170,653	136,522	34,131
VA	26,384	21,107	5,277	60,998	48,798	12,200
<b>Total</b>	<b>625,000</b>	<b>500,000</b>	<b>125,000</b>	<b>664,187</b>	<b>531,349</b>	<b>132,837</b>

State	DE Bay Origin Quota			Total Quota		
	Sexes Combined	Male	Female	Sexes Combined	Male	Female
DE	207,617	173,014	34,603	207,617	173,014	34,603
NJ	207,617	173,014	34,603	207,617	173,014	34,603
MD	159,437	132,864	26,573	170,653	142,211	28,442
VA	25,328	21,107	4,221	60,998	50,832	10,166
<b>Total</b>	<b>600,000</b>	<b>500,000</b>	<b>100,000</b>	<b>646,885</b>	<b>539,071</b>	<b>107,814</b>



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** Horseshoe Crab Plan Development Team  
**FROM:** Horseshoe Crab Advisory Panel  
**DATE:** July 22, 2022  
**SUBJECT:** Advisory Panel Input on Biomedical Mortality and Best Management Practices

### Background

In October 2021, the Board assigned the Plan Development Team (PDT) with the following task: review the threshold for biomedical mortality to develop biological based options for the threshold and to develop options for action when the threshold is exceeded; also, review the best management practices (BMPs) for handling biomedical catch and suggest options for updating and implementing BMPs. The PDT requested that the Horseshoe Crab Advisory Panel (AP) meet to discuss this task and provide input to the PDT regarding the biomedical mortality threshold and BMPs.

The AP met on July 11, 2022 to review the task and provide comments to the PDT. A summary of the AP's discussion and is summarized below. These comments represent the opinions of individual advisors and do not represent a consensus opinion.

**Advisory Panel Attendance:** Brett Hoffmeister (ACC), Allen Bergeson (Lonza), George Topping (commercial for biomed Lonza), Christina Lecker (Fuji Wako), Benjie Swan, Walker Golder (Audubon, Coastal Land Trust), Nora Blair (CRL), David Meservey (Fisherman Dealer)

**Public:** Ben Levitan (Earth Justice), Kristoffer Whitney (RIT, NSF research)

### AP Comments on Biomedical Mortality

Regarding the current estimates of biomedical mortality, Allen commented that the 15% mortality rate that is assumed for crabs that are bled was originally based on studies that used practices that are completely different from the true practices of the industry. He believes the mortality associated with the biomedical process is actually much lower, closer to 5%. He also noted that during the last assessment the data showed that the biomedical crabs had better survival rates than crabs not processed by the biomedical industry; this is because the biomedical labs take care not to bleed crabs that are unhealthy. A paper by Dave Smith (2020) estimates better mortality for bled crabs than control crabs. Regarding the 57,500 crab mortality threshold, Allen said this number was arbitrary when it was established. Efforts have replenished HSC in last few years.

Nora Blair echoed the statements related to the biomedical mortality rate and feels 15% is an overestimate. She also agreed with the TC in their decision to not recommend a biologically-based mortality threshold.

Walker Golder commented that the claims that biomedical mortality is lower than currently estimated do not address or explain why egg density in the Delaware Bay is low compared to what it was years ago. It used to be that egg density was 50,000 per square meter on the beaches in May. He is concerned that there are no signs of increasing egg density in the Bay regardless of the trawl survey trends, noting

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that the shorebirds need eggs to survive, and other species need them too. In addition, he has concerns about the post-handling mortality and impacts of bleeding on horseshoe crabs. He would also like to see more research on the impact of post-spawning capture, because spawning is energetically intensive; post-spawning capture at a time when crabs may be trying to replenish energy supplies and body condition could be contributing to mortality. Similarly, there seems to be minimal information on physiological effects on the adult crabs that are bled. He is also concerned about the release of the crabs after bleeding, specifically about whether the crabs are displaced from their habitat and spawning areas, and not being released close enough to where they are collected.

Allen Burgenson responded to these concerns, first stating that he believes the timing of the shorebirds and the peak egg density of horseshoe crabs are out of sync. Regarding replacement of crabs collected for Lonza, the collection location coordinates are taken and recorded, and also the release coordinates, which allows them to return the crabs within a small area near where they were collected.

### **AP Comments on Biomedical Best Management Practices**

The AP members discussed and provided some thoughts on the BMPs, as well as current practices in the biomedical industry. They also reviewed each of the BMPs from the 2011 document, and provided a few suggested changes.

Walker Golder noted concerns that in general, the language in the BMPs is too vague, and that the BMPs should be coastwide mandates instead of recommendations or state requirements. He would like to see BMPs that are more prescriptive and take into consideration the geographic variability and other variables from capture to release, because the current language leaves it open to interpretation of the individual. For example he asked if a specific tow time for trawls could be required rather than recommended.

The AP members representing the biomedical companies agreed that the BMPs were written this way because of the variation in the environment, collection methods, and facilities along the coast. Because there are different fishing practices in different states, for example hand harvest versus trawling, some of the BMPs would not be practicable in some areas and therefore could not be mandates. Similarly, they discussed that language like “appropriate” or “suitable” were used to describe issues like temperature and number of crabs in transport containers because these factors depend on the conditions specific to an area (e.g. the water temperature in South Carolina is different from that in Massachusetts). Therefore they agreed that broad restrictions or requirements across states would not make sense.

Brett Hoffmeister reminded the group that states have their own specific regulations to protect the spawning population of horseshoe crabs, like lunar closures. For example, in Maryland they do not collect crabs until after they spawn, after the second week of June. Walker Golder said all harvest and biomedical collections should be prohibited during the spawning period and during the period that horseshoe crabs are staging for spawning, including hand harvest.

In general, the biomedical representatives on the AP agreed that the industry is following the best management practices as if they are required (and in some states they are requirements) and making an effort to minimize mortality and stress of the crabs. It is in their best interest to keep mortality as low as possible. For Lonza, the BMPs are included in a contract with the fishermen and in their collection permit, and Maryland audits them for compliance with the BMPs.

Several AP members spoke favorably about the dual use of horseshoe crabs (bait crabs being used for biomedical before being returned to the bait market), saying it is an efficient use of the resource. Others said that it would not be possible in their state because there is no bait fishery.



The AP members suggested some specific changes to the BMPs, as follows:

- Under *Collection*, combine these two redundant bullets: “Sort out and return to the water individuals that do not appear to be healthy (damaged, slow movement, dull shell/old)” and “When possible, release juveniles or unhealthy individuals immediately and do not transport to the facility.”
- Under *Transport to Facility*, change “Maintain temperature between approximately ambient water temperature at time of collection and 10°F below ambient-water temperature” to “Maintain appropriate temperature to prevent temperature shock.” This addresses variation in temperatures along the coast and identifies the purpose of the practice.
- Under *Holding at Facility/Preparation for bleeding/Bleeding*, substitute the term “cell collection” for bleeding, and “collection” for harvest.
- Edit “Continue 30-year policy of not attempting to suction additional blood from the horseshoe crabs”
- Edit “Return to the water as soon as possible. If not being returned to the area of capture, ensure that conditions (~~salinity, water temperature, etc.~~) are similar to those found at the collection site”
  - Walker Golder raised a concern about the statement “If not being returned to the area of capture” because the BMPs indicate that the horseshoe crabs must be returned to the waters they were collected from.
- Under *Return to Sea*, clarify that it is a requirement to return the crabs to the sea.
  - The AP discussed whether it could be more specific how close they must be released to collection site. Walker Golder suggested the following language: “All crabs should be returned as close as possible to site of capture, in the same body of water, at a site with suitable local habitat and conditions, and not more than one mile from the site of capture”
  - A commercial harvesters noted that sometimes the state wants them to release the crabs some distance away from where they were collected to reduce the chance that recently released crabs would be picked up in another trawl.

### General Comments

George Topping noted that he also works on the Virginia Tech Trawl Survey, and has seen a huge increase in the horseshoe crab population during the survey for crabs of all sizes. He commented that they now have to stay in shallower areas to avoid too many small crabs. To get a good number of mature crabs 15-20 years ago they had to tow for much longer than they do now. Everything that management has been doing has worked and it would not be fair to mess with something that is working. He suggests continuing the surveys and current management. Habitat in the Delaware Bay has changed with increased human population growth and land development, and that is a lot of the reason why crabs are not coming up on beaches anymore. He also said that the Board needs to study the impact on horseshoe crabs before building windmills in the horseshoe crab sanctuary.



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** Horseshoe Crab Plan Development Team  
**FROM:** Horseshoe Crab Technical Committee  
**DATE:** July 25, 2022  
**SUBJECT:** Technical Committee Recommendations to PDT on Best Management Practices for Handling Biomedical Collections

### Background

In October 2021, the Board assigned the following task to the Plan Development Team (PDT): review the threshold for biomedical mortality to develop biological based options for the threshold and to develop options for action when the threshold is exceeded; also, review the best management practices (BMPs) for handling biomedical catch and suggest options for updating and implementing BMPs. The PDT tasked the Technical Committee (TC) with reviewing available information to address this task and recommending potential methods for developing biologically based options for the biomedical mortality threshold. They also requested the TC review the BMPs and recommend any updates.

The TC met in July to continue their discussion on the second part of the task relating to the BMPs. At this time, the TC agrees that more information would be needed to make any recommendations for updating the BMPs or potential requirements for biomedical collection practices. **If the Board wishes to pursue modifying the BMPs or considering new requirements, the TC recommends forming a Work Group to collect additional information and develop recommendations.**

### Technical Committee Discussion on Biomedical BMPs

At the TC's June meeting, state representatives were requested to provide information on how their state incorporates the BMPs into their permitting process for biomedical collections and facilities. For each of the BMPs listed in the 2011 document, the state TC representatives indicated whether the practice was required by their state, practiced by the industry but not required, not required nor practiced, not applicable, or unknown. The responses varied widely across the states, with some states requiring few if any of the BMPs and others requiring many of them. However, it was noted by many states that the practices in each state vary greatly, and consequently so does the applicability of some of the BMPs. For example, some states do not allow trawling as a biomedical collection method while others do; to address these differences the TC thinks the BMPs could be further grouped by collection method or other relevant categories. Other issues the TC would like to discuss further are BMPs specific to horseshoe crab holding pens and seasonality of biomedical collections.

The TC agreed that a much more in-depth process is needed to review biomedical practices and permitting in each state. The TC recommends the following next steps:

- Form a Work Group comprised of TC representatives from each of the states that permit biomedical collections and/or facilities, as well as Advisory Panel representatives from the biomedical industry.

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- The Work Group should expand on the information collected thus far by the TC. Specifically, it should identify the following:
  - Differences in biomedical practices across the states (from collection to return to sea)
  - Which BMPs are incorporated into practices or not (and why)
  - Which if any of the BMPs are required by the state
  - Enforceability of the BMPs
  - In text references or documents encompassing state permits or agreements with biomedical facilities and/or collectors.
- The Work Group should compile this information into a report including recommendations for potential actions the Board could consider (e.g., recommended changes to the BMPs, recommended coastwide requirements).

The TC believes this process would be beneficial for improving existing BMPs to inform management of the collection of horseshoe crabs for biomedical use by states through permitting or other mechanisms. It could also help identify areas in which mortality and sub-lethal impacts on horseshoe crabs collected for the biomedical industry could be reduced.



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

July 22, 2022

**To: Horseshoe Crab Management Board**  
**From: Tina Berger, Director of Communications**  
**RE: Advisory Panel Nomination**

Please find attached nominations to the Horseshoe Crab Advisory Panel for Delaware – Jordan Giuttari, a dealer/processor, and Matt Sarver, a conservationist . Please review this nomination 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: Caitlin Starks

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# ATLANTIC STATES MARINE FISHERIES COMMISSION

## Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: John H. Clark State: Delaware  
(your name)

Name of Nominee: Jordan Giuttari

Address: 3337 Main St

City, State, Zip: Bowers Beach, DE 19946

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 302-233-4694

Phone (evening): 302-233-4694

FAX: \_\_\_\_\_

Email: Del Bay Seafood @ gmail. com

**FOR ALL NOMINEES:**

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

1. Horseshoe Crabs
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes \_\_\_\_\_ no

3. Is the nominee a member of any fishermen's organizations or clubs?

yes  no \_\_\_\_\_

If "yes," please list them below by name.



Delaware Shellfish Advisory

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

<u>Blue crabs</u>	<u>Conchs</u>
<u>Horseshoe crabs</u>	<u>Oysters</u>
<u>Rockfish</u>	

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

<u>Blue Crabs</u>	<u>Conchs</u>
<u>Horseshoe crabs</u>	<u>Oysters</u>
<u>Rock fish</u>	

**FOR COMMERCIAL FISHERMEN:**

1. How many years has the nominee been the commercial fishing business? 15 years
2. Is the nominee employed only in commercial fishing? yes \_\_\_\_\_ no
3. What is the predominant gear type used by the nominee? Crab pots
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? DE Bay

**FOR CHARTER/HEADBOAT CAPTAINS:**

1. How long has the nominee been employed in the charter/headboat business? \_\_\_\_\_ years
2. Is the nominee employed only in the charter/headboat industry? yes \_\_\_\_\_ no \_\_\_\_\_  
If "no," please list other type(s) of business(es) and/occupation(s): \_\_\_\_\_  
\_\_\_\_\_
3. How many years has the nominee lived in the home port community? \_\_\_\_\_ years  
If less than five years, please indicate the nominee's previous home port community.  
\_\_\_\_\_

**FOR RECREATIONAL FISHERMEN:**

1. How long has the nominee engaged in recreational fishing? \_\_\_\_\_ years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes \_\_\_\_\_ no \_\_\_\_\_

If "yes," please explain.

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**FOR SEAFOOD PROCESSORS & DEALERS:**

1. How long has the nominee been employed in the business of seafood processing/dealing? 4 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):

Commercial fishermen

DE Bay + River Pilots Association

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3. How many years has the nominee lived in the home port community? 34 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? \_\_\_\_\_ years
2. Is the nominee employed in the fishing business or the field of fisheries management? yes \_\_\_\_\_ no \_\_\_\_\_

If "no," please list other type(s) of business(es) and/or occupation(s):

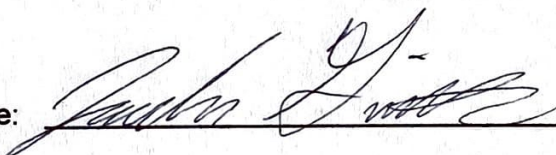
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**FOR ALL NOMINEES:**

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.

Nominee Signature: 

Date: 7/21/22

Name: Jordan Giutteri  
(please print)

**COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)**

  
State Director

\_\_\_\_\_  
State Legislator

\_\_\_\_\_  
Governor's Appointee





**ATLANTIC STATES MARINE FISHERIES COMMISSION**

**Advisory Panel Nomination Form**

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: John H. Clark State: Delaware  
(your name)

Name of Nominee: Matthew Sarver  
 Address: 6 Walnut Ridge Rd  
Wilmington, DE 19807  
 City, State, Zip: \_\_\_\_\_

Please provide the appropriate numbers where the nominee can be reached:  
 724-689-5845 same  
 Phone (day): \_\_\_\_\_ Phone (evening): \_\_\_\_\_  
 matt@sarverecological.com  
 FAX: \_\_\_\_\_ Email: \_\_\_\_\_

**FOR ALL NOMINEES:**

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.  
 Horseshoe Crab  
 1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_  
 4. \_\_\_\_\_

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?  
 X  
 yes \_\_\_\_\_ no \_\_\_\_\_

3. Is the nominee a member of any fishermen's organizations or clubs?  
 X  
 yes \_\_\_\_\_ no \_\_\_\_\_

If "yes," please list them below by name.

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4. What kinds (species ) of fish and/or shellfish has the nominee fished for during the past year?  
N/A

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5. What kinds (species ) of fish and/or shellfish has the nominee fished for in the past?  
N/A

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**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? \_\_\_\_\_ 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.

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**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):

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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? 10 years
2. Is the nominee employed in the fishing business or the field of fisheries management?  
yes \_\_\_\_\_ no  \_\_\_\_\_

If "no," please list other type(s) of business(es) and/or occupation(s):

Volunteer Conservation Committee Chair at Delaware  
Ornithological Society - Professional ecologist by  
trade.

**FOR ALL NOMINEES:**

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Nominee Signature: 

Date: 7/18/22

Matthew Sarver

Name: \_\_\_\_\_  
(please print)

**COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)**

  
State Director

\_\_\_\_\_  
State Legislator

\_\_\_\_\_  
Governor's Appointee



July 26, 2022

Atlantic States Marine Fisheries Commission  
1050 N. Highland Street, Suite 200 A-N  
Arlington, VA 22201  
comments@asmfc.org

***VIA ELECTRONIC MAIL***

**Re: Consideration of Draft Addendum VIII on the Implementation of Recommended Changes from 2021 Adaptive Resource Management Revision and Peer Review Report for Public Comment**

Dear Commissioners:

I write on behalf of New Jersey Audubon and Defenders of Wildlife regarding the Atlantic States Marine Fisheries Commission (“ASMFC”) Horseshoe Crab Management Board’s “Consider[ation of] Draft Addendum VIII on the Implementation of Recommended Changes from 2021 Adaptive Resource Management Revision and Peer Review Report for Public Comment,” which is scheduled for discussion at the Board’s meeting on August 3, 2022.<sup>1</sup> Please include this letter in the supplemental materials for that meeting.

On February 23, 2022, the parties to this letter submitted records requests to ASMFC, the U.S. Geological Survey, and the U.S. Fish & Wildlife Service seeking the model, including inputs, used to generate bait harvest recommendations under the adaptive resource management (“ARM”) revision. The purpose of the records requests was to ensure that the public has an opportunity to independently assess the rigor and functionality of the model. To date, the federal agencies have not provided the model or any of the model’s components or inputs.<sup>2</sup>

New Jersey Audubon and Defenders of Wildlife strongly urge the Horseshoe Crab Management Board not to initiate public comment on proposed Addendum VIII until all components of, and inputs to, the model are publicly available, and the public has had a reasonable opportunity to analyze them. Specifically, they urge the Board not to take management action to initiate a public comment period at the meeting on August 3. By initiating a comment period, the Board would be asking the public to comment on a model that the public has not yet had an opportunity to review, contravening basic requirements for informed public input.

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<sup>1</sup> ASMFC Horseshoe Crab Management Board, *Draft Agenda (August 3, 2022)*,

<http://www.asmfc.org/files/Meetings/2022SummerMeeting/HorseshoeCrabBoard.pdf>

<sup>2</sup> ASMFC provided certain components of the model on April 29, 2022, but indicated that most of the model’s components and inputs were in the possession of federal agencies.

The stakes of the Horseshoe Crab Management Board’s decision on proposed Addendum VIII are immense. On January 18, 2022, New Jersey Audubon and Defenders of Wildlife submitted a letter<sup>3</sup> to ASMFC detailing concerns about the ARM revision’s likely impact on the horseshoe crab and red knot, a migratory shorebird listed as threatened under the Endangered Species Act for which horseshoe crab eggs are an essential food source. The red knot’s precarious situation calls for a precautionary approach to facilitate its recovery—and to prevent a potentially irreversible decline.

There is no justification for advancing proposed Addendum VIII through the approval process without meaningful public review of the underlying model. The Board should postpone the initiation of a public comment period until the opportunity for such review has been granted.

Respectfully submitted,

Benjamin Levitan  
Senior Attorney, Biodiversity Defense Program  
EARTHJUSTICE  
48 Wall Street, 15th Floor  
New York, NY 10005  
(202) 797-4317  
blevitan@earthjustice.org

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<sup>3</sup> Letter from Benjamin Levitan to ASMFC Commissioners re: Proposed “Revision to the Framework for Adaptive Management of Horseshoe Crab Harvest in the Delaware Bay Inclusive of Red Knot Conservation” (Jan. 18, 2022), *in* Supplemental Materials for the Horseshoe Crab Management Board meeting (Jan. 26, 2022) at p. 37 of PDF, <http://www.asmfc.org/files/Meetings/2022WinterMeeting/HorseshoeCrabBoardSupplemental.pdf>.

**ATLANTIC STATES MARINE FISHERIES COMMISSION**

**REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN**

**FOR ATLANTIC MENHADEN**  
***(Brevoortia tyrannus)***

**2021 FISHING YEAR**



Prepared by the Plan Review Team

Prepared July 15, 2022



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

**REVIEW OF THE ASMFC FISHERY MANAGEMENT PLAN AND STATE COMPLIANCE FOR  
ATLANTIC MENHADEN (*Brevoortia tyrannus*) FOR THE 2021 FISHERY**

**Management Summary**

<u>Date of FMP:</u>	Original FMP: August 1981
<u>Amendments:</u>	Plan Revision: September 1992 Amendment 1: July 2001 Amendment 2: December 2012 Amendment 3: November 2017
<u>Management Unit:</u>	The range of Atlantic menhaden within U.S. waters of the Northwest Atlantic Ocean, from the estuaries eastward to the offshore boundary of the Exclusive Economic Zone (EEZ).
<u>States With Declared Interest:</u>	Maine – Florida, including Pennsylvania
<u>Additional Jurisdictions:</u>	Potomac River Fisheries Commission, National Marine Fisheries Service, United States Fish and Wildlife Service
<u>Active Boards/Committees:</u>	Atlantic Menhaden Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Plan Review Team, Plan Development Team, Ecological Reference Point Workgroup
<u>Stock Status:</u>	Not overfished, and overfishing is not occurring relative to the current single-species reference points (2019 Single-Species Benchmark Stock Assessment)

**I. Status of the Fishery Management Plan**

Atlantic menhaden management authority is vested in the states because the vast majority of landings come from state waters. All Atlantic coast states and jurisdictions, with the exception of the District of Columbia, have declared interest in the Atlantic menhaden management program.

The first coastwide fishery management plan (FMP) for Atlantic menhaden was passed in 1981. The FMP did not recommend or require specific management actions, but provided a suite of options should they be needed. In 1992, the plan was revised to include a suite of objectives intended to improve data collection and promote awareness of the fishery and its research needs.



[Amendment 1](#), implemented in 2001, provided specific biological, ecological and socioeconomic management objectives. Addenda I and V revised the biological reference points for menhaden and specified that stock assessments are to occur every three years. Although Amendment 1 did not implement any recreational or commercial management measures, Addenda II through IV instituted a harvest cap on the reduction fishery in Chesapeake Bay. Specifically, Addendum II implemented a harvest cap for 2006-2010 fishing seasons; before its first year of implementation, Addendum III revised the cap amount to be the average landings from 2001 to 2005 (or 109,020 mt); and Addendum IV extended the provisions of Addendum III through 2013.

[Amendment 2](#), implemented in 2012, established a 170,800 metric ton (mt) total allowable catch (TAC) for the commercial fishery beginning in 2013. This TAC represented a 20% reduction from average landings between 2009 and 2011. This Amendment also used the 2009-2011 period to allocate the TAC among jurisdictions. Additionally, the Amendment established timely reporting requirements for commercial landings and required states to be accountable for their respective quotas by paying back any overages the following year. Amendment 2 also included provisions that allowed for the transfer of quota between jurisdictions and a bycatch allowance of 6,000 pounds per day for non-directed fisheries that operate after a jurisdiction's quota has been landed. Addendum 1 to Amendment 2 allows two licensed individuals to harvest up to 12,000 pounds of menhaden bycatch when working from the same vessel using stationary multi-species gear; the intent of this provision is to accommodate cooperative fishing practices that traditionally take place in Chesapeake Bay. The Amendment also reduced the Chesapeake Bay reduction fishery harvest cap by 20% to 87,216 mt.

Amendment 2 also enabled the Board to set aside 1% of the coastwide TAC for episodic events. Episodic events are times and areas where Atlantic menhaden are available in more abundance than they normally occur. Technical Addendum I to Amendment 2 established a mechanism for New England states from Maine to Connecticut<sup>1</sup> to use the set aside, which includes a qualifying definition of episodic events, required effort controls to scale a state's fishery to the set aside amount, and a timely reporting system to monitor the set aside. Any unused set aside quota as of October 31 is redistributed to jurisdictions on November 1 based on the Amendment 2 allocation percentages.

In 2015, the TAC was increased by 10% to 187,880 mt for the 2015 and 2016 fishing years. In 2016, the Board again increased the TAC by 6.45% to 200,000 mt for the 2017 fishing year.

Atlantic menhaden are managed under [Amendment 3](#). Approved in November 2017, the Amendment maintained the management program's single-species biological reference points until the review and adoption of menhaden-specific ecological reference points (ERPs) as part of the 2019 benchmark stock assessment process. In doing so, the Board placed development of menhaden-specific ERPs as its highest priority and supports the efforts of the ERP Workgroup to reach that goal.

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<sup>1</sup> At its May 2016 meeting, the Board added New York as an eligible state to harvest under the set aside.

Amendment 3 also changed commercial quota allocations in order to strike an improved balance between gear types and jurisdictions. The Amendment allocated a baseline quota of 0.5% to each jurisdiction, and allocated the rest of the TAC based on average landings between 2009 and 2011. This measure provides fishing opportunities to states that had little quota under Amendment 2, while still recognizing historic landings in the fishery. States also have the option to relinquish all or part of its quota which is then redistributed to the other jurisdictions based on the 2009-2011 landings period. The Amendment also prohibits the rollover of unused quota; maintains the quota transfer process; maintains the bycatch provision (which was rebranded as the ‘incidental catch’ provision and applicable gear types were defined) and the episodic event set aside program for the states of Maine – New York. Finally, the Amendment reduced the Chesapeake Bay cap to 51,000 mt, recognizing the importance of the Chesapeake Bay as nursery grounds for many species by capping recent reduction landings from the Bay at current levels.

State	Allocations
Maine	0.52%
New Hampshire	0.50%
Massachusetts	1.27%
Rhode Island	0.52%
Connecticut	0.52%
New York	0.69%
New Jersey	10.87%
Pennsylvania	0.50%
Delaware	0.51%
Maryland	1.89%
PRFC	1.07%
Virginia	78.66%
North Carolina	0.96%
South Carolina	0.50%
Georgia	0.50%
Florida	0.52%
<b>Total</b>	<b>100%</b>

In addition to its Amendment 3 deliberations, the Board increased the TAC by 8% to 216,000 mt for the 2018 and 2019 fishing seasons with the expectation that setting of the TAC for subsequent years would be guided by menhaden-specific ERPs. However, the 2019 benchmark stock assessments and peer-review reports would not be available for Board review until February 2020. As a result, in August 2019, the Board maintained the 216,000 mt TAC for 2020.

In October 2019, the Commission found the Commonwealth of Virginia out of compliance with the Interstate FMP for failing to implement and enforce Section 4.3.7 of Amendment 3: Chesapeake Bay Reduction Fishery Cap (cap). Implementation of this measure is necessary to achieve the goals and objectives of Amendment 3 and maintain the Chesapeake Bay marine environment to assure the availability of the ecosystem’s resources on a long-term basis. The noncompliance finding was sent to the Secretary of Commerce who concurred with the Commission’s finding and declared a moratorium on Atlantic menhaden fisheries in Virginia waters, effective June 17, 2020 if the correct cap was not implemented. In May 2020, ASMFC withdrew the noncompliance finding as the Commonwealth promulgated regulations to implement the 51,000 mt cap. To account for the 2019 overage, the cap for the 2020 fishing year was set at 36,000 mt.

In August 2020, the Board formally approved the use of ERPs to manage Atlantic menhaden, with Atlantic striped bass as the focal species in maintaining their population. Atlantic striped bass was chosen for the ERP definitions because it was the most sensitive predator fish species to Atlantic menhaden harvest, so an ERP target and threshold sustaining striped bass would likely provide sufficient forage for other predators under current ecosystem conditions. For the development of the ERPs, all other focal species in the model (bluefish, weakfish, spiny dogfish, and Atlantic herring) were assumed to be fished at 2017 levels.

In October 2020, the Board approved a TAC for 2021 and 2022 of 194,000 mt, based on the ERPs approved in August. The new TAC represents a 10% reduction from the 2018-2022 TAC level. Based on projections, the TAC is estimated to have a 58.5% and 52.5% probability of exceeding the ERP fishing mortality target in the first and second year, respectively. The Board is currently in the process of considering Addendum I to Amendment 3, which could modify the state allocation process, as well as the Episodic Events Set Aside (EESA) and Incidental Catch and Small-Scale Fisheries Provision (IC/SSF).

## **II. Status of the Stock**

Atlantic menhaden are now managed by menhaden-specific ERPs as indicated above. The ERP target is the maximum fishing mortality rate ( $F$ ) on Atlantic menhaden that sustains Atlantic striped bass at their biomass target when striped bass are fished at their  $F$  target, a measure of the intensity with which the population is being fished, is used to evaluate whether the stock is experiencing overfishing. The ERP threshold is the maximum  $F$  on Atlantic menhaden that keeps Atlantic striped bass at their biomass threshold when striped bass are fished at their  $F$  target. Population fecundity, a measure of reproductive capacity, is used to evaluate whether the stock is overfished. According to the latest assessment results, the 2017 estimate of fecundity, was above both the ERP FEC target and threshold, indicating the stock was not overfished. The next single-species stock assessment update is underway and scheduled to be presented to the Board in August, 2022.

In February 2020, the Board accepted the results of the [Single-Species](#) and [Ecological Reference Point \(ERP\)](#) Benchmark Stock Assessments and Peer Review Reports for management use. These assessments were peer-reviewed and approved by an independent panel of scientific experts through the 69<sup>th</sup> SouthEast, Data, Assessment and Review (SEDAR) workshop. The single-species assessment acts as a traditional stock assessment using the Beaufort Assessment Model (BAM), a statistical catch-at-age model that estimates population size-at-age and recruitment. According to the model, the stock is not overfished or experiencing overfishing relative to the current single-species reference points. Population fecundity in 2017 is above the single-species threshold and  $F$  has remained below the single-species overfishing threshold (0.6) since the mid-1970s, and below the single-species overfishing target (0.22) since the mid-1990s. The model also found juvenile abundance was low in 2017, while biomass was relatively high.

The ERP assessment evaluates the health of the stock in an ecosystem context, and indicates the  $F$  reference points for menhaden should be lower to account for the species' role as a

forage fish<sup>2</sup>. The ERP assessment uses the Northwest Atlantic Coastal Shelf Model of Intermediate Complexity for Ecosystems (NWACS-MICE) to develop Atlantic menhaden ERPs. NWACS-MICE is an ecosystem model that focuses on four key predator species (striped bass, bluefish, weakfish, and spiny dogfish) and three key prey species (Atlantic menhaden, Atlantic herring, and bay anchovy). These species were chosen because diet data indicate they are top predators of Atlantic menhaden or are key alternate prey species for those predators.

The ERP assessment indicates the *F* reference points for menhaden should be lower than the single-species reference points, but it also concluded that the final ERP definitions, including the appropriate harvest level for menhaden, depend on the management objectives for the ecosystem (i.e., management objectives for both Atlantic menhaden and its predators). Accordingly, instead of proposing a specific ERP definition, the assessment recommends a combination of the BAM and the NWACS-MICE models as a tool for managers to evaluate trade-offs between menhaden harvest and predator biomass.

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

#### *Commercial*

Total commercial Atlantic menhaden landings in 2021, including directed, incidental catch, and EESA landings, are estimated at 195,092 mt (430.1 million pounds), an approximate 6% increase relative to 2020 (Table 1). The non-incidental catch fishery landings (directed landings plus landings under the EESA) total for 2021 is estimated at 189,497 mt (417.8 million pounds) and represents approximately 97% of the coastwide commercial TAC of 194,400 mt (428.6 million pounds). Landings from the incidental catch fishery are estimated at 5,596 mt (12.3 million pounds) and do not count towards the coastwide TAC.

#### *Reduction Fishery*

The 2021 harvest for reduction purposes is estimated at 136,690 mt (301.3 million pounds), a 10% increase from 2020 and 0.06% above the previous 5-year average of 136,614 mt (301.2 million pounds) (Table 3; Figure 3). Omega Protein's plant in Reedville, Virginia, is the only active Atlantic menhaden reduction factory on the Atlantic coast. In 2020, the reduction plant was shut down for 3 weeks due to the COVID-19 pandemic. Anecdotal reports indicate that in addition to the pandemic, bad weather may have also contributed to lower harvest.

#### *Bait Fishery*

The coastwide bait harvest estimate for 2021 from state compliance reports, including directed, incidental catch, and EESA landings, is 58,403 mt (128.8 million pounds). This represents a 2% decrease relative to 2020 and a 13% increase compared to the previous 5-year average (Table 3; Figure 3). New Jersey (36%), Virginia (26%), Maine (17%), and Massachusetts (8%) landed the four largest shares in 2021. For some states, landings validated by ACCSP differed to some

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<sup>2</sup> it should be noted, however, that the conservative TAC the Board has set for recent years is consistent with the ERP *F* target provided in the ERP Assessment

degree from the state compliance report values, resulting in a total coastwide bait harvest of 58,887 mt (129.8 million pounds; Table 2).

#### *Incidental Catch and Small Scale Fisheries Landings*

Incidental catch landings in 2021 are estimated at 5,596 mt (12.3 million pounds), which is a 9% decrease relative to 2020 (Table 4). Maine, Massachusetts, Rhode Island, Connecticut, New York, and New Jersey reported incidental catch landings (88% from purse seines and 8% from gill nets) in 2021 (Table 5). Maine accounted for 96% of total incidental fishery landings. The number of incidental catch trips (3,099) was lower than in 2019 (3,113) and 2020 (3,565) but higher than trips from 2016 through 2018 (Table 5).

#### *Episodic Events Set Aside Program*

The 2021 EESA quota was 1,944 mt (4.29 million pounds). Maine began harvesting under the EESA program on June 25<sup>th</sup> and continued until their EESA fishery closed on July 1<sup>st</sup>. Although, the directed fishery was able to reopen from July 2<sup>nd</sup> through 16<sup>th</sup> with the state's acquisition of 4.2 million pounds of quota through six state-to-state transfers. Massachusetts began harvesting under the EESA program on June 18<sup>th</sup> and closed the fishery on July 16<sup>th</sup>. Another six quota transfers allowed Massachusetts to continue the directed fishery from July 19<sup>th</sup> until August 10<sup>th</sup>. Rhode Island participated in the EESA program from June 8<sup>th</sup> until July 7<sup>th</sup> and closed the directed fishery on October 19<sup>th</sup>, before reopening it from October 22<sup>nd</sup> until October 25<sup>th</sup> to utilize a small amount of remaining quota. An estimated 2,213 mt (4.9 million pounds) of menhaden were landed under the EESA fishery (Table 6), which is 592,250 pounds over the set aside quota. In November and December 2021, and April 2022, a number of quota transfers were made to cover the overage (see Table 8).

#### *Chesapeake Bay Reduction Fishery Cap (cap)*

Amendment 3 implemented a 51,000 mt harvest cap for the reduction fishery in the Chesapeake Bay. Due to the cap being exceeded in 2019, the cap was reduced to 36,000 mt for 2020 to account for the overage. Reported reduction landings from Chesapeake Bay in 2020 were about 27,700 mt, under the adjusted cap by approximately 9,000 mt. As a result, the cap for 2021 is set once again at 51,000 mt. Reported reduction landings from Chesapeake Bay in 2021 were about 50,000 mt, under the cap by approximately 1,000 mt.

#### *Recreational*

Menhaden are important bait in many recreational fisheries; some recreational fishermen use cast nets to capture menhaden or snag them with hook and line for use as bait, both dead and alive. The Marine Recreational Information Program (MRIP) estimate for Atlantic menhaden harvest (A + B1) in 2021 is 3.1 million pounds (PSE of 31.1) which is a 21% increase from 2020 (2.55 million pounds). Please note due to COVID-19 pandemic disruptions to the Access Point Angler Intercept Survey and subsequent gaps in catch records, 2020 catch estimates are based in part on imputed data (i.e. proxy or replacement data from 2018 and 2019). For Menhaden in 2020, the contribution of imputed data to total harvest was 26% for harvest in number of fish and 19% for harvest in weight (pounds).

Additionally, it is important to note recreational harvest is not well captured by MRIP because there is not a known, identified direct harvest for menhaden, other than for bait. MRIP intercepts typically capture the landed fish from recreational trips as fishermen come to the dock or beach. However, since menhaden caught by recreational fishermen are often used as bait during their trip, they are typically not part of the catch that is seen by the surveyor completing the intercept.

#### **IV. Status of Research and Monitoring**

##### **Commercial fisheries monitoring**

Reduction fishery - The NMFS Southeast Fisheries Science Center Beaufort Laboratory in Beaufort, North Carolina, continues to monitor landings and collect biological samples from the Atlantic menhaden purse-seine reduction fishery. The Beaufort Laboratory processes and ages all reduction samples collected on the East Coast. In addition, the purse-seine reduction fishery continues to provide Captains Daily Fishing Reports (CDFRs) to the Beaufort Laboratory where NMFS personnel enter data into a database for storage and analysis.

Bait fishery - Per Amendment 3, states are required to implement a timely quota monitoring system to maintain menhaden harvest within the TAC and minimize the potential for quota overages. The Standard Atlantic Fisheries Information System (SAFIS) daily electronic dealer reporting system allows near real time data acquisition for federally permitted bait dealers in the Mid-Atlantic and Northeast. Landings by Virginia's purse-seine for-bait vessels (snapper rigs) in Chesapeake Bay are tabulated at season's end using CDFRs maintained on each vessel during the fishing season. A bait-fishery sampling program for size and age composition has also been conducted since 1994. The Beaufort Laboratory, and some states, age the bait samples collected. See *Section VII* for more information on quota monitoring and biological sampling requirements.

##### **Atlantic menhaden research**

The following studies relevant to menhaden assessment and management have been published within the last few years:

- Anstead, K. A., K. Drew, D. Chagaris, A. M. Schueller, J. E. McNamee, A. Buchheister, G. Nesslage, J. H. Uphoff Jr., M. J. Wilberg, A. Sharov, M. J. Dean, J. Brust, M. Celestino, S. Madsen, S. Murray, M. Appelman, J. C. Ballenger, J. Brito, E. Cosby, C. Craig, C. Flora, K. Gottschall, R. J. Latour, E. Leonard, R. Mroch, J. Newhard, D. Orner, C. Swanson, J. Tinsman, E. D. Houde, T. J. Miller, and H. Townsend. 2021. The path to an ecosystem approach for forage fish management: A case study of Atlantic menhaden. *Front. Mar. Sci.* 8: 607657.
- Chagaris D., K. Drew, A. M. Schueller, M. Cieri, J. Brito, and A. Buchheister. 2020. Ecological Reference Points for Atlantic Menhaden Established Using an Ecosystem Model of Intermediate Complexity. *Front. Mar. Sci.* 7:606417.
- Deyle, E., A. M. Schueller, H. Ye, G. M. Pao, and G. Sugihara. 2018. Ecosystem-based forecasts of recruitment in two menhaden species. *Fish and Fisheries* 19(5): 769-781.
- Drew, K., M. Cieri, A. M. Schueller, A. Buchheister, D. Chagaris, G. Nesslage, J. E. McNamee, and J. H. Uphoff. 2021. Balancing Model Complexity, Data Requirements,

and Management Objectives in Developing Ecological Reference Points for Atlantic Menhaden. *Front. Mar. Sci.* 8: 608059.

- Liljestrand, E.M., M.J. Wilberg, and A.M. Schueller. 2019. Estimation of movement and mortality of Atlantic menhaden during 1966-1969 using a Bayesian multi-state mark recapture model. *Fisheries Research* 210: 204-213.
- Liljestrand, E.M., M. J. Wilberg, and A. M. Schueller. 2019. Multi-state dead recovery mark-recovery model performance for estimating movement and mortality rates. *Fisheries Research* 210: 214-233.
- Lucca, B. M., and J. D. Warren. 2019. Fishery-independent observations of Atlantic menhaden abundance in the coastal waters south of New York. *Fisheries Research* 218: 229-236.
- Nesslage, G. M., and M. J. Wilberg. 2019. A performance evaluation of surplus production models with time-varying intrinsic growth in dynamic ecosystems. *Canadian Journal of Fisheries and Aquatic Sciences* 76(12): 2245-2255.
- Schueller, A.M., A. Rezek, R. M. Mroch, E. Fitzpatrick, and A. Cheripka. 2021. Comparison of ages determined by using an Eberbach projector and a microscope to read scales from Atlantic menhaden (*Brevoortia tyrannus*) and Gulf menhaden (*B. patronus*). *Fishery Bulletin* 119(1): 21-32.

Theses and Dissertations of Potential Interest:

- McNamee, J. E. 2018. A multispecies statistical catch-at-age (MSSCAA) model for a Mid-Atlantic species complex. University of Rhode Island.

## **V. Implementation of FMP Compliance Requirements for 2022**

All states are required to submit annual compliance reports by April 1.

### *Quota Results*

Table 8 contains 2021 state-specific quotas and directed harvest. The final quotas for 2021 account for 1.7 million pounds of quota relinquished by Delaware and the result of 25 state-to-state transfers (Table 9), as well as transfers to the EESA. Quota transfers were generally pursued to ameliorate overages. Based on preliminary 2021 landings and quota transfers through April 2022, no jurisdiction's quota has been adjusted due to quota overage.

The Board set the TAC at 194,400 mt (428.5 million pounds) for 2021 and 2022 based on the adopted ERPs. 1% is set aside for episodic events. States may relinquish all or part of its annual quota by December 1<sup>st</sup> of the previous year. Delaware relinquished 1.2 million pounds of quota which was redistributed to the states according to procedures outlined in Amendment 3 and is reflected in the 2022 Preliminary Quota (Table 8).

### *Quota Monitoring*

The Board approved timely quota monitoring programs for each state through implementation of Amendment 3. Monitoring programs are intended to minimize the potential for quota overages. Table 7 contains a summary of each state's approved quota monitoring system.

Menhaden purse seine and bait seine vessels (or snapper rigs) are required to submit CDFRs. Maine, New York, and Virginia fulfilled this requirement in 2021. New Jersey did not require purse seine vessels to fill out the specific CDFR but did require monthly trip level reporting on state forms that include complementary data elements to the CDFR. Rhode Island purse seine vessels must call in daily reports to RI DMF and fill out daily trip level logbooks. New Hampshire also does not require the specific CDFR, but does require daily, trip-level reporting from dealers and monthly trip-level reporting from harvesters. Massachusetts requires trip level reporting for all commercial fishermen. Menhaden purse seine fisheries do not currently operate in all other jurisdictions in the management unit.

### *Biological Monitoring Requirements*

Amendment 3 maintains biological sampling requirements for non *de minimis* states as follows:

- One 10-fish sample (age and length) per 300 mt landed for bait purposes for Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Delaware; and
- One 10-fish sample (age and length) per 200 mt landed for bait purposes for Maryland, Potomac River Fisheries Commission, Virginia, and North Carolina

Table 10 provides the number of 10-fish samples required and collected for 2021. These are based on the best available 2021 total bait landings data (including directed, incidental, and EESA landings) provided to the Commission by the states. In 2021, Massachusetts, Rhode Island, and Connecticut fell short of the required samples. Massachusetts received a number of quota transfers to extend the fishery on August 5<sup>th</sup>, but staff were unable to complete the additional monitoring before the fishery closed on August 10<sup>th</sup>. Due to late reported landings, Rhode Island missed one of the required 5 10-fish sampling events but noted that over the four completed events, 55 fish were sampled from the fishery, as well as an additional 49 from the coastal trawl survey. Connecticut has faced difficulties collecting bait samples and relies primarily on the Long Island Sound Trawl Survey for sampling, which produced 103 age samples and 302 length samples over 139 tows. All other jurisdictions met the biological monitoring requirements in 2021.

The PRT continued to discuss whether a sufficient number of age and length samples are being collected from different commercial gear types as well as regions, and whether substituting samples from fishery-independent sources is appropriate for meeting the requirement. The PRT recommends this requirement be evaluated as part of the next management action or during the next benchmark stock assessment.

### *Adult CPUE Index Requirement*

Amendment 3 requires that, at a minimum, each state with a pound net fishery must collect catch and effort data elements for Atlantic menhaden as follows; total pounds landed per day, number of pound nets fished per day. These are harvester trip level ACCSP data requirements. In May of 2013, the Board approved North Carolina's request to omit this information on the basis that it did not have the current reporting structure to require a quantity of gear field by



harvesters or dealers. In recent years, NC DMF staff have worked to develop a proxy method to estimate effort but this approach likely would not work for developing an adult CPUE index.

#### *De Minimis* Status

To be eligible for *de minimis* status, a state's bait landings must be less than 1% of the total coastwide bait landings for the most recent two years. State(s) with a reduction fishery are not eligible for *de minimis* consideration. If granted *de minimis* status by the Board, states are exempt from implementing biological sampling as well as pound net catch and effort data reporting. The Board also previously approved a *de minimis* exemption for New Hampshire, South Carolina and Georgia from implementation of timely reporting. The states of Pennsylvania, South Carolina, Georgia, and Florida requested and qualify for *de minimis* status for the 2021 fishing season.

## **VI. Plan Review Team Recommendations and Notable Comments**

### Management Recommendations

- The PRT recommends that the *de minimis* requests from Pennsylvania, South Carolina, Georgia, and Florida, be approved.
- The PRT recommends that the Technical Committee be tasked with evaluating the biological sampling requirement to be readdressed in a future management document or stock assessment.

## VII. Literature Cited

Atlantic States Marine Fisheries Commission (ASMFC). 2017. Atlantic Menhaden Stock Assessment Update. Prepared by the ASMFC Atlantic Menhaden Stock Assessment Subcommittee. 180 pp.

Southeast Data, Assessment, and Review (SEDAR). 2015. SEDAR 40 – Atlantic Menhaden Stock Assessment Report. SEDAR, North Charleston SC. 643 pp.

SEDAR. 2020. SEDAR 69 – Atlantic Menhaden Benchmark Stock Assessment Report. SEDAR, North Charleston SC. 691 pp. available online at: <http://sedarweb.org/sedar-69>

SEDAR. 2020. SEDAR 69 - Atlantic Menhaden Ecological Reference Points Stock Assessment Report. SEDAR, North Charleston SC. 560 pp. available online at: <http://sedarweb.org/sedar-69>

Table 1. Directed, bycatch, and episodic events set aside landings in 1000s of pounds for 2021 by jurisdiction. Source: 2022 ASMFC state compliance reports for Atlantic menhaden. NA = not applicable; C = confidential (Some states are listed as confidential to protect the confidentiality of other states)

State	Directed	Incidental Catch	EESA
ME	7,501	11,771	C
NH	C	-	NA
MA	7,782	174	C
RI	3,393	C	C
CT	163	C	NA
NY	2,912	310	NA
NJ	45,640	C	NA
DE	C	-	NA
MD	2,801	-	NA
PRFC	2,534	-	NA
VA	334,790	-	NA
NC	419	-	NA
SC	C	-	NA
GA	C	-	NA
FL	111	-	NA

Table 2. 2021 validated bait landings by jurisdiction in 1000s of pounds. C = confidential (Some states are listed as confidential to protect the confidentiality of other states)

State	Bait Landings
ME	22,769
NH	C
MA	9,916
RI	3,575
CT	C
NY	3,337
NJ	45,694
DE	C
MD	2,802
PRFC	2,536
VA	33,441
NC	424
SC	C
GA	C
FL	111

Table 3. Atlantic menhaden reduction and bait landings in thousand metric tons, 1987-2021

	<b>Reduction Landings (1000 mt)</b>	<b>Bait Landings (1000 mt)</b>
<b>1987</b>	310	25.5
<b>1988</b>	278	43.8
<b>1989</b>	284	31.5
<b>1990</b>	343	28.1
<b>1991</b>	330	29.7
<b>1992</b>	270	33.8
<b>1993</b>	310	23.4
<b>1994</b>	260	25.6
<b>1995</b>	340	28.4
<b>1996</b>	293	21.7
<b>1997</b>	259	24.2
<b>1998</b>	246	38.4
<b>1999</b>	171	34.8
<b>2000</b>	167	33.5
<b>2001</b>	234	35.3
<b>2002</b>	174	36.2
<b>2003</b>	166	33.2
<b>2004</b>	183	34.0
<b>2005</b>	147	38.4
<b>2006</b>	157	27.2
<b>2007</b>	174	42.1
<b>2008</b>	141	47.6
<b>2009</b>	144	39.2
<b>2010</b>	183	42.7
<b>2011</b>	174	52.6
<b>2012</b>	161	63.7
<b>2013</b>	131	37.0
<b>2014</b>	131	41.6
<b>2015</b>	143	45.8
<b>2016</b>	137	43.1
<b>2017</b>	129	43.8
<b>2018</b>	141	50.2
<b>2019</b>	151	58.1
<b>2020</b>	125	59.6
<b>2021</b>	137	58.4
<b>Avg 2016-2020</b>	137	50.9

Table 4. Incidental fishery landings by state in 1000s of pounds, 2013-2021. Only states that have reported incidental catch landings are listed. Average total incidental catch landings for the time series is 7.5 million pounds.

State	2013	2014	2015	2016	2017	2018	2019	2020	2021
ME		-	-	506	5,374	2,995	10,751	13,605	11,771
MA								49	174
RI	16	99	70	40	136	-	-	-	C
CT	0	-	10	-	124	-	-	-	C
NY	0	325	769	281	807	-	-	282	310
NJ	0	626	241	196	-	204,240	-	20	C
DE	76	112	92	21	29	-	-	-	-
MD	2,864	2,201	1,950	996	-	-	-	-	-
PRFC	1,087	1,112	455	106	670	-	-	-	-
VA	268	2,232	2,103	326	-	110,281	-	-	-
FL	65	126	302	111	264	-	-	-	-
<b>Total</b>	<b>4,377</b>	<b>6,831</b>	<b>5,992</b>	<b>2,581</b>	<b>7,404</b>	<b>3,215</b>	<b>10,751</b>	<b>13,957</b>	<b>12,336</b>

Table 5. Total incidental landings (1000s of pounds), number of trips, and number of states reporting landings in the incidental catch fishery, 2013-2021.

Year	Landings (1000s of pounds)	Number of Trips	Number of states landing
<b>2013</b>	4,377	2,783	4
<b>2014</b>	6,831	5,275	8
<b>2015</b>	5,992	4,498	9
<b>2016</b>	2,581	2,222	9
<b>2017</b>	7,407	2,108	7
<b>2018</b>	3,310	1,224	3
<b>2019</b>	10,751	3,113	1
<b>2020</b>	13,957	3,565	4
<b>2021</b>	12,336	3,099	6
<b>Total</b>	<b>67,037</b>	<b>27,887</b>	

Table 6. Episodic Events Set-Aside (EESA) fishery quota, landings, and participating states by year. \*The 2018 EESA quota was reduced due to an overage in 2017. The 2018 EESA overage was paid back in full by the state of Maine. \*\*The 2021 overage was covered by quota transfers in 2021 and 2022, and there will be no deduction for the 2022 fishing year.

<b>Year</b>	<b>States Declared Participation</b>	<b>EESA Quota (MT)</b>	<b>Landed (MT)</b>	<b>% EESA Quota Used</b>
2013		1,708	-	-
2014	RI	1,708	134	7.8%
2015	RI	1,879	854	45.5%
2016	ME, RI, NY	1,879	1,728	92.0%
2017	ME, RI, NY	2,000	2,129	106.5%
2018*	ME	2,031	2,103	103.6%
2019	ME	2,160	1,995	92.4%
2020	ME & MA	2,160	2,080	96.3%
2021**	ME, MA, RI	1,944	2,213	113.8%

Table 7. State quota reporting timeframes in 2021. The **bold** text indicates which reporting program (dealer or harvesters) the states use to monitor its quotas. **Blue text** indicates changes from 2020.

State+A2:D14	Dealer Reporting	Harvester Reporting	Notes
ME	monthly	<b>daily/weekly</b>	Harvesters must report same day during directed and episodic event trips; harvesters report daily trips weekly for trips <6,000 lbs. Harvest reports are used for quota monitoring.
NH	<b>weekly</b>	monthly	Exempt from timely reporting. Implemented weekly, trip level reporting for state dealers.
MA	<b>weekly</b>	monthly/daily	Harvesters landing greater than 6,000 lbs must report daily
RI	<b>twice weekly</b>	quarterly/daily	Harvesters using purse seines must report daily
CT	<b>weekly/monthly</b>	monthly/daily	CT operates as directed fisheries until 90% of the quota is harvested. Then operates at the 6,000 pound bycatch trip limit.
NY	<b>Weekly</b>	monthly	Capability to require weekly harvester reporting if needed
NJ	<b>weekly</b>	monthly	All menhaden sold or bartered must be done through a licensed dealer
DE	—	<b>monthly/daily</b>	Harvesters landing menhaden report daily using IVR
MD	monthly	<b>monthly/daily</b>	PN harvest is reported daily, while other harvest is reported monthly.
PRFC	—	<b>weekly</b>	Trip level harvester reports submitted weekly. When 70% of quota is estimated to be reached, then pound netters must call in weekly report of daily catch.
VA	—	<b>monthly/weekly/daily</b>	Purse seines submit weekly reports until 97% of quota, then daily reports. Monthly for all other gears until 90% of quota, then reporting every 10 days.
NC	<b>monthly (combined reports)</b>		Single trip ticket with dealer and harvester information submitted monthly. Larger dealers (>50,000 lbs of landings annually) can report electronically, updated daily.
SC	<b>monthly (combined reports)</b>		Exempt from timely reporting. Single trip ticket with dealer and harvester information.
GA	<b>monthly (combined reports)</b>		Exempt from timely reporting. Single trip ticket with dealer and harvester information.
FL	<b>monthly/weekly (combined reports)</b>		Monthly through the FWC Marine Fisheries Trip Ticket system until 75% of quota is projected to have been met, then weekly phone calls to dealers who have been reporting menhaden landings until the directed fishery is closed.

Table 8. Results of 2021 quota accounting in pounds. The 2021 landings do not include landings from the incidental catch fishery because they do not count towards the TAC. A majority of the 2021 episodic events set aside (EESA) quota was used by Maine with the remainder used by Massachusetts and Rhode Island. There was an EESA overage of about 592,000 pounds that was covered by quota transfers. The 2022 base quotas account for the redistribution of relinquished quota by Delaware (1.2 million pounds).

\*Includes redistributed relinquished quota for that year and any overages from the previous season.

^Includes inter-state transfers and transfers to the EESA quota.

State	2021 Base Quota*	Returned Set Aside	Transfers^	Final 2021 Quota	Overages	2022 Base Quota*
ME	2,194,396		5,317,590	7,511,986		2,194,303
NH	2,121,582		2,686,318	4,807,900		2,121,582
MA	5,422,022		2,362,791	7,784,813		5,417,812
RI	2,196,815		1,228,533	3,425,348		2,196,719
CT	2,188,634		-2,000,000	188,634		2,188,548
NY	2,934,618		0	2,934,618		2,933,580
NJ	46,323,661		275,000	46,598,661		46,267,280
PA	2,121,464		-1,086,318	1,035,146		2,121,464
DE	474,821		0	474,821		974,821
MD	8,037,057		-1,000,000	7,037,057		8,029,511
PRFC	4,564,863		-900,000	3,664,863		4,561,747
VA	335,206,390		0	335,206,390		334,781,533
NC	4,065,016		-2,000,000	2,065,016		4,062,537
SC	2,121,464		-1,775,000	346,464		2,121,464
GA	2,121,464		-1,971,164	150,300		2,121,464
FL	2,198,584		-1,400,000	798,584		2,198,486
<b>Total</b>	<b>424,292,851</b>			<b>424,030,601</b>		<b>424,292,851</b>



Table 9. State-to-state transfers of menhaden commercial quota for the 2021 Fishing year.

Transfer Date	ME	NH	MA	RI	CT	NY	NJ	PA	DE	MD	PRFC	VA	NC	SC	GA	FL
1-Jul-21	300,000				-300,000											
1-Jul-21		750,000			-750,000											
6-Jul-21	675,000													-675,000		
6-Jul-21	800,000												-800,000			
13-Jul-21	972,698														-972,698	
14-Jul-21	840,000															-840,000
16-Jul-21				500,000									-500,000			
17-Jul-21			262,500		-262,500											
17-Jul-21			700,000										-700,000			
17-Jul-21				187,500	-187,500											
19-Jul-21				210,000												-210,000
27-Jul-21				300,000										-300,000		
27-Jul-21			525,000											-525,000		
27-Jul-21				243,175											-243,175	
27-Jul-21			405,291												-405,291	
28-Jul-21		1,000,000								-1,000,000						
5-Aug-21				150,000				-150,000								
5-Aug-21	600,000							-600,000								
5-Aug-21			250,000					-250,000								
5-Aug-21			350,000													-350,000
13-Oct-21		500,000			-500,000											
22-Oct-21		350,000													-350,000	
27-Oct-21							275,000							-275,000		
28-Oct-21	900,000										-900,000					
8-Dec-21	350,000			-350,000												
11-Jul-22		86,318						-86,318								
<b>Total</b>	<b>5,437,698</b>	<b>2,686,318</b>	<b>2,492,791</b>	<b>1,240,675</b>	<b>-2,000,000</b>	<b>0</b>	<b>275,000</b>	<b>-1,086,318</b>	<b>0</b>	<b>-1,000,000</b>	<b>-900,000</b>	<b>0</b>	<b>-2,000,000</b>	<b>-1,775,000</b>	<b>-1,971,164</b>	<b>-1,400,000</b>

Table 10. Biological monitoring results for the 2021 Atlantic menhaden bait fishery.

\*Age samples are still being processed

State	#10-fish samples required	#10-fish samples collected	Age samples collected	Length samples collected	Gear/Comments
ME	33	38	380	380	36 from PS; 2 from gillnets
NH	7	7	70	70	Purse Seine
MA	15	13	130	130	all purse seine
RI	5	4	55	55	Otter Trawl, Floating Fish Trap
CT	1	0	103	302	Long Island Sound Trawl Survey - 139 tows in 2021
NY	5	14	127	147	cast net, seine net
NJ	67	109	*	1090	Purse Seine
	3	0	*	0	Other Gears
DE	1	1	10	10	Gill net
MD	6	30	417	1323	Pound net
PRFC	6	13	130	130	pound net
VA	7	55	55	55	Pound Net
	5	200	200	200	Gill Net
	0	20	20	20	Haul Seine
NC	1	6	55	92	gillnet
<b>Total</b>	<b>163</b>	<b>510</b>	<b>1752</b>	<b>4004</b>	

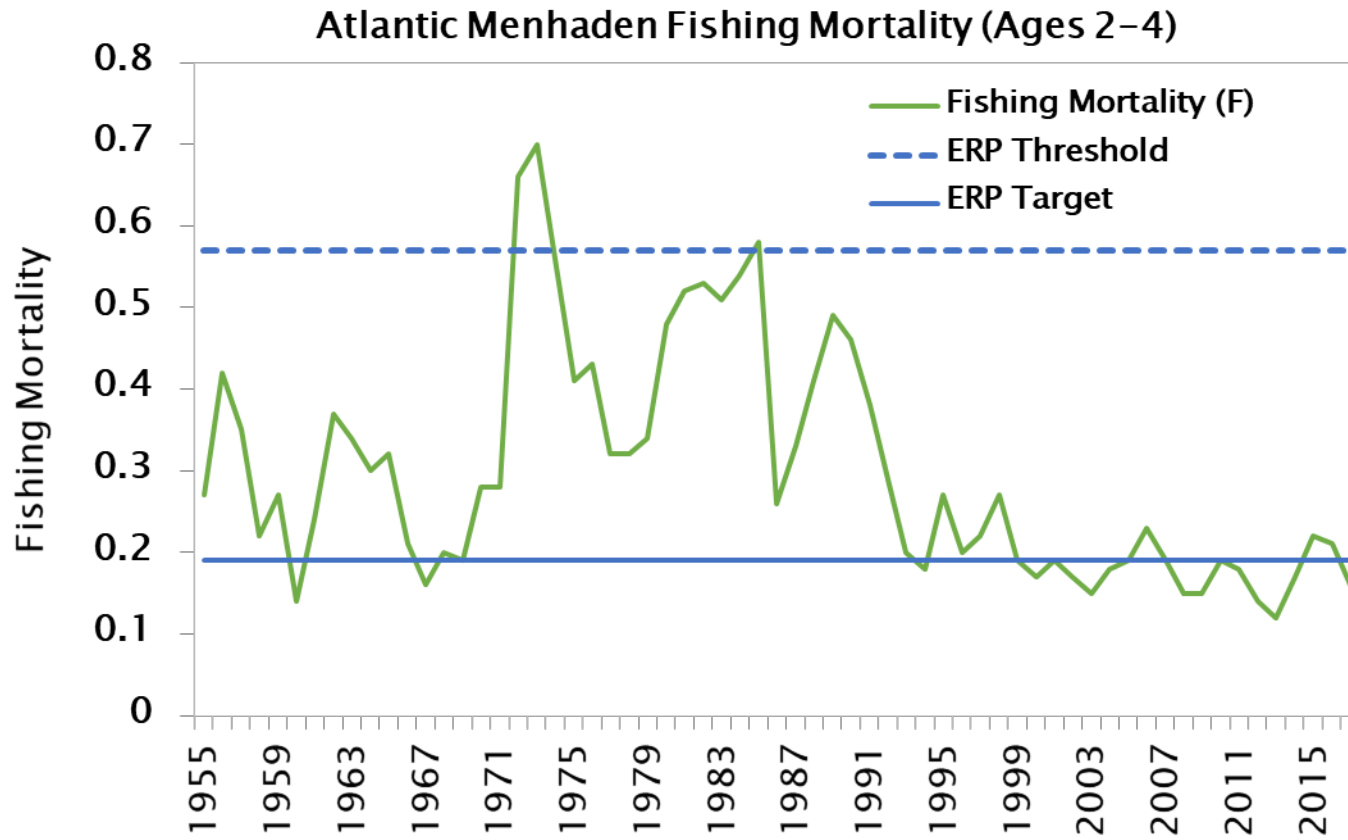


Figure 1. Fishing mortality, 1955-2017. The ERP fishing mortality reference points are  $F_{\text{target}} = 0.19$  and  $F_{\text{threshold}} = 0.57$ .  $F_{2017} = 0.16$ . Source: ASMFC 2020.

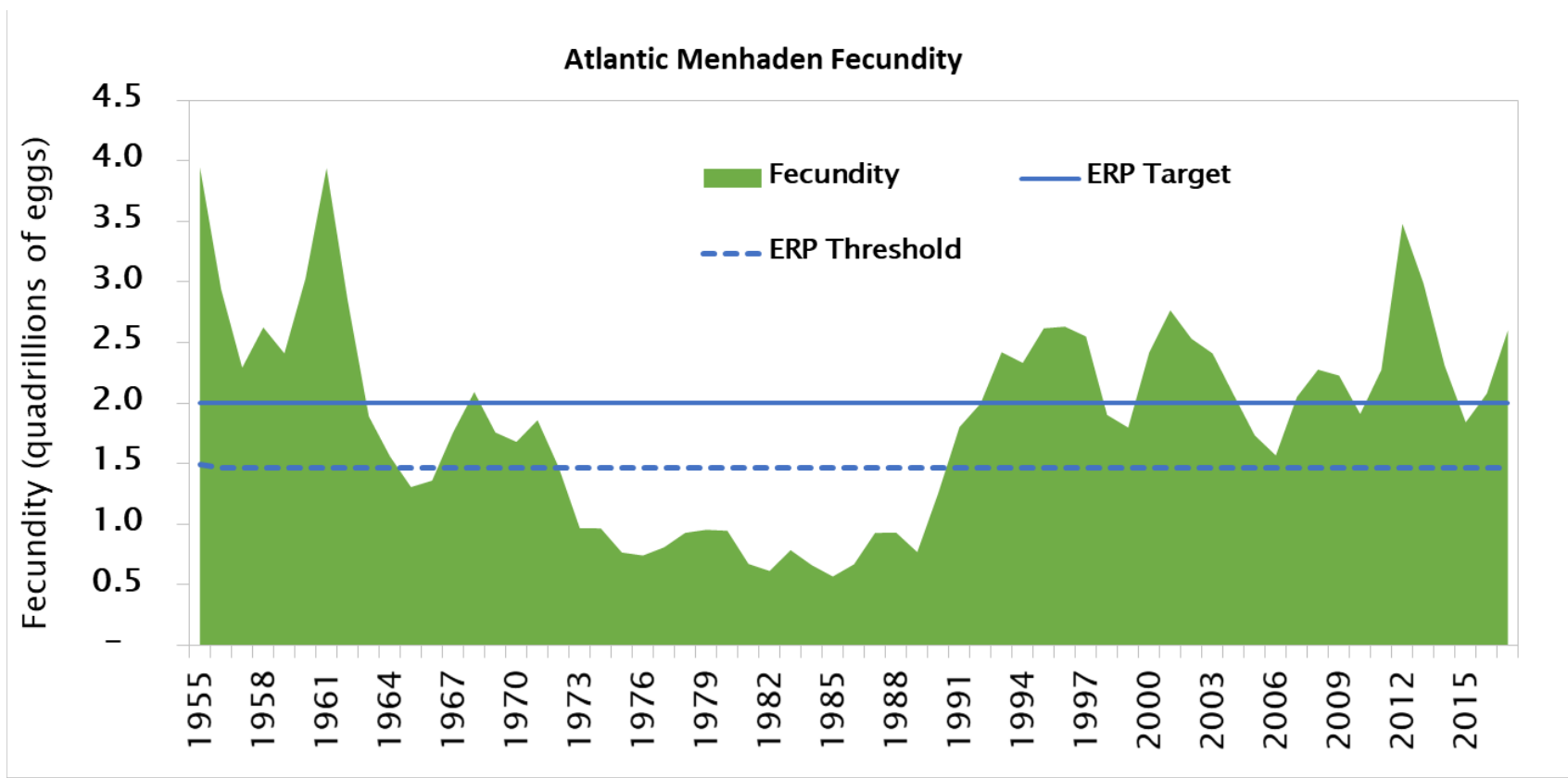


Figure 2. Atlantic menhaden fecundity, 1955-2017. The ERPs for population fecundity are  $FEC_{target} = 2,003,986$  (billions of eggs), and  $FEC_{threshold} = 1,492,854$  (billions of eggs).  $FEC_{2017} = 2,601,550$  billion eggs.

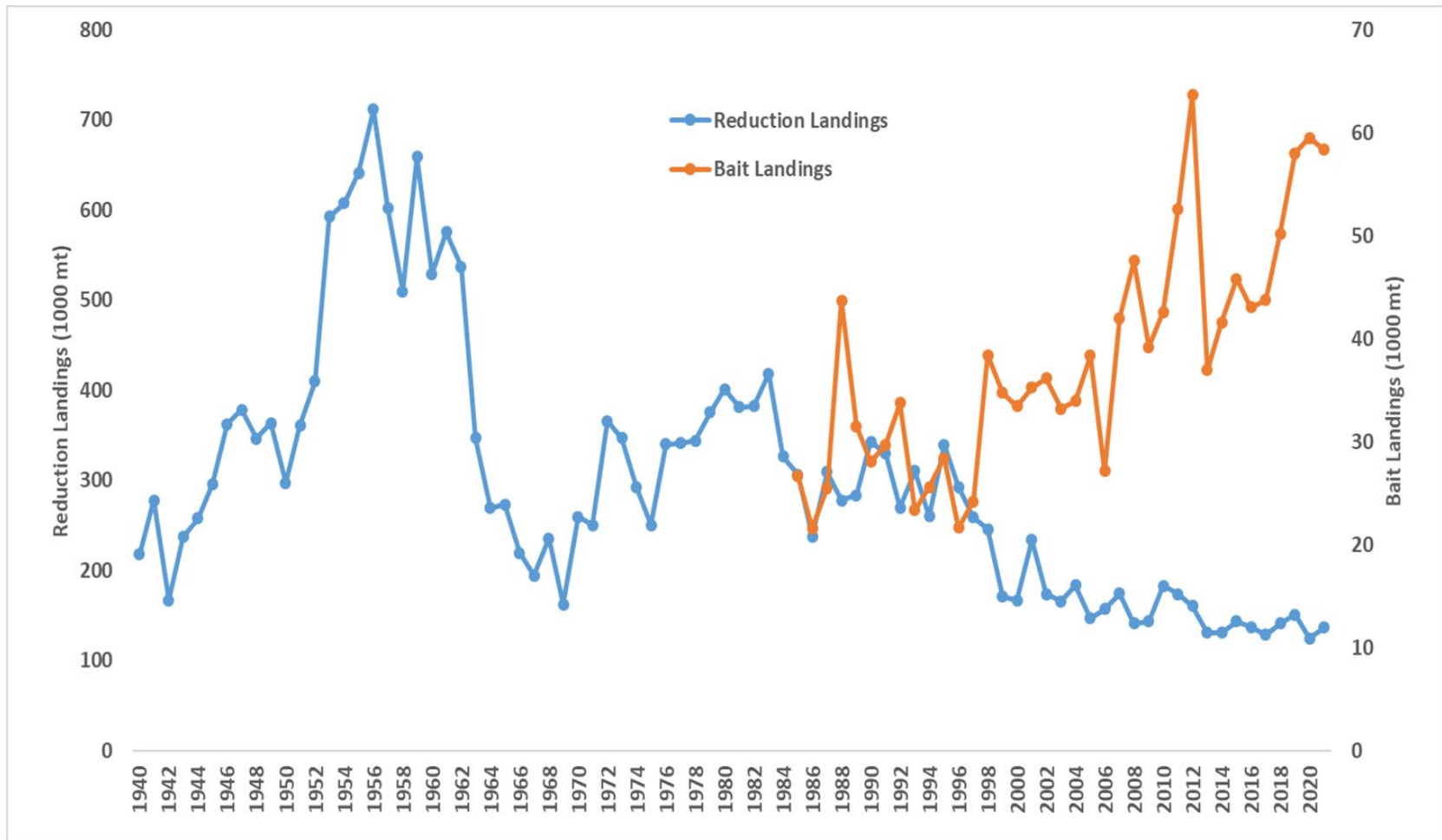


Figure 3. Landings from the reduction purse seine fishery (1940–2021) and bait fishery (1985–2021) for Atlantic menhaden. Note: there are two different scales on the y-axes.

# ***Atlantic States Marine Fisheries Commission***

## **DRAFT ADDENDUM I TO AMENDMENT 3 OF THE ATLANTIC MENHADEN INTERSTATE FISHERY MANAGEMENT PLAN FOR BOARD REVIEW**

### ***Commercial Allocations, Episodic Event Set Aside Program, and Incidental Catch/Small-Scale Fisheries***



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

*This draft document was developed for Board review and discussion at the August 2022 meeting week. This document is not intended to solicit public comment as part of the Commission/State formal public input process. However, comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. Also, if approved, a public comment period will be established to solicit input on the issues contained in the document.*

**August 2022**

## **Atlantic States Marine Fisheries Commission Seeks Your Input on Atlantic Menhaden Management**

The public is encouraged to submit comments regarding this document during the public comment period. Comments will be accepted until 5:00 p.m. EST on **DAY, MONTH 2022**. Regardless of when they were sent, comments received after that time will not be included in the official record.

You may submit public comment in one or more of the following ways:

1. Attend public hearings pertinent to your state or jurisdiction; given COVID-19, it is likely most hearings will occur via webinar.
2. Refer comments to your state’s members on the [Atlantic Menhaden Board](#) or [Atlantic Menhaden Advisory Panel](#), if applicable.
3. Mail, fax, or email written comments to the following address:

James Boyle  
Senior Fishery Management Plan Coordinator  
Atlantic States Marine Fisheries Commission  
1050 North Highland St., Suite 200 A-N  
Arlington, VA 22201  
Fax: (703) 842-0741  
[comments@asmfc.org](mailto:comments@asmfc.org) (subject line: Atlantic Menhaden Draft Addendum I to Amendment 3)

If you have any questions please call James Boyle at 703.842.0740.

### **Commission’s Process and Timeline**

August 2021	Atlantic Menhaden Board Tasks Staff to Develop Draft Addendum I
August 2021 – July 2022	Staff Develops Draft Addendum I for Board Review
<b>August 2022</b>	<b>Atlantic Menhaden Board Reviews Draft Addendum I and Considers Its Approval for Public Comment</b>
August – October 2022	Board Solicits Public Comment and States Conduct Public Hearings
October 2022	Board Reviews Public Comment, Selects Management Options and Considers Final Approval of Addendum I
TBD	Provisions of Addendum I are Implemented

## **1. INTRODUCTION**

The Atlantic States Marine Fisheries Commission (ASMFC) is responsible for managing Atlantic menhaden (*Brevoortia tyrannus*) in state waters (0–3 miles from shore) under the authority of the Atlantic Coastal Fisheries Cooperative Management Act, and has done so through an interstate fishery management plan (FMP) since 1981. The states of Maine through Florida have a declared interest in the fishery and are responsible for implementing management measures consistent with the interstate FMP. Management authority in the Exclusive Economic Zone (3–200 miles from shore) lies with NOAA Fisheries. For the purposes of this Addendum, the term “state” or “states” also includes the Potomac River Fisheries Commission.

At its August 2021 meeting, the ASMFC’s Atlantic Menhaden Management Board (Board) approved the following motion:

*Move to initiate an addendum to consider changes to commercial allocation, the episodic events set aside, and the small-scale/incidental catch provision. The purpose of this action is to address the issues outlined in the Atlantic Menhaden work group memo and the PDT should use the strategies provided in the work group memo as a starting point.*

The Addendum proposes options to adjust states’ commercial allocation to better align with availability; adjust the percentage of the episodic event set aside (EESA) program; and reduce incidental catch and small-scale fisheries (IC/SSF) landings from recent levels.

## **2. OVERVIEW**

### **2.1 Statement of the Problem**

Since the implementation of Amendment 3 (2017), dynamics in the commercial menhaden fishery have changed, most notably the rise of landings in the Gulf of Maine and an increase in quota transfers to the New England region; an increase in landings under the IC/SSF provision; and an annual reliance by some states on the EESA program. To sufficiently address the issues posed by these changes, the addendum addresses three separate but related components of the management program: 1) commercial allocation, 2) the IC/SSF provision, and 3) EESA program.

#### **2.1.1 Commercial Allocations**

The current allocations have resulted in the Total Allowable Catch (TAC) not being fully used coastwide, while some states do not have enough quota to maintain current fisheries. Quota transfers alone are not enough to ameliorate this issue. Some states have become reliant on the EESA and IC/SSF provision to maintain their fishery while other states regularly do not land their allocation.



**2.1.2 Episodic Event Set Aside (EESA) Program**

Over 90% of the EESA has been used in all years since 2016. With the increase in Atlantic menhaden availability to the Northeast, the program has become a secondary regional quota for several states to continue fishery operations in state waters. The dependency on the EESA highlights the mismatch of Atlantic menhaden distribution and availability to current commercial allocations.

**2.1.3 Incidental Catch and Small-Scale Fisheries (IC/SSF)**

The IC/SSF provision was intended to provide continued access for low-volume landings of menhaden once a state's directed fisheries quota was met and reduce regulatory discards. In recent years, menhaden availability at the northern part of its range has resulted in directed fishery quotas being met earlier in the year. Additionally, the coastwide landings under this category have exceeded a number of states directed fishery quotas and ranged from 1-4% of the annual TAC. Landings under this provision have only caused the overall TAC to be exceeded in a single year, 2021 (by 0.36%), but without changes, landings could remain at high levels or increase, potentially leading to more frequent exceedance of the TAC. Finally, the language in Amendment 3 has led to different interpretations of when landings fall under this provision (*i.e.* once a state's sector allocation is met or only once the full state allocation is met) and should be clarified.

**2.2 Background**

**2.2.1 Allocation**

Under Amendment 3, each state is allocated a 0.5% minimum quota and the remainder of the TAC is allocated based on a three-year average of landings from 2009-2011. On an annual basis, states have the option to relinquish part of or all of their fixed minimum quota by December 1st of the preceding fishing year. Any quota relinquished by a state is redistributed to other states that have not relinquished their quota, based on landings data from 2009-2011. Any overage of quota allocation is determined based on final allocations (inclusive of transfers), and the overage amount is subtracted from that state's quota allocation in the subsequent year on a pound-for-pound basis.

Amendment 2 (2012) also based state allocations on the three-year average of landings from 2009-2011; however, there was no fixed minimum. Table 1 shows a comparison of state quotas under Amendments 2 and 3, and highlights the influence of the 0.5% fixed minimum on states' allocations.

**Draft Addendum I to Amendment 3 for Board Review. Not for Public Comment**

**Table 1.** A comparison of state allocations under menhaden Amendment 2 and Amendment 3. Both Amendments used a 2009-2011 allocation timeframe; Amendment 3 included a 0.5% fixed minimum. While under Amendment 2, Pennsylvania was not a part of the Board and did not have an allocation, therefore is noted with a “-”.

<b>State</b>	<b>Amendment 2 Allocation (%)</b>	<b>Amendment 3 Allocation (%)</b>
Maine	0.04%	0.52%
New Hampshire	0%	0.50%
Massachusetts	0.84%	1.27%
Rhode Island	0.02%	0.52%
Connecticut	0.02%	0.52%
New York	0.06%	0.69%
New Jersey	11.19%	10.87%
Pennsylvania	-	0.50%
Delaware	0.01%	0.51%
Maryland	1.37%	1.89%
PRFC	0.62%	1.07%
Virginia	85.32%	78.66%
North Carolina	0.49%	0.96%
South Carolina	0%	0.50%
Georgia	0%	0.50%
Florida	0.02%	0.52%

From 2018 to 2020, total landings (directed, IC/SSF, and EESA) increased among the New England states of Maine, New Hampshire, and Massachusetts (Table 2). Maine and Massachusetts have both increased their percentage of coastwide total landings in recent years, with Maine’s percentage increasing every year from 2016-2020 and Massachusetts from 2016-2021. A number of states have maintained directed fisheries while their landings have represented less than 0.2% of coastwide total landings (Connecticut, Delaware, North Carolina, and Florida). In 2021, Massachusetts, Rhode Island, Connecticut, Maryland, and PRFC increased their percentage of coastwide total landings, relative to the previous year. Virginia’s percentage of the coastwide landings decreased greatly in 2020 relative to 2019 because the state’s largest fishery and processing plant was shut down for several weeks due to the COVID-19 pandemic.

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**Table 2.** State total landings as a percentage of coastwide (CW) landings, 2016-2021. Total landings include directed bait, reduction, IC/SSF, and EESA landings. Amendment 3 allocations for directed bait and reduction landings were implemented beginning in 2018. To protect confidentiality, information for New Hampshire, Pennsylvania, South Carolina, and Georgia have been removed. **These are proportions of the coastwide landings; they do not represent allocations.**

State	% of 2016 CW Landings	% of 2017 CW Landings	% of 2018 CW Landings	% of 2019 CW Landings	% of 2020 CW Landings	% of 2021 CW Landings
Maine	1.50%	2.31%	3.48%	4.91%	6.33%	5.28%
New Hampshire				0.99%	1.02%	
Massachusetts	0.76%	0.96%	1.37%	1.51%	2.17%	2.30%
Rhode Island	0.00%	0.45%	0.17%	0.01%	0.05%	0.83%
Connecticut	0.02%	0.05%	0.20%	0.03%	0.03%	0.04%
New York	0.37%	0.40%	0.11%	0.21%	1.09%	0.77%
New Jersey	11.47%	12.15%	11.97%	10.96%	12.22%	10.60%
Pennsylvania						
Delaware	0.02%	0.02%	0.04%	0.02%	0.04%	0.01%
Maryland	1.40%	0.76%	0.74%	0.73%	0.64%	0.65%
PRFC	0.63%	0.55%	0.79%	0.51%	0.54%	0.59%
Virginia	83.66%	82.08%	80.85%	79.93%	75.66%	77.65%
North Carolina	0.10%	0.20%	0.17%	0.12%	0.15%	0.10%
South Carolina						
Georgia						
Florida	0.07%	0.07%	0.06%	0.05%	0.06%	0.03%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

Since implementation of Amendment 3, the number of quota transfers has increased over time with 7, 17, 15, and 16 quota transfers occurring in 2018, 2019, 2020, and 2021, respectively. However, not every state transferred quota consistently; only Maine, Connecticut, Maryland, and Florida either gave or received quota every year from 2018-2021. Maine, New Hampshire, Massachusetts, and New Jersey had a net increase in quota through transfers in all four years. The net increase in quota by state over the four years ranged from 275,000 to 22.86 million pounds (Table 3). While the transfer of quota away from a state does not necessarily represent a decrease in abundance of menhaden, the transfer of quota to the New England states has coincided with increasing availability of menhaden regionally and the need for bait fish as the availability of Atlantic herring has decreased.

