Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200 A-N • Arlington, VA 22201
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Patrick C. Keliher (ME), Chair *Spud Woodward (GA), Vice-Chair* *Robert E. Beal, Executive Director*

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

MEMORANDUM

April 21, 2021

TO: Commissioners; Proxies; American Eel Management Board; American Lobster Management Board; Atlantic Coastal Cooperative Statistics Program Coordinating Council; Atlantic Menhaden Management Board; Atlantic Striped Bass Management Board; Executive Committee; Interstate Fisheries Management Program Policy Board; Mid-Atlantic Fishery Management Council; Shad and River Herring Management Board

FROM: Robert E. Beal
Executive Director

RE: ASMFC Spring Meeting Webinar: May 3-6, 2021

The Atlantic States Marine Fisheries Commission's Spring Meeting Webinar will be held May 3-6, 2021. Meeting materials are now available on the Commission website at http://www.asmfc.org/home/2021-spring-meeting-webinar. Supplemental materials will be posted to the website on Wednesday, April 28.

Board meeting proceedings will be broadcast daily via webinar beginning Monday, May 3 at 1:00 p.m. and continuing daily until the conclusion of the meeting (expected to be 12:30 p.m.) on Thursday, May 6. The webinar will allow registrants to listen to board deliberations and view presentations and motions as they occur. To register for the webinar go to https://attendee.gotowebinar.com/register/4182611915717793807, Webinar ID# 647-565-931.

Each day, the webinar will begin 30 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.

If you are joining the webinar but will not be using VoIP, you can may also call in at 1.562.247.8321 (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, you can do so by dialing 1.562.247.8321 (access code: 785-852-884)

We look forward to meeting with you at the Spring Meeting Webinar. If the staff or I can provide any further assistance to you, please call us at 703.842.0740.

Enclosure: Public Comment Guidelines and Final Agenda

Atlantic States Marine Fisheries Commission

Spring Meeting Webinar

May 3-6, 2021

Public Comment Guidelines

To provide a fair opportunity for public input, the ISFMP Policy Board approved the following guidelines for use at management board meetings. **Please note these guidelines have been modified to adapt to meetings via webinar**:

For issues that are not on the agenda, management boards will continue to provide an 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 3 weeks prior to the start of the webinar (April 19) has been included in the briefing materials.
2. Comments received by 5:00 PM on Tuesday, April 27 will be included in the supplemental materials.
3. Comments received by 10:00 AM on Friday, April 30 will be distributed electronically to Commissioners/Board members prior to the meeting.

Comments should be submitted via email at comments@asmfc.org. All comments must clearly indicate the commenter's expectation from the ASMFC staff regarding distribution.

Final Agenda

The agenda is subject to change. The agenda reflects the current estimate of time required for scheduled Board meetings. The Commission may adjust this agenda in accordance with the actual duration of Board meetings. It is our intent to begin at the scheduled start time for each meeting, however, if meetings run late the next meeting may start later than originally planned.

Monday, May 3

1:00 – 3:30 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: McKiernan
Other Participants: Reardon, Perry, Beal, DeVoe, Webb
Staff: Starks

1. Welcome/Call to Order *(D. McKiernan)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from February 2021
3. Public Comment
4. Consider Technical Committee Recommendation on Management Strategy Evaluation Options for Gulf of Maine/Georges Bank and Southern New England American Lobster Fisheries *(K. Reardon)* **Possible Action**
5. Update on Development of Draft Addendum XXVII on Gulf of Maine/Georges Bank Resiliency *(C. Starks)*
   - Provide Guidance to Plan Development Team on Draft Management Options
6. Discuss Vessel Tracking for the Lobster Fishery *(C. Starks)* **Possible Action**
   - Update on Tracking Projects *(A. Webb, W. DeVoe)*
7. Other Business/Adjourn

Tuesday, May 4

9:00 – 10:30 a.m. **Atlantic Coastal Cooperative Statistics Program Coordinating Council**
Partners: ASMFC, Connecticut, Delaware, District of Columbia, Florida, Georgia, MAFMC, Maine, Maryland, Massachusetts, NEFMC, New Hampshire, New Jersey, New York, NMFS, North Carolina, Pennsylvania, PRFC, Rhode Island, SAFMC, South Carolina, USFWS, Virginia
Chair: Carmichael
Staff: White

1. Welcome/Call to Order *(J. Carmichael)*
2. Council Consent
   - Approval of Agenda
   - Approval of Meetings from February 2021
3. Public Comment
4. Review Funding Decision Document and 2022 Request for Proposals *(J. Simpson)* **Action**
5. Program Updates *(G. White, J. Simpson)*
6. Other Business/Adjourn

10:45 – 11:45 a.m. **American Eel Management Board**

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: DC, NMFS, PRFC, USFWS
Chair: Fegley
Other Participants: Tuckey, Beal, DeLucia
Staff: Rootes-Murdy

1. Welcome/Call to Order *(L. Fegley)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from October 2019
3. Public Comment
4. Review 2020 Commercial Yellow Eel Landings *(K. Rootes-Murdy)*
   - Advisory Panel Report *(M. DeLucia)*
5. Progress Update on 2022 American Eel Benchmark Stock Assessment *(K. Anstead)*
6. Elect Vice-Chair **Action**
7. Other Business/Adjourn

11:45 a.m. – 1:00 p.m. **Lunch Break**

1:00 – 2:00 p.m. **Discussion Session on President Biden's Executive Order: Tackling the Climate Crisis at Home and Abroad**

Speaker: Sam Rauch, NOAA Fisheries
Executive Order 14008 Section 216 (c) Directs NOAA to Collect Recommendations on How to Make Fisheries, Including Aquaculture, and Protected Resources more Resilient to Climate Change, Including Changes in Management and Conservation Measures, and Improvements in Science, Monitoring, and Cooperating Research

2:15 – 3:45 p.m. **Atlantic Menhaden Management Board**

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: NMFS, PRFC, USFWS
Chair: Woodward
Other Participants: Newhard, Kersey
Staff: Rootes-Murdy

1. Welcome/Call to Order *(S. Woodward)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from February 2021
3. Public Comment
4. Consider Fishery Management Plan Review and State Compliance for the 2020 Fishing Year *(K. Rootes-Murdy)* **Action**
5. Discuss Revisiting the Commercial Quota Provisions of Amendment 3 *(K. Rootes-Murdy)* **Action**

6. Review Data Needs for Spatially Explicit Management of Atlantic Menhaden in the Chesapeake Bay *(J. Newhard)*
7. Other Business/Adjourn

Wednesday, May 5

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

(A portion of this meeting will be a closed session for Commissioners and Committee members only)
Members: Abbott, Anderson, Batsavage, Bell, Bowman, Cimino, Clark, Davis, Estes, Gilmore, Keliher, Kuhn, McKiernan, McNamee, Miller, Patterson, Woodward
Chair: Keliher
Staff: Leach

1. Welcome/Call to Order *(P. Keliher)*
2. Committee Consent
   - Approval of Agenda
   - Approval of Meeting Summary from February 3, 2021
3. Public Comment
4. Report of the Administrative Oversight Committee *(S. Woodward)*
   - Presentation of the FY 2022 Budget **Action**
   - Presentation of Statement of Investment Policy Guidelines **Action**
5. Update on Activities of the Allocation Subcommittee
6. Discuss Second Round of CARES Act Assistance *(R. Beal)*
7. Future Annual Meeting Update *(L. Leach)*
   - October 18-21, 2021 – Long Branch, New Jersey
   - 2022 – North Carolina
   - 2023 – Maryland
   - 2024 – Delaware
8. Other Business
9. Executive Director Performance Review **(Closed Session)**
10. Adjourn

10:30 – 11:30 a.m. **Shad and River Herring Management Board**

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Other Members: DC, NMFS, PRFC, USFWS
Other Participants: Neilan, Gadomski, Warner
Chair: Davis
Staff: Starks

1. Welcome/Call to Order *(J. Davis)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from February 2021
3. Public Comment

4. Review Technical Committee Progress on Board Tasks *(B. Neilan)*
   - Consider Technical Guidance Document for Implementation of Amendments 2 and 3 to the Shad and River Herring Fishery Management Plan **Action**
   - Update on Methods to Evaluate Bycatch in Mixed-stock Fisheries in State Waters
   - Consider Technical Committee Recommendations on Addressing Fish Passage Performance **Action**
5. Consider Approval of Shad Habitat Plan Updates **Action**
   - Review Technical Committee Recommendations *(B. Neilan)*
6. Other Business/Adjourn

11:30 a.m. – 1:00 p.m. Lunch Break

1:00 – 4:30 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: Borden
Other Participants: Sullivan, Godwin, Blanchard, Lee
Staff: Franke

1. Welcome/Call to Order *(D. Borden)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from February 2021
3. Public Comment
4. Consider the 2020 Albemarle Sound-Roanoke River Atlantic Striped Bass Stock Assessment **Action**
   - Presentation of Stock Assessment and Peer Review Panel Report *(L. Lee, C. Godwin)*
   - Technical Committee Report *(K. Sullivan)*
   - Consider Acceptance of Benchmark Stock Assessment and Peer Review Report for Management Use
5. Public Comment Summary to Draft Amendment 7 Public Information Document
   - Public Comment Summary *(E. Franke)*
   - Advisory Panel Report *(E. Franke)*
6. Draft Amendment 7 *(D. Borden)* **Action**
   - Provide Guidance to the Plan Development Team for Draft Amendment 7
7. Review and Populate Advisory Panel Membership *(T. Berger)* **Action**
8. Other Business/Adjourn

Thursday, May 6

9:00 a.m. – Noon **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
ASMFC Chair: Keliher
Other Participants: Pugliese
Staff: Kerns

1. Welcome/Call to Order *(P. Keliher)*
2. Board Consent
   - Approval of Agenda
   - Approval of Proceedings from February 2021
3. Public Comment
4. Executive Committee Report *(P. Keliher)*
5. Review and Consider New York's Appeal of Addendum XXXIII to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan *(P. Keliher)* **Final Action**
6. Discuss d*e minimis* within Commission Fishery Management Plans *(T. Kerns)*
7. Discuss East Coast Climate Change Scenario Planning Initiative *(T. Kerns)*
8. Discuss the Board Process of Approving Fishery Management Plan Reviews and Recommendations from Plan Review Teams *(T. Kerns)*
9. Update on the Mid-Atlantic Fishery Management Council's Research Steering Committee to Evaluate Restarting the Research Set-aside Program *(R. Beal)*
10. SEAMAP Report *(S. Murray)*
11. Review Noncompliance Findings (if Necessary) **Action**
12. Other Business/Adjourn

Noon – 12:30 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: Keliher
Staff: Beal

1. Welcome/Call to Order *(P. Keliher)*
2. Committee Consent
   - Approval of Agenda
   - Approval of Proceedings from October 2020
3. Public Comment
4. Consider Noncompliance Recommendations (if Necessary) **Final Action**
5. Other Business/Adjourn

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American Lobster Technical Committee
Meeting Summary
Webinar
Monday, April 12, 2021

TC Members: Kathleen Reardon (Chair, ME), Josh Carloni (NH), Tracy Pugh (MA), Conor McManus (RI), Renée St. Amand (CT), Kim McKown (NY), Chad Power (NJ), Craig Weedon (MD), Somers Smott (VA), Burton Shank (NEFSC), Caitlin Starks (ASMFC), Jeff Kipp (ASMFC)

Additional Attendees: Allison Murphy (NOAA), Corinne Truesdale (RI), Megan Ware (ME), Amalia Harrington (SeaGrant)

The Technical Committee (TC) met on Monday, April 12th, 2021 to follow up on discussion from their March 25th meeting. The TC reviewed relevant data and provided guidance to the Plan Development Team (PDT) on developing a trigger mechanism to automatically implement management measures to increase biological resiliency in the Gulf of Maine/Georges Bank lobster stock (GOM/GBK) through Draft Addendum XXVII. Staff reviewed the PDT's proposed option structure, which includes three options for "packaged" measures that would be implemented at different trigger levels; as proposed the options would not be mutually exclusive, and the Board could choose to implement some or all of the options. The PDT discussed having one option include a more conservative (more proactive) trigger that would result in the implementation of standardized measures across LCMAs to provide a relatively small increase in stock resiliency, and another trigger set at a less conservative (less proactive) point that would result in the implementation of more restrictive measures to provide a more substantial increase in resiliency. Tracy commented that without a PDT representative from MA involved in drafting the current options, additional input on the options is needed but that proposed sub-option 4B (standardizing the LCMAs to a zero tolerance definition for V-notching) would likely not be a preferred measure for MA due to concerns regarding enforcement of zero-tolerance (MA would likely support a 1/8" standardized definition).

Questions for the Board
Throughout the discussion, the TC noted at multiple points that they were unable to make recommendations without additional guidance from the Board on a number of issues related to the draft addendum. Therefore, the TC developed a list of questions for the Board to consider, below. Feedback on these questions is requested to give the TC and PDT a sense of the Board's objectives and priorities with this action.

- What are the Board's objectives with regard to stock resiliency? For example, is the goal to maintain current levels of abundance and productivity, broaden stock size structure, etc.?
- How soon does the Board want to react to changes in the stock? For example, after seeing 3 years of decline of a certain magnitude, or less?
- What are the Board's priorities with regard to standardization of measures versus stock resiliency? Is one more important than the other?

- What are the Board's goals for standardizing measures throughout the GOM/GBK stock? For example, increasing biological resiliency, improving enforcement, facilitating stock assessment, addressing supply-chain issues, etc.?

Review of Data for Trigger Indices

The TC reviewed data that could be used to establish an index with an associated trigger. First Jeff presented the ME/NH and MA trawl survey data combined into single indices by season using survey provided stratum areas, with sexes aggregated and constrained to sizes 71-80 mm. Data adjustments based on swept area and size selectivity were applied to standardize the catch rates between the two surveys. With these adjustments the indices track trends of the individual trawl surveys closely, but the ME/NH survey drives the combined index because of the higher densities it encounters and the larger spatial scale it surveys.

Conor presented the female VTS index for the GOM/GBK stock, with calculated slopes of a linear regression line fit to the index for various time windows. He noted that if slope were used as a trigger it would be sensitive to the number of years used; the slope changes significantly when a 5 year window is updated on a rolling basis.

Jeff brought up the idea raised on the previous TC call of focusing on a rate of change in the indices rather than a particular level. He presented analysis of the rate of change in the combined ME/NH and MA indices. The annual rate of change was calculated by dividing the index from a given year by the previous year and subtracting 1. He also calculated a 3-year running median of the annual rate of change to smooth out noise in the annual index. The median was used rather than the mean because using the mean tends to mask a declining trend. He also calculated the annual and running 3-year median rates of change for SNE recruit indices as a case study for assessing rate trajectories and magnitudes in a precipitous decline scenario. For the ME/NH and MA indices there is more noise in the earlier part of the time series and both positive and negative trends, but more negative trends in the latter half of the time series. For SNE, after 1998 the rates of change are mostly negative across all indices. The TC discussed that if rate of decline observed in SNE were used as the basis for establishing a trigger for GOM/GBK, then they would have to select an appropriate reference period. However, they noted this could be a challenge given that right before the SNE decline they observed the highest recruitment and reference abundance levels in the time series. The TC discussed not only using a number of consecutive years of decline as a trigger, but also considering the magnitude of the decline. In SNE, the rates of change are much more negative than the negative rates observed in the last part of the GOM/GBK time series. Kim suggested that a trigger could either be based on a steep decline over a shorter number of years, or a shallower decline over a longer timeframe.

Kim also reviewed correlation analyses from the stock assessment between the survey indices and the model abundance; the indices track the assessment model abundance estimates fairly well, with less correlation for the MA index than the others. These analyses confirmed there is a relationship between the assessment model and indices, and indices could be used for potential trigger management outside of an assessment.

The TC discussed accounting for catchability effects in the annual combined index, but determined that a significant amount of work would be required to do that annually. Thus, the TC notes there is annual variation associated with the rate of change method that should be considered but that the method of using a three-year median should smooth the potential extremes.

The TC supported pursuing rate of change in the indices as the basis for a trigger, and specifically agreed that both magnitude of change and number of years of decline should be incorporated (e.g., average 10% decline over 3 years). The TC discussed basing a more proactive trigger level on the Fishery/Industry Target reference point in the assessment. However, they felt additional guidance from the Board is needed on how reactive they want to be to negative trends. The TC felt that if this type of trigger is established through the addendum, it could provide the Board a tool to respond to a decline sooner than an assessment would allow. The TC discussed that the timeframe used for a trigger based on rate of change should be shorter than an assessment timeframe, such as 3 years or less. The TC also discussed that a less proactive trigger level could be linked to the abundance limit reference point in the assessment and/or a proxy developed from the indicators that delays action to a lower abundance level.

Analysis of Minimum and Maximum Gauge Size Changes

Burton presented analyses that were done in 2018 using data from the 2015 assessment for minimum and maximum gauge combinations and their impacts to spawning stock biomass and catch. It was noted that with minimum size increases, the number of lobsters caught would decrease marginally but total weight of landings would probably increase, independent of increases in spawning stock abundance and egg production. The TC notes that analysis of the impacts of changing measures depends on the assumed biological parameters, which are probably underestimating male growth and overestimating female growth. Burton also noted that there is more uncertainty about the impact of measures as the magnitude of change from status quo increases. Also, the TC observed that any increases in minimum size incur short-term costs as a portion of the next year's catch is unavailable due to the gauge increase. In general, there is a rough relationship between changing the minimum size and landings, where increasing the minimum size by 1 mm in one year would result in a decrease in landings by roughly 10% for that year. In inches, the impact of a change of 1/32" is about 8%, and 1/16" is about 16%. Thus, changes in gauge size have short-term costs to landings, but immediate benefits to stock resiliency and long-term benefits to landings, so timing of management actions is important.

The TC also noted a need for Board guidance on their objectives for the addendum, with regard to the importance of standardization of measures versus increasing stock resiliency. If the resiliency is the priority, it should be noted that some changes being considered in an effort to standardize measures (such as decreasing the minimum size in Area 3) could actually result in some loss to stock resiliency.

Kathleen asked if these simulations could be updated with more recent discard data for Area 3, particularly inclusion of new Commercial Fisheries Research Foundation study fleet data and possibly additional data from increased NOAA observer coverage driven by Standardized Bycatch Reduction Monitoring. Burton will look into the code to determine how long updating the analysis will take. The TC agreed this updated analysis should be sufficient for the PDT to consider appropriate minimum and maximum gauge sizes for the draft addendum.

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MEMORANDUM

TO: **American Lobster Management Board**

FROM: **Caitlin Starks, FMP Coordinator**

DATE: **April 27, 2021**

SUBJECT: **Electronic Vessel Tracking for Federal Lobster and Jonah Crab Fleet**

Background

In February 2018, the American Lobster Management Board (Board) approved Addendum XXVI to improve the spatial resolution of lobster and Jonah crab harvester data to address ongoing marine spatial planning activities and assessment challenges. At the same time, the Board approved a one-year pilot program to test electronic tracking devices in the lobster and Jonah crab fishery. The intent of this pilot program was to identify appropriate tracking devices for use in the fishery and inform a Board decision on whether electronic tracking should be pursued in part, or all, of the lobster and Jonah crab fishery.

In October 2020, the Board received a presentation on the successful results of the electronic tracking pilot program and acknowledged that electronic tracking to characterize spatial and temporal effort in the lobster fishery is a critical data need. As a result, the Board expressed interest in an ongoing expanded pilot project focused on data integration and hardware testing to lay the groundwork for implementing electronic tracking in the fishing fleet.

Board Action for Consideration

Based on Board direction, staff held a call with interested states in spring 2021 to better understand priorities and expectations for advancing electronic vessel tracking. This group recommended re-engaging the Board on tracking at the ASMFC Spring meeting, specifically for the Board to consider sending a letter to NOAA Fisheries recommending NOAA implement electronic vessel tracking requirements for the federal lobster and Jonah crab fishery.

Needs and Benefits of Electronic Vessel Tracking

To date, spatial information on the lobster and Jonah crab fishery has been constrained to NOAA statistical areas and state management areas, hindering the ability to quantify effort in specific regions or identify important transit routes. The application of electronic tracking to this fishery could significantly improve the information available to fishery managers and stock assessment scientists. In particular, a number of challenges the fishery is currently facing pose an acute need for electronic tracking in the offshore fishery. Spatial information on effort in federal waters is needed to address these issues, including:

- Right whales and protected resources: The current models used to assess the location of vertical lines in the fishery and their associated risk to right whale could be significantly improved with data collected through vessel tracking. The recently released draft Biological Opinion outlines additional risk reductions in the US lobster fishery starting in

2025 and it is important to update this data and the associated risk reduction models ahead of this timeline.