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**Table 3.** Quota transfers in pounds by state for 2013-2021.

State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2018-2021 Net Total	2018-2021 Average
ME				1,800,000	195,180	5,400,000	6,573,592	5,450,000	5,437,698	22,861,290	5,715,323
NH							3,373,592	2,300,000	2,686,318	8,359,910	2,786,637
MA	-500,000	-260,000	-508,685	-35,986			1,300,000	2,350,000	2,492,791	6,142,791	2,047,597
RI	15,000	50,000	33,685	35,986			-400,000	-1,800,000	1,240,675	-959,325	-319,775
CT						-500,000	-2,400,000	-2,000,000	-2,000,000	-6,900,000	-1,725,000
NY	1,000,000	210,000	475,000	492,823	300,000	-1,000,000	-1,900,000	500,000		-2,400,000	-800,000
NJ									275,000	275,000	275,000
PA								-500,000	-1,086,318	-1,586,318	-793,159
DE						-150,000		-100,000		-250,000	-125,000
MD						-1,500,000	-1,000,000	-1,350,000	-1,000,000	-4,850,000	-1,212,500
PRFC									-900,000	-900,000	-900,000
VA				-1,500,000		-1,000,000	-1,000,000			-2,000,000	-1,000,000
NC	-575,000			-877,823	-495,180		-600,000	-1,800,000	-2,000,000	-4,400,000	-1,466,667
SC							-2,347,184	-1,650,000	-1,775,000	-5,772,184	-1,924,061
GA									-1,971,164	-1,971,164	-1,971,164
FL	60,000			85,000		-1,250,000	-1,600,000	-1,400,000	-1,400,000	-5,650,000	-1,412,500

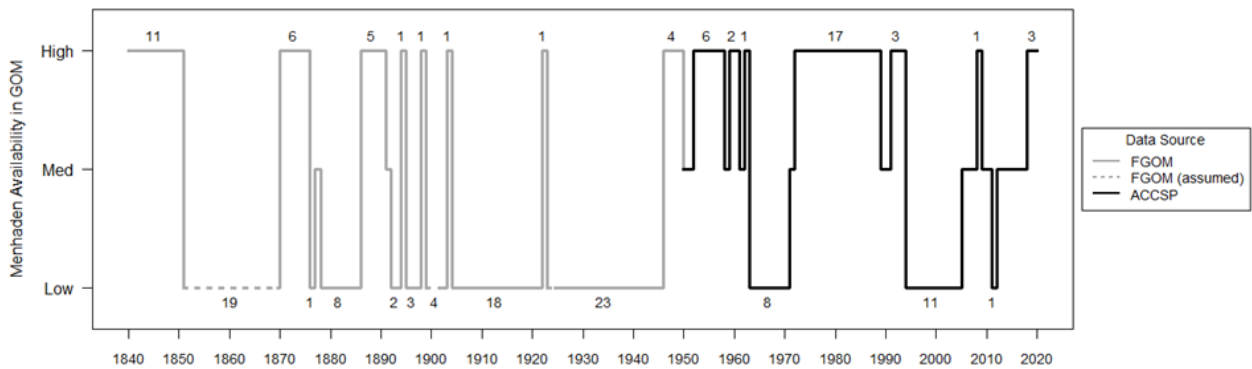
**2.2.2 Episodic Event Set Aside Program (EESA)**

The EESA Program was first implemented under Amendment 2 and clarified under Technical Addendum I later that year. Amendment 3 made no additional changes to the program. Annually, 1% of the TAC is set aside for episodic events, which are defined as any instance in which a qualified state has reached its quota allocation prior to September 1<sup>st</sup> and the state can prove the presence of unusually large amounts of menhaden in its state waters. To demonstrate a large amount of menhaden in state waters, a state can use surveys (e.g., aerial, seine) to indicate high biomass; landings information; or information highlighting the potential for fish kills, associated human health concerns, and that harvest would reduce or eliminate the fish kill. The goal of the program is to add flexibility in managing menhaden by allowing harvest during an episodic event, reduce discards, and prevent fish kills. States eligible to participate in the EESA program are limited to Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, and New York. When a state declares into the EESA, they are required to implement daily trip level harvester reporting and submit weekly reports to the ASMFC; restrict harvest and landings to state waters; and implement a maximum daily trip limit no greater than 120,000 pounds per vessel.

From 2013 through June 2022, the EESA has been used by Maine (6 years), Rhode Island (5 years), Massachusetts (2 years), and New York (2 years). Up to three states have participated at the same time. The starting date of states declaring into the program has ranged from mid-May to mid-August, with New York and Rhode Island opting in earlier than Maine and Massachusetts. Over 90% of the set-aside has been used in all years since 2016. In 2018 and 2019, Maine was the only state to declare into the EESA program and landed approximately 4.6 and 4.4 million pounds, respectively. In 2021, Maine, Massachusetts, and Rhode Island declared into the EESA program and combined the three states landed approximately 4.9 million pounds. Multiple states have implemented harvest control measures beyond the FMP’s 120,000-pound

trip limit, including: lower daily landings limits, weekly limits, limited landing days, and biomass thresholds for when the commercial fishery can operate.

The increasing reliance on the EESA program by some states has coincided with the decline in Atlantic herring and the increased availability of Atlantic menhaden in the Gulf of Maine. For more than a hundred years, there is evidence that periodic abundance of menhaden in the Gulf of Maine may last from 1 to 20 years then disappear for 1 to 20 years (Figure 1). In order to use the EESA and minimize disruptions to fishing activities, some states have sought creative ways at keeping their directed fishery open. In 2021, a number of states requested quota transfers as a group while fishing in the EESA, allowing for multiple quota transfers to be processed while the states continued to participate in the EESA program, in an effort to enable their directed fishery to resume after exiting the EESA with minimal interruption.



**Figure 1.** Reconstructed history of availability of Atlantic menhaden to the Gulf of Maine. The number of consecutive years in either a “High” or “Low” availability state are labeled. Data sources: *Fishes of the Gulf of Maine* (Bigelow and Schroeder 2002) and the Atlantic Coastal Cooperative Statistics Program (ACCSP).

### 2.2.3 Incidental Catch and Small-Scale Fisheries (IC/SSF)

A bycatch allowance was first implemented under Amendment 2, modified under Addendum I to Amendment 2 (2016), and modified again under Amendment 3. As outlined in Amendment 3, under the IC/SSF provision, after a state’s allocation is met, small-scale directed and non-directed gear types may continue to land up to 6,000 pounds of menhaden per trip per day. The following gear types are identified in Amendment 3 as eligible to participate:

*Small-scale gears:* cast nets, traps (excluding floating fish 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 fathoms long and 8 fathoms deep.

*Non-directed gears:* pound nets, anchored/stake gillnets, drift gill net, trawls, fishing weirs, fyke nets, and floating fish traps.

Since Amendment 2, not all states transition from a directed fishery to an incidental catch or small-scale fishery under the same conditions. Both New Jersey and Virginia subdivide their

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quotas among sectors and have done so since state quotas were implemented in 2013. Virginia allocates its annual quota to three sectors: the reduction sector, the purse seine bait sector, and the non-purse seine bait sector. New Jersey allocates the majority of its annual quota to the purse-seine fishery, and the remaining quota is allocated to all other gear types. Once the non-purse seine bait sector or “other gears” fishery has harvested its portion of the state’s allocation, that fishery moves into an IC/SSF regardless of whether the entire state’s quota has been harvested. This has resulted in Virginia and New Jersey reporting IC/SSF landings when they have not harvested their overall quota allocation for a given year. Since the inception of the IC/SSF provision, both states have reported landings following the closure of Virginia’s non-purse seine bait fishery and New Jersey’s “other gears” fishery as IC/SSF.

Prior to 2016, several states’ IC/SSF landings are considered confidential, therefore only information from 2016-2021 is included in Table 4. From 2016-2021, 11 different states have had IC/SSF landings, with the most number of states (8) reporting IC/SSF in a year occurring in 2016 and the fewest (1) occurring in 2019. The annual coastwide total IC/SSF landings ranged from approximately 2.1 million pounds to 13.9 million pounds. The highest amount occurred in 2020, when Maine landed the majority at 13.6 million pounds, representing 53% of Maine’s total landings that year. From 2016-2017 and 2018-2019, landings in this category increased by over 200%, with Maine being the only state with IC/SSF landings in 2019. From 2018-2020, the TAC remained constant at 216,000 mt while IC/SSF landings as a percentage of the annual TAC rose from less than 1% (2018) to nearly 3% (2020).

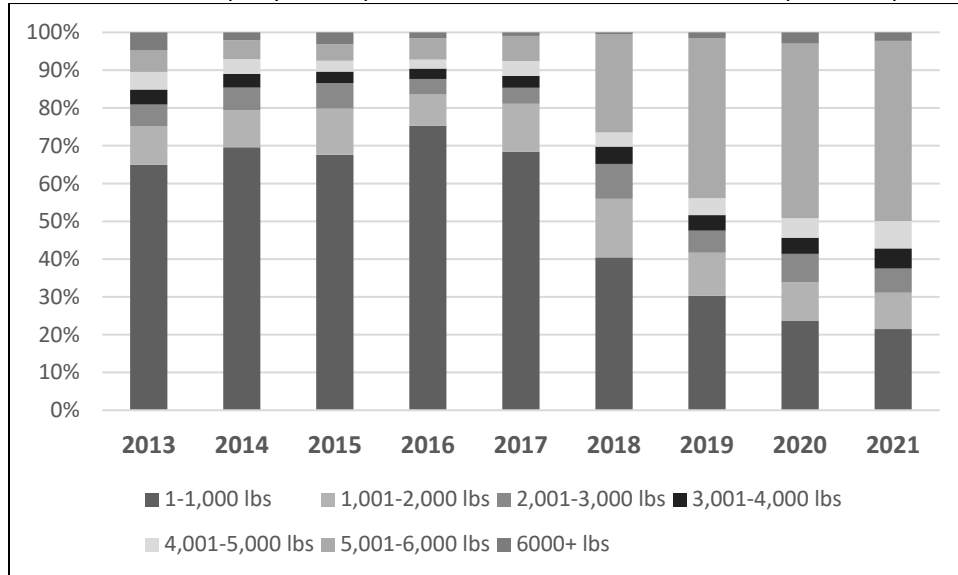
**Table 4.** IC/SSF landings in pounds from 2016-2021. Only states with these landings in this time period are included in the table. C = confidential (Some states are listed as confidential to protect the confidentiality of other states). Source: state compliance reports

<b>State</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Maine		5,373,940	2,995,145	10,750,929	13,605,497	12,508,195
Massachusetts					49,350	172,335
Rhode Island	39,540	135,748				C
Connecticut		126,986				C
New York	281,017	807,392			282,169	425,212
New Jersey	195,523		204,240		20,190	C
Delaware	20,823	29,285				
Maryland	995,698					
PRFC	105,669	670,447				
Virginia	325,692		110,281			
Florida	111,165	263,643				
<b>Total</b>	<b>2,075,127</b>	<b>7,407,441</b>	<b>3,309,666</b>	<b>10,750,929</b>	<b>13,957,206</b>	<b>13,186,879</b>
<b>Percent Change</b>		257%	-55%	225%	30%	-6%

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Since 2013, a majority of landings under this provision occur on trips that land either 1,000 pounds or less (52%), or greater than 5,000 pounds but less than 6,000 pounds (20%). However, landings per trip has increased in recent years (in 2021, 21% of trips < 1,000 pounds; 50% of trips >5,000 pounds; Figure 2). From 2017 to 2021, the majority of these landings have been caught by purse seine (83%, average for the time series). The share of IC/SSF landings using purse seine gear has increased from 57% in 2017 to approximately 88% from 2019 to 2021 (Table 5).

**Figure 2.** Percent of incidental trips by size in pounds, 2013-2021. Source: state compliance reports



**Table 5.** Annual summary of total IC/SSF landings in pounds as a fraction of coastwide TAC; and the fraction of total IC/SSF landings coming from small-scale directed purse seine fishing. \*2021 Total landings include adjustments from validation but purse seine landings and percentage are based on the compliance report figures. Source: ACCSP; state compliance reports

Year	Total landings	% of TAC	landings from purse seine	% from purse seine
2013	4,376,741	1.20%	0	0%
2014	6,831,462	1.90%	0	0%
2015	5,991,612	1.50%	0	0%
2016	2,075,127	0.50%	0	0%
2017	7,407,441	1.80%	4,291,347	58%
2018	3,290,066	0.70%	2,419,194	74%
2019	10,750,929	2.40%	9,545,747	89%
2020	13,957,206	3.10%	12,332,677	88%
2021*	13,186,879	3.08%	10,850,372	88%

### **2.3.0 Social and Economic Impacts**

Atlantic menhaden provide social and economic value to a diverse group of stakeholders both directly, to commercial and recreational menhaden fishing communities, and indirectly, to those who derive value from finfish, coastal birds, or marine mammals that predate upon menhaden. Menhaden-specific ERPs were developed and implemented to account for these diverse needs. The ERPs aim to provide sufficient menhaden to support sustainable menhaden fisheries, as well as menhaden's important role as a forage fish. Ensuring a stable forage base could increase the abundance of species that predate upon menhaden, such as other finfish, coastal birds, or marine mammals. An increase in abundance of these species could, in turn, lead to positive social and economic impacts for individuals, groups, or communities which rely on these resources for consumptive (e.g., commercial or recreational harvest) or non-consumptive purposes (e.g., bird or whale watching). Individuals who hold non-use values associated with affected species may also benefit from increased abundances (e.g., existence value from knowing a particular environmental resource exists or bequest value from preserving a natural resource or cultural heritage for future generations). Estimating potential economic or social impacts to these stakeholders as a result of menhaden-specific ERPs is challenging given complex and dynamic ecological relationships as well as the lack of socioeconomic data, especially for nonmarket goods and services.

This Addendum includes several measures which could carry social and economic impacts, notably potential changes to commercial allocations, the episodic event set aside program, and the incidental catch/small-scale fisheries provisions. The impacts of these changes on an individual stakeholder group will depend not only on the direction of these changes (e.g., whether the allocation is increasing or decreasing), but also a number of other social and economic factors. The extent and distribution of positive or negative socioeconomic effects arising from changes to allocations, or other provisions, is dependent on price elasticities (responsiveness of demand to a change in price), substitute products, fishing costs, alternative employment opportunities, fishing community structure, and possibly other factors.

Identifying quota allocation methods which are fair and equitable among fishery sectors, gear types, and regions will enhance socioeconomic net benefits if changes in allocation result in higher value or more efficient use of the menhaden resource. Efficiency improving shifts in allocation, while potentially beneficial overall, could disadvantage individual stakeholders through reductions in harvests, revenues, and profits.

A 2017 socioeconomic study of the commercial bait and reduction fisheries, funded by the ASMFC, contains several findings which elucidate possible social and economic impacts resulting from changes in menhaden management. While this study was conducted to inform Amendment 3, its findings may still be informative to the measures included in this Addendum. However, it is important to note that the study was focused on potential changes to the coastwide TAC, not the measures being considered in this Addendum. A study focused on, for



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example, allocation changes might have different results based on the different spatial scales and tradeoffs considered.

In the 2017 study, researchers interviewed and surveyed industry members to uncover salient themes, analyzed historic landings data to resolve market relationships, performed economic impact analyses to consider the effects of various TAC changes, and conducted a public opinion survey to assess attitudes toward menhaden management (see Whitehead and Harrison, 2017 for the full report). Interviews and surveys of commercial fishers and other industry members found mixed opinions on several subjects; however, many agreed that the demand for menhaden bait, oil, and meal had increased in recent years. Exogenous demand increases, if leading to increases in ex-vessel prices, could benefit menhaden bait and reduction industry members.

Analysis of historic landings data revealed that prices for menhaden were negatively related to landings levels, but that this relationship was small and insignificant in some instances. In particular, state-level analysis showed ex-vessel price was insensitive to landings. This finding suggested that reductions in the TAC might reduce commercial fishery revenues as decreases in landings are not fully compensated by higher prices. The effects of a change in the allocation of TAC among states is not clear. However, it was found that ex-vessel prices of menhaden were not uniform along the coast, with some states having higher prices than others, suggesting a change in allocation could influence fleet revenues.

Economic impact analyses of changes to the TAC found income and employment decreases (increases) corresponding to TAC decreases (increases), with the largest impacts concentrated in New Jersey and Virginia. For example, the analysis suggests that when totaling direct, indirect, and induced economic changes in the bait fishery, a 5% increase in the TAC from the 2017 baseline would result in 18 more jobs, a \$476,000 increase in total earnings, and a \$1.7 million increase in total economic output. Looking at the reduction sector, a 5% increase in the TAC from the 2017 baseline is estimated to increase total economic output (includes direct, indirect, and induced economic effects) by \$3.6 million in Northumberland county and add 77 full and part-time jobs. The difference in economic impacts between the bait and reduction sector is largely due to the difference in scale between the sectors, i.e., a 5% increase to reduction landings would be much higher in metric tons than a 5% increase to bait landings. In addition, it is important to note that economic impact analyses such as the one conducted in this study are a coarse assessment of potential economic impact, and they often do not take into account specific fishery and market dynamics.

Interestingly, subsequent analysis of coastal county income and employment changes in response to changes in bait landings (not reduction landings) showed little effect, casting some doubt on the conclusion that adjustments in menhaden TAC consistently lead to changes in fishery income and employment in the bait fishery. It may also be that the magnitude of impact is dependent on the size of the fishery in each state and the ability of fishermen to harvest other species. Nonetheless, it is reasonable to expect that if the TAC were to remain fixed but be allocated to states differently, those states receiving increased allocation would have

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positive economic impacts if the increase in allocation would lead to an increase in harvest. For those that received decreased quota, the expected impacts would depend on the expected impacts on harvest: if the reduced allocation would reduce harvest, negative economic impacts would be expected; however, if the reduced allocation was less than or equal to the state's latent quota, i.e., would not have any expected impacts on harvest, no economic impacts would be expected.

### 3. PROPOSED MANAGEMENT PROGRAM

This addendum considers modifying the following components of the management program: 1) commercial allocations, 2) IC/SSF provision, and the 3) EESA program. An objective is listed for each component to guide evaluation of proposed options for addressing the issues identified in the statement of the problem. **When the Board takes final action on the addendum, there is the opportunity to select any measure within the range of options that went out for public comment, including combining options across issues.**

In response to concerns that 2020 landings were atypical due to impacts from the COVID-19 pandemic, the full extent of which are unknown and possibly variable between states, the Board elected to exclude 2020 landings data in the commercial allocation options of this draft addendum, thereby minimizing the effects of COVID-19 on allocation.

The Plan Development Team (PDT) has highlighted the management options that they recommend the Board remove in order to focus on key solutions and reduce the complexity of the document. Taking these steps will ensure the public will be able to understand and comment on proposed changes to the management program more effectively. Recommendations can be found in an accompanying memo (M22-78). As the document is drafted there are 35 total options in the Draft Addendum (16 combinations of allocation options; 3 options for the EESA program; and 16 options for the IC/SSF provision).

#### 3.1 Commercial Allocation

Objective: Allocations should be adjusted to 1) align with the availability of the resource 2) enable states to maintain current directed fisheries with minimal interruptions during the season; 3) reduce the need for quota transfers and; 4) fully use the annual TAC without overage.

To account for the various combinations of allocation methods and timeframes the following management options have been divided into two steps. The first step outlines the method for setting the minimum allocation, and the second step outlines the approach used to allocate the remaining TAC. An option must be chosen in each step to complete an allocation package. Options under each of the following steps were developed using total landings information including quota transfers, and landings under the IC/SSF provision and EESA program.

**Step 1:**

***3.1.1 Allocation options for addressing the minimum allocation.***

The current fixed minimum allocation of 0.5% has been consistently underutilized by several states, with some states transferring or relinquishing some or all of their quota, and others keeping their unused quota. The Amendment 3 provisions of EESA, IC/SSF, and quota transfers have been utilized every year since the Amendment was implemented, indicating the latent quota created by the fixed minimum could be adjusted to reduce reliance on these provisions. Some states have highly variable landings, which will likely lead to them rarely exceeding their allocation under some allocation option below. It is important to keep in mind nearly all states have the potential to reach their quota prior to the end of the year under any allocation strategy under the current TAC. Any latent quota reduction produced by selecting the tiered option below will automatically be reallocated to the states based on the allocation method selected in step 2 (section 3.1.2).

Option A. Status Quo: Each state is allocated a 0.5% fixed minimum quota. Total TAC assigned under this option is 8.0% (i.e. 16 states x 0.50%= 8%).

Option B. Three-tiered fixed minimum approach: This option would assign states into three tiers (0.01%, 0.25%, or 0.50%) based on total landings. The states of Pennsylvania, South Carolina, and Georgia would be included in tier one and receive 0.01%. Tier two includes Connecticut, Delaware, North Carolina, and Florida, with each state receiving 0.25%. The remaining states would be in tier three and receive 0.5% of the TAC. The three states in tier one have consistent small-scale, bycatch fisheries, or have harvested no Atlantic menhaden from 2009-2020. The 0.01% coupled with the timeframe allocation assigned in Step 2 below would have covered their limited landings from 2009-2020 under all combinations. Depending on the selection made in Step 2 below, the tier two states would have had sufficient quota to cover their landings every year from 2009-2020, except North Carolina, which could have had up to two years that would have not been covered depending on the timeframe selected, but in nearly all other years they would have used less than half of their allocation. Total TAC assigned under this option is 5.53% (i.e., 3 states x 0.01% + 4 states \* 0.25% + 9 states \* 0.50% = 5.53%).

**Step 2:**

***3.1.2 Timeframes to base allocating the remaining TAC.***

Option 1. Status Quo: Three-year average of landings from 2009-2011. This option only incorporates landings from a short unregulated time period and does not reflect current Atlantic menhaden distribution or fishery performance.

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### Option 2. 2018, 2019 & 2021

The quota allocation timeframe is based on the most recent average landings from 2018, 2019, and 2021. This timeframe reflects the most recent landings history and is more likely to align with current stock distribution, but does not reflect previous stock distribution or fishery performance.

### Option 3. Weighted Time Frames

These options consider both recent and historical timeframes with sub-options of different weighting values. These options are similar to a long term average but focus on a shorter overall timeframe, and can emphasize either more recent or historical fishery performance.

- 3A. Weighted Allocation Timeframe #1 (2009-2011 and 2018, 2019 & 2021) includes the three most recent years, excluding 2020, and the first three years of quality bait fishery data during the unregulated time period.
  - Sub-Option 1. 25% 2009-2011 / 75% 2018, 2019 & 2021 – This weighting strategy emphasizes the more recent timeframe.
  - Sub-Option 2. 50% 2009-2011 / 50% 2018, 2019 & 2021 – This strategy weights both timeframes evenly.
- 3B. Weighted Allocation Timeframe #2\* (2009-2012 and 2017-2019 & 2021) includes the four most recent years, excluding 2020, and the first four years of quality bait fishery data during the unregulated time period.
  - Sub-Option 1. 25% 2009-2012 / 75% 2017-2021– This weighting strategy emphasizes the more recent timeframe.
  - Sub-Option 2. 50% 2009-2012 / 50% 2017-2021 – This strategy weights both timeframes evenly.

### Option 4. Moving Average

This option uses a three-year moving average to annually adjust allocations as the stock and fishery dynamics change. The three-year average is lagged to allow for finalizing data and time to inform states of their quota (i.e. 2018, 2019 & 2021 average used to set 2023 allocation). This option continually adjusts allocations to recent stock distribution and fishery performance, potentially reducing the need for reallocating in the future. Landings used to calculate the three-year moving average differ under each of the options and may include a state's base quota, any quota transferred to a state, catch under the EESA, and catch under the incidental catch set aside. Any state with harvest overage within the three-year time frame that is not covered by the provisions of the FMP will not have the overage portion of their landings count in calculating the moving average, and will still be required to pay any overage back pound for pound the year following the overage occurrence.

4A. No alterations to the Option. There will be no alterations to the option as described above and total landings will be used in the calculations under this option.

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4B. Provision to limit states' moving average landings if total landings exceed the TAC.

State landings less than or equal to the coastwide TAC would be used in the calculation of the moving average, regardless of the source. If total landings (directed plus IC/SSF plus EESA) are below the TAC, then all landings would be included. If directed landings are below the TAC but IC/SSF and/or EESA landings bring total landings over the TAC, then only the portion of IC/SSF and EESA landings that achieve the TAC would count toward the moving average calculation.

Calculation Procedure: (This procedure is only for moving average calculation when the IC/SSF landings added to directed landings exceed the TAC) EESA participation requires opting in and out of the program by providing dated notice to ASMFC and weekly landings reporting at a minimum. Any overage of the EESA that is not reconciled through a transfer will be subtracted from a states total landings prior to calculation. If more than one state is participating at the time of the overage the percentage of each state landings in the week (or weeks) the overage occurred will be used to produce the state by state landings reduction required by the EESA overage. A week is defined as Sunday through Saturday.

The following will be calculated to determine the IC/SSF landings that are over the TAC to be removed from state landings prior to moving average calculation. The Landings termed Excess IC/SSF landings in the calculations below do not include IC/SSF landings for a state that total landings, combined directed and IC/SSF landings, would not have exceeded a state's quota (i.e. a state closes its directed fishery early and operates under the IC/SSF restrictions, but never exceeds its quota). EESA landings included below will be after any adjustment made above (allowable EESA only).

IC/SSF Landings over the TAC = ((Total Landings) – TAC)) – (Overages that are not associated with the IC/SSF).

States Adjusted final Quota (AFQ) = (((State's Base Quota) + or – (Transfers)) + (EESA landings)) – (Overages that are not associated with the IC/SSF).

State Excess IC/SSF Landings = (State's Total Landings) > State's AFQ.

Total Excess IC/SSF Landings = The Sum of all states Excess IC/SSF Landings.

State's % of Excess IC/SSF = (State Excess IC/SSF Landings) / (Total Excess IC/SSF Landings).

Reduction of a states IC/SSF Landings = (IC/SSF landings over the TAC) \* (State's % of Excess IC/SSF).

State landings to be used in Moving average Calculation = ((States total Landings) – (Reduction of IC/SSF landings))-Overages

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Table 6. A1-3. Percent annual allocation by state using the 0.5% fixed minimum (Step 1, Option A) allocation and the 2009-2011; 2018, 2019 & 2021; and weighted timeframe allocations (Step 2, Options 1-3). Each of the two weighted timeframe combinations of 2009-2011/2018, 2019 & 2021 (Step 2, Option 3A), and 2009-2012/2017-2019 & 2021 (Step 2, Option 3B) are weighted 25% earlier /75% recent (Sub-Option 1) and 50% recent /50% earlier (Sub-Option 2).

State	Time Frame		2009-2011/2018,2019 & 2021		2009-2012/2017-2019 & 2021	
	A1 Status Quo 2009-2011	A2 2018, 2019 and 2021	A3: A-1 25%/75%	A3: A-2 50%/50%	A3: B-1 25%/75%	A3: B-2 50%/50%
ME	0.52%	4.71%	3.66%	2.61%	3.30%	2.37%
NH	0.50%	1.17%	1.00%	0.84%	0.89%	0.76%
MA	1.27%	2.09%	1.88%	1.68%	1.73%	1.54%
RI	0.52%	0.81%	0.73%	0.66%	0.75%	0.67%
CT	0.52%	0.58%	0.56%	0.55%	0.56%	0.54%
NY	0.69%	0.85%	0.81%	0.77%	0.81%	0.77%
NJ	10.87%	10.77%	10.81%	10.85%	11.32%	11.66%
PA	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
DE	0.51%	0.52%	0.52%	0.52%	0.52%	0.52%
MD	1.89%	1.15%	1.34%	1.53%	1.42%	1.68%
PRFC	1.07%	1.07%	1.07%	1.07%	1.10%	1.13%
VA	78.66%	73.62%	74.86%	76.11%	74.86%	75.56%
NC	0.96%	0.62%	0.70%	0.79%	0.69%	0.75%
SC	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
GA	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
FL	0.52%	0.54%	0.54%	0.53%	0.54%	0.53%

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Table 7. A4A. Percent annual allocation by state using the 0.5% fixed minimum allocation (Step 1, Option A) and the three year moving average allocation (Step 2, Option 4A) as it would have changed through time, and the year the timeframe would have been used to set allocations.

State	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018, 2019 & 2021
ME	0.52%	0.51%	0.51%	0.51%	0.51%	0.97%	1.64%	2.76%	3.85%	4.71%
NH	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.52%	0.85%	1.17%
MA	1.27%	0.91%	0.77%	0.95%	1.09%	1.13%	1.24%	1.46%	1.69%	2.09%
RI	0.52%	0.52%	0.52%	0.55%	0.71%	0.72%	0.82%	0.71%	0.69%	0.81%
CT	0.52%	0.51%	0.51%	0.51%	0.51%	0.51%	0.53%	0.59%	0.59%	0.58%
NY	0.69%	0.67%	0.68%	0.70%	0.77%	0.79%	0.85%	0.77%	0.72%	0.85%
NJ	10.93%	13.45%	13.94%	12.81%	10.67%	10.89%	11.25%	11.41%	11.23%	10.77%
PA	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
DE	0.51%	0.52%	0.52%	0.53%	0.53%	0.53%	0.52%	0.52%	0.52%	0.52%
MD	1.90%	2.18%	2.33%	2.52%	2.16%	2.02%	1.71%	1.38%	1.18%	1.15%
PRFC	1.07%	1.20%	1.30%	1.41%	1.23%	1.15%	1.06%	1.11%	1.06%	1.07%
VA	78.60%	76.18%	75.57%	76.30%	78.57%	78.04%	77.15%	76.08%	74.92%	73.62%
NC	0.96%	0.83%	0.80%	0.64%	0.68%	0.67%	0.66%	0.64%	0.65%	0.62%
SC	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
GA	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
FL	0.52%	0.52%	0.54%	0.55%	0.57%	0.57%	0.57%	0.56%	0.55%	0.54%
<b>Year in Use</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021/2022</b>	<b>2023</b>

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Table 8. A4B. Percent annual allocation by state using the 0.5% fixed minimum allocation (Step 1, Option A) and the three year moving average allocation (Step 2, Option 4B), as it would have changed through time, and the year the timeframe would have been used to set allocations.

Note: 2021 values only include landings under the TAC according to the calculation outlined in Option 4B.

State	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018, 2019 & 2021
ME	0.52%	0.51%	0.51%	0.51%	0.51%	0.97%	1.64%	2.76%	3.85%	4.56%
NH	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.52%	0.85%	1.17%
MA	1.27%	0.91%	0.77%	0.95%	1.09%	1.13%	1.24%	1.46%	1.69%	2.09%
RI	0.52%	0.52%	0.52%	0.55%	0.71%	0.72%	0.82%	0.71%	0.69%	0.81%
CT	0.52%	0.51%	0.51%	0.51%	0.51%	0.51%	0.53%	0.59%	0.59%	0.58%
NY	0.69%	0.67%	0.68%	0.70%	0.77%	0.79%	0.85%	0.77%	0.72%	0.83%
NJ	10.93%	13.45%	13.94%	12.81%	10.67%	10.89%	11.25%	11.41%	11.23%	10.79%
PA	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
DE	0.51%	0.52%	0.52%	0.53%	0.53%	0.53%	0.52%	0.52%	0.52%	0.52%
MD	1.90%	2.18%	2.33%	2.52%	2.16%	2.02%	1.71%	1.38%	1.18%	1.15%
PRFC	1.07%	1.20%	1.30%	1.41%	1.23%	1.15%	1.06%	1.11%	1.06%	1.08%
VA	78.60%	76.18%	75.57%	76.30%	78.57%	78.04%	77.15%	76.08%	74.92%	73.76%
NC	0.96%	0.83%	0.80%	0.64%	0.68%	0.67%	0.66%	0.64%	0.65%	0.62%
SC	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
GA	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
FL	0.52%	0.52%	0.54%	0.55%	0.57%	0.57%	0.57%	0.56%	0.55%	0.54%
<b>Year in Use</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021/2022</b>	<b>2023</b>



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Table 9. B1-3. Percent annual allocation by state using the three tier minimum (Step 1, Option B) allocation the 2009-2011; 2018, 2019 & 2021 and weighted timeframe allocations (Step 2, Options 1-3). Each of the two weighted timeframe combinations of 2009-2011/2018, 2019 & 2021 (Step 2, Option 3A), and 2009-2012/2017-2019 & 2021 (Step 2, Option 3B) are weighted 25% earlier /75% recent (Sub-Option 1) and 50% recent /50% earlier (Sub-Option 2).

State	Time Frame		2009-2011/2018,2019 & 2021		2009-2012/2017-2019 & 2021	
	B1 2009-2011	B2 2018, 2019 and 2021	B3: A-1 25%/75%	B3: A-2 50%/50%	B3: B-1 25%/75%	B3: B-2 50%/50%
ME	0.52%	4.82%	3.74%	2.67%	3.38%	2.42%
NH	0.50%	1.19%	1.02%	0.84%	0.90%	0.77%
MA	1.29%	2.13%	1.92%	1.71%	1.77%	1.57%
RI	0.52%	0.81%	0.74%	0.67%	0.76%	0.68%
CT	0.27%	0.33%	0.32%	0.30%	0.31%	0.29%
NY	0.70%	0.86%	0.82%	0.78%	0.82%	0.77%
NJ	11.21%	11.05%	11.09%	11.13%	11.61%	11.96%
PA	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
DE	0.26%	0.27%	0.27%	0.27%	0.27%	0.27%
MD	1.94%	1.17%	1.36%	1.55%	1.45%	1.71%
PRFC	1.09%	1.09%	1.09%	1.09%	1.11%	1.15%
VA	80.70%	75.58%	76.86%	78.14%	76.86%	77.58%
NC	0.72%	0.37%	0.46%	0.54%	0.45%	0.50%
SC	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
GA	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
FL	0.27%	0.29%	0.29%	0.28%	0.29%	0.28%

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Table 10. B4A. Percent annual allocation by State using the three tier minimum allocation (Step 1, Option B) and the three year moving average allocation (Step 2, Option 4A), as it would have changed through time, and the year the timeframe would have been used to set allocations.

State	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018, 2019 & 2021
ME	0.52%	0.51%	0.51%	0.51%	0.51%	0.98%	1.67%	2.82%	3.94%	4.82%
NH	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.52%	0.86%	1.19%
MA	1.29%	0.92%	0.78%	0.97%	1.10%	1.15%	1.26%	1.48%	1.73%	2.13%
RI	0.52%	0.52%	0.52%	0.55%	0.72%	0.73%	0.82%	0.72%	0.69%	0.81%
CT	0.27%	0.26%	0.26%	0.26%	0.26%	0.26%	0.28%	0.34%	0.34%	0.33%
NY	0.70%	0.67%	0.69%	0.71%	0.78%	0.80%	0.85%	0.77%	0.72%	0.86%
NJ	11.21%	13.80%	14.30%	13.14%	10.94%	11.17%	11.54%	11.71%	11.52%	11.05%
PA	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
DE	0.26%	0.27%	0.27%	0.28%	0.29%	0.28%	0.27%	0.28%	0.27%	0.27%
MD	1.94%	2.23%	2.38%	2.58%	2.20%	2.06%	1.74%	1.41%	1.20%	1.17%
PRFC	1.09%	1.22%	1.33%	1.44%	1.25%	1.17%	1.08%	1.12%	1.08%	1.09%
VA	80.70%	78.22%	77.59%	78.34%	80.67%	80.12%	79.21%	78.11%	76.91%	75.58%
NC	0.72%	0.59%	0.56%	0.40%	0.43%	0.42%	0.41%	0.40%	0.40%	0.37%
SC	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
GA	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
FL	0.27%	0.27%	0.29%	0.30%	0.32%	0.32%	0.32%	0.31%	0.31%	0.29%
<b>Year in Use</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021/2022</b>	<b>2023</b>

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Table 11. B4B. Percent annual allocation by State using the three tier minimum allocation (Step 1, Option B) and the three year moving average allocation (Step 2, Option 4B), as it would have changed through time, and the year the timeframe would have been used to set allocations.

Note: 2021 values only include landings under the TAC according to the calculation outlined in Option 4B.

State	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018, 2019 & 2021
ME	0.52%	0.51%	0.51%	0.51%	0.51%	0.98%	1.67%	2.82%	3.94%	4.67%
NH	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.52%	0.86%	1.19%
MA	1.29%	0.92%	0.78%	0.97%	1.10%	1.15%	1.26%	1.48%	1.73%	2.13%
RI	0.52%	0.52%	0.52%	0.55%	0.72%	0.73%	0.82%	0.72%	0.69%	0.82%
CT	0.27%	0.26%	0.26%	0.26%	0.26%	0.26%	0.28%	0.34%	0.34%	0.33%
NY	0.70%	0.67%	0.69%	0.71%	0.78%	0.80%	0.85%	0.77%	0.72%	0.83%
NJ	11.21%	13.80%	14.30%	13.14%	10.94%	11.17%	11.54%	11.71%	11.52%	11.07%
PA	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
DE	0.26%	0.27%	0.27%	0.28%	0.29%	0.28%	0.27%	0.28%	0.27%	0.27%
MD	1.94%	2.23%	2.38%	2.58%	2.20%	2.06%	1.74%	1.41%	1.20%	1.17%
PRFC	1.09%	1.22%	1.33%	1.44%	1.25%	1.17%	1.08%	1.12%	1.08%	1.09%
VA	80.70%	78.22%	77.59%	78.34%	80.67%	80.12%	79.21%	78.11%	76.91%	75.73%
NC	0.72%	0.59%	0.56%	0.40%	0.43%	0.42%	0.41%	0.40%	0.40%	0.37%
SC	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
GA	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
FL	0.27%	0.27%	0.29%	0.30%	0.32%	0.32%	0.32%	0.31%	0.31%	0.29%
<b>Year in Use</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021/2022</b>	<b>2023</b>

### 3.2 EESA Program

Objective: Ensure sufficient access to episodic changes in regional availability in order to minimize in-season disruptions and reduce the need for quota transfers and IC/SSF landings.

#### ***3.2.1 Increase the Set-Aside***

Goal: In combination with reallocation or separately, ensure the states of Maine to New York have increased bait quota for this program to reduce the need for in-season quota transfers or reliance on the IC/SSF provision in response to the increased presence of Atlantic menhaden biomass in the Northeast.

For both Options 1 and 2, the mandatory provisions, declaring participation, procedure for unused set aside, and procedure for set aside overages (Sections 4.3.6.1- 4.3.6.4) as outlined in Amendment 3 (Section 4.3.6.3) will remain in effect.

For Option 2 only, there are two sub-options for the Board's consideration. To allow for additional flexibility in managing the EESA depending on states' allocations and the need to reduce quota transfers, the following sub-options allow for the EESA to be set during the TAC setting process, rather than through adaptive management as outlined in Amendment 3.

Option 1. Status Quo (1%) – The EESA would remain at 1% of the total coastwide TAC. Should any quota remain unused after October 31<sup>st</sup>, annually, it would revert back into the common pool.

Option 2. Increase up to 5% - This option would allow the Board to increase the EESA to a specific percentage greater than or equal to 1% and less than or equal to 5%. The designated percentage of EESA would be subtracted from the total coastwide TAC prior to the distribution of allocation to states. Depending upon the option(s) chosen under Section 3.1, re-adjusting the fixed minimum quota could offset the possible increase in the EESA (see note below).

Sub-option 1. EESA is set as a static amount of 1-5%: The Board may choose an EESA between 1 and 5% and the chosen option is static until a subsequent Amendment or Addendum.

Sub-option 2. Set the EESA during Specifications at an amount between 1-5%: Under this option the Board will set the EESA at an amount between 1 to 5% during the Specification process as part of approving the TAC. The TAC and EESA may be set annually or on a multi-year basis depending on Board action.

**Note (only applies if a tiered minimum approach is selected):** The 0.5% fixed minimum from Amendment 3 allocated 8.0% of the TAC prior to timeframe based allocation of state quotas. If the fixed minimum was replaced by the three-tiered minimum allocation strategy, the 8.0% would be reduced to 5.53%. The amount of quota left by selecting the tiered option (2.47%),

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will be reallocated to the states, but increasing the EESA to 2.47% or less will result in a similar value in pounds being removed from the TAC prior to time frame based allocation. In Amendment 3, nine percent of the TAC either went to the EESA or the fixed minimum allocation.

### 3.3 IC/SSF Provision

Objective: Sufficiently constrain landings to achieve overall management goals of: 1) meeting the needs of existing fisheries, 2) reducing discards, and 3) indicating when landings can occur and if those landings are a part of the directed fishery.

In this section, there are four sub-topics to address IC/SSF landings. They include proposed changes to the timing of when states can begin landing under this provision (3.3.1); permitted gear types (3.3.2); changes to the IC/SSF trip limit (3.3.3); and considering a new accountability system for IC/SSF landings (3.3.4).

#### 3.3.1 Timing of IC/SSF Provision

Goal: Address the timing of when a state begins fishing under the provision since it impacts the duration that landings occur.

Option 1. No change (Status quo): Once a quota allocation is reached for a given state, the fishery moves to an incidental catch fishery. Currently, individual states interpret “*after a quota allocation is met for a given state*” differently (i.e., whether this refers to the entire allocation or a sector, fishery, or gear allocation).

Option 2. Sector/fishery/gear type allocation within a state is met: Currently, states such as New Jersey and Virginia further divide their state allocation into sector and gear type specific allocations. The provision would confirm that once a sector/fishery/gear type specific allocation is reached for a state, that state’s sector/fishery/gear type fishery can begin landing catch under the provision.

Option 3. Entire states allocation met: Once the entire quota allocation for a given state is reached, regardless of sector/fishery/gear type fishery allocations, the menhaden fishery moves to landing under the IC/SSF provision.

#### 3.3.2 Permitted Gear Types of the of IC/SSF Provision

Goal: Address the volume of landings under the provision by removing specific gear types

**Note:** Under Amendment 3, fyke nets were listed under both gear types which may lead to two different possession limits for the same gear type under 3.3.3 below, should the possession limit for directed gear types be modified. Therefore, under Options 2 and 3, fyke nets have been removed from the small-scale directed gear type category and

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maintained only in the non-directed gear type category. Additionally, trammel nets are defined as a directed gear under Amendment 3, but at the request of the Board was moved into the non-directed gear type category for Options 2 and 3 below. Option 1 Sub-Options 2 and 3 provide a mechanism for the classifications to be changed without changing permitted gear types.

Option 1. No changes to permitted gear types (Status quo): The provision would apply to both small-scale directed gears and non-directed gears. Small scale directed gears shall include cast nets, traps (excluding floating fish 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 fathoms long and eight fathoms deep. Non-directed gears include pound nets, anchored/stake gillnets, drift gill net, trawls, fishing weirs, fyke nets, and floating fish traps.

Sub-Option 1 (Status quo). All gear types will retain the classifications as defined in Amendment 3.

Sub-Option 2. Fyke nets will be removed from the small-scale directed gear type category, thereby becoming listed only as a non-directed gear.

Sub-Option 3. Fyke nets will be removed from the small-scale directed gear type category, thereby becoming listed only as a non-directed gear, and trammel nets will be reclassified as a non-directed gear type.

Option 2. No purse seines, all other small-scale and non-directed gears maintained: The provision would apply to both small-scale directed gears and non-directed gears, but exclude purse seine gears. This option is included due to the growth of directed landings from small-scale purse seine gears in recent years (Table 6). Landings from purse seine gears would count against a state's directed fishery quota. Small-scale directed gears shall 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, trammel nets, drift gill net, trawls, fishing weirs, fyke nets, and floating fish traps.

Option 3. Non-directed gears only: The provision shall apply to non-directed gears only. This includes pound nets, anchored/stake gillnets, trammel nets, drift gill net, trawls, fishing weirs, fyke nets, and floating fish traps.

### ***3.3.3 Trip Limit for Directed Small-Scale Fisheries of IC/SSF Provision***

Goal: Limit the annual volume of IC/SSF landings by reducing the trip limit.

The options below modify the trip limits for directed small-scale fisheries. Stationary multi-species gears are defined as pound nets, anchored/stake gill nets, fishing weirs, floating fish

## Draft Addendum I to Amendment 3 for Board Review. Not for Public Comment

traps, and fyke nets. A trip is based on a calendar day such that no vessel may land menhaden more than once in a single calendar day. The use of multiple carrier vessels per trip to offload any bycatch exceeding the daily trip limit of Atlantic menhaden is prohibited. If Option 3 was selected in section 3.3.2 above, this section is no longer needed.

Option 1. No change to trip limit (Status quo): small-scale gears and non-directed gear types may land up to 6,000 pounds of menhaden per trip per day. Two authorized individuals, working from the same vessel fishing stationary multi-species gear, are permitted to work together and land up to 12,000 pounds from a single vessel – limited to one vessel trip per day.

For both Options 2 and 3 below, the proposed change in the trip limit would only apply to 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, bait nets, and purse seines which are smaller than 150 fathoms long and 8 fathoms deep. Non-directed gears and stationary multi-species gears would still be able to land up to 6,000 pounds of menhaden per trip per day, with two individuals working from the same vessel fishing stationary multi-species gear, permitted to work together can land up to 12,000 pounds.

Option 2. 4,500 pound trip limit for directed gear types: The trip limit for the directed small-scale fishery shall be 4,500 pounds of menhaden per trip per day.

Option 3. 3,000 pound trip limit for directed gear types: The trip limit for the directed small-scale fishery shall be 3,000 pounds of menhaden per trip per day.

### ***3.3.4 Catch Accounting of IC/SSF Provision***

Goal: Create a system where annual IC/SSF landings are limited and there is accountability for overages.

**Note:** Under Option 2, the Board is not limited to one option. They can choose a combination of Option 2A and 2B or the sub-options.

Option 1. IC/SSF landings do not count against a state allocation nor the annual TAC (status quo): Landings under this provision will be reported as a part of the annual FMP Review (Amendment 3, Section 5.3: Compliance Report). Landings are reported by states as a part of Annual Compliance Reports. Should a specific gear type show a continued and significant increase in landings under the provision, or it becomes clear that a non-directed gear type is directing on menhaden under this provision, the Board has the authority, through adaptive management (Amendment 3, Section 4.6), to alter the trip limit or remove that gear from the IC/SSF provision.

Option 2. IC/SSF landings are evaluated against the annual TAC: Total landings under this provision would be evaluated against the annual TAC and will be reported as a part

## **Draft Addendum I to Amendment 3 for Board Review. Not for Public Comment**

of the annual FMP Review (Amendment 3, Section 5.3: Compliance Report). Landings are reported by states as a part of Annual Compliance Reports. If IC/SSF landings cause the TAC to be exceeded, meaning the TAC is exceeded after adding total IC/SSF landings to total landings that occur under state quotas and EESA, the trigger is tripped, and the Board must take action as specified in Options 2A-2B below.

Option 2A. Modify the Trip Limit for Permitted Gear Types in the IC/SSF Provision: The Board will evaluate the current IC/SSF trip limit and permitted gear types and take action to reduce the trip limit for one or more permitted gear types in the IC/SSF provision.

Sub-Option 1. The trip limit will be adjusted for one or more permitted gear types in the IC/SSF provision via Board action.

Option 2B. Modify Permitted Gear Types in the IC/SSF Provision: The Board will evaluate the permitted gear types in the IC/SSF provision and take action to eliminate one or more gear types from the IC/SSF provision.

Sub-Option 1. Permitted gear types in the IC/SSF provision will be adjusted via Board action.

#### **4. COMPLIANCE SCHEDULE**

If the existing Atlantic menhaden management plan is revised by approval of this draft addendum, the measures would be effective January 1, 2023. Unless otherwise directed by the Board, allocations will be revisited no more than 3 years (2025) following implementation of this addendum, as outlined in Amendment 3.



**5. LITERATURE CITED**

ASMFC. 2012. Amendment 2 to the Atlantic Menhaden Fishery Management Plan. ASMFC, Arlington, VA 114 p.

ASMFC. 2016. Addendum I to Amendment 2 to the Atlantic Menhaden Fishery Management Plan. ASMFC, Arlington, VA 7 p.

ASMFC. 2017. Amendment 3 to the Atlantic Menhaden Fishery Management Plan. ASMFC, Arlington, VA 111 p.

Bigelow, H.B., and Schroeder, W.C. 2002. Fishes of the Gulf of Maine. 3rd ed. Edited by B.B. Collette and G. Klein-MacPhee. Smithsonian Institution Press, Washington, D.C.



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** Atlantic Menhaden Management Board  
**FROM:** Atlantic Menhaden Plan Development Team  
**DATE:** July 26, 2022  
**SUBJECT:** Recommendations on Draft Addendum I to Amendment 3

At the 2022 Spring Meeting, the Atlantic Menhaden Management Board provided further guidance to the Plan Development Team (PDT) to continue developing draft Addendum I to Amendment 3. The addendum considers changes to commercial allocations, the episodic event set aside (EESA) program, and the incidental catch and small-scale fisheries (IC/SSF) provision. This memo summarizes the PDT recommendations for the Board's consideration in approving the document for public comment.

Each section below includes justification for modifying and/or eliminating specific options. A decision tree for selecting state allocations is included in the Appendix. The topics are interconnected such that decisions made for one topic will impact alternatives under other topics. Because of this interconnectedness, the Board should carefully consider removal of some options to reduce complexity of the document. This will allow the public to effectively provide feedback to the Board before final action. Currently there are 35 total options in the Draft Addendum (16 combinations of allocation options; 3 options for the EESA program; and 16 options for the IC/SSF provision). **While the number of options has been significantly reduced, the PDT reiterates its recommendation that the Board continue to simplify the document as much as possible before approving for public comment.**

### Commercial Allocations

#### *3.1.2 Timeframe for Allocating Remaining Available TAC*

Option 3B. Weighted Allocation Timeframe #2 (2009-2012 and 2017-2019 & 2021): **The PDT recommends removal of timeframe #2.** The Board requested two versions of the weighted allocation timeframe be developed in October 2021. While the state allocations vary slightly between the two versions, they are conceptually the same. By having two options, it increases the possible state allocation options by four options for a total of 16 options. **The PDT reiterates its recommendation that Timeframe #2 be removed because the same objective is achieved with Timeframe #1, which utilizes the original time series plus the most recent three years.**

## **Incidental Catch and Small-Scale Fisheries Provisions**

### *3.3.2 Permitted Gear Types of the IC/SSF Provision*

The PDT found two gear types that they felt should be reclassified. First, the PDT discovered that fyke nets were mistakenly listed as both a small-scale directed gear type and a non-directed gear type in Amendment 3, thereby creating a situation where fyke nets could be applied to two different sets of regulations. Additionally, in response to a Board request, the PDT reviewed the classification of trammel nets and decided that moving them to non-directed gear would be more consistent with their operation. **Therefore, in Options 2 and 3, the PDT chose to list both fyke and trammel nets as non-directed gear only. The PDT created Option 1 Sub-options 2 and 3 to provide a mechanism for the Board to still modify the gear type classifications in the event that the Board chooses to maintain the status quo of permitted gear types in the IC/SSF provision.**

At the Spring Meeting, the PDT was requested to review Option 3 and consider creating an exception for beach seines to continue operating if this option is selected. However, given that Options 1 and 2 both allow for beach seines to continue under the IC/SSF provision and that the intent of Option 3 is to create an IC/SSF provision where there is no menhaden directed fishery, such an exception would be contrary to the spirit of the option and the range that Options 1-3 present. Furthermore, the PDT is concerned that such an exception would be exploited to develop new directed fisheries under the IC/SSF provision. **Therefore, the PDT chose not to modify the option.**

### *3.3.4 Catch Accounting of the IC/SSF Provision*

Following Board modifications to 3.3.4 and requests for further management responses to an overage of the TAC caused by IC/SSF landings, the PDT developed Options 2A and 2B, which present the Board with mechanisms to impose trip limits or gear restrictions to reduce IC/SSF landings. However, the PDT feels that the process through which the Board should take action is strictly a management decision for the Board and will likely vary depending on the chosen action. Therefore, to complement the Board's authority to utilize adaptive management to draft a new management document, the PDT drafted a sub-option for both Option 2A and Option 2B that would give the Board the ability to enact a response through board action. The Board must weigh the advantages and disadvantages of both strategies. Selecting the option of modifying trip limits or gear types through Board action will allow the Board to be more responsive to TAC overages caused by the IC/SSF provision, while adaptive management will allow for more time to collect public input on the impacts of modifications on trip limits or gear types. Ultimately, if the Board chooses to pursue either Option 2A or 2B through Board action, they may still elect to use adaptive management if they believe that the action suggested under these options warrants further public input and the development of a management document.

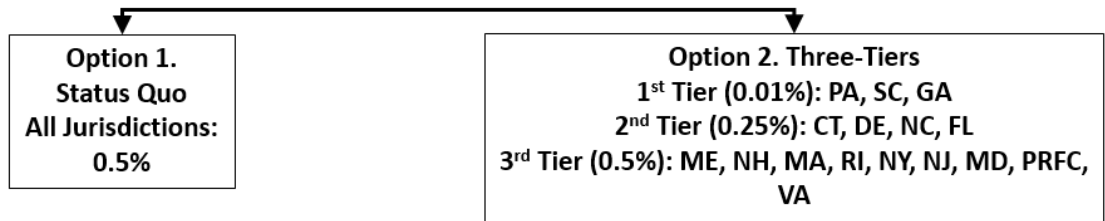
## Appendix A. Decision Tree

The following provides a Decision Tree for selecting state allocations.

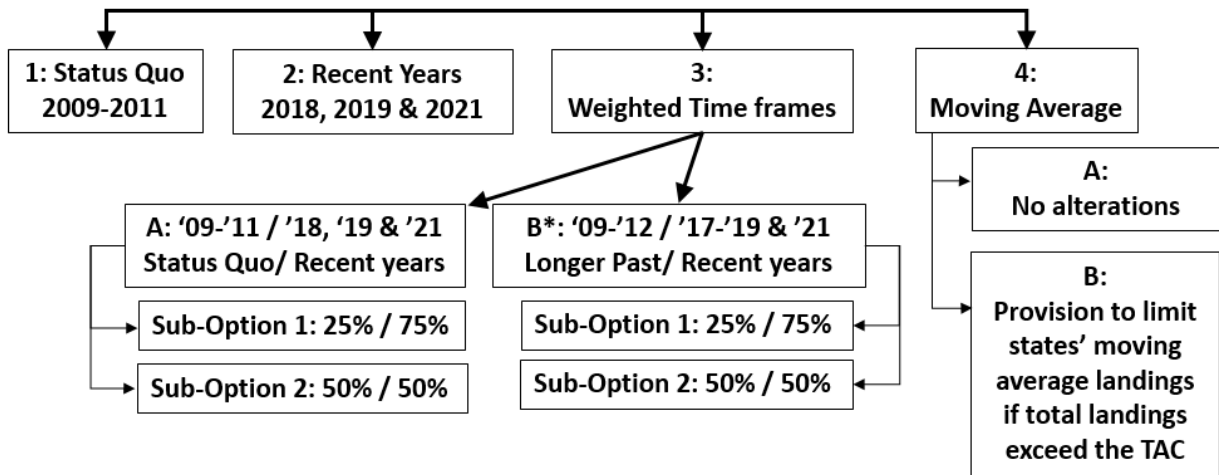
\*The PDT recommends removing these options

# Allocation Decision Tree

## Step 1: Minimum Allocation



## Step 2: Timeframe to allocate remaining TAC



# Atlantic States Marine Fisheries Commission

## Sciaenids Management Board

*August 4, 2022*

*8:00 – 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/Call to Order (*C. Batsavage*) 8:00 a.m.
2. Board Consent 8:00 a.m.
  - Approval of Agenda
  - Approval of Proceedings from May 2022
3. Public Comment 8:05 a.m.
4. Review Traffic Light Analysis for Spot and Atlantic Croaker 8:15 a.m.  
(*D. Franco/H. Rickabaugh*) **Possible Action**
  - Technical Committee Recommendations
  - Discuss Spot Addendum III Management Measures
5. Review Development of a Spatial Model of Spot Abundance and Mortality 8:55 a.m.  
(*R. Latour*)
6. Consider Atlantic Croaker and Red Drum Fishery Management Plan Reviews 9:05 a.m.  
and State Compliance for the 2021 Fishing Year (*T. Bauer*) **Action**
7. Progress Update on 2022 Black Drum Benchmark Stock Assessment (*J. Kipp*) 9:20 a.m.
8. Elect Vice-Chair (*C. Batsavage*) **Action** 9:25 a.m.
9. 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

# MEETING OVERVIEW

**Sciaenid Management Board Meeting**  
**Thursday, August 4, 2022**  
**8:00 a.m. – 9:30 a.m.**  
**Hybrid Meeting**

Chair: Chris Batsavage (NC) Assumed Chairmanship: 02/22	Technical Committee Chairs: Black Drum: Harry Rickabaugh (MD) Atlantic Croaker: Dawn Franco (GA) Red Drum: Lee Paramore (NC) Spot: Harry Rickabaugh (MD)	Law Enforcement Committee Representative: Capt. Chris Hodge (GA)
Vice Chair: Vacant	Advisory Panel Chair: Craig Freeman (VA)	Previous Board Meeting: May 2, 2022
Voting Members: NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS (10 votes)		

## 2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 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 Traffic Light Analysis (TLA) for Spot and Atlantic Croaker (8:15-8:55 a.m.) Possible Action

### Background

- The Traffic Light Analyses are updated annually for both spot and Atlantic croaker to assess changes to the population in non-benchmark stock assessment years.
- The 2020 TLA triggered management action at the level of moderate concern. Addendum III states management measures set in response to any trigger will remain in place for at least two years for spot (2021-2022) and three years for Atlantic croaker (2021-2024), after which management will be reevaluated based on the composite regional abundance characteristics. (**Supplemental Materials**). Per the Addendum, spot measures are due to be reevaluated prior to the 2023 fishing year.
- For the second year in a row, multiple surveys had missing data, so not all analyses could be run. The Technical Committee has made recommendations on how to proceed (**Supplemental Materials**).

### Presentations

- Review of 2022 Traffic Light Analyses of the 2021 fishing year for Atlantic Croaker and Spot by D. Franco and H. Rickabaugh.

**Board actions for consideration at this meeting**

- Consider Spot Addendum III management measures

**5. Review Development of a Spatial Model of Spot Abundance and Mortality (8:55-9:05 a.m.)****Background**

- Drs. Mike Wilberg (Chesapeake Biological Laboratory) and Rob Latour (Virginia Institute of Marine Science) are leading a research project to estimate fish abundance and mortality rates in specific regions using a spatial model.
- The Technical Committee met in May to receive a request from Drs. Wilberg and Latour for spot to be one of the focus species in the project. The TC foresaw no issues with providing the required confidential data from each state to develop the model and expressed support for the project.
- This research project will be separate from but occur in conjunction with the upcoming spot 2024 benchmark stock assessment.

**Presentations**

- Overview of the Development of a Spatial Model of Spot Abundance and Mortality by R. Latour.

**6. Consider Atlantic Croaker and Red Drum Fishery Management Plan Reviews and State Compliance for the 2021 Fishing Year (9:05-9:20 a.m.) Action****Background**

- Red Drum state compliance reports are due on July 1. The Red Drum Plan Review Team (PRT) has reviewed state reports and compiled the annual FMP Review. New Jersey and Delaware have requested continued *de minimis* status (**Supplemental Materials**).
- Atlantic Croaker state compliance reports are due on July 1. The Atlantic Croaker Plan Review Team (PRT) has reviewed state reports and compiled the annual FMP Review. New Jersey and Delaware requested *de minimis* status for both their recreational and commercial fisheries, and South Carolina and Georgia requested *de minimis* status for their commercial fisheries (**Supplemental Materials**).

**Presentations**

- 2021 FMP Reviews for Red Drum and Atlantic Croaker by T. Bauer.

**Board actions for consideration at this meeting**

- Consider approval of the 2021 FMP Review, state compliance reports, and New Jersey and Delaware's *de minimis* requests for Red Drum.
- Consider approval of the 2021 FMP Review, state compliance reports, and New Jersey, Delaware, South Carolina, and Georgia *de minimis* requests for Atlantic Croaker

**7. Progress Update on the Black Drum Benchmark Stock Assessment (9:20-9:25 a.m.)****Background**

- At the 2021 Summer Meeting, the Board approved the initiation of a Stock Assessment Subcommittee (SAS) to begin the Benchmark Stock Assessment Process for black drum.
- A black drum SAS was formed and has met several times to develop the benchmark stock assessment. A Data Workshop was held in December 2021 and a Methods Workshop was held in February 2022. The Assessment Workshop was held July 18-21, 2022.

- |  |
|--|
| <ul style="list-style-type: none"><li>• A peer review workshop for the black drum benchmark stock assessment is tentatively scheduled for December 2022.</li></ul> |
|--|

<p><b>Presentations</b></p>
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- |  |
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| <ul style="list-style-type: none"><li>• Stock assessment update by J. Kipp</li></ul> |
|--|

**8. Elect Vice-Chair (9:25-9:30 a.m.) Action**

**9. Other Business/Adjourn**





# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

July 25, 2022

**To:** Sciaenids Management Board

**From:** Tracey Bauer, FMP Coordinator

**RE:** Discussion of the 2021 fishing year Traffic Light Analysis of spot and Atlantic croaker

**Technical Committee Attendees:** Dawn Franco (Atlantic Croaker Chair, GA), Harry Rickabaugh (Spot Chair, MD), Chris McDonough (SC), Stacy VanMorter (NJ), Ingrid Braun (PRFC), Somers Smott (VA), Morgan Paris (NC), Joseph Munyandorero (FL)

**Other Attendees:** Ethan Simpson, Chris Batsavage

**Staff:** Tracey Bauer, Jeff Kipp, Kristen Anstead

This memorandum serves as a summary of the joint Spot and Atlantic Croaker Technical Committees (TCs) call on July 18, 2022. The following outlines the TCs' discussions and recommendations for the Board regarding the Traffic Light Analysis (TLA).

### Background

Annually, the TLA evaluates a Mid-Atlantic and a South Atlantic harvest metric, which is a combination of commercial and recreational landings in the region. It also evaluates a Mid-Atlantic and South Atlantic adult abundance metric, which is a combination of adult indices of abundance from surveys in each region. Metrics are evaluated using a color proportion of green, yellow, or red based on comparing that year to a 2002-2012 reference period. Addendum III for each species defined 30% red as a moderate concern and 60% red as a significant concern to the fishery. Management action is triggered according to the 30% red and 60% red thresholds if both the adult abundance and harvest thresholds are exceeded in a set number of terminal years. In 2020, the TLA for the 2019 fishing year indicated that both species triggered at the 30% red threshold. State implementation plans for management measures were approved in early 2021 and all new management measures were enacted by the end of 2021. These management measures will remain in place for at least two years for spot and three years for Atlantic croaker to promote consistent measures and allow for sufficient time to evaluate population response, as per Addendum III.

### Data Availability Issues

The pandemic directly impacted almost all state and federal fishery independent monitoring programs at some point during 2020. For the TLA, the impact was felt most significantly for the

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larger scale regional monitoring surveys, which were not able to sample at all in 2020. The Northeast Fishery Science Center (NEFSC) Multispecies Bottom Trawl Survey did not run in 2020, and is one of two surveys that makes up the Mid-Atlantic abundance index for both species. The South Atlantic abundance indices for both species are based partially on the Southeast Area Monitoring and Assessment Program (SEAMAP), which also did not run in 2020 or spring 2021. The North Carolina Division of Marine Fisheries Pamlico Sound Survey P195 did not complete sampling of all stations in 2020 or 2021.

Another important fishery independent survey to the TLAs for both species is the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP). ChesMMAP did not have available data for 2019, 2020, or 2021 due to lack of calibration factors from a vessel and gear change that occurred in 2019. However, it is anticipated that calibrated data should be available by summer 2023 for all impacted years.

Both the Mid-Atlantic and South Atlantic adult abundance composite indices could not be calculated for 2020 and 2021 due to the missing data for both species.

### **Recommendation**

Addendum III states that because management measures enacted would impact the harvest composite indices, only the adult abundance composite indices can be used to either trigger additional management measures or relax measures. However, due to missing data, updated adult abundance composite indices for the Mid-Atlantic and South Atlantic for both species could not be calculated and are undetermined. While the composite harvest metrics could not be used for determining status change, it is noted that there was a little to no reduction in the proportion of red in both regions for spot, and a slight increase in the proportion of red for Atlantic croaker in both regions.

The TCs previously determined 2021 was the first year management measures were in place. The measures must be in place for at least two years for spot (2021-2022) and three years for Atlantic croaker (2021-2023) before management can be reevaluated. Therefore, spot management is due to be reevaluated this year for any potential changes in management in 2023. With both abundance composite indices unknown due to missing data in multiple years, a determination of whether or not the spot TLA in either region exceeded the 60% threshold or fell below the 30% threshold cannot be made. However, the fishery independent indices that were available were examined for any concerning trends. The NEFSC survey, used for the Mid-Atlantic, shows increasing spot abundance in the past few years and no red proportions in the last five years. When the Mid-Atlantic abundance composite was generated using the NEFSC survey and NEAMAP in place of ChesMMAP, there was no red in any of the last three years. In the South Atlantic, the NCDMF P195 survey exceeded the 30% threshold only once in the last three years. Due the missing fishery independent survey data and the lack of concerning trends in the data that were available, the Spot TC recommended that any determination on the spot TLA should wait until 2023 when there is expected to be complete data from all surveys again.

As per Addendum III, Atlantic croaker management measures do not need to be reevaluated for another year. Similar to spot, it is unknown if the adult abundance metrics exceeded the 60% threshold thereby triggering elevated management measures for Atlantic croaker. However, the fishery independent indices that were available were examined for any concerning trends. The NEFSC survey, used for the Mid-Atlantic, shows increasing abundance in the past two years. In the South Atlantic, the SC Trammel survey exceeded the 30% threshold only once in the last six years with increasing abundance in the past two years. Therefore, the TC recommends maintaining management enacted in 2021.

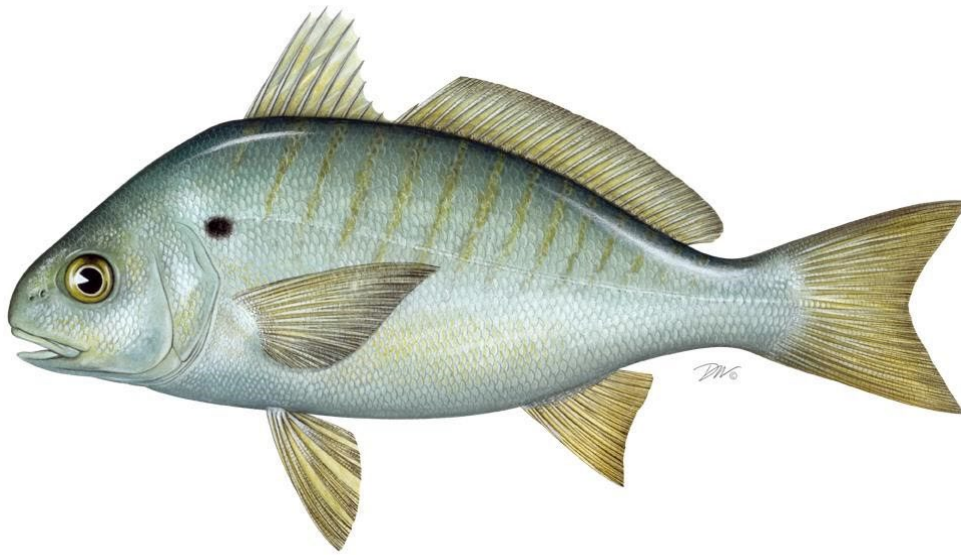
The TCs will be able to revisit the Atlantic croaker and spot composite abundance indices for the 2023 TLA, as all previously disrupted surveys have resumed and ChesMMAP calibrated data are expected to be available for all impacted years.

For more information, please contact Tracey Bauer, Fishery Management Plan Coordinator, at 703.842.0723 or [tbauer@asmfc.org](mailto:tbauer@asmfc.org).

# ATLANTIC STATES MARINE FISHERIES COMMISSION

## 2022 TRAFFIC LIGHT ANALYSIS REPORT FOR SPOT (*Leiostomus xanthurus*)

2021 Fishing Year



Prepared by the Technical Committee  
Drafted July 2022



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

## **EXECUTIVE SUMMARY**

### Background

The purpose of this report is to evaluate the current status of spot using the annual Traffic Light Analysis (TLA). Spot is managed under Addendum III (2020) which outlined the population characteristics evaluated, management triggers, and management responses. Annually, the Technical Committee (TC) conducts a TLA to evaluate a Mid-Atlantic and a South Atlantic harvest metric, combining commercial and recreational landings in the region. The TC also evaluates a Mid-Atlantic (NJ-VA) and South Atlantic (NC-FL) abundance metric, combining indices of abundance from surveys in the region. Each metric is evaluated using a color proportion of green, yellow, or red based on comparing that year to a 2002-2012 reference period. Addendum III defined 30% red as a moderate concern and 60% red as a significant concern to the fishery. Management action is triggered according to the 30% red and 60% red thresholds if both the adult abundance and harvest thresholds are exceeded in any two of the three terminal years.

### Data Availability Issues

There have been several data availability issues in recent years due to the COVID-19 pandemic and other factors. The pandemic caused some data gaps in 2020 which are detailed in the 2021 TLA report. The Mid-Atlantic abundance index is based on the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP) and the Northeast Fishery Science Center (NEFSC) Multispecies Bottom Trawl Survey. ChesMMAP has not had available data for 2019-2021 due to lack of calibration factors from a change in survey methodology. NEFSC's survey did not operate in 2020 but did operate in 2021. Because of the missing survey data in the Mid-Atlantic region, the NorthEast Area Monitoring and Assessment Program (NEAMAP) was evaluated for trends in the region despite it not being accepted for use in the TLA due to having a shorter time series (2007-2021) that does not include the reference period (2002-2012). The South Atlantic abundance index is based on the North Carolina Division of Marine Fisheries Pamlico Sound Survey, which was not able to sample all stations in 2020 and 2021, and the Southeast Area Monitoring and Assessment Program (SEAMAP) Coastal Trawl Survey which did not operate in 2020 and the spring of 2021. Therefore, both the Mid-Atlantic and South Atlantic abundance metrics continued to have data availability issues in 2021.

### 2021 Harvest Metrics

The Mid-Atlantic harvest metric did not exceed the red threshold at 30% in two of the three terminal years in 2021. The South Atlantic harvest metric did exceed the red threshold at 30% in all three terminal years in 2021. The harvest metrics in 2021 cannot be used as a trigger mechanism since they represent a year with catch restrictions in place.

### 2021 Abundance Metrics

These metrics could not be run due to missing 2020 and 2021 data. For the Mid-Atlantic, the only survey available in 2021 under the current TLA guidelines (2002-2012 reference period) was the NEFSC. The NEFSC survey and the NEAMAP survey, which was also active in 2021, did not exceed the 30% red threshold. For the South Atlantic, survey data for two of the three terminal years were not available and therefore it is unknown if this metric triggered.

Conclusions

Harvest exceeded the 30% threshold in South Atlantic in all three terminal years but only once out of the past three years in the Mid-Atlantic. Harvest restrictions were in place in 2021 and so the harvest metric cannot be used as a trigger mechanism in that year. The abundance composite metrics are unknown for the Mid-Atlantic and South Atlantic due to missing data, and so it could not be determined if further management would be triggered.

Addendum III requires that the management actions taken in 2021 remain in place for a minimum of two years (through and including the 2022 season) before evaluation and that action be re-considered in 2022. However, the continued impacts of missing data make evaluating the effects of the 2021 management actions difficult. Therefore, the TC recommends maintaining management actions in their current state and waiting to evaluate their effects until 2023 when it is anticipated all survey data will be available again.

## 1 INTRODUCTION

Spot is managed under the Omnibus Amendment for Spot, Spotted Seatrout, and Spanish Mackerel (2011), Addendum II (2014), and Addendum III (2020). The Omnibus Amendment updates all three species plans with requirements of the Atlantic States Marine Fisheries Commission's (ASMFC) Interstate Fisheries Management Program (ISFMP) Charter. The benchmark stock assessment for spot in 2017 was not recommended for management use due to uncertainty in biomass estimates from conflicting signals among abundance indices and catch time series, as well as sensitivity of model results to assumptions and model inputs.

Previously, in the absence of a coastwide stock assessment, the South Atlantic Board (SAB) approved Addendum II to the Spot Fishery Management Plan (FMP) in 2014. The Addendum established the use of a Traffic Light Analysis (TLA), similar to that used for Atlantic croaker, to evaluate fisheries trends and develop state-specified management actions (e.g., bag limits, size restrictions, time and area closures, and gear restrictions) when harvest and abundance thresholds are exceeded for two consecutive years. The TLA is a way to incorporate multiple data sources (both fishery -independent and -dependent) into an easily understood metric for management advice. It is often used for data-poor species, or species which are not assessed on a frequent basis. The name comes from assigning a color (red, yellow, or green) to categorize relative levels of indicators on the condition of the fish population (abundance metric) or fishery (harvest metric). For example, as harvest or abundance increase relative to their long-term mean, the proportion of green in a given year will increase and as harvest or abundance decrease, the amount of red in that year becomes more predominant. The TLA improves the management approach as it illustrates long-term trends in the stock and includes specific management recommendations in response to declines in the stock or fishery. Under Addendum II, state-specific management action would be initiated when the proportion of red exceeds specified thresholds (30% or 60%), for both harvest and abundance, over two consecutive years.

Starting in the late 2000s, there were inconsistent signals in the data used to examine the resource. While strong declines in harvest and reports of poor fishing prompted concern, management action was not triggered through the TLA because similar declines were not observed in abundance indices. These conflicting signals suggested the abundance indices being used in the TLA may not adequately represent coastwide adult abundance and the TLA may not be sensitive enough to trigger management action if declines in the population and fishery occur. Additionally, management lacked specificity in what measures to implement if a trigger did occur and how the fishery should be evaluated following management action. In February 2020, the SAB approved Addendum III to the Spot FMP. Addendum III addressed these issues by modifying the TLA to better reflect stock characteristics and identify achievable management actions based on stock conditions.

Addendum III incorporated the use of a regional approach to better reflect localized fishery trends and changed the TLA to trigger management action if two of the three most recent years of characteristics exceed threshold levels. These changes allow the TLA to better detect population and fishery declines. Addendum III also defined management responses for the

## DRAFT DOCUMENT FOR TECHNICAL COMMITTEE REVIEW

recreational and commercial fisheries and a method for evaluating the population's response to TLA-triggered management measures.

The following changes were incorporated into the TLA by Addendum III:

- Incorporation of indices from the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP) and the North Carolina Division of Marine Fisheries (NCDMF) Pamlico Sound Survey (Program 195) into the adult composite characteristic index, in addition to the currently used indices from the Northeast Fisheries Science Center (NEFSC) Multispecies Bottom Trawl Survey and the South Atlantic component of the Southeast Area Monitoring and Assessment Program (SEAMAP).
- Use of revised adult abundance indices from the surveys mentioned above, in which age-length keys and length composition information are used to estimate the number of adult (age 1+) individuals caught by each survey.
- Use of regional metrics to characterize the fisheries north and south of the Virginia-North Carolina state border. The ChesMMAP and NEFSC surveys will be used to characterize abundance north of the border, and the NCDMF Program 195 and SEAMAP surveys will be used to characterize abundance south of the border.
- Change/establish the reference time period for all surveys to be 2002-2012.
- Change the triggering mechanism to the following: Management action will be triggered according to the current 30% and 60% red thresholds if both the abundance and harvest thresholds are exceeded in any two of the three terminal years.

Addendum III also established a Spot Technical Committee (TC) with the ability to alter the TLA as needed to best represent trends in spot harvest and abundance, including selection of surveys and methods to analyze and evaluate these data. Such changes may be made without an addendum, but Addendum III was necessary because of the change to the management-triggering mechanism. The TC will evaluate state implementation of management responses triggered through the TLA. Since the implementation of Addendum III, spot management has been moved to the newly formed Sciaenids Management Board.

In 2020, the TLA for spot had red proportions that exceeded the threshold of 30% for the period of 2017-2019 in both harvest composite characteristics for the Mid-Atlantic and South Atlantic. Exceeding the 30% threshold represents moderate concern to the fishery and initiated a moderate management response. All non-*de minimis* states were required to institute a recreational bag limit of no more than 50 spot. States with more restrictive measures in place were encouraged to maintain those measures. For commercial fisheries, states had to set a regulation that, if applied to the state's 2010-2019 average commercial harvest, would have produced at least a 1% reduction. States established different measures by trip limits or season modifications, as long as measures implemented were quantifiable and are projected to achieve this 1% reduction. All states have submitted state implementation plans to meet required restrictions on recreational and commercial management measures. Addendum III states these management measures must be in place for at minimum two years, after which management will be reevaluated based on the composite regional abundance characteristics.



The current harvest composite index may be affected by these new management measures and thus cannot be considered when determining if management action is necessary.

In addition to triggering management, the COVID-19 pandemic occurred in 2020, which had far reaching impacts including limited or no sampling in state and federal fishery-independent monitoring programs. For the TLA, the impact was felt most significantly for the larger scale regional monitoring surveys (NEFSC groundfish survey and the SEAMAP survey) which were not able sample at all in 2020. In 2021, the only survey that was directly impacted by COVID was SEAMAP which could not complete the spring 2021 cruise, but was able to finish the full summer and fall cruises. Additionally, the ChesMMAP survey has not completed the calibration estimates for converting the index for use over the entire time series due to the vessel and gear change that occurred in 2019, and so data are unavailable from 2019-2021.

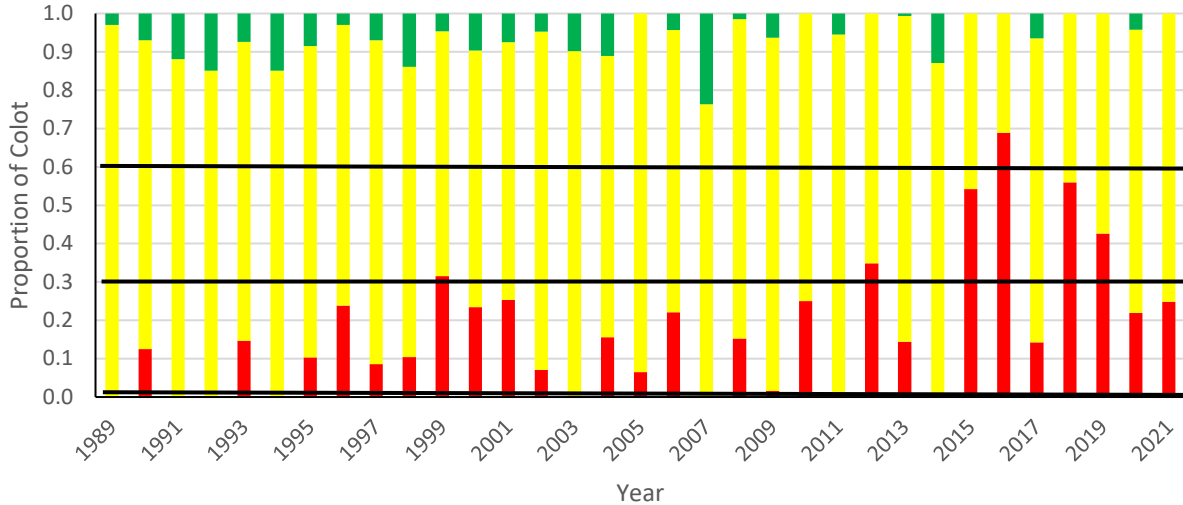
This report includes the harvest and abundance composite indices in Sections 2 and 3 which were approved in Addendum III to trigger management action. Individual TLAs for commercial and recreational harvest by region, as well as effort and discards of spot in the South Atlantic Shrimp Trawl Fishery, are described in Section 4. TLAs for each fishery-independent index that go into the abundance composite or juvenile composite are described in Section 5. The discard data and juvenile indices are included as supplementary information to be reviewed by the TC and are not considered in the trigger mechanisms. Supplemental information with NEAMAP incorporated into the Mid-Atlantic composites is provided in Section 6.

## **2 TRAFFIC LIGHT ANALYSIS (COMPOSITE INDICES)**

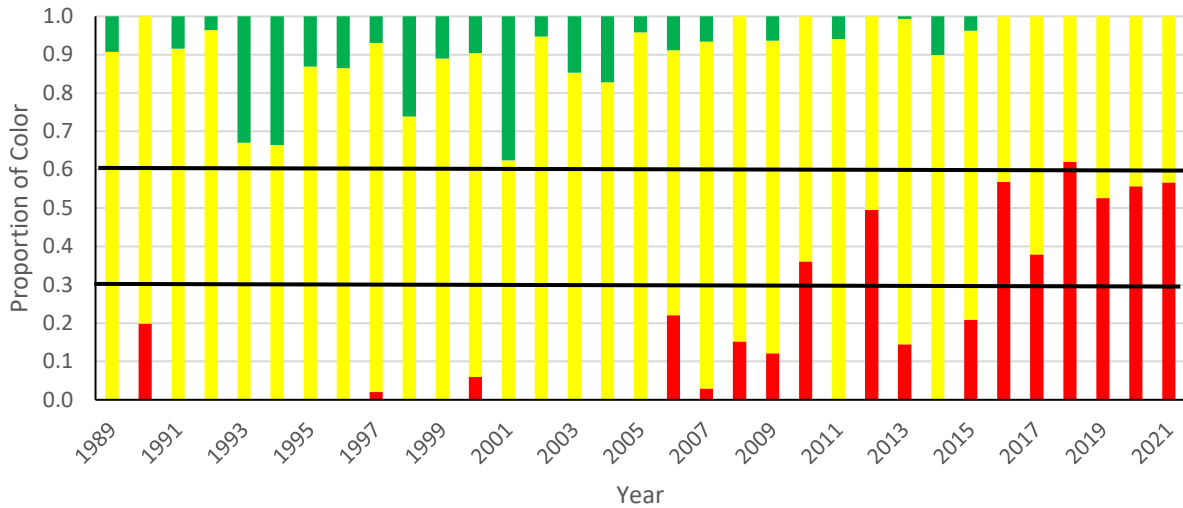
### **2.1 Harvest Composite Characteristic Index**

- The harvest (recreational and commercial landings) composite characteristic TLA showed a slight decrease in landings in 2021 for both the Mid-Atlantic and South Atlantic (Figure 1 and Figure 2).
- The composite characteristic for the Mid-Atlantic has been below the 30% red threshold for the last two years of the series (Figure 1) with an average red proportion of 23.3%. While 2021 was similar in pattern to 2020, it should not be interpreted as a trigger mechanism since catch restrictions were in place that year.
- The composite characteristic for the South Atlantic has exceeded the 30% red threshold for the last six years (Figure 2). The red proportion in exceeded the 30% threshold again in 2021. The TC cautions that the 2021 harvest composite should not be used as a trigger in the TLA since harvest restrictions were in place that year.

**Figure 1. Annual TLA color proportions for harvest composite (commercial and recreational landings) in the Mid-Atlantic coast (NJ-VA) for spot from 1989-2021 using a 2002-2012 reference period.**



**Figure 2. Annual TLA color proportions for harvest composite (commercial and recreational landings) for the South Atlantic coast (NC-FL) for spot from 1989-2021 using a 2002-2012 reference period.**



## 2.2 Abundance Composite Characteristic Index

The abundance composite TLA index for spot is broken into two components based on age composition in each region. The adult composite index was generated from the NEFSC and ChesMMAAP surveys for the Mid-Atlantic and SEAMAP and NCDMF Program 195 (Pamlico Sound Survey) in the South Atlantic since the majority of spot captured in these surveys were ages 1+. Calculating the abundance indices for the TLA has been challenging since many surveys could

not operate during COVID and ChesMMAP has not provided data since 2018. Neither the NEFSC fall ground fish survey nor the SEAMAP survey were able to complete any sampling cruises/trips in 2020. In 2021, SEAMAP also was not able to complete its spring survey sampling. The ChesMMAP survey has not completed the calibrations necessary to convert the 2019-2021 index values that would allow full use of the entire time series after the vessel and gear changes that occurred in 2019. ChesMMAP was able to sample in 2019, 2020, and 2021, so once calibration exercises are complete, the index data should be available in 2023. Therefore, at this time, ChesMMAP only goes through 2018. The NCDMF Program 195 was not able to sample all stations in 2020 and 2021 due to COVID and staffing issues. Twenty-eight of the 54 stations were sampled in 2020 and 35 of the 54 stations were sampled in 2021.

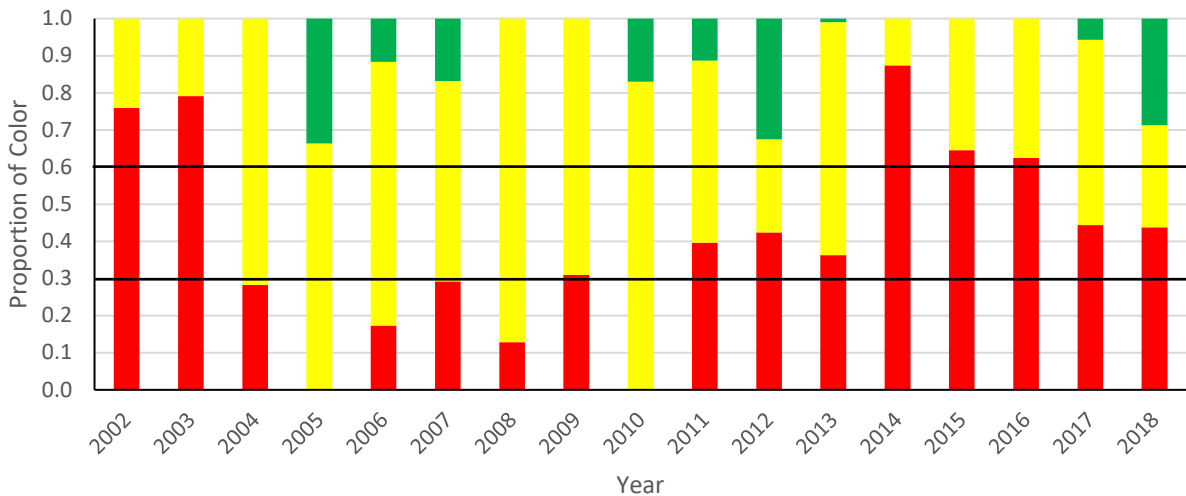
One additional survey that is available in the Mid-Atlantic is the Northeast Area Monitoring and Assessment Program (NEAMAP) which samples from Block Island Sound south to Cape Hatteras. The NEAMAP survey has been considered for use in the TLA but is currently not used due to the shorter series time frame (2007-2021) compared to all the other surveys. There is a supplemental section at the end of this report that describes the trends in the NEAMAP survey and gives composite characteristics that include NEAMAP for the Mid-Atlantic. Adult and juvenile data are presented as supplementary information only.

Additional potential indices available in the south Atlantic include the SCDNR trammel net survey (adults) and SCDNR electroshock survey (juvenile) if deemed necessary for future consideration.

### **2.2.1 Mid-Atlantic**

- The TLA composite characteristics for spot abundance (NEFSC and ChesMMAP surveys) in the Mid-Atlantic did not have 2019-2021 data points because the ChesMMAP survey indices were not available (Figure 3).
- While the composite adult index triggered at the 30% threshold because the red proportions in the index have exceeded the 30% threshold for the previous five years up to 2018, the recent years cannot be included since the ChesMMAP data was unavailable (Figure 3). The NEFSC survey did have green proportions in 2021 (see Section 5.1) indicating increasing abundance. However, in the last few years when both surveys are available (2017-2018), NEFSC showed green proportions while ChesMMAP showed high red proportions. These contrasting conditions make it difficult to infer about the composite characteristic in recent years when ChesMMAP data are unavailable.
- Results of the TLA for the Mid-Atlantic abundance are inconclusive due to missing data.

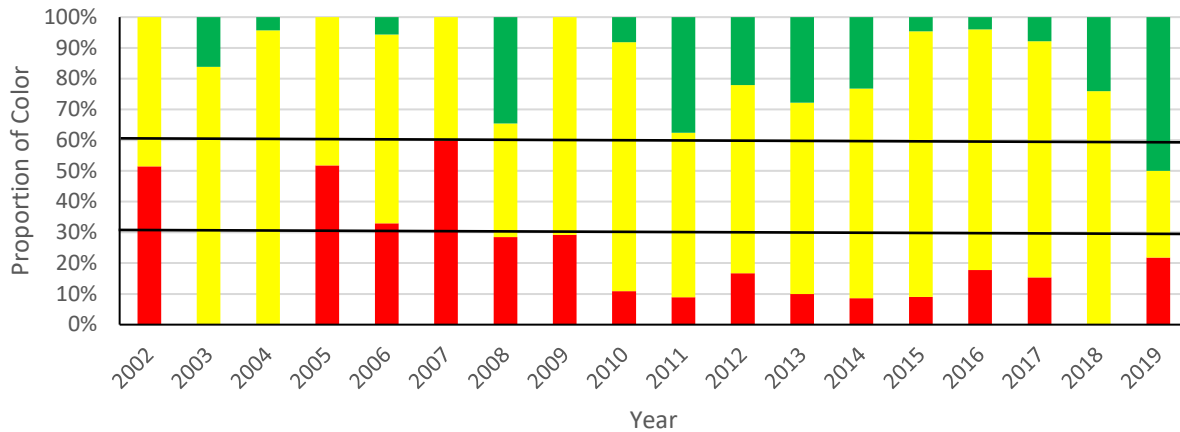
**Figure 3. Annual TLA for adult (age 1+) spot for composite characteristic of adult fishery independent surveys in the Mid-Atlantic (NJ-VA) (NEFSC and ChesMMAP) from 2002-2018 using a 2002-2012 reference period.**



### 2.2.2 South Atlantic

- Since SEAMAP spring cruise data was not available for 2020 or 2021, the TLA composite only goes through 2019. However, the NCDMF Program 195 data was available for 2020-2021 (see Section 5.4) and did not trigger at the 30% threshold for two out of the last three years. The results of the NCDMF Program 195 data analysis should be treated with caution however, as not all stations were sampled due to COVID and staffing issues. Twenty-eight of the 54 stations were sampled in 2020 and 35 of the 54 stations were sampled in 2021.
- The South Atlantic adult abundance composite characteristic did not trigger in 2019 since none of the red proportions in recent years have exceeded the 30% red threshold (Figure 4). There has been a bit of conflict in the index with both red and green proportions in the same years. This has been due to the NCDMF Program 195 index having higher red proportions and SEAMAP having relatively high green proportions in recent years.
- Results of the TLA for the South Atlantic abundance are inconclusive due to missing data.

**Figure 4. Annual TLA composite characteristic for adult spot (age 1+) in the South Atlantic (SEAMAP and NCDMF Program 195) from 2002-2019 using a 2002-2012 reference period.**



### 3 SUMMARY

- The harvest composite TLA for spot exceeded the 30% threshold in the South Atlantic but not in the Mid-Atlantic in 2021. However, 2021 had catch restrictions in place and so the TLA harvest composite should not be interpreted as a trigger year.
- The Mid-Atlantic abundance composite characteristic did not have 2019-2021 data points, so no determination could be made.
- The South Atlantic abundance composite characteristic did not trigger at 30% in 2019. However, data from 2020 or 2021 were not complete, so no determination can be made.
- With both abundance composite TLAs unknown due to missing data, a determination of whether or not the TLA triggered in 2021 cannot be made. Any determination on the TLA should wait until 2023 when there is complete data from all surveys again.

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Table 1. Traffic light metrics for the Mid- and South Atlantic regions with known and unknown values, given missing 2020 and 2021 data. Management action is triggered according to the current 30% red and 60% red thresholds if both the adult abundance and harvest thresholds are exceeded in any three of the four terminal years.

TLA Metric	Spot		
	2019	2020	2021
Mid-Atlantic Harvest	43% red	22% red	15% red*
South Atlantic Harvest	52% red	22% red	47% red*
Mid-Atlantic Adult Index	Unknown	Unknown	Unknown
South Atlantic Adult Index	50% green	Unknown	Unknown
2021 TLA Status	Status Unknown		

\*Harvest metrics should not be interpreted as a trigger mechanism in the TLA since catch restrictions to lower harvest were in place for these years

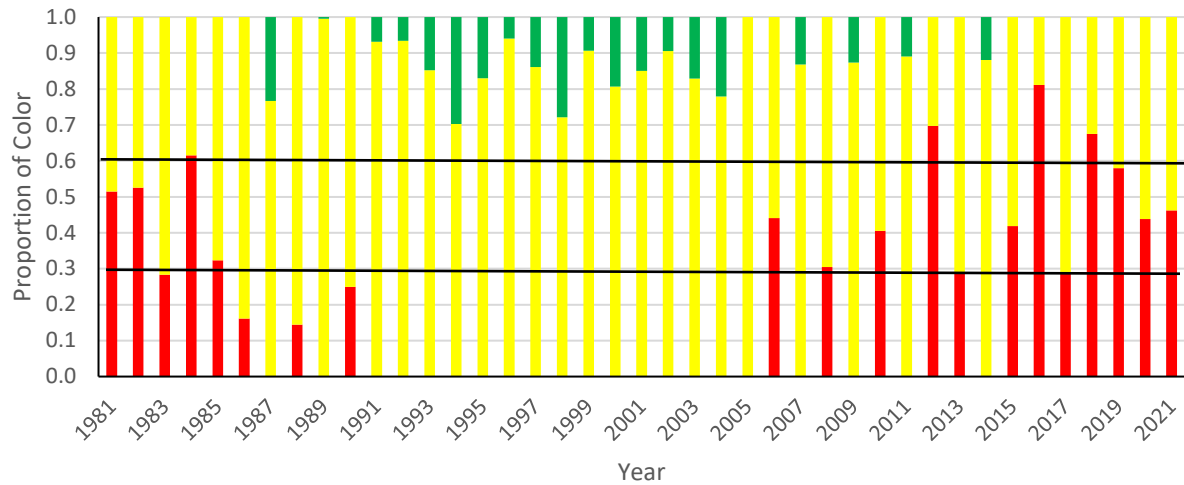
#### 4 TRAFFIC LIGHT ANALYSIS (FISHERY-DEPENDENT)

##### 4.1 Commercial Landings

###### 4.1.1 Mid-Atlantic

- Commercial landings of spot on the Atlantic coast decreased 5.3% in 2021 from 2020. Long-term commercial landings are still relatively low, a trend that has been occurring since 2003.
- The proportion of red for commercial landings in the Mid-Atlantic peaked in the 1990s and early 2000s (Figure 5). Total annual landings in the Mid-Atlantic have declined 69.7% from 2004 to 2021, although there is some year-to-year variability between red and green proportions. In the last seven years the red proportion has been above the 30% threshold in all but one year.
- The commercial index’s proportion of red was above the 30% threshold level in 2021 and represents the fourth year above this threshold. Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.

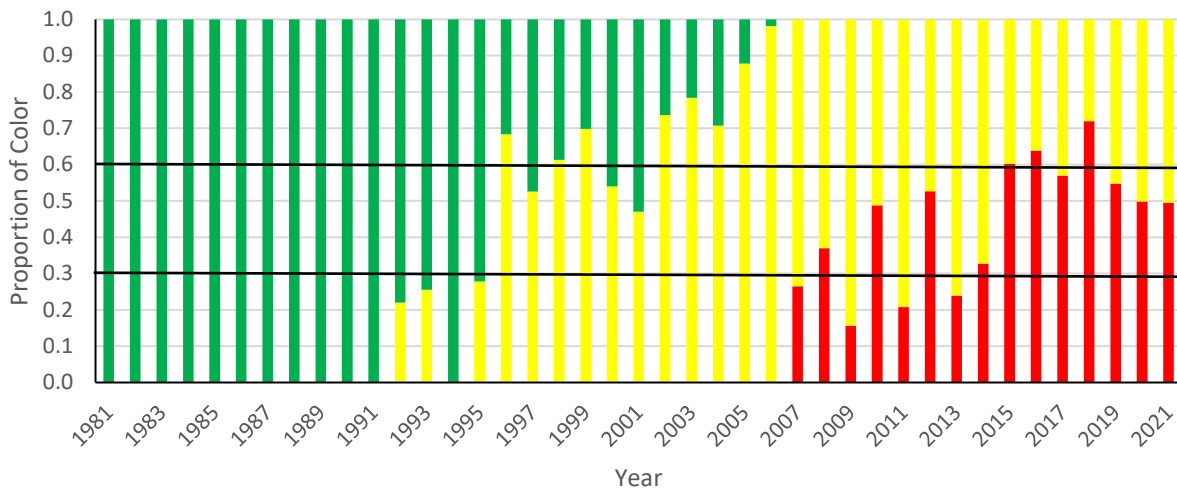
**Figure 5. Annual TLA color proportions using 2002-2012 reference period for spot from commercial landings for the Mid-Atlantic (NJ-VA) coast of the US from 1981-2021.**



#### 4.1.2 South Atlantic

- In the South Atlantic, commercial spot landings were high from the 1980s through the mid-2000s (Figure 6). Commercial spot landings began to decline steadily from 2005 onward and red proportion levels have been above the 30% threshold for most years since 2010. Commercial spot landings in the south Atlantic decreased only slightly (0.97%) in 2021, but red proportion was still above the 30% threshold. Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.
- The continued decline in commercial landings may be due to changes in effort in some other fisheries so it is difficult to determine the exact cause of the general decline in commercial landings in the South Atlantic. However, this trend is similar to what has been observed in the South Atlantic recreational fishery.

**Figure 6. Annual TLA color proportions using a 2002-2012 reference period for spot from commercial landings from 1981-2021 for the South Atlantic (NC-FL) coast of the US.**



## 4.2 Commercial Discards

### 4.2.1 South Atlantic

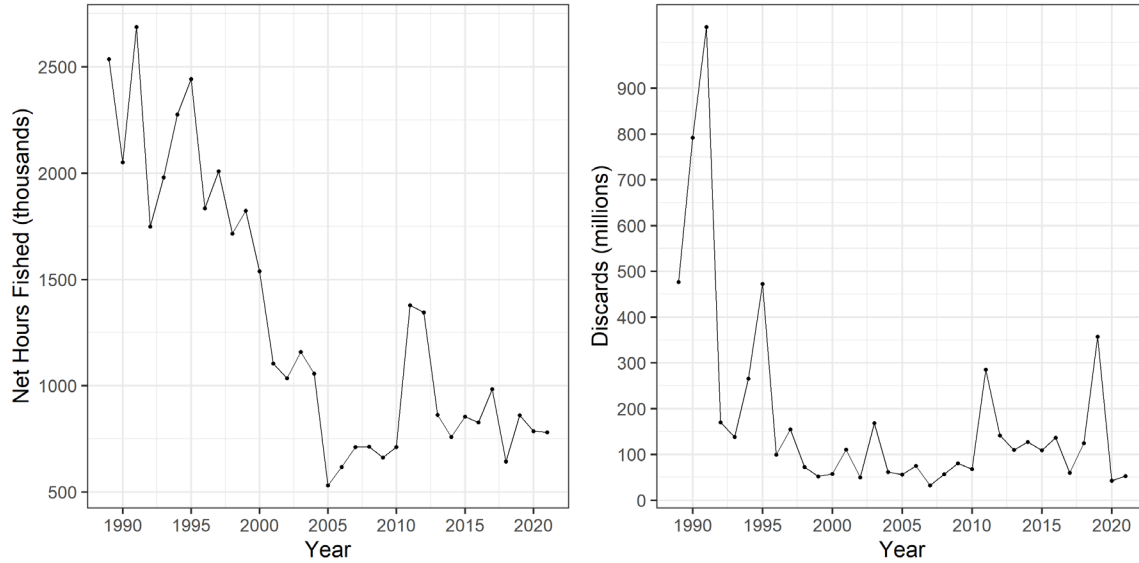
- Discard estimates of spot in the South Atlantic Shrimp Trawl Fishery are informed by catch rates observed during the SEAMAP survey and South Atlantic Shrimp Trawl Fishery Observer Program, and total effort of the South Atlantic Shrimp Trawl Fishery. Increases in discards could be an indicator of higher abundance of juveniles in the region, an increase in effort by the fishery, or a combination of both.
- Total effort (net hours) in the South Atlantic Shrimp Trawl Fishery declined from a time series high in 1991 to a time series low in 2005 (Figure 7). Effort then varied around an increasing trend through 2017 and was variable and lower through 2020. Effort declined slightly from 786,172 net hours in 2020 to 780,515 net hours in 2021.
- Total discards of spot in the South Atlantic Shrimp Trawl Fishery were highest during the late 1980s and early 1990s, declined to relatively low levels in the 2000s, and then increased to slightly higher levels in the 2010s (Figure 7; right). Discards were highly variable just prior to the terminal year, decreasing from one of the highest estimates in 2019 to one of the lowest estimates in 2020. Discards increased slightly from 42 million fish in 2020 to 53 million fish in 2021 and remain near time series lows.
- There were no SEAMAP tows conducted in 2020, so the estimated trend for the 2020 discard estimate relative to previous years is solely informed by South Atlantic Shrimp Trawl Fishery Observer catch rates. The observer catch rates of spot declined in 2020 relative to 2019 (Figure 8), and this decline can't be verified by SEAMAP catch rates. The SEAMAP survey did not sample in spring 2021, but began operations again during the peak of the shrimping season in July. The 2021 catch rates from both data sets show



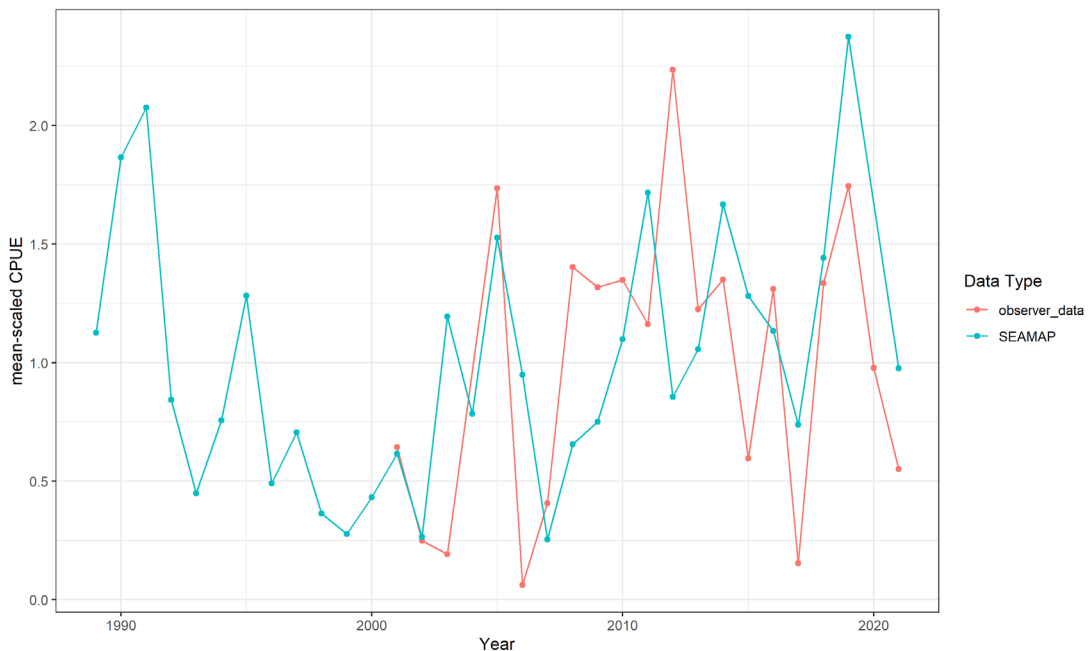
similar declines relative to 2019. As in all years, the magnitude of the 2020 and 2021 discard estimates is informed by the observer data (magnitude of catch rates) and shrimp trawl effort data (expansion factor to expand catch rates to total discards).

- For additional information on the South Atlantic Shrimp Trawl Fishery discard estimation, please see Appendix 1 of the 2020 TLA Update Report.

**Figure 7. Total net hours fished (left) and discards of spot (right) in the South Atlantic Shrimp Trawl Fishery.**



**Figure 8. Comparison of spot mean-scaled catch-per-unit-effort from SEAMAP Coastal Trawl Survey data and South Atlantic Shrimp Trawl Fishery Observer data**



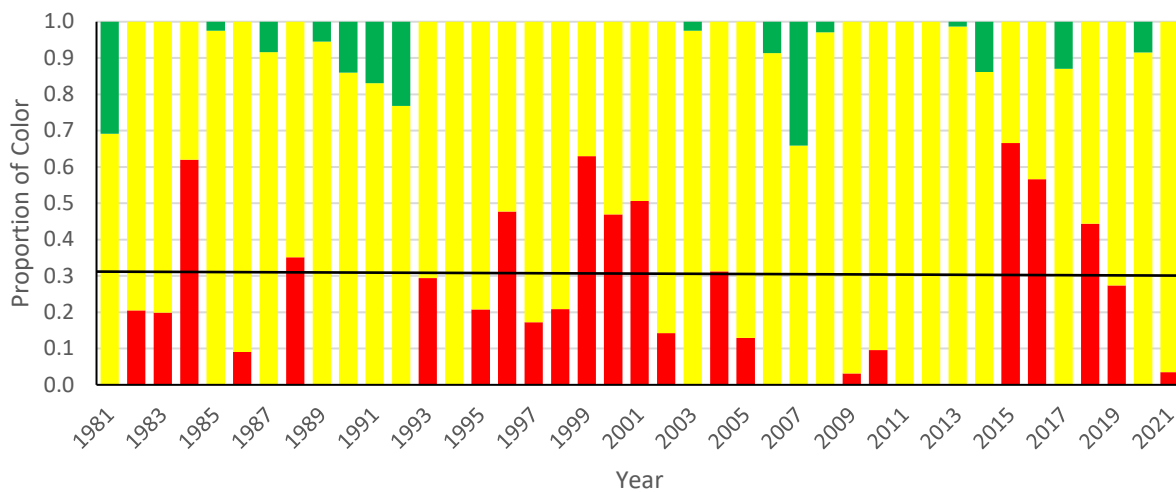
### 4.3 Recreational

In July 2018, the Marine Recreational Information Program transitioned from the catch estimates based on effort information from the Coastal Household Telephone Survey (CHTS) to effort information from the mail-based Fishing Effort Survey (FES). FES estimates are used in this and future reports, so recreational estimates and analyses may be different from previous years that used CHTS estimates.

#### 4.3.1 Mid-Atlantic

- The recreational harvest of spot on the Mid-Atlantic coast decreased 23.3% in 2021 from 2020, with values of 4,235,086 pounds and 5,814,976 pounds, respectively (Figure 9). Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.
- There was no red in the TLA in 2020 and a green proportion of 11.2%. The recreational TLA only exceed the 30% threshold in one of the last three years (2018; Figure 9).

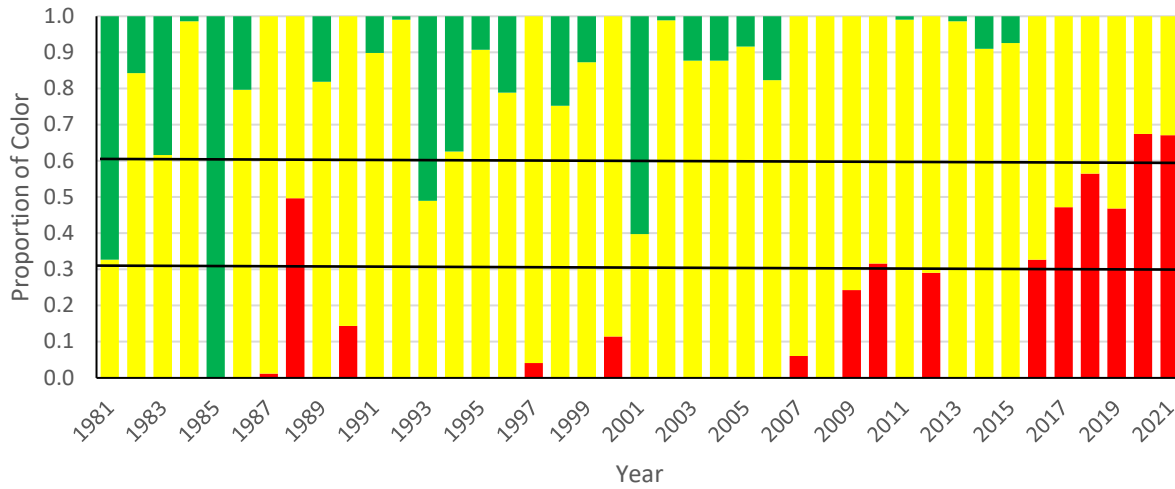
**Figure 9. Annual color proportions for the Mid-Atlantic (NJ-VA) coast of the US for recreationally harvested spot from 1981-2021 using a 2002-2012 reference period.**



#### 4.3.2 South Atlantic

- In the South Atlantic, recreational harvest increased 2.4% in 2021 (692,950 lbs) from 2020 (676,727 lbs). Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.
- Red proportions have been above the 30% threshold since 2016 for recreational harvest (Figure 10).

**Figure 10. Annual color proportions for the South-Atlantic (NC-FL) coast of the US for recreationally harvested spot from 1981-2021 using a 2002-2012 reference period.**

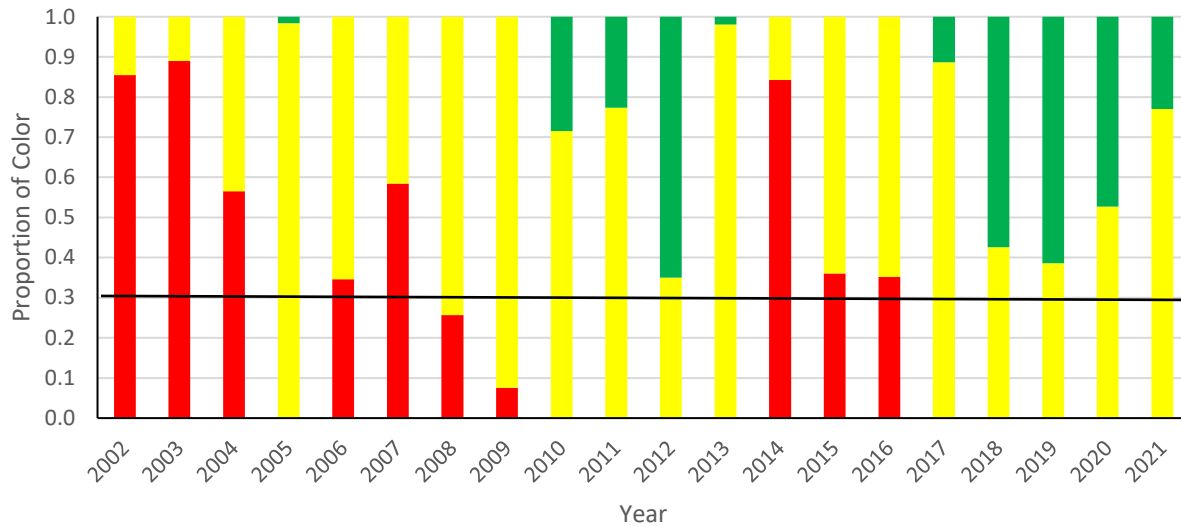


## 5 TRAFFIC LIGHT ANALYSIS (FISHERY-INDEPENDENT)

### 5.1 NEFSC Fall Groundfish Trawl Survey

- Since there was no sampling carried out in 2020 for the NEFSC survey, an intermediary placeholder value was estimated for 2020 (as the mean of 2018-2019 and 2021). Changes in the index are made as comparison to 2019 since that was the last year of the survey with data.
- There was no red in the TLA index for 2021, so this index did not exceed the 30% threshold (Figure 11).

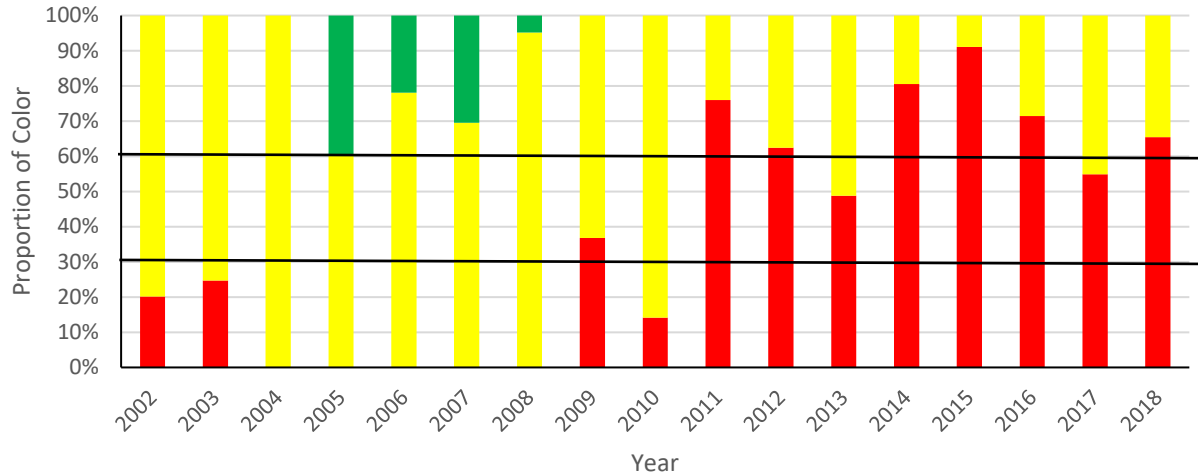
**Figure 11. Annual TLA color proportions for adult spot (age 1+) from Mid-Atlantic NEFSC fall groundfish trawl survey from 2002-2021 using a 2002-2012 reference period.**



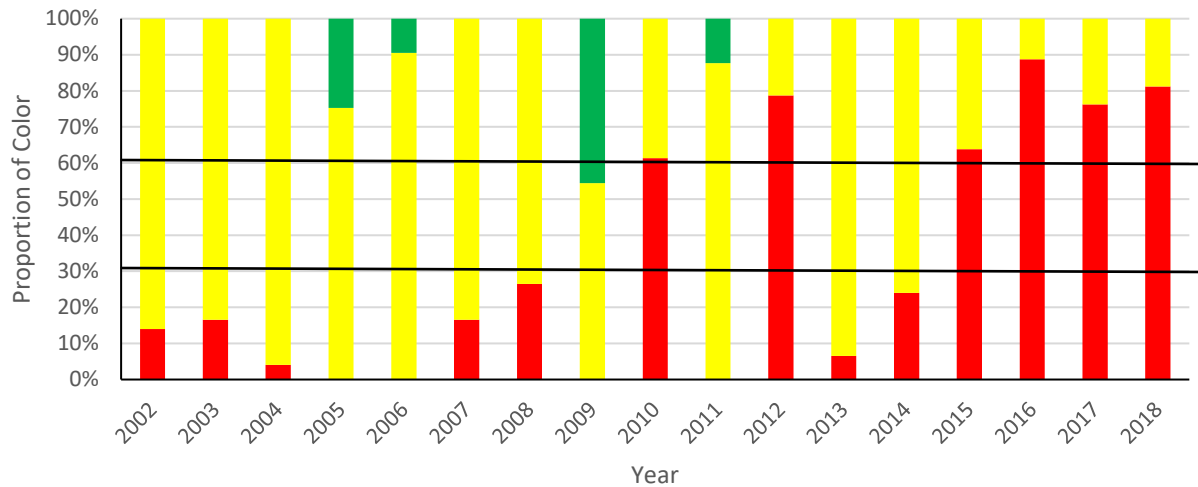
## 5.2 ChesMMA Trawl Survey

- The ChesMMA survey made major changes to the survey in 2019 (vessel change, gear change, altered protocols, etc.) but maintained the same sampling strata and design. Side-by-side comparison tows are being made between the new and old vessels/gears and the survey is in the process of producing conversion factors by species so that historic survey index values can be compared to ongoing survey values in the future. Since the conversion factor determination won't likely be finished until 2023, the ChesMMA index is only available through 2018 for the adult and juvenile TLA composite characteristics.
- The juvenile spot index showed a declining trend from the late 2000s through the present (Figure 12) with high proportions of red. Red proportions exceeded the 30% threshold for all years since 2011 and exceeded the 60% threshold for six of the last eight years in the data series.
- The adult spot index also showed a similar declining trend during the same time period (2010-2018) with red proportions exceeding the 60% threshold in the terminal four years of the time series (Figure 13).
- Whether the ChesMMA index would have exceeded either the 30% or 60% thresholds of concern is unknown due to the currently missing values for 2019-2021 (Figure 12 and Figure 13). These index values are expected to be available in 2023, but until then any estimate of whether the ChesMMA index triggered in 2019-2021 is speculative.

**Figure 12. Annual TLA color proportions for juvenile spot (age 0) from the Mid-Atlantic ChesMMAAP survey from 2002-2018 using a 2002-2012 reference period.**



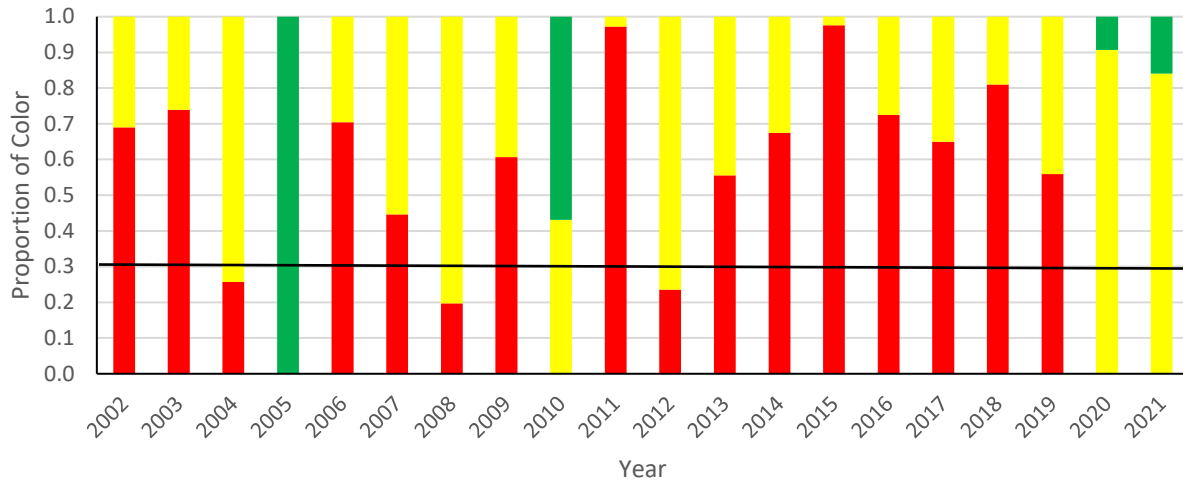
**Figure 13. Annual TLA color proportions for adult spot (age 1+) from the Mid-Atlantic ChesMMAAP survey from 2002-2018 using a 2002-2012 reference period.**



### 5.3 Maryland Juvenile Fish Seine Survey

- The Maryland CPUE increased 16.9% in 2021 from 2020, and was above the long-term mean for the second year in a row (Figure 14).
- CPUE was above the long-term mean for the two terminal years, indicating annual recruitment was up in the Maryland portion of the Chesapeake Bay in 2021.
- While spot numbers were up in both 2020 and 2021, with no red portion, the index still exceeded the 30% threshold level for the 2013-2019 time period indicating there is still cause for concern for a general decline in recruitment in Maryland waters.

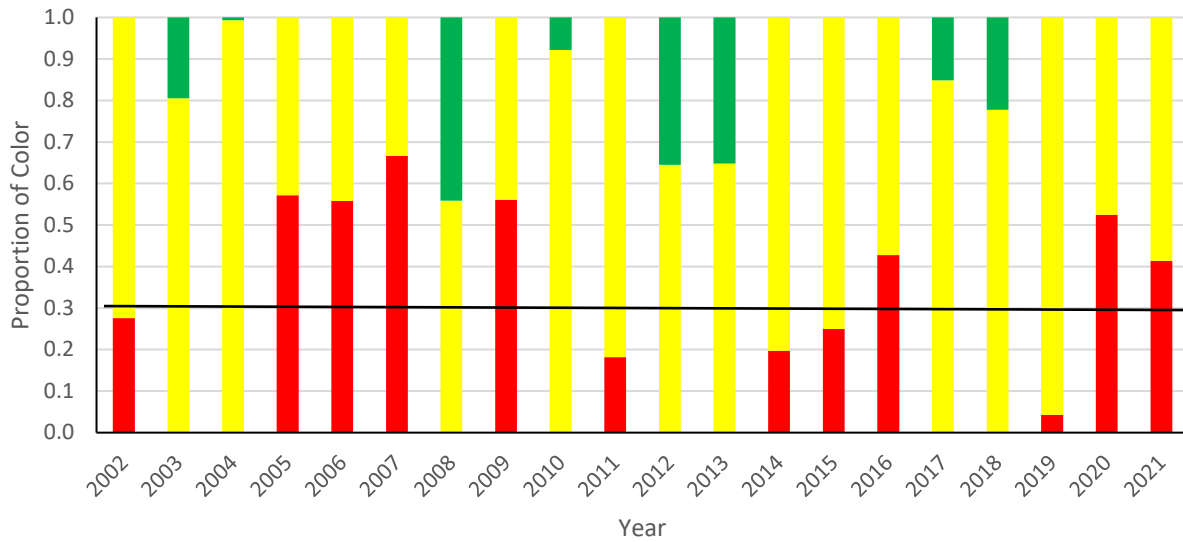
**Figure 14. Annual TLA color proportions for the Mid-Atlantic Maryland seine survey juvenile spot (age 0) index from 2002-2021 using a 2002-2012 reference period**



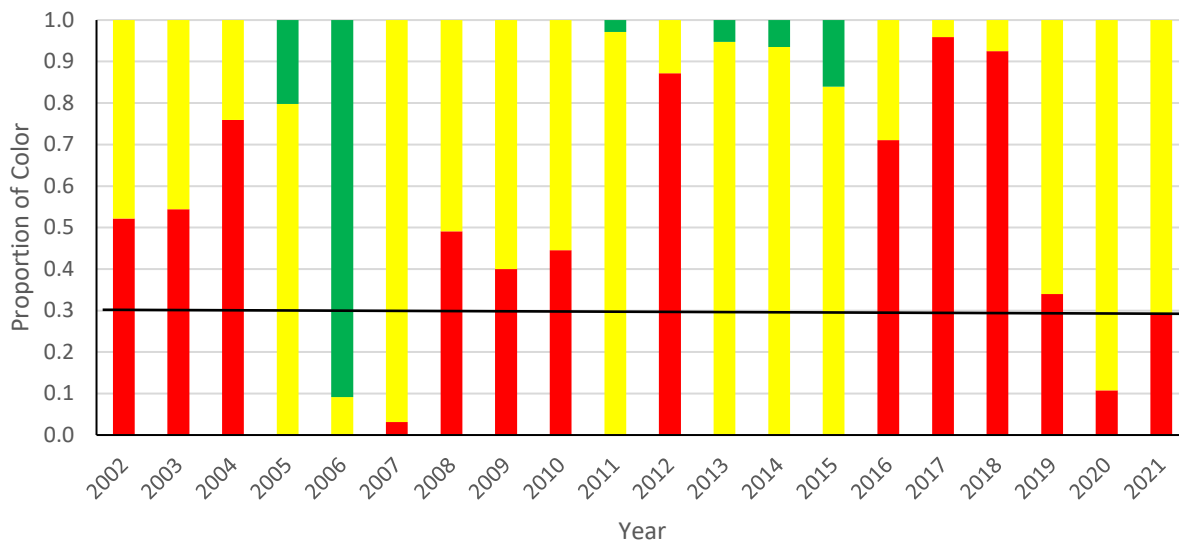
#### 5.4 NCDMF Program 195 (Pamlico Sound Survey)

- The NCDMF Program 195 survey saw an increase in juveniles and a decline in adults as indicated by red proportions in both juvenile (Figure 15) and adult (Figure 16) indices.
- Juvenile spot CPUE increased in 2021 from 2020 with the red proportion exceeding the 30% threshold for the second year in a row (Figure 15).
- The adult CPUE decreased in 2021 from 2020 (Figure 16) with a red proportion of 29% in 2021.
- The results of the NCDMF Program 195 data analysis should be treated with caution, as not all stations were sampled due to COVID and staffing issues. Twenty-eight of the 54 stations were sampled in 2020 and 35 of the 54 stations were sampled in 2021.

**Figure 15. Annual TLA color proportions for juvenile spot (age 0) from the South Atlantic NCDMF Program 195 Survey from 2002-2021 using a 2002-2012 reference period.**



**Figure 16. Annual TLA color proportions for adult spot (age 1+) from the South Atlantic NCDMF Program 195 Survey from 2002-2021 using a 2002-2012 reference period.**



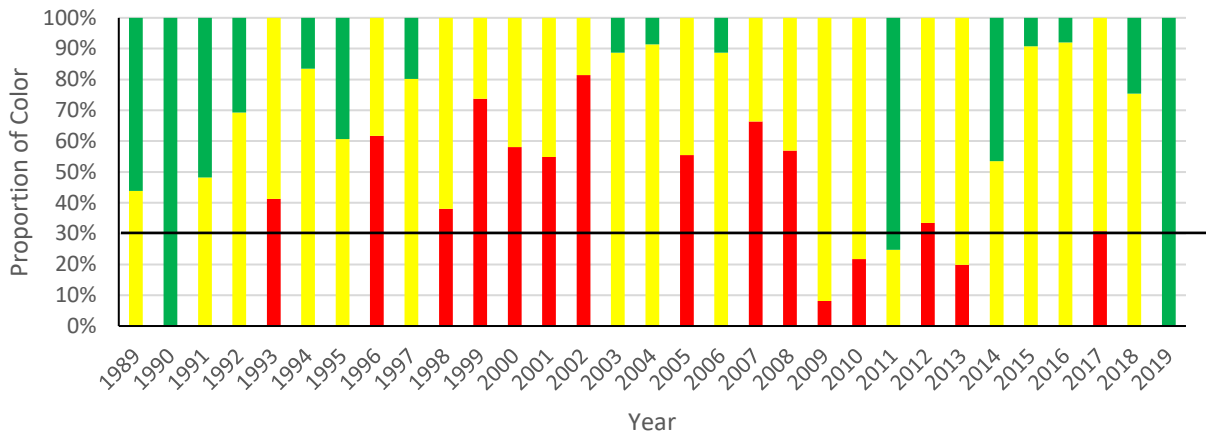
### 5.5 SEAMAP Trawl Survey

- There were no SEAMAP cruises in 2020 and the spring of 2021 due to COVID. As such, there was no adult TLA values for 2020 and 2021 and the index is only presented through 2019. The juvenile index (fall cruise) TLA for 2021 did occur and the missing 2020 value was imputed as an intermediary value (mean of 2018-2019 and 2021). The

SEAMAP index uses the spring season CPUE because it only catches adult spot (age 1+) during that season.

- The annual adult CPUE increased in 2019 from 2018 and was the highest value in the time series.
- The TLA index has only exceeded the 30% threshold once in the past seven years (Figure 17).

**Figure 17. Annual color proportions for Adult spot (age 1+) TLA from the fall South Atlantic SEAMAP survey from 1989-2019 using a 2002-2012 reference period.**



### 5.6 Juvenile Abundance Composite Indices

The juvenile composite index in the Mid-Atlantic was generated from the ChesMMAAP and the Maryland juvenile fish seine survey. ChesMMAAP has an age specific index for ages 0 which allowed its use as a juvenile index. The juvenile composite uses a terminal year of 2018, the most recent year the ChesMMAAP index is available.

- The juvenile spot TLA for the Mid-Atlantic (MD survey and ChesMMAAP) also showed a general decline in recruitment with very high red proportions for the last eight years (Figure 18).
- The juvenile composite index was above the 60% threshold for the past six years (Figure 18).



**Figure 18. Annual TLA for juvenile (age 0) spot for composite characteristic of fishery independent suveys in the Mid-Atlantic (NJ-VA) (MD seine survey and ChesMMAAP) from 2002-2018 using a 2002-2012 reference period.**



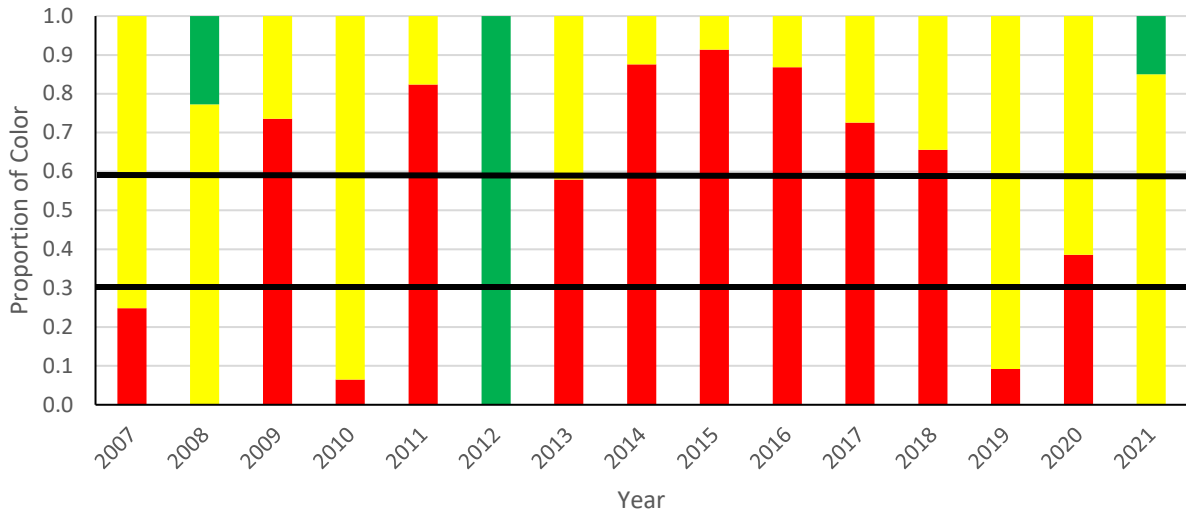
- The South Atlantic juvenile spot index (NCDMF Program 195) increased in 2021 from 2020 with the red proportion exceeding the 30% threshold for the second year in a row (Figure 15).

## 6 SUPPLEMENTAL MATERIALS

### 6.1 NEAMAP Survey

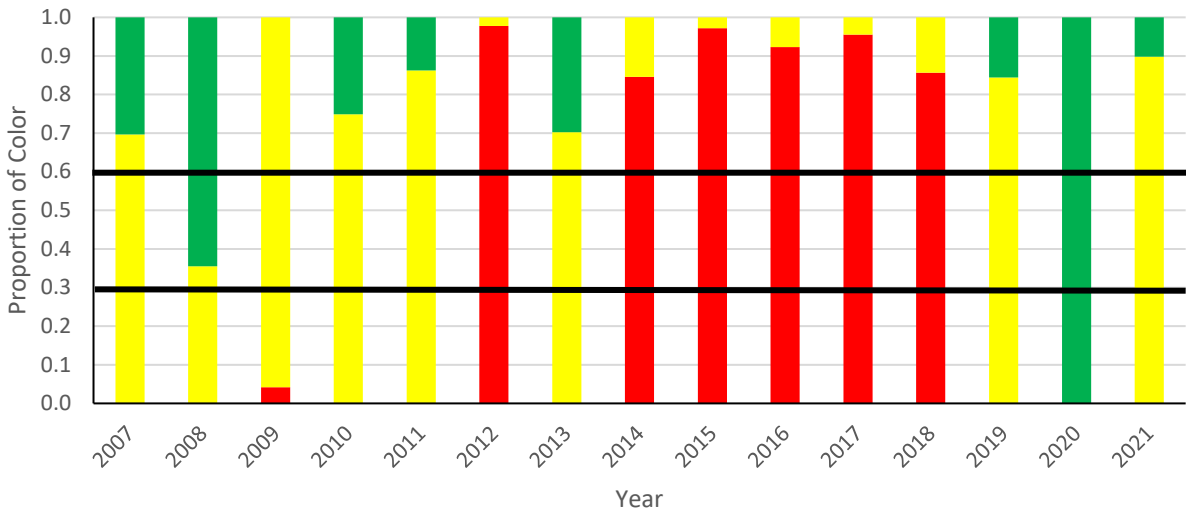
- The juvenile spot TLA index shows the evidence of low recruitment across all years except 2008, 2012, and 2021 (Figure 19). This is similar to the declining trends seen in the MD seine survey and the ChesMMAAP survey across the same years.

**Figure 19. Annual color proportions from TLA for juvenile (age 0) spot from the Mid-Atlantic NEAMAP survey from 2007-2021 using a 2007-2019 reference period.**



- The adult spot TLA index showed a generally declining trend from 2010 through 2018 with red proportions exceeding the 60% threshold (Figure 20). However, the last three years, 2019-2021, have had no red proportions, indicating an increase from previous years.

**Figure 20. Annual color proportion from TLA for adult (age 1+) spot from the Mid-Atlantic NEAMAP survey using a 2007-2019 reference period.**

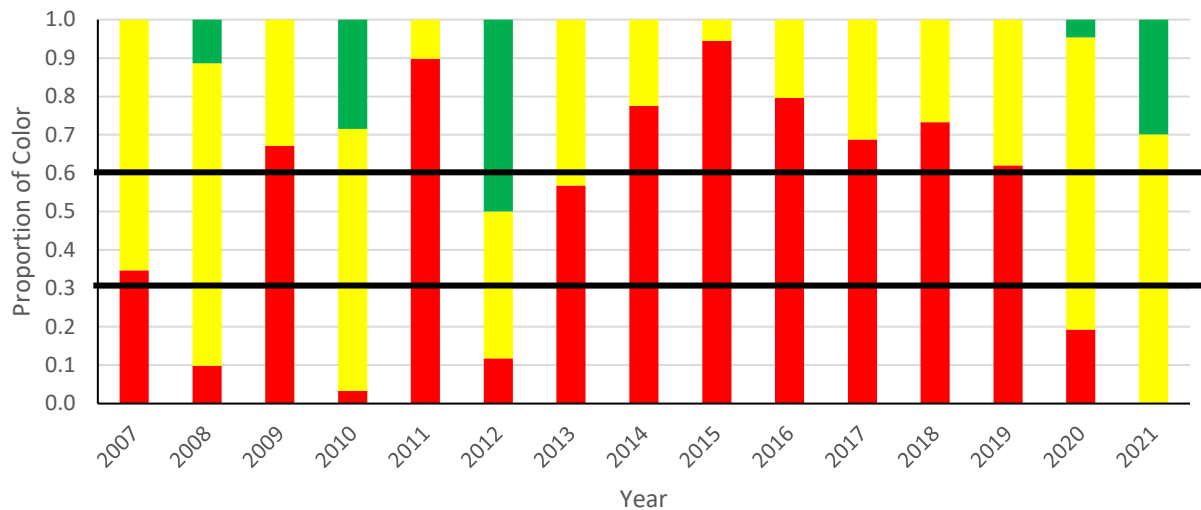


## 6.2 Composite TLA Characteristic for Mid-Atlantic including NEAMAP

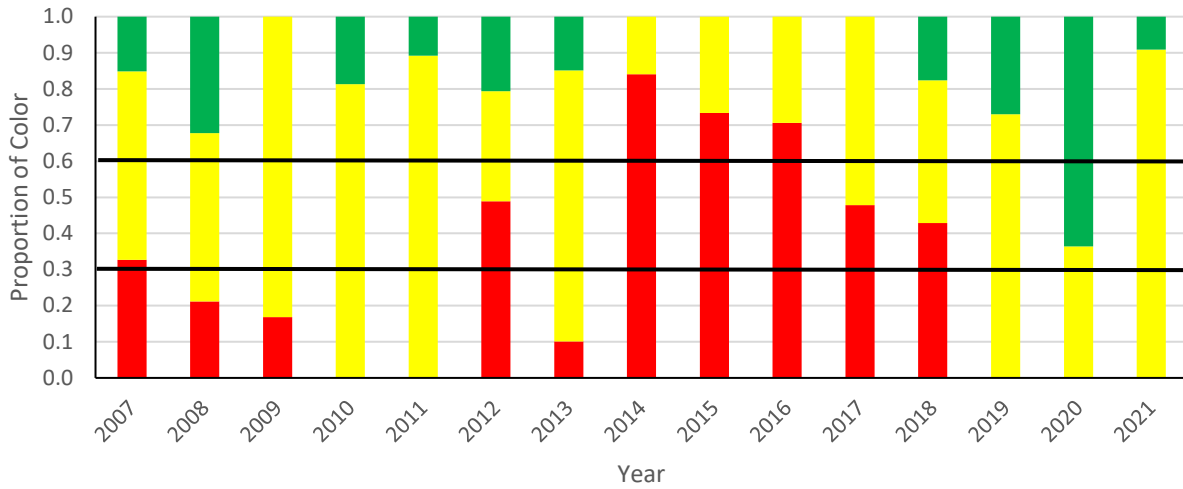
In order to generate the composite TLA index that included NEAMAP in the Mid-Atlantic, the other Mid-Atlantic indices (NEFSC, ChesMMAP, and MD Seine Survey) had to be recalculated using the common time period of all three surveys (2007-2019) in order to have a common reference. Since the ChesMMAP survey was not available for 2019-2021, the juvenile composite TLA (age 0) is presented using only NEAMAP and the MD juvenile fish seine survey. Since ChesMMAP for adults (age 1+) in 2019-2021 was also not available, the adult composite TLA was calculated using NEFSC and NEAMAP only.

- The juvenile spot composite characteristic (Figure 21) showed an increase in recruitment in 2021 in the Mid-Atlantic region with green proportions from both the MD and NEAMAP surveys. The continued increase in 2021 put the composite TLA below the 30% threshold for the second year in a row since 2012.
- The adult spot composite characteristic (Figure 22) showed an increase in abundance from both surveys (NEFSC and NEAMAP).
- Neither the juvenile or adult indices tripped in either of the two terminal years presented for each TLA with two of the three terminal years well below the 30% threshold.

**Figure 21. Juvenile spot (age 0) TLA composite characteristic index for the Mid-Atlantic (NJ-VA) using NEAMAP and MD Seine surveys from 2007-2021 with a 2007-2019 reference period.**



**Figure 22. Adult spot (age 1+) TLA composite characteristic index for Mid-Atlantic (NJ-VA) using NEFSC and NEAMAP surveys from 2007-2021 with a 2007-2019 reference period.**



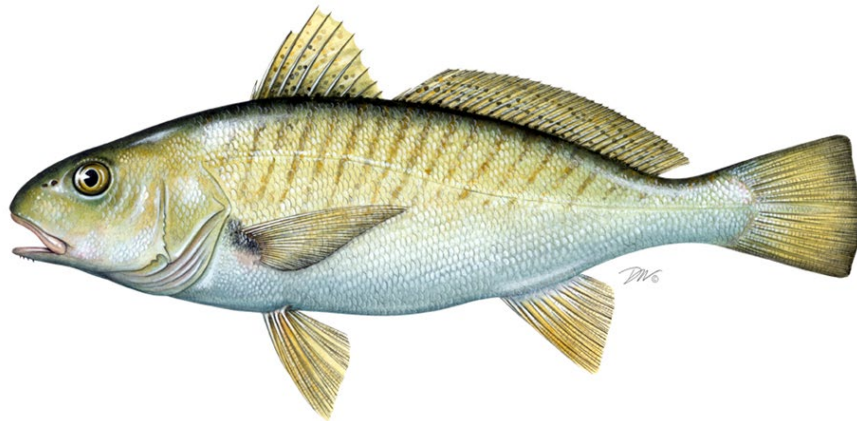
### 6.3 Summary

The addition of the NEAMAP survey generally supported the increasing abundance trends in the last couple of years in the fishery-independent surveys (NEAMAP and NEFSC). The TC might consider adding the NEAMAP survey to the Traffic Light Analysis before the next scheduled benchmark assessment for spot and re-evaluate all fishery independent surveys for use in the TLA.

# ATLANTIC STATES MARINE FISHERIES COMMISSION

## 2022 TRAFFIC LIGHT ANALYSIS REPORT FOR ATLANTIC CROAKER (*Micropogonias undulatus*)

2021 Fishing Year



Prepared by the Technical Committee  
Drafted July 2022



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

## **EXECUTIVE SUMMARY**

### Background

The purpose of this report is to evaluate the current status of Atlantic croaker using the annual Traffic Light Analysis (TLA). Atlantic croaker is managed under Addendum III (2020) which outlines the population characteristics evaluated, management triggers, and management responses. Annually, the Technical Committee (TC) conducts a TLA to evaluate a Mid-Atlantic and a South Atlantic harvest metric, combining commercial and recreational landings in the region. The TC also evaluates a Mid-Atlantic (NJ-VA) and South Atlantic (NC-FL) abundance metric, combining indices of abundance from fishery-independent surveys in each region. Each metric is evaluated using a color proportion of green, yellow, or red based on comparing that year to a 2002-2012 reference period. Addendum III defined 30% red threshold as a moderate concern and 60% red threshold as a significant concern to the fishery. Management action is triggered according to the 30% red and 60% red thresholds if both the adult abundance and harvest thresholds are exceeded for either region in any three of the four terminal years.

### Data Availability Issues

There have been several data availability issues in recent years due to the COVID-19 pandemic and other factors. The Mid-Atlantic abundance index is based on the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP) and the Northeast Fishery Science Center (NEFSC) Multispecies Bottom Trawl Survey. ChesMMAP has not had available data for 2019-2021 due to lack of calibration factors from a change in survey methodology, but should be available in 2023. NEFSC's survey did not operate in 2020 but did operate in 2021. Because of the missing survey data in the Mid-Atlantic region, the NorthEast Area Monitoring and Assessment Program (NEAMAP) was evaluated for trends in the region despite it not being accepted for use in the TLA due to having a shorter time series (2007-2021) that does not include the reference period (2002-2012). The South Atlantic abundance index is based on the South Carolina Department of Natural Resources (SCDNR) Trammel Net Survey and Southeast Area Monitoring and Assessment Program (SEAMAP) Coastal Trawl Survey. SEAMAP did not operate in 2020 and spring 2021. Therefore, the Mid-Atlantic abundance metric is unavailable for 2019-2021 and the South Atlantic abundance metric is unavailable for 2020-2021.

### 2021 Harvest Metrics

The Mid-Atlantic harvest metric has exceeded the 60% red threshold in all four terminal years (2018-2021) and the South Atlantic harvest metric has exceeded the 30% red threshold in all four terminal years (2018-2021). This is the second consecutive year the harvest metric in both regions have exceeded the 30% threshold, although the harvest metrics in 2021 cannot be used as a trigger mechanism since they represent a year with catch restrictions in place.

### 2021 Abundance Metrics

The Mid-Atlantic metric could not be updated due to missing ChesMMAP data from 2019-2021. The NEFSC index, an index used in the Mid-Atlantic metric, was available in 2021 and while it was below average, showed an increase from 2019. The South Atlantic composite could not be updated past 2019 due to missing SEAMAP data, so it is unknown if it triggered. The SC Trammel Net Survey increased 24% in 2021 compared to 2020. When the South Atlantic

composite metric was calculated using P195 instead of SEAMAP, all four years (2018-2021) were below the 30% threshold.

### Conclusions

The harvest metric triggered in both the Mid-Atlantic (60% threshold) and South Atlantic (30% threshold) from 2018 to 2020 indicating continued concern. Harvest restrictions were in place in 2021 and the harvest metric cannot be used as a trigger mechanism in that year. The abundance composite metrics are unknown for the Mid-Atlantic and South Atlantic due to missing data, and so it could not be determined if further management would be triggered. Addendum III requires management action taken in 2021 to remain in place for a minimum of three years (through and including the 2023 season). The TC recommends maintaining management enacted in 2021.

## **1 INTRODUCTION**

Atlantic croaker are managed under Amendment 1 to the Interstate Fishery Management Plan for Atlantic Croaker (2005) and Addendum I (2011), Addendum II (2014), and Addendum III (2020). The Amendment does not require any specific measures restricting harvest but encourages states with conservative measures to maintain them. It also implemented a set of management triggers, based on an annual review of certain metrics, to respond to changes in the fishery or resource, and initiate a formal stock assessment on an accelerated timeline if necessary. Addendum I revised the management program's biological reference points to assess stock condition on a coastwide basis as recommended by the 2010 stock assessment.

In August 2014, the South Atlantic State/Federal Fisheries Management Board (SAB) approved Addendum II to Amendment I to the Atlantic Croaker Fishery Management Plan (FMP). The Addendum established the Traffic Light Approach (or TLA) to evaluate fisheries trends and develop state-specific management actions (i.e., bag limits, size restrictions, time and area closures, and gear restrictions) when harvest and abundance thresholds are exceeded. Addendum II established the TLA as a precautionary management framework to evaluate fishery trends and develop management actions. Starting in the late 2000s, there were inconsistent signals in the data used to examine the resource. The lack of clear information from the TLA and the assessment made it difficult to provide management advice.

The most recent benchmark stock assessment for Atlantic croaker was completed in 2017 and provided more data for further refinement and modification of the existing TLA, as recommended by the Atlantic Croaker Technical Committee (TC). However, the 2017 stock assessment was not recommended for management use. In February of 2020, the SAB approved Addendum III to Amendment I allowing modification of the TLA to use a regional approach as well as establishing management actions to be taken if the TLA triggers were tripped. Addendum III addressed several issues by modifying the TLA to better reflect stock characteristics and identifying achievable management actions based on stock conditions.

The TLA is a way to incorporate multiple data sources (both fishery-independent and -dependent) into a single, easily understood metric for management advice. It is often used for data-limited species, or species that are not assessed on a frequent basis. As such, it is a

valuable management tool for Atlantic croaker. The name comes from assigning a color (red, yellow, or green) to categorize relative levels of indicators on the condition of the fish population (abundance metric) or fishery (harvest metric). For example, as harvest or abundance increase relative to their long-term mean (LTM), the proportion of green in a given year will increase, and as harvest or abundance decrease, the amount of red in that year becomes more predominant. Under Addendum II, state-specific management action would be initiated when the proportion of red exceeds specified thresholds (30% or 60%), for both harvest and abundance, over three consecutive years. The thresholds were maintained in Addendum III but the trigger mechanism was changed as described below.

Addendum III incorporated the following changes into the TLA:

1. Incorporation of indices from the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP) and the South Carolina Department of Natural Resources (SCDNR) Trammel Net Survey into the adult composite characteristic index, in addition to the currently used indices from the Northeast Fishery Science Center (NEFSC) Multispecies Bottom Trawl Survey and Southeast Area Monitoring and Assessment Program (SEAMAP).
2. Use of revised adult abundance indices from the surveys mentioned above, in which age-length keys and length composition information are used to estimate the number of adult (age 2+) individuals caught by each survey.
3. Use of regional metrics to characterize the fisheries north and south of the Virginia-North Carolina state border. The ChesMMAP and NEFSC surveys will be used to characterize abundance north of the border, and the SCDNR Trammel Net and SEAMAP surveys will be used to characterize abundance south of the border.
4. Change/establish the reference time period for all surveys to be 2002-2012.
5. Change the triggering mechanism to the following: Management action will be triggered according to the current 30% red and 60% red thresholds if both the abundance and harvest thresholds are exceeded in either region in any three of the four terminal years.

Addendum III retained the TC's ability to alter the TLA as needed to best represent trends in Atlantic croaker harvest and abundance, including selection of surveys and methods to analyze and evaluate these data. Such changes may be made without an addendum, but Addendum III was necessary because of the change to the management-triggering mechanism. Since the implementation of Addendum III, Atlantic croaker management has been moved to the newly formed Sciaenids Management Board.

In 2020, the TLA for Atlantic croaker had red proportions that exceeded the threshold of 30% in both the harvest and abundance metrics in the Mid-Atlantic. The South Atlantic region harvest metric also triggered at 30% threshold in 2020. Exceeding the 30% threshold represents moderate concern to the fishery and initiated a moderate management response. All non-*de minimis* states were required to institute a recreational bag limit of no more than 50 Atlantic



croaker per person per day. States with more restrictive measures in place were encouraged to maintain those measures. For commercial fisheries, states had to set a regulation that, if applied to the state's 2010-2019 average commercial harvest, would have produced at least a 1% reduction. States established different measures by trip limits or season modifications, as long as measures implemented were quantifiable and are projected to achieve this 1% reduction. All states have submitted state implementation plans to meet the required recreational and commercial management measures. Management measures were initiated in 2021 and are required to remain in place for three years, through 2023.

In addition to triggering management, the COVID-19 pandemic occurred in 2020, which had far reaching impacts including limited or no sampling in state and federal fishery-independent monitoring programs. For the TLA, the impact was felt most significantly for the larger scale regional monitoring surveys (NEFSC groundfish survey and the SEAMAP survey) which were not able to sample at all in 2020. In 2021, the only survey that was directly impacted by COVID was SEAMAP which could not complete the spring 2021 cruise, but was able to finish the full summer and fall cruises. Additionally, the ChesMMAP survey has not completed the calibration estimates for converting the index for use over the entire time series due to the vessel and gear change that occurred in 2019, so data are unavailable from 2019-2021. It is not clear when ChesMMAP anticipates having the calibration estimates completed.

This report includes the harvest and abundance composite indices in Sections 2 and 3 which are the TLAs that were approved in Addendum III to trigger management action. Individual TLAs for commercial and recreational harvest by region as well as effort and discards of Atlantic croaker in the South Atlantic Shrimp Trawl Fishery are described in Section 4. TLAs for each fishery-independent index that go into the abundance composite or juvenile composite are described in Section 5. The discard data and juvenile indices are included as supplementary information to be reviewed by the TC and are not considered in trigger mechanisms. Supplemental information with NEAMAP incorporated into the Mid-Atlantic composites and NCDMF P195 incorporated into the South Atlantic adult composite are provided in Section 6.

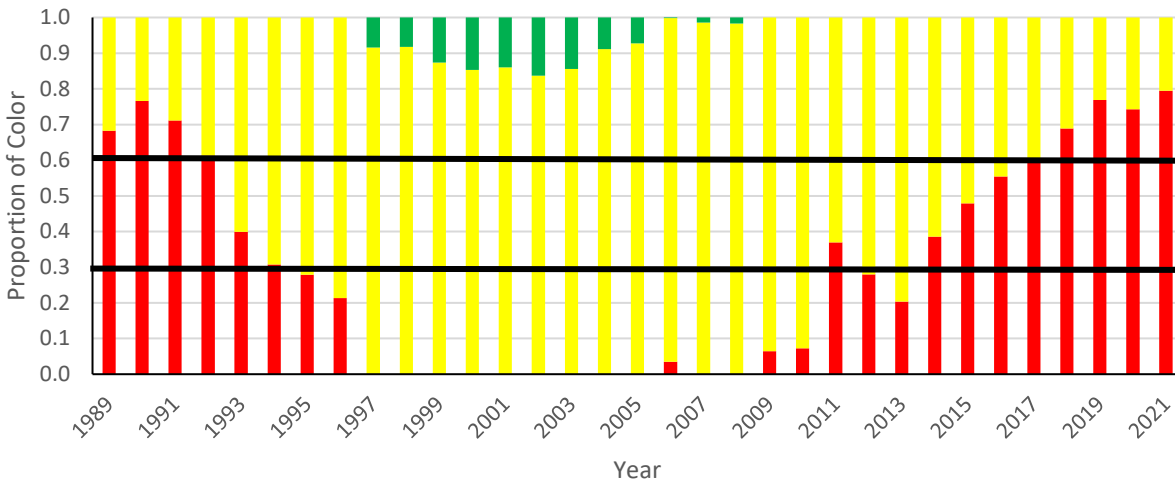
## **2 TRAFFIC LIGHT ANALYSIS (COMPOSITE INDEXES)**

### **2.1 Harvest Composite Index**

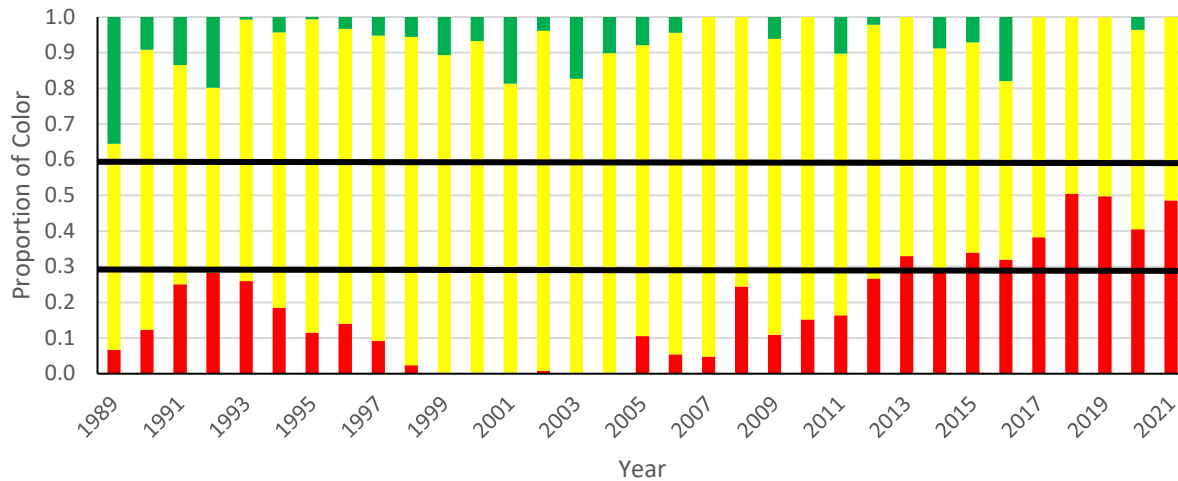
- The mean red proportion for the most recent three year time period (2019-2021) in the Mid-Atlantic was 77% with the red proportion being above 60% since 2018 which indicates a significant level of concern (Figure 1). Since catch restrictions were in place in 2021, this year cannot be used as a trigger mechanism for additional management measures.
- The harvest composite TLA index for the South Atlantic also triggered in 2021 at the 30% threshold and represented the eighth consecutive year above 30% (Figure 2). Similar to the Mid-Atlantic, 2021 was consistent with the most recent trends in data but it should not be interpreted as a trigger mechanism since catch restrictions were in place that year.

- Both regions show a continuing decline in recreational and commercial landings for Atlantic croaker.
- The TLA 30% threshold triggers were tripped in 2020 for the period of 2017-2019, leading to restrictive management measures put into place in the commercial and recreational fisheries in the Mid- and South Atlantic. Therefore, the current harvest composite index may be affected by these new management measures and thus cannot be considered when determining if continued management action is necessary.

**Figure 1. Annual color proportions for the harvest composite TLA of Mid-Atlantic (NJ-VA) Atlantic croaker recreational and commercial landings from 1989-2021 using a 2002-2012 reference period.**



**Figure 2. Annual color proportions for the harvest composite TLA of South Atlantic (NC-FL) Atlantic croaker recreational and commercial landings from 1989-2021 using a 2002-2012 reference period.**



## 2.2 Abundance Composite Characteristic Index

The abundance composite TLA index in each region is broken into two components based on age composition, including an adult index (ages 2+) and a juvenile index (ages 0-1). Only adult abundance is used to determine if management action is triggered. Juvenile data is presented as supplementary information only (Section 5.7). The adult composite index was generated from the NEFSC and ChesMMAAP surveys for the Mid-Atlantic and SEAMAP and SCDNR trammel net survey in the South Atlantic since the majority of Atlantic croaker captured in these surveys were ages 2+.

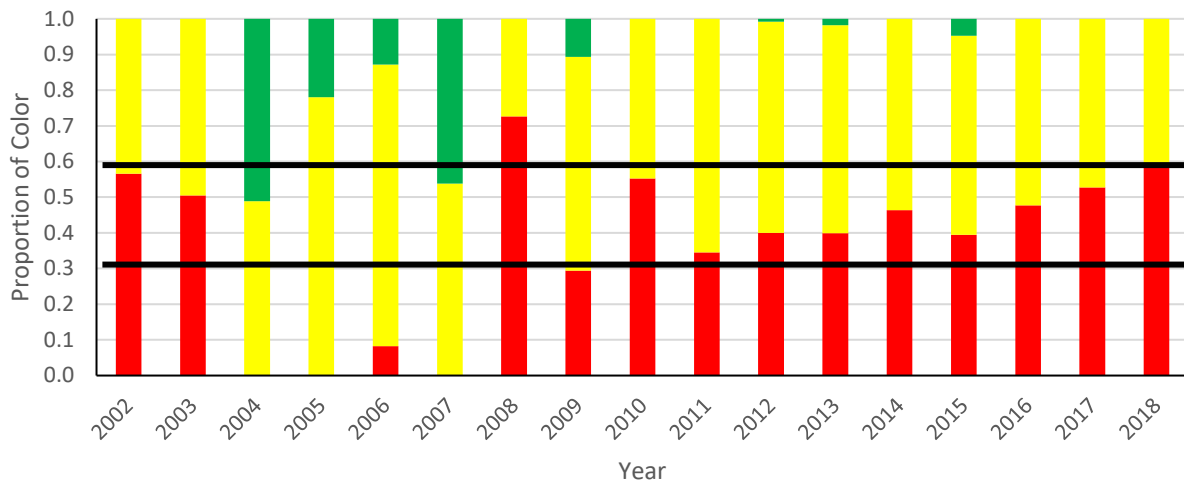
Calculating the abundance indices for the TLA has been challenging since many surveys could not operate during COVID and ChesMMAAP has not provided data since 2018. Neither the NEFSC fall ground fish survey nor the SEAMAP survey were able to complete any sampling cruises/trips in 2020. In 2021, SEAMAP also was not able to complete its spring survey sampling which is the season in which adults are typically captured. The ChesMMAAP survey has not completed the calibrations necessary to convert the 2019-2021 index values that would allow full use of the entire time series after the vessel and gear changes that occurred in 2019. Therefore, at this time, ChesMMAAP only goes through 2018.

### 2.2.1 Mid-Atlantic

- The adult Mid-Atlantic composite index (Figure 3) could only be calculated through 2018 since ChesMMAAP data was not available for 2019-2021. The NEFSC index was available in 2021 and showed an increase from 2019 (Section 5.1). However, it was still below the long-term mean and had a red proportion of 15%.

- The adult composite TLA characteristic for the Mid-Atlantic (Figure 3) shows a trend of increasing red proportions beginning approximately in 2009. The continued declining trend is cause for concern in the Mid-Atlantic region. The juvenile composite (Section 5.7) also shows a continued decline, potentially indicating poor recruitment, which does not bode well for changes in the adult population.
- Results of the TLA for the Mid-Atlantic abundance are inconclusive due to missing data.

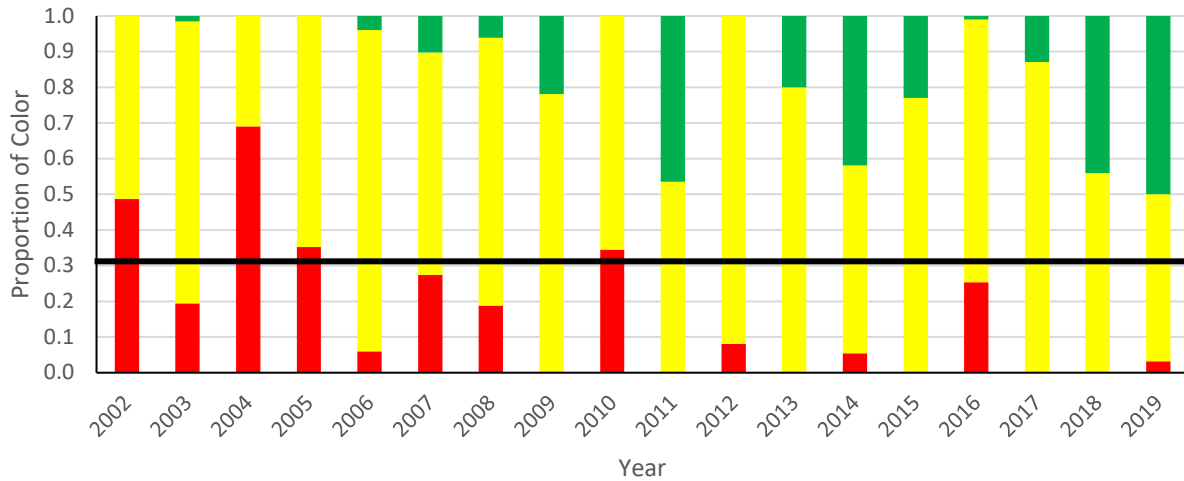
**Figure 3. Adult (age 2+) Atlantic croaker TLA composite characteristic index for the Mid-Atlantic (NEFSC and ChesMMAAP surveys) from 2002-2018.**



### 2.2.2 South Atlantic

- The adult composite TLA for the South Atlantic region is presented using SEAMAP and SCDNR Trammel Net survey data and did not include data from 2020 and 2021 from SEAMAP due to lack of data for spring cruises in both those years. The SCDNR trammel survey had an increase in abundance in 2021 and was above the long-term mean.
- Results of the TLA for the South-Atlantic abundance are inconclusive due to missing data.