- Offshore enforcement: It has long been recognized that enforcement efforts in the offshore federal lobster fishery need to be improved. As a result, there are ongoing efforts to enhance enforcement capabilities, including discussions around an offshore enforcement vessel capable of hauling and re-setting long trawls. However, even with an enforcement vessel, it can be hard to find gear, particularly in LCMA 3. Vessel tracking could improve the efficiency and efficacy of offshore enforcement efforts by directing enforcement personnel to where gear is located.
- Protected areas: In January 2021, President Biden issued an Executive Order on Tackling the Climate Crisis at Home and Abroad. Included in this Executive Order is a goal of protecting 30% of US waters by 2030. Given this goal, it is important to record the footprint of the US lobster fishery so this information can be considered in any future discussion and decisions.

Commission and State Actions in Support of Electronic Vessel Tracking

In addition to promoting the investigation of tracking devices through the Board-approved pilot project, the Commission and state partners have supported efforts to facilitate the development of electronic tracking programs. The following actions demonstrate the Board's continued support for tracking in the lobster and Jonah crab fishery:

- In April 2019, ASMFC sent a letter to NOAA Fisheries recommending the development of electronic tracking systems in the federal lobster fishery. This action was supported by Law Enforcement Committee advice that highlighted the need to implement a tracking system to enable effective targeting of offshore areas with a new offshore enforcement vessel or vessels.
- In its March 2021 comments on the proposed rule to modify the Atlantic Large Whale Take Reduction Plan (ALWTRP), ASMFC highlighted the need for improved enforcement in the offshore lobster fishery in order for the proposed ALWTRP to be effective.
- Maine DMR has continued to test emerging vessel tracking technologies, including the deployment of Particle trackers, a low-cost vessel tracking system with open-source architecture. DMR has also set aside funds to assimilate vessel tracking data with Maine's electronic harvester reporting app.
- Massachusetts and Rhode Island have collaborated on a project integrating cell-based tracking with ACCSP's SAFIS eTRIPS mobile trip reporting application, and have worked with ACCSP to create trip viewers within SAFIS eTRIPS online.

ACCSP FY22 RFP Summary of Changes

1. RFP

1.1. General Changes

1.1.1. Updated dates appropriately

1.2. Funding Subcommittee Recommendation (**PAGE 2**)

1.2.1. New paragraph highlighted in yellow

1.2.2. In consideration of the unique situation the COVID 19 has created, the step down process will be paused in FY22. This means that all maintenance projects in the step down process will be in the same year of the step down process as they were in FY21. All maintenance project submissions that are in the step down process are required to submit an appendix to the proposal with a summary of why the additional funding is needed and if there are any funds from the previous year that were not spent. This status is reflected in Appendix A of the FDD, which has a list of those maintenance projects entering year 6 and the maximum funding available to them.

2. Funding Decision Document

2.1. General changes

2.1.1. All dates have been updated

2.2. Funding Decision Process Timeline (**PAGE 1**)

2.2.1. Highlighted text added to clarify involvement of PIs in initial review

2.2.2. July- Operations and Advisory Committees review initial proposals, PIs are invited (not mandatory) to this meeting to answer questions and hear feedback; ACCSP staff provide initial review results to submitting Partner

2.3. Detailed Steps of Funding Decision Process Added Bullet 3 (**PAGE 2**)

2.3.1. New bullet highlighted in yellow

2.3.2. In consideration of the unique situation the COVID 19 has created, the step down process will be paused in FY22. This means that all maintenance projects in the step down process will be in the same year of the step down process as they were in FY21. All maintenance project submissions that are in the step down process are required to submit an appendix to the proposal with a summary of why the additional funding is needed and if there are any funds from the previous year that were not spent. This status is reflected in Appendix A.

2.4. Appendix A (**PAGE 15**)

2.4.1. Change year 6 to year 6/7 to accommodate the recommendation of the Funding Subcommittee

2.4.2. Adjusted language to note that table referred to year 6/7 FY22 projects

3. Biological Priority Matrix – No Changes

3.1 Updated by Biological Review Panel for FY22 and FY23

4. Bycatch Priority Matrix

4.1 Updated by Bycatch Prioritization Committee for FY22 and FY23

5. Recreational Technical Committee Priorities – No Changes

6. Socioeconomic Priority Data Elements – No Changes

7. Timeline for Proposal Review

7.1. Dates are updated

7.2. Overall timeline remains relatively the same

8. Ranking Criteria Document – No Changes

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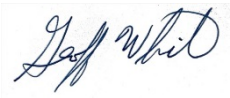
TO: ACCSP Coordinating Council and All ACCSP Committees

FROM: Geoff White, ACCSP Director 

SUBJECT: ACCSP Request for 2022 Proposals

The Atlantic Coastal Cooperative Statistics Program (Program or ACCSP) is issuing a Request for Proposals (RFP) to Program Partners and Committees for FY22 funding.

ACCSP's Funding Decision Document (FDD) provides an overview of the funding decision process, guidance for preparing and submitting proposals, and information on funding recipients' post-award responsibilities. Projects in areas not specifically addressed in the FDD may still be considered for funding if they help achieve Program goals. These goals, listed by priority, are improvements in:

1a. Catch, effort, and landings data (including licensing, permit and vessel registration data);
1b. Biological data (equal to 1a.);
2. Releases, discards and protected species data; and,
3. Economic and sociological data.

Project activities that will be considered according to priority may include:

- Partner implementation of data collection programs;
- Continuation of current Program-funded partner programs;
- Funding for personnel required to implement Program related projects/proposals; and
- Data management system upgrades or establishment of partner data feeds to the Data Warehouse and/or Standard Atlantic Fisheries Information System.

Proposals for biological sampling should target priority species in the top quartile (Attachment II) of the Biological Priority Matrix. Proposals for observer coverage should align with fisheries affecting the top quartile priority species (Attachment III) of the Bycatch Priority Matrix. Brief descriptions of the current levels of biological or bycatch sampling by any of the Partners would be helpful to the review process. Projects for recreational catch and effort data should target the priorities set by the Recreational Technical Committee (Attachment IV). Projects involving socioeconomic data should reference the Socioeconomic Priority Data Elements (Attachment V).

Proposals to continue Program-funded partner projects ("maintenance proposals") may not contain significant changes in scope (for example the addition of bycatch data collection to a dealer reporting project), and must include in the cover letter whether there are any changes in the current proposal from prior years' and, if so, provide a brief summary of those changes.

Additionally, in FY16 a long-term funding strategy policy was instituted to limit the duration of maintenance projects. Maintenance projects are now subject to a funding reduction following their

fourth year of maintenance funding. For maintenance projects entering year 6, a further 33 percent cut will be applied and funding will cease in year 7.

In consideration of the unique situation the COVID 19 has created, the step down process will be paused in FY22. This means that all maintenance projects will be in the same year of the step down process as they were in FY21. Maintenance projects that are new to that category this year will be considered to be in year 0 and will begin year 1 in FY23. All maintenance project submissions are required to submit an appendix to the proposal with a summary of why the extension is needed and if there are any funds from the previous year that were not spent. This status is reflected in Appendix A of the FDD, which has a list of those maintenance projects entering year 6 and the maximum funding available to them.

All project submissions must comply with the Program Standards found here. Please consider using this successful project proposal as a template. Overhead rates may not exceed 25% of total costs unless mandated by law or policy. Items included within overhead should not also be listed as in-kind match.

Submissions will be reviewed in accordance with the FDD (Attachment I), ranking criteria (Attachment VII), and funding allocation. Current funding allocation guidelines are 75% for maintenance projects and 25% for new projects within the Program priorities. If either allocation is not fully utilized, remaining funds will be available to approved projects in the other category. For example, if maintenance projects only use 67% of the total available funds, the remaining balance would be added to the 25% new project allocation to fund new projects as approved by the Coordinating Council.

Attachment VI provides a timeline for the FY22 funding process. The final decision on proposals to be funded for FY22 will be made in October 2021. Project awards will be subject to funding availability and, if there is a funding shortfall, awards may be adjusted in accordance with the FDD. Successful applicants will be notified when funding becomes available.

Project Investigators will be required to report progress directly to the Program's Operations and Advisory Committees in addition to meeting the standard Federal reporting requirements.

Please submit initial proposals as Microsoft Word and Excel files no later than **June 12, 2021** by email to Julie Defilippi Simpson, ACCSP Deputy Director julie.simpson@accsp.org. If you have any questions about the funding decision process, please contact your agency's Operations Committee member (http://www.accsp.org/committees) or ACCSP staff (703-842-0780).

RELEVANT ATTACHMENTS

ATTACHMENT I	FY2022 Funding Decision Document
ATTACHMENT II	FY2022 Biological Priority Matrix
ATTACHMENT III	FY2022 Bycatch Priority Matrix
ATTACHMENT IV	FY2022 Recreational Technical Committee Priorities
ATTACHMENT V	FY2022 Socioeconomic Priority Data Elements
ATTACHMENT VI	FY2022 Timeline for Proposal Review
ATTACHMENT VII	FY2022 Ranking Criteria Document

Funding Decision Process
Atlantic Coastal Cooperative Statistics Program
May 2021

The Atlantic Coastal Cooperative Statistics Program (the Program) is a state-federal cooperative initiative to improve recreational and commercial fisheries data collection and data management activities on the Atlantic coast. The program supports further innovation in fisheries-dependent data collection and management technology through its annual funding process.

Each year, ACCSP issues a Request for Proposals (RFP) to its Program Partners. The ACCSP Operations and Advisory Committees review submitted project proposals and make funding recommendations to the Deputy Director and the Coordinating Council.

This document provides an overview of the funding decision process, guidance for preparing and submitting proposals, and information on funding recipients' post-award responsibilities, including providing reports on project progress.

Overview of the Funding Decision Process

Funding Decision Process Timeline

April- Operations and Advisory Committees develop annual funding priorities, criteria and allocation targets (maintenance vs. new projects)

May- Coordinating Council issues Request for Proposals (RFP)

June- Partners submit proposals

July- Operations and Advisory Committees review initial proposals; ACCSP staff provide initial review results to submitting Partner

August- Final proposals are submitted. Final proposals must be submitted electronically to the Deputy Director, and/or designee by close of business on the day of the specified deadline. Final proposals received after the RFP deadline will not be considered for funding.

September- Operations and Advisory Committees review and rank final proposals

October- Funding recommendations presented to Coordinating Council; Coordinating Council makes final funding decision

ACCSP Staff submits notification to submitting Partner of funded projects and notification of approved projects to appropriate grant funding agency (e.g. NOAA Fisheries Regional Grants Program Office, "NOAA Grants") by Partner

As Needed- Operation and/or Leadership Team and Coordinating Council review and make final decision with contingencies (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.)

Detailed Steps of Funding Decision Process

1. Develop Annual Funding Priorities, Criteria and Allocation Targets (maintenance vs. new projects).

Prior to issuing the Request for Proposals, the Coordinating Council will approve the annual funding criteria and allocation targets. These will be used to rank projects and allocate funding between maintenance and new projects respectively.

In FY16, a long-term funding strategy policy was instituted to limit the duration of maintenance projects. Maintenance projects are now subject to a funding reduction following their fourth year of maintenance funding.

- For maintenance projects entering year 5 of ACCSP funding in FY20, a 33 percent funding cut was applied to whichever sum was larger: the project's prior two-year-average base funding set in FY16, or the average annual sum received during the project's four years of full *maintenance* funding. In year 6, a further 33 percent cut will be applied and funding will cease in year 7. Please see Appendix A for a list of maintenance projects entering year 6 in FY20 and the maximum funds available for these projects.
- For more recent maintenance projects (i.e., those entering year 5 of maintenance funding after FY20), the base funding will be calculated as the average of funding received during the project's four years as a *maintenance* project. These projects will receive a 33 percent cut in year 5, a further 33 percent cut in year 6, and funding will cease in year 7.
- In consideration of the unique situation the COVID 19 has created, the step down process will be paused in FY22. This means that all maintenance projects will be in the same year of the step down process as they were in FY21. Maintenance projects that are new to that category this year will be considered to be in year 0 and will begin year 1 in FY23. All maintenance project submissions are required to submit an appendix to the proposal with a summary of why the extension is needed and if there are any funds from the previous year that were not spent. This status is reflected in Appendix A.

2. Issue Request for Proposals

An RFP will be sent to all Program Partners and Committees no later than the week after the spring Coordinating Council meeting. The RFP will include the ranking criteria, allocation targets approved by the Coordinating Council, and general Program priorities taken from Goal 3 of the current ASMFC Five-Year Strategic Plan. The RFP and related documents will also be posted on the Program's website here.

All proposals MUST be submitted either by a Program Partner, jointly by several Program Partners, or through a Program Committee. The public has the ability to work with a Program Partner to develop and submit a proposal. Principle investigators are strongly encouraged to work with their Operations Committee member in the development of any proposal. All proposals must be submitted electronically to the Deputy Director, and/or designee, in the standard format.

3. Review initial proposals

Proposals will be reviewed by staff and the Operations and Advisory Committees. Committee members are encouraged to coordinate with their offices and/or constituents to provide input to the review process. Operations Committee members are also encouraged to work with staff in their offices who have submitted a proposal in order to represent the proposal during the review. Project PIs will be invited to attend the initial proposal review, held in July. The review and evaluation of all written proposals will take into consideration the ranking criteria, funding allocation targets and the overall Program Priorities as specified in the RFP. Proposals may be forwarded to relevant Program technical committees for further review of the technical feasibility and statistical validity. Proposals that fail to meet the ACCSP standards may be recommended for changes or rejected.

4. Provide initial review results to submitting Partner

Program staff will notify the submitting Partner of suggested changes, requested responses, or questions arising from the review. The submitting Partner will be given an opportunity to submit a final proposal incorporating suggested changes in the same format previously described in Step 2(b) by the final RFP deadline.

5. Review and rank final proposals

The review and ranking of all proposals will take into consideration the ranking criteria, funding allocation targets, and overall Program Priorities as specified in the RFP**.** The Deputy Director and the Advisory and Operations Committees will develop a list of prioritized recommended proposals and forward them for discussion, review, and approval by the Coordinating Council.

6. Proposal approval by the Coordinating Council

The Coordinating Council will review a summary of all submitted proposals and prioritized recommended proposals from the Operations and Advisory Committees. Each representative on the Coordinating Council will have one vote during final prioritization of project proposals. Projects to be funded by the Program will be approved by the Coordinating Council by the end of November each year. The Deputy Director will submit a pre-notification to the appropriate

NOAA Grants office of the prioritized proposals to expedite processing when those offices receive Partner grant submissions.

7. Confirmation of final funding amounts

The Director and Deputy Director will be notified by NOAA Fisheries of any federal grant adjustments (e.g. additions or rescissions). Additional funds will generally go to the next available ranked project. Reductions may include, but are not limited to:

- Lower than anticipated amounts from any source of funding
- Rescission of funding after initial allocations have been made
- Partial or complete withdrawal of funds from any source

If these or other situations arise, the Operations Committee will notify Partners with approved proposals to reduce their requested budgets or to withdraw a proposal entirely. If this does not reduce the overall requested amount sufficiently, the Director, Deputy Director, the Operations Committee Chair and Vice-Chair, and the Advisory Committee Chair will develop a final recommendation and forward to the ACCSP Leadership Team of the Coordinating Council. These options to address funding contingencies may include:

- Eliminating the lowest-ranked proposal(s)
- A fixed percentage cut to all proposals' budgets
- A directed reduction in a specific proposal(s)

8. Notification to submitting Partner of funded projects and submittal of project documents to appropriate grants agency (e.g. NOAA Grants) by Partner.

Notification detailing the Coordinating Council's actions relevant to a Partner's proposal will be sent to each Partner by Program staff.

- Approved projects from Non-federal Partners must be submitted as full applications (federal forms, project and budget narratives, and other attachments) to NOAA Grants via www.grants.gov. These documents must reflect changes or conditions approved by the Coordinating Council.
- Non-federal Partners must provide the Deputy Director with an electronic copy of the narrative and either an electronic or hard copy of the budget of the grant application as submitted to the grants agency (e.g. NOAA Grants).
- Federal Partners do not submit applications to NOAA Grants.

9. Operation and/or Leadership Team and Coordinating Council review and final decision with contingencies or emergencies.

Committee(s) review and decide project changes (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.) during the award period.

Proposal Guidance

General Proposal Guidelines

- The Program is predicated upon the most efficient use of available funds. Many jurisdictions have data collection and data management programs which are administered by other fishery management agencies. Detail coordination efforts your agency/Committee has undertaken to demonstrate cost-efficiency and non-duplication of effort.

- All Program Partners conducting projects for implementation of the program standards in their jurisdictions are required to submit data to the Program in prescribed standards, where the module is developed and formats are available. Detail coordination efforts with Program data management staff with projects of a research and/or pilot study nature to submit project information and data for distribution to all Program Partners and archives.

- If appropriate to your project, please detail your agency's data management capability. Include the level of staff support (if any) required to accomplish the proposed work. If contractor services are required, detail the level and costs.

- Before funding will be considered beyond year one of a project, the Partner agency shall detail in writing how the Partner agency plans to assume partial or complete funding or, if not feasible, explain why.

- If appropriate to your project, detail any planned or ongoing outreach initiatives. Provide scope and level of outreach coordinated with either the Program Assistant and/or Deputy Director.

- Proposals including a collection of aging or other biological samples must clarify Partner processing capabilities (i.e., how processed and by whom).

- Provide details on how the proposal will benefit the Program as a whole, outside of benefits to the Partner or Committee.

- Proposals that request funds for law enforcement should confirm that all funds will be allocated towards reporting compliance.

- Proposals must detail any in-kind effort/resources, and if no in-kind resources are included, state why.

- Proposals must meet the same quality as would be appropriate for a grant proposal for ACFCMA or other federal grant.

- Assistance is available from Program staff, or an Operations Committee member for proposal preparation and to insure that Program standards are addressed in the body of a given proposal.

- Even though a large portion of available resources may be allocated to one or more jurisdictions, new systems (including prototypes) will be selected to serve all Partners' needs.

- Partners submitting pilot or other short-term programs are encouraged to lease large capital budget items (vehicles, etc.) and where possible, hire consultants or contractors rather than hire new permanent personnel.

- The Program will not fund proposals that do not meet Program standards. However, in the absence of approved standards, pilot studies may be funded.

- Proposals will be considered for modules that may be fully developed but have not been through the formal approval process. Pilot proposals will be considered in those cases.

- The Operations Committee may contact Partners concerning discrepancies or inconsistencies in any proposal and may recommend modifications to proposals subject to acceptance by the submitting Partner and approval by the Coordinating Council. The Operations Committee may recommend changes or conditions to proposals. The Coordinating Council may conditionally approve proposals. These contingencies will be documented and forwarded to the submitting Partner in writing by Program staff.

- Any proposal submitted after the initial RFP deadline will not be considered, in addition to any proposal submitted by a Partner which is not current with all reporting obligations.

Proposal Format

Applicant Name: Identify the name of the applicant organization(s).

Project Title: A brief statement to identify the project.

Project Type: Identify whether new or maintenance project.

> *New Project – Partner project never funded by the Program. New projects may not exceed a duration of one year.*
>
> *Maintenance Project – Project funded by the Program that conducts the same scope of work as a previously funded new or maintenance project. These proposals may not contain significant changes in scope (e.g., the addition of bycatch data collection to a catch/effort dealer reporting project). PIs must include in the cover letter whether there are any changes in the current proposal from prior years' and, if so, provide a brief summary of those changes. At year 5 of maintenance funding, a project's base funding will be calculated as the average of funding received during the project's four years as a* maintenance *project.*

Requested Award Amount: Provide the total requested amount of proposal. Do not include an estimate of the NOAA grant administration fee.

Requested Award Period: Provide the total time period of the proposed project. The award period typically will be limited to one-year projects.

Objective: Specify succinctly the "why", "what", and "when" of the project.

Need: Specify the need for the project and the association to the Program.

Results and Benefits: Identify and document the results or benefits to be expected from the proposed project. Clearly indicate how the proposed work meets various elements outlined in the ACCSP Proposal Ranking Criteria Document (Appendix B). Some potential benefits may include: fundamental in nature to all fisheries; region-wide in scope; answering or addressing region-wide questions or policy issues; required by MSFCMA, ACFCMA, MMPA, ESA, or other acts; transferability; and/or demonstrate a practical application to the Program.

Data Delivery Plan: Include coordinated method of the data delivery plan to the Program in addition to module data elements gathered. The data delivery plan should include the frequency of data delivery (i.e. monthly, semi-annual, annual) and any coordinate delivery to other relevant partners.

Approach: List all procedures necessary to attain each project objective. If a project includes work in more than one module, identify approximately what proportion of effort is comprised within each module (e.g., catch and effort 45%, biological 30% and bycatch 25%).

Geographic Location: The location where the project will be administered and where the scope of the project will be conducted.

Milestone Schedule: An activity schedule in table format for the duration of the project, starting with Month 1 and ending with a three-month report writing period.

Project Accomplishments Measurement: A table showing the project goals and how progress towards those goals will be measured. In some situations the metrics will be numerical such as numbers of anglers contacted, fish measured, and/or otoliths collected, etc.; while in other cases the metrics will be binary such as software tested and software completed. Additional details such as intermediate metrics to achieve overall proposed goals should be included especially if the project seeks additional years of funding.

Cost Summary (Budget): Detail all costs to be incurred in this project in the format outlined in the budget guidance and template at the end of this document. A budget narrative should be included which explains and justifies the expenditures in each category. Provide cost projections for federal and total costs. Provide details on Partner/in-kind contribution (e.g., staff time, facilities, IT support, overhead, etc.). Details should be provided on start-up versus long-term operational costs.

> **In-kind** - [1]Defined as activities that could exist (or could happen) without the grant. [2]In-kind contributions are from the grantee organization. In-kind is typically in the form of the value of personnel, equipment and services, including direct and indirect costs.
>
> [1] The following are generally accepted as in-kind contributions:
>
> i. Personnel time given to the project including state and federal employees
>
> ii. Use of existing state and federal equipment (e.g. data collection and server platforms, Aging equipment, microscopes, boats, vehicles)

Overhead rates may not exceed 25% of total costs unless mandated by law or policy. Program Partners may not be able to control overhead/indirect amounts charged. However, where there is flexibility, the lowest amount of overhead should be charged. When this is accomplished indicate on the 'cost summary' sheet the difference between the overhead that could have been charged and the actual amount charged, if different. If overhead is charged to the Program, it cannot also be listed as in-kind.

Maintenance Projects: Maintenance proposals must provide project history table, description of completed data delivery to the ACCSP and other relevant partners, table of total project cost by year, a summary table of metrics and achieved goals, and the budget narrative from the most recent year's funded proposal.

Principal Investigator: List the principal investigator(s) and attach curriculum vitae (CV) for each. Limit each CV to two pages. Additional information may be requested.

Budget Guidelines & Template

All applications must have a detailed budget narrative explaining and justifying the expenditures by object class. Include in the discussion the requested dollar amounts and how they were derived. A spreadsheet or table detailing expenditures is useful to clarify the costs (see template below). The following are highlights from the NOAA Budget Guidelines document to help Partners formulate their budget narrative. The full Budget Guidelines document is available here.

Object Classes:

Personnel: include salary, wage, and hours committed to project for each person by job title. Identify each individual by name and position, if possible.

Fringe Benefits: should be identified for each individual. Describe in detail if the rate is greater than 35 % of the associated salary.

Travel: all travel costs must be listed here. Provide a detailed breakdown of travel costs for trips over $5,000 or 5 % of the award. Include destination, duration, type of transportation, estimated cost, number of travelers, lodging, mileage rate and estimated number of miles, and per diem.

Equipment: equipment is any single piece of non-expendable, tangible personal property that costs $5,000 or more per unit and has a useful life of more than one year. List each piece of equipment, the unit cost, number of units, and its purpose. Include a lease vs. purchase cost analysis. If there are no lease options available, then state that.

Supplies: purchases less than $5,000 per item are considered by the federal government as supplies. Include a detailed, itemized explanation for total supplies costs over $5,000 or 5% of the award.

Contractual: list each contract or subgrant as a separate item. Provide a detailed cost breakdown and describe products/services to be provided by the contractor. Include a sole source justification, if applicable.

Other: list items, cost, and justification for each expense.

Total direct charges

Indirect charges: If claiming indirect costs, please submit a copy of the current approved negotiated indirect cost agreement. If expired and/or under review, a copy of the transmittal letter that accompanied the indirect cost agreement application is requested.

Totals of direct and indirect charges

Example. Budget narrative should provide further detail on these costs.

Description	Calculation	Cost
Personnel (a)		
Supervisor	Ex: 500 hrs x $20/hr	$10,000
Biologist		
Technician		
Fringe (b)		
Supervisor	Ex: 15% of salary	$1500
Biologist		
Technician		
Travel (c)		
Mileage for sampling trips	Ex: Estimate 2000 miles x $0.33/mile	$660
Travel for meeting		
Equipment (d)		
Boat	Ex: $7000, based on current market research	$7000
Supplies (e)		
Safety supplies		$1200
Sampling supplies		$1000
Laptop computers	2 laptops @$1500 each	$3000
Software		$500
Contractual (f)		
Data Entry Contract	Ex: 1000 hrs x $20/hr	$20,000
Other (h)		
Printing and binding		
Postage		
Telecommunications charges		
Internet Access charges		
Totals		
Total Direct Charges (i)		
Indirect Charges (j)		
Total (sum of Direct and Indirect) (k)		

Post-award Responsibilities

Changing the Scope of Work

Partners shall submit requests for amendments to approved projects in writing to the Deputy Director. The Coordinating Council member for that Partner must sign the request.

When Partners request an amendment to an approved project, the Deputy Director will contact the Chair and Vice Chair of the Operations Committee. The Deputy Director and Operations Committee Chairs will determine if the requested change is minor or substantial. The Chairs and Deputy Director may approve minor changes.

For substantial proposed changes, a decision document including the opinions of the Chairs and the Deputy Director will be sent to the Operations Committee and the ACCSP Leadership Team of the Coordinating Council for review.

The ACCSP Leadership Team will decide to approve or reject the request for change and notify the Deputy Director, who will send a written notification to the Partner's principal investigator with a copy to the Operations Committee.

When a requested major amendment is submitted shortly before a Coordinating Council meeting, the approval of the amendment will be placed on the Council Agenda.

The Deputy Director will notify NOAA Grants of any change in scope of work for final approval for non-federal proposals, and the Partner will need to request a Change in Scope through Grants Online. Necessary communications will be maintained between the concerned Partner, the Program and NOAA Grants. Any changes must be approved through the normal NOAA Grants process.

Requesting a No-cost Extension

If additional time is needed to complete the project, Program Partners can request a no-cost extension to their award period. Partners should let the Program know of the need for additional time and then request the extension as an Award Action Request through NOAA Grants Online at least 30 days before the end date of the award.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Declaring Unused/Returned Funds

In an effort to limit the instances in which funds are not completely used during the award period, draw down reports from the NOAA Grants offices indicating remaining grant balances will be periodically reviewed during each fiscal year.

While effort should be made to complete the project as proposed, if Program Partners find that they will not be able to make use of their entire award, they should notify the Program and their NOAA Federal Program Officer as soon as possible. Depending on the timing of the action, the funds may be able to be reused within the Program, or they may have to be returned to the U.S. Treasury.

Program Partners must submit a written document to the Deputy Director outlining unused project funds potentially being returned. The Partner must also notify their Coordinating Council member (if applicable) for approval to return the unused funds. If the funding is available for re-use within the Program, the Director and Deputy Director will confer with the Operations Committee Chair and Vice-Chair and the Advisory Committee Chair, and then submit a written recommendation to the ACCSP Leadership Team of the Coordinating Council for final approval on the plan to distribute the returned money.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Reporting Requirements

Program staff will assess project performance.

The Partner project recipients must abide by the NOAA Regional Grant Programs reporting requirements and as listed below. All semi-annual and final reports are to include a table showing progress toward each of the progress goals as defined in Step 2b and additional metrics as appropriate. Also, all Partner project recipients will submit the following reports based on the project start date to the Deputy Director:

- Semi-annual reports (due 30 days after the semi-annual period) throughout the project period including time periods during no-cost extensions,
- One final report (due 90 days after project completion).
- Federal Partners must submit reports to the Deputy Director, and State Partners must submit reports to both the Deputy Director and the appropriate NOAA Grants office.

Program staff will conduct an initial assessment of the final report to ensure the report is complete in terms of reporting requirements. Program staff will serve as technical monitors to review submitted reports. NOAA staff also reviews the reports submitted via Grants Online.

A project approved on behalf of a Program Committee will be required to follow the reporting requirements specified above. The principle investigator (if not the Chair of the Committee) will submit the report(s) to the Chair and Vice Chair of the Committee for review and approval. The Committee Chair is responsible for submitting the required report(s) to the Program.

Joint projects will assign one principle investigator responsible for submitting the required reports. The principle investigator will be identified within the project proposal. The submitted reports should be a collaborative effort between all Partners involved in the joint project.

Project recipients will provide all reports to the Program in electronic format.

Partners who receive no-cost extensions must notify the Deputy Director within 30 days of receiving approval of the extension. Semi-annual and final reports will continue to be required through the extended grant period as previously stated.

Partners that have not met reporting requirements for past/current projects may not submit a new proposal.

A verbal presentation of project results may be requested. Partners will be required to submit copies of project specifications and procedures, software development, etc. to assist other Program Partners with the implementation of similar programs.

Report Format

Semi-Annual(s) – Progress Reports: (3-4 pages)

- Title page - Project name, project dates (semi-annual period covered and complete project period), submitting Partner, and date.
- Objective
- Activities Completed – bulleted list by objective.
- Progress or lack of progress of incomplete activities during the period of semi-annual progress – bulleted list by objective.
- Activities planned during the next reporting period.
- Metrics table
- Milestone Chart – original and revised if changes occurred during the project period.

Final Report:

- Title page – Project name, project dates, submitting Partner, and date.
- Abstract/Executive Summary (including key results)
- Introduction
- Procedures

- Results:
    - Description of data collected.
    - The quality of the data pertaining to the objective of the project (e.g. representative to the scope of the project, quantity collected, etc.).
    - Compiled data results.
    - Summary of statistics.
- Discussion:
    - Discuss the interpretation of results of the project by addressing questions such as, but not limited to:
    - What occurred?
    - What did not occur that was expected to occur?
    - Why did expected results not occur?
    - Applicability of study results to Program goals.
    - Recommendations/Summary/Metrics
- Summarized budget expenditures and deviations (if any).

Programmatic review

Project reports will inform Partners of project outcomes. This will allow the Program as a whole to take advantage of lessons learned and difficulties encountered. Staff will provide final reports to the appropriate Committee(s). The Committees then can discuss the report(s) and make recommendations to modify the Data Collection Standards as appropriate. The recommendations will be submitted through the Program committee(s) review process.

Appendix A: Maximum Funding for Maintenance Projects Entering Year 6/7 of Funding in FY22

Projects in Year 6/7 of Maintenance Funding	**Calculated Base** (formula used)	Maximum Funding Year 5	**Maximum Funding Year 6/7**
ME DMR: Portside commercial catch sampling and bycatch sampling for Atlantic herring, Atlantic mackerel, and Atlantic menhaden	**$133, 452.50** (2-year base)	$88,968.33	**$44,484.17**
ME DMR: Managing Mandatory Dealer Reporting in Maine	**$183, 934.50** (4-year avg)	$122,623.00	**$61,311.50**
RI DEM: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	**$82,563.50** (2-year base)	$55,042.33	**$27,521.17**
NJ DFW: Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	**$163,803.75** (4-year avg)	$109,202.50	**$54,601.25**
SC DNR: ACCSP Data Reporting from South Carolina's Commercial Fisheries	**$170,770.00** (2-year base)	$113,846.67	**$56,923.33**
ACCSP RTC: At-sea Headboat Sampling	**$162,114.00** (2-year base)	$108,076.00	**$54,038.00**
SEFSC: Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	**$266,792.00** (4-year avg)	$177,861.33	**$88,930.67**

Appendix B: Ranking Criteria Spreadsheet for Maintenance and New Projects

Ranking Guide – Maintenance Projects:

Primary Program Priority	**Point Range**	**Description of Ranking Consideration**
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	**Point Range**	**Description of Ranking Consideration**
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. geographic range of the stock).
> yr 2 contains funding transition plan and/or justification for continuance	0 – 4	Rank based on defined funding transition plan away from Program funding or viable justification for continued Program funding.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – Maintenance Projects: (*to be used only if funding available exceeds total Maintenance funding requested*)

Ranking Factors	Point Range	Description of Ranking Consideration
Achieved Goals	0 – 3	Proposal indicates project has consistently met previous set goals. Current proposal provides project goals and if applicable, intermediate metrics to achieve overall achieved goals.
Data Delivery Plan	0 – 2	Ranked based if a data delivery plan to Program is supplied and defined within the proposal.
Level of Funding	-1 – 1	-1 = Increased funding from previous year 0 = Maintained funding from previous year 1 = Decreased funding from previous year
Properly Prepared	-1 – 1	-1 = Not properly prepared 1 = Properly prepared
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – New Projects:

Primary Program Priority	Point Range	Description of Ranking Consideration
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	Point Range	Description of Ranking Consideration
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. fisheries sampled).
Contains funding transition plan / Defined end-point	0 – 4	Rank based on quality of funding transition plan or defined end point.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Innovative	0 – 3	Rank based on new technology, methodology, financial savings, etc.
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Biological Sampling Priority Matrix

Created in February 2021

For FY2022

Our vision is to be the principal source of fisheries-dependent information on the Atlantic coast through the cooperation of all program partners.

Biological Review Panel Recommends:

- Species in the upper 25% of the priority matrix should be considered for funding.

- Sampling projects which cover multiple species within the upper 25% are highly recommended.

* UPPER 25% OF MATRIX

Biological Review Panel Recommendations Based on Matrix*:

Species	Overfished	Overfishing	Most Recent Stock Assessme	Current/Next Stock Assessment	Council Priority	ASMFC Priority	State Priority	NMFS Priority	Fishery Managed	Sig. change in landings	Sig. change in mgmt w/in 24 mo	Adequacy of level of sampling	Stock Resilience	Seasonality of Fishery	Average Priority	TOTAL
Black Sea Bass *Centropristis striata*	N: MA N:SA	N: MA N:SA	MA: 2019 SA: 2018	MA:2021 SA:2023	5.0	5	3.5	5.0	5	1	1	4	3	1	4.5	32.43
Red Grouper *Epinephelus morio*	Y	Y	2017	2023	5.0	0	1.1	5.0	3	1	4	3	4	3	2.8	32.14
Snowy Grouper *Epinephelus niveatus*	Y	N	2019	2021	5.0	0	0.9	5.0	3	3	1	3	5	3	2.8	30.14
Bluefin Tuna *Thunnus thynnus*	U	N	2017	2021	0.0	0	1.8	5.0	5	5	5	3	3	1	2.0	30.14
River Herring *Alosa*	D	U	2017	2023	0.0	4	3.6	0.0	5	3	1	4	4	4	2.3	30.00
Cobia *Rachycentron canadum*	N	N	2020		1.0	5	1.5	4.0	3	1	3	4	3	3	3.1	29.86
Tilefish *Lopholatilus*	N: MA N:SA	N: MA Y:SA	MA:2017 SA:2016	MA/SA:2021	5.0	0	1.9	4.0	5	1	1	3	4	3	2.8	29.71
American Shad *Alosa*	D	U	2020		0.0	3	3.8	0.0	5	3	1	4	5	3	2.2	29.21
Atlantic halibut *Hippoglossus*	U	U	2020		4.0	0	1.2	1.0	3	5	1	4	5	3	2.0	28.71
Atlantic Menhaden *Brevoortia tyrannus*	N	N	2020	2022	0.0	5	3.1	3.0	5	1	3	3	3	1	2.8	28.64
Gray Triggerfish *Balistes capriscus*	U	U			5.0	0	1.0	4.0	3	5	1	3	2	3	2.6	28.36
Atlantic Smooth Dogfish *Mustelus canis*	N	N	2015	2021	0.0	3	1.4	3.0	5	5	1	3	2	3	2.1	28.21
Ocean Pout *Macrozoarces americanus*	Y	N	2020		0.0	0	0.2	0.0	3	5	5	5	5	3	1.0	27.79
Spanish Mackerel *Scomberomorus*	N	N	2020	2022	5.0	2	1.2	4.0	3	1	2	3	2	3	3.0	27.50
Blueline Tilefish *Caulolatilus microps*	U	U	2017	2024	3.0	0	1.1	5.0	3	3	2	3	3	3	2.4	27.29
Sandbar Shark *Carcharhinus plumbeus*	Y	N	2017		0.0	1	1.1	5.0	5	5	1	2	3	3	1.8	27.21
American Eel *Anguilla rostrata*	D	U	2017	2022	0.0	5	3.5	0.0	5	1	1	4	5	1	2.5	27.21
Gag Grouper *Mycteroperca microlepis*	N	N	2014	2021	5.0	0	0.9	5.0	3	1	0	3	4	3	2.8	26.57
Red Snapper *Lutjanus campechanus*	Y	Y	2016	2021	5.0		0.6	5.0	3	1	1	1	5	3	2.9	26.57
Dolphin *Coryphaena hippurus*	U	U			5.0	0	1.1	4.0	5	3	0	4	1	1	2.8	26.43
Horseshoe Crab *Limulus polyphemus*	U	U	2019	2021	0.0	4	3.1	0.0	5	3	0	3	4	2	2.0	26.00
Scamp *Mycteroperca phenax*	U	U		2022	5.0	0	1.0	4.0	3	1	0	3	4	3	2.6	25.93
Winter Skate *Raja ocellata*	N	N	2019	2023	0.0	0	1.0	0.0	3	5	5	4	5	1	1.0	25.36
Spiny Dogfish *Squalus acanthias*	N	N	2018	2022	0.0	3	2.6	2.0	5	3	0	2	5	1	1.9	24.93

Bio-sampling Priority Matrix

- Grouping of species in upper 25% of total matrix score, based on sampling adequacy and average priority (average of ASMFC, Council, NMFS and State priorities).
- Projects that target multiple upper quartile species should be given a higher priority.

		Biological Sampling Adequacy	
		Adequate (0 - 2)	Inadequate (3 - 5)
Averaged Priority Columns	High (≥ 3.0)		Black Sea Bass - Bluefin Tuna
	Low (< 3.0)	River Herring - Tilefish	Red Grouper - Snowy Grouper - Cobia - American Shad - Atlantic Halibut - Atlantic Menhaden - Atlantic Smooth Dogfish - Gray Triggerfish - Oceanpout - Spanish Mackerel - Blueline Tilefish - Sandbar Shark - Gag Grouper - American Eel - Red Snapper - Dolphin - Horseshoe Crab - Scamp - Winter Skate - Spiny Dogfish

Bycatch Sampling Priority Matrix

Created in February 2021

For FY 2022

Our vision is to be the principal source of fisheries-dependent information on the Atlantic coast through the cooperation of all program partners.

Top Quartile of Bycatch Matrix Suggestions

Combined Fleets	Sig. Change in mgmt w/in past 36 mo	Amt of reg discards	Amt of non reg discards	Prot Spp Interactions	Score
Mid-Atlantic Gillnet	3	4	2	5	14
Mid-Atlantic Pound Net	1	4	2	5	12
american american lobster Pots-GOM	1	4	1	5	11
american american lobster Pots-SNE	1	4	1	5	11
Snapper grouper H&L Fleet	3	4	1	3	11
New England Extra-Large-Mesh Gillnet	0	4	2	5	11
Mid-Atlantic Small-Mesh Otter Trawl, Bottom	1	4	1	5	11
Mid-Atlantic Fish Pots and Traps	1	4	1	5	11
South Atlantic Large Mesh Gillnet	0	4	2	5	11
Southeastern, Atlantic and Gulf of Mexico HMS Pelagic Longline	1	4	1	5	11
New England Crab Pots	3	2	1	5	11
South Atlantic shrimp Trawl	1	4	2	3	10
New England Otter Trawl	1	4	2	3	10
Southeastern, Atlantic and Gulf of Mexico HMS Shark Bottom Longline	0	4	1	5	10
Pelagic H&L Fleet (North)	1	4	1	3	9
Mid-Atlantic Extra-Large-Mesh Gillnet	1	2	1	5	9
New England Gillnet	1	2	1	5	9
South Atlantic Skimmer shrimp Trawl	3	2	1	3	9

Atlantic Coastal Cooperative Statistics Program
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ACCSP Funding Prioritization of the Recreational Technical Committee

July 2017

The Recreational Technical Committee sets the recreational data collection priorities for inclusion in ACCSP's annual request for proposals (RFP). In 2017, the committee opted to use its Atlantic Coast Recreational Implementation Plan priorities as the recreational data priorities for ACCSP's annual funding process. The prioritized list of data needs, which were reviewed and approved by the ACCSP Coordinating Council, is provided below:

1. **Improve precision (PSE) of MRIP catch estimates**
2. **(t) Comprehensive for-hire data collection and monitoring**
2. **(t) Improved recreational fishery discard and release data**
4. **Biological sampling for recreational fisheries separate from MRIP APAIS**
5. **Improved spatial resolution and technical guidance for post-stratification of MRIP estimates**
6. **Improved timeliness of recreational catch and harvest estimates**

SOCIOLOGICAL AND ECONOMIC DATA

The Committee on Economics and Social Sciences (CESS) developed a list of priority socioeconomic data elements for coastwide collection. The list is not exhaustive; it represents key elements that can serve as a baseline of fundamental socioeconomic information to support management decisions. The list of priority data elements includes:

1. Trip-level information (to be collected through voluntary or mandatory reporting, for all or a subset of participants)
2. Data elements for an owner/operator survey (to be collected through an annual or semiannual survey)*

The CESS identified these priority data elements with the understanding that data would be collected in the aforementioned methods and would be linked to other ACCSP data through identifiers. Alternative collection methods or the inability to link data with identifiers may require changes to the priority data elements list in order to ensure the utility of the data.