**Figure 4. Adult (age 2+) Atlantic croaker TLA composite characteristic index for the South Atlantic (SEAMAP and SCDNR trammel survey) from 2002-2019.**



### 3 SUMMARY

- The harvest composite TLA characteristic remained above triggered thresholds in both the Mid-Atlantic (60% threshold) and South Atlantic (30% threshold) in 2021 indicating continued concern, although 2021 had catch restrictions in place. Therefore, the TLA harvest composite should not be interpreted as a trigger year.
- The continued declining trend in the commercial and recreational harvest for the Atlantic coast is a concern since the decline has become greater in the last two years. However, several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest. According to Addendum III, until the management measures are lifted, further management action can only be triggered based on the abundance composites.
- The Mid-Atlantic abundance composite characteristic did not have 2019-2021 data points, so no determination could be made for these years.
- The South Atlantic abundance composite characteristics are missing 2020-2021 data, so no determination could be made for these years.
- Table 1 provides an overview of the past four years of trigger thresholds for each region, as well as the current TLA status. The adult abundance indices currently have an unknown status; as discussed above, ChesMMAP will be available in the future once calibration factors are developed.

**Table 1. Traffic light metrics for the Mid- and South Atlantic regions with known and unknown values, given missing 2019-2021 data. Management action is triggered according to the current 30% red and 60% red thresholds if both the adult abundance and harvest thresholds are exceeded in any three of the four terminal years within either region.**

TLA Metric	Atlantic Croaker			
	2018	2019	2020	2021
Mid-Atlantic Harvest	69% red	77% red	74% red	79% red*
South Atlantic Harvest	51% red	50% red	41% red	49% red*
Mid-Atlantic Adult Index	58% red	Unknown	Unknown	Unknown
South Atlantic Adult Index	44% green	50% green	Unknown	Unknown
2022 TLA Status	Status Unknown			

\*Harvest metrics should not be interpreted as a trigger mechanism in the TLA since catch restrictions to lower harvest were in place for these years

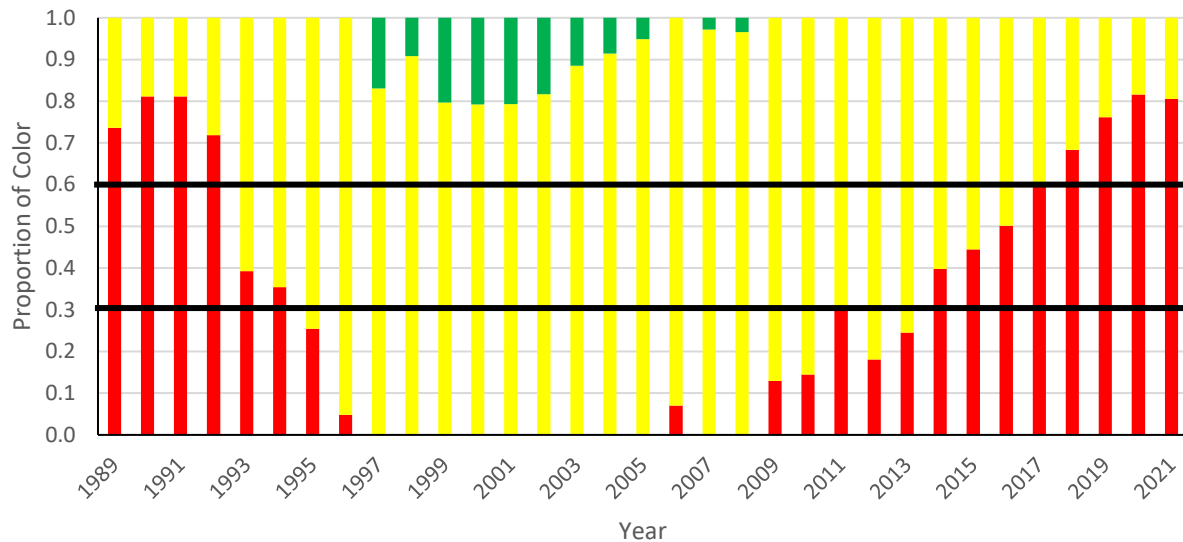
#### 4 TRAFFIC LIGHT ANALYSIS (FISHERY-DEPENDENT)

##### 4.1 Commercial Landings

###### 4.1.1 Mid-Atlantic

- Commercial landings in the Mid-Atlantic increased 98% in 2021 from 2020, but remained low and represented the fourth lowest year of commercial croaker landings in the data series (Figure 5). Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.
- The proportion of red for commercial landings has been above the 30% threshold every year since 2014 (Figure 5) and 2021 was the fourth year in a row where landings were above the 60% threshold.

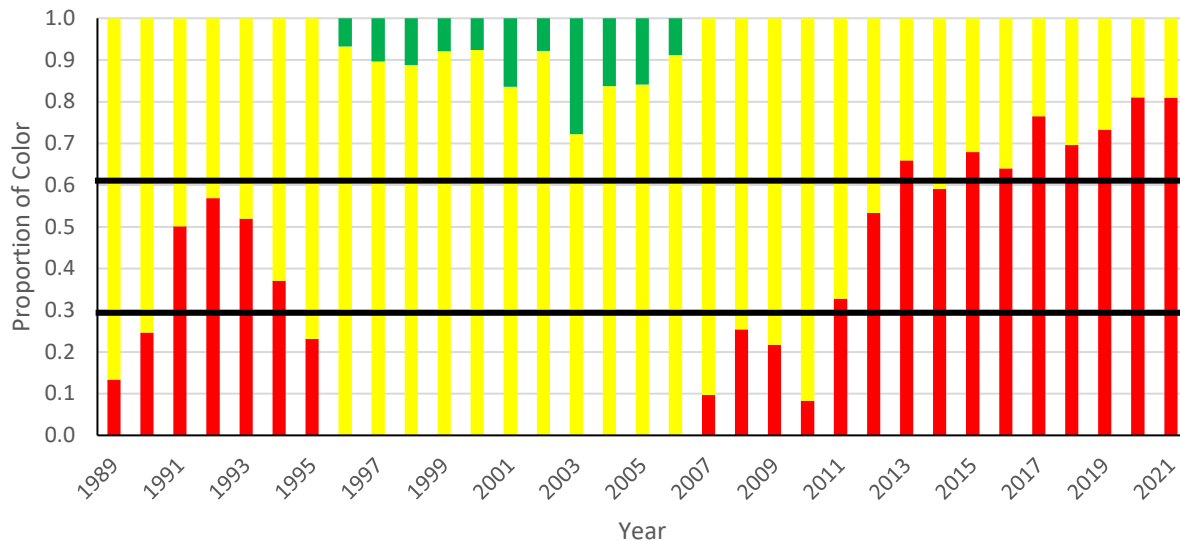
**Figure 5. Annual TLA color proportions for Atlantic croaker commercial landings for the Mid-Atlantic (NJ-VA) coast of the U.S. from 1989-2021.**



#### 4.1.2 South Atlantic

- Commercial landings in the South Atlantic increased slightly in 2021 from 2020, but remained low and represented the 14<sup>th</sup> year of decline in commercial croaker landings in the South Atlantic (Figure 6). Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.
- The proportion of red for commercial landings in the South Atlantic has been above the 30% threshold every year since 2011 and been above the 60% red threshold for every year since 2015 (Figure 6). This past year, 2021, was the 11<sup>th</sup> year in a row where landings were above the 30% threshold.

**Figure 6. Annual TLA color proportions for Atlantic croaker commercial landings for the South Atlantic (NC-FL) coast of the U.S. from 1989-2021.**



## 4.2 Commercial Discards

### 4.2.1 South Atlantic

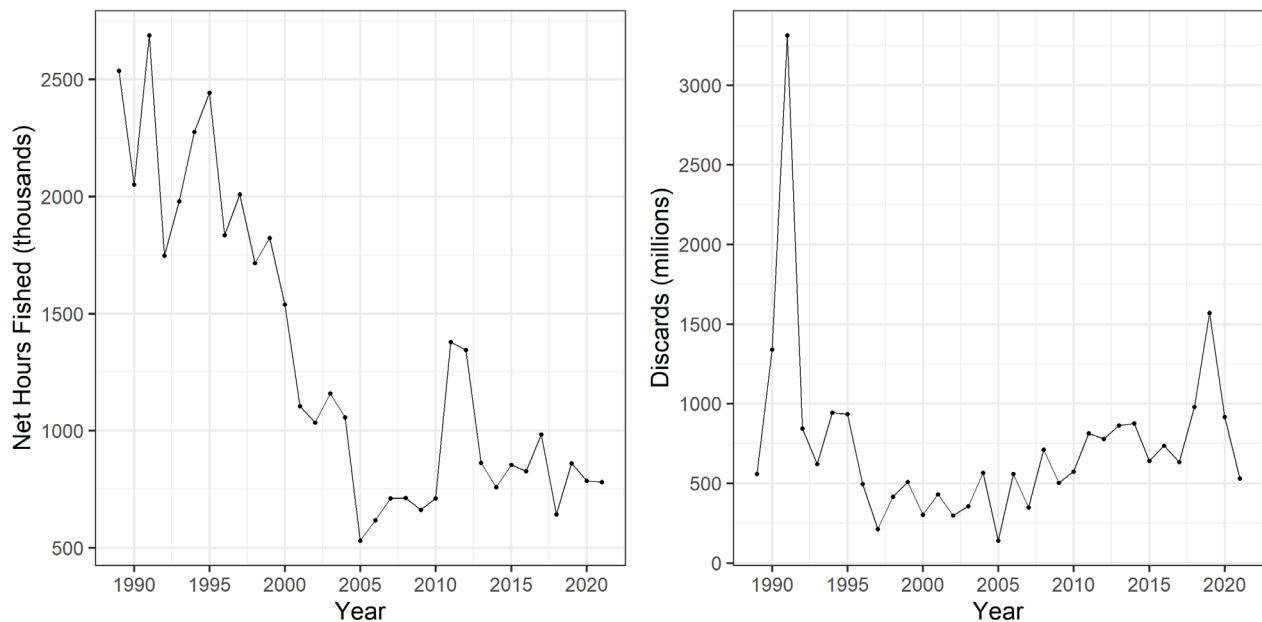
- Discard estimates of Atlantic croaker in the South Atlantic Shrimp Trawl Fishery are informed by catch rates observed during the SEAMAP survey and South Atlantic Shrimp Trawl Fishery Observer Program, and total effort of the South Atlantic Shrimp Trawl Fishery. Increases in discards could be an indicator of higher abundance of juveniles in the region, an increase in effort by the fishery, or a combination of both.
- Total effort (net hours) in the South Atlantic Shrimp Trawl Fishery declined from a time series high in 1991 to a time series low in 2005 (Figure 7). Effort then varied around an increasing trend through 2017 and was variable and lower through 2020. Effort declined slightly from 786,172 net hours in 2020 to 780,515 net hours in 2021.
- Total discards of Atlantic croaker in the South Atlantic Shrimp Trawl Fishery were high during the late 1980s and early 1990s, declined to relatively low levels in the early to mid-2000s, and then increased to levels similar to the beginning of the time series during the 2010s (Figure 7). Discards declined from some of the highest levels of the time series in 2018-2020 to the lowest level since 2009 in 2021.
- There were no SEAMAP survey tows conducted in 2020, so the trend for the 2020 discard estimate relative to previous years is solely informed by South Atlantic Shrimp Trawl Fishery Observer catch rates. Further, there was reduced observer coverage of shrimp trawl fisheries during 2020. Sampling occurred January-March and August-November at levels similar to prior years which includes months in both seasons (off-season and peak-season) used as a factor in the model to estimate catch rates, but



there was no observer coverage from April-July. The observer catch rates of Atlantic croaker over the reduced sampling season in 2020 increased relative to 2019 catch rates (Figure 8). The 2020 discard estimate was likely influenced by the lack of SEAMAP tows and reduced observer coverage. The SEAMAP survey did not sample in spring 2021, but began operations again during the peak of the shrimping season in July. The 2021 catch rates from both data sets show declines relative to 2019, though the SEAMAP survey shows a greater magnitude of decline during this period. As in all years, the magnitude of the 2020 and 2021 discard estimates are informed by the observer data (magnitude of catch rates) and shrimp trawl effort data (expansion factor to expand catch rates to total discards).

- For additional information on the South Atlantic Shrimp Trawl Fishery discard estimation, please see Appendix 1 of the 2020 TLA Update Report.

**Figure 7. Total net hours fished (left) and discards of Atlantic croaker (right) in the South Atlantic Shrimp Trawl Fishery.**



**Figure 8. Comparison of Atlantic croaker mean-scaled catch-per-unit-effort from SEAMAP Coastal Trawl Survey data and South Atlantic Shrimp Trawl Fishery Observer data.**



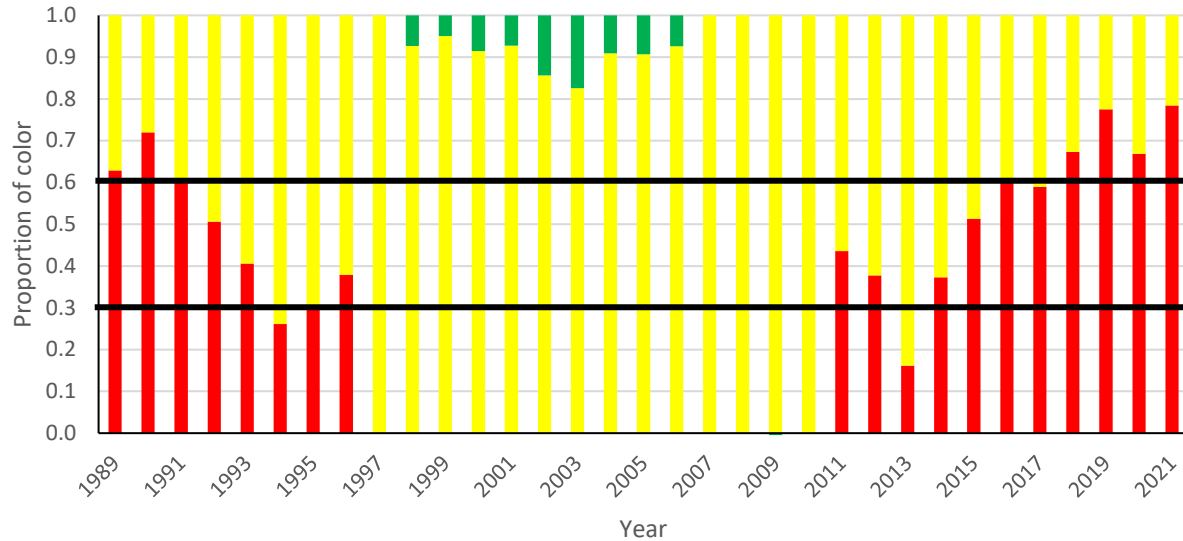
### 4.3 Recreational Harvest

In July 2018, the Marine Recreational Information Program transitioned from the catch estimates based on effort information from the Coastal Household Telephone Survey (CHTS) to effort information from the mail-based Fishing Effort Survey (FES). FES estimates are used in this and future reports, so recreational estimates and analyses may be different from previous years that used CHTS estimates.

#### 4.3.1 Mid-Atlantic

- The recreational harvest decreased by 64% in 2021 compared to 2020, and is the lowest value in the time series. Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.
- The recreational index has been above the 30% level since 2014 and has been above the 60% level for the last four years.
- As with commercial landings, the continued decline in harvest levels for Atlantic croaker in the recreational fishery are also cause for concern.

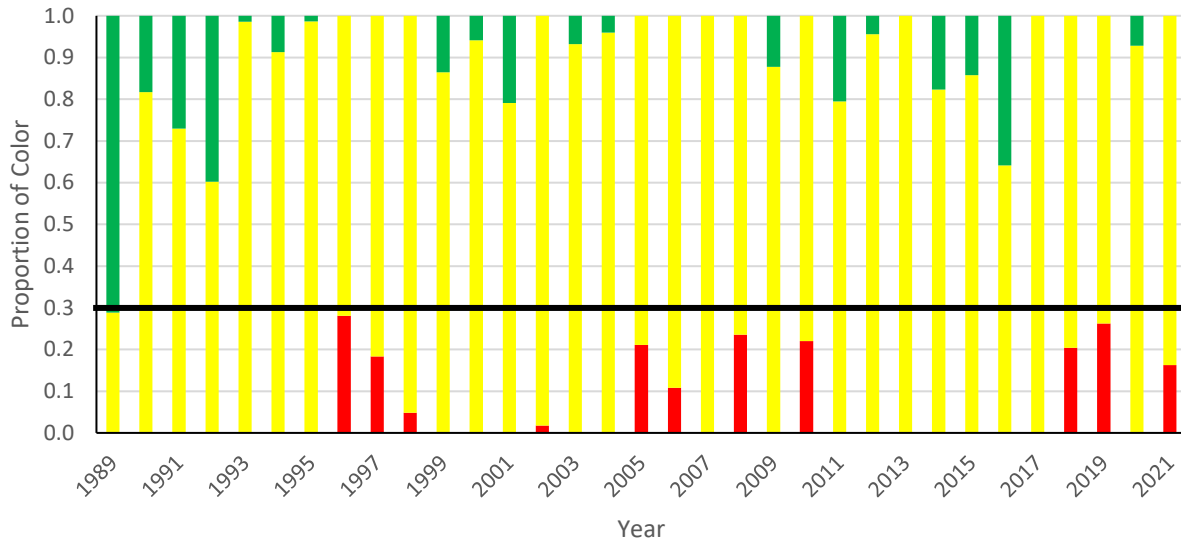
**Figure 9. Annual TLA color proportions for Atlantic croaker from the Mid-Atlantic (NJ-VA) coast recreational harvest of the U.S. from 1989-2021 based on a 2002-2012 reference period.**



#### 4.3.2 South Atlantic

- The recreational harvest index for the South Atlantic decreased 33% in 2021 compared to 2020. Several states implemented more restrictive management measures in 2021 as required by Addendum III, which may have impacted harvest.
- The index has been below the 30% threshold for the entire time series. However, recreational harvest has been below the long-term mean for 3 of the 4 terminal years in the index (Figure 10).

**Figure 10. Annual TLA color proportions for Atlantic croaker for the South Atlantic (NC-FL) recreational harvest of the U.S. from 1989-2021 based on a 2002-2012 reference period.**

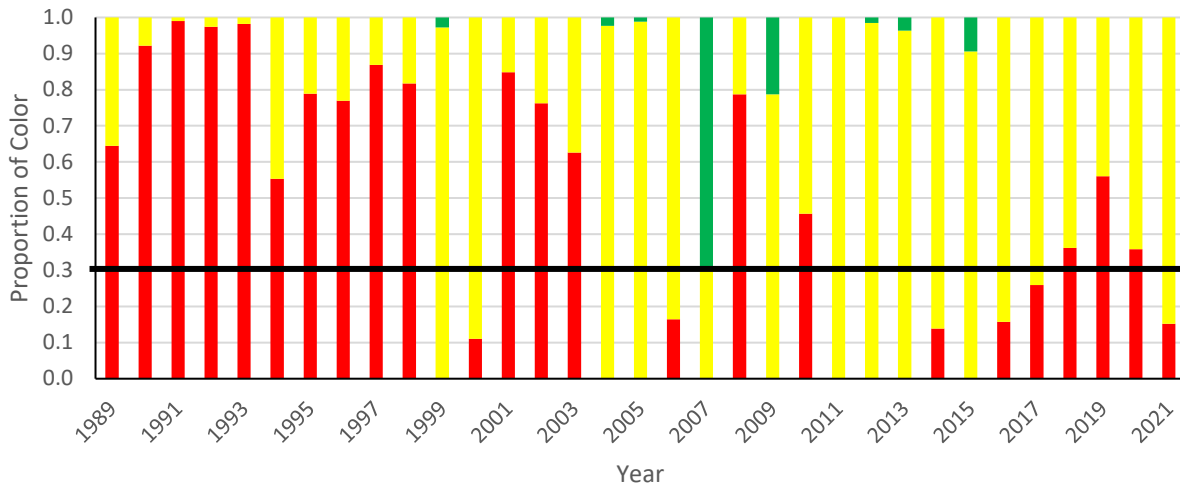


## 5 TRAFFIC LIGHT ANALYSIS (FISHERY-INDEPENDENT SURVEYS)

### 5.1 NEFSC Fall Groundfish Survey

- The index value for 2021 represented a 95% increase from 2019, the last sampled year of the survey (Figure 11).
- The NEFSC was not carried out in 2017 due to mechanical problems with the RV Bigelow. An imputed index for 2017 was calculated as the mean of 2015-2016 and 2018. An intermediary placeholder value was also estimated for 2020 (as the mean of 2018-2019 and 2021), when sampling wasn't conducted due to COVID.
- While the red proportion in 2021 did not exceed the 30% threshold, the index has been below the long-term mean for three of the past four years, with the general trend being a decline since the series peak in 2007.

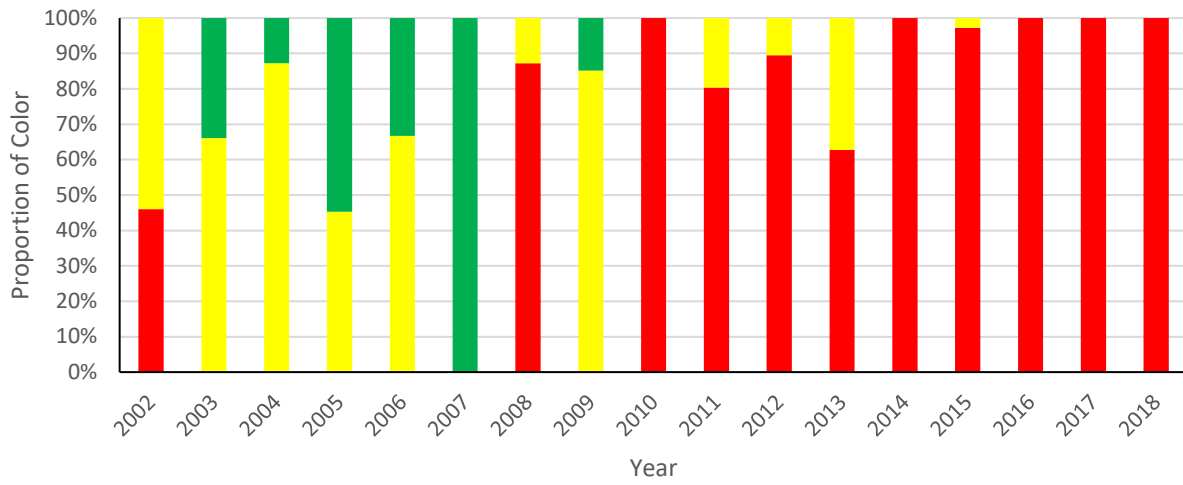
**Figure 11. Annual TLA color proportions for Atlantic croaker from NEFSC ground-fish trawl survey from 1989-2021 based on 2002-2012 reference period.**



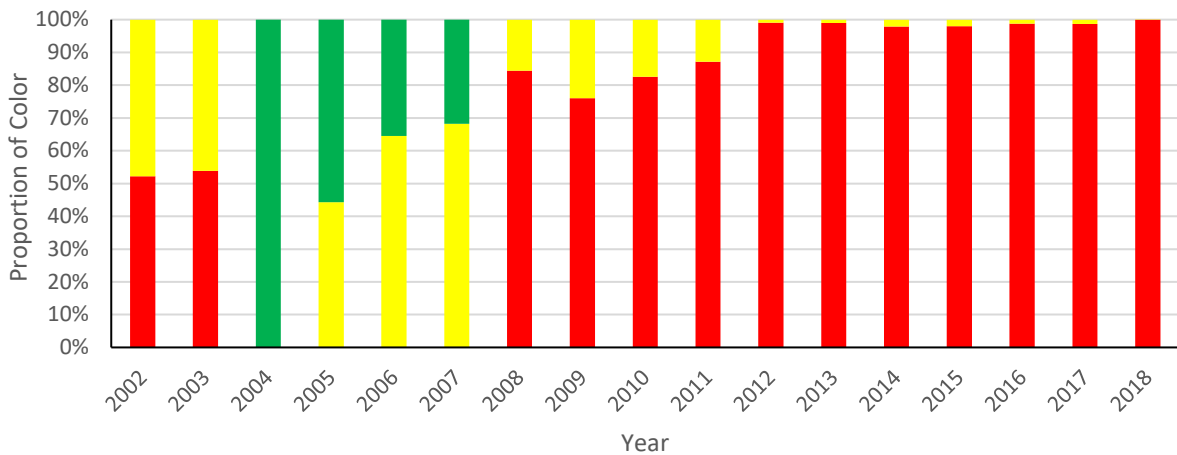
## 5.2 ChesMMAAP Survey

- The ChesMMAAP survey made major changes to the survey in 2019 (vessel change, gear change, altered protocols, etc.) but maintained the same sampling strata and design. Side-by-side comparison tows are in the process of being conducted between the new and old vessels/gears and the survey is in the process of producing conversion factors by species so that historic survey index values can be compared to ongoing survey values in the future. Since the conversion factor determination won't likely be finished until 2023, the ChesMMAAP index is only available through 2018 for the adult and juvenile TLA composite characteristics.
- The overall declining trend in catch of Atlantic croaker was evident in both the adult (age 2+) and juvenile (ages 0-1) indices, although the adult index was higher than the juvenile index in the early years of the survey (Figure 12 and Figure 13).
- The series peak for juveniles occurred in 2007 and the series peak for adults occurred in 2004. From 2008-2018, abundances for both age groups have remained relatively low.
- Red proportions exceeded 60% since 2010 in the juvenile index and since 2008 in the adult index (Figure 12 and Figure 13).

**Figure 12. ChesMMAP survey annual TLA color proportions for Atlantic croaker ages 0-1 from 2002-2018 using a 2002-2012 reference period.**



**Figure 13. ChesMMAP survey annual TLA color proportions for Atlantic croaker ages 2+ from 2002-2018 using a 2002-2012 reference period.**

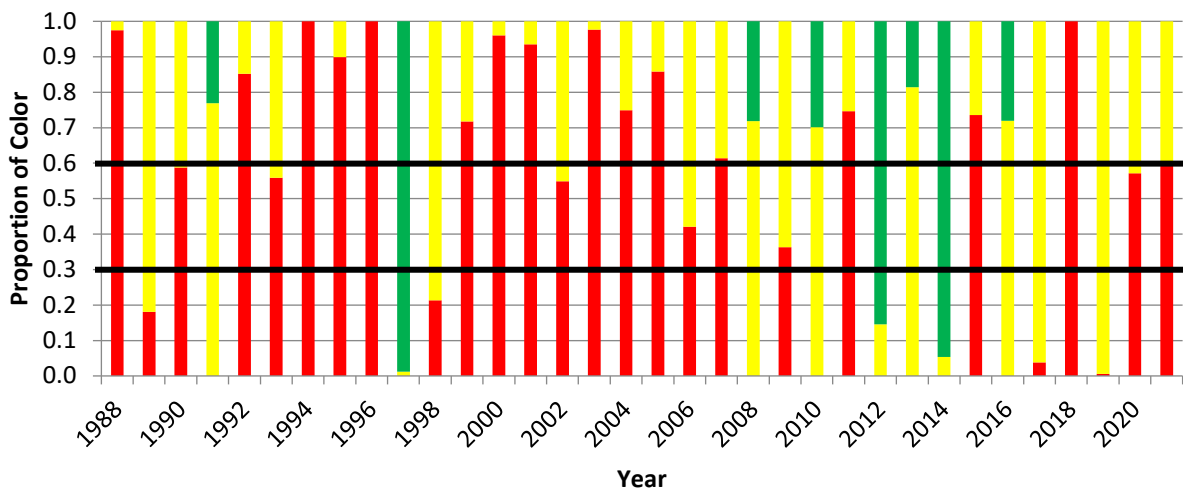


### 5.3 VIMS Survey

- Due to COVID-19 restrictions, no sampling occurred in April or May 2020 and June sampling was limited to Bay and York River only. However, the index was still calibrated using April - June with the limited sampling in 2020 taken into account so that the index for the entire time series could be utilized for the TLA. The VIMS juvenile trawl survey uses the relative catch levels of 1-year-old juvenile croaker as the proxy for the previous year's recruitment index.

- The VIMS index showed a 6% decrease in 2021 from 2020. High variability in the TLA color proportions was likely due to annual recruitment variations, which would not be uncommon for a juvenile index (Figure 14).
- The index value was below average in 2021 with a red proportion at 60%. The continued high red proportions are an indication of continued poor recruitment in recent years.
- The red proportion was above the 30% threshold for 3 of the 4 terminal years.

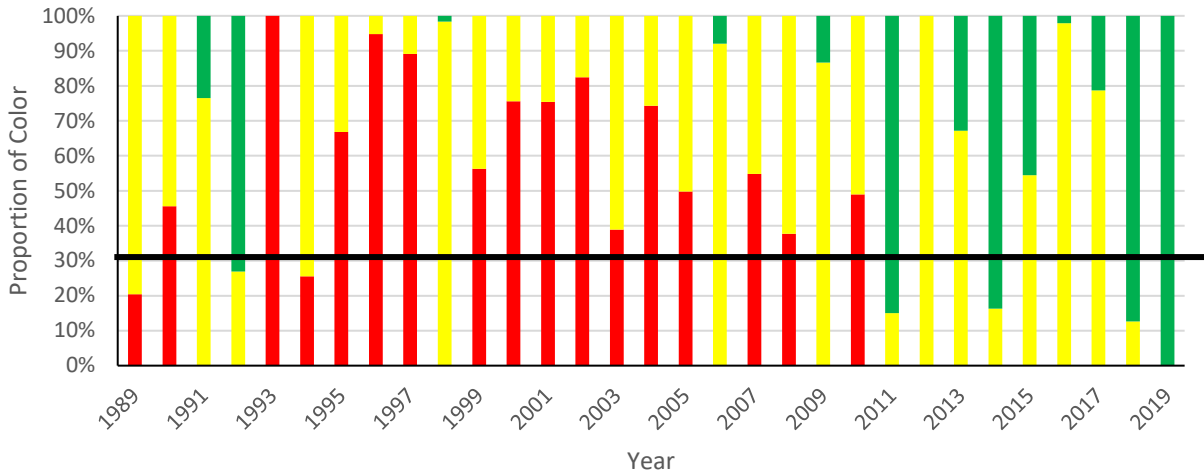
**Figure 14. Annual TLA color proportions for age-0 Atlantic croaker from VIMS spring trawl survey from 1988-2021 using 2002-2012 reference period.**



#### 5.4 SEAMAP Survey

- The SEAMAP survey index used was for the spring season when adult Atlantic croaker (ages 2+) are captured.
- There were no SEAMAP cruises in 2020 and the spring of 2021 due to COVID. As such, there was no TLA values for 2020 and 2021 and the index is only presented through 2019.
- The SEAMAP index increased by 13% in 2019 from 2018, and values have remained above average since 2011 so there has been no red in the TLA for recent years (Figure 15).
- This index will be updated in 2023 with the spring 2022 survey index values.

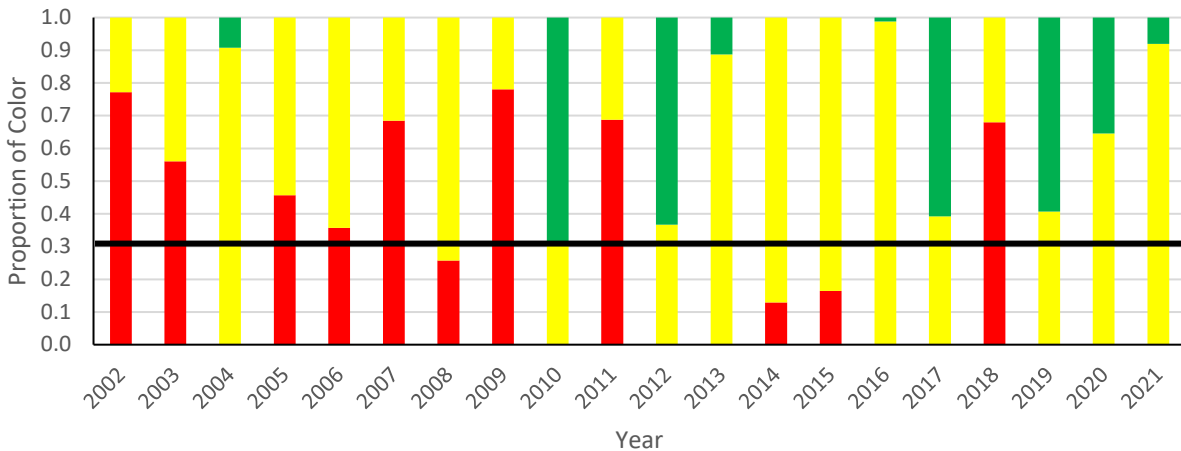
**Figure 15. Traffic Light Analysis for SEAMAP catch data by weight in spring from 1989-2019 using a 2002-2012 reference period.**



### 5.5 North Carolina Program 195 (Pamlico Sound Survey)

- The North Carolina index has been well above average the past three years (Figure 16).
- The results of the NCDMF Program 195 data analysis should be treated with caution, as not all stations were sampled due to COVID and staffing issues. Twenty-eight of the 54 stations were sampled in 2020 and 35 of the 54 stations were sampled in 2021. Limited sampling did not appear to change the trend but it appears to have elevated the magnitude.

**Figure 16. NCDMF Program 195 TLA color proportions for juvenile Atlantic croaker from 1989-2021 using 2002-2012 reference period.**

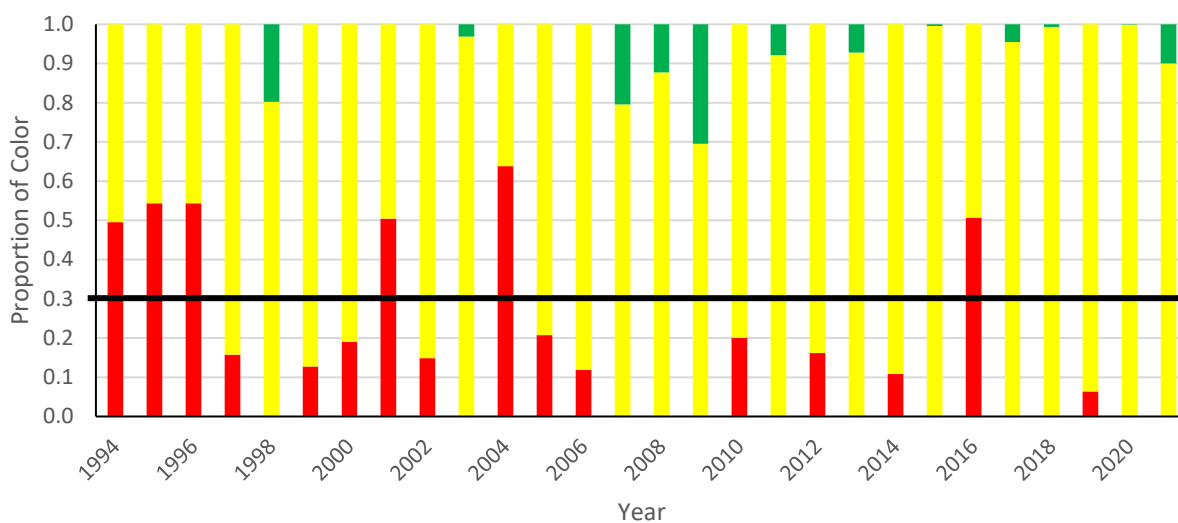




## 5.6 SCDNR Trammel Net Survey

- The SCDNR trammel index increased 24% in 2021 compared to 2020. Annual CPUE has been variably above and below the average since 2009, indicated by annual alterations between red and green proportions in the TLA (Figure 17).
- Red proportions have not been above the 30% threshold since 2016.

**Figure 17. SCDNR trammel net survey TLA color proportions for Atlantic croaker from 1994-2021 using a 2002-2012 reference period.**



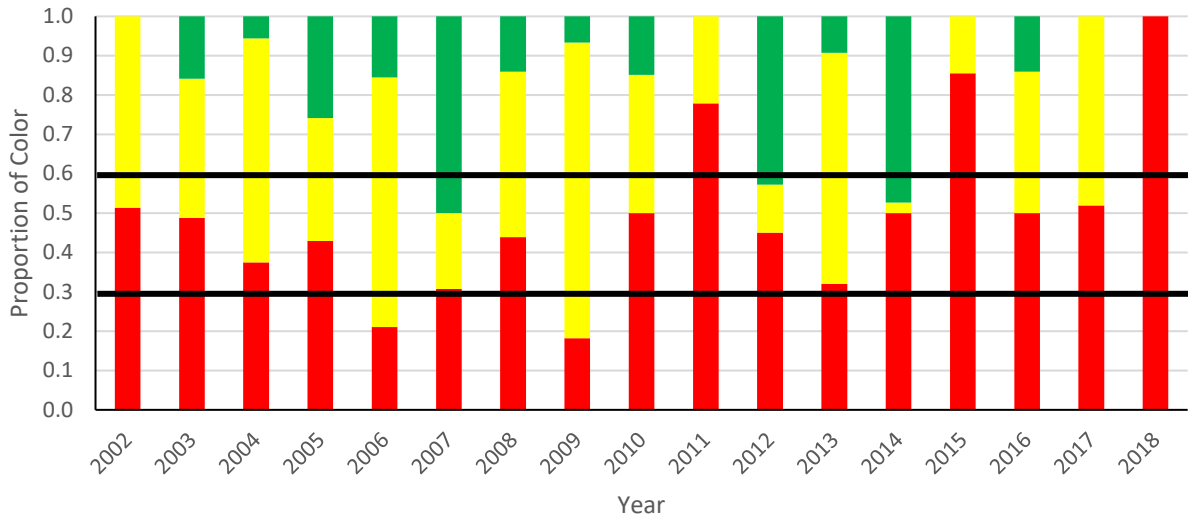
## 5.7 Juvenile Composite Indices

The juvenile composite index in the Mid-Atlantic was generated from the ChesMMAP and VIMS surveys, because VIMS is a juvenile survey and ChesMMAP has an age specific index for ages 0-1. The juvenile composite index in the South Atlantic was generated from the NCDMF Pamlico Sound Survey (Program 195) because the survey encounters age-0 croaker. As stated above, NEFSC survey data were not available for 2020 and the ChesMMAP survey does not have the updated calibrations to use the entire time series.

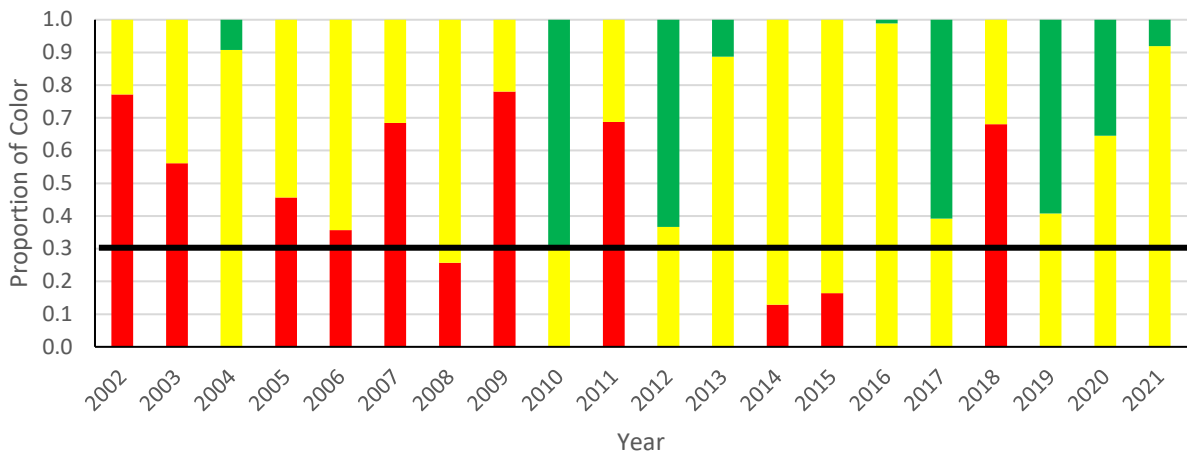
- The juvenile composite TLA (Figure 18) for the Mid-Atlantic is only shown through 2018 since that was the last year with data available for ChesMMAP. The VIMS survey was available through 2021, and continued to show a declining trend in 2021 (Section 5.3).
- The juvenile composite TLA characteristic (Figure 18) for the Mid-Atlantic in 2018 was above the 60% red threshold and was the ninth year above the 30% threshold.
- The high red proportions in recent years are indicative of continued poor Atlantic croaker recruitment in the Mid-Atlantic region.

- The juvenile index for the South Atlantic TLA composite characteristic was the NCDMF Pamlico Sound Survey. It did not trigger in 2021 with three of the four terminal years showing green proportions in the index but the proportion shows a decrease over the past three years (Figure 19).

**Figure 18. Juvenile croaker (ages 0-1) TLA composite characteristic index for the Mid-Atlantic (ChesMMA and VIMS) from 2002-2018.**



**Figure 19. Juvenile (ages 0-1) Atlantic croaker index for the South Atlantic using NCDMF Program 195 from 2002-2021.**



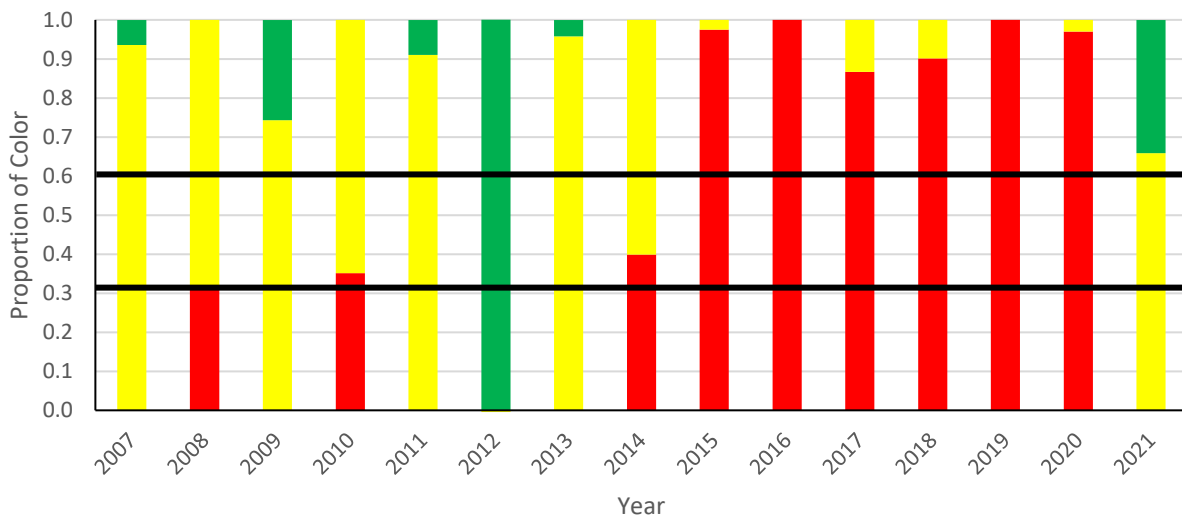
## 6 SUPPLEMENTAL MATERIAL

### 6.1 NEAMAP Survey

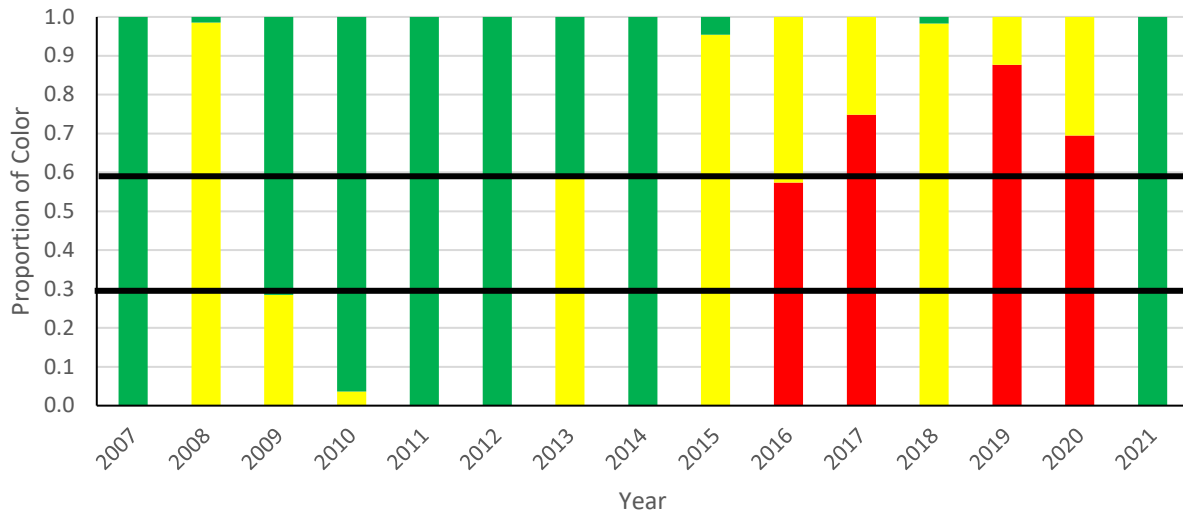
One additional survey that is available in the Mid-Atlantic is the Northeast Area Monitoring and Assessment Program (NEAMAP) which samples from Block Island Sound south to Cape Hatteras. The NEAMAP survey has been considered for use in the TLA but is currently not used due to the shorter time frame (2007-2021) compared to the other surveys. This survey may come into use with the TLA once it reaches a 15 year sampling time span, which corresponds approximately to the max life span of Atlantic croaker, but that will likely have to wait until the next stock assessment. This section describes the trends in the NEAMAP survey and gives composite characteristics that include NEAMAP.

- Juvenile recruitment and adult abundance has been declining since 2012 as indicated by high red proportions above the 60% threshold for the last five years (Figure 20 and Figure 21). This trend reversed in 2021 with significant increases in both juveniles and adults, indicated by high green proportions for both.
- Adult Atlantic croaker in particular showed a significant increase in 2021 (Figure 21), resulting in a green proportion of 1.0.
- Proportions of red for the juvenile index were above 30% in three of the four terminal years. The adult index only exceeded the 30% threshold in two of the four terminal years.

**Figure 20. Juvenile (ages 0-1) TLA color proportions for Atlantic croaker from NEAMAP survey from 2007-2021 using a 2007-2019 reference period.**



**Figure 21. Adult (ages 2+) TLA color proportions for Atlantic croaker from the NEAMAP survey from 2007-2021 using a 2007-2019 reference period.**



## 6.2 Composite TLA Characteristic for Mid-Atlantic including NEAMAP

In order to generate the composite TLA index that included NEAMAP in the Mid-Atlantic, the other Mid-Atlantic indices (NEFSC, ChesMMAP, VIMS) had to be recalculated using the common time period of all three surveys (2007-2019) in order to have a common reference. However, since both the NEFSC and ChesMMAP indices were not available in 2020 due to COVID-19 impacts, NEAMAP was the only available regional index in 2020. Additionally, the VIMS survey was not available in 2019, also due to COVID-19, so the juvenile TLA for 2020 only uses NEAMAP.

- The addition of NEAMAP to the Mid-Atlantic TLA composite characteristic for juvenile Atlantic croaker showed the same general trend of declining recruitment and high levels (> 60%) of red in recent years (Figure 22). Red proportions have been above 30% since 2015.
- The adult Atlantic croaker composite characteristic for the Mid-Atlantic with NEAMAP included also showed increasing proportions of red, but only two of the last four years were above the 30% threshold (Figure 23).

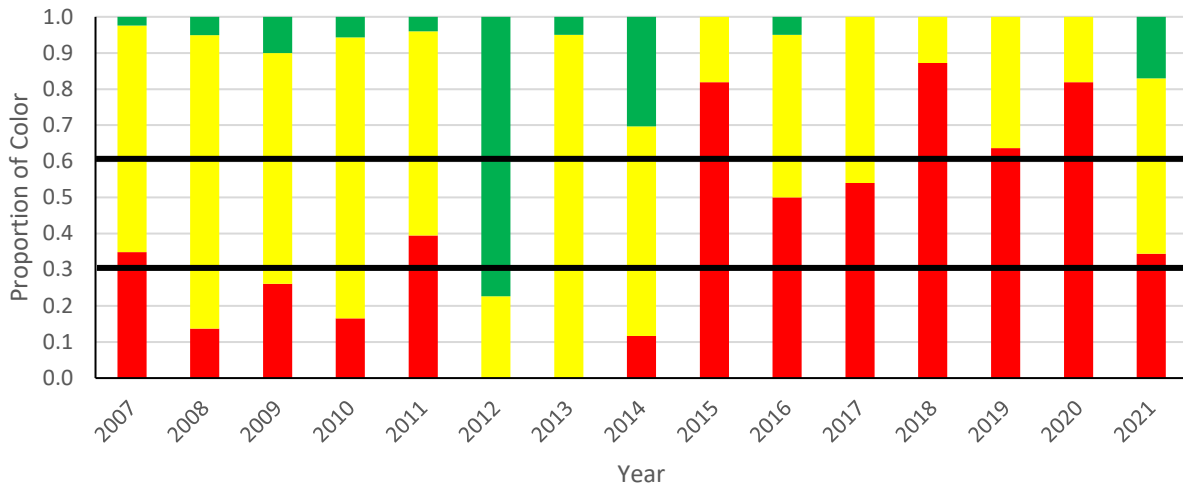
### 6.2.1 Summary of NEAMAP as a Composite Characteristic for the Mid-Atlantic

The addition of the NEAMAP survey to the Mid-Atlantic composite characteristics supports trends seen with the other indices used in the composite characteristic. The only limitation on the NEAMAP survey is the shorter time frame compared to the other surveys. The TC might consider adding the NEAMAP survey to the Traffic Light Analysis after the next scheduled

benchmark assessment for Atlantic croaker and re-evaluate all fishery independent surveys for use in the TLA. The impact of COVID-19 in 2020 on the different fishery independent surveys and the availability of the fully calibrated ChesMMAP index also makes it a good idea to wait on making changes on the TLA until fishing year 2022.

- The juvenile composite TLA characteristic was above the 30% threshold for red in 2021 and still had some green proportion as well. The red proportion was from the VIMS index which continues to decline and the green proportion was from the NEAMAP index.
- The Mid-Atlantic juvenile index using VIMS and NEAMAP would have triggered at the 30% threshold in 2021 with all years since 2015 exceeding that threshold.

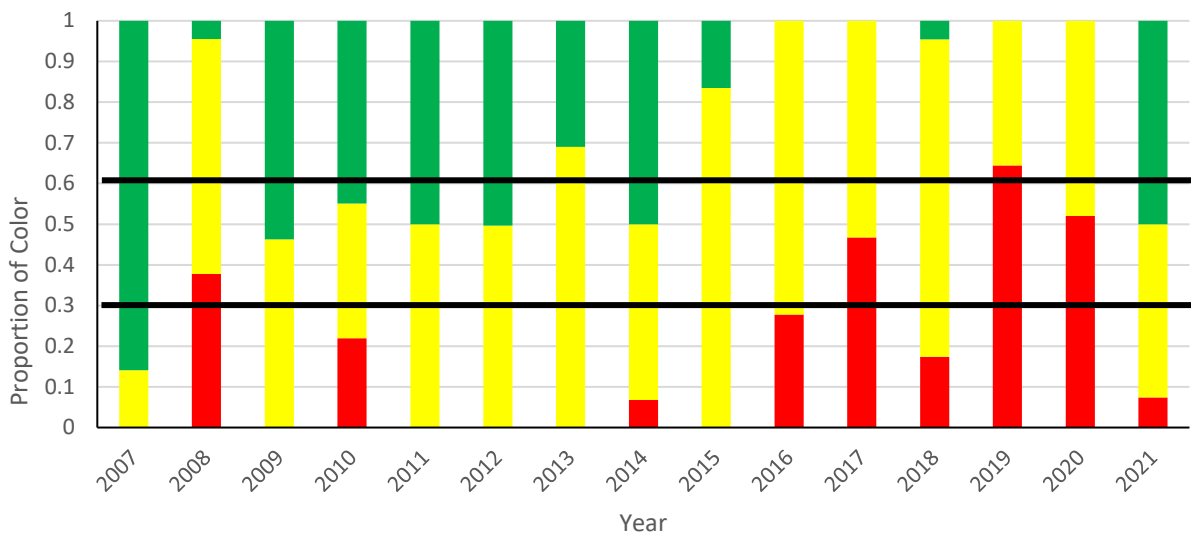
**Figure 22. Juvenile Atlantic croaker (ages 0-1) TLA composite characteristic index for the Mid-Atlantic using NEAMAP and VIMS from 2007-2021 with a 2007-2019 reference period.**



- The adult composite TLA characteristic was calculated using the NEFSC and NEAMAP surveys since ChesMMAP was not available for 2019-2021.

- The adult composite TLA would not have triggered in 2021 with only two of the four terminal years exceeding the 30% threshold.
- The green proportion in the 2021 composite was primarily due to the high catch levels seen in the NEAMAP survey.

**Figure 23. Adult Atlantic croaker (ages 2+) TLA composite characteristic index for the Mid-Atlantic (NJ-VA) using NEFSC, NEAMAP and ChesMMAP (2007-2018), NEFSC and NEAMAP (2019) and NEAMAP only (2020) from 2007-2021 with a 2007-2019 reference period.**



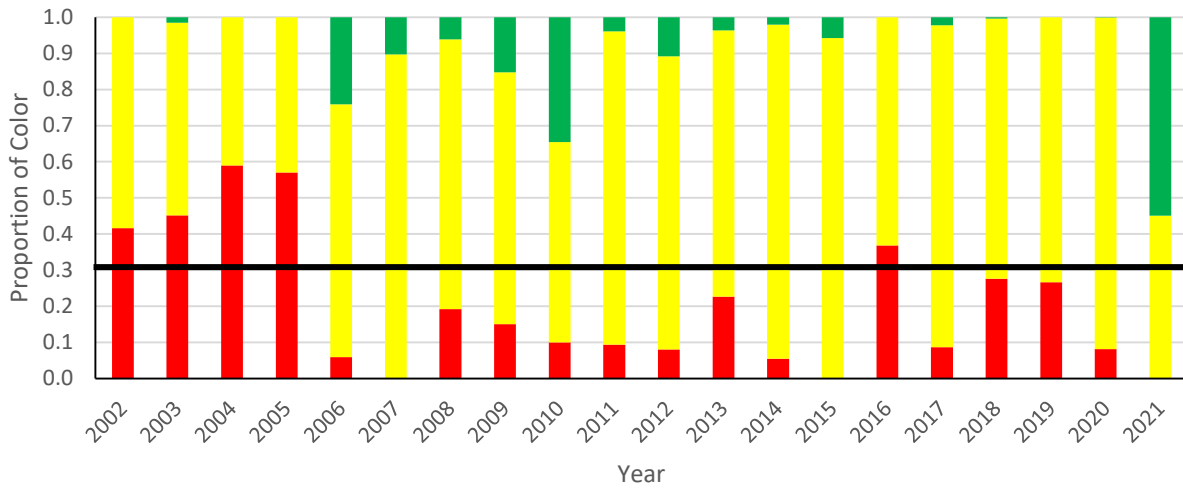
### 6.3 Composite Abundance TLA Characteristic for South Atlantic including NCDMF P195

The adult abundance composite TLA for the South Atlantic region is presented using the NCDMF Program 195 instead of SEAMAP and SCDNR Trammel Net survey data. This modified adult composite index for the South Atlantic is presented as supplemental material because the version as described in Addendum III could not be updated this year due to missing data. The modified adult composite TLA index for the South Atlantic would not have triggered any management response in 2021.

- The NCDMF survey had a significant increase in 2021 which resulted in a green proportion of 100% (Figure 24). The results of the NCDMF Program 195 data analysis should be treated with caution however, as not all stations in 2020 and 2021 were sampled due to COVID and staffing issues. Twenty-eight of the 54 stations were sampled in 2020 and 35 of the 54 stations were sampled in 2021. Limited sampling did not appear to change the trend but it appears to have elevated the magnitude.

- The SCDNR trammel survey also had an increase in abundance and was above the long-term mean.
- These increases resulted in a positive index above the long-term mean for the composite TLA, and all of the most recent four years (2018-2021) were below the 30% threshold.

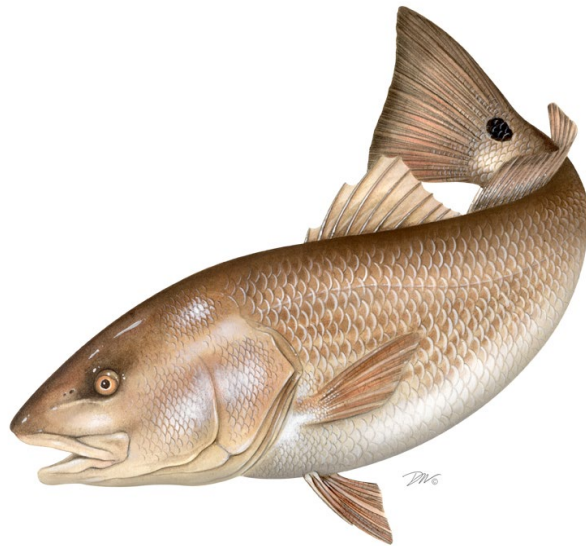
**Figure 24. Adult (age 2+) Atlantic croaker TLA composite characteristic index for the South Atlantic (NCDMF Program 195 and SCDNR trammel survey) from 2002-2021.**



**ATLANTIC STATES MARINE FISHERIES COMMISSION**  
**REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN**

**FOR**  
**RED DRUM**  
*(Sciaenops ocellatus)*

**2021 FISHING YEAR**



Prepared by the Plan Review Team  
Drafted July 2022



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*



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## **I. Status of the Fishery Management Plan**

<u>Date of FMP Approval:</u>	Original FMP – October 1984
<u>Amendments &amp; Addenda:</u>	Amendment 1 – October 1991 Amendment 2 – June 2002 Addendum 1 – August 2013
<u>Management Areas:</u>	The Atlantic coast distribution of the resource from New Jersey through Florida Northern: New Jersey through North Carolina Southern: South Carolina through the east coast of Florida
<u>Active Boards/Committees:</u>	Sciaenids Management Board, Red Drum Technical Committee, Stock Assessment Subcommittee, Plan Development Team, Plan Review Team, South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted an [Interstate Fishery Management Plan \(FMP\) for Red Drum](#) in 1984. The original management unit included the states from Maryland to Florida. In 1988, the Interstate Fisheries Management Program (ISFMP) Policy Board requested that all Atlantic coastal states from Maine to Florida implement the plan's recommended management regulations to prevent development of northern markets for southern fish. The states of New Jersey through Florida are now required to follow the FMP, while Maine through New York (including Pennsylvania) are encouraged to implement consistent provisions to protect the red drum spawning stock.

In 1990, the South Atlantic Fishery Management Council (Council) adopted a FMP for red drum that defined overfishing and optimum yield (OY) consistent with the Magnuson Fishery Conservation and Management Act of 1976. Adoption of this plan prohibited the harvest of red drum in the exclusive economic zone (EEZ), a moratorium that remains in effect today. Recognizing all harvest would take place in state waters, the Council FMP recommended states implement measures necessary to achieve the target level of at least 30% escapement.

Consequently, ASMFC initiated [Amendment 1](#) in 1991, which included the goal to attain optimum yield from the fishery over time. Optimum yield was defined as the amount of harvest that could be taken while maintaining the level of spawning stock biomass per recruit (SSBR) at or above 30% of the level which would result if fishing mortality was zero. However, a lack of information on adult stock status resulted in the use of a 30% escapement rate of sub-adult red drum to the off-shore adult spawning stock.

Substantial reductions in fishing mortality were necessary to achieve the escapement rate; however, the lack of data on the status of adult red drum along the Atlantic coast led to the adoption of a phase-in approach with a 10% SSBR goal. In 1991, states implemented or maintained harvest controls necessary to attain the goal.

As hoped, these management measures led to increased escapement rates of juvenile red drum. Escapement estimates for the northern region of New Jersey through North Carolina

(18%) and the southern region of South Carolina through Florida (17%) were estimated to be above the 10% phase-in goal, yet still below the ultimate goal of 30% (Vaughan and Carmichael 2000). North Carolina, South Carolina, and Georgia implemented substantive changes to their regulations from 1998-2001 that further restricted harvest.

The Council adopted new definitions of OY and overfishing for red drum in 1998. Optimum yield was redefined as the harvest associated with a 40% static spawning potential ratio (sSPR), overfishing as an sSPR less than 30%, and an overfishing threshold as 10% sSPR. In 1999, the Council recommended management authority for red drum be transferred to the states through the Commission's Interstate Fishery Management Program (ISFMP) process. This was recommended, in part, due to the inability to accurately determine an overfished status, and therefore stock rebuilding targets and schedules, as required under the revised Sustainable Fisheries Act of 1996. The transfer necessitated the development of an amendment to the interstate FMP in order to include the provisions of the Atlantic Coastal Fisheries Cooperative Management Act.

ASMFC adopted [Amendment 2](#) to the Red Drum FMP in June 2002 (ASMFC 2002), which serves as the current management plan. The goal of Amendment 2 is to achieve and maintain the OY for the Atlantic coast red drum fishery as the amount of harvest that can be taken by U.S. fishermen while maintaining the sSPR at or above 40%. There are four plan objectives:

- Achieve and maintain an escapement rate sufficient to prevent recruitment failure and achieve an sSPR at or above 40%.
- Provide a flexible management system to address incompatibility and inconsistency among state and federal regulations which minimizes regulatory delay while retaining substantial ASMFC, Council, and public input into management decisions; and which can adapt to changes in resource abundance, new scientific information, and changes in fishing patterns among user groups or by area.
- Promote cooperative collection of biological, economic, and sociological data required to effectively monitor and assess the status of the red drum resource and evaluate management efforts.
- Restore the age and size structure of the Atlantic coast red drum population.

The management area extends from New Jersey through the east coast of Florida, and is separated into a northern and southern region at the North Carolina/South Carolina border. The sSPR of 40% is considered a target; an sSPR below 30% (threshold level) results in an overfishing determination for red drum. Amendment 2 required all states within the management unit to implement appropriate recreational bag and size limit combinations needed to attain the target sSPR, and to maintain current, or implement more restrictive, commercial fishery regulations. All states were in compliance by January 1, 2003. See Table 1 for state commercial and recreational regulations in 2021.

Following the approval of Amendment 2 in 2002, the process to transfer management authority to ASMFC began, including an Environmental Assessment and public comment period. The final

rule became effective November 5, 2008. It repeals the federal Atlantic Coast Red Drum Fishery Management Plan and transfers management authority of Atlantic red drum in the exclusive economic zone from the South Atlantic Fishery Management Council to the Atlantic States Marine Fisheries Commission.

The Board approved [Addendum I](#) to Amendment 2 in August 2013. The Addendum revised the habitat section of Amendment 2 to include current information on red drum spawning habitat and life-stages (egg, larval, juvenile, sub-adult, and adult). It also identified and described the distribution of key habitats and habitats of concern.

## **II. Status of the Stocks**

The 2017 Red Drum Stock Assessment and Peer Review Report indicated overfishing was not occurring for either the northern or southern stock of red drum (ASMFC 2017). The assessment was unable to determine an overfished/not overfished status because population abundance could not be reliably estimated due to limited data for the older fish (ages 4+). A simulation assessment was recently completed providing a roadmap for future Red Drum stock assessments through the ASMFC process, with a planned benchmark assessment to follow; all work will be completed by the end of 2024.

### *Northern Region (NJ-NC)*

Recruitment (age 1 abundance) has varied annually with a large peak occurring in 2012 (Figure 1). The trend in the three-year average sSPR indicates low sSPR early in the time series with increases during 1991 – 1997 and fluctuations thereafter (Figure 2). The average sSPR has been above the overfishing threshold ( $F_{30\%}$ ) since 1994, and at or above the target ( $F_{40\%}$ ) since 1996, except during one year (2002). Fishing pressure and mortality appear to be stabilized near the target fishing mortality. The average sSPR is also likely above the target benchmark.

### *Southern Region (SC-FL)*

Recruitment (age 1 abundance) has fluctuated without apparent trend since 1991 (Figure 1). A high level of uncertainty exists around the three-year average sSPR estimates for the southern region. While the 3-year average sSPR estimate in 2013 was above both the target ( $F_{40\%}$ ) and the overfishing threshold ( $F_{30\%}$ ), indicating that overfishing is not occurring, the high level of uncertainty around this estimate indicates this conclusion should be considered with extreme caution (Figure 2).

**NOTE: In 2018, the Marine Recreational Information Program (MRIP) transitioned from estimating effort using the Coastal Household Telephone Survey (CHTS) to the mail-based Fishing Effort Survey (FES). The 2017 stock assessment used CHTS data to estimate recreational harvest. However, as red drum is not managed by a quota and to accommodate the transition, recreational harvest estimates based on the FES data or calibration are shown in this report. Due to differing estimation methodologies, these harvest data should not be compared to reference points from the 2017 stock assessment. Harvest estimates based on either effort survey can be compared at:**

**<https://www.st.nmfs.noaa.gov/st1/recreational/queries/>.**

### III. Status of the Fishery

Red drum landings from New Jersey through the east coast of Florida in 2021 are estimated at 6.2 million pounds (Tables 3 and 4; Figure 3). In 2021, 55% of the total landings came from the southern region where the fishery is exclusively recreational, and 45% from the northern region, similar to 2020 when 56% of the total landings came from the southern region and 44% from the northern region (Figure 4). These shifts are a significant change from the 2019 regional landings split, which were 20% from the northern region and 80% from the southern region.

#### *Northern Region (NJ-NC)*

Red drum landings in the northern region totaled 2.8 million pounds in 2021, increasing less than 1% from the previous year (Table 2). There was an increase in both commercial and recreational landings. Commercial landings totaled 218,476 pounds or 8% of the combined commercial and recreational harvest in the northern region, with 92% of commercial landings coming from North Carolina (Figure 5). This is a 26% increase in commercial landings from 2020. In North Carolina, a daily commercial trip limit and an annual cap of 250,000 pounds with payback of any overage constrained the commercial harvest. Unique to this state, the red drum fishing year extends from September 1 to August 31. In 2008, the Board approved use of this fishing year to monitor the cap. During the 2020/2021 fishing year, North Carolina landed 207,694 pounds of the 250,000 pound annual landings cap.

Recreational landings were estimated to be 2.6 million pounds in the northern region, only a slight increase from the previous year's estimates of recreational harvest at 2.5 million pounds (Table 4). North Carolina is estimated to have 1.5 million pounds of recreational landings, followed by Virginia with 1.1 million pounds. Virginia red drum recreational landings increased by 84% from the previous year. The number of fish harvested in the recreational fishery was 583,358 fish, down 13% from 2020 (Table 5). The number of fish released was similar to 2019 and 2020 at 3.8 million fish released in the northern region (Figure 6). It is estimated that 8% of released fish die as a result of being caught, resulting in an estimated 307,308 dead discarded fish in 2021 (Table 6). Recreational removals from the fishery are thus estimated to be 890,666 fish in 2021 (Figure 6 & 7).

#### *Southern Region (SC-FL)*

The southern region had no commercial landings; Florida commercial harvest has been prohibited since January 1988. South Carolina and Georgia designated red drum as a gamefish, banning commercial harvest and sale since 1987 and 2013, respectively.

Recreational landings were estimated to be 3.4 million pounds in the southern region, similar to 2020 estimates which were 3.3 million pounds (Table 4). Florida is estimated to have 2.5 million pounds of recreational landings, followed by Georgia with 506,962 lbs. The number of fish harvested in the recreational fishery was 1.2 million fish, a 15% increase from 2020 (Table 4). The number of fish released also increased by 40% compared to 2020 with 7.4 million fish released in the southern region in 2021 (Figure 6). It is estimated that 8% of released fish die as

a result of being caught, resulting in an estimated 590,172 dead discarded fish in 2021 (Table 6). Recreational removals from the fishery are thus estimated to be 1.8 million fish in 2021 (Figure 6 & 7).

#### **IV. Status of Assessment Advice**

Current stock status information comes from the 2017 stock assessment (ASMFC 2017) completed by the ASMFC Red Drum Stock Assessment Subcommittee (SAS) and Technical Committee (TC), peer reviewed by an independent panel of experts through ASMFC's desk review process, and approved by the South Atlantic State-Federal Fisheries Management Board for use in management decisions. Previous interstate management decisions were based on the last coastwide assessment, SEDAR 18 (SAFMC 2009), and prior to 2009, decisions were based on regional assessments conducted by Vaughan and Helser (1990), Vaughan (1992, 1993, 1996), and Vaughan and Carmichael (2000) that reflected the current stock structure, two stocks divided at the North Carolina-South Carolina border. Several states have also conducted state-specific assessments (e.g., Murphy and Munyandorero 2009; Takade and Paramore 2007 [update of Vaughan and Carmichael 2000]).

In 2017, a state-specific stock assessment was completed by South Carolina, which indicated the South Carolina population of red drum was experiencing overfishing (Murphy 2017). This assessment result prompted new state management regulations, which went into effect on July 1, 2018 (Table 1).

In 2020, Florida completed a stock assessment for red drum in Florida state waters<sup>1</sup>, and found that the Atlantic Coast red drum stock was not overfished and overfishing was not occurring. The northeast region (Flagler through Nassau counties) exceeded the Commission's target escapement rate of 40%. The southeast region (Miami-Dade-Volusia counties) exceeded the escapement rate in the terminal year (2019), but does not meet the current escapement rate target. Overall, the state of Florida has an escapement rate higher than the Commission's goal of 40%.

At the Winter meeting of ASMFC in 2019, the management Board reviewed a proposal from the SAS that recommended a population simulation model be developed to simulate the full red drum population. The simulated population would be used to test a variety of assessment modeling techniques to determine which model would be the most applicable for the next benchmark stock assessment. Due to the work and modeling expertise needed for the simulation assessment, the benchmark assessment has been postponed until 2024. The Red Drum Simulation Assessment and Peer Review Report was accepted by the Board at their May 2022 meeting. The Peer Review Panel recommended the stock synthesis model should be used to assess the northern (from New Jersey – North Carolina) and southern (from South Carolina – Florida) red drum stocks, while the statistical catch-at-age model should not be used. The Panel also recommended using a traffic light approach to monitor changes in landings and stock

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<sup>1</sup> Addis, D. 2020. The 2020 stock assessment of Red Drum, *Sciaenops ocellatus*, in Florida. Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute In-House Report IHR2020-002: 129 p.

abundance in between assessments. Work will begin on the 2024 Red Drum Benchmark Assessment in fall 2022.

#### **V. Status of Research and Monitoring**

No monitoring or research programs are annually required of the states except for the submission of a compliance report. Fishery-dependent (other than catch and effort data) monitoring programs are conducted from Maryland to Florida, with biological and sportfish carcass recovery programs collecting age, length, and sex data. Virginia, North Carolina, and South Carolina also conduct sportfish tagging programs. Fishery-independent monitoring programs that directly target or may encounter red drum are conducted in New Jersey, Delaware, North Carolina, South Carolina, Georgia, and Florida. Data collected includes CPUE, biological data, YOY indices, and mark-recapture data. See Table 2 for details on the fishery independent indices and ongoing-surveys.

#### **VI. Status of Management Measures and Issues**

##### *Fishery Management Plan*

Amendment 2 was fully implemented by January 1, 2003, providing the management requirements for 2021. Requirements include: recreational regulations designed to achieve at least 40% sSPR, a maximum size limit of 27 inches or less, and current or more stringent commercial regulations. States are also required to have in place law enforcement capabilities adequate to successfully implement their red drum regulations. In August 2013, the Board approved Addendum I to Amendment 2 of the Red Drum FMP. The Addendum revises the habitat section of Amendment 2 to include the most current information on red drum spawning habitat for each life stage (egg, larval, juvenile, sub-adult, and adult). It also identifies the distribution of key habitats and habitats of concern, including potential threats and bottlenecks.

##### *Management Changes*

At its July meeting, the Florida Fish and Wildlife Conservation Commission approved new management regions and regulation changes for red drum in state waters following a final rule hearing, to be effective September 1, 2022. Statewide, the new regulations will prohibit the captain and crew to retain a bag limit when on a fire-head trip and reduce the off-the-water transport limit of red drum from 6 to 4 fish per person. Regionally, there will now be nine red drum management regions, the Indian River Lagoon Region will be catch-and-release only, and a one fish bag limit will be maintained in the Big Bend Region. Additionally, the 8 fish bag limit will be reduced to 4 fish in the Panhandle, Big Bend, and Northeast Regions, and reduced to 2 fish in the Tampa Bay, Sarasota Bay, Charlotte Harbor, Southwest, and Southeast regions.

##### *De Minimis Requests*

New Jersey and Delaware requested *de minimis* status through the annual reporting process. While Amendment 2 does not include a specific method to determine whether a state qualifies for *de minimis*, the PRT chose to evaluate an individual state's contribution to the fishery by comparing the two-year average of total landings of the state to that of the management unit. New Jersey and Delaware each harvested zero percent of the two-year average of total landings. *De minimis* status does not exempt either state from any requirement; it may exempt

them from future management measures implemented through addenda to Amendment 2, as determined by the Board.

## **VII. Implementation of FMP Compliance Requirements for 2021**

The PRT found no inconsistencies among states with the requirements of Amendment 2 and no inconsistencies were found.

## **VIII. Recommendations of the Plan Review Team**

### Management and Regulatory Recommendations

Consider approval of the *de minimis* requests by New Jersey and Delaware.

### Research Recommendations

Research recommendations can be found in the most recent stock assessment found [here](#) and the 2022 Simulation Assessment and peer review report [here](#). The PRT had the additional research recommendations:

- Implement surveys (e.g., logbooks, electronic methods, etc.) to determine the length composition (and age data, if possible) of recreational discards (B2) of red drum. This information has been highlighted as the single largest data gap in previous assessments.
- Continue sampling of adult red drum surveys to determine abundance, size, age, sex composition, and maturity of the adults. Additionally, investigate the possibility of senescence in female red drum. Investigate how targeting of adult red drum spawning and post-spawning aggregations via catch-and-release hook-and-line fisheries by anglers is affecting the reproductive potential of the stock due to both direct lethal and sub-lethal effects.
- Assess the effects of environmental factors on stock density/year class strength. Determine whether natural environmental perturbations affect recruitment and modify relationships with spawning stock size.
- Support and conduct applied research to evaluate the social and economic value of this important, primarily recreational fishery. Accomplishing this includes continued support of the Marine Recreational Fishing Expenditures Survey that is conducted every three to five years by NOAA fisheries as well as conducting applied research on projecting social and/or economic estimated impacts associated with this fishery.

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X. Figures

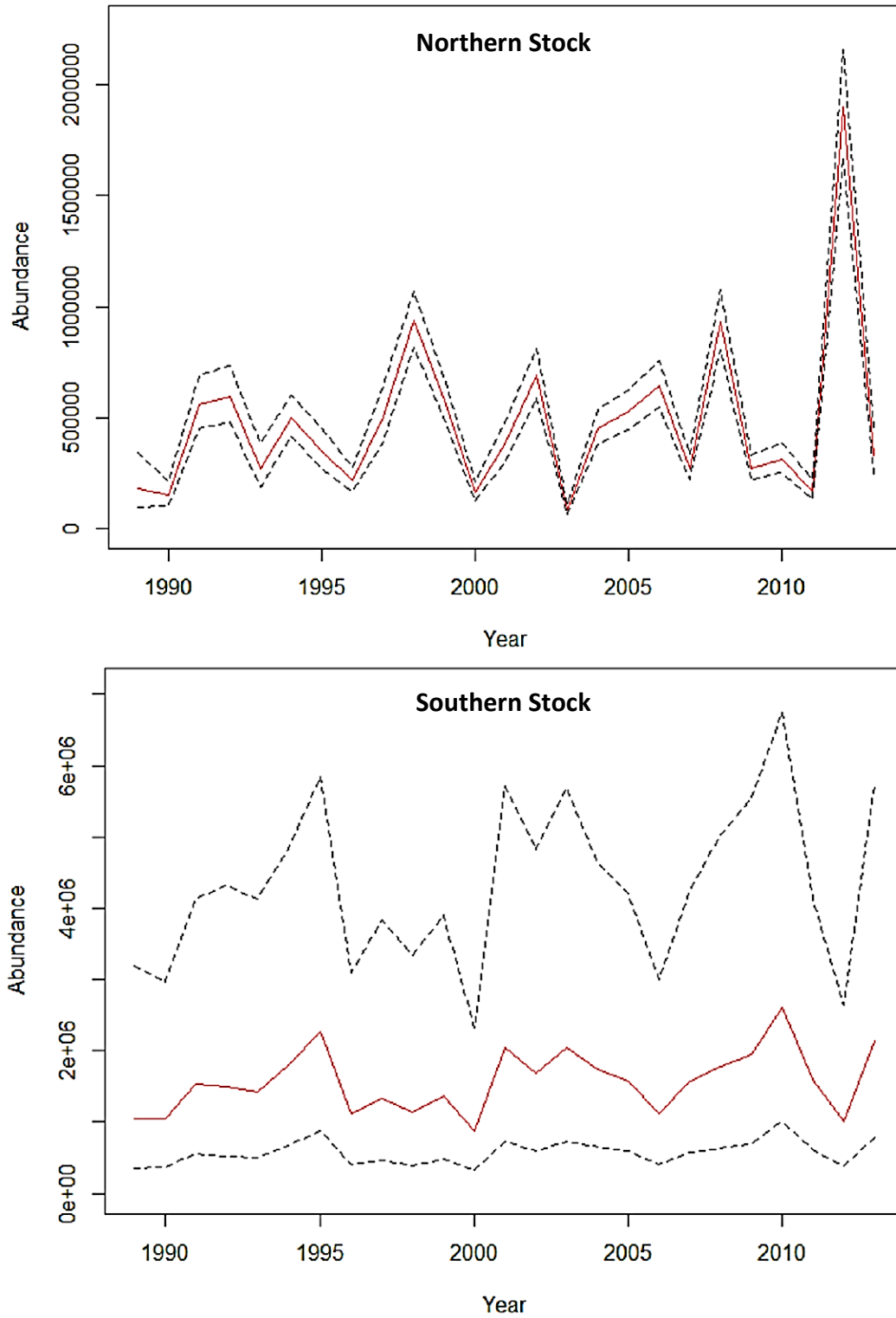


Figure 1. Predicted recruitment (age-1 abundance, red lines) with 95% confidence intervals (dashed black lines) for the northern (top) and southern (bottom) regions (Source: ASMFC 2017).