Note: Priorities for standalone surveys will differ from the priorities identified below due to their distinct methodologies and inability to leverage other ACCSP data. The CESS should be consulted when identifying data elements for standalone socioeconomic surveys to ensure their utility and, where practical, consistency across studies.

*The ACCSP recognizes the analytic value of collecting the data elements below. We recommend that partners be aware of and take into account the reporting burden to industry, the sensitivity and at times confidentiality of socioeconomic information, and other relevant perspectives when determining which data elements to collect and set as optional or mandatory.

A. COMMERCIAL FISHERIES

Table 1:
TRIP LEVEL INFORMATION

DATA ELEMENT	DESCRIPTION / CRITERIA
Trip Information	
Vessel Identifier	-Unique vessel identifier (e.g., US Coast Guard, state registration number, etc.) -These identifiers must be trackable through time and space.
Trip Identifier	- Unique identifier assigned to the trip
Labor Cost Information	
Total Crew Cost	- Total monetary amount that was given to the crew for this trip

Total Captain Cost (If other than owner)	- Total monetary amount that was given to the captain for this trip
Owner Share	- Total monetary amount the vessel (or permit) owner received for this trip
Other Trip Cost Information	
Fuel & Oil Costs	- Cost for all fuel and oil used on this trip
Bait Costs	- Cost for all bait used on this trip
Ice Costs	- Cost for all ice used on this trip
Grocery Costs	- Cost for all groceries used on this trip
Miscellaneous Costs	- Cost of any other expenses specific to this trip (not including wages, overhead, or fixed costs) E.g., offloading/non-crew labor costs, packaging costs, etc.

Table 2:
DATA ELEMENTS FOR OWNER/OPERATOR SURVEY

DATA ELEMENT	DESCRIPTION / CRITERIA
Vessel Identification*	-Unique vessel identifier (e.g., US Coast Guard, state registration number, etc.) -These identifiers must be trackable through time and space.
Fishermen Identification	-Unique ACCSP Identifier for fishermen
Labor Cost Information	
Crew Payment System	- Code to identify crew & captain payment system (e.g. share system, per day, per trip)
Percentage Share Crew	- Percentage share to crew (if applicable)
Percentage Share Captain	- Percentage share to captain (if applicable)
Percentage Share Boat/Owner	- Percentage share to boat/owner (if applicable)
Crew Wages	- Average crew wages for the year (crew payment system indicates whether by hour, trip, day, etc.) (if applicable)
Captain Wages	- Average captain wages for the year (crew payment system indicates whether by hour, trip, day, etc.) (if applicable)
Annual Costs (Most Recent Year)	
Labor costs (captain and crew not in household)	- Total costs of labor for captain and crew outside the owner/operator's household
Labor costs (to people within owner/operator household)	- Total costs of labor for captain and crew within the owner/operator's household
Annual Insurance Costs	- Hull, health, protection and indemnity, mortgage, etc.
Dockage	- Total cost for vessel dockage, home port and transient dockage
Loan Payments	- Principal and interest
New Gear/ Equipment	- Total cost of new gear or equipment acquired
Repairs & Maintenance	- Total cost of repairs & maintenance of vessel and gear that were conducted in the previous year
Permits & Licenses	- Total cost of fishing permits / licenses for the previous year

Leased Quota Cost	- Total cost of leased quota for the previous year
Other Professional Expenses	- Professional expenses not otherwise itemized
Demographic Information	
Household Size	- # of individuals in the household (including respondent)
Employment Status	- Current employment status (e.g., employed fulltime, part-time, unemployed, retired, etc.)
Education	- Highest level of education completed
Marital/Cohabitational Status	- Current marital or cohabitational status of respondent
Age	- Age of the respondent
Gender	- Gender of the respondent
Ethnicity	- Ethnic background
Total Annual Household Income	- Total annual household income
Number of Household Individuals Involved in Commercial Fishing	-Total number of household individuals involved in commercial fishing (including respondent)
Percent of Annual Household Income from Commercial Fishing	- Percent of household income that is generated through commercial fishing or support activities
County of Residence	-County of residence
Years in Community	- Years in county of residence
Fishing Activity Information	
Fishermen status	-Fishermen status (e.g. full time, part time, not actively fishing)
Years in Commercial Fishing	- Number of years participating in commercial fishery
Permits held	- fishing permits held (by permit type)
Permit use	- Were all permits used within the last year
Reason for Latency	-Reason for not using permit within the last year
Primary Species Landed by Month	- Primary species landed by month
Primary Gears Used by Month	- Primary gears used by month

*Vessel Identifier is needed to link trip-level data to survey results

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This list includes dates for fiscal year 2021, including ACCSP committee meetings, relevant dates of the funding cycle, as well as meetings or conferences ACCSP typically attends or which may be of interest to our partners. Due to the restrictions from COVID-19, some in-person meetings may be held virtually. If you have any questions or comments on this calendar please do not hesitate to contact the ACCSP staff at info@accsp.org.

Jan 20-21:	APAIS South Atlantic Training – Webinar
Jan 26-27:	APAIS Mid-Atlantic Training – Webinar
Jan 26-28:	NEFMC Meeting – Webinar
Feb 1-4:	ASMFC Meeting/Coordinating Council Meeting – Webinar
Feb 9-10:	APAIS North Atlantic Training - Webinar
Feb 17:	Biological Review Panel Annual Meeting – Webinar
Feb 18:	Bycatch Prioritization Committee Annual Meeting –Webinar
Feb 10-11:	MAFMC Meeting – Webinar
Mar 1:	Start of ACCSP FY21
Mar 1-5:	SAFMC Meeting – Webinar
Week of Mar 23:	Commercial Technical Committee Annual Meeting – Webinar*
Week of Mar 23:	Information Systems Committee Annual Meeting – Webinar*
Apr 6-8:	MAFMC Meeting – Galloway, NJ
Week of April 13:	Operations and Advisory Committees Spring Meeting – Webinar*
Week of Apr 13:	Recreational Technical Committee – Webinar *
Apr 13-15:	NEFMC Meeting – Mystic, CT
May 3-6:	ASMFC/Coordinating Council Meeting – Arlington, VA
May 11:	ACCSP issues request for proposals
Late May:	APAIS Wave 2 Meeting - Webinar
Jun 8-10:	MAFMC Meeting – Virginia Beach, VA
Jun 14-18:	SAFMC Meeting – Ponte Vedra Beach, FL
Jun 12:	Initial proposals are due
Jun 19:	Initial proposals are distributed to Operations and Advisory Committees
Jun 22-24:	NEFMC Meeting – Portland, ME
July 6:	Any initial written comments on proposals due
Week of Jul 13:	Review of initial proposals by Operations and Advisory Committees – Webinar
July 20:	If applicable, any revised written comments due
Week of Jul 27:	Feedback submitted to principal investigators
Late July:	APAIS Wave 3 Meeting – Webinar
Aug 3-5:	ASMFC Meeting/Coordinating Council Meeting – Arlington, VA
Aug 9-12:	MAFMC Meeting – Philadelphia, PA
Aug 14:	Revised proposals due

Our vision is to produce dependable and timely marine fishery statistics for Atlantic coast fisheries that are collected, processed, and disseminated according to common standards agreed upon by all program partners.

Aug 21:	Revised proposals distributed to Operations and Advisory Committees
Week of Sep 7:	Preliminary ranking exercise for Advisors and Operations Members – Webinar
Sep 13-17:	SAFMC Meeting – Charleston, SC
Week of Sep 21:	Annual Advisors/Operations Committee Joint Meeting (TBD)
Sep 28-30	NEFMC Meeting – Plymouth, MA
Late September:	APAIS Wave 4 Meeting – Webinar
Oct 5-7:	MAFMC Meeting – New York, NY
Oct 19-21:	ASMFC Annual Meeting/Coordinating Council Meeting – Long Branch, NJ
Nov 6-10:	AFS 151st Annual Meeting – Baltimore, MD
Dec 6-10:	SAFMC Meeting – Beaufort, NC
Dec 7-9:	NEFMC Meeting – Newport, RI
Dec 13-16:	MAFMC Meeting – Annapolis, MD

* *Indicates meetings not yet scheduled.*

Ranking Guide – Maintenance Projects:

Primary Program Priority	**Point Range**	**Description of Ranking Consideration**
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	**Point Range**	**Description of Ranking Consideration**
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. geographic range of the stock).
> yr 2 contains funding transition plan and/or justification for continuance	0 – 4	Rank based on defined funding transition plan away from Program funding or viable justification for continued Program funding.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	**Point Range**	**Description of Ranking Consideration**
Properly Prepared	-1–1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

<u>Ranking Guide – Maintenance Projects:</u> (*to be used only if funding available exceeds total Maintenance funding requested*)

Ranking Factors	Point Range	Description of Ranking Consideration
Achieved Goals	0 – 3	Proposal indicates project has consistently met previous set goals. Current proposal provides project goals and if applicable, intermediate metrics to achieve overall achieved goals.
Data Delivery Plan	0 – 2	Ranked based if a data delivery plan to Program is supplied and defined within the proposal.
Level of Funding	-1 – 1	-1 = Increased funding from previous year 0 = Maintained funding from previous year 1 = Decreased funding from previous year
Properly Prepared	-1 – 1	-1 = Not properly prepared 1 = Properly prepared
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – New Projects:

Primary Program Priority	**Point Range**	**Description of Ranking Consideration**
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 –10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	**Point Range**	**Description of Ranking Consideration**
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. fisheries sampled).
Contains funding transition plan / Defined end-point	0 – 4	Rank based on quality of funding transition plan or defined end point.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	**Point Range**	**Description of Ranking Consideration**
Innovative	0 – 3	Rank based on new technology, methodology, financial savings, etc.
Properly Prepared	-1–1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

ACCSP

Good Data, Good Decisions

February 2021 Committee Newsletter

This monthly newsletter is intended to keep all committee members informed of the activities and accomplishments of ACCSP committees and staff. ACCSP staff welcomes feedback on all content.

Upcoming Events

- **March 2:** Information Systems Committee Meeting
- **March 4:** Commerical Technical Committee Meeting
- **See** ACCSP Calendar Link **for more information**

Highlights

The ACCSP fiscal year 2021 is beginning on March 1 and we are very excited about the coming year. We have updated the program calendar located on our website to include many significant partner events.
This allows our partners and the public to see what is happening on the coast in one place. These events include ACCSP funding cycle deadlines, ACCSP Committee meetings, Council meetings, APAIS/ FHTS wave meetings, and ASMFC quarterly meetings.

Coordinating Council

- During the February 3, 2021 meeting approved final ACCSP Administrative grant and all ACCSP 2021 proposals.

Commercial Technical Committee

- Virtual meeting March 4, primary agenda items listed and see the ACCSP calendar for more information:
- SAFIS Redesign
  - Update on the release of SAFIS eTrips V2 and the SAFIS Redesign.
- Gill Nets: Gear Quantity and Gear Attributes
- One-Stop Reporting
  - Update on the status of a technical specifications document for vendors / developers seeking OSR compliance.
- Spatial Data Coordination
  - Staff will detail the development of Atlantic coastal reporting maps using GIS software in response to new reporting requirements. Feedback is desired on new processes available in Oracle 19c that allow greater spatial data visualization and integration.
- Committee Small Group Updates

conversion factors.

Biological Review Panel & Bycatch Prioritization Committee

- Last week the Biological Review Panel & Bycatch Prioritization Committee finalized the matrices and came to committee consensus regarding matrix scores.
- These scores will be presented to the Coordinating Council and used as reference material for funding priorities.

Information Systems Committee

- Virtual meeting March 2, primary agenda items listed and see the ACCSP calendar for more information:
- SAFIS Redesign status
- Phase out of Pre-Redesign applications
    - eTRIPS original online and e-1Ticket

Recreational Technical Committee

- The Comprehensive For-hire Data Collection Program's list of core data elements, those which would be required for all logbooks, have been discussed and are close to full agreement by Committee.
- The next steps include finalizing the list of non-core (i.e., which could be collected by partners but not required for all logbooks) data elements and presenting the program progress to NOAA Fisheries.

MRIP Survey Conduct:

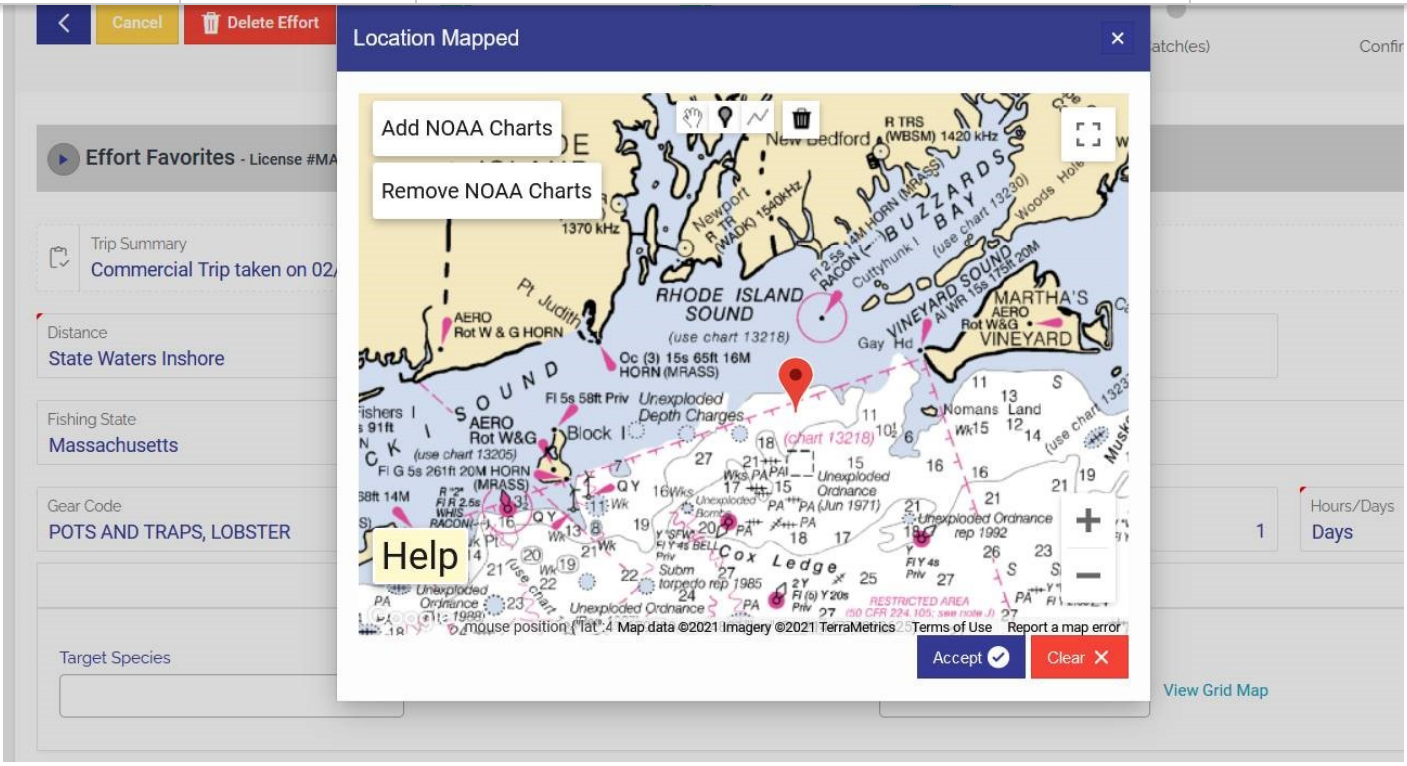
- State APAIS agreements and increased annual assignment totals have been allocated by state/month for all Atlantic states.

Standard Codes Committee

- Request for new Port codes for "Unknown County" in Georgia and South Carolina:
    - Julie Califf, Eric Hiltz and Jackie Wilson have requested the addition of "Unknown County" Port codes to be included in SAFIS.
    - Currently, SAFIS maintains similar codes for all other states on the Atlantic Coast – except for SC and GA.

Program Update

- The software team continues work on eTRIPS/Redesign including a newly integrated map feature which will provide NOAA topographical charts overlaying existing maps.
- The benefit of this map is that it provides the ability for a fisherman to pinpoint a fishing area on the map. The point will automatically be translated to latitude/longitude and to ten-minute grid point(s).



- SAFIS eTRIPS UPLOAD redesign will be deployed in early March. This will complete the alignment of processing of records coming into SAFIS via online, mobile, and upload pathways.
- SAFIS server and Oracle upgrade were successfully completed on February 19th.

Editor: Marisa Powell
Please contact us if you have any questions or feedback at info@accsp.org

ACCSP

Good Data, Good Decisions

March 2021 Committee Newsletter

This monthly newsletter is intended to keep all committee members informed of the activities and accomplishments of ACCSP committees and staff. ACCSP staff welcomes feedback on all content.

- **April 13:** Recreational Technical Committee Meeting
- Operations and Advisory Committees Spring Meeting - **TBD**
- **May 3-5:** ASMFC/Coordinating Council Meeting
- **See** ACCSP Calendar Link **for more information**

Highlights

- The ACCSP Data Team is working with state and federal partners to deliver the 2020 Spring Data Load. There will also be a Mid-Summer Data Load to increase flexibility for partners. A public announcement with more details and release of the data in the Data Warehouse will be in mid-April.

Coordinating Council

- ACCSP 2021 project support finalized for NOAA distribution of funds

Commercial Technical Committee

The committee held its annual meeting via webinar on March 3, 2021. Discussion topics included:

- SAFIS Redesign
- Gill nets and gear attributes
- Small group tasking
- Oracle Spatial and SAFIS applications

Mike Lewis (NOAA S&T) completed his two years as Chair of the committee, and Chris Bradshaw (FWCC) became the new Chair. Anna Webb (MA DMF) was elected Vice-Chair by unanimous consent. Follow-up and action items are being coordinated with ACCSP staff and committee members over the next month.

The Electronic Monitoring working group is meeting on April 8th to discuss Haul and Drop level data elements.

Information Systems Committee

- A demo of the new eTRIPS/redesign-UPLOAD feature was presented to partners in early March and we are awaiting feedback.
- Once all features have been addressed, a copy will be moved to production. The redesign-UPLOAD will work in tandem with the older version.

Future release of eTRIPS/redesign (online, mobile, upload) will include HMS Species/Disposition validations which will prevent HMS attributes from being requested for discards.

Standard Codes Committee

Bradley Walter and Connie Lewis requested that these existing Maryland port codes be made available for commercial trips reported in SAFIS:

PORT	STATE	FIPS_PLACE_NAME
231007	MD	GANEYS WHARF COUNTY RAMP
231321	MD	MATTAPEAKE COUNTY PARK AND PIER
231329	MD	ROARING PT COUNTY PARK
231503	MD	COX'S POINT COUNTY PARK
231527	MD	TUCKAHOE COUNTY RAMP
232025	MD	ST. PETER'S CREEK COUNTY RAMP
236223	MD	ABELLS WHARF (COUNTY PARK)

Editor: Marisa Powell
Please contact us if you have any questions or feedback at info@accsp.org

ACCSP Announces FY21 Funding Recipients

April 7, 2021

ACCSP is pleased to announce the recipients of its FY21 funding awards. Thanks to NOAA Fisheries, ACCSP is able to fund 6 new and 8 ongoing projects submitted by our state and federal partners to improve fisheries data collection and processing on the Atlantic coast. This year's awards, including the Administrative Grant, total approximately $3.4 million.

FY21 Proposal Recipients

wdt_ID	Partner	Project Title	Approximate Funding
2	ME DMR	FY21: Managing Mandatory Dealer Reporting in Maine	$61,263
3	ME DMR	Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries	$25,896
4	RI DEM	FY21: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	$27,521
5	RI DEM	Advancing Fishery Dependent Data Collection for Black Sea Bass (Cetropristis striata) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach	$132,064
6	NJ DFW	Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	$63,461
7	SC DNR	ACCSP Data Reporting from South Carolina's Commercial Fisheries	$56,923
8	SAFMC	FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application	$114,792
9	SEFSC	Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries	$88,931
10	RI DEM	FY21: Economic Efficiency Assessment of the Rhode Island Fluke and Black Sea Bass Aggregate Management Programs	$56,334
11	ACCSP Comm Tech	Continual Validation and Development of Conversion Factors for Priority Fish and Crustacean Species	$142,056
	Partner	Project Title	Approximate Funding

ACCSP's annual funding process kicks off each May with the release of our RFP. Stay tuned for FY22 RFP announcements!

2020 Fisheries Data are Now Available in the ACCSP Data Warehouse

April 12, 2021

The Atlantic Coastal Cooperative Statistics Program is pleased to announce that the Spring Data Load to update the 2020 commercial data is complete. The commercial and recreational data for 2020 excluding the North Carolina trip ticket data and New York datasets are available in the Data Warehouse.

ACCSP partner data suppliers have added CARES Act work to their regular data intensive activities. The increased workload for many of our partners has caused some delay in data delivery and availability for the Spring Data Load.

ACCSP has shown flexibility in our process to respond to the needs of our partners and data users and is creating an additional load for this summer to include the data that was unable to be delivered during the Spring Data Load. We are calling this the “Mid-Summer Data Load,” with deadlines to ACCSP in June and a release of data in early July. ACCSP is committed to providing the most comprehensive data to all users as soon as available.

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: American Eel Management Board

FROM: American Eel Advisory Panel

DATE: April 27, 2021

SUBJECT: Advisory Panel Report on American Eel Fisheries, Recent Landings, and Market Demand

The Advisory Panel (AP) met virtually at 9:00 AM on April 26, 2021 to review yellow eel landings and provide information on the recent trends in the fishery. Only two AP members were in attendance on the call with two additional AP member providing comments over the phone (see below). Staff recommends that jurisdictions revisit their current AP membership in order to improve attendance and participation.

Participating AP Members:
Mari-Beth DeLucia (TNC, Chair)
Mitch Feigenbaum (PA)
Lawrence Voss (DE; provided comments by phone)
Jimmy Trossbach (MD; provided comments by phone)

The following is a summary of the comments provided by AP members- both from the webinar and individually by phone- as well as comments from those in the Commercial Yellow Eel Fishery in Maryland (MD Watermen) not on the AP.

In recent years (2016-2020), have you observed any change in the availability of yellow eels? Has your catch changed (increased or decreased) during this time?

AP Comments (from meeting): No AP members on the call actively fish for yellow eels. Mitch Feigenbaum, representing Delaware Valley Fish Company (primary buyer along the US Atlantic coast), indicated his company has bought fewer yellow eels in recent years due to less demand for food eels in European markets. Due to this, he emphasized that the decrease in landings in recent years should not be interpreted as a decrease in availability of eels or change in their population.

Mr. Trossbach (MD): there has no real change in catch or catch per unit effort. If anything it may have increased but that is largely due to there being less people fishing for eels. Changes to his landings in recent years has been due to less market demand.

Mr. L Voss (DE): has not fished for yellow eels in recent years.

MD Watermen: Availability of yellow eels has increased. In 2021, fishing less gear and catching more eels. Animals appear abundant. One watermen reporting an average catch per pot of 2-3 pounds. Another reported 3-5 pounds. Both are higher than past years.

What factors influenced recent catch? (markets/economy, environment, regulations, and/or other factors)?

AP Comments (from meeting): The most significant factor effecting landings is market demand. Traditionally the yellow eel fishery operates seasonally (late spring and then again in the fall). In recent years, both the European food market demand and U.S. domestic bait market demand has decreased. The European food market, which historically imported wild-caught yellow eels, has shifted in recent years to sourcing 'farm' raised European eel from aquaculture facilities within Europe. The development of aquaculture facilities to raise glass eels to adult yellow eel size has been an ongoing process over the last 30 years with the shift towards sourcing from it increasing, with many traditional buyers switching to sourcing from these facilities exclusively. Additionally, there have been an overall decrease in demand for eels in Europe – Mr. Feigenbaum indicated that large retailers such as Aldi stopped selling smoked eels products in some European countries due to pressure from environmental groups given the European eel (*Anguilla anguilla*) is listed as critically endangered by the IUCN.

The U.S. domestic bait market demand for live or frozen eels is primarily for use in recreational fisheries targeting blue catfish, Atlantic striped bass, and cobia. Traditionally, the proportion of landings that go towards this market have been much smaller (approximately 20%) than the European food market. Restrictions imposed as part of COVID-19 appears to have decreased the demand for eels as bait in 2020.

Mr. Feigenbaum emphasized that current state regulations implemented as part of the ASMFC FMP are not a limiting factor for recent landings trend; market demand has driven this change.

Mr. Trossbach (MD): (Aside from market demand mentioned above) the price of bait (primarily razor clams) has been a limiting factor to set pots and traps. Additionally, there has been a decrease of individuals still active in the fishery given the costs (bait, fuel) and interest in shifting to more lucrative fisheries.

MD Watermen: COVID-19 seems to be the driving factor for no market. Most eels go overseas and flights weren't leaving the country. Delaware Valley (Fish Company) stopped buying. On some days, we have to release eels overboard because of no market. The market has been contracting over the last decade. Farm raised eels from Asia have taken over the restaurant markets in the US. Eels can be ordered from Asian markets in the exact quantity and at the exact time they are needed. They are vacuum packed and ready to use. This compared to more expensive US-caught eels which are seasonal and would arrive unprocessed. This is exacerbated by low labor costs in Asia.

What are the primary markets for yellow eels currently? Domestic or International? Food or bait?

AP Comments (from meeting): As mentioned above, historically the yellow eel fishery has largely been driven by demand for eels as food in European grocery stores and restaurants. There remains a much smaller domestic food eel market in cities such as Philadelphia, New York City, and Boston. Domestic demand for eels as bait has decreased over recent decades compared to the 1980s-1990s.

Mr. Trossbach (MD): Aside from selling food eels to Delaware Valley for European Markets, also sell eels as bait to whole seller to meet demand for recreational fisheries in New Jersey, New York (Long Island Sound) and Northeastern Atlantic states (generally).

MD Watermen: Some watermen report a majority international market citing Belgium, France, Holland and Portugal. Flights not leaving the country and restaurants closing in Europe have been part of market problem. Other watermen have a primarily domestic market where eels are purchased for both food and bait. Larger eels are purchased by US-based Asian food markets/restaurants and smaller eels are popular as bait for blue catfish (best bait for commercial catfish trotlines) and for cobia fishing.

Did your catch or landings change from 2019 to 2020? If so, why?

AP Comments (from meeting): Due to limited demand in Europe, Delaware Valley Fish Company had instructed many in the industry who opportunistically catch eels to stop in 2020 (prior to the COVID-19 pandemic).

Mr. Trossbach (MD): COVID-19 pandemic restrictions that impacted the U.S. recreational fishing by limiting the number of trips and people on-board headboats and for-hire vessels, affected sales for eels as bait in New Jersey, New York, and Northeast. These factors, in addition to decreased international market demand previously mention, appear to have contributed to a decrease in landings in 2020.

MD Watermen: All watermen report higher catch rates but lower landings due to market problems.

How do you think the fishery will perform in 2021? Different from 2020 or similar?

AP Comments (from meeting): With COVID-19 restrictions being lifted in 2021 which impacted recreational fishing in 2020, there will likely be an increase in yellow eel landings for bait. Given yellow eels for bait constitute a smaller percentage of total landings than food eels for European markets, which maintains a limited demand for wild-caught yellow eels, the overall coastwide total may increase slightly from 2020 harvest levels.

Mr. Trossbach: As state imposed COVID-19 restrictions ease in 2021 that should help increase domestic demand for bait in Virginia, Maryland, New Jersey, and New York. That being said, it's unclear whether that will significantly increase yellow eel landings in 2021.

MD Watermen: Nobody is anticipating things to change in 2021 due to ongoing COVID restrictions. There is uncertainty of how market will bounce back in future years but there seemed to be optimism for European markets.

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April 2, 2021

Submitted via Electronic Mail
OceanResources.Climate@noaa.gov

Dr. Paul Doremus
Assistant Administrator for Fisheries (Acting)
NOAA Fisheries

Re: Recommendations for More Resilient Fisheries and Protected Resources Due to Climate Change

Dr. Doremus:

The Division of Marine Fisheries Management of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated agency consideration of a request by the National Oceanic and Atmospheric Administration (NOAA) for input on Executive Order 14008: "Tackling the Climate Crisis at Home and Abroad". Specifically, NOAA has requested recommendations to address Sec. 216(c); how to make fisheries and protected resources more resilient to climate change, including changes in management and conservation measures, and improvements in science, monitoring, and cooperative research. The FWC provides the following recommendations for NOAA's consideration.

The FWC manages fish and wildlife resources for the State of Florida and represents the State on the Gulf of Mexico Fishery Management Council, South Atlantic Fishery Management Council, and the Highly Migratory Species Advisory Panel. The challenges associated with managing natural resources in a changing marine environment are complex. FWC recognizes climate change as a threat to Florida's marine ecosystems and species in Florida's State Wildlife Action Plan (https://myfwc.com/media/22767/2019-action-plan.pdf). Often managers are forced to make decisions without a full understanding of factors driving changes in fisheries, largely in part because of current scientific and management capacity to comprehensively evaluate and predict the effects of these changes. Climate change is perhaps one of the least understood drivers of natural resource production due to the multi-dimensional way the environment interacts with basic metabolic rates at the species level and how this translates throughout the food web at an ecosystem level. Future efforts to improve resiliency in fisheries and protected resources should be inclusive of this complexity and warrants a careful consideration of factors driving observed changes and how these changes are incorporated into management. In this light, we have organized our comments into several categories to address where research, resources and additional actions are needed for adaptive resource management under changing climate conditions. These categories include: 1) tracking ecosystem trends; 2) habitat considerations; 3) multi-species interactions; 4) spatial scales and connectivity; 5) human dimensions; 6) advancing stock assessments; 7) management framework; and 8) protected resources.

1. Fisheries - Tracking Ecosystem Trends

a. *Enhanced fishery-independent monitoring in the southeast United States*
Understanding broad ecosystem trends and how they influence population dynamics of fish stocks and protected species is critical to the successful management of these resources during climate change. However, at present, monitoring data to evaluate broad ecosystem trends, particularly at the lower trophic levels (e.g., primary and secondary producers), are largely spatially and temporally insufficient for incorporation into management efforts. As technologies advance and expand our capacity for monitoring, FWC advocates for additional monitoring efforts that encompass not only managed species, but also monitors ecosystem conditions across space and time. From a system-level perspective, these conditions should include habitat, primary and secondary production, and trophic information.

b. *Changes in the frequency of severe events*
Extreme events such as hurricanes, cold snaps, and harmful algal blooms are expected to increase resulting in periodic reductions in fish populations at regional and local scales. Florida experienced a series of strong hurricanes in 2004 and 2005 and most recently in 2017 and 2018, a severe red tide in 2005, the most severe drought on record in 2007, an extreme cold event in 2010, and persistent red tides in 2018. For species that are closely managed, understanding population resilience to environmental and anthropogenic disturbances (i.e., recovery trajectories across broad spatial areas) can guide which suite of management actions are available to mitigate and respond to any impacts. Some of the events described above resulted in regional closures of inshore fisheries. For example, the recreational fishery for common snook has been closed in SW Florida for five of the past 10 years because of severe events (e.g., cold kills, red tide). For federally-managed fisheries like gag and red grouper, some of these severe events resulted in reductions in catch limits (once analyses and/or stock assessments indicating fishery declines were available). Such events often affect local research assets (damage to structures, power outages, flooding), thus a broad network of cooperation among institutions is needed to step in following a severe event to assess the effects to fish populations.

2. Fisheries - Habitat Considerations

a. *Habitat monitoring and mapping*
Changing temperature regimes, depths, and intertidal flooding frequencies are likely to result in changes to habitat types at given locations. One example is the conversion of saltmarshes to mangroves in the northern Gulf of Mexico and along the Atlantic coast of northern Florida. It is not known whether these habitat types are functionally equivalent with respect to fish use. Analysis of existing datasets and experimental studies (for example create a mix of saltmarsh and mangrove controlling for elevation at restoration sites) could help determine what, if any, changes to expect in fish communities and essential habitat of economically important species. Other expected changes include migration of coastal habitats inland, changes in the position of oligohaline zones in rivers, and increased depths in areas currently occupied by seagrasses. To understand habitat impacts on fisheries and protected resources,

changes in these habitats will need to be monitored over time and resources are currently insufficient to do so. Mapping efforts are underway by NOAA NCCOS to provide baseline data, but FWC recommends additional resources be provided to expand their (and other) efforts to identify habitats that may be resilient to the effects of climate change.

b. *Magnitude of linkages between nearshore and offshore habitats and fishery/resource production* Observed effects of climate change have already impacted habitat in Florida and predicted effects indicate that impacts to sensitive habitat will increase (e.g., coral reefs, hardbottom, seagrass, mangroves). The health and connectivity of Florida's diverse habitats are at the foundation for the high productivity and use of our natural resources. Understanding the magnitude of these linkages could provide guidance for habitat protection, restoration efforts, and drivers of fishery/resource production. Incorporation of such information into stock assessments could provide valuable insight to resource managers.

c. *Changes in flooding frequencies of coastal nursery habitat*
Coastal habitats that have historically been flooded infrequently will be become more connected to their estuaries. The primary nursery habitat for some species, however, depend on remote, infrequently flooded habitats, namely snook species, black drum, and tarpon. For example, using acoustic telemetry and water level loggers, FWC has observed that emigration of juvenile tarpon from coastal nurseries is tied to storm events. Research is needed to understand how existing nursery habitats for these and other species are likely to function as flooding regimes change from a stochastic seasonal connection to daily tide. Predation pressure on these species is likely to increase with increased connectivity. Fish biologists can work with restoration practitioners to create new habitats landward of existing ones. There may also be opportunities to work with engineers and city planners to modify existing stormwater infrastructure into functional nurseries. The first step is to properly characterize nursery habitats, the appropriate flooding regimes, and degree of connectivity with open water in ways that can be easily transferred to engineers, city planners, and restoration practitioners.

d. *Additional actions to promote habitat resilience*
   i. Loss of essential fish habitat such as spawning, aggregation and foraging structural features decreases fish community productivity and resilience to the effects of climate change. Conserving and restoring essential fish habitats (Oculina Banks, SE coral reef tract, seagrass communities, Grand Banks benthic cobble habitat, etc.) damaged by human activities will enhance such productivity and resilience.
   ii. Nutrient contamination leads to reduced benthic habitat productivity and can shift whole ecosystems from benthic macrophyte based to water column microalgal based. Addressing human-caused nutrient pollution across watersheds contributing to reduced estuarine water quality should be a priority in all impaired systems.
   iii. Natural habitats, such as mangrove and oyster communities, have the ability to adapt to sea level rise to some degree. Establishing tax- and permitting-based incentives for green living shoreline installations along lower energy estuarine shorelines to avoid

conversion of these important habitat interfaces to hardened shorelines should be a core priority of any climate change resilience effort in estuaries.

iv. Work with fishers to reduce fishing gear-based habitat damage (shifting gear to targeted fisheries, minimize benthic trawl fishing in areas of hardbottom communities, etc.). In order to best address these impacts, extensive high resolution mapping of all estuarine and marine benthic habitats is required.

v. Promote facilitated transitions of habitats as they move shoreward (up slope) and inland as a result of sea level rise, and reduce or prevent physical barriers to up slope migration.

vi. Facilitate poleward migrations of native coastal communities (e.g., mangroves into saltmarsh systems).

vii. Integrate natural habitat enhancement with aquaculture facilities to improve habitat availability for fish species ("tuning" of appropriate habitat characteristics to provide ecosystem services in aquaculture facilities).

viii. Support Early Detection and Rapid Response efforts for invasive species that may impact fisheries, as climate change and SLR will increase vulnerability of many areas to invasion.

ix. Establish incentives and provide funding for land acquisition programs and land use that allow for upland and inland migration of coastal habitats. Similar to efforts that focus on establishing "wildlife corridors", prioritize targeted "habitat transition zone" acquisitions.

x. Fund long-term monitoring on projects intended to improve coastal resilience to better understand their impacts on fisheries and associated coastal species over time.

3. Fisheries - Multi-Species Interactions

a. *Identify significant trophic interactions that should be accounted for in management*
The effects of climate change are likely to impact the food web at every trophic level. Identification of significant trophic interactions, and any subsequent changes in them as climate change progresses, would help managers better understand the importance of certain food web linkages and how shifts in production at lower trophic levels influence fisheries and protected resources.

b. *Improved monitoring of bycatch, assessments of bycatch and impacts of removals through multi-species modeling efforts, and research into advancements for bycatch solutions*
As species distributions change in response to climate change, fisheries are likely going to encounter changes in their bycatch composition and rates. For areas and fisheries where bycatch is predicted to potentially increase, managers need to have the ability to assess the magnitude of bycatch and determine options for minimizing its impact.

4. Fisheries - Spatial Scales and Connectivity

a. *Climate vulnerability analyses*
Climate change is likely to have broad effects across entire ecosystems and a fundamental question remains regarding the relevant spatial scales that ecosystem

processes should be managed or accounted for. To determine this, an understanding of connectivity within and among regions is required. Climate vulnerability analyses are underway in the South Atlantic and Gulf regions, and FWC recommends additional support to expedite those efforts and expand to a broader suite of fish and invertebrate species.

b. *Changes in species distributions*
Several tropical and subtropical species are already expanding their range farther north into the southeastern United States. More cooperation and collaboration is needed with partners and other nations in the tropics where the abundance and evolution of these species have been historically centered. Cross-site studies of genetic structure and life-history traits (e.g., cold tolerance, counter-gradient growth) spanning countries in South, Central, and North America are needed to better understand how species may adapt to living at higher latitudes and in novel habitats. In some cases, range expansion may provide for new fisheries in areas where they did not previously exist. Protection or enhancement of these "new" fisheries will require identification of essential habitat and an appropriate management strategy depending on connectivity to populations farther south.

c. *Changes in species migrations*
Support for cooperative acoustic tracking networks like iTAG (Integrated Tagging of Animals in the Gulf of Mexico) and FACT. A relaxation of temperature drivers (specifically milder winters in the southeastern United States) will affect fish migrations. Examples of these migrations along the Atlantic and Gulf coasts of Florida include the winter sailfish run to southeast Florida and fall/spring runs of cobia, mackerel, and coastal sharks. Other coastal migrants include tripletail, permit, blackfin tuna, and amberjack although the extents of their migratory behaviors are less known. These movement patterns affect which cities and ports have access to the fishery. For example, tournaments targeting cobia during spring in the Florida panhandle have collapsed. It has been difficult to ascertain whether this is due to changing migration patterns (fewer fish moving south in response to cold and thus more fish remaining in the northern Gulf), overfishing of a migratory population contingent, or overfishing of the entire population. With increased acoustic research capacity, tracking fish migrations will be possible. For coastal species, we need a better idea of what proportion of the populations migrate as well as the migration start/end points, pathways, and timing. As temperature drivers relax, it is likely that the migratory portion of the population may diminish; more may become non-migratory and thus more susceptible to local pressures and population structuring. The timing of migration, and the catches that occur at specific ports, will be altered. We need baselines quickly for which to gauge future changes and to be able to modify identified Essential Fish Habitat accordingly to support appropriate management.

d. *Larval connectivity*
The extent of larval connectivity between regions, and how that might be changing with climate change, is another important area of research that is needed. Combined use of biophysical modeling, modeling of species-specific larval attributes, appropriate spatial resolution, and validation with genetics or otolith microchemistry would be useful for

managers to understand larval transfer rates between regions. Incorporation of such data into stock assessments would ultimately provide managers with additional tools to evaluate drivers of stock status.

5. Fisheries - Human Dimensions

a. *Increase resiliency of fishing communities*
Natural resources are managed for a variety of reasons, but ultimately regulations are in place to promote sustainability and the betterment of human communities reliant on these resources. As such, research is needed to better understand and more accurately assess the economic impacts of new fishing regulations, and FWC recommends increased stakeholder involvement in the decision-making process.

b. *Evaluate the causes and impacts of climate change from a social, economic, and institutional perspective*
Large-scale events that have affected entire ecosystems (e.g., Deepwater Horizon oil spill or Florida red tide event of 2017-2018) have highlighted the need for more resources to better understand the short- and long-term impacts of these events on society. Increasing stakeholder involvement in resource management may help elucidate climate impacts at the institutional level, but more research is needed on the social and economic aspects of resource management. For example, how will range shifts of economically-important species impact competition, production, and regional socio-economics?