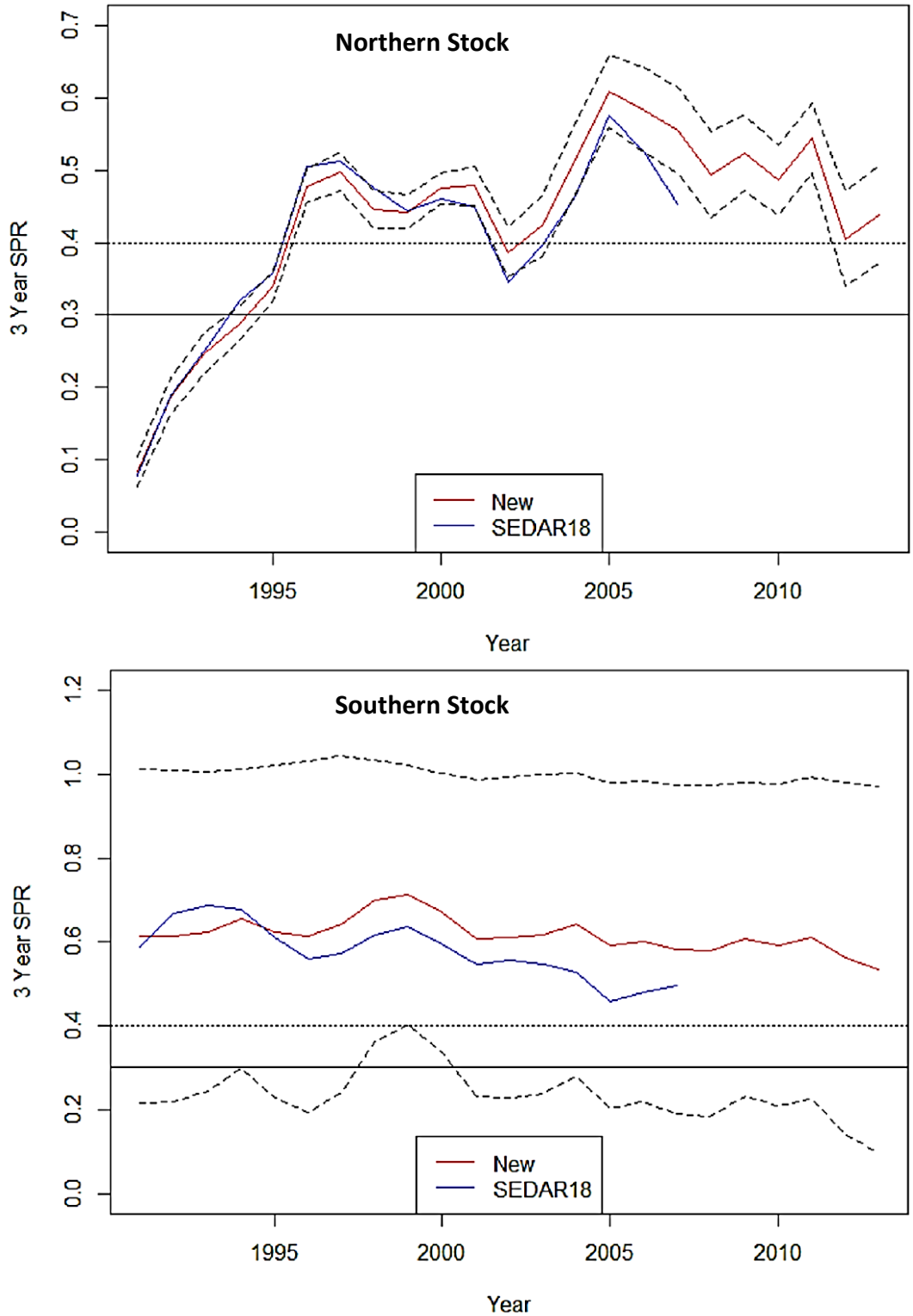
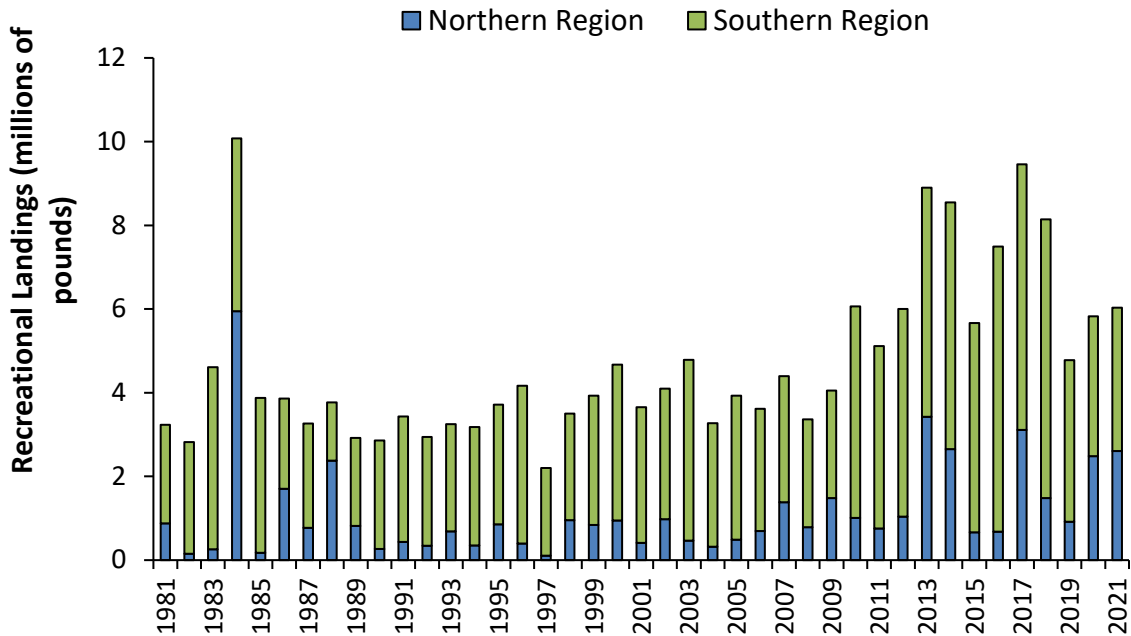
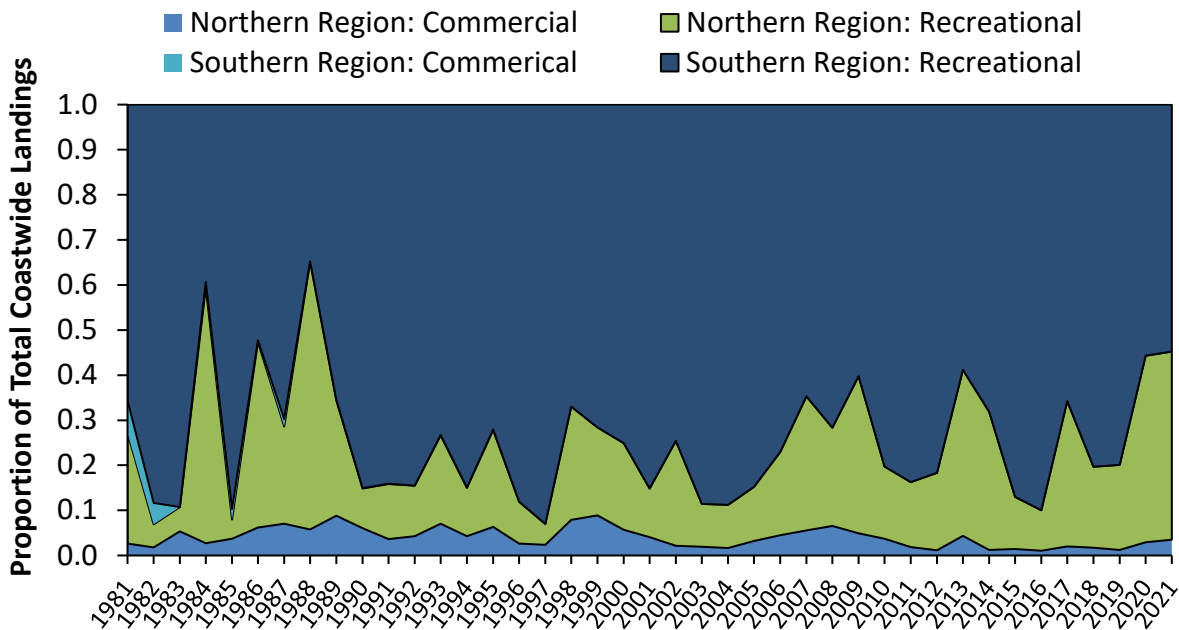


Figure 2. Three year average sSPR (red lines) for the northern (top) and southern (bottom) stocks with 95% confidence intervals (dashed black lines). Point estimates from the previous benchmark assessment (SEDAR18) are included for comparison. The target sSPR (dotted black line) is 40% and the threshold sSPR (solid black line) is 30% (Source: ASMFC 2017).



**Figure 3. Recreational landings of red drum by region (1981-2021).** See Table 3 for values and data sources.

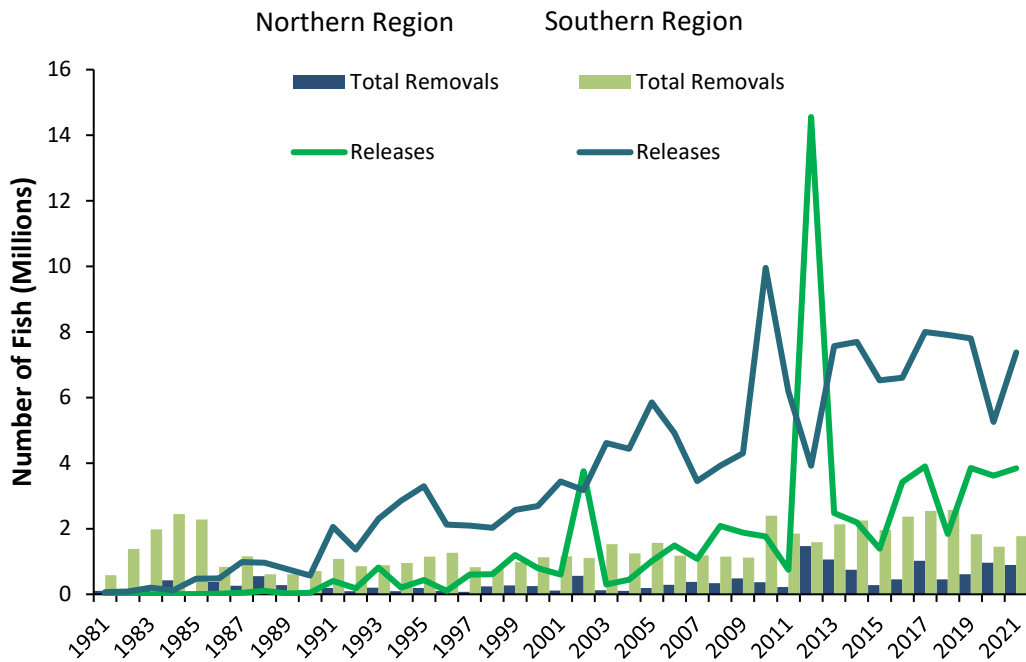
\*Recreational weight data for NC-FL in 1988 is unavailable. Recreational harvests in pounds were estimated for these states in this year by multiplying each state’s 1988 harvest in numbers of fish by its time series average weight.



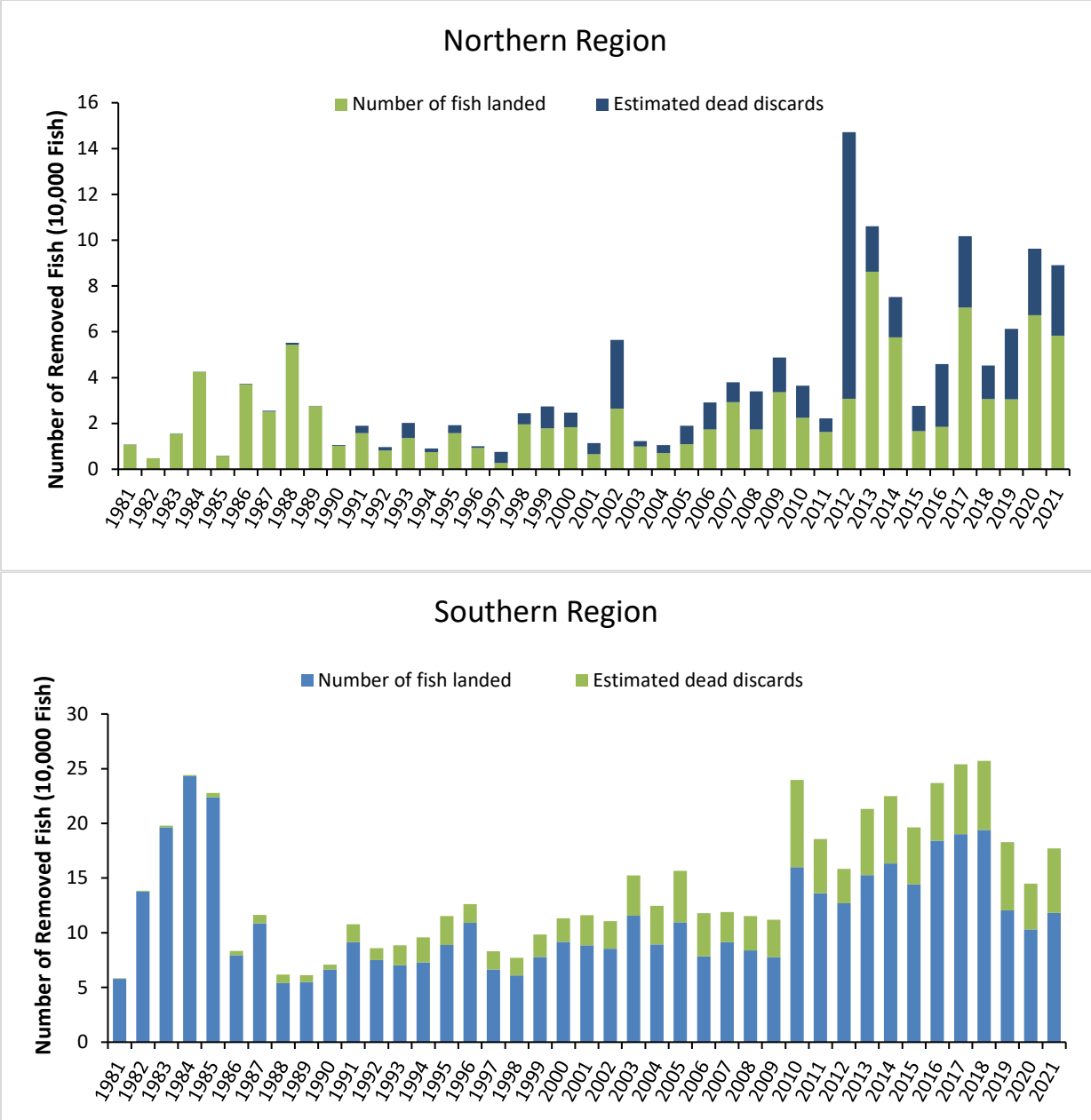
**Figure 4. Proportion of regional, sector-specific landings to total coastwide landings (pounds).** See Tables 2 and 3 for data sources.



**Figure 5. Commercial landings of red drum from the Northern Region (1981-2021).** See Table 2 for values and data sources.



**Figure 6. Total recreational removals (numbers) compared to recreational releases of red drum (numbers).** See Tables 5 and 6 for values and data sources.



**Figure 7. Recreational removals (landings and dead discards) of red drum (numbers) by region.** Dead discards are estimated by applying an 8% discard mortality rate to alive releases. See Tables 5 & 6 for values and data sources.

## XI. Tables

**Table 1. Red drum regulations for 2021.** The states of New Jersey through Florida are required to meet the requirements in the FMP; states north of New Jersey are encouraged to follow the regulations. All size limits are total length.

State	Recreational	Commercial
NJ	18" - 27", 1 fish	18" - 27", 1 fish
DE	20" - 27", 5 fish	20" - 27", 5 fish
MD	18" - 27", 1 fish	18" - 25", 5 fish
PRFC	18" - 25", 5 fish	18" - 25", 5 fish
VA	18" - 26", 3 fish	18" - 25", 5 fish
NC	18" - 27", 1 fish	18" - 27"; 250,000 lbs harvest cap with overage payback (150,000 lbs Sept 1- April 30; 100,000 lbs May 1-Aug 31); harvest of red drum allowed with 7 fish daily trip limit; daily landed catch of flounder, bluefish, black drum or striped mullet must exceed daily catch of drum; small mesh (<5" stretched mesh) gill nets attendance requirement May 1 - November 30. Fishing year: September 1 – August 31.
SC	15" - 23", 2 fish per person per day bag limit and 6 fish per boat per day boat limit	Gamefish Only
GA	14" - 23", 5 fish	Gamefish Only
FL	18" - 27"; Northeast Region – 2 fish per person per day, 8 fish vessel limit, Northwest and South Region – 1 fish per person day bag limit, 8 fish vessel limit	Sale of native fish prohibited

**Table 2. Overview of each state’s fishery independent surveys.**

<b>State</b>	<b>Fishery Independent Monitoring Details</b>
<b>New Jersey</b>	Five annual nearshore trawl surveys conducted since 1988, in January/February, April, June, August, and October. Length and weight data, and catch per unit effort (CPUE) in number of fish per tow and biomass per tow recorded for all species.
<b>Delaware</b>	30-ft bottom trawl survey and 16-ft bottom trawl survey. Neither survey has ever captured red drum.
<b>North Carolina</b>	Seine survey since 1991 produces age-0 abundance index. Gill net survey in Pamlico Sound since 2001 characterizes size and age distribution, produces abundance index, improves bycatch estimates, and studies habitat usage. Longline survey since 2007 produces adult index of abundance and tags fish.
<b>South Carolina</b>	Estuarine trammel net survey for subadults. Electrofishing survey in low salinity estuarine areas for juveniles/subadults. Inshore and coastal bottom longline survey for biological data and adult abundance index. Genetic sub-sampling and tagging conducted during these three surveys.
<b>Georgia</b>	Estuarine trammel net survey for subadult biological data and abundance index. Estuarine gill net survey for young-of-year (YOY) biological data and abundance index. Bottom longline survey for adult biological data and abundance index.
<b>Florida</b>	Seine surveys characterizing young-of-year (YOY) (<40 mm standard length) and sub-adult (>299 mm) abundance along the northeast (NE) and southeast (SE) Florida coasts.

**Table 3. Commercial landings (pounds) of red drum by state, 2012-2021.** (Source: personal communication with ACCSP, Arlington, VA, for years prior to 2021 and state compliance reports for 2021, except as noted below.) Note that SC, GA, and FL do not have commercial red drum fisheries, and years with incidental landings are included in the total.

<b>Year</b>	<b>NJ to PRFC</b>	<b>VA</b>	<b>NC</b>	<b>Total</b>
<b>2012</b>	8,318	2,786	66,519	77,691
<b>2013</b>	3,176	30,137	371,949	405,262
<b>2014</b>	353	14,733	90,647	105,732
<b>2015</b>	421	814	80,282	81,516
<b>2016</b>	197	1,898	77,833	79,927
<b>2017</b>	644	6,971	186,411	194,032
<b>2018</b>	C	885	144,464	145,501
<b>2019</b>	32	1,650	56,393	58,107
<b>2020</b>	104	7,989	165,670	173,867
<b>2021</b>	324	17,788	200,364	218,476

\*C indicates confidential landings, and totals have been rounded to protect confidentiality.



**Table 4. Recreational landings (pounds) of red drum by state, 2012-2021.** (Source: personal communication with MRIP for data prior to 2021; state compliance reports for 2021)

Year	NJ	DE	MD	VA	NC	Northern Region Total
2012		9,948	158,313	225,732	648,342	1,042,335
2013		13,536	12,086	1,185,572	2,214,045	3,425,239
2014				979,388	1,674,595	2,653,983
2015				98,329	567,730	666,059
2016				45,451	633,496	678,947
2017			6,782	1,628,692	1,475,852	3,111,326
2018				31,566	1,452,358	1,483,924
2019	4,107		2,113	470,940	436,219	913,379
2020		1,544	115,181	610,001	1,758,789	2,485,515
2021			5,441	1,123,953	1,479,550	2,608,944

Year	SC	GA	FL	Southern Region Total
2012	1,007,542	221,044	3,727,020	4,955,606
2013	682,544	452,283	4,341,545	5,476,372
2014	921,971	387,367	4,582,561	5,891,899
2015	656,747	394,787	3,949,000	5,000,534
2016	536,550	586,235	5,694,370	6,817,155
2017	1,048,249	826,857	4,470,905	6,346,011
2018	643,213	1,186,306	4,829,344	6,658,863
2019	862,124	630,294	2,372,773	3,865,191
2020	671,004	535,674	2,135,588	3,342,073
2021	441,191	506,962	2,473,995	3,422,148

**Table 5. Recreational landings (numbers) of red drum by state, 2012-2021.** (Source: personal communication with MRIP for data prior to 2021; state compliance reports for 2021)

Year	NJ	DE	MD	VA	NC	Northern Total
2012		2,256	62,444	90,856	152,005	307,561
2013		3,734	4,766	333,590	520,758	862,848
2014				251,501	324,303	575,804
2015				22,102	143,876	165,978
2016				15,866	169,195	185,061
2017			4,943	347,145	353,716	705,804
2018				6,334	299,577	305,911
2019	1,331		1,258	205,824	97,186	305,599
2020		493	44,975	214,069	413,419	672,956
2021			1,415	256,281	325,662	583,358

Year	SC	GA	FL		Southern Total
2012	296,380	96,354	877,569		1,270,303
2013	282,688	236,760	1,007,729		1,527,177
2014	393,424	212,193	1,027,980		1,633,597
2015	258,493	201,049	981,685		1,441,227
2016	241,224	289,928	1,309,505		1,840,657
2017	455,887	467,522	978,520		1,901,929
2018	262,725	606,836	1,069,604		1,939,165
2019	333,315	271,970	599,348		1,204,633
2020	239,874	230,026	560,382		1,030,282
2021	210,454	261,488	710,091		1,182,033

**Table 6. Recreational alive releases (numbers) of red drum by state, 2012-2021.** (Source: personal communication with MRIP for data prior to 2021; state compliance reports for 2021)

Year	NJ	DE	MD	VA	NC	Northern Region Total	Northern Region Dead Discards
2012		42,738	1,250,726	8,323,032	4,939,534	14,556,030	1,164,482
2013		1,325	7,125	576,743	1,892,171	2,477,364	198,189
2014		264	659	1,108,646	1,086,967	2,196,536	175,723
2015			1,456	78,590	1,308,072	1,388,118	111,049
2016		2,598	47,908	164,575	3,203,452	3,418,533	273,483
2017			14,148	1,722,618	2,165,656	3,902,422	312,194
2018	4,715		21,384	85,338	1,729,260	1,840,697	147,256
2019		474	5,740	865,957	2,976,601	3,848,772	307,902
2020			217,710	716,277	2,686,150	3,620,137	289,611
2021		1,147	22,218	1,272,609	2,545,371	3,841,345	307,308

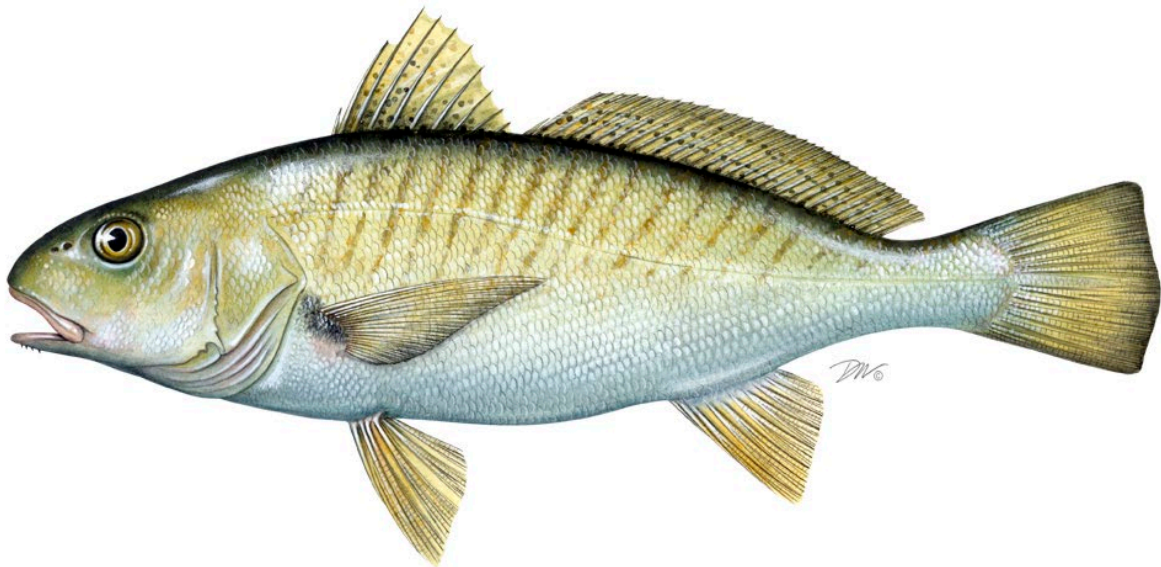
  

Year	SC	GA	FL		Southern Region Total	Southern Region Dead Discards
2012	1,083,096	220,312	2,614,554		3,917,962	313,437
2013	1,864,510	504,759	5,196,513		7,565,782	605,263
2014	1,874,809	750,619	5,074,602		7,700,030	616,002
2015	1,432,754	961,277	4,132,461		6,526,492	522,119
2016	1,266,931	601,153	4,734,303		6,602,387	528,191
2017	2,094,199	1,176,524	4,727,411		7,998,134	639,851
2018	1,493,803	1,045,570	5,375,011		7,914,384	633,151
2019	2,911,653	1,206,707	3,688,884		7,807,244	624,580
2020	1,705,054	393,368	3,154,500		5,252,922	420,234
2021	1,894,088	794,030	4,689,030		7,377,148	590,172

**ATLANTIC STATES MARINE FISHERIES COMMISSION**  
**REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN**

**FOR ATLANTIC CROAKER**  
***(Micropogonias undulatus)***

**2021 FISHING YEAR**



Prepared by the Plan Review Team  
Drafted July 2022



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

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## I. Status of the Fishery Management Plan

<u>Date of FMP Approval:</u>	Original FMP – October 1987
<u>Amendments:</u>	Amendment 1 – November 2005 (implemented January 2006) Addendum I – March 2011 Addendum II – August 2014 Addendum III – February 2020
<u>Management Areas:</u>	The Atlantic coast distribution of the resource from New Jersey through Florida
<u>Active Boards/Committees:</u>	South Atlantic State/Federal Fisheries Management Board; Atlantic Croaker Technical Committee, Stock Assessment Subcommittee, and Plan Review Team; South Atlantic Species Advisory Panel

[The Fishery Management Plan \(FMP\) for Atlantic Croaker](#) was adopted in 1987 and included the states from Maryland through Florida (ASMFC 1987). In 2004, the South Atlantic State/Federal Fisheries Management Board (Board) found the recommendations in the FMP to be vague, and recommended that an amendment be prepared to define management measures necessary to achieve the goals of the FMP. The Interstate Fisheries Management Program Policy Board also adopted the finding that the original FMP did not contain any management measures that states were required to implement.

In 2002, the Board directed the Atlantic Croaker Technical Committee (TC) to conduct the first coastwide stock assessment of the species to prepare for developing an amendment. The Atlantic Croaker Stock Assessment Subcommittee developed a stock assessment in 2003, which was approved by a Southeast Data Assessment Review (SEDAR) panel for use in management in June 2004 (ASMFC 2005a). The Board quickly initiated development of an amendment and, in November 2005, approved [Amendment 1 to the Atlantic Croaker FMP](#) (ASMFC 2005b). The amendment was fully implemented by January 1, 2006.

The goal of Amendment 1 was to utilize interstate management to perpetuate the self-sustainable Atlantic croaker resource throughout its range and generate the greatest economic and social benefits from its commercial and recreational harvest and utilization over time. Amendment 1 contains four objectives:

- 1) Manage the fishing mortality rate for Atlantic croaker to provide adequate spawning potential to sustain long-term abundance of the Atlantic croaker population.
- 2) Manage the Atlantic croaker stock to maintain the spawning stock biomass above the target biomass levels and restrict fishing mortality to rates below the threshold.
- 3) Develop a management program for restoring and maintaining essential Atlantic croaker habitat.

- 4) Develop research priorities that will further refine the Atlantic croaker management program to maximize the biological, social, and economic benefits derived from the Atlantic croaker population.

Amendment 1 expanded the management area to include the states from New Jersey through Florida. Consistent with the stock assessment completed in 2004, the amendment defined two Atlantic coast management regions: the south-Atlantic region, from Florida through South Carolina; and the mid-Atlantic region, from North Carolina through New Jersey.

Amendment 1 established biological reference points (BRPs) to define an overfished and overfishing stock status for the mid-Atlantic region only. Reliable stock estimates and BRPs for the South Atlantic region could not be developed during the 2004 stock assessment due to a lack of data. The BRPs were based on maximum sustainable yield (MSY), and included threshold and target levels of fishing mortality (F) and spawning stock biomass (SSB): F threshold =  $F_{MSY}$  (estimated to be 0.39); F target =  $0.75 \times F_{MSY}$  (estimated to be 0.29); SSB threshold =  $0.7 \times SSB_{MSY}$  (estimated to be 44.65 million pounds); and SSB target =  $SSB_{MSY}$  (estimated to be 63.78 million pounds). An SSB estimate below the SSB threshold resulted in an overfished status determination, and an F estimate above the F threshold resulted in an overfishing status determination. The Amendment established that the Board would take action, including a stock rebuilding schedule if necessary, should the BRPs indicate the stock is overfished or overfishing is occurring.

Amendment 1 did not require any specific measures restricting recreational or commercial harvest of Atlantic croaker. States that already had more conservative measures were encouraged to maintain those regulations (Table 1). The Board was able to revise Amendment 1 through adaptive management, including any regulatory and/or monitoring requirements in subsequent addenda, along with procedures for implementing alternative management programs via conservation equivalency.

The Board initiated [Addendum I to Amendment I](#) at its August 2010 meeting, following the updated stock assessment, in order to address the proposed reference points and management unit. The stock assessment evaluated the stock as a coastwide unit, rather than the two management units established within Amendment I. In approving Addendum I, the Board endorsed consolidating the stock into one management unit, as proposed by the stock assessment. In addition, Addendum I established a procedure, similar to other species, by which the Board may approve peer-reviewed BRPs without a full administrative process, such as an amendment or addendum.

In August 2014, the Board approved [Addendum II to the Atlantic Croaker FMP](#). The Addendum established the Traffic Light Approach (TLA) as the new precautionary management framework to evaluate fishery trends and develop management actions. The TLA was originally developed as a management tool for data poor fisheries. The name comes from assigning a color (red, yellow, or green) to categorize relative levels of population indicators. When a population characteristic improves, the proportion of green in the given year increases. Harvest and abundance thresholds of 30% and 60% were established in Addendum II, representing

moderate and significant concern for the fishery. If thresholds for both population characteristics achieve or exceed a threshold for a three year period, then management action is enacted.

The TLA framework replaces the management triggers stipulated in Addendum I, which dictated that action should be taken if recreational and commercial landings dropped below 70% of the previous two year average. Those triggers were limited in their ability to illustrate long-term declines or increases in stock abundance. In contrast, the TLA approach is capable of better illustrating trends in the fishery through changes in the proportion of green, yellow, and red coloring. A 2018 TC report recommended several updates to the current TLA approach (ASMFC 2018). The Board initiated an Addendum III to incorporate these updates.

In February 2020 the Board approved [Addendum III to Amendment 1](#) of the Atlantic Croaker FMP. This addenda adjusted the TLA to incorporate additional fishery-independent indices, age information, use of regional characteristics, and changes to the management triggering mechanisms. Management triggers and responses include bag limits for the recreational fishery and percentage harvest reductions from a 10 year average for the commercial fishery. The response will be defined by which percent threshold (30% or 60%) that was exceeded in any of the 3 out of 4 terminal years.

Addenda III did not add or change any management measures or requirements, unless management-triggering mechanisms are tripped. The only pre-existing requirement is for states to submit an annual compliance report by July 1<sup>st</sup> of each year that contains commercial and recreational landings as well as results from any monitoring programs that intercept Atlantic croaker.

## **II. Status of the Stock**

The most recent stock assessment, conducted in 2017, upon peer review was not recommended for management use. Therefore, current stock status is unknown. The Peer Review Panel did not indicate problems in the Atlantic croaker fishery that would require immediate management action but did recommend continued evaluation of the fishery using the annual TLA.

The conclusions of the 2010 stock assessment (ASMFC 2010), which is the most recent assessment that was recommended by peer review for management use, were that Atlantic croaker was not experiencing overfishing and biomass had increased and fishing mortality decreased since the late 1980s. The 2010 assessment was unable to confidently determine stock status, particularly with regards to biomass, due to an inability to adequately estimate removals from discards of the South Atlantic shrimp trawl fishery. Improvements on estimation of these discards were made in the 2017 assessment, allowing the potential for shrimp trawl discards to be included as supplemental information with the annual TLA. Annual monitoring of shrimp trawl fishery discards is important because these discards represent a considerable proportion of Atlantic croaker removals, ranging from 7% to 78% annually during 1988-2008, according to the 2010 assessment (ASMFC 2010).



One of the primary reasons that the 2017 stock assessment did not pass peer review was due to conflicting signals in harvest and abundance metrics. Theoretically, increases in adult abundance should result in more fish available to be caught by the fishery; thus, fishing would be more efficient (greater catch per unit effort) and harvest would increase in a pattern similar to adult abundance. However, several recent abundance indices have shown increases while harvest has declined to some of the lowest levels on record. One factor thought to contribute to overestimates of adult abundance is an increase in the number of juveniles misclassified as adults in surveys that historically have typically caught adults.

In response, the Atlantic Croaker TC recommended several changes to the annual TLA through [Addendum III](#). The addendum added indices from the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAAP) and the South Carolina Department of Natural Resources (SCDNR) Trammel Net Survey into the adult composite characteristic index. In addition, all surveys used revised adult abundance indices and not have an established reference period of 2002-2012. Regional metrics were also used to characterize the fisheries north and south of the Virginia-North Carolina state line. The ChesMMAAP and the NEFSC surveys will be used to characterize abundance north of the state line, and SCDNR Trammel Net and SEAMAP surveys will be used to characterize abundance south of the state line.

### III. Status of the Fishery

***This report includes updated recreational estimates from the Marine Recreational Information Program's transition to the mail-based Fishing Effort Survey (FES) on July 1, 2018. Past recreational estimates have been calibrated to the FES and, therefore, are different from those shown in FMP Reviews and state compliance reports prior to 2018.***

Total Atlantic croaker harvest (recreational and commercial) from New Jersey through the east coast of Florida in 2021 is estimated at 3.0 million pounds (Tables 2 and 3, Figure 1). This represents a 39% decrease in total harvest from 2020 (5.0 million pounds). The commercial and recreational fisheries harvested 32% and 68% of the 2021 total, respectively, which was similar to 2020 when the recreational fishery also harvested a majority (84%) of the total Atlantic croaker harvest. This represents a large shift from the previous 10 year average split, of 52% and 47%, respectively, from 2010 to 2019. Many states had to have some data for 2020 recreational harvest data imputed from prior years due to interruptions in sampling from COVID-19 (Table 4).

Atlantic coast commercial landings of Atlantic croaker exhibit a cyclical pattern, with low harvests in the 1960s to early 1970s and the 1980s to early 1990s, and high harvests in the mid-to-late 1970s and the mid-1990s to early 2000s (Figure 1). Commercial landings increased from a low of 3.7 million pounds in 1991 to 28.6 million pounds in 2001; however, landings have declined every year from 2010 to 806,781 pounds in 2020, the lowest of the time series (1950-2021). Landings increased by 21% in 2021, to 972,121 pounds, the second lowest value in the time series. Within the management unit, the majority of 2021 commercial landings came from North Carolina (56%) and Virginia (30%).

From 1981-2021, recreational landings of Atlantic croaker from New Jersey through Florida have varied by count between 5.2 million fish in 2021 and 36.2 million fish in 1986 and by weight between 1.8 million pounds in 2019 and 18.9 million pounds in 2003 (Tables 5 and 6, Figure 2). Landings generally increased from 1990 until 2003, after which they showed a declining trend through 2021. The 2021 landings are estimated at 5.2 million fish and 2.0 million pounds, a 51% decrease in number of fish and fish weight from 2020. Virginia was responsible for 36% of the 2021 recreational landings, in numbers of fish, followed by North Carolina (20%). It is important to note that due to the COVID-19 pandemic, some 2020 MRIP data was imputed to fill in missing data. The percent contribution of imputed data ranged from 0% for Maryland up to 70% for New Jersey (Table 4).

The number of recreational releases generally increased over the time series until 2013 when releases steadily declined until 2018, when a time series low of 18.1 million fish were released (Table 6 and Figure 2). From 2018 through 2021, releases have overall been increasing again. The percentage of released recreational catch has shown an increasing trend from the 1990s to 2021. In 2021, anglers released 27.5 million fish, a slight decrease from the 31.8 million fish released in 2020. However, anglers released a greater percentage of the total recreational catch in 2021, compared to 2020. An estimated 84% of the total recreational croaker catch was released in 2021, the highest percentage on record, compared to 75% in 2020 (Figure 2).

#### **IV. Status of Assessment Advice**

A statistical catch-at-age (SCA) model was used in the 2010 Atlantic croaker stock assessment (ASMFC 2010). This model combines catch-at-age data from the commercial and recreational fisheries with information from fishery-independent surveys and biological information such as growth rates and natural mortality rates to estimate the size of each age class and the exploitation rate of the population. The assessment was peer reviewed by a panel of experts in conjunction with the Southeast Data, Assessment, and Review (SEDAR) process.

The benchmark stock assessment conducted in 2017 was not recommended for management use due to uncertainty in biomass estimates resulting from conflicting signals among abundance indices and catch time series as well as sensitivity of model results to assumptions and model inputs. Specifically, model-estimated values of stock size, fishing mortality, and biological reference points are too uncertain for use; however, the trends in model-estimated parameters and ratio-based fishing F reference points are considered reliable. Currently, a Traffic Light Approach (TLA) is used to monitor the stock and make management decisions in lieu of an approved stock assessment. The TLAs can be found [here](#).

#### **V. Status of Research and Monitoring**

There are no research or monitoring programs required of the states except for the submission of an annual compliance report. New Jersey, Delaware, Maryland, Potomac River Fisheries Commission (PRFC), Virginia, North Carolina, South Carolina, and Georgia conduct fishery-dependent (other than catch and effort data) monitoring programs. All states and jurisdictions

conduct fishery-independent monitoring programs along the Atlantic coast from New Jersey to Florida.

The Northeast Fishery Science Center (NEFSC) performs a randomly stratified groundfish survey from Cape Hatteras, North Carolina to Maine. Atlantic croaker are one of the main species caught throughout much of the survey area and, since the surveys started in 1972, it provides a long term data set. Since 1994, there has been an increase in annual catch variability. The NEFSC survey was not carried out in 2020 due to the COVID-19 pandemic, but was active again in 2021.

## **VI. Status of Management Measures and Issues**

### *Fishery Management Plan*

Amendment 1 was fully implemented by January 1, 2006, and provided the management plan for the 2009 fishing year. There are no interstate regulatory requirements for Atlantic croaker. Should regulatory requirements be implemented in the future, all state programs must include law enforcement capabilities adequate for successfully implementing the regulations. Addendum I to Amendment 1 was initiated in August 2010 and approved in March 2011, in order to 1) revise the biological reference points to be ratio-based, and 2) remove the distinction of two regions within the management unit, based on the results of the 2010 stock assessment. Addendum II was approved August 2014 and established the TLA management framework for Atlantic croaker in order to better illustrate long-term trends in the fishery. Addendum III was approved February 2020 and adjusted management through the TLA by incorporating additional fishery-independent indices, age information, use of regional characteristics, and changes to the management-triggering mechanisms.

### *Traffic Light Approach*

#### 2021 Harvest Metrics

The Mid-Atlantic harvest metric exceeded the 60% red threshold in all four terminal years (2018-2021; Figure 3) and the South Atlantic harvest metric has exceeded the 30% red threshold in all four terminal years (2018-2021; Figure 4). This is the second consecutive year the harvest metric in both regions has triggered at least at the 30% threshold, although the harvest metrics in 2021 cannot be used as a trigger mechanism since they represent a year with catch restrictions in place.

#### 2021 Abundance Metrics

The Mid-Atlantic metric could not be updated due to missing ChesMMAAP data from 2019-2021 (Figure 5). The NEFSC index, an index used in the Mid-Atlantic metric, was available in 2021 and while it was below average, it showed an increase from 2019. The South Atlantic metric could also not be updated past 2019 due to missing SEAMAP data in 2020 and spring 2021 (Figure 6). The SC Trammel Net Survey, an index used in the South Atlantic metric, increased 24% in 2021

compared to 2020. When the South Atlantic metric was calculated including P195 instead of SEAMAP, all four terminal years (2018-2021) did not exceed any threshold.

### Conclusions

The harvest metric triggered in both the Mid-Atlantic (60% threshold) and South Atlantic (30% threshold) from 2018 to 2020 indicating continued concern. Harvest restrictions were in place in 2021 and the harvest metric cannot be used as a trigger mechanism in that year. The abundance composite metrics are unknown for the Mid-Atlantic and South Atlantic due to missing data, and so it could not be determined if further management would be triggered. Addendum III requires management action taken in 2021 to remain in place for a minimum of three years (through and including the 2023 season). The TC recommends maintaining management enacted in 2021.

### *De Minimis Requests*

States are permitted to request *de minimis* status if, for the preceding three years for which data are available, their average commercial landings or recreational landings (by weight) constitute less than 1% of the coastwide commercial or recreational landings for the same three year period. A state may qualify for *de minimis* in either its recreational or commercial sector, or both, but will only qualify for exemptions in the sector(s) that it qualifies for as *de minimis*. Amendment 1 does not include any compliance requirements other than annual state reporting, which is still required of *de minimis* states. Addendum III, depending on the level of management action triggered, has exemptions for *de minimis* states when measures are triggered at the 30% level (see above for the TLA description). If the TLA triggers at the 60% level, then all states, including *de minimis*, must implement management measures.

In the annual compliance reports, the following states requested *de minimis* status: New Jersey (commercial and recreational fisheries), Delaware (recreational and commercial fisheries), South Carolina (commercial fishery), and Georgia (commercial fishery). The commercial and recreational *de minimis* criteria for 2022 are based on 1% of the average coastwide 2019-2021 landings in each fishery. New Jersey, Delaware, South Carolina, and Georgia commercial fisheries all qualify for *de minimis* status, but landings are confidential. New Jersey and Delaware recreational fisheries both qualify for *de minimis* status, but landings are also confidential.

### *Changes to State Regulations*

In 2020, the TLA triggered management measures at the 30% level, or moderate concern. Non *de minimis* states were required to implement management measures that instituted a 50 fish recreational bag limit and reduce the commercial harvest by 1% of the average state commercial harvest from the previous 10 years. If the state had more restrictive measures in place, they did not need to make any changes. All proposed management changes were reviewed by the Technical Committee and approved by the Board. Below is a list of states that who implemented measures in 2021:

- Virginia: 50 fish bag limit, charter allowance, and commercial fishery season closure from January 1 to January 15. Approved on March 23, 2021.

- North Carolina: 50 fish bag limit and a commercial fishery season closure from December 16 to December 31. Proclamation authority published on April 15, 2021.
- Florida: 50 fish bag limit and a commercial vessel limit of 1,200 pounds in state waters. Rule published December 1, 2021.

#### *Atlantic Croaker Habitat*

In winter of 2017, the ASMFC Habitat Committee released *Atlantic Sciaenid Habitats: A Review of Utilization, Threats, and Recommendations for Conservation, Management, and Research*, which outlines the habitat needs of Atlantic croaker at different life stages (egg, larval, juvenile, adult). This report also highlights threats and uncertainties facing these ecological areas and identifies Habitat Areas of Particular Concern. It can be found online at:

[http://www.asmfc.org/files/Habitat/HMS14\\_AtlanticSciaenidHabitats\\_Winter2017.pdf](http://www.asmfc.org/files/Habitat/HMS14_AtlanticSciaenidHabitats_Winter2017.pdf).

#### *Bycatch Reduction*

Atlantic croaker is subject to both direct and indirect fishing mortality. Historically, croaker ranked as one of the most abundant bycatch species of the south Atlantic shrimp trawl fishery, resulting in the original FMP's recommendation that bycatch reduction devices (BRDs) be developed and required in the shrimp trawl fishery. Since then, the states of North Carolina through Florida have all enacted requirements for the use of BRDs in shrimp trawl nets in state waters, reducing croaker bycatch from this fishery (ASMFC 2010). However, bycatch and discard monitoring from the shrimp trawl fishery have historically been inadequate, resulting in a major source of uncertainty for assessing this stock, as well as other important Mid- and South Atlantic species. Most of the discarded croaker are age-0 and thus likely have not yet reached maturity (ASMFC 2010). The North Carolina Division of Marine Fisheries conducted a two-year study, published in 2015, to collect bycatch data from state shrimp trawlers. It found that Atlantic croaker represent between 34-49% of the total observed finfish bycatch by weight in estuarine waters and between 20-42% in ocean waters. The at-net mortality for Atlantic croaker was found to be 23% (Brown 2015). These data will be valuable for incorporating estimates of removals in future stock assessments.

Discard estimates of Atlantic croaker in the South Atlantic Shrimp Trawl Fishery are informed by catch rates observed during the SEAMAP survey and South Atlantic Shrimp Trawl Fishery Observer Program, and total effort of the South Atlantic Shrimp Trawl Fishery. Increases in discards could be an indicator of higher abundance of juveniles in the region, an increase in effort by the fishery, or a combination of both. Total effort (net hours) in the South Atlantic Shrimp Trawl Fishery declined from a time series high in 1991 to a time series low in 2005 (Figure 7). Effort then varied around an increasing trend through 2017 and was variable and lower through 2020. Effort declined slightly from 786,172 net hours in 2020 to 780,515 net hours in 2021. Total discards of Atlantic croaker in the South Atlantic Shrimp Trawl Fishery were high during the late 1980s and early 1990s, declined to relatively low levels in the early to mid-2000s, and then increased to levels similar to the beginning of the time series during the 2010s (Figure 7). Discards declined from some of the highest levels of the time series in 2018-2020 to the lowest level since 2009 in 2021. For additional information on the South Atlantic Shrimp Trawl Fishery discard estimation, see Appendix 1 of the [2020 TLA Update Report](#).

Atlantic croaker are also discarded from other commercial fishing gears, primarily due to market pressures and few restrictions on croaker harvest at the state level. The National Oceanic and Atmospheric Administration (NOAA) Fisheries Pelagic Observer Program provides data to estimate these discards for use in assessments; however, the time series is limited and only discards from gill nets and otter trawls could be estimated for the 2010 assessment based on the available data. Since 1988, estimated discards have fluctuated between 94 and 15,176 mt without trend, averaging 2,503 mt (ASMFC 2010).

Atlantic croaker is also a major component of the scrap/bait fishery. Landings from this fishery are not reported at the species level, except in North Carolina, which has a continuous program in place to sample these landings and enable estimation of croaker scrap landings for use in the stock assessment. As part of the 2010 stock assessment, North Carolina estimated the scrap/bait landings, which have declined in recent years, from a high of 1,569 mt in 1989 to a low of 84 mt in 2008, primarily due to restrictions placed on fisheries producing the highest scrap/bait landings (ASMFC 2010). Regulations instituted by North Carolina include a ban on flynet fishing south of Cape Hatteras, incidental finfish limits for shrimp and crab trawls in inside waters, minimum mesh size restrictions in trawls, and culling panels in long haul seines.

South Carolina has also begun a state monitoring program to account for bait landings. The state initiated a bait harvester trip ticket program for all commercial bait harvesters licensed in South Carolina. The impetus for this program is to track bait usage of small sciaenid species (croaker, spot, and whiting) as well as other important bait species.

Several states have implemented other commercial gear requirements that further reduce bycatch and bycatch mortality, while others continue to encourage the use of the BRD devices. NOAA Fisheries published a notice on June 24, 2011 for public scoping in the Federal Register to expand the methods for reducing bycatch interactions with sea turtles, which may have additional effects on the bycatch of finfish like Atlantic croaker in trawls (76 FR 37050). Continuing to reduce the quantity of sub-adult croaker harvested should increase spawning stock biomass and yield per recruit.

Atlantic croaker are also subject to recreational discarding. The percentage of Atlantic croaker released alive by recreational anglers has generally increased over time. Discard mortality was estimated to be 10% for the 2010 stock assessment (ASMFC 2010). The use of circle hooks and appropriate handling techniques can help reduce mortality of released fish.

## **VII. Implementation of FMP Compliance Requirements for 2022**

The PRT found no inconsistencies among states with regard to the requirements of Amendment 1 and Addendum III.

## VIII. Recommendations

### Management and Regulatory Recommendations

- Consider approval of the *de minimis* requests from New Jersey, Delaware, South Carolina, and Georgia for their commercial fisheries.
- Consider approval of the *de minimis* requests from New Jersey and Delaware for their recreational fisheries.
- Research into the impacts of climate change on the range of the species.
- Research into Atlantic croaker juvenile discard mortality for recreational and commercial fisheries by each gear type in regions where removals are highest.

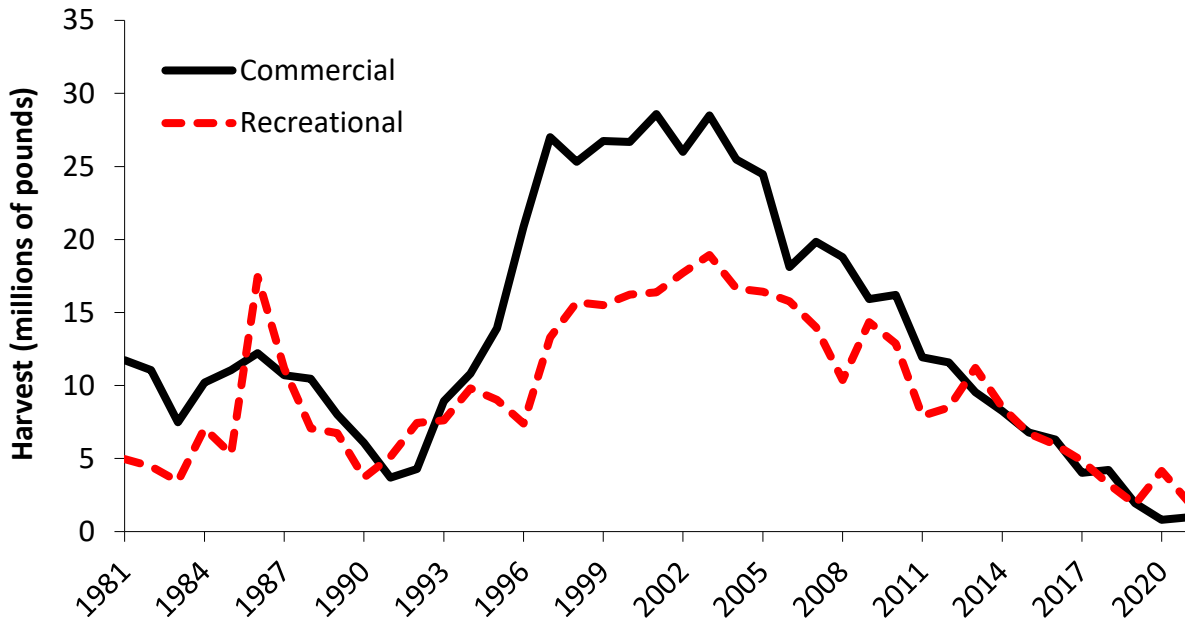
### Research and Monitoring Recommendations

Additional research and monitoring recommendations can be found in the 2016 Atlantic Croaker Stock Assessment Peer Review Report [here](#) under Term of Reference 8.

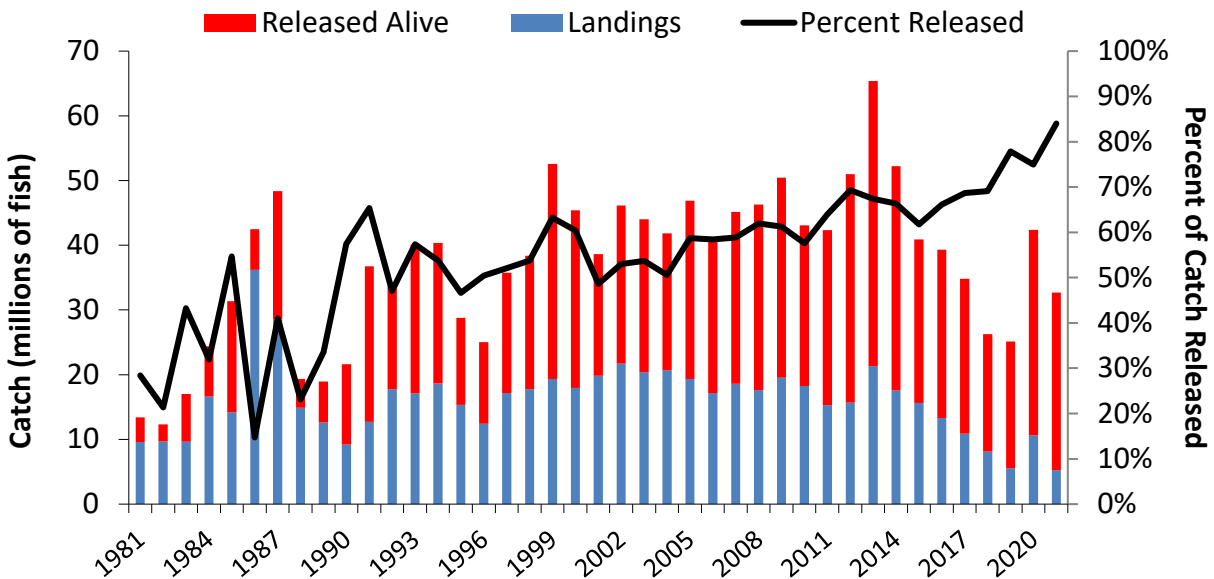
## IX. References

- Atlantic States Marine Fisheries Commission (ASMFC). 1987. Fishery Management Plan for Atlantic Croaker. Washington (DC): ASMFC. Fishery Management Report No. 10. 90 p.
- ASMFC. 2005a. Atlantic Croaker Stock Assessment & Peer Review Reports. Washington (DC): ASMFC. 370 p.
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- Kevin Brown. 2015. Characterization of the commercial shrimp otter trawl fishery in the estuarine and ocean (0-3 miles) waters of North Carolina. Morehead City (NC): NCDEQ, Division of Marine Fisheries. Abstract.

X. Figures

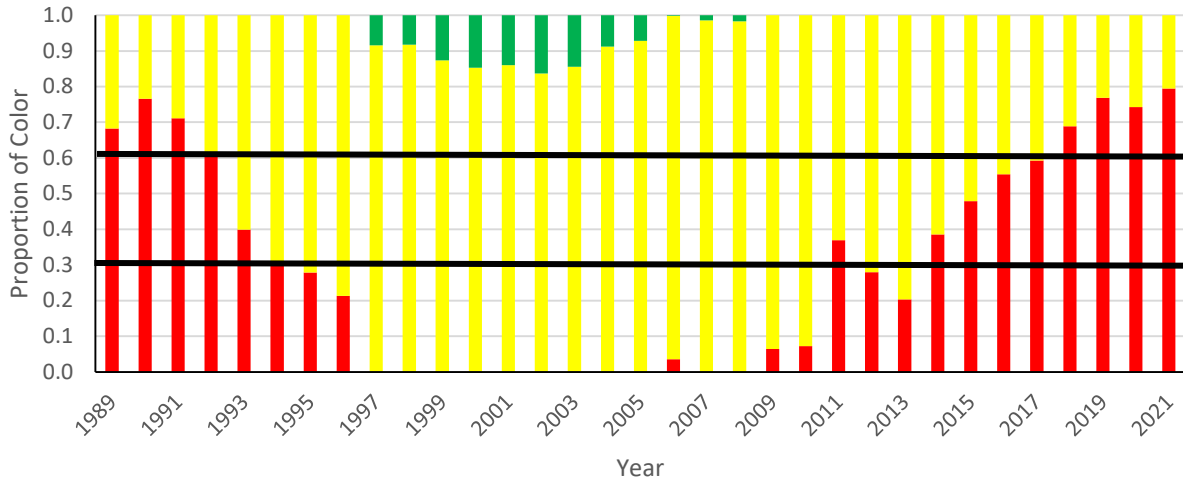


**Figure 1. Atlantic croaker commercial and recreational landings (millions of pounds) from 1981-2021.** (See Tables 2 and 3 for source information. Commercial landings estimate for 2021 is preliminary. Reliable recreational landings estimates are not available prior to 1981. Recreational landings estimates are based on the mail-based Fishing Effort Survey.)

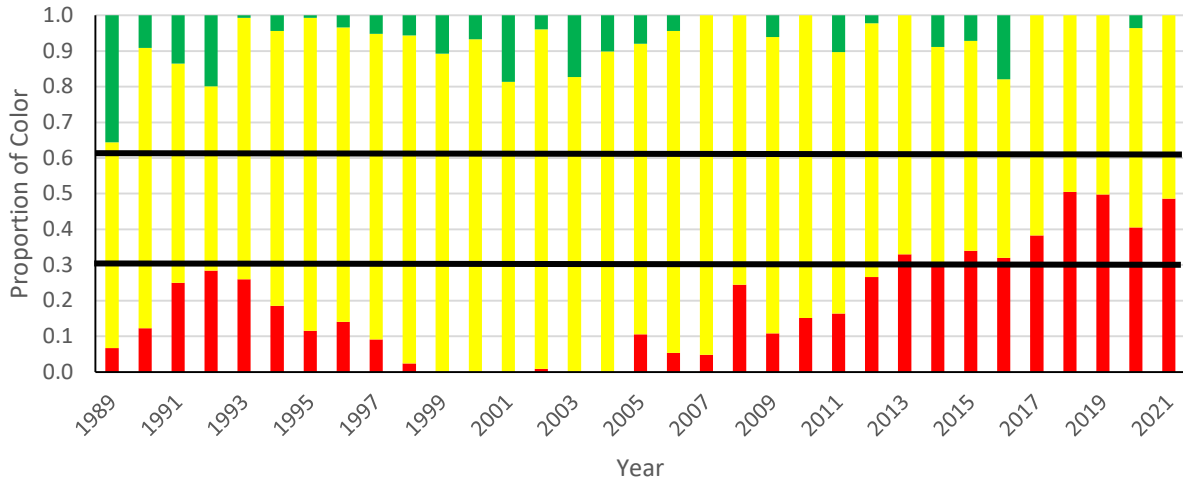


**Figure 2. Recreational catch (landings and alive releases, in millions of fish) and the percent of catch that is released, 1981-2021, based on the mail-based Fishing Effort Survey calibration.** (See Tables 4 and 5 for values and source information.)

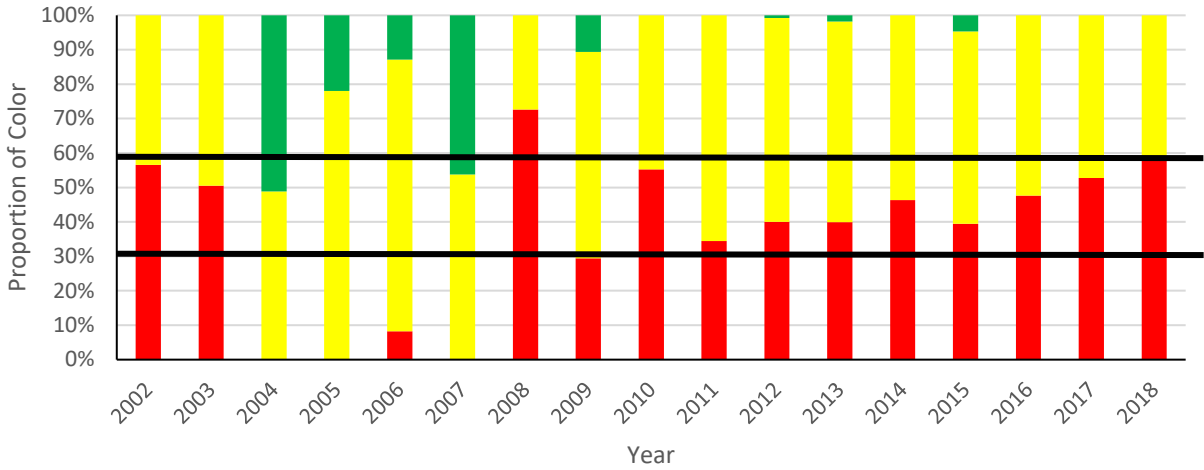




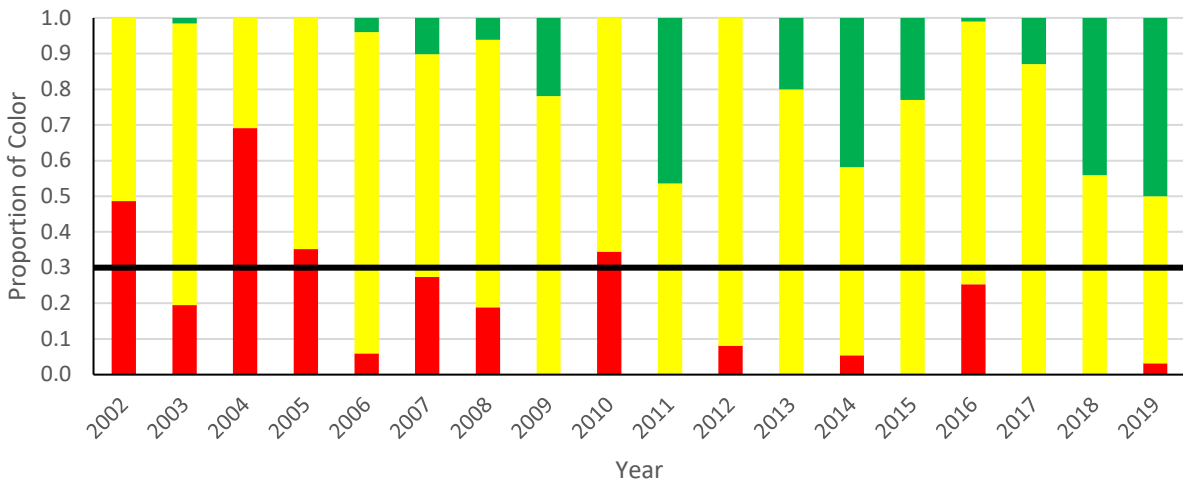
**Figure 3. Annual color proportions for harvest composite TLA of Mid-Atlantic region (NJ-VA) for Atlantic croaker recreational and commercial landings from 1989-2021 using a 2002-2012 reference period.**



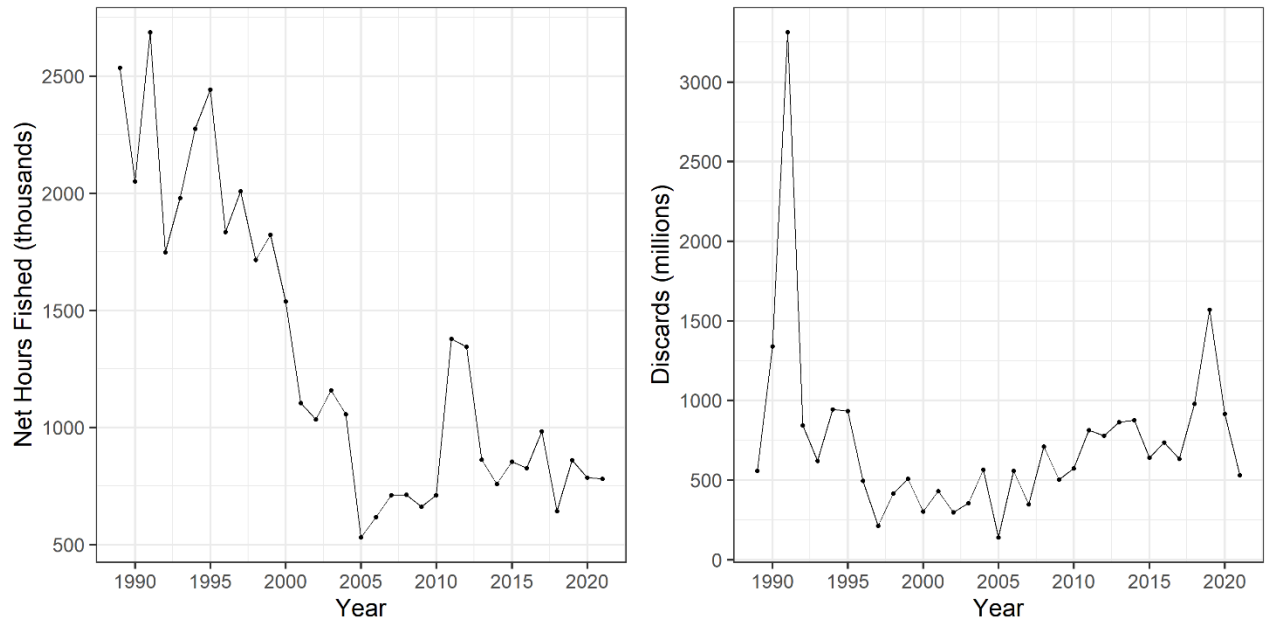
**Figure 4. Annual color proportions for harvest composite TLA of South Atlantic region (NC-FL) for Atlantic croaker recreational and commercial landings from 1989-2021 using a 2002-2012 reference period.**



**Figure 5. Adult (age 2+) Atlantic croaker TLA composite characteristic index for the Mid-Atlantic (NJ-VA; NEFSC and ChesMMAAP surveys) from 2002-2018. This figure is unchanged from the previous three years due to the recalibration effort of ChesMMAAP.**



**Figure 6. Adult (age 2+) Atlantic croaker TLA composite characteristic index for the South Atlantic (NC-FL; SEAMAP and SCDNR trammel survey) from 2002-2019. This figure is unchanged from the previous two years due to missing data from SEAMAP.**



**Figure 7. Total net hours fished (left) and discards of Atlantic croaker (right) in the South Atlantic Shrimp Trawl Fishery from 1989-2021.**

**XI.  
Tables**

**Table 1. Summary of state regulations for Atlantic croaker in 2021.**

<b>State</b>	<b>Recreational</b>	<b>Commercial</b>
NJ	None	Otter/beam trawl mesh restriction for directed croaker harvest (>100 lbs in possession)
DE	8" minimum; recreational gill nets (up to 200 ft.) with license	8" minimum
MD	9" min, 25 fish/day, charter boat logbooks	9" minimum; open 3/16 to 12/31
PRFC	25 fish/day	Pound net season: 2/15 to 12/15
VA	50 fish/day, with additional charter live bait allowance (effective 3/23/21)	Open 1/1 to 12/31 (effective 3/23/21)
NC	50 fish/day (effective 4/15/21), recreational use of commercial gears with license and gear restrictions	Open 1/1 to 12/15 (effective 4/15/21)
SC	Mandatory for-hire logbooks, small Sciaenidae species aggregate bag limit of 50 fish/day	None
GA	25 fish/day	25 fish/day limit except for trawlers harvesting shrimp for human consumption (no limit)
FL	50 fish/day (effective 12/1/21)	1,200 commercial vessel limit (effective 12/1/21)

\* A commercial fishing license is required to sell croaker in all states with fisheries. For all states, general gear restrictions affect commercial croaker harvest.

**Table 2. Commercial harvest (pounds) of Atlantic croaker by state, 2012-2021.**

(Estimates for 2021 are preliminary. Sources: 2022 state compliance reports for 2021 fishing year and for years prior to 2021, personal communication with ACCSP, Arlington, VA, except PRFC [compliance reports only].) Note that Georgia does not have a commercial fishery for Atlantic croaker.

Year	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
2012	C	C	915,432	273,849	6,842,005	3,106,616	C		74,527	11,582,978
2013	C	C	820,777	130,285	6,237,602	1,927,938	C		76,463	9,538,901
2014	265,166	C	443,661	177,777	4,697,381	2,629,908	C		45,587	C
2015	C	C	294,038	118,996	4,426,957	1,819,007	C		39,096	6,784,146
2016	C	C	101,949	168,889	3,825,737	2,092,287	C		57,538	6,302,799
2017	C	C	42,958	114,319	2,822,005	1,008,015	C		43,033	4,032,993
2018	C	C	44,306	16,561	2,450,984	1,643,646	C		54,409	4,210,715
2019	C	463	2,865	C	595,434	1,278,340	C		68,179	1,945,723
2020	C	C	1,857	601	147,026	570,453	C		84,906	806,781
2021	C	C	4,584	11,430	287,898	540,622	C		124,642	972,121

C: Confidential data

**Table 3. Recreational harvest (pounds) of Atlantic croaker by state, 2012-2021.** (Sources: 2022 state compliance reports for 2021 fishing year and for years prior to 2021, personal communication with MRIP)

Year	NJ	DE	MD	VA	NC	SC	GA	FL	Total
2012	259,645	147,737	1,980,417	4,664,264	307,338	30,149	29,815	1,063,337	8,482,702
2013	1,637,516	253,447	1,581,384	6,442,166	453,881	84,248	89,781	642,887	11,200,818
2014	750,580	427,615	1,265,217	4,354,046	758,751	104,434	138,423	712,090	8,511,554
2015	263,749	189,320	871,596	3,514,410	557,735	181,909	248,431	881,185	6,708,335
2016	7,133	10,959	407,010	2,998,022	443,728	81,896	116,313	1,893,203	5,958,264
2017	0	26,441	238,659	3,383,057	237,160	310,621	100,565	555,389	4,851,892
2018	34,125	5,859	191,854	2,245,518	164,644	81,251	83,258	445,663	3,252,172
2019	973	23,973	38,895	995,491	224,337	133,227	97,791	358,941	1,873,628
2020	16,358	21,870	91,047	2,410,612	223,685	230,205	77,876	1,072,714	4,144,367
2021	7,079	35,746	69,744	823,319	376,121	173,526	95,031	461,048	2,041,614

**Table 4. Contribution of imputed harvest rate data from 2018 and 2019 for 2020 MRIP harvest estimates of Atlantic croaker.**

State	2020 Harvest (A+B1) Total Weight (lb)	PSE	Contribution of Imputed Data to Total Harvest Rate
NEW JERSEY	16,358	60.6	70%
DELAWARE	21,870	26.8	33%
MARYLAND	91,047	36.9	0%
VIRGINIA	2,410,612	20.2	50%
NORTH CAROLINA	223,685	20.6	21%
SOUTH CAROLINA	230,205	19.1	2%
GEORGIA	77,876	41.4	13%
FLORIDA	1,072,714	27.5	3%

**Table 5. Recreational harvest (numbers) of Atlantic croaker by state, 2012-2021.** (Sources: 2022 state compliance reports for 2021 fishing year and for years prior to 2021, personal communication with MRIP)

<b>Year</b>	<b>NJ</b>	<b>DE</b>	<b>MD</b>	<b>VA</b>	<b>NC</b>	<b>SC</b>	<b>GA</b>	<b>FL</b>	<b>Total</b>
2012	830,891	202,283	2,565,599	8,786,350	848,495	132,264	104,944	2,190,268	15,661,094
2013	2,707,410	530,236	2,308,987	12,517,286	1,300,804	336,140	264,984	1,332,465	21,328,324
2014	852,733	806,256	2,197,125	9,533,829	1,935,961	600,482	289,781	1,359,207	17,576,096
2015	339,021	334,676	1,738,576	8,024,381	1,437,019	555,263	790,014	2,429,723	15,648,673
2016	8,236	24,546	659,318	7,276,719	1,109,570	268,470	402,254	3,553,777	13,302,890
2017	0	65,606	423,790	7,644,516	666,930	765,227	371,301	969,146	10,906,516
2018	104,321	12,370	305,469	5,472,329	472,917	335,833	241,382	1,176,999	8,121,620
2019	3,031	53,048	69,771	3,055,510	651,268	593,475	332,073	801,751	5,559,927
2020	58,097	54,193	244,788	6,529,494	673,377	827,904	232,535	2,010,168	10,630,556
2021	22,722	71,237	174,056	1,862,543	1,066,533	707,924	371,257	952,581	5,228,853

**Table 6. Recreational releases (number) of Atlantic croaker by state, 2012-2021.** (Sources: 2022 state compliance reports for 2021 fishing year and for years prior to 2021, personal communication with MRIP)

<b>Year</b>	<b>NJ</b>	<b>DE</b>	<b>MD</b>	<b>VA</b>	<b>NC</b>	<b>SC</b>	<b>GA</b>	<b>FL</b>	<b>Total</b>
2012	3,336,964	1,036,383	7,090,976	15,140,369	3,878,710	1,070,703	781,302	2,999,225	35,334,824
2013	2,980,744	1,811,661	7,557,223	18,480,099	6,729,556	3,754,143	1,361,943	1,265,571	44,025,744
2014	703,031	1,396,970	2,806,693	10,314,405	10,347,332	4,742,718	2,057,898	2,265,961	34,635,008
2015	240,840	309,389	1,236,293	6,815,343	9,632,560	3,236,774	1,320,939	2,451,253	25,243,391
2016	139,085	390,655	726,662	6,993,470	7,254,382	5,233,835	1,178,630	4,073,001	25,989,720
2017	152,540	230,455	2,829,255	8,464,305	4,631,445	4,755,853	1,059,539	1,770,846	23,894,238
2018	144,637	85,424	203,081	5,359,179	4,311,368	5,568,892	1,403,560	1,072,381	18,148,522
2019	33,333	101,523	1,243,785	6,642,685	3,634,211	3,768,288	1,893,287	2,259,705	19,576,817
2020	147,494	286,780	2,870,268	6,223,025	5,560,605	12,921,019	1,696,852	2,057,158	31,763,201
2021	116,606	353,743	1,909,466	4,306,221	9,539,047	8,207,074	1,687,801	1,363,075	27,483,033



# Atlantic States Marine Fisheries Commission

## ISFMP Policy Board

August 4, 2022  
9:45 a.m. - 1:15 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 (*S. Woodward*) 9:45 a.m.
2. Board Consent (*S. Woodward*) 9:45 a.m.
  - Approval of Agenda
  - Approval of Proceedings from May 2022
3. Public Comment 9:50 a.m.
4. Executive Committee Report (*S. Woodward*) 10:00 a.m.
5. Consider Changes to the Appeals Policy (*R. Beal*) **Final Action** 10:10 a.m.
6. Report from *De Minimis* Work Group (*T. Kerns*) **Possible Action** 10:20 a.m.
7. Update on East Coast Climate Change Scenario Planning (*T. Kerns*) 10:35 a.m.
8. Review of NOAA Fisheries' Climate Ecosystem Fisheries Initiative (*J. Hare*) 10:45 a.m.
9. Update on the Risk and Uncertainty Policy (*J. McNamee*) 10:55 a.m.
10. NEAMAP Report **Action** (*N. Lengyel Costa*) 11:20 a.m.
11. Committee Reports 11:40 a.m.
  - Legislative (*B. Hyatt*)
  - Habitat (*L. Havel*) **Action**
  - Atlantic Coast Fish Habitat Partnership (*L. Havel*)
  - Assessment Science (*S. Murray*) **Action**
12. Consider Providing Comments to NOAA Fisheries on Atlantic Sturgeon Bycatch Working Group Draft Action Plan, if necessary (*T. Kerns*) **Possible Action** 12:25 p.m.
13. Review of Blue Catfish Science in the Chesapeake Bay 12:30 p.m.  
(*M. Bromilow, C. Densmore, M. Groves*)
14. Review of NOAA Fisheries' Draft Equity and Environmental Justice Strategy 1:00 p.m.  
(*S. Benjamin*)
15. Review Noncompliance Findings (If Necessary) **Action** 1:10 p.m.
16. Other Business/Adjourn 1:15 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

ISFMP Policy Board  
Thursday August 4, 2022  
9:45 a.m. -1:15 p.m.  
Hybrid Meeting

Chair: Spud Woodward (GA) Assumed Chairmanship: 10/21	Vice Chair: Joe Cimino (NJ)	Previous Board Meetings: May 5, 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 May 5, 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. Executive Committee Report (10:00-10:10 a.m.)

### Background

- The Executive Committee will meet on August 3, 2022

### Presentations

- S. Woodward will provide an update of the Executive Committee's work

### Board action for consideration at this meeting

- none

## 5. Consider Changes to the Appeal Process Final Action (10:10-10:20 a.m.)

### Background

- The ISFMP Charter includes an opportunity for a state to appeal species management board decisions. A process was implemented in 2003 and revised to clarify appeal criteria.
- After the 2021 appeal decision regarding black sea bass commercial allocation, it was suggested additional improvements to the process may be appropriate.
- The Executive Committee has discussed and drafted a revised Appeals Process (**Briefing Materials**).

**Presentations**

- R. Beal will present the revised Appeals Process

**Board action for consideration at this meeting**

- Approve the revised Appeals Process

**6. Report from De Minimis Work Group Possible Action (10:20-10:35 a.m.)****Background**

- The Commission includes de minimis provisions in interstate FMPs to reduce the management burden for states that have a negligible effect on the conservation of a species. The de minimis provisions in FMPs vary by species and include a range of requirements for management measures, reporting requirements, and de minimis qualification periods.
- Past Policy Board de minimis discussions focused on the balance between standardization across FMPs and the flexibility for the species management boards in developing de minimis provisions.
- The Policy Board tasked a Work Group to provide a recommendation for addressing de minimis that addresses the concerns raised by the Board which were presented in May. Based on the recommendations the Board tasked staff to draft a white paper with options for a draft policy.

**Presentations**

- T. Kerns will present the De Minimis White Paper (**Supplemental Materials**)

**Board action for consideration at this meeting**

- Consider White Paper Options

**7. Update on East Coast Climate Change Scenario Planning Initiative (10:35-10:45 a.m.)****Background**

- In November 2020, the Northeast Region Coordinating Council (NRCC) initiated a region-wide scenario planning initiative. Through this East Coast Climate Change Scenario Planning Initiative, fishery managers and scientists are working collaboratively to explore jurisdictional and governance issues related to climate change and shifting fishery stocks.
- The specific focus of this scenario project is (i) to assess how climate change might affect stock distribution, availability and other aspects of east coast marine fisheries over the next 20 years, and (ii) to identify what this means for effective future governance and fisheries management.
- [A scoping process](#) was conducted in Fall of 2021 to introduce the initiative to stakeholders, to seek input on the draft project objectives, and to solicit input from stakeholders on factors and issues that might shape the future of East Coast fisheries. A summary of the scoping process and input received can be found [here](#).
- The Exploration Phase was conducted in spring, where three webinars were held that focused on identifying and analyzing the major drivers of change in depth which served as the “building blocks” for the scenario creation workshop.
- A [Scenario Creation Workshop](#) was held in June, where through a series of conversations and exercises, over 70 participants created a set of scenarios that describe how climate change *might* affect East Coast fisheries in the next 20 years.

Each scenario describes a different way in which changing oceanographic, biological, and social/economic conditions could combine to create future challenges and opportunities for East Coast fisheries.

**Presentations**

- T. Kerns will provide an update of the initiative and next steps

**Board action for consideration at this meeting**

- None

**8. Review of NOAA Fisheries' Climate Ecosystem Fisheries Initiative (10:45-10:55 a.m.)**

**Background**

- [The Climate, Ecosystems, and Fisheries Initiative](#) is a cross-NOAA effort to build the operational ocean modeling and decision support system needed to reduce impacts, increase resilience, and help marine resources and resource users adapt to changing ocean conditions.

**Presentations**

- J. Hare will present the initiative

**Board action for consideration at this meeting**

- None

**9. Update on Risk and Uncertainty Policy (10:55-11:20 a.m.)**

- At the 2020 Summer Meeting, Commissioners supported the continued development of the draft Risk and Uncertainty Policy and Decision Tool. The Policy Board tasked the Risk and Uncertainty Policy Workgroup with further refining the criteria for the Risk and Uncertainty Decision Tool and updating the striped bass example.
- In the Winter of 2021, the Board reviewed the draft Risk and Uncertainty Policy. The Board determined the Policy was ready for a test run and tasked the Tautog Management Board to use the Policy in conjunction with 2021 Tautog Stock Assessment Update.

**Presentations**

- J. McNamee will present a summary of the pilot of the Policy and recommendations

**Board action for consideration at this meeting**

- none

**10. NEAMAP Report (11:20-11:40 a.m.)**

- The Northeast Area Monitoring and Assessment Program (NEAMAP) is a cooperative state/federal program facilitating fishery-independent data collection, analysis & dissemination in the Northeast area (ME to NC).
- Over the years, there have been many discussions about what constitutes a NEAMAP survey and which surveys should be included under the NEAMAP name. Current NEAMAP surveys include the Southern New England/Mid-Atlantic Nearshore Trawl Survey (VIMS), Maine-New Hampshire Inshore Trawl Survey, and the Massachusetts Division of Marine Fisheries Bottom Trawl Survey. However, a number of other trawl surveys are conducted by NEAMAP partner state and federal agencies, which could

be included under the NEAMAP umbrella. In addition, there has been an ongoing need to clarify what criteria NEAMAP surveys must meet, as well as whether or not NEAMAP should develop common protocols.