6. Fisheries - Advancing Stock Assessments

a. *Evaluate which species or species complexes are most sensitive to environmental conditions*
To accurately assess and effectively manage fish stocks and natural resources during climate change, advancements are needed to better encompass ecosystem effects within stock assessments. FWC recognizes that ecosystem considerations have recently been included in stock assessments for red grouper, red snapper, and brown shrimp and believes this type of approach should be taken for all managed species, when appropriate.

b. *Determine which environmental conditions influence fisheries production and how those data can be used to improve stock assessments*
Data limitation for ecosystem covariates is generally lacking across time-series, which are typically utilized in stock assessments. More resources are needed to evaluate if fisheries production is being influenced by environmental conditions, and if so, which conditions are driving the observed changes.

c. *Stock assessment process*
Recognizing that the federal stock assessment process in the southeastern United States is already stretched to capacity, FWC places a high importance on additional stock assessment resources such that timely assessments can be completed, and appropriate ecosystem conditions can be considered in the process.

7. Fisheries - Management Framework

a. *Modifications to fishery management toolbox*
While the effects of climate change on fisheries production are poorly understood, fisheries managers will need to have the flexibility to adapt to these challenges and likely new management tools to respond to climate change impacts on fisheries. Management tools (e.g., federal control rules, accountability measures, etc.) that were effective in the past may not be effective under certain climate change scenarios for species that are identified as vulnerable to climate change. Risk analyses and management strategy evaluations are likely necessary to determine the robustness of current policies and management actions in a changing environment. However, prior to modifying the fishery management toolbox, the research stated in the above sections is needed.

b. *Revisions to Governance*
Modifications to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) can provide flexibility to Councils when dealing with impacts of climate change on fisheries. For example, modifying MSA language, such as the Acceptable Biological Catch (ABC) recommendation language in Sec. 302 (h)(6), could help increase regulatory flexibility and remove overburdensome restrictions. Additionally, FWC suggests modifying MSA language to extend timelines for rebuilding overfished fisheries and ending overfishing by allowing Councils to ease into rebuilding plans when possible, which can help reduce negative impacts to fishermen and fishing communities.

c. *Increased coordination and collaboration between fishery managers*
Coordination by regional fishery management councils, NOAA Fisheries, states, and other fishery management entities like the state fishery management commissions is necessary to tackling the changing and unexpected conditions because of climate change. Individual states and councils are already dealing with shifting stocks, subsequent allocation issues, and other regional fisheries challenges, which are likely to continue. As species distributions change, management authorities may potentially shift between councils. FWC recommends development of a plan for how shifts in management will be expected to occur to prevent overfishing and meet the changing needs of these fisheries. Additionally, continued cooperation and expanded efforts for fishery-independent surveys and other research programs throughout the regions can help ensure data is adequately and comprehensively captured to provide the best science available for management decisions.

8. Protected Resources

a. As sea levels rise, coastal armoring authorized to protect upland dwellings and infrastructure will likely increase. Unless these structures are carefully designed and constructed, important beach and dune habitat for coastal wildlife will be lost. New coastal armoring structures should be designed to minimize encroachment into sandy beach habitat, such as vertical seawalls, and sited as close (landward) to the vulnerable and eligible structure it is being installed to protect as practicable.

b. Access for marine turtles to existing habitats could be cut off through increased water control structures or other armoring structures. Other entry points to currently accessible bodies of water could be identified and if none are available, work could be done to re-examine wildlife passage through water control structures or other armoring structures (e.g., fish ladders).

c. As the coast moves landward due to sea level rise, what is currently inland lighting will play a larger role in coastal systems in relation to marine turtle conservation (e.g., disorientations due to artificial lights). Viewshed modeling could be conducted using various coastline/water level profiles to identify hotspot light sources. There could be development of additional alternative lighting regimes for structures usually not found near the coast (e.g., high rise office buildings, sports arenas)

d. Harmful algae blooms could develop or spread to new locations with future changes in climate and flow of aquatic systems around the state. Modeling of algae blooms and possible water flows could provide insight into which areas may be more prone to this impact and therefore need more resources to protect against the spread of the harmful organisms.

e. Continued cooperative research to understand impacts to incubating sea turtle nests from wetter and warmer beaches is needed (i.e., hatch success, temperature dependent sex determination, shifts in nesting season). This research could be completed cooperatively by the FWC, USFWS, NOAA, USGS, FDEP, EPA, local universities, local municipalities, non-profit organizations, and/or other partner agencies and groups.

The FWC appreciates the opportunity to provide input for NOAA's consideration of Executive Order 14008: "Tackling the Climate Crisis at Home and Abroad". Should you require additional assistance regarding our comments, please contact Lisa Gregg at Lisa.Gregg@myfwc.com or (850) 617-9621.

Sincerely,

Jessica McCawley
Director

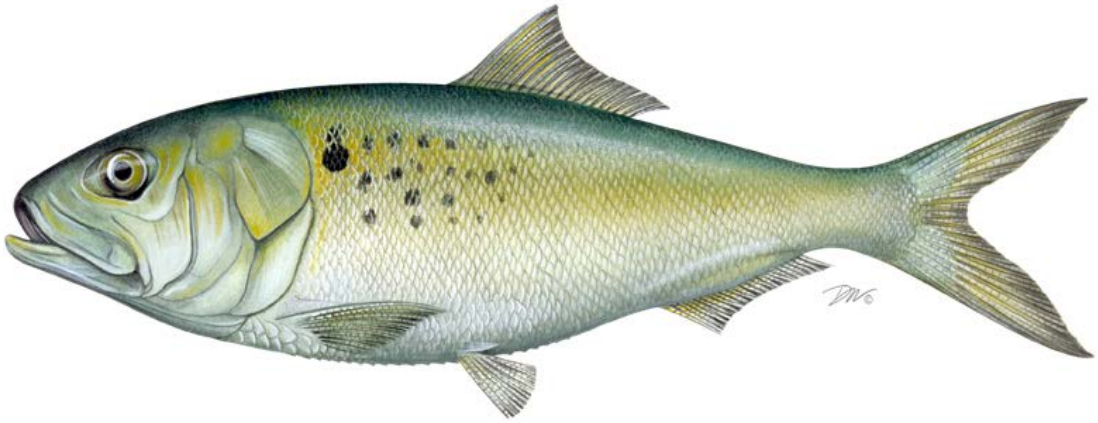
jm/mg/lg/cjs/kf

ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR ATLANTIC MENHADEN
(*Brevoortia tyrannus*)

2020 FISHING YEAR



Prepared by the Plan Review Team

Prepared April 2021

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 2020 FISHERY

Management Summary

Date of FMP:	Original FMP: August 1981
Amendments:	Plan Revision: September 1992 Amendment 1: July 2001 Amendment 2: December 2012 Amendment 3: November 2017
Management Unit:	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).
States With Declared Interest:	Maine – Florida, including Pennsylvania
Additional Jurisdictions:	Potomac River Fisheries Commission, National Marine Fisheries Service, United States Fish and Wildlife Service
Active Boards/Committees:	Atlantic Menhaden Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Plan Review Team, Plan Development Team, Ecological Reference Point Workgroup
Stock Status:	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 alos 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[1] 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.

[1] 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%
Total	100%

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.

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.

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 69th 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[2]. The ERP assessment uses the Northwest Atlantic Coastal Shelf Model of Intermediate Complexity for Ecosystems (NWACS-MICE) to develop Atlantic menhaden ERPs.

[2] 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

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 2020, including directed, incidental catch, and episodic event set aside (EESA) landings, are estimated at 184,150 mt (405 million pounds), an approximate 12% decrease relative to 2019 (Table 1). The non-incidental catch fishery landings (directed landings plus landings under the EESA) total for 2020 is estimated at 177,830 mt (392 million pounds) and represents an approximate 82% of the coastwide commercial TAC of 216,000 mt (476.2 million pounds). Landings from the incidental catch fishery are estimated at 6,330 mt (13.95 million pounds) and do not count towards the coastwide TAC.

Reduction Fishery

The 2020 harvest for reduction purposes is estimated at 124,600 mt (274.7 million pounds), a 17% decrease from 2019 and 11% below the previous 5-year average of 140,380 mt (309.4 million pounds) (Table 2; 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 plan 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 2020, including directed, incidental catch, and EESA landings, is 59,550 mt (131.2 million pounds). This represents a 3% increase relative to 2019 and a 23% increase compared to the previous 5-year average (Table 2; Figure 3). New Jersey (38%), Virginia (25%), Maine (20%), and Massachusetts (7%) landed the four largest shares in 2020.

Incidental Catch and Small Scale Fisheries Landings

Incidental catch landings in 2020 are estimated at 6,330 mt (13.95 million pounds), which is a 30% increase relative to 2019 and the highest level in the time series average (Table 3). Maine, Massachusetts, New York, and New Jersey reported incidental catch landings (88% from purse seines and 8% from gill nets) in 2020 (Table 4). Maine accounted for 97% of total incidental

fishery landings in 2020. Incidental catch trips in 2020 were higher than trips from 2016 through 2019 (Table 4).

Episodic Events Set Aside (EESA) Program
The 2020 EESA quota was 2,160 mt (4.76 million pounds). Maine began harvesting under the EESA program on June 25, with projections indicating that 80% of the EESA quota had been harvested after three days of harvesting. Maine's EESA fishery closed on July 6, although the directed fishery was able to reopen on July 7 through 18th following the state's acquisition of 5.4 million pounds of quota through eight state-to-state transfers. Massachusetts began harvesting under the EESA program on August 17 and landed 361,485 pounds before closing the fishery on August 28. As of October 31, an estimated 2,080 mt (4.5 million pounds) of menhaden were landed under the EESA fishery (Table 5). Approximately 80 mt (176,771 pounds) of remaining EESA quota was reallocated back to the states on November 1 based on the 2009-2011 period (see Table 7).

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 was about 27,700 mt, under the adjusted the cap by approximately 9,000 mt. As a result, the cap for 2021 is set once again at 51,000 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 2020 is 2.55 million pounds (PSE of 33.5) which is a 33% increase from 2020 (1.92 million pounds or 1,569 mt). 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:

- 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.
- 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, M. J. 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.
- Chargaris D., Drew K., Schueller A., Cieri M., J. Brito J., and Buchheister A. 2020. Ecological Reference Points for Atlantic Menhaden Established Using an Ecosystem Model of Intermediate Complexity. Front. Mar. Sci. 7:606417.

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 2020

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

Quota Results
Table 7 contains 2020 state-specific quotas and directed harvest. The final quotas for 2020 account for 4.45 million pounds of quota relinquished by Delaware and Georgia, an adjustment of 16 state-to-state transfers (Table 8), and the reallocation of unused EESA quota (176,771 pounds). Quota transfers were generally pursued to ameliorate overages. Based on preliminary 2020 landings and quota transfers through April 2021, 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 based on the newly adopted ERPs. 1% is set aside for episodic events. States may relinquish all or part of its annual quota by December 1st of the previous year. Delaware relinquished 1.7 million pounds of quota which was redistributed to the states according to procedures outlined in Amendment 3 and is reflected in the 2021 Preliminary Quota (Table 7).

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 6 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 2020. 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 DFW and fill out daily trip level logbooks. Massachusetts and Connecticut require 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 9 provides the number of 10-fish samples required and collected for 2020. These are based on the best available 2020 total bait landings data (including directed, incidental, and EESA landings) provided to the Commission by the states. In 2020, Maine, Massachusetts, and PRFC fell short of the required samples. All three jurisdictions indicated that the COVID-19 pandemic in 2020 prevented them from collecting the full samples. As restrictions remain in place for many states in 2021 in response to the pandemic, there is a strong chance some states will not be able to meet their 2021 sampling requirement. All other jurisdictions met the biological monitoring requirements in 2020.

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. The PRT seeks clarification from the Board whether this exemption remains in place for North Carolina. All other states with a pound net fishery met this requirement.

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 incidental catch fishery provision issue and biological sampling requirement be readdressed in a future management document.
- The PRT recommends the Board clarify whether North Carolina is exempt from collecting catch and effort data from the pound net fishery.

Notable Comments
Landings data suggest that Atlantic menhaden have become increasingly available to the Gulf of Maine fishery in recent years (2016-2020). In 2020, the state of Maine reported landings in excess of 25 million pounds, marking a 13% increase relative to 2019 landings and a 316% increase relative to 2016. In 2020 Massachusetts reported 8.8 million pounds, marking a 26% increase relative to 2019. While New Hampshire's 2018 and 2020 landings are confidential, in 2019 the states of Maine through Massachusetts accounted for nearly 7% of the coastwide

total landings. Maine has requested additional quota through in-season transfers each year since 2016; both New Hampshire and Massachusetts also received additional quota through transfers in 2020. Both Maine and Massachusetts opted into the EESA fishery in 2020, marking four consecutive years of participation for Maine in the program. Both states also reported incidental catch landings in 2020 as well. Landings in the 2020 incidental catch fishery increased to 13.7 million pounds, a 30% increase from 2019 and a new time series high.

The recent increase in landings is attributed to the status and availability of other bait fish populations in the region (e.g., Atlantic herring). There may be additional social and economic factors that the PRT is unaware of contributing to the change in landings trend.

Similar to last year's report, the PRT highlights how some states manage their quota relative to the incidental catch fishery. The incidental catch provision in Amendment 3 states "after a quota allocation is met for a given jurisdiction, the fishery moves to an incidental catch fishery in which small-scale gears and non-directed gear types may land up to 6,000 pounds of menhaden per trip per day" (12,000 pounds per trip per day for two authorized individuals, working from the same vessel fishing stationary multi-species gear). The amendment does not give guidance for the incidental catch provision if a state subdivides its quota to different gear types or sectors. New Jersey and the Commonwealth of Virginia subdivide their quotas and have done so since the Commission implemented state quotas 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 incidental catch fishery regardless of whether the entire state's quota has been harvested. This has resulted in Virginia and New Jersey reporting incidental catch landings when they have not met their overall quota allocation for a given year. Since the inception of the incidental catch provision, the PRT has reported landings following the closure of Virginia's non-purse seine bait fishery and New Jersey's "other gears" fishery as incidental catch. The PRT requests guidance from the Board if they would like to see this reported differently.

Separately, the PRT notes the overall increase of the incidental catch in recent years relative to the directed fishery landings. While incidental catch does not count towards the annual TAC, in 2020 incidental catch was approximately 10% of bait fishery landings. 2019 and 2020 were the highest levels of incidental catch since the provision was implemented through Amendment 2 in 2013. Given the significant increase of landings in this category, the PRT expressed concern that volume of landings appears to not reflect the original intention of the provision. The PRT recommends this issue be addressed in a future management document.

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 2020 by jurisdiction. NA = not applicable; C = confidential

State	Directed	Incidental Catch	EESA
ME	7,889	10,751	4,398
NH	C	-	NA
MA	8,417	49	361
RI	198	-	NA
CT	112	-	NA
NY	3,766	282	NA
NJ	49,803	20	NA
DE	161	-	NA
MD	2,595	-	NA
PFRC	2,190	-	NA
VA	307,351	-	NA
NC	594	-	NA
SC	-	-	NA
GA	-	-	NA
FL	247	-	NA

Table 2. Atlantic menhaden reduction and bait landings in thousand metric tons, 1986-2020

	Reduction Landings (1000 mt)	Bait Landings (1000 mt)
1986	238	21.6
1987	310	25.5
1988	278	43.8
1989	284	31.5
1990	343	28.1
1991	330	29.7
1992	270	33.8
1993	310	23.4
1994	260	25.6
1995	340	28.4
1996	293	21.7
1997	259	24.2
1998	246	38.4
1999	171	34.8
2000	167	33.5
2001	234	35.3
2002	174	36.2
2003	166	33.2
2004	183	34.0
2005	147	38.4
2006	157	27.2
2007	174	42.1
2008	141	47.6
2009	144	39.2
2010	183	42.7
2011	174	52.6
2012	161	63.7
2013	131	37.0
2014	131	41.6
2015	143	45.8
2016	137	43.1
2017	129	43.8
2018	141	50.2
2019	151	58.1
2020	125	59.6
Avg 2015-2019	140	48.2

Table 3. Incidental fishery landings by state in 1000s of pounds, 2013-2020. Only states that have reported incidental catch landings are listed. Average total incidental catch landings for the time series is 6.9 million pounds.

State	2013	2014	2015	2016	2017	2018	2019	2020
ME		-	-	506	5,374	2,995	10,751	13,605
MA								49
RI	16	99	70	40	136	-	-	-
CT	0	-	10	-	124	-	-	-
NY	0	325	769	281	807	-	-	282
NJ	0	626	241	196	-	204,240	-	20
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	-	-	-
Total	4,377	6,831	5,992	2,581	7,404	3,215	10,751	13,957

Table 4. Total incidental landings (1000s of pounds), number of trips, and number of states reporting landings in the incidental catch fishery, 2013-2020.

Year	Landings (1000s of pounds)	Number of Trips	Number of states landing
2013	4,377	2,783	4
2014	6,831	5,275	8
2015	5,992	4,498	9
2016	2,581	2,222	9
2017	7,404	2,108	7
2018	3,310	1,224	3
2019	10,751	3,113	1
2020	13,957	3,565	4
Total	55,154	24,788	

Table 5. 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.

Year	States Declared Participation	EESA Quota (MT)	Landed (MT)	% EESA Quota Used
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%

Table 6. State quota reporting timeframes in 2020. The **bold** text indicates which reporting program (dealer or harvesters) the states use to monitor its quotas. Blue text indicates changes from 2019.

State+	Dealer Reporting	Harvester Reporting	Notes
ME	monthly	**monthly/daily**	Harvesters landing greater than 6,000 lbs must report daily during episodic event. **Harvest schedule is Monday, Tuesday, Thursday, and Friday. Change from four consecutive days (M-T) made in 2020**
NH	**weekly**	monthly	Exempt from timely reporting. Implemented weekly, trip level reporting for state dealers.
MA	**weekly**	monthly/daily	Harvesters landing greater than 6,000 lbs must report daily
RI	**twice weekly**	quarterly/daily	Harvesters using purse seines must report daily
CT	**weekly/monthly**	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	**Weekly**	monthly	Capability to require weekly harvester reporting if needed
NJ	**weekly**	monthly	All menhaden sold or bartered must be done through a licensed dealer
DE	—	**monthly/daily**	Harvesters landing menhaden report daily using IVR
MD	monthly	**monthly/daily**	PN harvest is reported daily, while other harvest is reported monthly.
PRFC	—	**weekly**	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	—	**monthly/weekly/daily**	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	**monthly (combined reports)**		Single trip ticket with dealer and harvester information submitted monthly. Larger dealers (>50,000 lbs of landings annually) can report electronically, updated daily.
SC	**monthly (combined reports)**		Exempt from timely reporting. Single trip ticket with dealer and harvester information.
GA	**monthly (combined reports)**		Exempt from timely reporting. Single trip ticket with dealer and harvester information.
FL	**monthly/weekly (combined reports)**		Monthly until 75% fill of quota triggers implementation of weekly.

Table 7. Results of 2020 quota accounting in pounds. The 2020 landings do not include landings from the incidental catch fishery because they do not count towards the TAC. A majority of the 2020 episodic events set aside (EESA) quota was used by Maine (92%) with the remainder used by Massachusetts (8%). The remaining set aside quota (176,771 lbs) redistributed to the states. Massachusetts did exceed its transfer-adjusted quota (2021 quota has been adjusted for overage), but the coastwide TAC was not exceeded in 2020. The 2021 base quotas account for the redistribution of relinquished quota by Delaware (1.7 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	2020 Base Quota*	Returned Set Aside	Transfers^	Final 2020 Quota	Overages	2021 Base Quota*
ME	2,437,866	32.9	5,450,000	7,888,728		2,194,396
NH	2,357,313	0.1	2,300,000	4,657,315		2,121,582
MA	6,008,565	1,488.4	2,350,000	8,397,582		5,402,667
RI	2,440,542	34.0	-1,800,000	641,433		2,196,815
CT	2,431,491	30.3	-2,000,000	432,285	-	2,188,634
NY	3,256,768	366.7	500,000	3,766,381	-	2,934,618
NJ	51,257,740	19,933.0	0	51,780,273		46,323,661
PA	2,357,183	-	-500,000	1,857,183		2,121,464
DE	2,416,467	-	-100,000	216,467		474,821
MD	8,901,558	2,667.6	-1,350,000	7,621,489		8,037,057
PRFC	5,060,296	1,101.9	0	5,089,181		4,564,863
VA	370,846,528	150,204.8	0	374,784,068		335,206,390
NC	4,507,320	876.4	-1,800,000	2,730,295		4,065,016
SC	2,357,183	-	-1,650,000	707,183		2,121,464
GA	2,357,183	-	0	0		2,121,464
FL	2,442,500	34.8	-1,400,000	1,043,411		2,198,584
TOTAL	471,436,501	176,770.9		471,613,272		424,273,496

Table 8. State-to-state transfers of menhaden commercial quota for the 2020 Fishing year.