- The NEAMAP Operations Committee developed a draft NEAMAP survey definition to clarify to the public what constitutes a “NEAMAP survey.” The new definition would expand the NEAMAP survey label to the other NEAMAP partner trawl surveys.
- The NEAMAP Operations Committee is also working to develop a high-level set of NEAMAP principles and guidance documents on specific technical topics. These principles and guidance documents will not require methodology changes from ongoing survey but will serve to define best practices.

#### **Presentations**

- N. Lengyel Costa will present an overview of NEAMAP and the new NEAMAP survey definition, as well as the planned next steps for developing NEAMAP principals and protocols.

#### **Board action for consideration at this meeting**

- Consider approval of the NEAMAP survey definition.

### **11. Committee Reports (11:40 a.m.- 12:25 p.m.)**

#### **Background**

- In 2022, the **Legislative Committee** has engaged Congress on the Recovering America’s Wildlife Act, the Forage Fish Conservation Act, the Shark Fin Sales Elimination Act, and FY22, FY23, and 24 Appropriations. It provided talking points and background information for Commissioners to interact with Congressional staff and facilitated several virtual interactions.
- The **Habitat Committee** met in June. The Committee has completed the update to the 2018 ASMFC State Climate Change Initiatives Gaps and Recommendations Report (**Briefing Materials**) and the Fish Habitats of Concern designations for Commission-managed species and Atlantic sturgeon
- Atlantic Coast Fish Habitat Partnership’s Steering Committee met in Summer 2022. The FY2022 National Fish Habitat Partnership funded projects were announced earlier this year.
- The Stock Assessment Committee met to review the upcoming Commission stock assessment and made adjustments due to work load.

#### **Presentations**

- B. Hyatt will provide an update of the Legislative Committee’s work in 2022
- L. Havel will provide and update of the Habitat Committee’s work and present the two reports
- L. Havel will provide an update of the ACFHP’s work
- S. Murray will provide an update of the Stock Assessment Committee’s work (**Supplemental Materials**)
- K. Drew and K. Anstead will update on the progress of the River Herring and American Eel stock assessments

#### **Board action for consideration at this meeting**

- Consider approval of the update to the 2018 ASMFC State Climate Change Initiatives Gaps and Recommendations Report
- Consider approval of the updated stock assessment schedule

**12. Consider Providing Comments to NOAA Fisheries on Atlantic Sturgeon Bycatch Working Group Draft Action Plan Possible Action, if necessary (12:25-12:30 p.m.)**

**Background**

- NOAA Fisheries will review the Atlantic Sturgeon Bycatch Working Group Draft Action Plan on Tuesday August 2.

**Presentations**

- T. Kerns will provide an update of the Commissions discussion regarding the Draft Action Plan

**Board action for consideration at this meeting**

- Consider Comments to NOAA Fisheries on the Draft Action Plan

**13. Review of Blue Catfish Science in the Chesapeake Bay (12:30-1:00 p.m.)**

**Background**

- The NOAA Invasive Catfish Working Group, the U.S. Geological Survey's Eastern Ecological Science Center, and Maryland DNR are conducting science related to invasive blue catfish predation/diet, life history, movement, and mitigation strategies in the Chesapeake region (**meeting materials**).

**Presentations**

- M. Bromilow will provide an overview of the NOAA Chesapeake Bay Office Invasive Catfish Workgroup and related science activities.
- M. Groves will present on blue catfish monitoring and biological data collection in Maryland's tidal tributaries of the Chesapeake Bay.
- C. Densmore will present on USGS science examining blue catfish health and disease, reproduction, and diet

**Board action for consideration at this meeting**

- None

**14. Review of NOAA Fisheries' Draft Equity and Environmental Justice Strategy (1:00-1:10 p.m.)**

**Background**

- NOAA Fisheries is committed to advancing equity and environmental justice, including equal treatment, opportunities, and environmental benefits for all people and communities, while building on continuing efforts and partnerships with underserved and underrepresented communities. To help guide their work, they developed the [Equity and Environmental Justice Strategy](#). This strategy describes the path that we will take to incorporate equity and environmental justice into the vital services we provide to all stakeholders.

**Presentations**

- S. Benjamin will provide a review of the draft strategy

**Board action for consideration at this meeting**

- None

**15. Review Non-Compliance Findings, if Necessary Action**

**16. Other Business/Adjourn**

# ***Atlantic States Marine Fisheries Commission***

## **APPEALS PROCESS**

For Executive Committee consideration on July 26, 2022 and  
ISFMP Policy Board consideration on August 4, 2022.

### **Background**

The Atlantic States Marine Fisheries Commission's interstate fisheries management process is based on the voluntary commitment and cooperation of the states. The involved states have frequently demonstrated their willingness to compromise and the overall process has proven to be very successful. However, there have been instances where a state/jurisdiction has expressed concern that the Board decisions have not been consistent with language of an FMP, resulted in unforeseen circumstances or impacts, did not follow established processes, or were based on flawed technical information. In order to address these concerns, the ISFMP Policy Board charged the Administrative Oversight Committee with "exploring and further developing an appeals process".

Under the current management process the primary policy development responsibility lies with species management boards. And, in the case of development of new fishery management plans or amendments the full Commission has final approval authority prior to implementation. The purpose of the appeals process is to provide a mechanism for a state/jurisdiction to petition for a management decision to be reconsidered, repealed or altered. The appeals process is intended to only be used in extraordinary circumstances where all other options have been exhausted. The management boards have the ability to go back and correct errors or address additional technical information through the recently clarified process on "amending or rescinding previous board actions".

During the December 2003 ISFMP Policy Board meeting, the decision was made to continue to have the Policy Board serve as the deliberative body that will consider valid appeals. This decision is consistent with the language that is included in the ISFMP Charter. However, the Charter does not provide detailed guidance on how an appeal is to be addressed.

This paper details for the Commission appeals process.

**Appeal Criteria** – The intent of the appeals process is to provide a state with the opportunity to have a decision made by a species management board or section reconsidered by the Policy Board. The following criteria will be used to guide what type of decisions can be appealed. In general, management measures established through the FMP/amendment/addendum process can be appealed. However, the appellant must use one of the following criteria to justify an appeal:

1. Decision not consistent with, or is contrary to, the stated goal and objectives of the current

FMP (Goal and Objective Section of FMPs/Amendments or Statement of the Problem Section of Addenda).

2. Failure to follow process as identified in the ISFMP Charter, Rules and Regulations or other ASMFC guiding documents (e.g. conservation equivalency guidance).
3. Insufficient/inaccurate/incorrect application of technical information. Examples can include but are not limited to:
  - a. If for any calculations used in the decision, an error which changes the results was identified after the decision was rendered;
  - b. If any data used as the basis for a decision, undergoes a modification which impacts results after the decision was rendered (i.e. a landings dataset is adjusted significantly due to a recalibration or application of a control rule adjustment);
  - c. If data is incorrectly identified and therefore incorrectly applied, such as a misidentification of landings information as catch information, or incorrectly assigned landings/catch to a jurisdiction;
  - d. If information used as the basis for the decision lacked scientific or statistical rigor, thereby calling in to question the sound basis for the decision;
  - e. If the historical landings, catch, or abundance time series used as a basis for a decision is found to be incorrect.

Any appeal based on criterion 3 may be verified independently by a technical body appointed by the Chair, as needed.

4. Management actions resulting in unforeseen circumstances/impacts that were not considered by the Board as the management document was developed.

The following issues could not be appealed:

1. Management measures established via emergency action
2. Out-of-compliance findings (this can be appealed but, through a separate, established process)
3. Changes to the ISFMP Charter

**Appeal Initiation** – The ISFMP Charter provides that a state aggrieved by a management board action can appeal to the ISFMP Policy Board. Any state can request to initiate an appeal; also a group of states can submit a unified request for an appeal. The states are represented on the Commission by three representatives that have the responsibility of acting on behalf of the states' Executive and Legislative branches of government. Therefore, in order to initiate an appeal all seated Commissioners (not proxies) of a state's caucus must agree that an appeal is warranted and must sign the letter submitted to the Commission. If a multi-state appeal is requested all the Commissioners from the requesting states must sign the letter submitted to the Commission. During meetings where an appeal is discussed proxies will be able to participate in the deliberations. Meeting specific proxies will not be permitted to vote on the final appeal determination, consistent with Commission policy.



A state (or group of states) can request and appeal on behalf of the Potomac River Fisheries Commission, District of Columbia, National Marine Fisheries Service, or the United States Fish and Wildlife Service.

The letter requesting an appeal will be submitted to the Chair of the Commission and include the measure(s) or issue(s) being appealed, the justification for the appeal, and the commitment to comply with the finding of the Policy Board. This letter must also include a demonstration that all other options to gain relief at the management board level have been exhausted. This letter must be submitted via certified mail or email at least **45 days** prior to a scheduled ASMFC Meeting Week. The Commission Chair, Vice-Chair and immediate past Chair will determine if the appeal meets the qualifying guidelines and notify the Policy Board of their decision. If the immediate past chair is no longer a commissioner the Chair will select an alternate from a state that is not affected by the appeal. Also, if the Chair, Vice-Chair or immediate past Chair is a signatory to the appeal, the Chair will select an alternate from a state that is not affected (or minimally affected) by the appeal.

**Convene a “Fact Finding” Committee (optional)** – Upon review of the appeal documentation, the Commission Chair, Vice-Chair and immediate past Chair (or alternate if necessary, as described above) may establish a “Fact Finding” Committee to conduct analyses and/or compile additional information if necessary. This group will be made up of individuals with the technical expertise (including legal, administrative, social, economic, or habitat expertise if necessary) and familiarity with the fishery to conduct the necessary analysis. If such a committee is convened the schedule included in the last section of this document may need to be adjusted to provide time for the Committee to conduct analyses. The Commission Chair, Vice-Chair and immediate past Chair (or alternate if necessary, as described above) may set a deadline for the Committee to complete its work to ensure the appeal is addressed in a timely manner.

**ISFMP Policy Board Meeting** – Following the determination that an appeal has met the qualifying guidelines, a meeting of the Policy Board will be convened at a scheduled ASMFC meeting week. The agenda of this meeting will be set to allow sufficient time for all necessary presentations and discussions. The Chair of the Commission will serve as the facilitator of the meeting. If the Chair is unable to attend the meeting or would like to more fully participate in the deliberations, the Vice-Chair of the Commission will facilitate the meeting. The ISFMP Director will provide the background on the development of the management program as well as a summary of the justification provided in the record for the management board’s action. The ISFMP Director will also present the potential impacts of the appeal on other affected states. The appellant Commissioners will present their rationale for appealing the decision and provide a suggested solution. The Policy Board will then discuss the presentations and ask any necessary questions. **If the Policy Board needs additional technical information to support a decision on an appeal, the Policy Board can request additional analysis from one of the Commission’s technical support groups. This request will be addressed prior to the Commission’s next quarterly meeting and then the Policy Board will be reconvened to take**

action on the appeal. The Policy Board can meet between quarterly meetings if the timing allows. The Policy Board will vote to determine if the management board's action was justified. A simple majority of the Policy Board is required to forward a recommendation to a management board for corrective action. If the Policy Board determines that the existing management program should be modified, it will issue a finding to that effect as well as any guidance regarding corrective action to the appropriate species management board. The referral may be worded to allow the management board flexibility in determining the details of the corrective action. If the Policy Board requires a management board to take specific corrective actions, the scope of potential corrective actions must be consistent with the presentation of management options provided to the public in the Draft Amendment or Addendum.

Upon receipt of the Policy Board's recommendation the management board will discuss the findings and make the necessary changes to address the appeal. The management board is obligated to make changes that respond to the findings of the Policy Board. A simple majority of the management board will be necessary to approve the changes.

If the management board is unable to make the changes necessary to respond to the findings of the Policy Board, the following options are available:

1. The management board can request clarification from the Policy Board on the specifics of the findings. A meeting of the Policy Board will be scheduled to ensure the requested clarification is provided to the management board to take action at the Commission's next quarterly meeting.
2. The management board can inform the Policy Board that it is unable to address the findings and the Policy Board will take action to approve changes to address the appeal.
3. The management board can request additional analyses from the technical committee or other technical support group (e.g. Management and Science Committee, Assessment Science Committee). A meeting of the appropriate technical group will be scheduled to ensure the requested information is provided to the management board to take action at the Commission's next quarterly meeting.

**Appeal Products and Policy Board Authority** – Following the Policy Board meeting a summary of the meeting will be developed. This summary will include a detailed description of the findings and will be forwarded to the appropriate management board and Policy Board upon completion. If the Policy Board determines that changes to the management program are necessary, the summary may include guidance to the management board for corrective action. The report of the Policy Board will be presented to the management board for action at the next scheduled meeting.

**Considerations to Prevent Abuse of the Appeals Process** – The appeals process is intended to be used only in extraordinary situations and is in no way intended to provide a potential avenue to preempt the established board process. The initiation of an appeal will not delay the Commission process for finding a state out of compliance nor delay or impede the imposition of



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## De Minimis White Paper

August 2022

The Atlantic States Marine Fisheries Commission (Commission) includes *de minimis* provisions in interstate Fishery Management Plans (FMP) to reduce the management burden for states that have a negligible effect on the conservation of a species. The ISFMP Charter includes a definition of *de minimis* and the requirement to include *de minimis* provisions in the FMP.

*Definition: De Minimis – A situation in which, under existing conditions of the stock and the scope of the fishery, conservation and enforcement actions taken by an individual state would be expected to contribute insignificantly to a coastwide conservation program required by an FMP or amendment.*

*FMP Provisions: ... and provided that each fishery management plan shall address the extent to which States meeting de minimis criteria may be exempted from specific management requirements of the fishery management plan to the extent that action by the particular States to implement and enforce the plan is not necessary for attainment of the fishery management plan's objectives and the conservation of the fishery.*

The *de minimis* provisions in FMPs vary by species and include a range of requirements for management measures, reporting requirements, and *de minimis* qualification thresholds. This white paper outlines a draft policy that would set *de minimis* standards for Commission FMPs. The draft policy proposes to allow species Boards to deviate from these standards to address unique characteristics of a fishery. It is noted, Federal FMPs do not recognize *de minimis* standards; therefore, any *de minimis* measure implemented in a Commission FMP for jointly managed species could result in inconsistent measures between state and federal waters.

### **Draft De Minimis Policy**

*De minimis* provisions within Commission FMPs are designed to reduce the management burden for states that have a negligible effect on the conservation of a species. This draft policy outlines *de minimis* standards for Commission FMPs. A species board may deviate from these standards to address unique characteristics of a fishery. If a board deviates from the Policy's standards, a rationale will be provided within the FMP.

### **Minimum Standards**

By definition states that meet *de minimis* standards would have a negligible effect on the conservation of a species, therefore those states should not have to change regulations year-to-year to meet FMP requirements. Each FMP will establish a set of measures for *de minimis* states to implement that would not have to change year-to-year. These measures would provide a minimal level of the species conservation as well as prevent regulatory loop holes. These measures could be for both the commercial and recreational fishery or different measures could be set for each fishery.

### **De Minimis Fishery Designation**

*De minimis* can apply to commercial or recreational fisheries or both. In some cases, a state could meet *de minimis* requirement for one fishery but not both, and depending on how the FMP defines *de minimis* the state may not meet the requirement and thus would not be considered *de minimis* (e.g. The FMP for species X sets the *de minimis* requirement by looking at total commercial and recreational landings together, state A has a very small commercial fishery but a recreational fishery that brings them above the *de minimis* threshold. If the requirements had been separate, state A would have met *de minimis* for the commercial fishery but not the recreational fishery).

**Option 1:** Each species board will review the *de minimis* provisions to determine how *de minimis* will be considered (both fisheries together, separated or only one sector).

**Option 2:** *De minimis* provisions will be considered separately for commercial and recreational fisheries or for only one sector only.

**Option 3:** *De minimis* provisions will be considered with commercial and recreational fisheries combined.

### **De Minimis Thresholds**

*De minimis* thresholds will be based on the average landings from the previous X (see options below) years of landings. The averaging of multiple years of data prevents a state from taking action as a result of a rare event.

Options for the number of years (X) data would be averaged:

**Option 1:** two years of data

**Option 2:** three years of data

A state can be considered *de minimis* if the average landings for the last X years is less than Y % (see options below) of the coastwide landings.

Options for the percent of the coastwide landings (Y):

**Option 1:** Task the species boards to have the technical committee review the *de minimis* thresholds to determine an appropriate level that would have a negligible effect on the conservation of the species.

**Option 2:** less than 1% of the average X years of landings data

**Option 3:** less than 0.5% of the average X years of landings data

### **Sampling Requirements**

*De minimis* states can be exempt from sampling requirements because it may be difficult to meet the sampling requirements of the plan when there are minimal landings. For stock assessments it may be important to have some biological samples on the outer edges of a species range where *de minimis* states often fall. For data poor species, it may be necessary for states to collect biological samples, even with minimal landings. Species boards shall have the stock assessment subcommittee or technical committee review the sampling requirements for *de minimis* states to determine what level, if any, is appropriate.

**Current FMP *De Minimis* Measures**

<b>Species</b>	<b><i>De Minimis</i> Qualification (include # of landing years if applicable)</b>	<b>Sector Application: Commercial and/or Recreational; Both (can not split them)</b>	<b>Exemption From:</b>
<b>American Eel</b>	Applicable by life stage if, for the proceeding 2 years, the average commercial landings (by weight) of that life stage constitute less than 1% of coastwide commercial landings for that life stage for the same 2 year period.	Commercial	Having to adopt the commercial and recreational fishery regulatoins for that particular life stage and any fishery-dependent monitoring elements for that life stage and any fishery-dependent monitoring elements for that life stage.
<b>American Lobster</b>	Average of last 2 years commercial landings is not more than 40,000 lbs	Commercial	All FMP requirements except coastwide measures and those deemed necessary by the Board when <i>de minimis</i> is granted
<b>Atlantic Croaker</b>	Average commercial or recreational landings (by weight) constitute <1% of the average coastwide commercial or recreational landings for the most recent three years in which data is available.	Commercial and/or recreational	A state that qualifies for <i>de minimis</i> for commercial and/or recreational fisheries is exempt from implementing management response for the <i>de minimis</i> fishery when the 30% moderate response level from the Traffic Light Approach is triggered.
<b>Atlantic Herring</b>	Average of last three years' combined commercial landings (weight) is < 1% of coastwide for same two years	Commercial	Not specified in Plan
<b>Atlantic Menhaden</b>	A state's bait landings must be less than 1% of the total coastwide bait landings for the most recent two years. State(s) with a reduction fishery are not eligible for <i>de minimis</i> consideration	Commercial (There is no management of the recreational fishery)	If granted <i>de minimis</i> status by the Board, states are exempt from implementing biological sampling as well as pound net catch and effort data reporting.
<b>Atlantic Sturgeon</b>	NA	NA	NA

<b>Black Drum</b>	The average combined commercial and recreational landings (by weight) constitute less than 1% of the average coastwide commercial and recreational landings in the most recent three years in which data is available.	Both	Not specified in Plan
<b>Black Sea Bass</b>	NA	NA	NA
<b>Bluefish</b>	Commercial landings less than 0.1% of the total coastwide commercial landings in the last preceding year for which data is available	Commercial	Allocated 0.1% of commercial quota. Exempt from the Biological Monitoring Program.
<b>Cobia</b>	In order for a state to be considered <i>de minimis</i> for its recreational fishery, its recreational landings for 2 of the previous 3 years must be less than 1% of the coastwide recreational landings for the same time period. In order for a state to be considered <i>de minimis</i> for its commercial fishery, its commercial landings for 2 of the previous 3 years must be less than 2% of the coastwide commercial landings for the same time period.	Commercial and/or recreational	A recreational <i>de minimis</i> state may choose to match the recreational management measures implemented by an adjacent non- <i>de minimis</i> state (or the nearest non- <i>de minimis</i> state if none are adjacent) or limit its recreational fishery to 1 fish per vessel per trip with a minimum size of 33 inches fork length (or the total length equivalent, 37 inches). Commercial <i>de minimis</i> states are subject to the same commercial regulations as the rest of the coastwide fishery but are not required to monitor their in-season harvests. To account for potential landings in <i>de minimis</i> states not tracked in-season against the quota, 4% of the commercial quota or 5,000 pounds, whichever is less, is set aside and not accessible to non- <i>de minimis</i> states.
<b>Horseshoe Crab</b>	For the last 2 years, a state's combined average landings, based on numbers, must be < 1% of coastwide landings for same 2-year period	Commercial	States that qualify for <i>de minimis</i> status are not required to implement any horseshoe crab harvest restriction measures, but are required to implement components A, B, E and F of the monitoring program.

**Current FMP *De Minimis* Measures**

<b>Jonah Crab</b>	States may qualify for <i>de minimis</i> status if, for the preceding three years for which data are available, their average commercial landings (by weight) constitute less than 10 1% of the average coastwide commercial catch	Commercial	States who qualify for <i>de minimis</i> are not required to implement fishery independent and port/sea sampling requirements
<b>Northern Shrimp</b>	NA	NA	NA
<b>Red Drum</b>	The PRT chose to evaluate an individual state's contribution to the fishery by comparing the two-year average of total landings of the state to that of the management unit.	Not specified in Plan	<i>De minimis</i> status does not exempt either state from any requirement; it may exempt them from future management measures implemented through addenda to Amendment 2, as determined by the Board.
<b>Scup</b>	NA	NA	NA
<b>Shad and River Herring</b>	A state can request <i>de minimis</i> status if commercial landings of river herring or shad are less than 1% of the coastwide commercial total.	Commercial	<i>De minimis</i> status exempts the state from the subsampling requirements for commercial biological data.
<b>Spanish Mackerel</b>	The previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch.	Both	Those states that qualify for <i>de minimis</i> are not required to implement any monitoring requirements, as none are included in the plan.
<b>Spiny Dogfish</b>	Commercial landings are < 1% of coastwide commercial landings	Commercial only	State is exempt from the monitoring requirements of the commercial spiny dogfish fishery for the following fishing year. However, must continue to report any spiny dogfish commercial or recreational landings within their jurisdiction via annual state compliance reports.
<b>Coastal Sharks</b>	Not specified in Plan; determined on a case by case basis.	Not specified in Plan	Not specified in Plan, but unnecessary to implement all regulatory requirements in the FMP

<b>Spot</b>	A state qualifies for <i>de minimis</i> status if its past 3-years' average of the combined commercial and recreational catch is less than 1% of the past 3-years' average of the coastwide combined commercial and recreational catch.	Both	A state that qualifies for <i>de minimis</i> for both fisheries is exempt from implementing management response for the <i>de minimis</i> fisheries when the 30% moderate response level from the Traffic Light Approach is triggered.
<b>Spotted Sea Trout</b>	A state qualifies for <i>de minimis</i> status if its previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch.	Both	Those states that qualify for <i>de minimis</i> are not required to implement any monitoring requirements, as none are included in the plan.
<b>Striped Bass</b>	Average of last two years' combined commercial and recreational landings (lbs) is < 1% of coastwide for same two years	Both	State requested requirements that the Board approves (except annual reporting)
<b>Summer Flounder</b>	Landings from the last preceding calendar year which data are available are less than 0.1% of the total coastwide quota for that year	Commercial	State quota will be 0.1 % of the coastwide quota and subtracted from the coastwide quota before allocation to the other states (state waters only)
<b>Tautog</b>	Most recent years commercial landings are < 1% of coastwide commercial landings or less than 10,000 lbs	Commercial	The <i>de minimis</i> state is required to implement the commercial minimum size provisions, the pot and trap degradable fastener provisions, and regulations consistent with those in the recreational fishery (including possession limits and seasonal closures). The state must monitor its landings on at least an annual basis. If granted <i>de minimis</i> status, a state must continue to collect the required 200 age/length samples.
<b>Weakfish</b>	Combined average commercial and recreational landings (by weight) constitute less than 1% of the coastwide commercial and	Both	The recreational or commercial fishing provisions of Amendment 4, except BRD requirements and annual reporting



**Current FMP *De Minimis* Measures**

	recreational landings for the most recent two year period.		
<b>Winter Flounder</b>	Preceding three years landings for which sector data are available average <1% sector coastwide landings	Commercial and/or recreational	Biological monitoring/sub-sampling activities for the sector for which <i>de minimis</i> has been granted

penalties for delayed compliance.

**Limiting Impacts of Appeal Findings** – If a state is successful in an appeal and the management program is altered, another state may be negatively impacted by the appeals decision. In order to prevent an appeals “chain reaction,” the Policy Board’s recommendation and the resulting management board’s decision will be binding on all states. All states with an interest in the fishery will be obligated to implement the changes as approved by the management board. Upon completion of the appeals process, a state is not precluded from taking further action beyond the Commission process to seek relief.

If the Policy Board supports the appeal and determines that corrective action is warranted, the potential for management changes to negatively impact other states will be evaluated by the Policy Board and the species management board. **In the case of jointly managed species, the Policy Board and the species management board should consider that corrective action could result in inconsistent measures between state and federal waters.**

### **Appeals Process Timeline**

1. Within **15 working days** of receipt of a complete appeal request the Commission Chair, Vice-Chair, and immediate past chair (or alternate) will determine if the state has an appeal which meets the qualifying guidelines.
2. Upon a finding that the appeal meets the qualifying guidelines, the appeal will be included on the agenda of the ISFMP Policy Board meeting scheduled during the next ASMFC Meeting Week (provided an adequate time period is available for preparation of the necessary documentation).
3. Following the finding that an appeal meets the qualifying guidelines, Commission staff and the appellant commissioners will have a minimum of **15 working days** to prepare the necessary background documents.
4. The background documents will be distributed at least **15 days** prior to the Policy Board meeting.
5. If the management board requests additional information from the Policy Board or a technical support group, a meeting of the Policy Board or technical support group will be scheduled as quickly as practical to allow the management board to take action at the Commission’s next quarterly meeting.

A summary of the Policy Board meeting will be developed and distributed to all Commissioners within **15 working days** of the conclusion of the meeting.



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO: ISFMP Policy Board**

**FROM: Sarah Murray, Fisheries Science Coordinator**

**DATE: July 26, 2022**

**SUBJECT: Risk and Uncertainty Policy**

### Background

In recent years, the Commission has been developing a Risk and Uncertainty Policy and Decision Tool. At the 2021 Winter Meeting, the ISFMP Policy Board recommended using tautog as a pilot case for the policy. Preliminary Risk and Uncertainty Decision Tools were developed for each of the four tautog management regions using input from the Tautog Management Board, Tautog Technical Committee, and the Committee on Economic and Social Sciences. The Tautog Board reviewed the decision tools and the Preliminary Tautog Risk and Uncertainty Report (see supplemental materials) at the 2021 Fall Meeting.

In the normal risk and uncertainty process, the next phase would only be triggered if a management action was initiated. However, the Tautog Board did not initiate a management action at the 2021 Fall Meeting. To complete the tautog pilot case and improve understanding of the process, the Tautog Board tasked staff with developing hypothetical scenarios that illustrated how the tool would have worked (see Risk and Uncertainty Decision Tool Hypothetical Scenarios Memo in supplemental materials).

### Next Steps

The following input is requested from the Policy Board in order to determine the next steps for the Risk and Uncertainty Policy:

- Should a test case with a different species be conducted or should the Commission move forward with finalizing and approving the policy?
  - Note: the current iteration of the process and decision tool are only applicable to data-rich, quota-managed species. The likely next candidate species, for either another test case or the first implementation of the policy, include: tautog (assessment update, 2024), red drum (benchmark assessment, 2024), and cobia (benchmark assessment, 2025).
- Should the Commission develop and test a process for data poor species in the interim (before the next candidate data-rich species)?
- Should the Policy only apply to species that are solely managed by ASMFC?
- Should the Policy require ASMFC to conduct the process when a relevant management action is expected or should the process be optional?

M22-85



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## MEMORANDUM

**TO: Tautog Management Board**

**FROM: Sarah Murray, Fisheries Science Coordinator**

**DATE: January 10, 2022**

**SUBJECT: Risk and Uncertainty Decision Tool Hypothetical Scenarios**

### Background

In recent years, the Commission has been developing a policy to better account for the risk and uncertainty that is inherent to fisheries management. One of the key components of accounting for risk is determining risk tolerance – in the case of the Commission, how much risk is acceptable for a species or stock. The Commission’s preliminary Risk and Uncertainty Policy provides a consistent yet flexible method for arriving at a recommended risk level that takes into account the Commission’s priorities and characteristics of the stock and fishery.

In the typical management-decision process, projections of biomass are used to help determine the appropriate harvest level for a stock. Different harvest levels result in different probabilities of achieving the reference points; for example, higher harvest levels have a lower probability of being at or below the  $F$  target, while lower harvest levels have a higher probability of achieving the  $F$  target. Management priorities and risk tolerance determine the appropriate probability to use to set the harvest level for a stock. In the past, the Commission decisions regarding this probability have been made via *ad hoc* Board discussions.

The preliminary Risk and Uncertainty Decision Tool provides a structured method for arriving at the probability of achieving the reference points. The decision tool incorporates different information related to the risk and uncertainty for a species (technical inputs) and combines it with the relative importance of the information (weighting) to arrive at the recommended probability of achieving the reference points.

### Tautog Pilot Case

At the 2021 Winter Meeting, the ISFMP Policy Board recommended using tautog as a pilot case for the Commission’s draft Risk and Uncertainty Policy. Preliminary Risk and Uncertainty Decision Tools were developed for each of the four tautog management regions based on input from the Tautog Management Board, Tautog Technical Committee (TC), and Committee on Economic and Social Sciences (CESS). The Board reviewed the preliminary Tautog Risk and Uncertainty Report, which summarized the preliminary decision tools, at the 2021 Fall Meeting.

M22-08

Normally, the risk and uncertainty process would only continue to the next stage if a management action was initiated. Otherwise, the species decision tool would be saved for future use. While the Tautog Board did not initiate a management action at the 2021 Fall Meeting, the Board tasked staff with developing hypothetical scenarios to illustrate how the tool would have worked and complete the tautog pilot case.

### **Decision Tool Process**

If a management action had been initiated, the next step would be for the TC to produce a preliminary recommended probability (Table 1) of achieving the fishing mortality ( $F$ ) target reference point for each of the management regions. The preliminary probabilities would include all of the components of the decision tool except for the socioeconomic component – in other words, this would be the recommended level of precaution if no socioeconomic considerations were taken into account. The TC would conduct projections to determine the harvest level that would result in  $F$  being at or below  $F$  target with the preliminary probabilities. Next, the CESS would compare the preliminary harvest levels to the status quo harvest levels and use the difference to score the management effect portion of the socioeconomic component. The socioeconomic scores would be added to the decision tool to produce a final recommended probability that includes socioeconomic considerations. The Board would review the final recommended probability and decide whether to accept it and use it to determine the future harvest level, or adjust the weightings to better reflect Board priorities.

### **Hypothetical Scenarios**

In the case of tautog, a management action was not initiated and, as a result, the final stage using the probabilities with projections will not be completed. To complete the tautog pilot, hypothetical scenarios (Table 2) were developed to illustrate how the decision tools would have worked. These scenarios are not based on projections and therefore do not represent real scenarios or management options. While the real process would use the difference between the preliminary harvest level and the status quo to score management effect, these scenarios use hypothetical percent differences. For example, scenarios 2a-e (Table 2) demonstrate what the final recommended probabilities would be if the preliminary harvest level was a 5-10% change from status quo; this change could be an increase or a decrease in harvest.

The scenarios (Table 2, scenarios 2b - e) also include different potential weightings for the socioeconomic components. In the decision tool, the short-term socioeconomic component often decreases the probability (reducing precaution) and long-term socioeconomic component often increases the probability (increasing precaution). The socioeconomic component serves as a way to balance tradeoffs between short-term and long-term socioeconomic considerations, based on Board preferences. In the weightings produced from the Tautog Board's input, the short-term and long-term components were weighted roughly the same (Table 2, scenario 2a). This is a result of differing opinions on short-term and long-term

tradeoffs, which averaged out to similar scores. Because the short-term and long-term socioeconomic technical inputs were the same scores, the two components largely balance each other out. As a result, the different hypothetical management effect scores have little to no impact on the final probability.

To illustrate how the management effect score could impact the final probability, additional scenarios with alternate weightings for the socioeconomic components were added. The original decision tool weightings were based on Board input on the relative importance of each decision tool component compared to the others, scored from much less important (1) to much more important (5). Scenarios 2b and 2d demonstrate what the hypothetical scenarios would look like if short-term was scored as a 5 and long-term was scored as a 1, and vice-versa. While the original weightings were all based on the 1 – 5 scores, it is possible to weight a component even higher than this. Scenarios 2c and 2e demonstrate a more extreme weighting, which is the equivalent of having scored the short-term or long-term component as a 10. The tautog FMP mandates that the Board must use at least a 50% chance of achieving the *F* target when taking action to reduce *F*, so for the hypothetical scenarios, 50% was used as the lower limit and scenarios or weightings that would have resulted in a recommended probability of less than 50% were not included. A higher probability of achieving *F* target would result in a lower harvest limit.

For all regions, putting more weight on short-term socioeconomic considerations resulted in a lower recommended probability, while putting more weight on long-term socioeconomic considerations resulted in a higher recommended probability. The amount that the probability was changed depended on how much higher the weights for these components were. For the scenarios where the short-term socioeconomic considerations were weighted higher (2b-c), the standard most important score (5) resulted in a 2% decrease from the preliminary probability, while the more extreme weighting (10) resulted in a 4% decrease. For the scenarios where the long-term socioeconomic considerations were weighted higher (2d-e), the standard most important score (5) resulted in a 2% increase from the preliminary probability while the more extreme weighting (10) resulted in a 4% increase. In all cases, the adjustments do not result in radical departures from reasonable probability levels. At the same time, the process creates a more refined and transparent representation of the Commission's risk policy in the management decision-making process.

### **Next Steps**

The next step for the tautog pilot case is to report back to the ISFMP Policy Board on lessons learned. For tautog, the regional decision tools will be saved for potential consideration with future management actions.

**Table 1: Tautog Regional Decision Tool Preliminary Probabilities (Probabilities without Socioeconomic Considerations) for Achieving F Target**

Tautog Regional Decision Tool Preliminary Probabilities				
Region	MARI	LIS	NJ-NYB	DelMarVa
Amendment 1 Status Quo	50%			
Preliminary probabilities by region (probabilities without socioeconomic component)	54%	59%	61%	56%

Higher probabilities of achieving the F target have a lower risk of overfishing but will result in lower harvest limits.

**Table 2: Tautog Regional Decision Tool Hypothetical Scenarios**

Tautog Regional Decision Tool Hypothetical Scenarios								
Scenario	Socioeconomic Component Weightings				Regional Final Recommended Probabilities (All Components)			
	Commercial		Recreational		MARI	LIS	NJ-NYB	DelMarVa
	ST Weight	LT Weight	ST Weight	LT Weight				
<b>Scenario 1: No change to harvest level</b>								
1: Any weightings	*	*	*	*	54%	59%	61%	56%
<b>Scenario 2: 5-10% change to harvest level</b>								
2a: No change to weightings	0.09	0.09	0.10	0.10	54%	59%	61%	56%
2b: Short-term socioeconomic considerations (ST) most important (5); long-term (LT) least important (1)	0.16	0.03	0.16	0.03	52%	56%	59%	54%
2c: ST most important, with extra high weighting (10); LT least (1)	0.25	0.03	0.25	0.03	50%	55%	57%	52%
2d: ST least important (1); LT most (5)	0.03	0.16	0.03	0.16	56%	61%	63%	58%
2e: ST least important (1), LT most, with extra high weighting (10)	0.03	0.25	0.03	0.25	58%	62%	65%	60%

\*If the change to the harvest level is 0, the socioeconomic component will be 0 regardless of the weightings

**Atlantic States Marine Fisheries Commission**  
**Preliminary Tautog Risk and Uncertainty Report**

Produced for the 2021 Tautog Assessment Update

October 2021

The following report details the preliminary inputs for the Tautog Risk and Uncertainty Decision Tools. There are four decision tools, one for each tautog management region: Massachusetts – Rhode Island (MARI); Long Island Sound (LIS); New Jersey – New York Bight (NJ-NYB); and Delaware, Maryland, Virginia (DelMarVa). The report summarizes both technical inputs (scores) and weightings for the decision tools. The technical inputs characterize components of the tautog stock and fishery that may contribute to risk and uncertainty, while the weightings indicate the relative importance of each component to management considerations for tautog.

**Preliminary Risk and Uncertainty Decision Tools for Tautog Management Regions**

Decision Tool Component	MARI		LIS		NJ-NYB		DelMarVa	
	Weight	Score	Weight	Score	Weight	Score	Weight	Score
<b><i>Stock Status, scale: 0 to 1</i></b>								
P(SSB < SSB threshold)	0.13	0.000	0.13	0.003	0.13	0.491	0.13	0.085
P(SSB < SSB target)	0.10	0.069	0.10	0.528	0.10	0.947	0.10	0.378
P(F > F threshold)	0.13	0.000	0.13	0.259	0.13	0.239	0.13	0.000
P(F > F target)	0.11	0.000	0.11	0.754	0.11	0.722	0.11	0.012
<b><i>Additional Uncertainty Considerations, scale: 0 to 5</i></b>								
Model uncertainty	0.11	3.13	0.11	3.17	0.11	3.17	0.11	4.00
Management uncertainty	0.10	2.83	0.10	3.6	0.10	3.67	0.10	3.20
Environmental uncertainty	0.07	1.80	0.07	1.5	0.07	1.80	0.07	1.40
<b><i>Additional Risk Considerations, scale: 0 to 5</i></b>								
Ecosystem/trophic importance	0.06	0.80	0.06	1.00	0.06	1.00	0.06	1.40
<b><i>Socioeconomic Considerations, scale -5 to 5</i></b>								
Short-term commercial socioeconomic effect	0.09	*	0.09	*	0.09	*	0.09	*
Long-term commercial socioeconomic effect	0.09	*	0.09	*	0.09	*	0.09	*
Short-term recreational socioeconomic effect	0.10	*	0.10	*	0.10	*	0.10	*
Long-term commercial socioeconomic effect	0.10	*	0.10	*	0.10	*	0.10	*

\*A portion of the socioeconomic scores will only be calculated if a management action will be initiated. See the Socioeconomic Considerations for further details and socioeconomic sub-scores.



### **Region: Massachusetts – Rhode Island (MARI)**

The following technical inputs were provided by the Tautog Technical Committee.

#### **Stock Status**

All stock status inputs are based on the 2021 Tautog Assessment Update.

#### ***Spawning Stock Biomass (SSB) Threshold***

Probability that SSB is less than the threshold (range: 0 – 1): 0.000

#### ***SSB Target***

Probability that SSB is less than the target (range: 0 – 1): 0.069

#### ***F Threshold***

Probability that fishing mortality ( $F$ ) is more than the threshold (range: 0 – 1): 0.000

#### ***F Target***

Probability that  $F$  is more than the target (range: 0 – 1): 0.000

#### **Additional Uncertainty Considerations**

##### ***Model Uncertainty***

Score (range: 0 – 5): 3.13

Justification: The MRIP PSEs for the MARI region are high as it is a small region with a low intercept rate. There are two age 1+ fishery independent indices with long time series; however, they are trawl surveys, which are not ideal for tautog. Retrospective patterns were large but in a conservative direction, underestimating SSB and overestimating  $F$ . There were more significant overestimations of  $F$  in the retrospective patterns than underestimates of SSB. SSB and  $F$  have been fairly steady the past several years and continue to track total removals and fishery independent indices well. There are some concerns with the age structure as length-at-age estimates differed between MA and RI in recent years; while this is not a major concern, it adds some uncertainty. There was some patterning in residuals. Sensitivity runs did not change the stock status.

##### ***Management Uncertainty***

Score (range: 0 – 5): 2.83

Justification: The recreational fishery accounts for approximately 95% of removals in the MARI tautog fishery by weight. MRIP estimates for the region have moderate to high PSEs, indicating limited ability to accurately estimate catch. As a result, there is limited capacity to regulate removals and assess recreational compliance. There are known issues with illegal and unreported harvesting in the region, however, the commercial tagging program was implemented to help combat these issues. There is a moderate to high level of fishing activity and interest in tautog from fishermen in the region. Stock status (not overfished, overfishing not occurring) and the lack of significant biomass fluctuations over the last 20 years indicate successful management.

##### ***Environmental Uncertainty***

Score (range: 0 – 5): 1.80

Justification: Recruitment is steady and there is no evidence that recruitment is strongly influenced by environmental factors. Natural mortality is believed to be adequately accounted for in the assessment. There are no major concerns with habitat loss. Although Hare et al.

(2016) identified tautog as having a very high vulnerability to climate change, there is no clear, imminent risk of climate change to tautog. While prey dynamics are not accounted for in the model, prey dependence is low and it is likely that tautog are generalists. Predator dependence is also low, with no known species that preferentially target tautog (Bigelow and Schroeder 1953).

### **Additional Risk Considerations**

#### ***Ecosystem/Trophic Importance***

Score (range: 0 – 5): 0.80

Justification: Tautog is not a keystone predator. However, it does provide control of crab populations that prey on other shellfish and turnover of mussel populations. There are no known species that preferentially prey on tautog and there are no known interactions with threatened or endangered species. Tautog is not known to provide any important ecosystem services or support key ecosystem functions.

### **Socioeconomic Considerations**

See socioeconomic considerations section below.

### **Region: Long Island Sound (LIS)**

The following technical inputs were provided by the Tautog Technical Committee.

#### **Stock Status**

All stock status inputs are based on the 2021 Tautog Assessment Update.

#### ***SSB Threshold***

Probability that SSB is less than the threshold: 0.003

#### ***SSB Target***

Probability that SSB is less than the target: 0.528

#### ***F Threshold***

Probability that fishing mortality ( $F$ ) is more than the threshold: 0.259

#### ***F Target***

Probability that  $F$  is more than the target: 0.754

### **Additional Uncertainty Considerations**

#### ***Model Uncertainty***

Score (range: 0 – 5): 3.17

Justification: The MRIP estimates have high PSEs, especially as a result of splitting New York between Long Island Sound and New York Bight. The interruptions to the recreational sampling surveys and fishery independent surveys in 2020 increase uncertainty. There is high uncertainty in catch and catch-at-age due to poor sample sizes. There is an age 1+ fishery independent index with a long time series; however, it is a trawl survey, which is not ideal for tautog. Overall, there are few biological observations. There are not enough catch and length observations for all modes, particularly: headboats (no length observations since 2016), spear fishing (no observations at all), and the commercial fleet (few observations). Length-age observations had to be borrowed from different years and different regions to fill out a minimal age-length key.

The retrospective patterns were large but in a conservative direction. The retrospective patterns fit within the 95% confidence intervals, however the percent difference in  $F$  is as high as 250% different from 2020. Percent different in SSB in the retrospective patterns is up to 30% different from 2020. Retrospective patterns in recruitment are distributed more evenly, some years overestimating some underestimating. Harvest is fairly variable.

### ***Management Uncertainty***

Score (range: 0 – 5): 3.60

Justification: The recreational fishery accounts for approximately 96% of tautog removals in the LIS region in weight. Tautog fishermen are poorly encountered by MRIP sampling and MRIP estimates for the region have moderate to high PSEs, indicating limited ability to accurately estimate catch. As a result, there is limited capacity to regulate removals and assess recreational compliance. In addition, there are difficulties with separating Long Island Sound catch from New York Bight catch for New York. There are significant concerns with illegal and unreported harvesting in the region, however, the commercial tagging program was implemented to help combat these issues. There is a high level of fishing activity and interest in tautog from fishermen in the LIS region.

### ***Environmental Uncertainty***

Score (range: 0 – 5): 1.50

Justification: Recruitment is steady and there is no evidence that recruitment is strongly influenced by environmental factors. Natural mortality is believed to be adequately accounted for in the assessment. Tautog requires structured habitat and moves from shallow to deep water for preferred water temperature and food (shellfish). There are no major concerns with habitat loss. Although Hare et al. (2016) identified tautog as having a very high vulnerability to climate change, there is no clear, imminent risk of climate change to tautog. While prey dynamics are not accounted for in the model, prey dependence is low and it is likely that tautog are generalists. Predator dependence is also low, with no known species that preferentially target tautog.

### **Additional Risk Considerations**

#### ***Ecosystem/Trophic Importance***

Score (range: 0 – 5): 1.00

Justification: Tautog is not a keystone predator. However, it does provide control of crab populations that prey on other shellfish and turnover of mussel populations. There are no known species that preferentially prey on tautog and there are no known interactions with threatened or endangered species. Tautog is not known to provide any important ecosystem services or support key ecosystem functions.

#### **Socioeconomic Considerations**

See socioeconomic considerations section below.

### **Region: New Jersey – New York Bight**

The following technical inputs were provided by the Tautog Technical Committee.

#### **Stock Status**

All stock status inputs are based on the 2021 Tautog Assessment Update.

#### ***SSB Threshold***

Probability that SSB is less than the threshold: 0.491

#### ***SSB Target***

Probability that SSB is less than the target: 0.947

#### ***F Threshold***

Probability that fishing mortality ( $F$ ) is more than the threshold: 0.239

#### ***F Target***

Probability that  $F$  is more than the target: 0.722

### **Additional Uncertainty Considerations**

#### ***Model Uncertainty***

Score (range: 0 – 5): 3.17

Justification: Changes in scale for SSB were seen with the new MRIP data, as expected; however, the overall trend tracks with the prior update. The MRIP estimates have high PSEs, especially as a result of splitting New York between Long Island Sound and New York Bight. There is high uncertainty in catch and catch-at-age due to poor sample sizes. There is an age 1+ fishery independent index with a long time series; however, it is a trawl survey, which is not ideal for tautog. In addition, there were uncertainties related to 2020 data, including: a high proportion of imputed estimates for the MRIP landings, interruptions to two surveys providing FI indices (NY DEC WLI seine survey had a delayed schedule and NJ DEP ocean trawl survey ceased operations for 2020), and commercial landings that may have been impacted by market disruptions due to COVID-19. Sensitivity runs showed little to no impact on  $F$ , however two models did influence SSB and recruitment and could result in stock status changes with regards to the final overfished determination. Retrospective patterns were apparent for SSB and  $F$ , but in a generally conservative direction.  $F$  was consistently overestimated, while SSB showed a smaller percent difference and showed both over and underestimation. Retrospective patterns for recruitment were also present, and a concern as the model was consistently overestimating recruitment. There were moderate residual patterns for  $F$  and SSB (overestimating  $F$  and underestimating SSB), but the Mohn's Rho adjusted estimates for these parameters were within the 95% CI of the model estimates.

#### ***Management Uncertainty***

Score (range: 0 – 5): 3.67

Justification: Recreational removals account for approximately 95% of removals within the NJ – NYB region. Tautog fishermen are poorly encountered by MRIP sampling and MRIP estimates for the region have moderate to high PSEs, indicating limited ability to accurately estimate catch. As a result, there is limited capacity to regulate removals and assess recreational compliance. In addition, there are difficulties with separating LIS catch from NYB catch for New

York. There are significant concerns with illegal and unreported harvesting in the region, however, the commercial tagging program was implemented to help combat these issues. There is a high level of fishing activity and interest in tautog from fishermen in the NJ – NYB region.

### ***Environmental Uncertainty***

Score (range: 0 – 5): 1.80

Justification: Recruitment is steady and there is no evidence that recruitment is strongly influenced by environmental factors. Natural mortality is believed to be adequately accounted for in the assessment. Tautog requires structured habitat and moves from shallow to deep water for preferred water temperature and food (shellfish). There are no major concerns with habitat loss. There is no clear, imminent risk of climate change to tautog. Although Hare et al. (2016) identified tautog as having a very high vulnerability to climate change, there is no clear, imminent risk of climate change to tautog. While prey dynamics are not accounted for in the model, prey dependence is low and it is likely that tautog are generalists. Predator dependence is also low, with no known species that preferentially target tautog.

### **Additional Risk Considerations**

#### ***Ecosystem/Trophic Importance***

Score (range: 0 – 5): 1.00

Justification: Tautog is not a keystone predator. However, it does provide control of crab populations that prey on other shellfish and turnover of mussel populations. There are no known species that preferentially prey on tautog and there are no known interactions with threatened or endangered species. Tautog is not known to provide any important ecosystem services or support key ecosystem functions.

### **Socioeconomic Considerations**

See socioeconomic considerations section below.

### **Region: Delaware – Maryland – Virginia**

The following technical inputs were provided by the Tautog Technical Committee.

#### **Stock Status**

All stock status inputs are based on the 2021 Tautog Assessment Update.

#### ***SSB Threshold***

Probability that SSB is less than the threshold: 0.085

#### ***SSB Target***

Probability that SSB is less than the target: 0.378

#### ***F Threshold***

Probability that fishing mortality ( $F$ ) is more than the threshold: 0.000

#### ***F Target***

Probability that  $F$  is more than the target: 0.012

## **Additional Uncertainty Considerations**

### ***Model Uncertainty***

Score (range: 0 – 5): 4.00

Justification: Retrospective patterns are in a risky direction, i.e.,  $F$  was consistently underestimated and SSB was overestimated. However, the percent difference for  $F$  has been decreasing in more recent years. SSB has been overestimated to a larger scale than the underestimations in  $F$ . Retrospective patterns in recruitment are varied and less of a concern. There is high uncertainty in MRIP recreational catch estimates for individual states, including a number of years with CVs > 50%, due to low intercept rates for tautog. The only index of abundance is MRIP CPUE and there is potential underestimation of CV in recreational CPUE. There are large blocks of years with consistently negative or positive residuals in index and catch model fits. In addition, there is no fishery independent index for the region. Because of the lack of indices, there were limited sensitivity runs that could be conducted. Some runs were completed testing starting values and CVs, none of which resulted in changes to stock status.

### ***Management Uncertainty***

Score (range: 0 – 5): 3.20

Justification: The DelMarVA tautog fishery is almost exclusively recreational, with 99% of removals by weight coming from the recreational fishery. MRIP estimates for the region have high PSEs, indicating limited ability to accurately estimate catch. As a result, there is limited capacity to regulate removals and assess recreational compliance. There are known issues with illegal and unreported harvesting in the region, however, the commercial fishery is an extremely small component of the overall removals and the commercial tagging program was implemented to help combat these issues. There is a low level of fishing activity and interest in tautog from fishermen in the DelMarVa region.

### ***Environmental Uncertainty***

Score (range: 0 – 5): 1.40

Justification: Recruitment is steady and there is no evidence that recruitment is strongly influenced by environmental factors. Natural mortality is believed to be adequately accounted for in the assessment. Tautog requires structured habitat and moves from shallow to deep water for preferred water temperature and food (shellfish). There are no major concerns with habitat loss. Although Hare et al. (2016) identified tautog as having a very high vulnerability to climate change, there is no clear, imminent risk of climate change to tautog. While prey dynamics are not accounted for in the model, prey dependence is low and it is likely that tautog are generalists. Predator dependence is also low, with no known species that preferentially target tautog.

## **Additional Risk Considerations**

### ***Ecosystem/Trophic Importance***

Score (range: 0 – 5): 1.40

Justification: Tautog is not a keystone predator. However, it does provide control of crab populations that prey on other shellfish and turnover of mussel populations. There are no known species that preferentially prey on tautog and there are no known interactions with

threatened or endangered species. Tautog is not known to provide any important ecosystem services or support key ecosystem functions.

### **Socioeconomic Considerations**

See socioeconomic considerations section below.

#### **Socioeconomic Considerations**

The following technical inputs were provided by the Committee on Economics and Social Sciences (CESS). After comparing regional data, the CESS decided to provide a single coastwide score for each socioeconomic component. The data examined (tautog landings as a proportion of total landings, tautog ex-vessel value as a proportion of total ex-vessel value, proportion of removals from the recreational vs. commercial fishery) did not indicate major concerns with heterogeneity and providing a coastwide score would be consistent with the socioeconomic criteria.

#### ***Commercial Value***

Score (range: 0 – 5): 2

Justification: The average (2018-2020) ex-vessel value of tautog from Virginia to Massachusetts was \$1,383,049 in 2020 dollars. This indicates a score of “low” based on the socioeconomic criteria.

#### ***Commercial Community Dependence***

Score (range: 0 – 5): 4

Justification: The average (2018-2020) commercial community dependence for the top ten communities was 35.1%, indicating a score of “high” based on the socioeconomic criteria. The top ten communities were determined based on the ports with the ten highest average tautog landings (2018-2020). Community dependence, calculated as the annual value of tautog landings as a proportion of the value of landings for all species for that port, was produced for each of the top ten communities.

#### ***Recreational Desirability***

Score (range: 0 – 5): 3

Justification: The average (2018-2020) recreational desirability was 2.4%, indicating a “moderate” score based on the socioeconomic criteria. Recreational desirability is calculated as the total coastwide (Virginia to Massachusetts) annual targeted trips for tautog (primary or secondary target) as a percentage of total trips for all species.

#### ***Recreational Community Dependence***

Score (range: 0 – 5): 2

Justification: The average (2018-2020) recreational community dependence for the top ten communities was 7.2%, indicating a score of “low” based on the socioeconomic criteria. The top ten communities were determined based on the counties with the ten highest average (2018-2020) tautog targeted trips. Community dependence, calculated as the annual number of

tautog targeted trips as a proportion of all trips for that county, was produced for each of the top ten communities.

***Commercial Short-term Management Change***

Score (range: 0 – 1; + or – depending on direction of effect):

To be calculated if management actions are initiated.

***Commercial Long-term Management Change***

Score (range: 0 – 1; + or – depending on direction of effect):

To be calculated if management actions are initiated.

***Recreational Short-term Management Change***

Score (range: 0 – 1; + or – depending on direction of effect):

To be calculated if management actions are initiated.

***Recreational Long-term Management Change***

Score (range: 0 – 1; + or – depending on direction of effect):

To be calculated if management actions are initiated.

**Preliminary Decision Tool Weightings**

The following weightings were produced based on Tautog Management Board input. The Board provided input on priorities for risk considerations in tautog management via a webinar poll and survey. Each component of the Risk and Uncertainty Decision Tool was scored on a scale of 1 to 5, where 1 = this component is much less important than other components, 3 = this component is equally important as other components, and 5 = this component is much more important than other components. Responses were averaged and converted to the weighting scale.

<b>Component</b>	<b>Score</b>	<b>Weight</b>
<b>SSB Threshold</b>	4.14	0.13
<b>SSB Target</b>	3.14	0.10
<b>F Threshold</b>	4.14	0.13
<b>F Target</b>	3.43	0.11
<b>Model Uncertainty</b>	3.50	0.11
<b>Management Uncertainty</b>	3.21	0.10
<b>Environmental Uncertainty</b>	2.29	0.07
<b>Ecosystem Importance</b>	1.79	0.06
<b>Commercial Short-term</b>	2.93	0.09
<b>Commercial Long-term</b>	3.00	0.09
<b>Recreational Short-term</b>	3.14	0.10
<b>Recreational Long-term</b>	3.29	0.10



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Hare JA, Morrison WE, Nelson MW, Stachura MM, Teeters EJ, et al. 2016. A Vulnerability Assessment of Fish and Invertebrates to Climate Change on the Northeast U.S. Continental Shelf. PLOS ONE 11(2): e0146756. <https://doi.org/10.1371/journal.pone.0146756>

## **DRAFT Atlantic Croaker Fish Habitats of Concern Designation**

FHOCs for juvenile Atlantic croaker include low salinity estuarine habitats along the Atlantic coast in early spring, to higher salinity estuarine habitats in summer and early fall, in areas with mud and detrital bottoms rich in benthic prey and dissolved oxygen (DO) levels consistently higher than 2.0 mg/L. Estuaries such as Pamlico Sound and Chesapeake Bay serve as important nursery and spawning areas (Schloesser and Fabrizio 2018). Adult Atlantic croaker are also dependent upon estuarine habitat in spring through fall, in areas with salinities ranging from 3-27 ppt and DO greater than 2.0 mg/L, but are less limited than juveniles by bottom substrate type due to an ontogenetic diet shift.

Along the Atlantic coast, juvenile Atlantic croaker are typically found in estuaries. Young of the year (YOY) less than 50 mm TL inhabit low salinity or upriver areas (Haven 1957; Dahlberg, 1972; Chao and Musick 1977; White and Chittenden 1977; Miller et al. 2003). Juveniles are positively correlated with mud bottoms that have large amounts of detritus and high amounts of benthic prey (Cowan and Birdsong 1985). Juveniles migrate downstream as they develop; by late fall, most juveniles emigrate out of the estuaries to coastal ocean habitats (Migliarese et al. 1982). In spring (after spending winter in the coastal ocean) through fall, adult Atlantic croaker are found in estuaries over muddy and sandy substrates, seagrass beds, and near oyster, coral and sponge reefs (White and Chittenden 1977; TSNL 1982).

Studies have shown that Atlantic croaker are virtually absent from waters with DO levels below 2.0 mg/L, suggesting they are very sensitive to the amount of DO present (Eby and Crowder 2002), which can become a factor that limits habitat quantity and quality in the warmer summer months in estuarine systems that experience nutrient enrichment and eutrophication issues. Bottom-tending fishing gear may also impact Atlantic croaker FHOCs (Able et al. 2017, Odell et al. 2017).

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# Atlantic States Marine Fisheries Commission

## Assessment Science Committee Report

The Assessment Science Committee (ASC) met on May 17<sup>th</sup>, 2022 to address several agenda items, including assessment training workshops, the red drum simulation assessment, and revising the ASMFC stock assessment schedule.

### Revised ASMFC Stock Assessment Schedule

The following proposed changes were made to the ASMFC Stock Assessment Schedule since the previous schedule was approved by the ISFMP Policy Board in August 2021:






- **Black sea bass:** the research track assessment shifted from a Fall 2022 completion date to Spring 2023, which will be followed by a management track assessment in June 2023.
- **Tautog:** a tentative assessment update was added to the schedule in 2024.
- Assessments for 2025 and 2026 were added to the schedule, including:
  - **American lobster:** benchmark assessment in 2025
  - **Atlantic menhaden:** single-species and ecological reference points assessment in 2025
  - **Atlantic sea herring:** SARC research track assessment in 2025; management track assessment in 2026
  - **Striped bass:** assessment update in 2026
    - Note: the next benchmark assessment is scheduled for 2027
  - **Black sea bass:** management track assessment in 2025
  - **Bluefish:** management track assessment in 2025
  - **Cobia:** SEDAR benchmark assessment in 2025
  - **Spiny dogfish:** management track assessment in 2026
  - **Summer flounder:** management track assessment in 2025
  - **Weakfish:** tentative assessment update in 2025
  - **Winter flounder:** research track assessment in 2026

**DRAFT Long-Term Stock Assessment Schedule (Updated May 2022)**

Species	2018	2019	2020	2021	2022	2023	2024	2025	2026
American Eel					ASMFC				
American Shad			ASMFC						
American Lobster			ASMFC					ASMFC	
Atlantic Croaker							ASMFC		
Atlantic Menhaden		SEDAR			Update			SEDAR	
Atl. Menhaden ERPs		SEDAR						SEDAR	
Atlantic Sea Herring	SARC - Spring		Management		Management		Management	SARC - Spring	Management
Atlantic Striped Bass	SARC - Fall				Update		Update		Update
Atlantic Sturgeon							ASMFC		
Black Drum					ASMFC				
Black Sea Bass	Update	Operational		Management		SARC - Spring		Management	
Bluefish	Update	Operational		Management	SARC - Fall	Management		Management	
Coastal Sharks			SEDAR			SEDAR			
Cobia		SEDAR						SEDAR	
Horseshoe Crab		ASMFC					Update		
Horseshoe Crab ARM				ASMFC					
Jonah Crab						ASMFC			
Northern Shrimp	ASMFC			Update			Update		
Red Drum					ASMFC		SEDAR		
River Herring						ASMFC			
Scup	Update	Operational		Management		Management			
Spanish Mackerel					Operational				
Spiny Dogfish	Update				SARC - Fall				Management
Spot							ASMFC		
Spotted Seatrout									
Summer Flounder	SARC - Fall			Management		Management		Management	
Tautog				Update			<i>*Update</i>		
Weakfish		Update						<i>*Update</i>	
Winter Flounder			Management			Management	Management		SARC - Spring

**Notes:**

Coastal Sharks            Hammerhead benchmark assessment 2023  
 Spotted Seatrout        States conduct individual assessments  
 Striped Bass             2027 Benchmark Assessment

	ASMFC Peer Review
	Spring SARC Review (June; Research Track)
	Fall SARC Review (November; Research Track)
	SEDAR Peer Review (Research Track)
	Completed

*\*Italics = under consideration, not officially scheduled*

# NOAA Fisheries Invites Public Comment on New Draft Equity and Environmental Justice Strategy

NOAA Fisheries invites feedback on our draft [Equity and Environmental Justice Strategy](#). Comments are due August 31, 2022.

## Frequently Asked Questions (FAQs)

### **What is NOAA Fisheries' draft Equity and Environmental Justice (EEJ) Strategy?**

NOAA Fisheries' draft EEJ Strategy provides a framework to incorporate EEJ into our daily activities. It identifies step-down implementation plans at the regional level; seeks to remove barriers to EEJ; and seeks to promote equity in all we do at NOAA Fisheries.

### **Who/what are the driving forces behind the development of this draft strategy?**

NOAA Fisheries' draft EEJ Strategy builds on executive orders promoting equity, recommendations from the White House Environmental Justice Advisory Council, action items from the Department of Commerce Equity Action Plan, and guidance from the NOAA Climate Council. In addition, this strategy is driven by strong support from NOAA Fisheries' leadership, enthusiastic staff participation, and a clear and growing need from underserved communities.

### **Is this strategy a new effort within NOAA Fisheries?**

No, this strategy builds on NOAA Fisheries' previous equity and environmental justice efforts to provide guidance for incorporating and prioritizing EEJ in ongoing and future activities in support of the NOAA Fisheries' mission.

### **Have Tribal Nations been consulted?**

Yes, early in the process, we held two consultation webinars open to members of Tribal Nations.

### **Does NOAA Fisheries' have the budget resources to support implementation of this strategy?**

Many of the actions contained in this strategy can be accomplished within current resources. Some cannot be. That is why the President included a specific request for additional funding for NOAA Fisheries for Equity and Environmental Justice work in both his FY 2022 and FY 2023 proposed budgets. So while some actions can be taken immediately, others will depend on Congressional funding of the President's FY 2023 budget and may not be implementable in the near term. Some would take even longer to implement. The actions we are able to take immediately will be identified in the implementation plans.

### **What's NOAA Fisheries EEJ Working Group and what's its focus?**

To advance our commitment to EEJ, NOAA Fisheries convened the Equity and Environmental Justice Working Group (EEJ WG). This group includes members from Headquarters, Regional Offices, and Science Centers. The EEJ WG's charge is to:

- Provide input on Fisheries' responses to executive orders and NOAA requests focused on equity, environmental justice, and support for underserved communities;
- Share information about Fisheries' efforts to embed EEJ into our external and programmatic work; and
- Create a strategy that identifies current initiatives, envisions a more equitable future, and outlines a roadmap to that goal.

### **What are NOAA Fisheries' current EEJ initiatives?**

Within NOAA Fisheries, at least 167 programs or initiatives promote EEJ. These efforts include:

- **Empowering Environment:** Activities that provide the institutional support, including training and resources, needed to implement multiple EEJ approaches at NOAA Fisheries.
- **Policy & Plans:** Activities that ensure that our policies promote equal opportunities for all and do not create unintended inequities or unequal burdens for underserved communities.
- **Research & Monitoring:** Activities that identify underserved communities, address their needs, and assess impacts of management decisions.
- **Outreach & Engagement:** Activities that build relationships with underserved communities to better understand their needs, and improve information sharing with all stakeholders.
- **Benefits:** Activities that distribute benefits equitably among stakeholders by increasing the access to opportunities for underserved communities.
- **Inclusive Governance:** Activities that support the meaningful involvement of underserved communities in the decision-making processes.

## **What are the Executive Orders that promoted NOAA Fisheries to form the EEJ working group?**

There are 4 Executive Orders we are responding to:

- EO 13985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government
- EO 14008: Tackling the Climate Crisis at Home and Abroad
- EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations
- EO 13175: Consultation and Coordination With Indian Tribal Governments

## **How are you defining ‘equity’?**

As defined in Executive Order 13985, equity means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

## **How are you defining ‘environmental justice’?**

Environmental Justice is the fair treatment and meaningful involvement of all people, regardless of race, color, gender, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies including but not limited to:

- Equitable protection from environmental and health hazards;
- Equitable access to decision-making processes;
- Equitable opportunity for disadvantaged communities that have been historically marginalized.

## **How are you defining ‘underserved communities’?**

Underserved communities have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. These include geographic communities as well as populations sharing a particular characteristic such as: women and girls; Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders, and other persons of color; persons facing discrimination or barriers related to gender identity; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons



who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

**Is this effort just a re-branding of existing activities?**

No, this national strategy describes the path that NOAA Fisheries will take to incorporate EEJ into the vital services we provide to all stakeholders.

The Draft Equity and Environmental Justice Strategy may be found online at the NOAA Fisheries website at: <https://www.fisheries.noaa.gov/feature-story/noaa-fisheries-invites-public-comment-new-draft-equity-and-environmental-justice>.



**NOAA  
FISHERIES**

NOAA Fisheries

# **Equity and Environmental Justice Strategy**

# Executive Summary

NOAA Fisheries endeavors to serve stakeholders equitably by engaging underserved communities in the science, conservation, and management of the nation's ocean resources and their habitat. This national strategy builds on NOAA Fisheries' previous equity and environmental justice efforts to provide guidance for incorporating and prioritizing EEJ in ongoing and future activities in support of NOAA Fisheries' mission.

NOAA Fisheries' science, conservation, and management activities serve a diverse array of communities across the United States and Territories. Recognizing that not all communities have equal opportunities and access to NOAA Fisheries' services, we identified three overarching goals (Table 1). This national strategy requires step-down implementation plans and annual progress reports to ensure improvements in five core areas: Policy, Research, Outreach, Benefits, and Governance. A sixth core area, Empowering Environment, provides agency staff with the support and tools necessary to implement changes (Table 1).

Identifying and recognizing underserved communities, as well as addressing access barriers they face, will allow NOAA Fisheries to more equitably and effectively serve all communities. Focusing on these six core objectives will provide more equitable stewardship of the nation's ocean resources and their habitat.

This national strategy is the result of guidance from recent Executive Orders, the Department of Commerce's Equity Action Plan, NOAA's Climate Council and NOAA Fisheries' leadership, as well as enthusiastic staff participation and a clear and growing need indicated by underserved communities. To be clear, it does not condone business as usual and is not a rebranding of existing activities. Rather, this national strategy describes the path that NOAA Fisheries will take to incorporate EEJ into the vital services we provide to all stakeholders.

Table 1. NOAA Fisheries’ three overarching goals and six core EEJ objectives

<b>NOAA Fisheries’ Equity and Environmental Justice Goals</b>				
<b>Prioritize identification, equitable treatment, and meaningful involvement of underserved communities.</b>	<b>Provide equitable delivery of services.</b>	<b>Prioritize EEJ in our mandated and mission work.</b>		
<b>Objectives</b>				
<p><b>Empowering Environment:</b>                      Provide the institutional support, including training and resources, needed to implement multiple EEJ approaches at NOAA Fisheries. Internal leadership and management will identify EEJ as priorities and encourage staff to consider EEJ in every aspect of their work.</p>				
<p><b>Incorporate Equity and Environmental Justice in Policy and Plans:</b>                      Ensure that our policies promote equal opportunities for all and do not create unintended inequities or unequal burdens for underserved communities.</p>	<p><b>Equity in Research and Researching Equity:</b>                      Identify underserved communities, address their needs, and assess impacts of management decisions.</p>	<p><b>Outreach and Engage Equitably:</b>                      Build relationships with underserved communities to better understand their needs, and improve information sharing with all stakeholders.</p>	<p><b>Equitably Distribute Benefits:</b>                      Distribute benefits equitably among stakeholders by increasing the access to opportunities for underserved communities.</p>	<p><b>Inclusive Governance:</b>                      Provide for the meaningful involvement of underserved communities in the decision-making processes.</p>

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# List of Acronyms

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act

DOC: Department of Commerce

EEJ: Equity and Environmental Justice

EJ IWG: Federal Interagency Working Group on Environmental Justice

ESA: Endangered Species Act

HMS: Highly Migratory Species

IN FISH!: Inclusive NOAA Fisheries Internship Program

LGBTQ+: lesbian, gay, bisexual, transgender, and queer

MMPA: Marine Mammal Protection Act

MREP: Marine Resource Education Program

MSA: Magnuson–Stevens Fishery Conservation and Management Act

NCBO: NOAA Chesapeake Bay Office

NEPA: National Environmental Policy Act

NMFS: National Marine Fisheries Service

NOAA Fisheries: National Oceanic and Atmospheric Administration National Marine Fisheries Service

OHC: Office of Habitat Conservation

OPA: Oil Pollution Act

PDS: Policy Directive System

TEK: Traditional Ecological Knowledge

# Introduction

This national strategy provides guidance for incorporating and prioritizing equity and environmental justice (EEJ) in ongoing and future activities in support of NOAA Fisheries’ mission. While NOAA Fisheries’ work has incorporated elements of EEJ, our efforts to date have not met the scope, magnitude, and duration of the challenges facing underserved communities. In 2021, President Biden signed Executive Orders 13985 and 14008 to promote equity and environmental justice within the federal government and its external-facing efforts. In response, the FY22-26 Department of Commerce’s Strategic Plan revised its mission, “to create the conditions for economic growth and opportunity for all communities,” and published its Equity Action Plan. NOAA Fisheries responded by convening an EEJ Working Group to improve information sharing, coordinate internal expertise, and to inform implementation of EEJ. The EEJ Working Group identified current EEJ activities (described in detail in Appendix 1) and developed this document as a framework for embedding EEJ into everything NOAA Fisheries does, on a daily basis, to fulfill our mission to provide vital services equitably for the entire nation. Implementing this strategy requires the participation of the NOAA Fisheries’ entire workforce and all offices and programs. While there is much we can do without additional funds, significant progress will require additional funds, as requested in the FY23 Budget Request.

## Definitions

NOAA Fisheries adopts the following definitions:

*Environmental Justice* is the fair treatment and meaningful involvement of all people, regardless of race, color, gender, sexual orientation, national origin, religion, disability, or income during development, implementation, and enforcement of environmental laws, regulations, and policies, including but not limited to:

- Equitable protection from environmental and health hazards;
- Equitable access to decision-making processes; and
- Equitable opportunity for underserved communities that have been marginalized.\*

*Equity* is the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment.\*\*

*Meaningful Involvement\** means:

- Stakeholders have an opportunity to participate in decisions about activities that may affect their environment and/or health;
- The public's contribution informs NOAA Fisheries' decisions;
- Community concerns will be considered in the decision making process; and
- Decision makers will seek out and facilitate the involvement of those potentially affected.

*Stakeholders\** are individuals or representatives from organizations or interest groups that have a strong interest in NOAA Fisheries' work and policies.

*Public\** is the general population of the United States. Many segments of "the public" may have a particular interest in or may be affected by NOAA Fisheries programs and decisions.

*Underserved Communities*, as defined by Executive Order 13985, refers to communities that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. These include geographic communities as well as populations sharing a particular characteristic, history or identity. Adapting EO 13985 these groups could include but are not limited to: women and girls; Black, Latino, and Indigenous and Native American persons\*\*\*, Asian Americans and Pacific Islanders, and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. Specific to the fisheries context, underserved groups within fishing communities may include, for example, subsistence fishery participants and their dependents, fishing vessel crews, and fish processor and distribution workers. Finally, territorial fishing communities (which include American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands) may also be categorized as underserved. Underserved communities will vary by region, and by the barriers they face. Furthermore, many of these community categories intersect. Hence identification of, and meaningful involvement with underserved communities will be a regionally specific and an on-going process that will require long-term commitment.



*Climate Change* is the long-term shift in oceanic and atmospheric conditions, resulting in increased temperature, sea level rise, and changes in weather patterns like drought, flood, and storm frequency/duration. NOAA identifies climate change as an EEJ issue because its impacts are unevenly experienced across the nation: long-standing socioeconomic inequities can make underserved communities, who often have the highest exposure to hazards and the fewest resources to respond, more vulnerable. As described in the NOAA Fisheries’ Climate Science Strategy Five Year Progress Report (2021), fishing communities may be especially vulnerable to sea level rise, loss of catch abundance and diversity, and the resulting impacts to their local economy.

#### *Diversity, Equity, Inclusion, and Accessibility*

NOAA Fisheries strives to eradicate discrimination in our programs and policies, identify and reduce barriers to equity, and be inclusive of all communities affected by NOAA Fisheries’ work. This EEJ Strategy focuses on advancing environmental justice and equitably serving all underserved communities through NOAA Fisheries’ externally facing services and policies. Successful implementation of this strategy will depend, in part, on continued progress toward a diverse and inclusive NOAA Fisheries workforce. NOAA Fisheries’ internal diversity, equity, inclusion and accessibility efforts focus on cultivating a diverse workforce to reflect, understand, and respond to the varied communities we serve, including underserved communities, as described in the [NOAA Fisheries Diversity and Inclusion Strategic Plan](#) for 2022-2025 and as outlined in [Executive Order 14035](#). Here, diversity encompasses national origin, language, race, color, abilities, ethnicity, gender, age, religion, and sexual orientation, among other factors. Inclusion refers to equitable treatment, access, opportunity and advancement of all employees.

\* adapted from the [Environmental Protection Agency](#)’s definition

\*\*as defined by [Executive Order 13985](#)

\*\*\*The United States federal government has specific guidelines for relationships with federally recognized Tribes. This Equity and Environmental Justice Strategy does not revise or impact that responsibility in any way. See [Executive Order 13175](#) (Consultation and Coordination With Indian Tribal Governments), which directs federal agencies to “have an accountable process to ensure meaningful and timely input by Tribal officials in the development of regulatory policies that have Tribal implications.” See also [NOAA Procedures for Government-to-Government Consultation with Federally Recognized Indian Tribes and Alaska Native Corporations](#) which guides NOAA Fisheries’ work with federally recognized Tribes.

## NOAA Fisheries’ Stewardship Mission

NOAA Fisheries<sup>1</sup> is responsible for the stewardship of the Nation’s ocean resources and their habitats. Backed by robust science, NOAA Fisheries provides vital services for the Nation, including ensuring productive and sustainable fisheries, safe sources of seafood, conservation and recovery of protected resources, and ecosystem protection and restoration. NOAA Fisheries’ work directly impacts the economic opportunities, health, and environment of many communities—including underserved communities.

## Mandates for Equity and Environmental Justice

Government programs and policies can play a large role in advancing environmental justice and the equitable distribution of services to individuals, families, businesses, and communities. Recognizing this, executive orders have

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<sup>1</sup> Known informally as NOAA Fisheries, the official name of the agency in legislation and regulations is the National Marine Fisheries Service (NMFS).

been issued to promote EEJ within the federal government and guide the way NOAA Fisheries and other federal agencies implement their mission. EEJ are a priority for the Administration, and several interagency groups are updating metrics, definitions, and approaches that will be incorporated into this strategy as they become available.

Signed in 2021, [Executive Order 13985](#) (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) states

*...the Federal Government should pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality. Affirmatively advancing equity, civil rights, racial justice, and equal opportunity is the responsibility of the whole of our Government. Because advancing equity requires a systematic approach to embedding fairness in decision-making processes, executive departments and agencies (agencies) must recognize and work to redress inequities in their policies and programs that serve as barriers to equal opportunity.*

Also signed in 2021, [Executive Order 14008](#) (Tackling the Climate Crisis at Home and Abroad) directs Federal agencies to

*make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.*

The White House Environmental Justice Advisory Council was established under Executive Order 14008. The EJ Advisory Council recommends that each agency create an EJ Scorecard to track regulatory impacts on and benefits to disadvantaged communities. EJ Scorecard recommendations include: evaluating access to and distribution of benefits; tracking Federal funding; establishing iterative and bidirectional feedback; engaging agency staff; documenting potential burdens; and identifying short- and long-term goals.

[Executive Order 12898](#) (Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations), signed in 1994, directs each federal agency, “[t]o the greatest extent practicable and permitted by law...” to identify and address, as appropriate, the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations.

The Department of Commerce Equity Action Plan (2022) lays the foundation for programing and policies that will reach a larger and more diverse audience and address key barriers to economic success for historically underserved communities. The goals of the plan include: making services, science, and data more accessible to underserved communities; ensuring that benefits and funding advance racial equity and support underserved communities; and providing economic opportunities for underserved communities by institutionalizing equity in the long-term. These goals require systems to collect quantitative and qualitative data to measure progress on equity and a more diverse, inclusive, equitable, and accessible workplace.

The DOC Environmental Justice Strategy (2012) outlined the following “Guiding Environmental Justice Principles”:

- The public should be afforded meaningful opportunities to participate in the formulation, design and execution of Departmental programs, policies and activities;

- Tribes shall, on a government-to-government basis, be afforded regular and meaningful consultation and collaboration opportunities in the development of Department policies that have Tribal implications (see Executive Order 13175).
- All populations should share in (and are not excluded from) benefits of Departmental programs, policies and activities affecting human health or the environment.
- No populations should be affected in a disproportionately high and adverse manner by agency programs, policies or activities affecting human health or the environment.
- The Department will engage in environmental justice activities in a transparent and accountable manner.

In addition to these mandates, EEJ are also encouraged and prioritized under a number of federal statutes that govern NOAA Fisheries' work with some underserved communities (described in detail in Appendix 2). Provisions of these laws either explicitly encourage EEJ or allow NOAA Fisheries to address EEJ at our discretion in conformance with our existing authorities in our planning, policies, and regulations, as we fulfill our conservation and management mandates. NOAA Fisheries strives to make decision-making processes accessible and transparent to the public and to help stakeholders understand and engage in federal decisions that could impact their livelihoods and communities.

## **Barriers to Equity and Environmental Justice**

As stewards of the nation's ocean resources and habitats, NOAA Fisheries' work affects underserved communities dependent on marine ecosystems for environmental, economic, social, and cultural well-being. However, underserved communities experience barriers to fair treatment and meaningful involvement in NOAA Fisheries' work. The barriers faced by underserved communities are often interrelated but vary by community history, characteristics, and need. Below, we have identified some common barriers.

### **1. Unawareness of underserved communities**

The first barrier to EEJ within NOAA Fisheries is that we have not fully identified the underserved communities that are impacted by our work. This oversight affects who are considered NOAA Fisheries stakeholders, who research and monitoring are tailored for, and who are aware of and receive services. Without recognition of underserved communities, their needs cannot be documented or addressed.

### **2. Structural barriers**

Underserved communities may face structural barriers (e.g., laws, regulations, and policies) that prevent equitable access to resources and/or NOAA Fisheries' services. For example, criteria for allocation of resources may be based on historical ownership, creating services for the largest number of people, generating the greatest net benefits, or prioritizing commercial segments of fisheries, which may exclude underserved communities.

### **3. Barriers to accessing services**

Underserved communities can experience barriers to accessing NOAA Fisheries' services due to language differences or difficulties attending NOAA meetings due to venues, times, or travel costs. Furthermore, mandates and management protocols may be counter to cultural decision-making and allocation practices of some underserved communities.

**4. System complexity**

The complexity of accessing federal services can inhibit inclusion of stakeholders, especially those who have not previously received such services. Benefit application systems may be difficult to navigate and require special knowledge.

**5. Gaps in expertise**

Our ability to identify, characterize, and serve all communities equitably requires prioritizing research conducted by anthropologists, sociologists, geographers, economists, and interdisciplinary social scientists. Similarly, education and outreach staff are limited and do not have the resources to engage with all communities on all issues. We also don't have staff geographically located and with the cultural and language literacy needed to engage many of our underserved communities.