Transfers	Transfer Date	ME	NH	MA	RI	CT	NY	NJ	PA	DE	MD	PRFC	VA	NC	SC	GA	FL
1	1-Jul	1,000,000				-1,000,000											
2	7-Jul	1,700,000								-100,000				-600,000			-1,000,000
3	8-Jul			600,000										-600,000			
4	16-Jul		750,000												-750,000		
5	21-Jul			900,000											-900,000		
7	18-Aug	250,000	1,000,000		-250,000	-1,000,000											
8	25-Aug			600,000										-600,000			
9	26-Aug	1,000,000		250,000	-250,000						-1,000,000						
10	27-Aug		350,000								-350,000						
11	25-Sep		400,000														-400,000
12	14-Oct		800,000		-800,000												
13	21-Oct	500,000			-500,000												
14	2-Nov	1,000,000	-1,000,000														
15	20-Nov						500,000		-500,000								
16	13-Apr-21			20,000										-20,000			
Total		5,450,000	2,300,000	2,370,000	-1,800,000	-2,000,000	500,000	0	-500,000	-100,000	-1,350,000	0	0	-1,820,000	-1,650,000	0	-1,400,000

Table 9. Biological monitoring results for the 2020 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	38	37	370	370	Two samples tossed due to salting; could not age
NH	6	7	70	70	Purse seine
MA	13	10	104	104	10 purse seine
RI	0	0	0	0	None
CT	1	1	30	30	Gillnet- Lower CT River
NY	7	8	75	75	cast net, seine net
NJ	73	104	*	1040	Purse seine
	2	1	*	10	"Other gear" grouped for confidential reasons
DE	1	1	30	30	Gill net
MD	6	16	293	777	Pound net
PRFC	5	3	45	45	Pound net
VA	5	0	0	0	Pound net
	5	20	200	200	Gill net
	0	2	20	20	Haul seine
NC	3	2	20	252	Gill net
Total	**165**	**212**	**1257**	**3023**	

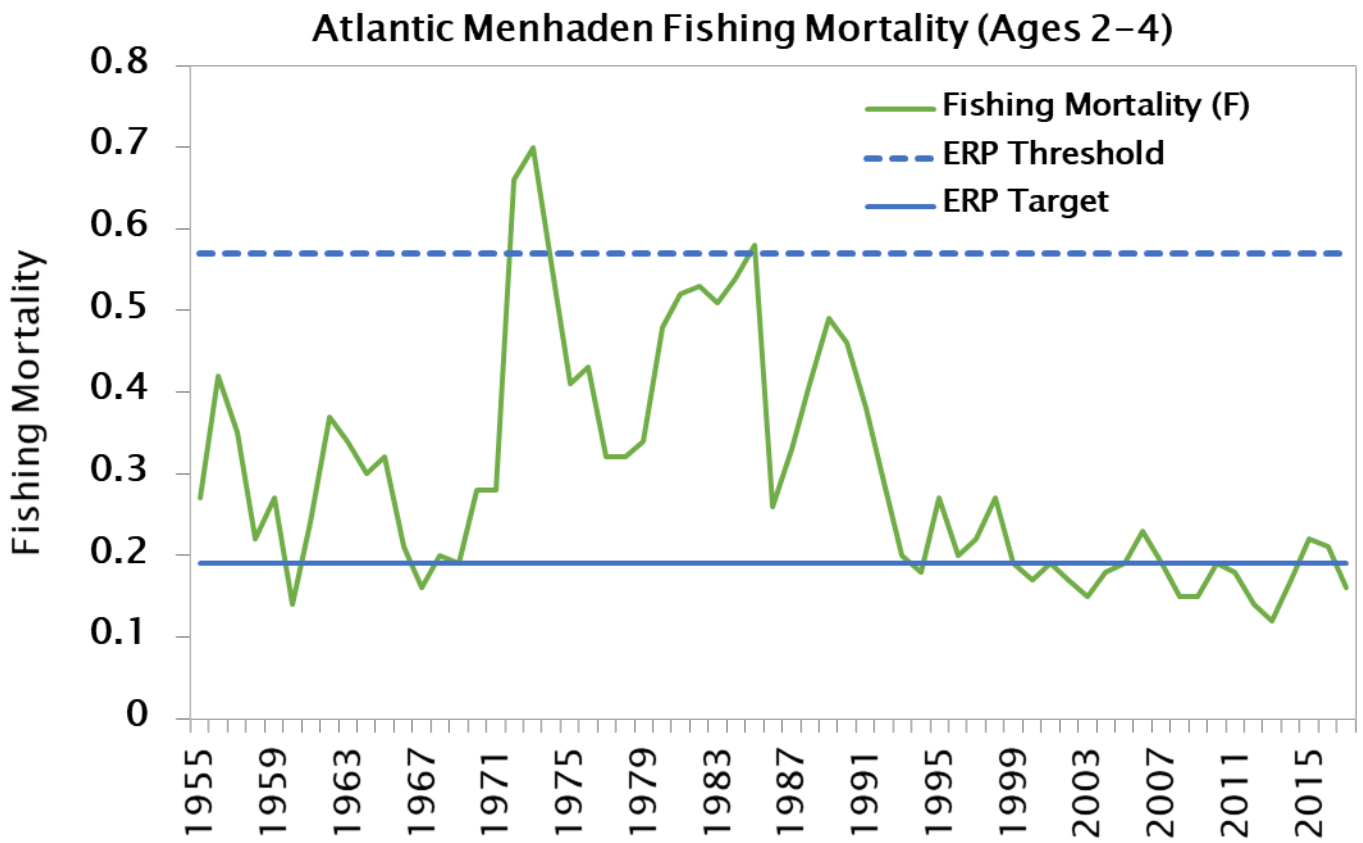


Figure 1. Fishing mortality, 1955-2017. The ERP fishing mortality reference points are F_{target} = 0.19 and $F_{threshold}$ = 0.57. F_{2017} = 0.16. Source: ASMFC 2020.

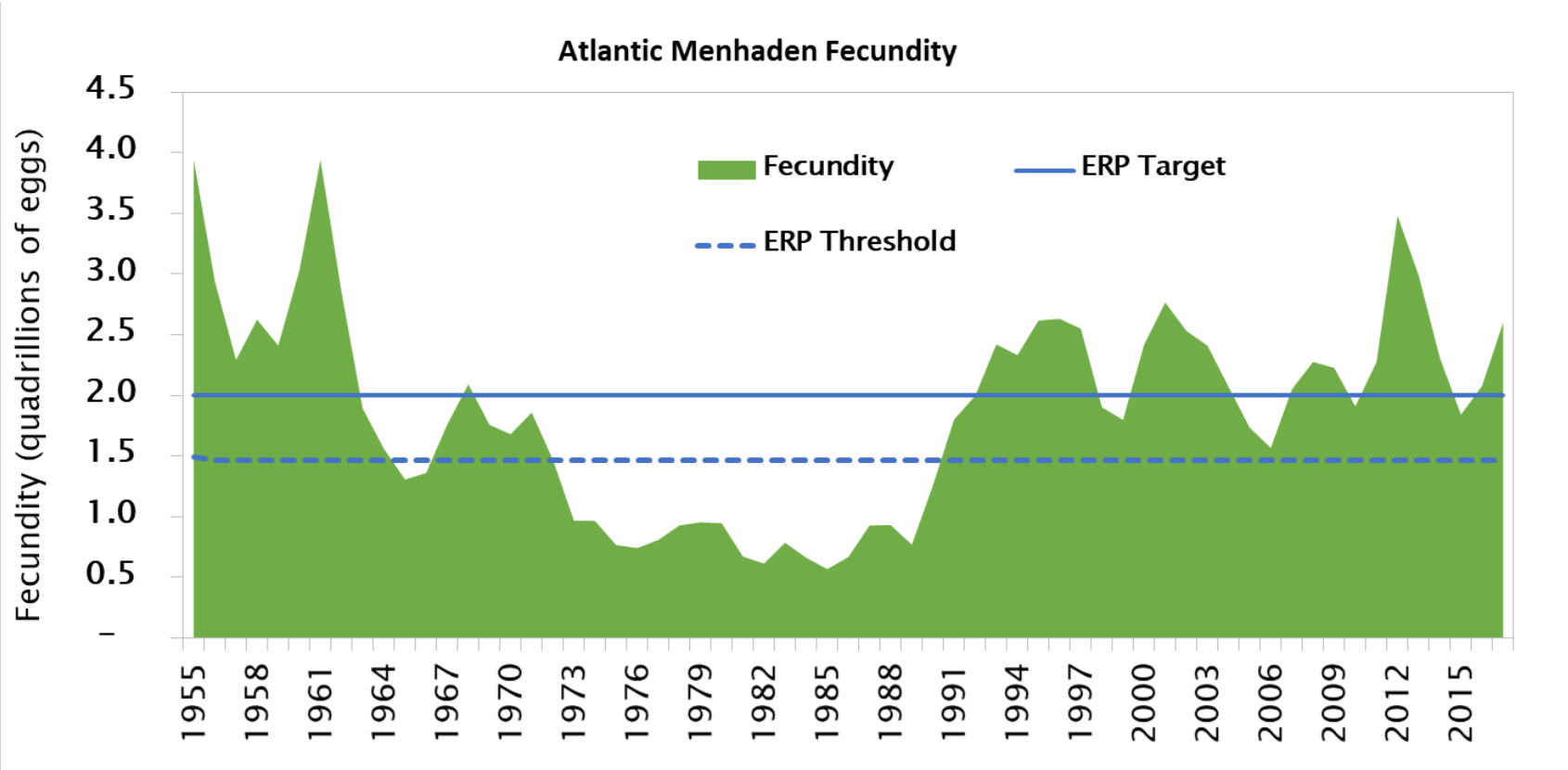


Figure 2. Atlantic menhaden fecundity, 1955-2017. The ERPs for population fecundity are FEC_{target} = 2,003,986 (billions of eggs), and $FEC_{threshold}$ = 1,492,854 (billions of eggs). FEC_{2017} = 2,601,550 billion eggs.

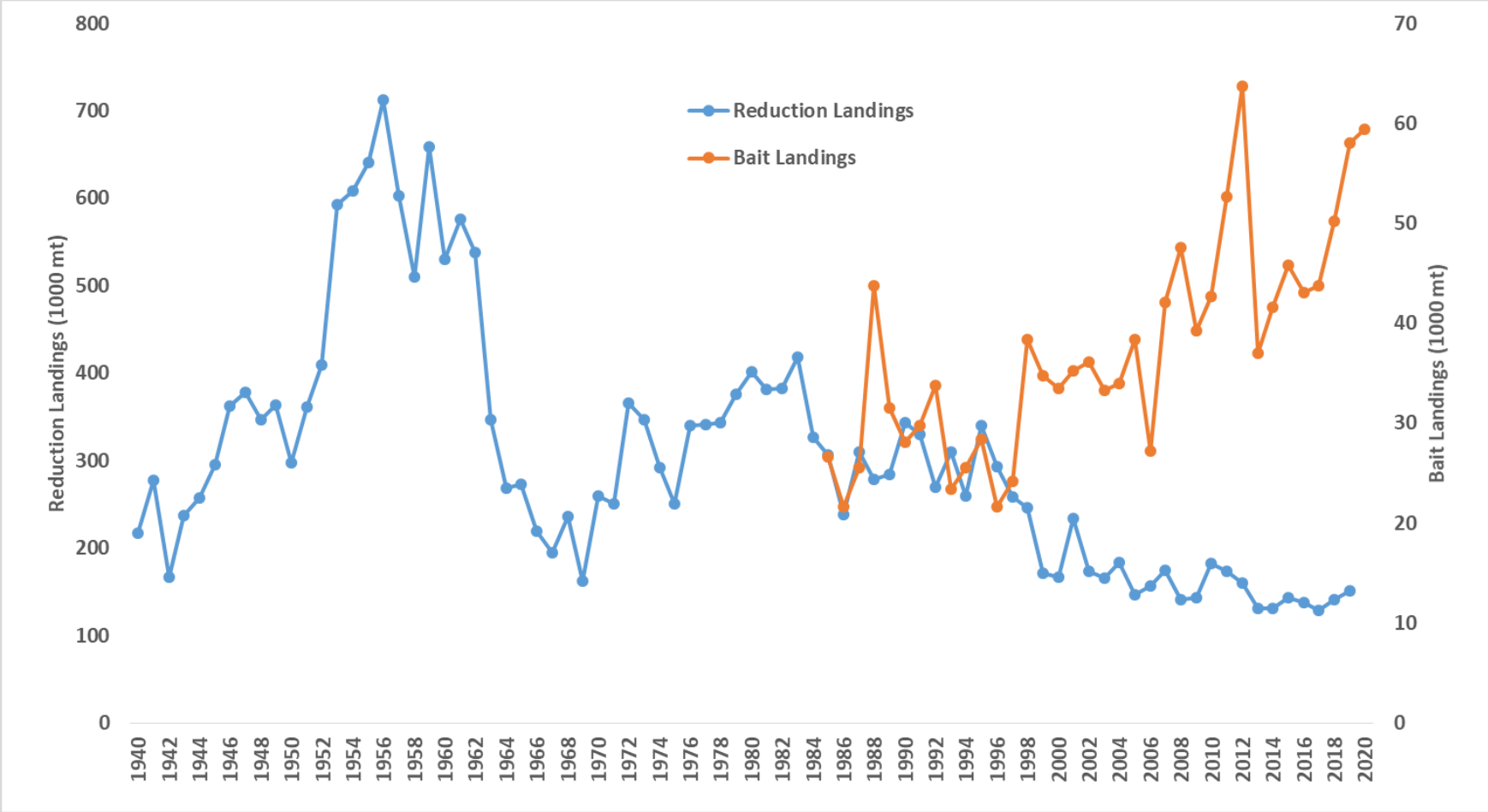


Figure 3. Landings from the reduction purse seine fishery (1940–2020) and bait fishery (1985–2020) for Atlantic menhaden. Note: there are two different scales on the y-axes.

ROY COOPER
Governor

DIONNE DELLI-GATTI
Secretary

JOHN G. BATHERSON
Acting Director

To: Kirby Rootes-Murdy, ASMFC

From: Holly White, NCDMF

CC: Chris Batsavage, Katy West, Charlton Godwin, Amanda Tong

Date: April 23, 2021

Subject: NCDMF Daily Pound Net Landings Proxy for Effort for Atlantic Menhaden

Hi Kirby,

On April 16, 2020 you requested NCDMF provide definitions for the columns "Trips, Nets, ActualPounds" used a proxy to determine the number of pound nets fished per day in the NC Menhaden Workbook. This proxy was developed to meet the requirements of Amendment 3 for mandatory catch and effort data elements for Atlantic menhaden harvested from pound nets. North Carolina does require mandatory reporting of catch but does not require effort data elements. North Carolina calculates effort based on number of pounds nets permitted to fishermen at the time of landings.

The proxy for number of pound nets fished per day has been used to complete Tab 6 of the NC Menhaden Workbook for compliance years 2018, 2019, and 2020. Table 1 provides the non-confidential daily pound net landings using the proxy for number of pound nets fished per day for review by the Plan Review Team. We have also corrected the decimal issue in the "Nets" column. The columns have been reordered for easier understanding. Previously the columns were ordered as "Trips, AcutalPounds, Nets" now ordered as "Trips, Nets, ActualPounds". With these changes, we are providing an updated NC Menhaden Workbook, updated tabs are highlighted in green.

Table 1. NCDMF non-confidential daily pound net landings using proxy for number of pound nets fished per day, 2020.

Year	Month	Day	Gear	Species	Pounds	Participants	Trips	Nets	ActualPounds	CatchperTrip	CatchperNet	CatchperActualPound	Confidential
2020	1	1	Pound Net	Menhaden	133	3	3	3	7	44	44	19	
2020	3	11	Pound Net	Menhaden	765	3	3	10	28	255	80	27	
2020	3	14	Pound Net	Menhaden	861	3	3	10	28	287	90	31	
2020	3	18	Pound Net	Menhaden	300	3	3	10	28	100	31	11	
2020	4	5	Pound Net	Menhaden	520	3	3	10	28	173	54	19	
2020	6	8	Pound Net	Menhaden	842	3	3	5	17	281	168	50	
2020	6	16	Pound Net	Menhaden	560	3	4	8	19	140	70	29	
2020	6	18	Pound Net	Menhaden	5,800	3	3	13	51	1,933	446	114	
2020	6	29	Pound Net	Menhaden	900	3	3	7	14	300	125	62	
2020	7	11	Pound Net	Menhaden	1,490	4	4	8	23	373	187	64	
2020	7	18	Pound Net	Menhaden	1,550	4	5	7	21	310	211	74	

Trips
Number of trips from the Trip Ticket database where date, gear, and waterbody of harvest are specified by dealer during transaction (landing by fisherman). Trips equals the total number of unique trip tickets where gear was a pound net by year/month/day/all waterbodies combined.

Nets
Nets have a singular pound net set permit with unique identifier for a specified location. Nets may have one or multiple 'ActualPounds' fished.

Nets are derived from the Pound Net Permit data and then applied to the Trip Ticket data that is stratified by date and waterbody. Participants with the recorded trip ticket are matched to those participants with a Pound Net Permit. An assumption is made that a Pound Net Permit participant fishes all of his nets every day. In cases where there is trip ticket data for a participant but that participant does not own a valid Pound Net Permit, an average number of nets is then applied to the trip ticket data, again stratified by date and waterbody. In cases where the effort data (nets) is still missing, an average number of nets is applied to those values stratified by date. These values were then all summed up to get the total number of nets fished.

Actual Pounds

Actual Pounds are holding pens, lead(s), one or more enclosures used for harvest of menhaden. Actual pounds was calculated the same way as nets. Instead of using Nets, Actual Pounds derived from the Pound Net Permit data was used.

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Atlantic Menhaden Management Board

FROM: Ecological Reference Point Work Group and Atlantic Menhaden Technical Committee

DATE: April 26, 2021

SUBJECT: Atlantic Menhaden Spatial Model Needs

At the 2021 Winter Meeting, the Atlantic Menhaden Management Board tasked the Ecological Reference Point Work Group (ERP WG) and Atlantic Menhaden Technical Committee (TC) to provide additional detail regarding the research recommendation in the 2019 benchmark stock assessment to "develop a spatially-explicit model." Specifically, the Board requested information on what data would be needed, a timeline for development and implementation, and if it would resolve questions regarding management of menhaden in the Chesapeake Bay.

The ERP WG and TC discussed potential approaches for developing a spatially-explicit model for Atlantic menhaden. These approaches cover a range of spatial complexity, data needs, and timelines, and provide different levels of information to support management. In this memo, the ERP WG and TC provide an initial outline of potential approaches, including the data and modeling development needs, timelines, and expected management information produced, and highlight areas where Board input is needed. The ERP WG and TC stress that the needs and timelines listed here are based on the group's current understanding of what is feasible and may change once model development and data analysis are underway. The approach the group chooses will depend on management goals, as well as data and funding availability.

Attributes	Approach
Coarse spatial scale, minimal additional data requirements	Coastwide Beaufort Assessment Model (BAM) + coastwide Northwest Atlantic Coastal Shelf Model of Intermediate Complexity for Ecosystems (NWACS-MICE) + supplemental Bay information
	Coarse spatial BAM + coastwide NWACS-MICE ERPs
Fine spatial scale, significant additional data requirements	Coarse spatial BAM + coarse spatial NWACS-MICE ERPs
	Detailed spatial BAM + detailed spatial ERPs (NWACS-MICE or alternative detailed spatial multispecies model)

1. Coastwide BAM and NWACS-MICE with supplemental Bay information

These approaches would use the existing BAM plus NWACS-MICE approach to develop coastwide ERPs for Atlantic menhaden to produce a Total Allowable Catch (TAC) that takes into account Atlantic menhaden's role as a forage fish on a coastwide basis, as is done now, but would also provide supplemental information on the Chesapeake Bay.

a. Supplemental Bay Atlantic menhaden abundance information

Approach*:* Supplemental information on absolute Atlantic menhaden abundance in the Chesapeake Bay, such as from an aerial survey, could be used to determine what proportion of the TAC could be taken from the Chesapeake Bay in order to keep exploitation in the Bay at an acceptable level. This simpler, escapement-based approach could be an efficient way to develop information to inform the Chesapeake Bay Cap; however, it would not provide broader spatial information and therefore would not provide advice for regional allocation discussions. In addition, the ERPs developed would be on the coastwide scale, and thus would not include consideration of predator-prey interactions or needs on a finer spatial scale. The ERP WG and TC also noted the uncertainty introduced by combining two different methods of abundance estimation (the BAM and the fishery-independent Bay method), and the lack of information on seasonal migration rates into and out of the Bay.