**6. Gaps in representation**

**Underserved communities are not well represented on the regional Fisheries Management Councils established under MSA or the advisory panels associated with those councils.** Underserved communities are also not well represented in the NOAA Fisheries workforce, leading to the lack of awareness discussed above and crucial gaps in perspectives. Staff may unconsciously prioritize their own communities because of familiarity, easy access, and pre-existing communication paths.

# NOAA Fisheries' Approach to EEJ

To address the barriers faced by underserved communities, the NOAA Fisheries' EEJ Working Group developed a framework that includes long-term goals and short-term objectives, as recommended by the White House EJ Advisory Council. These goals and objectives interact to create the capacity and accountability processes necessary to advance EEJ within the agency, as encouraged in the DOC Equity Action Plan.

## Long-term Goals

1. Prioritize identification, equitable treatment, and meaningful involvement of underserved communities.
2. Provide equitable delivery of NOAA Fisheries' services.
3. Prioritize EEJ in our mandated and mission work.

To achieve these goals, each national program (e.g., Office of Protected Resources, Office of Habitat Conservation, etc.) and geographic region (e.g., Southeast, Pacific Islands, etc.) will create an EEJ step-down implementation plan (possibly as part of their [NOAA Fisheries Geographic Strategic Plans](#) for FY 2023–2028) that is specific and responsive to the needs of underserved communities and allows for the input of underserved communities. Each program, science center, and regional office will set EEJ as Priority Areas or milestones in annual strategic planning starting in FY2023. National program offices will coordinate with regional offices and science centers to establish ownership for shared goals. Implementation plans will include metrics describing EEJ actions, and progress will be publicly reported annually. To track progress toward our goals, NOAA Fisheries will evaluate these annual reports using an EEJ Scorecard that includes the metrics recommended by the White House EJ Advisory Council (e.g., access to and distribution of benefits and funding, feedback from underserved communities, tracking of federal funding; staff engagement, and documentation of regulatory burdens). These metrics are currently under review within the federal government; upon availability, the final metrics will be incorporated into NOAA Fisheries' EEJ Scorecard.

## Short-term Objectives

To provide consistency in the development of regional or programmatic plans, the NOAA Fisheries' EEJ Working Group has identified six EEJ objectives (Table 1). In the sections below, we explain each objective and its role in NOAA Fisheries' commitment to EEJ and provide guiding questions to consider when developing regional or programmatic plans for NOAA Fisheries day-to-day work. Many of these questions demonstrate the need for additional EEJ work in a particular area. These needs are reflected in a summary of actions, metrics, and resources needed to implement each objective. These EEJ metrics will be updated if further guidance is provided by the White House EJ Advisory Council, DOC, and NOAA.

## **Empowering Environment**

**Objective:** Provide the institutional support, including training and resources, needed to implement multiple EEJ approaches at NOAA Fisheries. Internal leadership and management will identify EEJ as a priority and encourage staff to consider EEJ into every aspect of their work.

To implement this strategy, it is imperative that leadership and management create an empowering environment. This means identifying EEJ as priorities by enabling employees to meaningfully integrate EEJ considerations into their day-to-day work and supporting this through increasing expertise on EEJ within the NOAA Fisheries' workforce. As stated by the White House EJ Advisory Council, "Agency and administrative professional culture should encourage and incentivize staff to reflect and share lessons learned." This will also be supported by a multiscale approach including the continued work of the national NOAA Fisheries' EEJ Working Group, as well as regional EEJ working groups to develop regionally specific plans.

Basic needs shared across multiple objectives include:

- EEJ Training
- Staff time
- Staff expertise
- Community Liaisons
- Demographic data collection, analysis, and reporting
- Support collaboration with other agencies
- Language translation services

### **Guiding Questions**

- How can NOAA Fisheries' leadership and workforce better reflect the diversity of the communities we serve?
- How should we diversify the disciplinary expertise necessary for addressing EEJ in our work?
- Are staff given adequate time, resources, training, and expertise guidance to incorporate EEJ into their work?
- What accountability structures does NOAA Fisheries need, e.g. a commitment to monitoring and evaluation of EEJ metrics and the incorporation of EEJ work into performance plans?
- What data and resources do staff need to identify underserved communities impacted by their work, as well as the training and tools needed to promote EEJ in that work?

Table 2: Empowering Environment, Action Areas, and Proposed Metrics

Action	Possible Mechanisms/Metrics	Resources Needed
<p>1. Leadership at every level communicates about EEJ to staff and prioritizes EEJ in NOAA Fisheries strategic plans and annual priorities documents</p>	<ul style="list-style-type: none"> <li>• Number of programs with an EEJ milestone</li> <li>• Percentage of milestones reached</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership support</li> <li>• EEJ training</li> </ul>
<p>2. Include EEJ collateral duty roles into the performance plans of applicable staff, including metrics for accountability</p>	<ul style="list-style-type: none"> <li>• Percentage applicable staff with EEJ included in performance plans</li> <li>• EEJ work included in promotion scoring criteria for appropriate staff</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership support</li> <li>• Suggested language</li> </ul>
<p>3. Include EEJ collateral duty roles into the performance work statements of contracts with work that interfaces with external stakeholders, including metrics for accountability</p>	<ul style="list-style-type: none"> <li>• Percentage of applicable contracts with EEJ included in performance work statements</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership, project officer, and contracting staff support</li> <li>• Suggested language</li> </ul>
<p>4. Provide engaging and meaningful training opportunities targeted at staff and leadership to help build a shared understanding of the concepts of EEJ and how to implement these concepts in their work. (Such as the Environmental Protection Agency’s <a href="#">“Environmental Justice Learning Center”</a>)</p>	<ul style="list-style-type: none"> <li>• Number and percentage of staff trained</li> </ul>	<ul style="list-style-type: none"> <li>• EEJ training materials and/or funds for trainer</li> <li>• Current staff time</li> </ul>
<p>5. Support continuation of the NOAA Fisheries’ national EEJ Working Group, with representation from each sub-office. The Working Group should continue to meet to share information about successful approaches, collaborate on outreach and inclusion of common constituencies, and guide NOAA Fisheries’ decision-making.</p>	<ul style="list-style-type: none"> <li>• Number of offices represented at regular meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>
<p>6. Establish Regional/Program EEJ Working Groups</p>	<ul style="list-style-type: none"> <li>• Number of Regional/Program EEJ working groups</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>
<p>7. Build internal infrastructure for prioritizing and implementing EEJ: create “field offices” staffed by liaisons (prioritizing local knowledge, language) to facilitate relationships, public meetings, research (social science and biological), monitoring, etc.</p>	<ul style="list-style-type: none"> <li>• Number of field staff with knowledge of local language and culture</li> <li>• Number of in-person meetings, or venue and platform decisions that prioritize underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>• EEJ community liaisons</li> <li>• Field offices</li> <li>• EEJ training</li> </ul>

<p>8. Provide training on NOAA Fisheries’ EEJ goals and objectives for Council or other advisory body members</p>	<ul style="list-style-type: none"> <li>• Number of trainings provided</li> <li>• Feedback from trainees on their efficacy</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>
<p>9. Mandatory training for all grant reviewers on how to mitigate the types of bias that likely disadvantage underserved communities when reviewing applications</p>	<ul style="list-style-type: none"> <li>• Number and percentage of grant reviewers trained</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ training</li> </ul>



## **Incorporate Equity and Environmental Justice in Policy and Plans**

**Objective:** Ensure that our policies promote equal opportunities for all and do not create unintended inequities or unequal burdens for undeserved communities.

NOAA Fisheries must adhere to requirements of laws enacted by Congress, which may have a great impact on stakeholders, particularly underserved communities. In accordance with its statutory mandates, NOAA Fisheries issues policies, strategies, and regulations to implement its mission. At times, we are required to make determinations based solely on the best available scientific information, such as the listing of species under the Endangered Species Act; however, some sections of some laws permit EEJ considerations in their implementation, and some plans are wholly dependent on the input and involvement of the communities they address. For example, [climate change resilience planning](#) requires the knowledge and participation of fishing communities to assess and address impacts of changing ocean conditions. Thus, to the extent permitted by applicable law, Policy and Planning EEJ activities consider the impacts and responsiveness of NOAA Fisheries' programs to underserved communities and look for opportunities to co-develop management, conservation, and stewardship initiatives with such communities.

As stated in EO 13985, entrenched disparities in public policies have denied equal opportunity to some individuals and communities. These disparities include past and ongoing policy decisions by the NOAA Fisheries that may have exacerbated unequal distribution of economic, social, and cultural resources. For example, allocation of fishery resources is a complex issue because of the history and tradition of access, the perceptions of equity that arise with allocation decisions, and differences in the economic and social values competing user groups place on those resources.

By more systematically considering EEJ in NOAA Fisheries' policy and planning activities, we can improve equity in the delivery of services. Where possible and appropriate, NOAA Fisheries can include provisions to reduce barriers and improve services to underserved communities to institutionalize equity for the long-term.

### **Guiding Questions**

- How can NOAA Fisheries better include equity for underserved communities in policies and internal guidance?
- How will NOAA Fisheries review existing policies and procedures with EEJ lenses so that they may be refined or revised to ensure more equitable outcomes?
- How can NOAA Fisheries design or revise policies and procedures in a way that ensures that they are helpful and clear to underserved communities?
- What additional flexibility can we provide in NOAA Fisheries' policies and procedures to incorporate relevant local language, customs, and knowledge?

Table 3: Incorporate Equity and Environmental Justice in Policy and Plans, Action Areas and Proposed Metrics

Action	Possible Mechanisms/Metrics	Resources Needed
1. Issue guidance on how new NOAA Fisheries’ policies and plans regarding our external-facing work shall consider EEJ objectives	<ul style="list-style-type: none"> <li>Percentage of policies and plans including EEJ objectives</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> <li>EEJ training</li> </ul>
2. Issue guidance that during the periodic review of each NOAA Fisheries’ directive in the Policy Directive System (PDS) , the review includes: appropriate language, clear messaging, accessibility, and consideration of EEJ, communities, local language, customs, and traditional knowledge	<ul style="list-style-type: none"> <li>Percentage of applicable PDS directives including EEJ considerations</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> <li>EEJ training</li> </ul>
3. Conduct a review of major NOAA Fisheries’ regulatory processes (fisheries, protected resources, habitat conservation, and aquaculture) to determine whether new policies, regulations, or guidance documents may be necessary to advance EEJ in NOAA Fisheries’ actions and programs	<ul style="list-style-type: none"> <li>Number of regulatory process reviews completed</li> <li>Number of regulatory processes updated based on review</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> <li>EEJ training</li> </ul>
4. Develop programs, policies, and activities to address the disproportionately high and adverse environmental, climate-related, and other cumulative impacts on underserved communities, as well as the accompanying food security and economic challenges of such impacts	<ul style="list-style-type: none"> <li>Number of programs, policies, and activities that address climate change impacts on underserved communities</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> <li>EEJ training</li> </ul>

## Research and Monitoring for Equity

**Objective:** Identify undeserved communities, address their needs, and assess impacts of management decisions.

NOAA Fisheries uses the best scientific data and information available to guide and adapt its management decisions. Research and Monitoring encompass the collection and analysis of data in support of NOAA Fisheries' mission across a broad array of biological, oceanographic, ecological, social, cultural, and economic arenas. This informs NOAA Fisheries' understanding about 1) the near and long-term condition of our coastal and marine ecosystems and 2) the identification, role, and characterization of humans that rely on or interact with those ecosystems.

Research and monitoring is crucial to EEJ efforts for two main reasons. First, EEJ prioritizes the social, cultural and economic (human) research and monitoring needed to identify and characterize underserved communities and to understand how they are affected by NOAA Fisheries' decisions on resources, livelihoods, culture, food security, etc. Methods to identify underserved communities will need to be appropriate for a given region, program, or project area. Social scientists could use, but are not limited to, Census-based mapping tools, site-specific information from regional staff, information from project partners and grantees, and community consultation. These activities provide the data needed to inform policies that ensure societal benefits from ocean and coastal resources are shared equitably. Collecting and analyzing demographic information on the individuals currently participating and affected by or benefiting from NOAA Fisheries' programs and management will also be essential to monitoring our progress towards EEJ, as encouraged by the DOC Equity Action Plan.

Second, EEJ also requires meaningful involvement of underserved communities in biological (non-human) research and monitoring. Meaningful involvement includes early engagement with underserved communities to identify shared priorities that meet their needs and fulfill NOAA Fisheries' mission. Meaningful involvement also includes engagement of underserved communities during data gathering and reporting, to ensure that findings are appropriate and accessible. For example, NOAA Fisheries' climate change research seeks input on the impacts of climate change on fisheries and fishery-dependent communities in order to develop resilience plans.

### Guiding Questions

- What research do we need to identify underserved communities?
- How can NOAA Fisheries better engage with underserved communities to identify, co-develop, and co-produce place-based research and monitoring priorities?
- How can we reduce bias in social science research?<sup>2</sup>
- How can NOAA Fisheries expand involvement of members of underserved communities in research and monitoring projects?
- How will NOAA Fisheries more equitably allocate research and monitoring resources to identify and characterize underserved communities, understand their needs, and use findings to effectively guide management decisions that affect them?
- How can NOAA Fisheries more equitably allocate our research and monitoring resources to fisheries, habitat, and protected species science that directly impact underserved communities?

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<sup>2</sup> Sampling includes social-science research, but also any other situation where community consultation is used as data.

- How can NOAA Fisheries improve our understanding of the impact of our regulatory actions on underserved communities?
- Does NOAA Fisheries use best practices for working with communities to integrate traditional ecological knowledge into research structure, data collection, and data reporting?
- How can NOAA Fisheries make science communication more accessible and understandable to a diverse audience, including underserved communities?

Table 4: Research and Monitoring for Equity, Action Areas and Proposed Metrics

Action	Possible Mechanisms/Metrics	Resources Needed
<p>1. Meaningful involvement of underserved communities throughout the research process. This includes co-development and co-production of research and monitoring for community characterization and social indicators, fisheries, aquaculture, protected species, and habitat restoration.</p>	<ul style="list-style-type: none"> <li>• Early engagement of underserved communities to co-produce research and monitoring priorities (Links to Outreach and Engagement)</li> <li>• Involvement of underserved community members in the data collection process.</li> <li>• Reporting of findings back to underserved communities</li> <li>• Percentage of projects that involve underserved community members during planning, fieldwork, and reporting</li> <li>• Number of research and monitoring projects that meaningfully involve underserved communities</li> <li>• Underserved community satisfaction with the NOAA Fisheries research and monitoring process</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ training</li> <li>• Dedicated funds to pay study participants</li> </ul>
<p>2. Identify and characterize underserved communities by prioritizing social, cultural, economic, and demographic research.</p>	<ul style="list-style-type: none"> <li>• Prioritize social and economic research for EEJ by supporting internal expertise [human capital]</li> <li>• Prioritize cultural literacy to effectively and appropriately engage with underserved communities (Links to Outreach and Engagement)</li> <li>• Number of data sources and research projects characterizing underserved communities</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ training</li> <li>• OMB approval</li> </ul>

<p>3. Analyze the social, cultural, and economic impacts of NOAA Fisheries’ services and management decisions (e.g., fisheries, protected species, and habitat conservation) on underserved communities.</p>	<ul style="list-style-type: none"> <li>• Number of reports that integrate social, cultural, and economic impacts to underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ training</li> </ul>
<p>4. Include local and traditional ecological knowledge<sup>3</sup> in fisheries, climate, and ecosystem-based science.</p>	<ul style="list-style-type: none"> <li>• Quantity of climate and ecosystem based management projects and products that incorporate local and traditional ecological knowledge in their data collection and reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ training</li> </ul>
<p>5. Co-production and co-development (i.e., meaningful involvement of fisheries and aquaculture representatives from underserved communities) in the fisheries and cultivation stock assessment and allocation processes.</p>	<ul style="list-style-type: none"> <li>• Diversity and number of fisheries and marine aquaculture representatives from underserved communities taking part in stock assessment processes.</li> <li>• Number of community data workshops</li> <li>• Underserved community satisfaction with NOAA Fisheries stock assessment processes</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ training</li> <li>• EEJ community liaisons</li> </ul>
<p>6. Develop a survey and reporting methodology to estimate the value that underserved communities receive from their use of living marine resources (including non-exploitative value).</p>	<ul style="list-style-type: none"> <li>• Publication of reporting methodology</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>
<p>7. Conduct an analysis of barriers to entry in fisheries and marine aquaculture programs (e.g., cost, culture, and management structure) for underserved communities and identify potential policy changes.</p>	<ul style="list-style-type: none"> <li>• Percentage of fisheries programs for which a barrier analysis is conducted and policy changes identified</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>
<p>8. Co-produced and co-developed research on the consumption patterns of communities who principally rely on fish and/or wildlife for subsistence. Communicate to the public the risks and benefits of those consumption patterns (<a href="#">Executive Order 12898</a>).</p>	<ul style="list-style-type: none"> <li>• Number of reports produced</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>

<sup>3</sup> Please see [the NOAA Fisheries and National Ocean Service Guidance and Best Practices for Engaging and Incorporating Traditional Ecological Knowledge in Decision-Making](#) for more information.

<p>9. Advance and improve territorial fisheries science and management support through improved assessment and support of local fisheries management agencies via co-developed and co-produced research and application.</p>	<ul style="list-style-type: none"> <li>• Number of joint stock assessments co-produced</li> <li>• Number of positions funded</li> <li>• Number of projects funded</li> </ul>	<ul style="list-style-type: none"> <li>• Additional funding, as requested for FY23</li> </ul>
<p>10. Expand the Community Social Vulnerability Indicators Toolbox to include new metrics that consider environmental justice, climate change concerns, and racial equity in underserved coastal communities.</p>	<ul style="list-style-type: none"> <li>• Number of new metrics</li> </ul>	<ul style="list-style-type: none"> <li>• Additional funding, as requested for FY23</li> <li>• EEJ training</li> </ul>

## **Outreach and Engage Equitably**

**Objective:** Build relationships with underserved communities to better understand their needs and improve information sharing with all stakeholders.

NOAA Fisheries shares information and builds relationships with underserved communities through outreach and engagement including: student education programs, internships, and a variety of communication products to share information and knowledge. Engaging in two-way information sharing with stakeholders and partners is crucial to success, and we will use input from underserved communities to improve this process.

Effective outreach and engagement must be highly customized, personalized, consistent, long-term, and flexible. They also require skill, knowledge, and time. NOAA Fisheries can increase coordination and communication with underserved communities through asking the opinion of community members, using those opinions to direct actions, early engagement, prioritizing cultural literacy, addressing communication barriers (e.g. translation), and building communication plans that can adapt to emerging needs of underserved communities.

Through outreach and engagement, NOAA Fisheries intends to better understand the needs and priorities of communities impacted by our work. We will prioritize new and reinvigorated efforts to work more closely with community representatives and build stronger relationships with underserved communities. As recommended by the White Council EJ Advisory Council, we will establish iterative and bidirectional feedback loops to improve our communication methods.

### **Guiding Questions**

- Does NOAA Fisheries reach underserved communities through various communication platforms, languages, and outreach activities? Are those the preferred methods of communication within the community?
- How does NOAA Fisheries actively aggregate and incorporate the feedback we receive?
- At an agency level, how can we prioritize outreach and train staff to effectively engage with underserved communities?
- How can NOAA Fisheries build relationships with underserved communities that allow for two-way communication and trust?
- What training and resources do staff need to expand NOAA Fisheries' outreach and communication in underserved communities?

Table 5: Outreach and Engage Equitably, Action Areas and Proposed Metrics

Action	Possible Mechanisms/Metrics	Resources Needed
<p>1. Leverage existing information and community ties</p>	<ul style="list-style-type: none"> <li>• Create a list of current connections to underserved communities for each region or program</li> <li>• Add additional underserved communities to the above list for each region or program, and allow for periodic updates (Links to Research and Monitoring)</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>
<p>2. Work with members of underserved communities to create communication plans</p>	<ul style="list-style-type: none"> <li>• Number of communication plans</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• Community input</li> <li>• Minor funds for printing /contact mailings</li> <li>• Staff training</li> </ul>
<p>3. Learn from existing community ties (e.g., listening and learning sessions with community members) the best methods for communication, and allow for the communication plan to evolve based on new information or on the ground realities. Consider accessibility in terms of language, distribution method (in person, print, social media etc.), and cultural protocols.</p>	<ul style="list-style-type: none"> <li>• Percentage of communication plans that are responsive to cultural norms and community context.</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• Community input</li> <li>• Minor funds for printing /contact mailings</li> <li>• Staff training</li> </ul>
<p>4. Create outreach materials and events that follow the communication plan developed with and for each underserved community (see Action 2).</p>	<ul style="list-style-type: none"> <li>• Number of communication products (brochures, media posts, etc.) or outreach events (meetings, presentations, workshops etc.)</li> <li>• Underserved community satisfaction with the communication products and outreach events</li> <li>• Underserved community awareness of NOAA Fisheries’ presence/image.</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• Language experts for written and in-person translation</li> <li>• EEJ community liaisons</li> <li>• Funds for outreach materials and events</li> <li>• EEJ training</li> <li>• Use of outreach funding</li> </ul>



<p>5. Create educational programs and opportunities to engage underserved communities in STEM activities related to NOAA Fisheries’ research and management mission and support.</p>	<ul style="list-style-type: none"> <li>• Number of education and community engagement events and products (programs, curricula, and activities) targeting underserved communities</li> <li>• Number of underserved communities / members that are reached by community engagement events and products</li> <li>• Number of paid internship opportunities for underserved communities</li> <li>• Number of paid interns from underserved communities</li> <li>• Include EEJ considerations in selection criteria</li> <li>• Underserved community participant satisfaction with education prog./ product</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• List of current opportunities</li> <li>• Funding for additional opportunities</li> <li>• EEJ training</li> </ul>
<p>6. Support educational programs and opportunities to engage underserved communities in the management process through support of EEJ selection criteria in existing programs provided by partners.</p>	<ul style="list-style-type: none"> <li>• Number of stakeholders from underserved communities trained in management process</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• Resources to support existing education programs</li> <li>• EEJ training</li> </ul>
<p>7. Provide outreach, mentorship, and public facing online training for underserved communities regarding how to navigate NOAA Fisheries’ grant program proposal development and application process (Links to Equitably Distribute Benefits), and the internship and job application process.</p>	<ul style="list-style-type: none"> <li>• Develop an online application resource and number of public outreach events targeted at underserved communities</li> <li>• Develop public outreach events targeted at underserved communities</li> <li>• Develop a mentorship program application processes, increasing underserved communities access to technical expertise and subject matter experts</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• Communications plan to reach key audiences</li> </ul>
<p>8. Create fisheries management and seafood industry pilot education/training programs with historically Black colleges and universities, minority serving institutions, Tribal colleges, and community colleges</p>	<ul style="list-style-type: none"> <li>• Number of pilot programs created</li> <li>• Number of participants in pilot programs</li> </ul>	<ul style="list-style-type: none"> <li>• Additional funding, as requested for FY23</li> </ul>
<p>9. Generate interest in fishing by creating a grant program for training, education, outreach, and technical assistance initiatives involving youth from underserved communities</p>	<ul style="list-style-type: none"> <li>• Number of grants funded</li> </ul>	<ul style="list-style-type: none"> <li>• Additional funding</li> </ul>

## **Equitably Distribute Benefits**

**Objective:** Distribute benefits equitably among stakeholders by increasing the access to opportunities for underserved communities.

NOAA Fisheries provides benefits to communities through direct investments, disaster assistance, and grant opportunities for research, habitat restoration, aquaculture, and species recovery among others<sup>4,5</sup>. Benefits can also come in the form of data and tools that communities can use to make decisions. For example, benefits relating to climate change include funding and tools to build knowledge and resilience.

As stated in EO 13985, advancing equity creates

*...opportunities for the improvement of communities that have been historically underserved, which benefits everyone. The Federal Government should, consistent with applicable law, allocate resources to address the historic failure to invest sufficiently, justly, and equally in underserved communities, as well as individuals from those communities.*

As described in the DOC Equity Action Plan, we will: make services, science, and data more accessible to underserved communities; ensure that benefits and funding advance racial equity and support underserved communities; and provide economic opportunities for underserved communities by institutionalizing equity in the long-term. As recommended by the White Council EJ Advisory Council, we will evaluate access to and distribution of benefits and track federal funding. Furthermore, the Justice40 Initiative directs us to deliver at least 40 percent of the overall benefits from federal investments in climate and clean energy to disadvantaged communities. Investments in ecological restoration and community resilience are integral to NOAA's climate strategy goals to create and foster natural and economic resilience along coasts through our expertise and robust on-the-ground partnerships and place-based conservation activities.

NOAA Fisheries seeks to examine its policies, criteria and processes related to provision of funding and other benefits to ensure equitable distribution. The key challenges will be to recognize and repair inequities and to identify new opportunities to deliver benefits to underserved communities.

### **Guiding Questions**

- What barriers do underserved communities face in accessing benefits managed by NOAA Fisheries?
- Do NOAA Fisheries' benefits (such as funding, fisheries allocations, permits, opportunities, services, and environmental protection and restoration) equitably reach or benefit underserved communities? Can we expand the equity in our delivery of these benefits?
- How can we better serve underserved communities with data and tools NOAA Fisheries provides to the public?
- What accountability structures and processes are needed to ensure equitable delivery of benefits, such as data collection, on benefit recipients and analysis of that data?

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<sup>4</sup> This includes administration of 52 [funding and financial service opportunity programs](#) that provide direct and indirect benefits to communities.

<sup>5</sup> Going forward, benefits will also include new funding opportunities under the Infrastructure Investment and Jobs Act, which allocates \$400 million to protect and restore habitats that sustain fisheries, recover protected species, and maintain resilient ecosystems and communities (15 percent of funding reserved for Tribes).

Table 6: Equitably Distribute Benefits, Action Areas and Proposed Metrics

Action	Possible Mechanisms/Metrics	Resources Needed
<p>1. Identify and remove potential barriers that underserved communities may face to access NOAA Fisheries’ benefits and services, including agency acquisition and financial assistance opportunities; work to incorporate EEJ considerations into all internal and external competitive funding opportunities</p>	<ul style="list-style-type: none"> <li>Review selection criteria that may systematically disqualify underserved communities</li> <li>Number of grant/funding/contracting programs reviewed and modified</li> <li>Increase accessibility of benefits and services (Linked to Outreach and Engagement)</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> <li>EEJ training</li> </ul>
<p>2. Track and report the percentage of grants, projects, disaster declarations, and other funding going to underserved communities</p>	<ul style="list-style-type: none"> <li>Tracking and reporting mechanisms developed</li> <li>Tracking and reporting mechanisms used to analyze the allocation of resources to underserved communities</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> </ul>
<p>3. Incorporate EEJ considerations into program decision-making and resource allocation. Considerations could include assessment of impacts and benefits to underserved communities in the community selection criteria, and prioritization of actions that benefit or correct a disparity among communities.</p>	<ul style="list-style-type: none"> <li>Number of programs that incorporate EEJ into allocation decision-making.</li> <li>Goal that at least 40% of overall climate adaptation and resilience resources benefit disadvantaged communities (<a href="#">EO 14008</a> Sec. 402, and “<a href="#">Justice 40</a>”)</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> <li>EEJ training</li> </ul>
<p>4. For natural resource damage assessments, ensure natural resource injuries (including lost human use, as well as social, cultural and economic benefits) borne by underserved communities are accounted for and ensure they are appropriately compensated with restoration of those habitats injured</p>	<ul style="list-style-type: none"> <li>Number of natural resource damage assessment cases with explicit consideration of natural resource and human use losses borne by underserved communities and engagement in restoration planning.</li> </ul>	<ul style="list-style-type: none"> <li>Current staff time</li> <li>EEJ training</li> </ul>
<p>5. Increase Tribal and state capacity for species recovery by requesting additional funds for Species Recovery Grants, which create jobs and improve populations of listed species, which often have cultural and subsistence value for Tribes.</p>	<ul style="list-style-type: none"> <li>Number of Species Recovery Grants to Tribes and states with underserved communities</li> </ul>	<ul style="list-style-type: none"> <li>Additional funding, as requested for FY23</li> </ul>

## **Inclusive Governance**

**Objective:** Enable the meaningful involvement of underserved communities in the decision-making processes.

Inclusive governance ensures broad and diverse participation in decision-making, such that all stakeholders are equally welcomed and encouraged to participate. However, members of underserved communities rarely have equal access to contributing to governance processes (see *Barriers to Equity and Environmental Justice*). NOAA Fisheries seeks to increase the diversity of voices through public comments, empower community participation, and support cooperative management efforts wherever possible.

The decisions NOAA Fisheries makes through its scientific, conservation, and management work impact communities. Federal rulemaking is subject to numerous requirements to ensure transparency and opportunities for public participation; however, access for underserved communities may be limited by a number of factors. It is incumbent upon us to ensure that all stakeholders have an equal voice in NOAA Fisheries' processes.

NOAA Fisheries works in partnership with Councils (and other advisory bodies), Tribes, Alaska Natives, stakeholders, state, territorial, and local government agencies, and numerous other partners to achieve NOAA Fisheries' mission. Increasing engagement and representation of underserved communities is essential to successful fulfillment of our mission.

### **Guiding Questions**

- How can NOAA Fisheries better account for the needs of underserved communities in decision-making?
- What accountability processes and structures are needed for NOAA Fisheries to assess if underserved community needs are adequately accounted for in decision-making?
- How can underserved communities have equitable access to participate in management processes (time/travel to in-person meetings, broadband internet to support remote participation, access to interpreters, etc.)?
- Is the information NOAA Fisheries uses to support decision-making accessible to stakeholders in underserved communities (plain language, 508 compliant, translated into appropriate primary languages, delivered in a preferred platform, etc.)?
- How can NOAA Fisheries facilitate representation of underserved communities on advisory bodies? How can NOAA Fisheries modify the decision-making process to improve access to underserved communities?
- How can NOAA Fisheries facilitate involvement of underserved communities when requesting public comment/input?

Table 7: Inclusive Governance Action Areas and Proposed Metrics

Action	Possible Mechanisms/Metrics	Resources Needed
<p>1. Increase and improve opportunities for underserved communities to engage in the decision-making process.</p>	<ul style="list-style-type: none"> <li>• Support diverse platforms for participatory engagement with members of underserved communities (Link to Outreach and Engagement)</li> <li>• Early engagement with community representatives to ensure communication methods are effective (Link to Outreach and Engagement)</li> <li>• Attendance at public meetings that occur in underserved communities</li> <li>• Host public meetings and other engagement in underserved communities</li> <li>• Underserved community satisfaction with decision-making process</li> <li>• Underserved community satisfaction with decisions made</li> </ul>	<ul style="list-style-type: none"> <li>• Travel funds for participants</li> <li>• Funds to compensate community members for their time and expertise</li> <li>• Funds for facilities rental, equipment, supplies, interpreters, etc.</li> <li>• Language experts</li> <li>• Staff training</li> </ul>
<p>2. Increase the diversity of public comments by improving the accessibility of public meetings and documents and regulations</p>	<ul style="list-style-type: none"> <li>• Identify new ways to make public meetings accessible to underserved communities (Link to Outreach and Engagement)</li> <li>• Percentage of public meetings notices in languages used by constituency and with interpretation services available</li> <li>• Provide documents that are accessible to underserved communities (Link to Outreach and Engagement)</li> </ul>	<ul style="list-style-type: none"> <li>• Travel funds for participants</li> <li>• Funds for translation services</li> <li>• Language and communication experts</li> </ul>
<p>3. Support representation of underserved communities in advisory bodies such as Regional Councils, Advisory Panels, recovery planning teams, Regional Fishery Management Organization advisory committees, Marine Fisheries Advisory Committee</p>	<ul style="list-style-type: none"> <li>• Collect demographic information to track representation of underserved communities and provide to relevant advisory bodies to encourage greater diversity and representation</li> <li>• Develop training and educational resources/materials and provide these resources to underserved communities to facilitate broader participation and understanding of advisory bodies</li> <li>• Satisfaction of representatives with their role in advisory bodies.</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• Outreach plan for new recruits</li> </ul>

<p>4. Establish or improve relationships with municipal, State, and Territorial governments, other federal agencies, and non-government organizations in Territories to leverage their community connections when soliciting public input</p>	<ul style="list-style-type: none"> <li>• Number of regions with outreach lists including these groups</li> <li>• Number of meetings scheduled to brief government officials in underserved communities</li> <li>• Feedback from attendees on the effectiveness of the outreach efforts</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ community liaison</li> <li>• Travel funding</li> </ul>
<p>5. Coordinate with municipal, State, and Tribal governments, other federal agencies, and non-government organizations on cross-cutting issues that impact underserved communities</p>	<ul style="list-style-type: none"> <li>• Number of interagency teams that address cross-cutting issues affecting underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> <li>• EEJ training</li> </ul>
<p>6. Continue to honor Tribal sovereignty and the federal trust responsibility.</p>	<ul style="list-style-type: none"> <li>• Number of formal and informal consultations with Tribal Nations</li> <li>• Satisfaction of Tribal Nations with the consultation process and outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>• Current staff time</li> </ul>
<p>7. Create training program to provide constituents the information and tools needed to confidently and productively engage in fishery (commercial, recreational, aquaculture) management decision processes</p>	<ul style="list-style-type: none"> <li>• Number of people trained</li> </ul>	<ul style="list-style-type: none"> <li>• Additional funding, as requested for FY23</li> </ul>

# Strategy Development Process

The development of the NOAA Fisheries’ EEJ Strategy is designed as a multi-year iterative process, which includes early community input and public feedback (Figure 1). In this section, we document development of the strategy with special attention to how community, internal, and public input were incorporated.

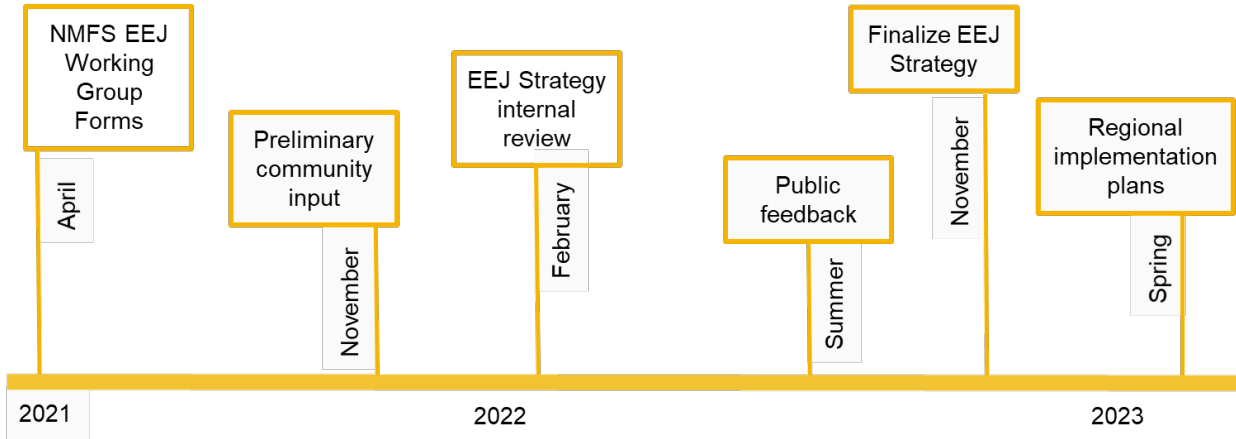


Figure 1. NOAA Fisheries’ EEJ Strategy development timeline

## Preliminary Community Input

In November 2021, we solicited early input from federally and non-federally recognized Tribes, Territories, and Indigenous communities on NOAA Fisheries’ role in EEJ. We reviewed, synthesized and summarized the recommendations, as follows:

### Empowering Environment

- Create a community committee with representatives of underserved groups
- Establish an EEJ liaison within underserved communities to network and provide understanding of cultural protocols
- Assess EEJ progress through monitoring and evaluation on an ongoing basis across all target areas.

### Policy and Plans

- Review implementation of cultural consideration in the MMPA and ESA
- Do EEJ analysis of policies

### Research and Monitoring

- Align NOAA Fisheries’ research priorities with underserved communities’ research priorities
- Collect survey data in all fishing communities

- Do EEJ analysis of management impacts
- Define and include non-commercial fisheries
- Increase funding to territorial science and invest in local scientific research and expertise

### **Outreach and Engagement**

- Ensure engagement involves the appropriate language and venue; hold in-person meetings with the public, local government, and fishing organizations
- Create targeted campaigns to raise awareness of NOAA Fisheries' mission and progress; create a mentor network to support robust proposal writing efforts; invest in capacity building for specialized workforces based on regional strengths

### **Equitable Distribution of Benefits**

- Consider barriers to benefit access such as criteria related to population size, recordkeeping burden, and non-commercial fisheries
- Do EEJ analysis of NOAA Fisheries' benefits distribution, such as research funding and grants

### **Inclusive Governance**

- Coordinate with other federal agencies on land issues that affect habitat and species
- Honor Tribal sovereignty and the federal trust responsibility

## **Internal Review**

In early 2022, the updated draft EEJ strategy was shared widely among NOAA Fisheries' leadership and staff. The working group received feedback from every region and several headquarters offices. As with the initial community input, feedback was categorized and addressed. The updated version was then presented to leadership in April 2022.

In response to the feedback, goals were included, objectives were reordered, and connection between them strengthened; metrics were reviewed to make them more output (rather than input) oriented.

## **Public Feedback—In Progress**

NOAA Fisheries seeks public comment on this document to ensure that this national strategy will lead us to equitably serve all communities. Effort will again be made to reach underserved communities and, if possible, hold in-person meetings. So far throughout this process in-person meetings have not been possible due to Covid-19 travel restrictions. We will seek feedback from communities we have not yet heard from, such as processing plant workers. We will also incorporate EEJ updates, as they become available from the Administration, DOC, and NOAA, into the final strategy.



# Appendix 1: EEJ Activity Categories

To better understand the scope of NOAA Fisheries’ current and planned efforts and to identify opportunities for future work, the NOAA Fisheries’ EEJ Working Group categorized 170 current EEJ activities. Six main categories and 17 distinct themes were identified<sup>6</sup>. Several activities were categorized under multiple themes and approaches, demonstrating how these approaches often work together. Outreach and Engagement was the most common approach used in NOAA Fisheries EEJ activities, followed by Research and Monitoring, then Benefit. Policy and Planning and Inclusive Governance had fewer examples and may represent opportunities for further prioritization and development. Below are examples of NOAA Fisheries’ ongoing work within those six EEJ approaches.

Table A1. Themes used to categorize EEJ activities and examples of each.

EEJ Approach	Theme	NOAA Fisheries Examples of Ongoing Work
<b>Empowering Environment</b>	<b>EEJ Training</b> - Activities and initiatives that improve communication and relationship building with underserved communities, including increasing understanding of NOAA Fisheries’ underserved constituent communities.	The Alaska Fisheries Science Center and Alaska Regional Office staff have taken cultural awareness training regarding Alaska Native communities, governance structure, and culture to help increase understanding and to build positive relationships and improve communication with and understanding of Alaska Native communities.
	<b>Capacity Building</b> - Capacity building, including career development products or activities.	NOAA Fisheries supports paid undergraduate summer internships for students from historically black colleges and minority serving institutions. Examples include the Inclusive NOAA Fisheries Internship Program (IN FISH!), Woods Hole Partnership Education Program, and the Hollings Preparation Program ( <a href="#">see a complete list</a> ). With NOAA Fisheries mentors supporting participants on a project, these programs provide opportunities for career development in science and management fields.
<b>Incorporate EEJ in Policy and Plans</b>	<b>Program Plans</b> - Planning ways to increase the reach and benefits of NOAA Fisheries programs to underserved communities.	The Office of Habitat Conservation formed a standing committee to develop recommendations for integrating EEJ principles into Damage Assessment Remediation and Restoration Program work. Recommendations inform the development of new strategies for engaging underserved communities, the application of new methods and decision frameworks that allow us to better consider and assess EEJ factors, and our ability to assess progress over time relative to specific objectives.

<sup>6</sup> The iterative process of categorizing and developing themes and broad categories included a preliminary and secondary analysis based on feedback.

<p><b>Incorporate EEJ in Policy and Plans</b> (cont'd.)</p>	<p><b>Policy</b> - Considering EEJ during the policy making process.</p>	<p>The Pacific Islands Regional Office is working with stakeholders, other U.S. government colleagues, and Western &amp; Central Pacific Fisheries Commission members to develop a management measure that will address concerns about the conditions faced by crew members from underserved communities, focusing on crew labor standards and safety.</p>
<p><b>Equity in Research and Researching Equity</b></p>	<p><b>Collaborative and Supporting Research</b> - Research or research support done in collaboration with underserved communities or the agencies/institutions that represent them (e.g., Tribal council, Territorial fisheries agency).</p>	<p>Local fishermen from the villages of Emmonak and Alakanuk, NOAA Fisheries, the Alaska Department of Fish and Game, and the Yukon Delta Fisheries Development Association work together each summer to retrieve salmon nets, count fish, measure water temperature and send samples to the Alaska Fisheries Science Center Auke Bay Laboratories to analyze fish diet and body condition. The <a href="#">project</a> provides opportunities to introduce young people to science careers while citizen scientists help study the decline in Chinook salmon returns to Yukon River.</p>
	<p><b>Social and Cultural Research</b> - Research to identify and characterize underserved fisheries communities. It includes social indicators, demographic data, and research on human health, safety, and food security, non-commercial fisheries, as well as local, traditional and cultural knowledge</p>	<p>Community characterizations can be used to highlight previously underserved communities. For example, the Alaska Fisheries Science Center led research projects on <a href="#">the role of Alaska Native women in Bristol Bay fisheries</a>, <a href="#">women’s engagement in 30 years of fishing in Alaska</a>, and <a href="#">women’s participation within commercial fisheries in North America and Europe</a> to explore the multifaceted nature of women’s fisheries engagement.</p>
	<p><b>Management and Governance Research</b> - Analysis of impacts of management measures on underserved communities, and their perception of and engagement in the decision-making process.</p>	<p>The Office of Habitat Conservation’s Restoration Center Deepwater Horizon Project evaluates each proposal in the reasonable range of alternatives to determine whether its implementation would have disproportionate impacts on minority, low-income, or underserved populations.</p>
<p><b>Outreach and Engage Equitably</b></p>	<p><b>Relationship Building and Knowledge Sharing</b> - Activities designed to build and maintain relationships with communities and provide important information.</p>	<p>Developed the Recreational Fishers Education Program - Puerto Rico in collaboration with the Puerto Rico Department of Environment &amp; Natural Resources and the Caribbean Fishery Management Council. This is an educational program tailored to the recreational fishing community in Puerto Rico. The program is made up of 7 modules: fishery laws and regulations, regulated marine species, highly migratory species, coral reef ecosystems, Puerto Rico Coral Reef laws and regulations, fishery management and participation, and catch and release best practices. The program covers both federal and territorial fisheries and will be launching virtual online workshops this summer.</p>

<b>Outreach and Engage Equitably</b> (cont'd.)	<b>Communication and Language Access</b> - Communication platforms, settings, and products to reach underserved communities.	To broaden the engagement of minority fishing communities with the rulemaking process, and improve compliance with new conservation and management measures, several NOAA Fisheries offices translate fishery management materials (e.g., fishing compliance guides, species identification and safe handling cards), and provide interpreters at public meetings. Translations have been done in Spanish, Vietnamese, and Samoan.
	<b>Education</b> - Education products or activities designed to reach underserved communities.	The Alaska Fisheries Science Center works with the Sealaska Heritage Institute and the Alaska Native Science and Engineering Program to provide activities and science, technology, engineering and mathematics content for Alaska Native middle school students.
<b>Equitably Distribute Benefits</b>	<b>Grants and Funding allocation</b> - Grants and funding allocation for activities for underserved communities.	The Southeast Regional Office worked with the Office of Protected Resources to develop a revised process for evaluating Species Recovery Grants to Tribes to ensure fair representation of Tribal projects for funding panel consideration. In addition, the Office of Habitat Conservation has included specific language in their Notice of Federal Funding Opportunities to include EEJ and restoration opportunities.
	<b>Fisheries and Aquaculture</b> - Fisheries and aquaculture activities for underserved communities.	The Northwest Fisheries Science Center collaborated with the Northwest Indian College to support a Tribal youth partnership researching new toxins affecting shellfish aquaculture.
	<b>Habitat Conservation and Restoration</b> - Habitat conservation and restoration activities for underserved communities.	The NOAA Chesapeake Bay Office created the Envision the Choptank partnership, which finds collaborative solutions that support healthy and productive oyster reefs, and restore fishable, swimmable waters to the Choptank River. Envision the Choptank, with NCBO's support, has developed and agreed to EEJ principles and incorporated EEJ considerations into project equity checklists and is focusing on habitat restoration and conservation projects in underserved communities to increase equity and inclusion in projects.
	<b>Climate Adaptation</b> - Climate adaptation activities for underserved communities	NCBO is assisting with a Chesapeake Bay Program project targeting green infrastructure projects to enhance coastal resilience in underserved areas to increase equity and inclusion in restoration.

<b>Inclusive Governance</b>	<b>Improve Diversity of Community Input -</b> Activities designed to increase diverse input to decision makers, including through public comment processes.	The Atlantic Highly Migratory Species Management Division actively considers diversity (ethnic, geographic, fishery, etc.) in the review of nominations to the HMS Advisory Panel with the goal of achieving diverse input and advice on HMS fishery issues and management. Recently, they have increased U.S. Caribbean participation on the HMS Advisory Panel, particularly from Puerto Rico.
	<b>Support Community Decision-Making -</b> Activities designed to increase access to decision-making for underserved communities.	The Southeast Regional Office worked with the Gulf of Maine Research Institute to expand the Marine Resource Education Program to Puerto Rico and the U.S. Virgin Islands. Nationally, MREP creates avenues for scientists and managers to learn from fishers and for fishers to improve understanding and engagement in the federal fishery science and management process.
	<b>Cooperative Management Processes -</b> Activities that include management collaboration with underserved communities.	Under the Marine Mammal Protection Act, NOAA Fisheries and Alaska Native organizations <a href="#">co-manage marine mammal populations in Alaska</a> . Co-management promotes full and equal participation by Alaska Natives in decisions affecting the subsistence management of marine mammals (to the maximum extent allowed by law) as a tool for conserving Alaska marine mammal populations.

## Appendix 2: NOAA Fisheries' Mandates and EEJ

NOAA Fisheries issues programs, policies and activities under the following laws, which often intersect with EEJ considerations:

### Magnuson-Stevens Fishery Conservation and Management Act

The [Magnuson–Stevens Fishery Conservation and Management Act](#)<sup>7</sup> (MSA) creates a public process governing marine fisheries management in U.S. federal waters with the objectives of preventing overfishing and rebuilding fisheries when needed. The MSA establishes a constituent-based development of management measures through open public forums called fisheries management councils. It contains a number of references to specific communities, including Tribal governments, native Hawaiian, Alaskan Native, and Western Pacific indigenous communities. The MSA describes national standards for the development of fishery management plans, and NOAA fisheries provides regulatory guidance on implementation of the ten national standards for this management.

National Standard 1 requires that conservation and management measures prevent overfishing while achieving, on a continuing basis, the optimum yield (OY) from each fishery for the U.S. fishing industry. 16 U.S.C. 1851(a)(1). OY refers to an amount of fish which provides the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account protection of marine ecosystems; and is prescribed on the basis of maximum sustainable yield “as reduced by any relevant social, economic, or ecological factor...” 16 U.S.C. 1802(33). For social factors, the [National Standard 1](#) guidelines provide a non-exhaustive list of potential considerations, fishery-related indicators, and other factors that may be considered. This list encourages consideration of “...preservation of a way of life for fishermen and their families, dependence of local communities on a fishery (e.g., involvement in fisheries and ability to adapt to change),... non-fishery related indicators (e.g., unemployment rates, percent of population below the poverty level, population density, etc.),...[and] the cultural place of subsistence fishing, obligations under Tribal treaties, proportions of affected minority and low-income groups, and worldwide nutritional needs” (50 C.F.R. 600.310(e)(3)(iii)(B)(1)).

National Standard 4 requires that allocations be fair and equitable, reasonably calculated to promote conservation, and carried out to avoid excessive shares (among other considerations). 16 U.S.C. 1851(a)(4). Relevant to EO 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government), the [National Standard 4 guidelines](#) provide guidance on these requirements and also other factors relevant to the fishery management plan’s objectives that should be considered, such as “economic and social consequences of the scheme, food production...dependence on the fishery by present participants and coastal communities, ...opportunity for new participants to enter the fishery...” (50 C.F.R. 600.325(c)(3)(iv)).

National Standard 8 requires conservation and management measures, consistent with MSA conservation requirements, to take into account the importance of fishery resources to fishing communities by utilizing economic and social data that are based upon the best scientific information available in order to provide for the sustained participation of such communities; and to the extent practicable, minimize adverse economic impacts on such communities (16 U.S.C. 1851(a)(8)). When addressing these requirements, the [National Standard 8 guidelines](#) provide that both consumptive and non-consumptive uses of fishery resources should be considered (50 C.F.R. 600.345(c)(4)). “Fishing community” is defined under the MSA as a “community that is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing

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<sup>7</sup> Formerly the Fisheries Conservation and Management Act (1976).

vessel owners, operators, and crew, and fish processors that are based in such community” (16 U.S.C. 1802(17); see also 50 C.F.R. 600.345(b)(3)). The NS8 guidelines further explain: “A fishing community is a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops)” (50 C.F.R. 600.345(b)(3)). These fishing communities likely overlap in some cases with underserved communities as defined above, and highlighting potential inequity in fisheries policy decisions in required analyses under National Standard 8 is an important intersection of our mandate and the Executive Orders.

As noted in the [2012 Department of Commerce Environmental Justice Strategy](#), the Magnuson-Stevens Fishery Conservation and Management Act recognizes the special role for Tribes and other indigenous peoples in the development and implementation of fisheries policies. For example, the Act stipulates that the Pacific Fishery Management Council, whose area of responsibility is seaward of California, Oregon, Washington and Idaho, will include a voting member who is a representative of an Indian Tribe with federally recognized fishing rights from the region. Additionally, the MSA authorizes a Western Alaska Community Development Quota Program, whose goals are providing eligible western Alaska villages with the opportunity to participate and invest in Bering Sea and Aleutian Islands fisheries, supporting economic development, alleviating poverty and providing economic and social benefits for residents, and achieving sustainable and diversified local economies (16 U.S.C. 1855(i)(1)). For any fishery under the authority of the Western Pacific Fishery Management Council, the MSA authorizes the establishment of a Western Pacific Community Development Program in order to provide access for western Pacific communities that participate in the program (16 U.S.C. 1855(i)(2)). The goals of this program include promoting the development of social, cultural and commercial initiatives that enhance opportunities for western Pacific communities of American Samoa, Guam, Hawaii and the Commonwealth of the Northern Mariana Islands.

There is also a mandate under the MSA to establish a pilot program for regionally-based marine education and training programs in the Western Pacific and the Northern Pacific to foster understanding, practical use of knowledge (including native Hawaiian, Alaskan Native, and other Pacific Islander-based knowledge), and technical expertise relevant to stewardship of living marine resources. The goal of programs or projects would be to improve communication, education, and training on marine resource issues and increase scientific education for marine-related professions among coastal community residents, including indigenous Pacific islanders, Native Hawaiians, Alaskan Natives, and other underrepresented groups in the region. 16 U.S.C. 1855(j).

## Endangered Species Act

The purpose of the [Endangered Species Act \(ESA\)](#) is to conserve threatened and endangered species and the ecosystems upon which they depend. NOAA Fisheries shares responsibility for implementing the ESA with the U.S. Fish and Wildlife Service; we are responsible for managing marine and anadromous fishes. The ESA prohibits the “take” (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of endangered species, but under certain circumstances, this prohibition does not apply to subsistence take by “any Indian, Aleut, or Eskimo who is an Alaskan Native who resides in Alaska” or “any non-native permanent resident of an Alaskan native village” 16 U.S.C. 1538(a); 1539(e).

In June 1997, the Secretary of Commerce and Secretary of Interior issued a Joint Department of Commerce and Department of the Interior Secretarial Order “[American Indian Tribal Rights, Federal Tribal Trust Responsibilities, and the Endangered Species Act](#)”. The Order acknowledges the trust responsibility and treaty obligations of the United States toward Indian Tribes and Tribal members and its government-to-government relationship in dealing with Tribes.



Accordingly, the Departments will carry out their responsibilities under the ESA in a manner that harmonizes the federal trust responsibility to Tribes, Tribal sovereignty, and statutory missions of the Departments, and that strives to ensure that Indian Tribes do not bear a disproportionate burden for the conservation of listed species, so as to avoid or minimize the potential for conflict and confrontation. Section 161 of Public Law 108–199 (188 Stat. 452), as amended by section 518 of Public Law 108–447 (118 Stat. 3267), directs all federal agencies to consult with Alaska Native corporations on the same basis as Tribal Nations under EO 13175. Additionally, Secretarial Order 3225, entitled “Endangered Species Act and Subsistence Uses in Alaska (Supplement to Secretarial Order 3206)” establishes a consultation framework between NOAA Fisheries and Alaska Natives regarding subsistence take of ESA-listed species under the Act. Consistent with these orders and consultation policies, we coordinate and consult with affected Tribal Nations when considering actions under the ESA that may impact Tribal trust resources, Tribally-owned fee lands, or the exercise of Tribal rights.

## [Fish and Wildlife Coordination Act](#)

Under the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), NOAA Fisheries annually funds [Species Recovery Grants to Federally Recognized Tribes](#) to support management, research, monitoring, and outreach activities that have direct conservation benefits for species listed under the ESA.

## [Marine Mammal Protection Act](#)

The [Marine Mammal Protection Act](#) of 1972 establishes a national policy to prevent marine mammals from declining beyond the point where they cease to be significant functional elements of the ecosystems of which they are a part. The MMPA prohibits the “take” of marine mammals, including the hunting, capturing, collecting, or killing of these animals, in U.S. waters or on lands subject to the jurisdiction of the U.S., with some exceptions. It requires that an incidental take authorization be obtained for the unintentional “take” of marine mammals incidental to activities including construction projects. However, under certain circumstances, the MMPA exempts subsistence take by Alaska Natives (described in 16 U.S.C. 1371(b) as “any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean”); see also 50 CFR 216.3 and 216.23. Additionally, [section 119 of the MMPA](#) allows NOAA Fisheries to establish agreements with [Alaska Native Organizations for co-management](#) of marine mammals harvested for subsistence and cultural purposes. Co-management promotes full and equal participation by Alaska Natives in decisions affecting the subsistence management of marine mammals (to the maximum extent allowed by law) as a tool for conserving marine mammal populations in Alaska.

Under applicable circumstances, the MMPA also provides NOAA Fisheries with authority to waive or grant an exemption to the take prohibition of marine mammals to facilitate the exercise of treaty rights to hunt or fish reserved by federally recognized treaty Tribes. For example, under section 120 of the Act, NOAA Fisheries may authorize the lethal removal of seals and sea lions having a significant negative impact on ESA-listed salmon on the West Coast. In certain designated areas, NOAA Fisheries may authorize Tribal governments to participate in the removal process. Under section 101(a)(3) of the MMPA, NOAA Fisheries may consider granting a waiver of the take prohibition to allow a Tribe to exercise their treaty right to engage in a subsistence hunt of healthy populations of marine mammals.

## [National Environmental Policy Act](#)

The National Environmental Policy Act establishes the national environmental policy of the federal Government to use all practicable means and measures to foster and promote the general welfare, create and maintain conditions under which humans and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of

present and future generations of Americans, and directs federal agencies to consider the environmental impacts of their proposed actions prior to making decisions. The Council on Environmental Quality’s 1997 [Environmental Justice Guidance under the National Environmental Policy Act](#) highlights the importance of NEPA in identifying environmental justice issues and offers principles for incorporating environmental justice into NEPA reviews of our proposed actions. The Federal Interagency Working Group on Environmental Justice established a NEPA Committee in 2012 pursuant to the [Memorandum of Understanding on Environmental Justice and Executive Order 12898 \(2011\)](#). The Memorandum identified NEPA as an area of focus for inclusion in the agencies’ environmental justice efforts and directed efforts to “include interagency collaboration.” After examining best practices, lessons learned, research, analysis, training, consultation, and other experiences of federal NEPA practitioners across the federal government, the EJ IWG produced [Promising Practices for EJ Methodologies in NEPA Reviews \(2016\)](#) as an informal guide for sharing effective ways to build robust consideration of environmental justice into NEPA practice.

As required under NEPA, fishery management actions go through the environmental review process. The [2012 Department of Commerce Environmental Justice Strategy](#) notes that as the custodian of extensive environmental data, NOAA is uniquely equipped to assess “the potential ... disproportionate and adverse environmental impacts on low-income and minority populations”. In addition, the guidance notes that NOAA Fisheries studies the impact of climate change on NOAA Fisheries-trust resources, including fisheries, ESA and MMPA species, and their associated habitats. NOAA Fisheries has key data resources for understanding how those climate-induced changes to our resources will specifically impact underserved/minority/Tribal populations.

## [Comprehensive Environmental Response, Compensation and Liability Act \(CERCLA\)](#)

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), provides a comprehensive group of authorities focused on one main goal: to address any release, or threatened release, of hazardous substances, pollutants, or contaminants that could endanger human health and/or the environment. CERCLA’s response provisions focus on the protection of human health and the environment. The statute also provides authority for assessment and restoration of natural resources that have been injured by a hazardous substance release or response.

## [Oil Pollution Act \(OPA\)](#)

The [Oil Pollution Act](#) of 1990 strives to prevent oil spills from vessels and facilities, enforces removal of spilled oil and assigns liability for the cost of cleanup and damages. The Act requires specific operating procedures; defines responsible parties and financial liability; implements processes for measuring damages; specifies damages for which violators are liable; and establishes a fund for damages, cleanup, and removal costs. It gives NOAA and others the authority to address impacts to natural resources caused by oil spills and to take actions to respond to or prevent an oil spill.





**NOAA  
FISHERIES**

NOAA Fisheries (Pesqueras)

# **Equity and Environmental Justice Strategy (Estrategia de Equidad y Justicia Medioambiental)**

# Resumen ejecutivo

NOAA Fisheries trabaja para proporcionarles un servicio equitativo a las partes interesadas, involucrando a las comunidades menos favorecidas en las actividades científicas, la conservación y la gestión de los recursos oceánicos de la nación y su hábitat. Esta estrategia nacional se basa en el trabajo previo de NOAA Fisheries en materia de equidad y justicia medioambiental (EEJ) para ofrecer orientación sobre la incorporación y la priorización de la EEJ en las actividades actuales y futuras que respalden la misión de NOAA Fisheries.

Las actividades científicas, de conservación y gestión de NOAA Fisheries están al servicio de un amplio espectro de comunidades en los Estados Unidos y sus territorios. Al reconocer que no todas las comunidades tienen las mismas oportunidades y acceso a los servicios de NOAA Fisheries, hemos identificado tres objetivos generales (Tabla 1). Esta estrategia nacional requiere planes de implementación por etapas e informes de progreso anuales para garantizar mejoras en cinco áreas fundamentales: Política, Investigación, Alcance, Beneficios y Administración. Una sexta área principal, Ambiente empoderante, le brinda al personal de la agencia el apoyo y las herramientas necesarias para implementar cambios (Tabla 1).

La identificación y el reconocimiento de las comunidades menos favorecidas, así como la respuesta a las barreras de acceso que estas enfrentan, permitirán que NOAA Fisheries les ofrezca un servicio más equitativo y efectivo a todas las comunidades. El foco en estos seis objetivos fundamentales dará lugar a una gestión más equitativa de los recursos oceánicos de la nación y su hábitat.

Esta estrategia nacional es el resultado de las orientaciones de órdenes ejecutivas recientes, del Equity Action Plan (Plan de Acción para la Equidad) del Department of Commerce, del Climate Council de NOAA y de la dirección de NOAA Fisheries, así como de la participación activa del personal y de una necesidad clara y creciente demostrada por las comunidades menos favorecidas. Para que quede claro, dicha estrategia no justifica la falta de cambios y no es una renovación superficial de las actividades existentes. Por el contrario, esta estrategia nacional describe el camino que seguirá NOAA Fisheries para incorporar la EEJ en los servicios esenciales que les proporcionamos a todas las partes interesadas.

Tabla 1. Los tres objetivos globales de NOAA Fisheries y los seis objetivos fundamentales de la EEJ

<b>Objetivos de equidad y justicia medioambiental de NOAA Fisheries</b>				
<b>Priorizar la identificación, el abordaje equitativo y la participación significativa de las comunidades menos favorecidas.</b>		<b>Proporcionar servicios equitativos.</b>	<b>Priorizar la EEJ en nuestro trabajo por mandato y misión.</b>	
<b>Objetivos</b>				
<p><b>Ambiente empoderante:</b>                      Proporcionar apoyo institucional, lo que incluye las capacitaciones y los recursos necesarios para implementar múltiples acercamientos a la EEJ en NOAA Fisheries. La dirección y la gerencia internas identificarán la EEJ como una prioridad e incentivarán al personal a considerarla en todos los aspectos de su trabajo.</p>				
<p><b>Incorporación de la equidad y justicia medioambiental en políticas y planes:</b>                      Garantizar que nuestras políticas promuevan la igualdad de oportunidades para todas las personas y que no creen desigualdades no deseadas ni cargas desiguales para las comunidades desatendidas.</p>	<p><b>Equidad en la investigación e investigación de la equidad:</b>                      Identificar a las comunidades menos favorecidas, abordar sus necesidades y evaluar los impactos de las decisiones de la gestión.</p>	<p><b>Divulgación y participación equitativa:</b>                      Construir relaciones con las comunidades menos favorecidas para comprender mejor sus necesidades y mejorar el intercambio de información con todas las partes interesadas.</p>	<p><b>Distribución equitativa de los beneficios:</b>                      Distribuir los beneficios de forma equitativa entre las partes interesadas de manera que se promueva el acceso a oportunidades por parte de las comunidades menos favorecidas.</p>	<p><b>Administración inclusiva:</b>                      Prever la participación significativa de las comunidades menos favorecidas en los procesos de toma de decisiones.</p>

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## Lista de acrónimos

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act (Ley Integral de Respuesta, Compensación y Responsabilidad Ambiental)

DOC: Department of Commerce (Departamento de Comercio)

EEJ: Equity and Environmental Justice (Equidad y Justicia Medioambiental)

EJ IWG: Federal Interagency Working Group on Environmental Justice (Grupo de Trabajo Federal Interinstitucional sobre la Justicia Ambiental)

ESA: Endangered Species Act (Ley sobre las Especies en Peligro de Extinción)

HMS: Highly Migratory Species (Especies altamente migratorias)

IN FISH! Programa inclusivo de pasantía de NOAA Fisheries

LGBTQ+: lesbianas, gays, bisexuales, transgénero y queer

MMPA: Marine Mammal Protection Act (Ley de Protección de Mamíferos Marinos)

MREP: Marine Resource Education Program (Programa de Educación sobre los Recursos Marinos)

MSA: Magnuson–Stevens Fishery Conservation and Management Act (Ley Magnuson -Stevens sobre la Administración y Conservación de la Pesca)

NCBO: NOAA Chesapeake Bay Office (Oficina de NOAA de la bahía de Chesapeake)

NEPA: National Environmental Policy Act (Ley Nacional de Política Medioambiental)

NMFS: National Marine Fisheries Service (Servicio Nacional de Pesca Marina)

NOAA Fisheries: National Oceanic and Atmospheric Administration National Marine Fisheries Service (Servicio Nacional de Pesca Marina de la Administración Nacional Oceánica y Atmosférica)

OHC: Office of Habitat Conservation (Oficina de Conservación del Hábitat)

OPA: Oil Pollution Act (Ley de Contaminación Petrolera)

PDS: Policy Directive System (Sistema de Directivas de Políticas)

TEK: Traditional Ecological Knowledge (Conocimiento Ecológico Tradicional)

# Introducción

Esta estrategia nacional proporciona orientación para incorporar y priorizar la equidad y justicia medioambiental (EEJ) en las actividades actuales y futuras que respalden la misión de NOAA Fisheries. Si bien, el trabajo de NOAA Fisheries ha incorporado elementos de EEJ, nuestros esfuerzos a la fecha no han logrado el alcance, la magnitud y la duración de los desafíos que enfrentan las comunidades menos favorecidas. En 2021, el presidente Biden firmó las Órdenes Ejecutivas 13985 y 14008 para fomentar la equidad y la justicia medioambiental dentro del gobierno federal y sus iniciativas orientadas hacia el exterior. En respuesta, el Plan Estratégico de los años FY22-26 del Department of Commerce revisó su misión, “para crear las condiciones necesarias para el crecimiento económico y el acceso a oportunidades de parte de todas las comunidades”, y publicó su Equity Action Plan. NOAA Fisheries respondió con la convocatoria de un Grupo de Trabajo de EEJ para mejorar el intercambio de información, coordinar la experiencia interna e informar la implementación de la EEJ. El Grupo de Trabajo de EEJ identificó las actividades actuales de la EEJ (descritas en detalle en el Apéndice 1) y desarrolló este documento como un marco para incluir la EEJ en todo lo que hace NOAA Fisheries, a diario, para cumplir nuestra misión de brindar servicios vitales de forma equitativa para toda la nación. Para implementar esta estrategia se requiere la participación de toda la fuerza de trabajo y todas las oficinas y programas de NOAA Fisheries. Si bien, hay mucho que podemos hacer sin fondos adicionales, para lograr un progreso significativo serán necesarios dichos fondos adicionales, según lo requerido en la Solicitud de Presupuesto para el año FY23.

## Definiciones

NOAA Fisheries adopta las siguientes definiciones:

*Justicia Medioambiental* es el tratamiento justo y la participación significativa de todas las personas, independientemente de la raza, el color, el género, la orientación sexual, la nacionalidad, la religión, la situación de discapacidad o ingresos durante el desarrollo, la implementación y la aplicación de las leyes, normas y políticas medioambientales, incluidas, entre otras:

- Protección equitativa frente a los peligros medioambientales y de la salud;
- Acceso equitativo a los procesos de toma de decisiones; y
- Oportunidades equitativas para las comunidades menos favorecidas que han sido marginadas.\*

*Equidad* es el tratamiento aceptable, justo e imparcial, constante y sistemático de todas las personas, incluso las que pertenecen a comunidades menos favorecidas a quienes se les ha negado dicho tratamiento.\*\*

*Participación significativa\** se refiere:

- Las partes interesadas tienen la oportunidad de participar en decisiones sobre actividades que pueden afectar su medio ambiente y su salud.
- La contribución del público fundamenta las decisiones de NOAA Fisheries.
- Las inquietudes de la comunidad se tendrán en cuenta en el proceso de toma de decisiones.
- Las personas encargadas de tomar decisiones buscarán y facilitarán la participación de las partes potencialmente afectadas.

*Partes interesadas\** son personas o representantes de organizaciones o grupos de interés que tienen un gran interés en los trabajos y políticas de NOAA Fisheries.

*Público\** es la población en general de los Estados Unidos. Muchos segmentos del “público” pueden tener un interés particular o posiblemente se vean afectados por los programas y decisiones de NOAA Fisheries.

*Comunidades desatendidas*, como se define en la Orden Ejecutiva 13985, se refiere a las comunidades a las que se les ha negado sistemáticamente la oportunidad total de participar en aspectos de la vida económica, social y cívica. Estas incluyen comunidades geográficas así como poblaciones que comparten una característica, historia o identidad determinada. Si se adapta la Orden Ejecutiva 13985, estos grupos podrían incluir, entre otros: mujeres y niñas; personas de raza negra, latina e indígena y los nativos americanos\*\*\*, los estadounidenses de origen asiático y los isleños del Pacífico y otras personas de color; los miembros de minorías religiosas; las personas lesbianas, gays, bisexuales, transgénero y queer (LGBTQ+); las personas con discapacidad; las personas que viven en zonas rurales, y las personas en situación de pobreza o desigualdad persistente. En relación con el contexto específico de la pesca, los grupos desatendidos dentro de las comunidades pesqueras pueden incluir, por ejemplo, a los participantes de la pesca para la subsistencia y sus dependientes, tripulaciones de barcos pesqueros y trabajadores del proceso y distribución de la pesca. Finalmente, las comunidades de pesca territorial (lo que incluye a Samoa Estadounidense, Guam, la Mancomunidad de las Islas Marianas del Norte, Puerto Rico y las Islas Vírgenes Estadounidenses) también se pueden categorizar como desatendidas. Las comunidades desatendidas varían según la región y las barreras que enfrentan. Además, muchas de estas categorías de comunidades se entrecruzan. Por lo tanto, la identificación y la participación significativa de las comunidades desatendidas será un proceso regional específico y continuo que requerirá un compromiso a largo plazo.

*Cambio climático* es el cambio de las condiciones oceánicas y atmosféricas a largo plazo, lo que resulta en un aumento de temperatura, elevación del nivel del mar, y cambios en los patrones climáticos como sequías, inundaciones y frecuencia o duración de las tormentas. La NOAA identifica el cambio climático como un problema de EEJ porque sus impactos se experimentan de manera desigual en todo el país: las desigualdades socioeconómicas de larga data pueden hacer que las comunidades desatendidas, que a menudo tienen la mayor exposición a los peligros y la menor cantidad de recursos para responder a estos, sean más vulnerables. Tal como se describe en Climate Science Strategy Five Year Progress Report de NOAA Fisheries (2021), las comunidades pesqueras pueden ser especialmente vulnerables a la elevación del nivel del mar, la pérdida de la abundancia y diversidad de la pesca, y los impactos resultantes en su economía local.

#### *Diversidad, equidad, inclusión y accesibilidad*

NOAA Fisheries se esfuerza para erradicar la discriminación en nuestros programas y políticas, identificar y reducir las barreras hacia la equidad y ser inclusivos con todas las comunidades afectadas por el trabajo de NOAA Fisheries. Esta estrategia de EEJ se centra en el avance de la justicia medioambiental y la atención equitativa de todas las comunidades desatendidas a través de los servicios y políticas externos de NOAA Fisheries. La correcta implementación de esta estrategia dependerá, parcialmente, del progreso continuo hacia una fuerza laboral diversa e inclusiva de NOAA Fisheries. Los esfuerzos internos en cuanto a la diversidad, equidad, inclusión y accesibilidad de NOAA Fisheries se centran en cultivar una fuerza laboral diversa para reflejar, comprender y responder a las diversas comunidades con las que trabajamos, incluidas las comunidades desatendidas, como se describe en el [NOAA Fisheries Diversity and Inclusion Strategic Plan](#) para 2022- 2025 y como se describe en la [Orden Ejecutiva 14035](#). Aquí, la diversidad abarca la nacionalidad, el idioma, la raza, el color, las capacidades, el origen étnico, el género, la edad, la religión y la orientación sexual, entre otros factores. La inclusión se refiere a un tratamiento, acceso, oportunidades y avance equitativo de todos los empleados.

\* adaptado de la definición de la [Environmental Protection Agency](#)

\*\* como se define en la [Orden Ejecutiva 13985](#)

\*\*\* El gobierno federal de los Estados Unidos tiene pautas específicas para las relaciones con las Tribus reconocidas a nivel federal. Esta Equity and Environmental Justice Strategy no modifica ni afecta dicha responsabilidad de ninguna manera. Consulte la [Orden Ejecutiva 13175](#) (Consulta y Coordinación con los Gobiernos Tribales Indígenas), que ordena a las agencias federales a “tener un proceso de rendición de cuentas para garantizar los aportes significativos y oportunos de los funcionarios tribales en el desarrollo de políticas reglamentarias que tengan implicaciones para las Tribus” Consulte también [NOAA Procedures for Government-to-Government Consultation with Federally Recognized Indian Tribes and Alaska Native Corporations](#) (Procedimientos de la NOAA para la consulta de Gobierno a Gobierno con las Tribus Indígenas reconocidas a nivel federal y las Corporaciones nativas de Alaska) que guían el trabajo de NOAA Fisheries con las Tribus reconocidas a nivel federal.

## Misión de administración de NOAA Fisheries

NOAA Fisheries<sup>1</sup> es responsable de la administración de los recursos oceánicos de la Nación y sus hábitats. Con el respaldo de una ciencia sólida, NOAA Fisheries provee servicios vitales a la Nación, lo que incluye garantizar una industria pesquera productiva y sostenible, fuentes seguras de productos del mar, la conservación y recuperación de recursos protegidos, y la protección y restauración de ecosistemas. El trabajo de NOAA Fisheries impacta de forma

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<sup>1</sup> Conocida de manera informal como NOAA Fisheries, el nombre oficial de la agencia encargada de la legislación y reglamentación es el National Marine Fisheries Service (NMFS).



directa en las oportunidades económicas, la salud y el medioambiente de muchas comunidades, incluidas las comunidades desatendidas.

## Disposiciones de Equidad y Justicia Ambiental

Los programas y políticas del Gobierno pueden jugar un rol importante en el avance de la justicia medioambiental y la distribución equitativa de servicios para las personas, familias, empresas y comunidades. Reconociendo esto, se han emitido órdenes ejecutivas para promover la EEJ dentro del gobierno federal y guiar la forma en que NOAA Fisheries y otras agencias federales implementan su misión. La EEJ es una prioridad para la Administración, y muchos grupos entre agencias están actualizando las métricas, definiciones y enfoques que se incorporarán a esta estrategia a medida que estén disponibles.

La [Orden Ejecutiva 13985](#) (Promoción de la equidad racial y el apoyo a las comunidades desatendidas a través del gobierno federal), firmada en 2021, establece

*... el gobierno federal debe buscar un enfoque integral para el avance de la equidad para todas las personas, incluidas las personas de color y aquellas personas que han sido desatendidas, marginadas y afectadas de manera adversa a lo largo de la historia por la pobreza y desigualdad persistente. Promover afirmativamente la equidad, los derechos civiles, la justicia racial y la igualdad de oportunidades es responsabilidad de todo nuestro Gobierno. Debido a que promover la equidad requiere un enfoque sistemático para incorporar la equidad en los procesos de toma de decisiones, los departamentos ejecutivos y las agencias (agencias) deben reconocer las desigualdades en sus políticas y programas que sirven como barreras para la igualdad de oportunidades y trabajar para corregirlas.*

También firmada en 2021, la [Orden Ejecutiva 14008](#) (*Hacer frente a la crisis climática en el país y en el extranjero*) ordena a las agencias federales que

*hagan que el logro de la justicia medioambiental sea parte de sus misiones mediante el desarrollo de programas, políticas y actividades que aborden los impactos desproporcionadamente altos y adversos en la salud humana, del medio ambiente, el clima y otros impactos acumulativos en las comunidades desfavorecidas, así como los desafíos económicos que acompañan a dichos impactos.*

El White House Environmental Justice Advisory Council se estableció mediante la Orden Ejecutiva 14008. El EJ Advisory Council recomienda que cada agencia cree una tarjeta de puntuación de justicia ambiental para hacer un seguimiento de los impactos reglamentarios y los beneficios para las comunidades desfavorecidas. Las recomendaciones de la tarjeta de puntuación incluyen: evaluar el acceso a los beneficios y su distribución; hacer un seguimiento de los fondos federales; establecer comentarios iterativos y bidireccionales; involucrar al personal de la agencia; documentar las cargas potenciales; e identificar objetivos a corto y largo plazo.

La [Orden Ejecutiva 12898](#) (*Acciones Federales para Abordar la Justicia Ambiental en Poblaciones Minoritarias y Poblaciones de Bajos Ingresos*), firmada en 1994, ordena a cada agencia federal, “[en] la mayor medida posible y permitida por la ley...” identificar y abordar, según corresponda, los efectos desproporcionadamente altos y adversos para la salud humana o el medio ambiente de sus acciones en las poblaciones minoritarias y de bajos ingresos.

El Equity Action Plan (2022) del Department of Commerce sienta las bases para la programación y las políticas que llegarán a una audiencia más grande y diversa, y abordarán las principales barreras para el éxito económico de las comunidades históricamente desatendidas. Los objetivos del plan incluyen: facilitar el acceso a los servicios, la ciencia y los datos para las comunidades desatendidas, garantizar que los beneficios y la financiación promuevan la equidad

racial y apoyen a las comunidades desatendidas, y brindar oportunidades económicas a las comunidades desatendidas mediante la institucionalización de la equidad a largo plazo. Estos objetivos necesitan sistemas que recopilen datos cuantitativos y cualitativos para medir el progreso de la equidad y un lugar de trabajo más diverso, inclusivo, equitativo y accesible.

La Estrategia de Justicia Ambiental (2012) del DOC delineó los siguientes "Principios rectores de la justicia ambiental":

- Se debe proporcionar oportunidades significativas a la población para que participen en la formulación, diseño y ejecución de programas, políticas y actividades departamentales.
- Las Tribus deberán, de gobierno a gobierno, recibir consultas regulares y significativas y oportunidades de colaboración en el desarrollo de las políticas del Departamento que tengan implicaciones tribales (ver Orden Ejecutiva 13175).
- Todas las poblaciones deberían compartir ( y no se les excluye de) los beneficios de los programas, las políticas y las actividades del Departamento, que afecten la salud humana o el medio ambiente.
- Ninguna población debe verse afectada de manera desproporcionadamente alta y adversa por los programas, las políticas o las actividades de la agencia que afecten la salud humana o el medio ambiente.
- El Departamento participará de las actividades de justicia medioambiental de manera transparente y responsable.

Además de estas disposiciones, también se alienta y prioriza la EEJ también conforme a una serie de estatutos federales que rigen el trabajo de NOAA Fisheries con algunas comunidades desatendidas (que se describen en detalle en el Apéndice 2). Las disposiciones de estas leyes alientan explícitamente la EEJ o permiten que NOAA Fisheries aborde la EEJ según nuestro criterio en conformidad con las autoridades existentes en cuanto a nuestra planificación, políticas y reglamentaciones a medida que cumplimos con nuestras obligaciones de conservación y gestión. NOAA Fisheries se esfuerza para hacer que los procesos de toma de decisiones sean accesibles y transparentes para el público, y para ayudar a las partes interesadas a comprender y participar en las decisiones federales que podrían afectar sus medios de vida y sus comunidades.

## **Barreras para la Equidad y la Justicia Ambiental**

Como administrador de los recursos y hábitats de los océanos de la nación, el trabajo de NOAA Fisheries afecta a las comunidades desatendidas que dependen de los ecosistemas marinos para su bienestar ambiental, económico, social y cultural. Sin embargo, las comunidades desatendidas experimentan barreras que les impiden recibir un tratamiento justo y participar significativamente del trabajo de NOAA Fisheries. Las barreras que enfrentan las comunidades desatendidas a menudo se interrelacionan pero varían según la historia, las características y las necesidades de la comunidad. A continuación, identificamos algunas barreras comunes.

### **1. Desconocimiento de las comunidades desatendidas**

La primera barrera de la EEJ dentro de NOAA Fisheries es que no hemos identificado completamente a las comunidades desatendidas que se ven afectadas por nuestro trabajo. Esta supervisión afecta a quienes se consideran partes interesadas de NOAA Fisheries, a las personas para quienes se diseña la investigación y la supervisión, y quienes conocen y reciben los servicios. Sin el reconocimiento de las comunidades desatendidas, no se pueden documentar ni resolver sus necesidades.

## **2. Barreras estructurales**

Las comunidades desatendidas pueden enfrentar barreras estructurales (p. ej., leyes, reglamentaciones y políticas) que evitan el acceso equitativo a los recursos o a los servicios de NOAA Fisheries. Por ejemplo, los criterios para la asignación de recursos pueden basarse en la propiedad histórica, crear servicios para la mayor cantidad de personas, generar los mayores beneficios netos o priorizar segmentos comerciales de la pesca, lo cual puede excluir a las comunidades desatendidas.

## **3. Barreras para acceder a los servicios**

Las comunidades desatendidas pueden experimentar barreras para acceder a los servicios de NOAA Fisheries debido a las diferencias de idioma o las dificultades para asistir a las reuniones de la NOAA a causa de los lugares de reunión, horarios o costos del viaje. Además, las disposiciones y los protocolos de gestión pueden ser contrarios a la toma de decisiones culturales y las prácticas de asignación de algunas comunidades desatendidas.

## **4. Complejidad del sistema**

La complejidad para acceder a los servicios federales puede inhibir la inclusión de las partes interesadas, especialmente de quienes no han recibido previamente tales servicios. Los sistemas de solicitud de beneficios pueden ser difíciles de recorrer y requerir un conocimiento especial.

## **5. Brechas en el conocimiento**

Nuestra habilidad para identificar, caracterizar y atender a todas las comunidades de forma equitativa requiere que se priorice la investigación llevada a cabo por antropólogos, sociólogos, geógrafos, economistas y científicos sociales interdisciplinarios. De manera similar, el personal de educación y divulgación es limitado y no tiene los recursos para comprometerse con todas las comunidades en todos los temas. Tampoco tenemos personal en la ubicación geográfica ni con la alfabetización cultural y de lenguaje que se necesita para involucrar a muchas de nuestras comunidades desatendidas.

## **6. Brechas en la representación**

**Las comunidades desatendidas no están bien representadas en los Consejos regionales de gestión pesquera establecidos conforme a MSA o en los paneles asesores asociados con esos consejos.** Las comunidades desatendidas tampoco están bien representadas en la fuerza laboral de NOAA Fisheries, lo que lleva a la falta de conciencia mencionada anteriormente y a brechas fundamentales en las perspectivas. El personal puede priorizar inconscientemente a sus propias comunidades debido a la familiaridad, el fácil acceso y las rutas de comunicación preexistentes.

# Enfoque de NOAA Fisheries hacia EEJ

Para abordar las barreras que enfrentan las comunidades desatendidas, el Grupo de Trabajo de la EEJ de NOAA Fisheries desarrolló un marco que incluye objetivos a largo y a corto plazo, según la recomendación del White House EJ Advisory Council. Estas metas y objetivos interactúan para crear los procesos de capacidad y responsabilidad necesarios para promover la EEJ dentro de la agencia, como lo recomienda el Equity Action Plan del DOC.

## Metas a largo plazo

1. Priorizar la identificación, el abordaje equitativo y la participación significativa de las comunidades menos favorecidas.
2. Proporcionar una prestación de servicios equitativa de NOAA Fisheries.
3. Priorizar la EEJ en nuestro trabajo por mandato y misión.

Para lograr estos objetivos, cada programa nacional (p. ej., Office of Protected Resources, Office of Habitat Conservation, etc.) y región geográfica (p. ej., Sudeste, Islas del Pacífico, etc.) crearán un plan de implementación gradual de EEJ (posiblemente como parte de sus [NOAA Fisheries Geographic Strategic Plans](#) para el año fiscal 2023-2028) que sea específico y responda a las necesidades de las comunidades desatendidas y permita el aporte de dichas comunidades. Cada programa, centro de ciencias y oficina regional establecerá la EEJ como áreas de prioridad o hitos en la planificación estratégica anual que comienza en el Año FY2023. Las oficinas del programa nacional coordinarán con las oficinas regionales y centros e ciencias para establecer la propiedad de los objetivos compartidos. Los planes de implementación incluirán métricas que describan las acciones de la EEJ y el progreso se informará públicamente de forma anual. Para realizar un seguimiento del progreso hacia nuestros objetivos, NOAA Fisheries evaluará estos informes anuales mediante una tarjeta de puntuación de EEJ que incluye las métricas recomendadas por el White House EJ Advisory Council (p. ej., acceso y distribución de beneficios y fondos, comentarios de comunidades desatendidas, seguimiento de financiamiento federal, compromiso del personal y documentación de las cargas reglamentarias). Actualmente, estas métricas están en revisión en el gobierno federal; dependiendo de la disponibilidad, las métricas finales se incorporarán a la tarjeta de puntuación de EEJ de NOAA Fisheries.

## Objetivos a corto plazo

Para ofrecer coherencia en el desarrollo de los planes regionales o programáticos, el Grupo de Trabajo de EEJ de NOAA Fisheries ha identificado seis objetivos de EEJ (Tabla 1). En las secciones a continuación, explicamos cada objetivo y su rol en el compromiso de NOAA Fisheries con la EEJ y proporcionamos preguntas de orientación para tener en cuenta al desarrollar planes regionales o programáticos para el trabajo diario de NOAA Fisheries. Muchas de estas preguntas demuestran la necesidad de realizar trabajo adicional de EEJ en un área particular. Estas necesidades se ven reflejadas en un resumen de acciones, métricas y recursos necesarios para implementar cada objetivo. Estas métricas de EEJ se actualizarán si el White House EJ Advisory Council, DOC, y NOAA brindan más orientación.

### **Ambiente empoderante**

**Objetivo:** Proporcionar apoyo institucional, lo que incluye las capacitaciones y los recursos necesarios para implementar los múltiples enfoques de la EEJ en NOAA Fisheries. La dirección y la administración internas identificarán la EEJ como una prioridad e incentivarán al personal a considerarla en todos los aspectos de su trabajo.

Para implementar esta estrategia es imperativo que la dirección y la administración creen un entorno de empoderamiento. Esto significa identificar la EEJ como prioridad al permitir que los empleados integren de manera significativa las consideraciones de la EEJ en su trabajo diario y respaldar esto a través de un mayor conocimiento de la EEJ dentro de la fuerza laboral de NOAA Fisheries. Como indicó el White House EJ Advisory Council, “La cultura profesional administrativa y de la agencia debe alentar e incentivar al personal a reflexionar y compartir las lecciones aprendidas”. Esto también debe apoyarse desde un enfoque de múltiples escalas incluido el trabajo continuo del Grupo de Trabajo nacional de la EEJ de NOAA Fisheries, así como los grupos de trabajo regionales de la EEJ para desarrollar planes específicos regionales.

Las necesidades básicas compartidas entre los múltiples objetivos incluyen:

- Capacitación sobre EEJ
- Tiempo del personal
- Conocimiento del personal
- Enlaces comunitarios
- Recopilación, análisis e informe de datos demográficos
- Colaboración con otras agencias
- Servicios de traducción de idiomas

### **Preguntas de orientación**

- ¿Cómo pueden la dirección y la fuerza laboral de NOAA Fisheries reflejar mejor la diversidad de las comunidades a las que servimos?
- ¿Cómo debemos diversificar la experiencia disciplinaria necesaria para tratar la EEJ en nuestro trabajo?
- ¿Se le da al personal el tiempo, los recursos, la capacitación y la orientación de experiencia adecuados para incorporar la EEJ en su trabajo?
- ¿Qué estructuras de rendición de cuentas necesita NOAA Fisheries, p. ej., un compromiso con el seguimiento y la evaluación de las métricas de la EEJ y la incorporación del trabajo de la EEJ en los planes de desempeño?
- ¿Qué datos y recursos necesita el personal para identificar a las comunidades desatendidas que fueron afectadas por su trabajo, así como la capacitación y las herramientas necesarias para promover la EEJ en ese trabajo?

Tabla 2: Ambiente empoderante, áreas de acción y métricas propuestas

Acción	Mecanismos/métricas posibles	Recursos necesarios
<p>1. La dirección en todos los niveles comunica sobre la EEJ al personal y prioriza la EEJ en los planes estratégicos y los documentos de prioridades anuales de NOAA Fisheries.</p>	<ul style="list-style-type: none"> <li>• Diversos programas con objetivos de EEJ</li> <li>• Porcentaje de objetivos alcanzados</li> </ul>	<ul style="list-style-type: none"> <li>• Apoyo de la dirección</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>2. Incluir los roles de servicio colateral de EEJ en los planes de desempeño del personal que correspondan, incluidas las métricas para la rendición de cuentas</p>	<ul style="list-style-type: none"> <li>• Porcentaje de personal aplicable con la EEJ incluida en planes de desempeño</li> <li>• Trabajo de EEJ incluido en los criterios de puntuación de promoción para el personal apropiado</li> </ul>	<ul style="list-style-type: none"> <li>• Apoyo de la dirección</li> <li>• Idioma que se sugiere</li> </ul>
<p>3. Incluir los roles de servicio colateral de la EEJ en las declaraciones de trabajo de desempeño de los contratos con trabajo que interactúa con las partes interesadas externas, incluidas las métricas para la rendición de cuentas</p>	<ul style="list-style-type: none"> <li>• Porcentaje de contratos aplicables con la EEJ incluida en las declaraciones de rendimiento de trabajo</li> </ul>	<ul style="list-style-type: none"> <li>• Apoyo a la dirección, a los responsables de proyectos y al personal de contratación</li> <li>• Idioma que se sugiere</li> </ul>
<p>4. Brindar oportunidades de capacitación atractivas y significativas dirigidas al personal y a la dirección para ayudar a desarrollar una comprensión compartida de los conceptos de la EEJ y cómo implementar estos conceptos en su trabajo. (Como el <a href="#">“Environmental Justice Learning Center”</a> de la Environmental Protection Agency)</p>	<ul style="list-style-type: none"> <li>• Cantidad y porcentaje de personal capacitado</li> </ul>	<ul style="list-style-type: none"> <li>• Materiales de capacitación de EEJ y fondos para el instructor</li> <li>• Tiempo actual del personal</li> </ul>
<p>5. Apoyar la continuación del Grupo de Trabajo de la EEJ nacional de NOAA Fisheries, con representación de cada suboficina. El Grupo de Trabajo debe continuar reuniéndose para compartir información sobre enfoques exitosos, colaborar en la divulgación e inclusión de destinatarios comunes y guiar la toma de decisiones de NOAA Fisheries.</p>	<ul style="list-style-type: none"> <li>• Número de oficinas representadas en reuniones ordinarias</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>
<p>6. Establecer Grupos de trabajo regionales/programas de EEJ</p>	<ul style="list-style-type: none"> <li>• Grupos de trabajo regionales/programas de EEJ</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>

<p>7. Construir infraestructura interna para priorizar e implementar la EEJ: crear “oficinas de campo” con personal de enlace (con prioridad en el conocimiento e idioma local) para facilitar las relaciones, las reuniones públicas, la investigación (ciencias sociales y biológicas), la supervisión, etc.</p>	<ul style="list-style-type: none"> <li>• Personal de campo con conocimiento del idioma y la cultura local</li> <li>• Reuniones en persona, o decisiones sobre el lugar y la plataforma que dan prioridad a las comunidades desatendidas.</li> </ul>	<ul style="list-style-type: none"> <li>• Enlaces comunitarios de EEJ</li> <li>• Oficinas de campo</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>8. Brindar capacitación sobre las metas y objetivos de EEJ de NOAA Fisheries para los miembros del Consejo u otros órganos asesores</p>	<ul style="list-style-type: none"> <li>• Cantidad de capacitaciones proporcionadas</li> <li>• Comentarios de las personas capacitadas sobre la eficacia</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>
<p>9. Capacitación obligatoria para todos los revisores de subvenciones sobre cómo mitigar los tipos de sesgo que probablemente perjudican a las comunidades desatendidas al revisar las solicitudes</p>	<ul style="list-style-type: none"> <li>• Número y porcentaje de revisores de subvenciones capacitados</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>

## **Incorporación de la equidad y justicia medioambiental en políticas y planes**

**Objetivo:** Garantizar que nuestras políticas promuevan la igualdad de oportunidades para todas las personas y que no creen desigualdades no deseadas ni cargas desiguales para las comunidades desatendidas.

NOAA Fisheries debe cumplir con los requisitos de las leyes promulgadas por el Congreso, que pueden tener un gran impacto en las partes interesadas, especialmente en las comunidades desatendidas. De acuerdo con sus mandatos legales, NOAA Fisheries emite políticas, estrategias y regulaciones para implementar su misión. A veces, estamos obligados a tomar determinaciones basadas únicamente en la mejor información científica disponible, como la lista de especies según la Endangered Species Act. Sin embargo, algunas secciones de algunas leyes permiten consideraciones de la EEJ en su implementación, y algunos planes dependen totalmente de los aportes y la participación de las comunidades a las que se dirigen. Por ejemplo, [la planificación de resiliencia ante el cambio climático](#) requiere el conocimiento y la participación de las comunidades pesqueras para evaluar y abordar los impactos de las condiciones oceánicas cambiantes. Por lo tanto, en la medida en que lo permita la ley correspondiente, las actividades de políticas y planificación de la EEJ consideran los impactos y la capacidad de respuesta de los programas de NOAA Fisheries para las comunidades desatendidas y buscan oportunidades para desarrollar conjuntamente iniciativas de gestión, conservación y administración con dichas comunidades.

Como se establece en la Orden Ejecutiva 13985, las disparidades arraigadas en las políticas públicas han negado la igualdad de oportunidades a algunas personas y comunidades. Estas disparidades incluyen decisiones políticas pasadas y actuales de NOAA Fisheries que pueden haber exacerbado una distribución desigual de los recursos económicos, sociales y culturales. Por ejemplo, la asignación de los recursos pesqueros es un tema complejo debido a la historia y la tradición del acceso, las percepciones de equidad que surgen con las decisiones de asignación y las diferencias en los valores económicos y sociales que los grupos de usuarios en competencia asignan a esos recursos.

Al considerar más sistemáticamente la EEJ en las políticas y las actividades de planificación de NOAA Fisheries, podemos mejorar la equidad en la prestación de servicios. Cuando sea posible y apropiado, NOAA Fisheries puede incluir disposiciones para reducir las barreras y mejorar los servicios a las comunidades desatendidas para institucionalizar la equidad a largo plazo.

### **Preguntas de orientación**

- ¿Cómo puede NOAA Fisheries incluir mejor la equidad para las comunidades desatendidas en las políticas y la orientación interna?
- ¿Cómo revisará NOAA Fisheries las políticas y los procedimientos existentes con los lentes de EEJ para que puedan ser refinados o revisados para garantizar resultados más equitativos?
- ¿Cómo puede NOAA Fisheries diseñar o revisar políticas y procedimientos de una manera que garantice que sean útiles y claros para las comunidades desatendidas?
- ¿Qué flexibilidad adicional podemos proporcionar en las políticas y procedimientos de NOAA Fisheries para incorporar el idioma, las costumbres y los conocimientos locales relevantes?



Tabla 3: Incorporar la equidad y justicia medioambiental en políticas y planes, áreas de acción y métricas propuestas

Acción	Mecanismos/métricas posibles	Recursos necesarios
<p>1. Proporcionar orientación sobre cómo las nuevas políticas y planes de NOAA Fisheries con respecto a nuestro trabajo externo deben considerar los objetivos de la EEJ</p>	<ul style="list-style-type: none"> <li>• Porcentaje de políticas y planes que incluyen objetivos de EEJ</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>2. Proporcionar orientación que indique que durante la revisión periódica de cada directiva de NOAA Fisheries del Policy Directive System (PDS), la revisión incluya: lenguaje apropiado, mensajes claros, accesibilidad y consideración de EEJ, comunidades, idioma local, costumbres y conocimiento tradicional</p>	<ul style="list-style-type: none"> <li>• Porcentaje de directivas de PDS aplicables que incluyen consideraciones de la EEJ</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>3. Llevar a cabo una revisión de los principales procesos reglamentarios de NOAA Fisheries (pesca, recursos protegidos, conservación de hábitats y acuicultura) para determinar si pueden ser necesarias nuevas políticas, reglamentaciones o documentos de orientación para promover la EEJ en las acciones y programas de NOAA Fisheries</p>	<ul style="list-style-type: none"> <li>• Número de revisiones de procesos regulatorios completadas</li> <li>• Número de procesos regulatorios actualizados según la revisión</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>4. Desarrollar programas, políticas y actividades para abordar los impactos ambientales, relacionados con el clima y otros impactos acumulativos desproporcionadamente altos y adversos en las comunidades desatendidas, así como los desafíos económicos y de seguridad alimentaria que acompañan a dichos impactos</p>	<ul style="list-style-type: none"> <li>• Número de programas, políticas y actividades que tratan los impactos del cambio climático en las comunidades desatendidas</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>

## **Investigación y supervisión para la equidad**

**Objetivo:** Identificar a las comunidades desatendidas, abordar sus necesidades y evaluar los impactos de las decisiones de la gestión.

NOAA Fisheries utiliza los mejores datos científicos e información disponibles para orientar y adaptar sus decisiones administrativas. La investigación y la supervisión abarcan la recopilación y el análisis de datos en apoyo de la misión de NOAA Fisheries en una amplia gama de áreas biológicas, oceanográficas, ecológicas, sociales, culturales y económicas. Esto permite la comprensión de NOAA Fisheries sobre 1) la condición a corto y largo plazo de nuestros ecosistemas costeros y marinos y 2) la identificación, el papel y la caracterización de los humanos que dependen de esos ecosistemas o interactúan con ellos.

La investigación y la supervisión son cruciales para las iniciativas de EEJ por dos razones principales. En primer lugar, la EEJ prioriza la investigación y la supervisión social, cultural y económica (humana) necesarias para identificar y caracterizar a las comunidades desatendidas y comprender cómo se ven afectadas por las decisiones de NOAA Fisheries sobre los recursos, los medios de vida, la cultura y la seguridad alimentaria. Los métodos para identificar a las comunidades desatendidas deberán ser adecuadas para una región, programa o área de proyecto determinadas. Los científicos sociales podrían usar, entre otros, herramientas de mapeo basadas en censos, información específica del sitio del personal regional, información de socios y beneficiarios del proyecto, y la consulta comunitaria. Estas actividades proporcionan los datos necesarios para fundamentar políticas que garanticen los beneficios sociales de que los recursos oceánicos y costeros se comparten equitativamente. La recopilación y el análisis de información demográfica sobre las personas que actualmente participan y se ven afectadas o se benefician de los programas y la gestión de NOAA Fisheries también será esencial para supervisar nuestro progreso hacia la EEJ, como lo recomienda el Equity Action Plan del DOC.

En segundo lugar, EEJ también requiere una participación significativa de las comunidades desatendidas en la investigación y la supervisión biológica (no humana). La participación significativa incluye el compromiso temprano con las comunidades desatendidas para identificar prioridades compartidas que satisfagan sus necesidades y cumplan la misión de NOAA Fisheries. La participación significativa también incluye la participación de las comunidades desatendidas durante la recopilación y el informe de datos, para garantizar que los hallazgos sean apropiados y accesibles. Por ejemplo, la investigación sobre el cambio climático de NOAA Fisheries busca información sobre los impactos del cambio climático en la industria pesquera y las comunidades dependientes de la pesca para desarrollar planes de resiliencia.

### **Preguntas de orientación**

- ¿Qué investigación necesitamos hacer para identificar a las comunidades desatendidas?
- ¿Cómo puede NOAA Fisheries comprometerse mejor con las comunidades desatendidas para identificar, desarrollar y generar conjuntamente las prioridades de investigación y supervisión en el lugar?
- ¿Cómo podemos reducir el sesgo en la investigación en ciencias sociales?<sup>2</sup>
- ¿Cómo puede NOAA Fisheries ampliar la participación de los miembros de las comunidades desatendidas en proyectos de investigación y supervisión?

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<sup>2</sup> El muestreo incluye la investigación en ciencias sociales, pero también cualquier otra situación en la que se utilice la consulta comunitaria como información.

- ¿Cómo asignará NOAA Fisheries de manera más equitativa los recursos de investigación y supervisión para identificar y caracterizar a las comunidades desatendidas, comprender sus necesidades y utilizar los hallazgos para guiar de manera efectiva las decisiones de gestión que las afectan?
- ¿Cómo puede NOAA Fisheries asignar de manera más equitativa nuestros recursos de investigación y supervisión a la ciencia de la pesca, el hábitat y las especies protegidas que afectan directamente a las comunidades desatendidas?
- ¿Cómo puede NOAA Fisheries mejorar nuestra comprensión del impacto de nuestras acciones reglamentarias en las comunidades desatendidas?
- ¿NOAA Fisheries utiliza las mejores prácticas para trabajar con las comunidades en la integración del conocimiento ecológico tradicional en la estructura de investigación, la recopilación de datos y el informe de datos?
- ¿Cómo puede NOAA Fisheries hacer que la comunicación científica sea más accesible y comprensible para una audiencia diversa, incluidas las comunidades desatendidas?

Tabla 4: Investigación y supervisión de equidad, áreas de acción y métricas propuestas

Acción	Mecanismos/métricas posibles	Recursos necesarios
<p>1. Participación significativa de las comunidades desatendidas a lo largo del proceso de investigación. Esto incluye el desarrollo conjunto y la producción conjunta de investigación y supervisión para la caracterización de comunidades e indicadores sociales, pesca, acuicultura, especies protegidas y restauración de hábitats.</p>	<ul style="list-style-type: none"> <li>• Participación temprana de las comunidades desatendidas para producir en conjunto investigaciones y supervisar las prioridades (Enlaces a Divulgación y participación)</li> <li>• Participación de miembros de la comunidad desatendida en el proceso de recopilación de datos.</li> <li>• Comunicación de los resultados a las comunidades desatendidas</li> <li>• Porcentaje de proyectos que involucran a miembros de comunidades desatendidas durante la planificación, el trabajo de campo y la elaboración de informes</li> <li>• Número de proyectos de investigación y supervisión que involucran de forma significativa a las comunidades desatendidas</li> <li>• Satisfacción de la comunidad desatendida con el proceso de investigación y supervisión de NOAA Fisheries</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> <li>• Fondos destinados al pago de los participantes del estudio</li> </ul>

<p>2. Identificar y caracterizar a las comunidades desatendidas con prioridad en la investigación social, cultural, económica y demográfica.</p>	<ul style="list-style-type: none"> <li>• Priorizar la investigación social y económica de la EEJ mediante el apoyo a la experiencia interna [capital humano]</li> <li>• Priorizar la alfabetización cultural para involucrarse de manera efectiva y adecuada con las comunidades desatendidas (Enlaces a Divulgación y participación)</li> <li>• Número de fuentes de datos y proyectos de investigación que caracterizan a las comunidades desatendidas</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> <li>• Aprobación de OMB</li> </ul>
<p>3. Analizar los impactos sociales, culturales y económicos de los servicios de NOAA Fisheries y las decisiones administrativas (p. ej., pesca, especies protegidas y conservación del hábitat) en las comunidades desatendidas.</p>	<ul style="list-style-type: none"> <li>• Número de informes que integran los impactos social, cultural y económico para las comunidades desatendidas.</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>4. Incluir conocimientos ecológicos locales y tradicionales<sup>3</sup> en la ciencia basada en la pesca, el clima y los ecosistemas.</p>	<ul style="list-style-type: none"> <li>• Cantidad de proyectos y productos de gestión basada en el clima y los ecosistemas que incorporan conocimientos ecológicos locales y tradicionales en su recopilación de datos y presentación de informes</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>5. Producción y desarrollo conjuntos (es decir, participación significativa de los representantes de la pesca y la acuicultura de las comunidades desatendidas) en los procesos de evaluación y asignación de las poblaciones de pesca y cultivo.</p>	<ul style="list-style-type: none"> <li>• Diversidad y número de representantes de la pesca y la acuicultura marina de comunidades desatendidas que participan en los procesos de evaluación de poblaciones.</li> <li>• Número de talleres de datos comunitarios</li> <li>• Satisfacción de la comunidad desatendida con los procesos de evaluación de las poblaciones pesqueras de la NOAA</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> <li>• Enlaces comunitarios de EEJ</li> </ul>
<p>6. Desarrollar una metodología de encuestas e informes para estimar el valor que las comunidades desatendidas reciben de su</p>	<ul style="list-style-type: none"> <li>• Publicación de la metodología de informe</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>

<sup>3</sup>Para obtener más información, consulte [la Guía y las mejores prácticas para involucrar e incorporar el conocimiento ecológico tradicional en la toma de decisiones del NOAA Fisheries and National Ocean Service](#).

<p>uso de los recursos marinos vivos (incluido el valor de no explotación).</p>		
<p>7. Llevar a cabo un análisis de las barreras que enfrentan las comunidades desatendidas para ingresar a los programas de pesca y acuicultura marina (p. ej., costo, cultivo y estructura de administración) e identificar posibles cambios en las políticas.</p>	<ul style="list-style-type: none"> <li>• Porcentaje de programas pesqueros para los que se realiza un análisis de barreras y se identifican cambios en las políticas</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>
<p>8. Investigación elaborada y desarrollada en conjunto sobre los patrones de consumo de las comunidades que dependen principalmente del pescado y la vida silvestre para su subsistencia. Comunicar al público los riesgos y beneficios de esos patrones de consumo (<a href="#">Orden Ejecutiva 12898</a>).</p>	<ul style="list-style-type: none"> <li>• Número de informes producidos</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>
<p>9. Promover y mejorar la ciencia territorial de la pesca y el apoyo a la administración a través de investigaciones y aplicaciones desarrolladas y producidas en conjunto que permitan una mejor evaluación y apoyo de las agencias locales de administración de la pesca.</p>	<ul style="list-style-type: none"> <li>• Evaluaciones conjuntas de poblaciones elaboradas en conjunto</li> <li>• Cantidad de puestos financiados</li> <li>• Cantidad de proyectos financiados</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos adicionales, según lo solicitado para el año FY23</li> </ul>
<p>10. Ampliar la Caja de Herramientas de Indicadores de Vulnerabilidad Social Comunitaria para incluir nuevas métricas que consideren la justicia ambiental, las preocupaciones sobre el cambio climático y la equidad racial en las comunidades costeras desatendidas.</p>	<ul style="list-style-type: none"> <li>• Número de métricas nuevas</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos adicionales, según lo solicitado para el año FY23</li> <li>• Capacitación sobre EEJ</li> </ul>

## **Divulgación y participación equitativa**

**Objetivo:** Construir relaciones con las comunidades desatendidas para comprender mejor sus necesidades y mejorar el intercambio de información con todas las partes interesadas.

NOAA Fisheries comparte información y construye relaciones con comunidades desatendidas a través de la divulgación y la participación, que incluyen: programas de educación para estudiantes, pasantías y una variedad de productos de comunicación para compartir información y conocimiento. Participar en el intercambio de información bidireccional con las partes interesadas y los socios es fundamental para el éxito, y utilizaremos los aportes de las comunidades desatendidas para mejorar este proceso.

La divulgación y la participación efectivas deben ser sumamente personalizadas, consistentes, a largo plazo y flexibles. También requieren habilidades, conocimiento y tiempo. NOAA Fisheries puede aumentar la coordinación y la comunicación con las comunidades desatendidas al pedir la opinión de los miembros de la comunidad, utilizando esas opiniones para dirigir acciones, participar temprano, priorizar la alfabetización cultural, abordar las barreras de comunicación (por ejemplo, traducción) y crear planes de comunicación que puedan adaptarse a las necesidades emergentes de las comunidades desatendidas.

Mediante la divulgación y la participación, NOAA Fisheries intenta comprender mejor las necesidades y prioridades de las comunidades afectadas por nuestro trabajo. Daremos prioridad a las iniciativas nuevas y revitalizadas para trabajar más de cerca con los representantes de las comunidades y construir relaciones más sólidas con las comunidades desatendidas. Según la recomendación del White Council EJ Advisory Council, estableceremos circuitos de intercambio de información iterativos y bidireccionales para mejorar nuestros métodos de comunicación.

### **Preguntas de orientación**

- ¿NOAA Fisheries llega a las comunidades desatendidas a través de diversas plataformas de comunicación, idiomas y actividades de divulgación? ¿Esos métodos de comunicación son los preferidos por las comunidades?
- ¿Cómo agrega e incorpora activamente NOAA Fisheries los comentarios que recibimos?
- A nivel de agencia, ¿cómo podemos priorizar la divulgación de información y capacitar al personal para que participe de forma efectiva con las comunidades desatendidas?
- ¿Cómo puede NOAA Fisheries construir relaciones con las comunidades desatendidas que permitan una comunicación bidireccional y el desarrollo de confianza?
- ¿Qué tipo de capacitación y recursos necesita el personal para ampliar la divulgación de información y la comunicación de NOAA Fisheries con las comunidades desatendidas?

Tabla 5. Divulgación y participación equitativa, áreas de acción y métricas propuestas

Acción	Mecanismos/métricas posibles	Recursos necesarios
<p>1. Aprovechar la información existente y los lazos comunitarios</p>	<ul style="list-style-type: none"> <li>• Crear una lista de conexiones actuales con las comunidades desatendidas para cada región o programa</li> <li>• Agregar comunidades desatendidas adicionales a la lista anterior para cada región o programa, y permitir actualizaciones periódicas (Enlaces a Investigación y supervisión)</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>
<p>2. Trabajar con miembros de comunidades desatendidas para crear planes de comunicación</p>	<ul style="list-style-type: none"> <li>• Número de planes de comunicación</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Aporte comunitario</li> <li>• Fondos menores para impresión de material/listas de contactos de correo electrónico</li> <li>• Capacitación del personal</li> </ul>
<p>3. Aprender de los lazos comunitarios existentes (p. ej., sesiones de escucha y aprendizaje con miembros de la comunidad) los mejores métodos de comunicación y permitir que el plan de comunicación evolucione en función de nueva información o realidades sobre el terreno. Considerar la accesibilidad en términos de idioma, método de distribución (en persona, material impreso, redes sociales, etc.) y protocolos culturales.</p>	<ul style="list-style-type: none"> <li>• Porcentaje de planes de comunicación que dan respuesta a las normas culturales y al contexto comunitario.</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Aporte comunitario</li> <li>• Fondos menores para impresión de material/listas de contactos de correo electrónico</li> <li>• Capacitación del personal</li> </ul>

<p>4. Crear materiales y eventos de divulgación de información que sigan el plan de comunicación desarrollado con cada comunidad desatendida y para ellas (consulte Acción 2).</p>	<ul style="list-style-type: none"> <li>• Número de productos de comunicación (folletos, publicaciones en los medios, etc.) o eventos de divulgación (reuniones, presentaciones, talleres, etc.).</li> <li>• Satisfacción de la comunidad desatendida con los productos para la comunicación y los eventos de divulgación</li> <li>• Conciencia sobre la presencia/imagen de NOAA Fisheries por parte de la comunidad desatendida.</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Expertos en idiomas para la traducción escrita y en persona</li> <li>• Enlaces comunitarios de EEJ</li> <li>• Fondos para los materiales y eventos de divulgación</li> <li>• Capacitación sobre EEJ</li> <li>• Uso de los fondos para la divulgación de información</li> </ul>
<p>5. Crear oportunidades y programas educativos para involucrar a las comunidades desatendidas en actividades de ciencia, tecnología, ingeniería y matemáticas (Science, Technology, Engineering and Mathematics, STEM) relacionadas con la misión y el apoyo de investigación y administración de NOAA Fisheries.</p>	<ul style="list-style-type: none"> <li>• Eventos y productos de educación y participación comunitaria (programas, planes de estudio y actividades) dirigidos a las comunidades desatendidas</li> <li>• Cantidad de miembros/comunidades desatendidas a los que llegan los eventos y productos de participación comunitaria</li> <li>• Oportunidades de pasantías pagadas para las comunidades desatendidas</li> <li>• Pasantes pagos de las comunidades desatendidas</li> <li>• Incluir las consideraciones de la EEJ en los criterios de selección</li> <li>• Satisfacción de los participantes de la comunidad desatendida con el programa/producto educativo</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Lista de oportunidades actuales</li> <li>• Fondos para oportunidades adicionales</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>6. Apoyar las oportunidades y los programas educativos para involucrar a las comunidades desatendidas en el proceso de administración mediante el apoyo de los criterios de selección de la EEJ en los programas existentes proporcionados por los socios.</p>	<ul style="list-style-type: none"> <li>• Capacitación de las partes interesadas de las comunidades desatendidas en procesos de administración</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Recursos de apoyo para los programas de educación existentes</li> <li>• Capacitación sobre EEJ</li> </ul>



<p>7. Proporcionar divulgación de información, tutoría y capacitación en línea de cara al público para las comunidades desatendidas sobre cómo atravesar el proceso de solicitud y desarrollo de la propuesta del programa de subvenciones de NOAA Fisheries (Enlaces a Distribución equitativa de los beneficios), y el proceso de solicitud de empleo y pasantías.</p>	<ul style="list-style-type: none"> <li>• Desarrollar un recurso de solicitud en línea y una cantidad de eventos de divulgación pública dirigidos a comunidades desatendidas</li> <li>• Desarrollar eventos de divulgación pública dirigidos a las comunidades desatendidas</li> <li>• Desarrollar un proceso de solicitud del programa de tutoría, que facilite el acceso de las comunidades desatendidas al conocimiento técnico y a los expertos en la materia</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Plan de comunicaciones para llegar a audiencias clave</li> </ul>
<p>8. Crear programas piloto de educación/capacitación para la administración y la industria pesquera con colegios y universidades históricamente negras, instituciones que atienden a minorías, colegios tribales y colegios comunitarios</p>	<ul style="list-style-type: none"> <li>• Creación de programas piloto</li> <li>• Cantidad de participantes en los programas piloto</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos adicionales, según lo solicitado para el año FY23</li> </ul>
<p>9. Generar interés en la pesca mediante la creación de un programa de subvenciones para iniciativas de capacitación, educación, divulgación y asistencia técnica que involucren a jóvenes de comunidades desatendidas</p>	<ul style="list-style-type: none"> <li>• Subvenciones financiadas</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos adicionales</li> </ul>

## **Distribución equitativa de los beneficios**

**Objetivo:** Distribuir los beneficios de manera equitativa entre las partes interesadas mediante el aumento del acceso a oportunidades por parte de las comunidades desatendidas.

NOAA Fisheries brinda beneficios a las comunidades a través de inversiones directas, asistencia en caso de desastres y oportunidades de subvenciones para investigación, restauración de hábitats, acuicultura y recuperación de especies, entre otros<sup>4,5</sup>. Los beneficios también pueden venir en forma de datos y herramientas que las comunidades pueden usar para tomar decisiones. Por ejemplo, los beneficios relacionados con el cambio climático incluyen financiamiento y herramientas para generar conocimiento y resiliencia.

Como lo establece la Orden Ejecutiva 13985, el fomento de la equidad crea

*... oportunidades para la mejora de la comunidades que han sido desatendidas históricamente, los cual beneficia a todos. El gobierno federal debe, de conformidad con la ley aplicable, asignar recursos para abordar el fracaso histórico de invertir de manera suficiente, justa y equitativa en las comunidades desatendidas, así como en las personas de dichas comunidades.*

Como se describe en el Equity Action Plan del DOC, haremos lo siguiente: facilitar el acceso a los servicios, la ciencia y los datos para las comunidades desatendidas; garantizar que los beneficios y la financiación promuevan la equidad racial y apoyen a las comunidades desatendidas; y brindar oportunidades económicas a las comunidades desatendidas mediante la institucionalización de la equidad a largo plazo. Tal como lo recomendó el White Council EJ Advisory Council, evaluaremos el acceso y la distribución de los beneficios y realizaremos un seguimiento de los fondos federales. Además, la iniciativa Justice40 nos ordena destinar al menos el 40 por ciento de los beneficios generales de las inversiones federales a asuntos relacionados con el clima y la energía limpia para las comunidades desatendidas. Las inversiones en restauración ecológica y resiliencia comunitaria son parte integral de los objetivos de la estrategia climática de NOAA para crear y fomentar la resistencia natural y económica a lo largo de las costas a través de nuestra experiencia y sólidas asociaciones en el terreno y actividades de conservación basadas en el lugar.

NOAA Fisheries busca examinar sus políticas, criterios y procesos relacionados con la provisión de fondos y otros beneficios para garantizar una distribución equitativa. Los desafíos clave serán reconocer y reparar las desigualdades e identificar nuevas oportunidades para ofrecer beneficios a las comunidades desatendidas.

### **Preguntas de orientación**

- ¿Qué barreras enfrentan las comunidades desatendidas para acceder a los beneficios administrados por NOAA Fisheries?

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<sup>4</sup> Esto incluye la administración de 52 [programas de oportunidades de financiamiento y servicios financieros](#) que brindan beneficios directos e indirectos a las comunidades.

<sup>5</sup> En el futuro, los beneficios también incluirán nuevas oportunidades de financiación en virtud de la Infrastructure Investment and Jobs Act, que asigna \$400 millones para proteger y restaurar hábitats que permiten sostener la industria pesquera, recuperar especies protegidas y mantener ecosistemas y comunidades resilientes (el 15 % de la financiación se reserva para las Tribus).

- ¿Los beneficios de NOAA Fisheries (como financiamiento, asignaciones de pesca, permisos, oportunidades, servicios y protección y restauración ambiental) alcanzan o benefician equitativamente a las comunidades desatendidas? ¿Podemos expandir la equidad en nuestra entrega de estos beneficios?
- ¿Cómo podemos atender mejor a las comunidades desatendidas con los datos y las herramientas que NOAA Fisheries proporciona al público?
- ¿Qué estructuras y procesos de rendición de cuentas se necesitan para garantizar la entrega equitativa de los beneficios, como la recopilación de datos sobre los beneficiarios y el análisis de esos datos?

Tabla 6: Distribución equitativa de los beneficios, áreas de acción y métricas propuestas

Acción	Mecanismos/métricas posibles	Recursos necesarios
<p>1. Identificar y eliminar las barreras potenciales que las comunidades desatendidas pueden enfrentar para acceder a los beneficios y servicios de NOAA Fisheries, incluidas las oportunidades de adquisición y asistencia financiera de la agencia; trabajar para incorporar las consideraciones de la EEJ en todas las oportunidades de financiación competitivas internas y externas</p>	<ul style="list-style-type: none"> <li>• Revisar los criterios de selección que pueden descalificar sistemáticamente a las comunidades desatendidas</li> <li>• Revisar y modificar subvenciones/fondos/programas de contratación</li> <li>• Aumentar el acceso a los beneficios y servicios (Enlace a Divulgación y participación)</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>2. Hacer un seguimiento y presentar informes del porcentaje de subvenciones, proyectos, declaraciones de desastre y otros fondos destinados a comunidades desatendidas</p>	<ul style="list-style-type: none"> <li>• Mecanismos de seguimiento e informes desarrollados</li> <li>• Uso de mecanismos de seguimiento e informes para analizar la asignación de recursos a las comunidades desatendidas</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>
<p>3. Incorporar las consideraciones de la EEJ en la toma de decisiones del programa y la asignación de recursos. Las consideraciones podrían incluir la evaluación de los impactos y beneficios para las comunidades desatendidas en los criterios de selección de la comunidad y la priorización de acciones que beneficien o corrijan una disparidad entre las comunidades.</p>	<ul style="list-style-type: none"> <li>• Programas que incorporan la EEJ en la toma de decisiones de la asignación.</li> <li>• Meta de que al menos el 40 % de los recursos generales de adaptación y resiliencia climática beneficien a las comunidades desatendidas (<a href="#">EO 14008</a> Sec. 402 y "<a href="#">Justice 40</a>")</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
<p>4. En el caso de las evaluaciones de daños a los recursos naturales, garantizar que se tenga en cuenta la destrucción de los recursos naturales (incluida la pérdida del uso humano, así como de beneficios sociales, culturales y económicos) asumida por las comunidades desatendidas y</p>	<ul style="list-style-type: none"> <li>• Casos de evaluación de daños a los recursos naturales con consideración explícita de las pérdidas de uso humano y de recursos naturales asumidas por las comunidades desatendidas y participación en la planificación de la restauración.</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>

<p>asegurarse de que sean compensadas adecuadamente con la restauración de los hábitats dañados</p>		
<p>5. Aumentar la capacidad tribal y estatal para la recuperación de especies mediante la solicitud de fondos adicionales para subvenciones de recuperación de especies, que permitan crear empleos y mejorar las poblaciones de especies incluidas en la lista, que a menudo tienen valor cultural y de subsistencia para las Tribus.</p>	<ul style="list-style-type: none"> <li>• Subvenciones para la recuperación de especies para las Tribus y estados con comunidades desatendidas</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos adicionales, según lo solicitado para el año FY23</li> </ul>

## **Administración inclusiva**

**Objetivo:** Permitir la participación significativa de las comunidades desatendidas en los procesos de toma de decisiones.

La administración inclusiva garantiza la participación amplia y diversa en la toma de decisiones, para que todas las partes interesadas sean igualmente bienvenidas y alentadas a participar. Sin embargo, los miembros de las comunidades desatendidas inusualmente tienen acceso equitativo para contribuir en los procesos administrativos (ver Barreras para la Equidad y la Justicia Medioambiental). NOAA Fisheries busca aumentar la diversidad de las voces a través de comentarios públicos, promover la participación comunitaria y apoyar los esfuerzos de la administración cooperativa cuando sea posible.

Las decisiones que toma NOAA Fisheries a través de su trabajo científico, de conservación y administrativo afectan a las comunidades. La reglamentación federal está sujeta a numerosos requisitos para garantizar la transparencia y las oportunidades de participación pública; sin embargo, el acceso de las comunidades desatendidas puede verse limitado por una serie de factores. Nos corresponde asegurarnos de que todas las partes interesadas tengan la misma participación en los procesos de NOAA Fisheries.

NOAA Fisheries trabaja en asociación con los Consejos (y otros organismos asesores), las Tribus, los nativos de Alaska, las partes interesadas, las agencias gubernamentales estatales, territoriales y locales, y muchos otros socios para lograr la misión de NOAA Fisheries. Aumentar el compromiso y la representación de las comunidades desatendidas es esencial para el cumplimiento exitoso de nuestra misión.

### **Preguntas de orientación**

- ¿Cómo puede NOAA Fisheries dar mejor cuenta de las necesidades de las comunidades desatendidas en la toma de decisiones?
- ¿Qué procesos y estructuras de rendición de cuentas se necesitan para que NOAA Fisheries evalúe si las necesidades de las comunidades desatendidas se tienen en cuenta adecuadamente en la toma de decisiones?
- ¿Cómo pueden las comunidades desatendidas tener acceso equitativo para participar en los procesos de administración (tiempo/viaje a reuniones en persona, Internet de banda ancha para apoyar la participación remota, acceso a intérpretes, etc.)?
- ¿La información que utiliza NOAA Fisheries para respaldar la toma de decisiones es accesible para las partes interesadas de las comunidades desatendidas (lenguaje sencillo, cumplimiento de 508, traducción a los idiomas principales apropiados, entregada en una plataforma preferida, etc.)?
- ¿Cómo puede NOAA Fisheries facilitar la representación de las comunidades desatendidas en los organismos asesores? ¿Cómo puede NOAA Fisheries modificar el proceso de toma de decisiones para mejorar el acceso de las comunidades desatendidas?
- ¿Cómo puede NOAA Fisheries facilitar la participación de las comunidades desatendidas al solicitar comentarios/aportes públicos?

Tabla 7: Áreas de acción de la administración inclusiva y métricas propuestas

Acción	Mecanismos/métricas posibles	Recursos necesarios
<p>1. Aumentar y mejorar las oportunidades para que las comunidades desatendidas participen en el proceso de toma de decisiones.</p>	<ul style="list-style-type: none"> <li>• Utilizar diversas plataformas para lograr la participación de miembros de comunidades desatendidas (Enlace a Divulgación y participación)</li> <li>• Comunicación temprana con representantes de la comunidad para garantizar que los métodos de comunicación sean efectivos (Enlace a Divulgación y participación)</li> <li>• Asistencia a reuniones públicas que se llevan a cabo en comunidades desatendidas</li> <li>• Organizar reuniones públicas y otros encuentros en comunidades desatendidas</li> <li>• Satisfacción de la comunidad desatendida con el proceso de toma de decisiones</li> <li>• Satisfacción de la comunidad desatendida con las decisiones que se tomaron</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos de viaje para los participantes</li> <li>• Fondos para compensar a los miembros de las comunidades por su tiempo y conocimientos</li> <li>• Fondos para el alquiler de instalaciones, equipos, suministros, intérpretes, etc.</li> <li>• Expertos en idiomas</li> <li>• Capacitación del personal</li> </ul>
<p>2. Aumentar la diversidad de los comentarios públicos al mejorar la accesibilidad de las reuniones públicas y los documentos y reglamentos</p>	<ul style="list-style-type: none"> <li>• Identificar nuevas formas de hacer que las reuniones públicas sean accesibles para las comunidades desatendidas (Enlace a Divulgación y participación)</li> <li>• Porcentaje de avisos de reuniones públicas en los idiomas utilizados por los destinatarios y disponibilidad de servicios de interpretación</li> <li>• Proporcionar documentos que sean accesibles para las comunidades desatendidas (Enlace a Divulgación y participación)</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos de viaje para los participantes</li> <li>• Fondos para los servicios de traducción</li> <li>• Expertos en idiomas y comunicación</li> </ul>
<p>3. Apoyar la representación de las comunidades desatendidas en organismos asesores como consejos regionales, paneles asesores, equipos de planificación de recuperación, comités asesores de organizaciones regionales de administración pesquera, comité asesor de la industria pesquera marina</p>	<ul style="list-style-type: none"> <li>• Recopilar información demográfica para hacer un seguimiento de la representación de las comunidades desatendidas y proporcionarla a los organismos asesores relevantes para fomentar una mayor diversidad y representación</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Plan de divulgación para nuevos participantes</li> </ul>

	<ul style="list-style-type: none"> <li>• Desarrollar recursos/materiales educativos y de capacitación, y proporcionar estos recursos a las comunidades desatendidas para facilitar una mayor participación y comprensión de los organismos asesores</li> <li>• Satisfacción de los representantes con su papel en los organismos asesores.</li> </ul>	
4. Establecer o mejorar las relaciones con los gobiernos municipales, estatales y territoriales, otras agencias federales y organizaciones no gubernamentales en los Territorios para aprovechar sus conexiones con la comunidad al solicitar la opinión del público	<ul style="list-style-type: none"> <li>• Regiones con listas de divulgación que incluyen estos grupos</li> <li>• Reuniones programadas para informar a funcionarios gubernamentales de las comunidades desatendidas</li> <li>• Comentarios de los asistentes sobre la efectividad de las iniciativas de divulgación</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Enlace comunitario de la EEJ</li> <li>• Fondos de viaje</li> </ul>
5. Coordinar con los gobiernos municipales, estatales y tribales, otras agencias federales y organizaciones no gubernamentales sobre temas transversales que afectan a las comunidades desatendidas	<ul style="list-style-type: none"> <li>• Equipos interinstitucionales que abordan cuestiones transversales que afectan a las comunidades desatendidas.</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> <li>• Capacitación sobre EEJ</li> </ul>
6. Continuar honrando la soberanía Tribal y la responsabilidad del fideicomiso federal.	<ul style="list-style-type: none"> <li>• Consultas formales e informales con las Naciones Tribales</li> <li>• Satisfacción de las Naciones Tribales con el proceso de consulta y los resultados.</li> </ul>	<ul style="list-style-type: none"> <li>• Tiempo actual del personal</li> </ul>
7. Crear un programa de capacitación para proporcionar a los destinatarios la información y las herramientas necesarias para participar con confianza y productividad en los procesos de decisión de gestión de la pesca (comercial, recreativa, acuicultura)	<ul style="list-style-type: none"> <li>• Cantidad de personas capacitadas</li> </ul>	<ul style="list-style-type: none"> <li>• Fondos adicionales, según lo solicitado para el año FY23</li> </ul>

# Proceso de desarrollo de estrategias

El desarrollo de la estrategia de EEJ de NOAA Fisheries está diseñado como un proceso iterativo de varios años, que incluye aportes tempranos de la comunidad y comentarios del público (Figura 1). En esta sección, documentamos el desarrollo de la estrategia con especial atención a cómo se incorporaron los aportes de la comunidad, internos y públicos.

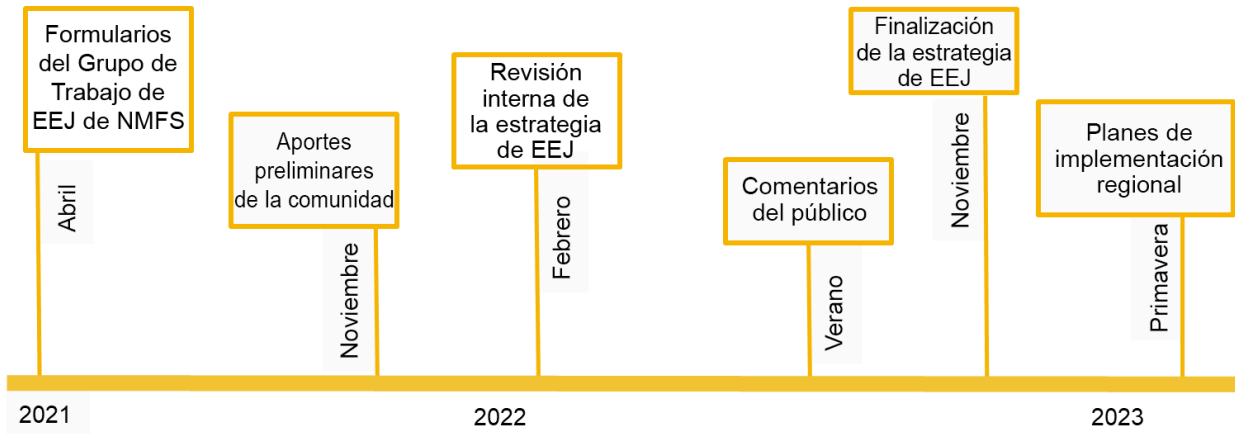


Figura 1. Cronograma de desarrollo de la estrategia de EEJ de NOAA Fisheries

## Aportes preliminares de la comunidad

En noviembre de 2021, solicitamos aportes tempranos de Tribus, Territorios y comunidades indígenas reconocidos a nivel federal y no federal sobre el papel de NOAA Fisheries en EEJ. Revisamos, sintetizamos y resumimos las recomendaciones de la siguiente manera:

### Ambiente empoderante

- Crear un comité comunitario con representantes de grupos desatendidos
- Establecer un enlace de EEJ dentro de las comunidades desatendidas para establecer redes y facilitar la comprensión de los protocolos culturales
- Evaluar el progreso de la EEJ a través de la supervisión y la evaluación de manera continua en todas las áreas objetivo.

### Políticas y planes

- Revisar la implementación de la consideración cultural en la MMPA y la ESA
- Analizar la EEJ en las políticas

### Investigación y supervisión

- Alinear las prioridades de investigación de NOAA Fisheries con las prioridades de investigación de las comunidades desatendidas



- Recopilar datos de encuestas en todas las comunidades pesqueras
- Analizar la EEJ en los impactos de la administración
- Definir e incluir la pesca no comercial
- Aumentar el financiamiento para la ciencia territorial e invertir en investigación y experiencia científica local

#### **Divulgación y participación**

- Asegurarse de que la participación involucre el idioma y el lugar apropiados; celebrar reuniones en persona con el público, el gobierno local y las organizaciones pesqueras
- Crear campañas específicas para crear conciencia sobre la misión y el progreso de NOAA Fisheries; crear una red de tutores para apoyar los esfuerzos sólidos de redacción de propuestas; invertir en el desarrollo de capacidades para fuerzas de trabajo especializadas basadas en fortalezas regionales

#### **Distribución equitativa de los beneficios**

- Considerar las barreras para el acceso a los beneficios, como los criterios relacionados con el tamaño de la población, la carga de mantenimiento de registros y la pesca no comercial
- Analizar la EEJ en la distribución de beneficios de NOAA Fisheries, como financiación de investigación y subvenciones

#### **Administración inclusiva**

- Coordinar iniciativas con otras agencias federales sobre los asuntos relacionados con la tierra que afectan al hábitat y las especies
- Honrar la soberanía Tribal y la responsabilidad del fideicomiso federal

## **Revisión interna**

A principios de 2022, el borrador actualizado de la estrategia de EEJ se compartió ampliamente entre la dirección y el personal de NOAA Fisheries. El Grupo de Trabajo recibió comentarios de cada región y varias oficinas centrales. Al igual que con el aporte inicial de la comunidad, los comentarios se categorizaron y trataron. Luego, la versión actualizada se presentó a la dirección en abril de 2022.

En respuesta a los comentarios, se incluyeron metas, se reordenaron objetivos y se fortaleció la conexión entre ellos; se revisaron las métricas para hacerlas más orientadas a los resultados (en lugar de los aportes).

## **Comentarios del público: en curso**

NOAA Fisheries busca comentarios del público sobre este documento para garantizar que esta estrategia nacional nos permita atender equitativamente a todas las comunidades. Se hará un nuevo esfuerzo para llegar a las comunidades desatendidas y, si es posible, realizar reuniones presenciales. Hasta el momento a lo largo de este proceso, las reuniones presenciales no han sido posibles debido a las restricciones de viaje por el Covid-19. Buscaremos comentarios de las comunidades de las que aún no hemos tenido noticias, como los trabajadores de la planta de procesamiento. También incorporaremos actualizaciones de EEJ, a medida que estén disponibles por parte de la Administración, DOC y NOAA, en la estrategia final.

# Apéndice 1: Categorías de actividades de la EEJ

Para comprender mejor el alcance de las iniciativas actuales y planificadas de NOAA Fisheries e identificar oportunidades para el trabajo futuro, el Grupo de trabajo de EEJ de NOAA Fisheries clasificó 170 actividades actuales de EEJ. Se identificaron seis categorías principales y 17 temas distintos<sup>6</sup>. Varias actividades se clasificaron en múltiples temas y enfoques, lo que demuestra cómo estos enfoques a menudo funcionan juntos. La divulgación y la participación fue el enfoque más común utilizado en las actividades de EEJ de NOAA Fisheries, seguido de Investigación y supervisión, y luego Beneficio. Políticas y planificación y Administración inclusiva tenían menos ejemplos y pueden representar oportunidades para una mayor priorización y desarrollo. A continuación, se muestran ejemplos del trabajo en curso de NOAA Fisheries dentro de esos seis enfoques de EEJ.

Tabla A1. Ejemplos de NOAA Fisheries del trabajo en curso.

Enfoque de EEJ	Tema	Ejemplos de NOAA Fisheries de trabajo en curso
<b>Ambiente empoderante</b>	<b>Capacitación de EEJ:</b> actividades e iniciativas que mejoran la comunicación y la construcción de relaciones con las comunidades desatendidas, incluida una mayor comprensión de las comunidades desatendidas destinatarias de NOAA Fisheries.	El personal de Alaska Fisheries Science Center y Alaska Regional Office recibió capacitación sobre conciencia cultural con respecto a las comunidades nativas de Alaska, su estructura de gobierno y su cultura para ayudar a facilitar la comprensión, construir relaciones positivas y mejorar la comunicación y el entendimiento con las comunidades nativas de Alaska.
	<b>Desarrollo de capacidades:</b> desarrollo de capacidades, incluidos productos o actividades de desarrollo profesional.	NOAA Fisheries apoya pasantías de verano pagadas para estudiantes de universidades históricamente negras e instituciones que atienden a minorías. Algunos ejemplos son Inclusive NOAA Fisheries Internship Program (IN FISH!), Woods Hole Partnership Education Program y Hollings Preparation Program ( <a href="#">ver una lista completa</a> ). Con los tutores de NOAA Fisheries que apoyan a los participantes de un proyecto, estos programas brindan oportunidades para el desarrollo profesional en los campos de la ciencia y la administración.
<b>Incorporación de la EEJ en políticas y planes</b>	<b>Planes de programa:</b> formas de planificación para aumentar el alcance y los beneficios de los programas de la NOAA Fisheries para las comunidades desatendidas.	La Office of Habitat Conservation formó un comité permanente para desarrollar recomendaciones para integrar los principios de EEJ en el trabajo del Damage Assessment Remediation and Restoration Program. Las recomendaciones permiten fundamentar el desarrollo de nuevas estrategias para involucrar a las comunidades desatendidas, la aplicación de nuevos métodos y marcos de decisión que nos permiten

<sup>6</sup> El proceso iterativo de categorizar y desarrollar temas y categorías amplias incluyó un análisis preliminar y secundario basado en los comentarios.

		considerar y evaluar mejor los factores de EEJ y nuestra capacidad para evaluar el progreso a lo largo del tiempo en relación con objetivos específicos.
<b>Incorporación de la EEJ en políticas y planes</b> (continuación.)	<b>Política:</b> Tener en cuenta la EEJ durante el proceso de toma de decisiones.	La Pacific Islands Regional Office está trabajando con las partes interesadas, otros colegas del gobierno de EE. UU. y los miembros de la Western & Central Pacific Fisheries Commission para desarrollar una medida de gestión que aborde las preocupaciones sobre las condiciones que enfrentan los miembros de las tripulaciones de las comunidades desatendidas, con un enfoque en los estándares laborales y la seguridad de la tripulación.
<b>Equidad en la investigación e investigación de la equidad</b>	<b>Investigación colaborativa y de apoyo:</b> investigación o apoyo a la investigación realizada en colaboración con comunidades desatendidas o las agencias/instituciones que las representan (p. ej., consejos tribales, agencias de pesca territorial).	Los pescadores locales de las comunidades de Emmonak y Alakanuk, NOAA Fisheries, Alaska Department of Fish and Game y Yukon Delta Fisheries Development Association trabajan conjuntamente cada verano para recuperar redes de salmón, contar peces, medir la temperatura del agua y enviar muestras a Alaska Fisheries Science Center Auke Bay Laboratories para analizar la dieta y la condición corporal de los peces. El <a href="#">proyecto</a> brinda oportunidades para introducir a los jóvenes en las carreras científicas, mientras que los científicos ciudadanos ayudan a estudiar la disminución de los retornos del salmón chinook al río Yukón.
	<b>Investigación social y cultural :</b> investigación para identificar y caracterizar a las comunidades pesqueras desatendidas. Incluye indicadores sociales, datos demográficos e investigaciones sobre salud humana, seguridad y seguridad alimentaria, pesca no comercial, así como conocimientos locales, tradicionales y culturales	Las caracterizaciones de la comunidad se pueden usar para resaltar comunidades que antes no estaban bien atendidas. Por ejemplo, el Alaska Fisheries Science Center dirigió proyectos de investigación sobre <a href="#">el papel de las mujeres nativas de Alaska en la industria pesquera de la bahía de Bristol</a> , <a href="#">la participación de las mujeres en 30 años de pesca en Alaska</a> y <a href="#">la participación de las mujeres en la pesca comercial en América del Norte y Europa</a> para explorar la naturaleza multifacética de la participación de las mujeres en la pesca.
	<b>Investigación de gestión y administración:</b> análisis de los impactos de las medidas de gestión en las comunidades desatendidas, y su percepción y participación en el proceso de toma de decisiones.	El Restoration Center Deepwater Horizon Project de la Office of Habitat Conservation evalúa cada propuesta en el rango razonable de alternativas para determinar si su implementación tendría impactos desproporcionados en las poblaciones minoritarias, de bajos ingresos o desatendidas.

<p><b>Divulgación y participación equitativa</b></p>	<p><b>Construcción de relaciones e intercambio de conocimientos:</b> actividades diseñadas para construir y mantener relaciones con las comunidades y proporcionar información importante.</p>	<p>Se desarrolló el Programa de Educación de Pesca Recreativa de Puerto Rico en colaboración con el Departamento de Recursos Naturales y Ambientales de Puerto Rico y el Consejo de Administración Pesquera del Caribe. Este es un programa educativo hecho a la medida de la comunidad pesquera recreativa de Puerto Rico. El programa se compone de 7 módulos: leyes y reglamentos pesqueros, especies marinas reguladas, especies altamente migratorias, ecosistemas de arrecifes de coral, leyes y reglamentos de arrecifes de coral de Puerto Rico, manejo y participación pesquera, y mejores prácticas de captura y liberación. El programa cubre la pesca tanto a nivel federal como territorial y lanzará talleres virtuales en línea este verano.</p>
<p><b>Divulgación y participación equitativa (continuación.)</b></p>	<p><b>Comunicación y acceso lingüístico:</b> plataformas, entornos y productos de comunicación para llegar a las comunidades desatendidas.</p>	<p>Para ampliar la participación de las comunidades pesqueras minoritarias en el proceso de elaboración de normas y mejorar el cumplimiento de las nuevas medidas de conservación y gestión, varias oficinas de NOAA Fisheries traducen materiales de administración pesquera (p. ej., guías de cumplimiento de la pesca, identificación de especies y tarjetas de manejo seguro) y proporcionan intérpretes en reuniones públicas. Las traducciones se han realizado en idioma español, vietnamita y samoano.</p>
	<p><b>Educación:</b> productos o actividades educativas diseñadas para llegar a las comunidades desatendidas.</p>	<p>El Alaska Fisheries Science Center trabaja con el Sealaska Heritage Institute y el Alaska Native Science and Engineering Program para proporcionar actividades y contenido de ciencia, tecnología, ingeniería y matemáticas para los estudiantes de secundaria nativos de Alaska.</p>
<p><b>Distribución equitativa de los beneficios</b></p>	<p><b>Subvenciones y asignación de fondos:</b> subvenciones y asignación de fondos para actividades para comunidades desatendidas.</p>	<p>La Southeast Regional Office trabajó con la Office of Protected Resources para desarrollar un proceso revisado para evaluar las subvenciones de recuperación de especies para las Tribus con el fin de garantizar una representación justa de los proyectos tribales para la consideración del panel de financiación. Además, la Office of Habitat Conservation ha incluido lenguaje específico en su aviso de oportunidades de financiamiento federal para incluir la EEJ y oportunidades de restauración.</p>
	<p><b>Pesca y acuicultura:</b> actividades de pesca y acuicultura para comunidades desatendidas.</p>	<p>El Northwest Fisheries Science Center colaboró con el Northwest Indian College para apoyar una asociación tribal de jóvenes que investiga nuevas toxinas que afectan la acuicultura de mariscos.</p>

	<p><b>Conservación y restauración del hábitat:</b> actividades de conservación y restauración del hábitat para comunidades desatendidas.</p>	<p>La NOAA Chesapeake Bay Office (NCBO) creó la asociación Envision the Choptank, que encuentra soluciones colaborativas que respaldan los arrecifes de ostras saludables y productivos, y restauran las aguas aptas para la pesca y el nado en el río Choptank. Envision the Choptank, con el apoyo de NCBO, desarrolló y aceptó los principios de EEJ e incorporó las consideraciones de EEJ en las listas de verificación de equidad del proyecto y se está enfocando en proyectos de restauración y conservación de hábitats en comunidades desatendidas para aumentar la equidad y la inclusión en los proyectos.</p>
	<p><b>Adaptación climática:</b> actividades de adaptación climática para las comunidades desatendidas</p>	<p>La NCBO colabora con un proyecto del Chesapeake Bay Program que se enfoca en proyectos de infraestructura verde para mejorar la resistencia costera en áreas desatendidas con el fin de aumentar la equidad y la inclusión en la restauración.</p>
<p><b>Administración inclusiva</b></p>	<p><b>Mejorar la diversidad de los aportes de la comunidad:</b> actividades diseñadas para aumentar los aportes diversos a las personas encargadas de la toma de decisiones, incluso a través de procesos de comentarios públicos.</p>	<p>La Atlantic Highly Migratory Species Management Division considera activamente la diversidad (étnica, geográfica, pesquera, etc.) en la revisión de las nominaciones al Panel Asesor de HMS con el objetivo de lograr diversos aportes y consejos sobre temas y gestión de pesca de HMS. Recientemente, ha aumentado la participación del Caribe de EE. UU. en el Panel Asesor de HMS, particularmente de Puerto Rico.</p>
	<p><b>Apoyo a la toma de decisiones de la comunidad:</b> actividades diseñadas para aumentar el acceso a la toma de decisiones por parte de las comunidades desatendidas.</p>	<p>La Southeast Regional Office trabajó con el Gulf of Maine Research Institute para expandir el Marine Resource Education Program a Puerto Rico y las Islas Vírgenes de EE. UU. A nivel nacional, MREP crea vías para que los científicos y administradores aprendan de los pescadores y para que los pescadores mejoren la comprensión y la participación en el proceso de administración y ciencia pesquera a nivel federal.</p>
	<p><b>Procesos de administración cooperativa:</b> actividades que incluyen la colaboración administrativa con las comunidades desatendidas.</p>	<p>En virtud de la Marine Mammal Protection Act, NOAA Fisheries y organizaciones de las comunidades nativas de Alaska <a href="#">administran en conjunto las poblaciones de mamíferos marinos de Alaska</a>. La administración conjunta promueve la participación plena e igualitaria de los nativos de Alaska en las decisiones que afectan la administración de subsistencia de los mamíferos marinos (en la medida máxima permitida por la ley) como una herramienta para conservar las poblaciones de mamíferos marinos de Alaska.</p>

## Apéndice 2: Directivas y EEJ de NOAA Fisheries

NOAA Fisheries crea programas, políticas y actividades conforme a las siguientes leyes, que a menudo se interrelacionan con las consideraciones de la EEJ:

### Magnuson-Stevens Fishery Conservation and Management Act

La [Magnuson-Stevens Fishery Conservation and Management Act](#)<sup>7</sup>(MSA) crea un proceso público que rige la administración de la pesca marina en las aguas federales de EE. UU. con el objetivo de prevenir la sobrepesca y reconstruir la pesca cuando sea necesario. La MSA establece un desarrollo de medidas de administración basado en los destinatarios a través de foros públicos abiertos llamados consejos de administración pesquera. Contiene una serie de referencias a comunidades específicas, incluidos gobiernos tribales, comunidades indígenas nativas de Hawái, nativas de Alaska y del Pacífico occidental. La MSA describe los estándares nacionales para el desarrollo de planes de administración pesquera y NOAA Fisheries brinda orientación reglamentaria sobre la implementación de los diez estándares nacionales de dicha administración.

El National Standard 1 requiere que las medidas de conservación y administración eviten la sobrepesca mientras se logra, de manera continua, el rendimiento óptimo (Optimum Yield, OY) de cada sector de pesca de la industria pesquera de los EE. UU. 16 USC 1851(a)(1). OY se refiere a una cantidad de pescado que brinda el mayor beneficio general a la Nación, particularmente con respecto a la producción de alimentos y las oportunidades recreativas, y teniendo en cuenta la protección de los ecosistemas marinos; y se prescribe sobre la base del rendimiento máximo sostenible "reducido por cualquier factor social, económico o ecológico relevante..." 16 U. S. C. 1802(33). En cuanto a los factores sociales, las pautas del [National Standard 1](#) brindan una lista no exhaustiva de posibles consideraciones, indicadores relacionados con la pesca y otros factores que pueden considerarse. Esta lista alienta la consideración de "... la preservación de una forma de vida para los pescadores y sus familias, la dependencia de las comunidades locales de un sector de pesca (p. ej., la participación en la pesca y la capacidad de adaptarse al cambio), ... indicadores no relacionados con la pesca (p. ej., tasas de desempleo, porcentaje de población por debajo del nivel de pobreza, densidad de población, etc.), ...[y] el lugar cultural de la pesca de subsistencia, las obligaciones en virtud de los tratados tribales, las proporciones de grupos minoritarios y de bajos ingresos afectados, y necesidades nutricionales mundiales" (50 C. F. R. 600.310(e)(3)(iii)(B)(1)).

El National Standard 4 requiere que las asignaciones sean justas y equitativas, razonablemente calculadas para promover la conservación y llevadas a cabo para evitar participaciones excesivas (entre otras consideraciones). 16 USC 1851(a)(4). En relación con la EO 13985 (Avance de la equidad racial y el apoyo a las comunidades desatendidas a través del gobierno federal), las [pautas del National Standard 4](#) brindan orientación sobre estos requisitos y también sobre otros factores relevantes para los objetivos del plan de administración pesquera que se deben considerar, como "consecuencias económicas y sociales del esquema, producción de alimentos... dependencia de la industria pesquera por parte de los participantes actuales y las comunidades costeras, ... oportunidad para que nuevos participantes ingresen a la industria pesquera..." (50 C. F. R. 600.325(c)(3)(iv)).

El National Standard 8 requiere medidas de conservación y gestión, coherentes con los requisitos de conservación de MSA, para tener en cuenta la importancia de los recursos pesqueros para las comunidades pesqueras mediante el uso de datos económicos y sociales que se basan en la mejor información científica disponible para proporcionar una participación sostenida de tales comunidades; y, en la medida de lo posible, minimizar los impactos económicos

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<sup>7</sup> Anteriormente la Fisheries Conservation and Management Act (1976).



adversos en dichas comunidades (16 U. S. C. 1851(a)(8)). Al abordar estos requisitos, las [Pautas del National Standard 8](#) establecen que se deben considerar los usos de los recursos pesqueros tanto de uso consuntivo como no consuntivo (50 C. F. R. 600.345(c)(4)). La “comunidad pesquera” se define en la MSA como una “comunidad que depende sustancialmente o participa sustancialmente en la captura o el procesamiento de los recursos pesqueros para satisfacer las necesidades sociales y económicas, e incluye a los propietarios, operadores y tripulantes de embarcaciones pesqueras y procesadores de pescado que tienen su sede en dicha comunidad” (16 U. S. C. 1802(17); véase también 50 C. F. R. 600.345(b)(3)). Las pautas del NS8 explican además: “Una comunidad pesquera es un grupo social o económico cuyos miembros residen en un lugar específico y comparten una dependencia común de la pesca comercial, recreativa o de subsistencia o de servicios e industrias directamente relacionados con la pesca (por ejemplo, astilleros, proveedores de hielo, tiendas de aparejos)” (50 C. F. R. 600.345(b)(3)). Es probable que estas comunidades pesqueras se superpongan en algunos casos con comunidades desatendidas como se definió anteriormente, y resaltar la posible inequidad en las decisiones de política pesquera en los análisis requeridos conforme al National Standard 8 es una intersección importante de nuestro mandato y las Órdenes Ejecutivas.

Como se señaló en la [Estrategia de justicia medioambiental de 2012 del Department of Commerce](#), la Magnuson-Stevens Fishery Conservation and Management Act reconoce el papel especial de las Tribus y otros pueblos indígenas en el desarrollo y la implementación de políticas pesqueras. Por ejemplo, la Ley estipula que el Pacific Fishery Management Council, cuya área de responsabilidad corresponde al lado del mar de California, Oregón, Washington e Idaho, incluirá un miembro votante que sea representante de una Tribu indígena con derechos de pesca reconocidos federalmente en la región. Además, la MSA autoriza un Western Alaska Community Development Quota Program, cuyos objetivos son brindar a las comunidades elegibles de Alaska Occidental la oportunidad de participar e invertir en la industria pesquera del mar de Bering y las islas Aleutianas, lo que favorece el desarrollo económico, alivia la pobreza y brinda beneficios económicos y sociales a los residentes, y permite lograr economías locales sostenibles y diversificadas (16 U. S. C. 1855(i)(1)). En el caso de cualquier sector de pesca sujeto a la autoridad del Western Pacific Fishery Management Council, la MSA autoriza el establecimiento de un Western Pacific Community Development Program para brindar acceso a las comunidades del Pacífico occidental que participan en el programa (16 U. S. C. 1855(i)(2)). Los objetivos de este programa incluyen promover el desarrollo de iniciativas sociales, culturales y comerciales que mejoren las oportunidades para las comunidades del Pacífico occidental de Samoa estadounidense, Guam, Hawái y la Mancomunidad de las Islas Marianas del Norte.

También hay una directiva en virtud de la MSA para establecer un programa piloto para programas de capacitación y educación marina con base regional en el Pacífico occidental y el Pacífico norte para fomentar la comprensión, el uso práctico del conocimiento (incluido el conocimiento de las comunidades nativas de Hawái, de Alaska y de otras islas del Pacífico) y la experiencia técnica relevante para la administración de los recursos marinos vivos. El objetivo de los programas o proyectos sería mejorar la comunicación, la educación y la capacitación sobre temas de recursos marinos y aumentar la educación científica para las profesiones relacionadas con el mar entre los residentes de las comunidades costeras, incluidos los indígenas de las islas del Pacífico, los nativos de Hawaii, los nativos de Alaska y otros grupos subrepresentados en la región. 16 USC 1855(j).

## Endangered Species Act

El propósito de la [Endangered Species Act \(ESA\)](#) es conservar las especies amenazadas y en peligro de extinción y los ecosistemas de los que dependen. NOAA Fisheries comparte la responsabilidad de implementar la ESA con el U. S. Fish and Wildlife Service; nos encargamos del manejo de peces marinos y anádromos. La ESA prohíbe "capturar" (es decir,

acosar, dañar, perseguir, cazar, disparar, herir, matar, atrapar, capturar o recolectar, o intentar participar en cualquier conducta de este tipo) de especies en peligro de extinción, pero en ciertas circunstancias, esta prohibición no se aplica a la captura de subsistencia por parte de “cualquier persona indígena, aleutiano o esquimal que sea nativo de Alaska que resida en Alaska” o “cualquier residente permanente no nativo de una comunidad nativa de Alaska” 16 U. S. C. 1538(a); 1539(e).

En junio de 1997, el Secretary of Commerce y el Secretary of Interior emitieron una Orden Secretarial Conjunta del Department of Commerce y el Department of the Interior “[American Indian Tribal Rights, Federal Tribal Trust Responsibilities, and the Endangered Species Act](#)”. La Orden reconoce la responsabilidad fiduciaria y las obligaciones de los tratados de los Estados Unidos con respecto a las Tribus indígenas y los miembros tribales y su relación de gobierno a gobierno en el trato con las Tribus. En consecuencia, los Departamentos llevarán a cabo sus responsabilidades conforme a la ESA de una manera que unifique la responsabilidad del fideicomiso federal con las Tribus, la soberanía Tribal y las misiones estatutarias de los Departamentos, y que se esfuerce por garantizar que las Tribus indígenas no tengan que soportar una carga desproporcionada por la conservación de las especies incluidas en la lista, a fin de evitar o minimizar el potencial de conflicto y confrontación. La Sección 161 de la Ley pública 108–199 (188 Stat. 452), modificada por la sección 518 de la Ley pública 108–447 (118 Stat. 3267), ordena a todas las agencias federales que consulten con las corporaciones nativas de Alaska sobre la misma base que las naciones tribales conforme a la EO 13175. Además, la Orden Secretarial 3225, titulada “Endangered Species Act and Subsistence Uses in Alaska (Supplement to Secretarial Order 3206)” establece un marco de consulta entre NOAA Fisheries y los nativos de Alaska con respecto a la captura de subsistencia de las especies incluidas en la lista de la ESA en virtud de la Ley. De acuerdo con estas órdenes y políticas de consulta, coordinamos y consultamos con las naciones tribales afectadas cuando consideramos acciones conforme a la ESA que pueden afectar los recursos del fideicomiso tribal, las tierras de propiedad tribal o el ejercicio de los derechos tribales.

## Fish and Wildlife Coordination Act

En virtud de la Fish and Wildlife Coordination Act (16 U. S. C. 661 et seq.), NOAA Fisheries otorga anualmente [subvenciones para la recuperación de especies a Tribus reconocidas a nivel federal](#) para apoyar la administración, investigación, supervisión y actividades de divulgación que tienen beneficios directos de conservación para las especies indicadas en la ESA.

## Marine Mammal Protection Act

La [Marine Mammal Protection Act](#) (MMPA) de 1972 establece una política nacional para evitar que los mamíferos marinos disminuyan más allá del punto en que dejen de ser elementos funcionales significativos de los ecosistemas de los que forman parte. La MMPA prohíbe la “captura” de mamíferos marinos, incluida la caza, captura, recolección o matanza de estos animales, en aguas de los EE. UU. o en tierras sujetas a la jurisdicción de los EE. UU., con algunas excepciones. Requiere que se obtenga una autorización de captura incidental para la “captura” no intencional de mamíferos marinos en relación con actividades que incluyen proyectos de construcción. Sin embargo, en ciertas circunstancias, la MMPA exime la captura de subsistencia por parte de los nativos de Alaska (descrito en 16 U. S. C. 1371(b) como “cualquier persona indígena, aleutiano o esquimal que resida en Alaska y que habite en la costa del Océano Pacífico Norte o el Océano Ártico”); ver también 50 CFR 216.3 y 216.23. Además, [la sección 119 de la MMPA](#) permite a NOAA Fisheries establecer acuerdos con [organizaciones nativas de Alaska para la gestión conjunta](#) de mamíferos marinos capturados con fines culturales y de subsistencia. La gestión conjunta promueve la participación plena e igualitaria de los nativos de Alaska en las decisiones que afectan la gestión para la subsistencia de los



mamíferos marinos (en la medida máxima permitida por la ley) como una herramienta para conservar las poblaciones de mamíferos marinos de Alaska.

En las circunstancias que correspondan, la MMPA también otorga a NOAA Fisheries la autoridad para renunciar u otorgar una exención a la prohibición de captura de mamíferos marinos para facilitar el ejercicio de los derechos por tratado de caza o pesca reservados para las Tribus reconocidas a nivel federal. Por ejemplo, en virtud de la sección 120 de la Ley, NOAA Fisheries puede autorizar la remoción letal de focas y leones marinos que tengan un impacto negativo significativo en el salmón de la costa oeste que figura en la lista de la ESA. En ciertas áreas designadas, NOAA Fisheries puede autorizar a los gobiernos tribales a participar en el proceso de remoción. En virtud de la sección 101(a)(3) de la MMPA, NOAA Fisheries puede considerar conceder una exención de la prohibición de captura para permitir que una Tribu ejerza el derecho que le otorga el tratado de participar en la caza de subsistencia de poblaciones sanas de mamíferos marinos.

## National Environmental Policy Act

La National Environmental Policy Act establece la política ambiental nacional del gobierno federal para utilizar todos los medios y medidas viables para fomentar y promover el bienestar general, crear y mantener condiciones en las que los seres humanos y la naturaleza puedan existir en armonía productiva y cumplir con los objetivos sociales, económicos y otros requisitos de las generaciones presentes y futuras de estadounidenses, y ordena a las agencias federales que consideren los impactos ambientales de sus acciones propuestas antes de tomar decisiones. La [Guía de Justicia Ambiental de 1997 del Consejo de Calidad Ambiental bajo la Ley de Política Ambiental Nacional](#) destaca la importancia de NEPA en la identificación de asuntos de justicia ambiental y ofrece principios para incorporar la justicia ambiental en las revisiones de NEPA de nuestras acciones propuestas. El Grupo de Trabajo Interagencia Federal sobre Justicia Ambiental estableció un Comité NEPA en 2012 de conformidad con el [Memorandum de Entendimiento sobre Justicia Ambiental y la Orden Ejecutiva 12898 \(2011\)](#). El Memorándum identificó a la NEPA como un área de enfoque para la inclusión en los esfuerzos de justicia ambiental de las agencias y dirigió los esfuerzos para “incluir la colaboración entre agencias” Después de examinar las mejores prácticas, las lecciones aprendidas, la investigación, el análisis, la capacitación, la consulta y otras experiencias de los profesionales federales de NEPA en todo el gobierno federal, el EJ IWG produjo [Promising Practices for EJ Methodologies in NEPA Reviews \(2016\)](#) como una guía informal para compartir formas efectivas para construir una sólida consideración de la justicia ambiental en la práctica de la NEPA.

Como lo exige la NEPA, las acciones de administración pesquera atraviesan el proceso de revisión ambiental. La [Estrategia de Justicia Ambiental de 2012 del Department of Commerce](#) señala que, como custodio de una gran cantidad de datos ambientales, la NOAA está equipada de manera única para evaluar "los posibles... impactos ambientales adversos y desproporcionados en las poblaciones minoritarias y de bajos ingresos". Además, la guía señala que NOAA Fisheries estudia el impacto del cambio climático en los recursos fiduciarios de NOAA Fisheries, incluidas la pesca, las especies de ESA y MMPA, y sus hábitats asociados. NOAA Fisheries cuenta con recursos de datos clave para comprender cómo esos cambios inducidos por el clima en nuestros recursos afectarán de forma específica a las poblaciones desatendidas/minoritarias/tribales.

## Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

La Comprehensive Environmental Response, Compensation and Liability Act de 1980 (CERCLA) proporciona un grupo integral de autoridades centradas en un objetivo principal: abordar cualquier liberación o amenaza de liberación de sustancias peligrosas, nocivas o contaminantes que podrían poner en peligro la salud humana o el medio ambiente.

Las disposiciones de respuesta de CERCLA se centran en la protección de la salud humana y el medio ambiente. El estatuto también proporciona autoridad para la evaluación y restauración de los recursos naturales se dañaron en una respuesta o liberación de sustancias peligrosas.

## Oil Pollution Act (OPA)

La [Oil Pollution Act](#) de 1990 se esfuerza por prevenir derrames de petróleo de embarcaciones e instalaciones, obliga a retirar el petróleo derramado y asigna responsabilidad por el costo de la limpieza y los daños. La Ley exige procedimientos operativos específicos; define las partes responsables y la responsabilidad financiera; implementa procesos de medición de daños; especifica los daños por los cuales los infractores son responsables; y establece un fondo para daños, limpieza y costos de remoción. Otorga a la NOAA y a otros la autoridad para abordar los impactos en los recursos naturales causados por los derrames de petróleo y tomar medidas para responder o prevenir un derrame de petróleo.