Data & development needs: This approach would not require additional model development, but would require a significant investment in a robust source of information on absolute abundance in the Chesapeake Bay, which is currently does not exist. It may be possible to use a shorter time series of abundance in this framework than the 10 years that the TC requires for indices of relative abundance within the BAM; however, this will depend on review of the data after collection. An absolute abundance survey would likely require 1-2 years of gear calibration and pilot studies, plus a minimum of 3 years data, in order to evaluate interannual variability and uncertainty in the abundance estimates from the survey, meaning this approach could potentially be taken to peer review within 5-7 years of initiating the survey. However, if interannual variability is high, more years of data would be needed before the approach is ready for management use. Although shorter time series might be sufficient for the initial analysis, the survey would need to be conducted on a regular basis in order to provide management advice in subsequent years.

b. Supplemental Bay multispecies indicators

Approach: Supplemental information such as the state of major predators (striped bass, blue fish, birds) abundance and body fat condition for the Bay could be used as ecosystem indicators to inform management control rules in parallel with the single species BAM and MICE models. Indicators would likely provide qualitative rather than quantitative advice on the Bay cap.

Data & development needs: Ecosystem indicators could be developed from existing datasets, but would require some work to synthesize different data sources and develop a meaningful control rule or traffic light approach to inform management.

2. Coarse spatial model approaches

These approaches would provide information on a coarse spatial scale, e.g., North, Mid, and South Atlantic plus a Chesapeake Bay region. However, it is important to note that, due to data limitations, the Chesapeake Bay region would include the coastal waters of Maryland and Virginia. Additional analysis of the tagging data would be required to determine the significance of including ocean waters and whether or not this information could be used to inform the Bay Cap. Both of these approaches would take approximately 5-7 year to complete, though this could change depending on funding and data availability.

a. Coarse spatial BAM with coastwide NWACS-MICE ERPs

Approach: This approach would refine the BAM to include spatial dynamics at a coarse scale and produce regional estimates of biomass, while the NWACS-MICE model would provide coastwide ERPs. The BAM plus NWACS-MICE would be used to develop a coastwide TAC, as is done now. An escapement-based approach could be used to determine what proportion of the TAC could be taken from each region. Regions would be defined to match management needs and the existing information on migration rates. Again, in the coarse approaches the Chesapeake Bay region would include Maryland and Virginia coastal waters due to its inclusion in the Bay region in the historical tagging study. The coastwide ERPs would not include the ecosystem considerations on a finer spatial scale. Currently, genetic and tagging data indicate Atlantic menhaden comprise a single stock on the Atlantic coast, and the BAM includes some consideration of spatial dynamics with the fleets-as-areas approach. Incorporating spatial structure could provide some improvements to our understanding of the stock, including differences in recruitment and life history characteristics.

Data & development needs: Catch-at-age data are already available on a coarse regional basis. Existing fishery-independent indices could be assigned to or developed at the regional level. The existing information on migration rates between large scale regions is not differentiated by age, and so the model would assume that all ages share the same migration patterns. This would introduce additional uncertainty in the spatial model. Information on the proportion of total recruitment that comes from each region could also be a limitation for this model. This approach could be attempted with the existing datasets, but would require investment of personnel time and effort. This approach would likely be ready for peer review in 5-7 years, but that frame could be longer if existing data are not adequate.

b. Coarse spatial BAM with coarse spatial NWACS-MICE ERPs

Approach: This approach would build on the coarse spatial BAM approach described above, but combine it with a coarse spatial NWACS-MICE. To develop ERPs that take into account spatial dynamics in predator-prey interactions, a spatially-explicit multispecies model is necessary. The most straightforward approach would be to combine a spatially-explicit version of the NWACS-MICE model with a spatially-explicit version of the BAM. Both models would have a similar coarse spatial scale determined by management needs and data availability. Again, note that the Chesapeake Bay region would include Maryland and Virginia coastal waters. This approach could be used to provide advice on both the Chesapeake Bay Cap and broader regional allocation discussions. For example, it would be possible to run scenarios with differing levels of

fishing in the Chesapeake Bay region to estimate specific impacts on predators that use the region.

Data & development needs: A spatially-explicit multispecies model is more data intensive than the spatially-explicit BAM. To develop a coarse NWACS-MICE spatial model, we would need estimates of dispersal rates for all modeled species, information on seasonal spawning, recruitment, and migration patterns, and also information on spatial fishing effort for all fishing fleets in the model. In absence of actual data, expert opinion and rules-of-thumb can be used to parameterize the spatial model. For calibration and validation of the spatial model, we would need reliable species distribution maps that are seasonally resolved, region-specific trends in abundance and catch, fishing effort maps, and region-specific food habit data. The scale of the existing diet data is a weakness in current data availability in developing ERPs that account for finer scale ecosystem dynamics, especially for non-finfish predators. Investment in enhanced diet data collection from new or existing fishery-independent sampling programs at the state or federal level for the species in the NWACS-MICE model would benefit these models. This approach could be attempted with the existing datasets, but would require investment of personnel time and effort. This approach would likely be ready for peer review in 5-7 years; however, that frame could be longer if existing data are not adequate or shorter if resources are made available and more time can be allocated to model development.

3. Complex Spatial Modeling Approaches

These approaches would further refine the spatial scale. If the data were available, these approaches could provide information on the Chesapeake Bay specifically (i.e., not including ocean waters) and other regions beyond the coarse spatial scale. Both of these approaches would likely take at least 10 years, though this could change depending on funding and data availability.

a. Refined spatial BAM with NWACS-MICE ERPs

Approach: This approach would develop a more refined spatial BAM, which would be able to provide information on the Chesapeake Bay specifically (separate from MD and VA ocean waters) and other regions beyond the coarse spatial scale described above. It could be used with a coastwide NWACS-MICE or a refined spatial NWACS-MICE, depending on data availability. Depending on which NWACS-MICE approach was used, this approach would provide information similar to the escapement-based approaches or the coarse NWACS-MICE approach, respectively, but on a more refined spatial scale.

Data & development needs: In order to provide information on a true Chesapeake Bay region, or other regions beyond the coarse spatial scale described above, the BAM would require more fine-scale information on migration rates at age between the regions of interest. This would require a new comprehensive tagging study to provide that information. If complementary data on seasonal spatial distribution maps and trends in abundance and catch were available for the NWACS-MICE model, ERPs could be developed on a similar scale to the BAM's regional structure. If not, coastwide ERPs could be used in conjunction with the more refined BAM model. The refined spatial ERPs require significant investment in movement studies as well as in

diet data and model development. This approach would not be feasible until the necessary movement data are available.

b. Detailed spatial BAM and detailed spatial ERPs

Detailed spatial BAM and detailed spatial ERPs

Approach: The most complex approach would be to develop a fully-realized fine-scale spatial multispecies or ecosystem model for Atlantic menhaden. This could be achieved with NWACS-MICE, or another model such as the multi-species statistical catch-at-age model developed for the 2019 ERP Benchmark Assessment. A fully realized NWACS-MICE or other spatial model would use a much finer spatial resolution (on the order of 10-minute squares) that represented habitat gradients and jurisdictional boundaries. The model could be driven by static and/or spatial-temporal habitat maps, for example from satellite data or oceanographic model. This approach could simulate a broader range of environmental and policy options, such as warming sea temperatures and species range expansion into the northern region. Higher spatial resolution in the model would allow for better representation of spatial fishing effort in and out of the Bay.

Data & development needs: The disadvantage of this approach is that it is far more computationally demanding and requires information on species-habitat interactions that may not be available for some species. Typically, the habitat preference functions are derived from survey data. Assembling habitat maps, combining survey datasets, and estimating species preference functions for the different habitat types adds considerable time to model development. For species/life stages that are not captured in any surveys, expert opinion and online data repositories such as AquaMaps can be used instead. Validating the high-resolution spatial MICE model could be done by comparing region-specific time series (similar to the coarse scale model), comparing predicted and observed species distribution maps, or on a point-by-point basis. Higher resolution movement and diet data would significantly enhance model development and result in more reliable ERP estimates. Spatially-explicit statistical catch-at-age models do exist (i.e., Stock Synthesis and others); however, they do not exist in a multispecies model construct at this point, so would require software development. This approach would not be feasible until the necessary spatial data are available.

Immediate Funding Needs

The ERP WG and the TC indicated that some form of a coarsely structured spatial model was possible to develop for the next benchmark assessment if the Board was willing to accept a longer time frame for the next benchmark (2027-2028 instead of 2025). The approach that the groups pursue will depend on management goals (see 'Management input needs' below), data availability, and development resources. Table 1 provides a comparison of the approaches based on advice provided, data needs, and timeline.

The major areas that would require or benefit from funding to address data or model limitations are summarized below. In addition, the ERP WG and TC noted that timeline for model development could be shortened somewhat with funding for dedicated modelers.

Approach	Major Funding Need
Coastwide model with supplemental Bay information	3-5+ years of reliable absolute abundance estimates for the Chesapeake Bay
Coarse spatial ERPs	Spatially and seasonally explicit diet data and spatial distributions for key predator and prey species; additional model development
Refined spatial ERPs	Spatially- and seasonally-explicit diet data for key predator and prey species; fine-scale information on migration rates between regions by age; additional model development

Management input needs

The TC and ERP WG need guidance from the Board on specific goals and priorities to determine a path forward. The ERP WG and TC pose the following questions to the Board:

- What is the primary goal for spatially-explicit modeling? (e.g., advice on Chesapeake Bay Cap, regional allocation advice, enhance accuracy of coastwide ERPs, something else)
- Are there secondary goals?
- Are the ecosystem management objectives for the Chesapeake Bay the same as those used to develop the coastwide ERPs?
- What tradeoffs is the Board willing to make between the spatial scale/detail of the modeling and the timeline for the next benchmark?
- Would the Board be satisfied with a regional approach that separates MD and VA from the rest of the coast if modeling the Chesapeake Bay separately is not feasible for the next benchmark?

For example, the primary goal could be to provide advice on the Chesapeake Bay Cap by the next benchmark assessment, and the secondary goal could be to provide information to inform regional allocations. In this case, if there were challenges with developing a model to provide regional allocation information in the next benchmark timeframe, the group could switch to an approach that would only provide advice on the Chesapeake Bay Cap. Alternatively, if the Board prioritized regional allocation in addition to the Bay Cap and indicated that they were willing to wait longer for results, the group could delay completion of the benchmark assessment in order to complete that approach.

The TC and ERP WG will need direction from the Board as soon as possible (no later than Annual Meeting) in order to pursue a spatially-explicit modeling as part of the next benchmark stock assessment and follow the current assessment schedule.

Table 1. Comparison of potential approaches for developing a spatially-explicit model for Atlantic menhaden.

Approach	Advice				Data Needs		Timeline***
	Single-spp. CB	Multi-spp. CB	Multi-spp. Regional Allocations	Fine-scale Spatial Dynamics	Possible w/ Existing Data	Addt'l data needs	
Coastwide BAM + NWACS-MICE + supplemental Bay abundance	✓					Absolute abundance estimates in C. Bay	5-7 years
Coastwide BAM + NWACS-MICE + Bay indicators	✓*	✓*			✓		5-7 years
Coarse spatial BAM + coastwide NWACS-MICE ERPs	✓**				✓		5-7 years
Coarse spatial BAM + coarse spatial NWACS-MICE ERPs	✓**	✓**	✓		✓	Better diet data for ERP species	5-7 years.
Refined spatial BAM + NWACS-MICE ERPs	✓	✓	✓			Migration at age data for desired regions, better diet data for ERP species	10+ years
Detailed spatial BAM + detailed spatial ERPs	✓	✓	✓	✓		Finer scale data (all types) for ERP species	10+ years

*: This approach would likely provide qualitative, not quantitative, information on Chesapeake Bay Cap

**: Existing data could provide information on MD and VA separately from the rest of the coast, but not Chesapeake Bay itself.

***: These timelines are preliminary estimates and could be revised once model development is underway.

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MEMORANDUM

TO: **Shad and River Herring Management Board**

FROM: **Shad and River Herring Technical Committee**

DATE: **April 26, 2021**

SUBJECT: **Recommendations on American Shad Habitat Plan Updates**

Amendment 3 to the Shad and River Herring FMP requires all states and jurisdictions to submit a habitat plan for American shad. A majority of the habitat plans were approved by the Shad and River Herring Management Board (Board) in February 2014, and it was anticipated that they would be updated every five years. The states began the process of reviewing their American shad habitat plans and making updates in 2020, however, many states encountered delays due to COVID-19. At the February 2021 Board meeting, the following habitat plan updates were approved: ME, NH, MD, NC, Savannah River, and GA.

For the May 2021 Board meeting, six additional habitat plan updates have been submitted for Board consideration: MA, RI, CT, Delaware River, SC, and FL. The updates that were made to each plan are summarized in the sections below. The TC reviewed these plans via email in April 2021, and recommends Board approval of all six plans.

Massachusetts Coastal Rivers Shad Habitat Plan
The updated plan is a major overhaul to the first MA habitat plan, including lots of editing in each section to try to bring the plan more in line with what ASMFC is looking for. Rivers have been added that have known shad runs but were not included in the first plan, in addition to changes in existing sections. Changes include the following:

- New sections on shad runs in the Jones, North, South, and Neponset rivers.
- New summary Table 1 on all known MA coastal rivers with shad runs.
- New reporting on shad electrofishing monitoring in the South River and Indian Head River.
- New maps from GIS Diadromous Fish data layer showing shad run locations with impediments.

Rhode Island Shad Habitat Plan
The updated plan includes information on projects completed since the original plan was approved, including:

Pawcatuck River Projects

- White Rock Dam Removal
- Potter Hill Fishway Improvements (although a final removal/partial removal has not been completed)

- Bradford Rock Ramp
- Lower Shannock Falls Dam Removal
- Horseshoe Falls Fishway
- Kenyon Mill Rock Ramp Fishway

Pawtuxet River Projects

- Partial Dam Removal at Pawtuxet Falls

Connecticut Shad Habitat Plan

The 2021 CT Shad Habitat Plan is a collaborative update, gathering information from all CT DEEP diadromous fisheries staff. Since 2013, the State of CT and subsequent groups have developed several plans and reports to identify threats and develop strategies to protect natural resources. New and updated information in this plan is summarized below.

Habitat Assessment

- Table 2. Assessment of historic and current spawning and rearing habitat was updated to reflect increases to access since the 2013 plan

Threats assessment

- Dam Inventory- Added a section to describe role of USACE in flood risk management of dams; CT DEEP WPLR Dam Inventory
- Discussion of historic runs in small systems
- Discussion of injury or mortality to shad due to passage
- Discussion of Repeat Spawners
- Inventory of altered water quality
    - Included additional information on history of poor water quality in CT
    - Included information history of low DO levels in LIS
    - Discussion of initiation of Shad studies to determine effects of CT River Nuclear Power Plant
    - Discussion of pollutants
- Water withdrawals- Discussion of CT DEEP Water Diversion Program
- Toxic and thermal discharge- 2015 report from Long Island Sound Study Comprehensive Conservation and Management Plan
    - CT DEEP Healthy Water's Initiative
- Channelization and dredging
    - Army Corps of Engineers- Included description of New Haven Harbor (Quinnipiac River)
- Land use inventory and assessment- Discussion of UCONN Center for Land Use Education and Research Changing Landscape Project- riparian, forest cover, land cover; Land use regulations
- Atmospheric deposition assessment- Western Long Island Sound Nitrogen, Housatonic River PCBs
- Climate change- Long Island sound Trawl Survey fish assemblage shifts due to warming water temperatures
- Competition and predation-Discussion of how past CT River research demonstrated that predators can have substantial predation impacts on adult alosines

Habitat Restoration

- Water quality improvement-Description of CT's water permit programs and monitoring
- Impingement/Entrainment at dams-Addressed through regulated hydro projects via FERC licensing process
- CT DEEP Fisheries Division Habitat Conservation and Enhancement Program- Updated description
- Climate Change planning -Updated to describe CT Governor's Council on Climate Change (GC3) Plan to develop and implement adaptation strategies to assess and prepare for the impacts of climate change in areas such as natural resources
- Shad transplantation program- Added additional details to description
- Table 3- Update to dams, current fish passage and future fish passage
- Table 4- Update to restoration and connectivity to spawning and rearing habitat since 2013
- Figure 1- Updated map

Delaware River Shad Habitat Plan

The 2020 Shad Habitat Plan from the Delaware River Basin was a significant re-write of the previous plan. The major changes to the updated plan are summarized below by section.

- An Introduction section was added to describe the purpose of the document formation, information about the Delaware River Basin Fish and Wildlife Management Cooperative, and information on a new funding program for the basin that may support future habitat restoration for shad and herring. Some of this information was included in the Overview section of the previous version.
- The Background section (previously called the Overview), details were refined (river distance, drainage area, etc.) and more information was included related to the salt front location as well as primary spawning grounds used historically in the main stem (much of this was pulled from the previous Main Stem section). The section also includes a more detailed description about the impacts to habitat and water quality that ultimately restricted historic shad habitat access and availability in the basin.
- The Main Stem Habitat Assessment section has updated and includes more detailed information on current habitat availability in the main stem.
- The Tributary Habitat Assessment section was updated to provide a table with specific information on each tributary to the Delaware River, including the current extent of available habitat and historic extent of habitat in each tributary. More detail was added to the state descriptions in this section that are supported by the information provided in the table. A map was also included to delineate the extent of current shad runs in the Delaware River and tributaries.
- Nursery Habitat section was updated with additional and historic and current records of juvenile shad distribution in the river and describes the Co-op's young-of-year sampling locations.
- In the Threat Assessment section, a table was added to include names and details from all identified barriers known to occur in the range of historic shad habitat in the Delaware River Basin. A map of the barrier locations was also included. The

Restoration/Mitigation portion of this section was moved to its own section in the updated plan and more details and updated information were included there about prioritizing barriers for removal/passage. Some updates were provided to the Climate Change section. Invasive species (including blue catfish, flathead catfish, and northern snakehead) were added under the trophic structure heading as another concern. The flow alteration portion was expanded to describe recent improvements in water management and continued areas of concern. Details were added to the impingement/entrainment portion to better describe the potential impacts of cooling water intake structures on migratory fish, including shad and herring. The threats text for natural gas development, dissolved oxygen, emerging contaminants, American eel weirs, and dredging were removed.

South Carolina Shad Habitat Plan

The 2020 Shad Habitat Plan from South Carolina was an update to the previous plan. Changes to the updated plan are summarized below.

- Acknowledgement that a joint Shad Habitat Plan for the Savannah River SC/GA was submitted and approved by the TC and Management Board.
- Updated information regarding the Yadkin/Pee Dee River FERC license (P-2206) which was issued to Duke Energy.
- For all river systems: access links for new regulatory online tools that include updated information for point source discharge, dredging permits, and any mining activities.
- Updated information regarding the Santee Cooper FERC license (P-199), not yet issued.
- Additional Fish Passage Considerations

Florida Shad Habitat Plan

The 2020 Florida Shad Habitat Plan includes updates to three systems, summarized below.

<u>St. Johns River</u>

- City of Deltona has received a permit for a raw water intake in Lake Monroe. This is located in the littoral zone and the Army Corps of Engineers determined no adverse impact on critical fish habitat or federally managed species. The footprint of intake is <1 acre and littoral zone is far from the run of the river where American Shad eggs and larvae have been located. The project is intended to offset groundwater over-pumping that is harming spring flow at a spring ~15km downstream of lake.
- Florida Department of Environmental Protection updated the Basin Management Action Plan (BMAP) for Lake Jesup, a lake that discharges by the spawning grounds
- Florida Department of Environmental Protection established BMAPs for three first magnitude springs that discharge to the middle St. Johns River
- Added reference to the annual "State of the River Report"

<u>Econlockhatchee River</u>

- Updated to include mention of historic reference of shad spawning in the <u>Econlockhatchee</u> and recent findings from monitoring that demonstrate continued use of the <u>Econlockhatchee</u> by spawning shad

- Added a reference about hydrologic changes over time

Ocklawaha

- The St. Johns River Water Management District updated its review of the impacts of removing the dam on nutrient dynamics downstream. Reference added.