

Atlantic States Marine Fisheries Commission

Executive Committee

*August 2, 2016
8:00 – 10:00 a.m.
Alexandria, Virginia*

Draft Agenda

1. Welcome/Call to Order, *D. Grout*
2. Committee Consent **Action**
 - Approval of Agenda
 - Approval of Meeting Summary from May 2016
3. Public Comment
4. Discuss ASMFC Lead Staff on Assessments
5. Discuss Conservation Equivalency
6. Discuss PDT Membership White Paper
7. Discuss Commission-specific Meeting Procedures
8. Discuss Renaming the Hart Award
9. Discuss Health Benefits for Retired ASMFC Employees
10. 75th Annual Meeting Update, *L. Leach*
11. Discuss ACCSP Governance (Closed Session)
12. Other Business/Adjourn

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

The meeting will be held at the Westin Alexandria; 400 Courthouse Square, Alexandria, VA; 703.253.8600

Vision: Sustainably Managing Atlantic Coastal Fisheries

**MEETING SUMMARY OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
EXECUTIVE COMMITTEE**

**Westin Alexandria
Alexandria, VA
May 3, 2016**

INDEX OF MOTIONS

- 1. Approval of Agenda by Consent (Page 1)**
- 2. Approval of Meeting Summary from February 3, 2016 by Consent (Page 1)**
- 3. Move approval of the FY17 budget as presented. Vice Chair Gilmore, on behalf of the Administrative Oversight Committee; passed unanimously. (Page 1)**
- 4. Move that the Commission should use confidential data when calculating state assessments. Robert Boyles, Dave Simpson; passed unanimously. (Page 1)**
- 5. Move that we prioritize the SK funding as the fishery independent surveys minus the South Carolina red drum trammel net and low priority SEAMAP surveys. Robert Boyles, Dennis Abbott; passed 12-1-2 (Page 2)**
- 6. Move to approve the draft ACFCMA document as submitted, adding Florida information when received. Robert Boyles, Brandon Muffley; passed unanimously (Page 2)**
- 7. Move that the Executive Committee bring forward to the full Commission for its consideration the integration of the ACCSP under ASMFC governance. Spud Woodward, Pat Keliher; passed unanimously. (Page 2)**
- 8. Adjournment by Consent (Page 2)**

ATTENDANCE

Committee Members

Pat Keliher, ME (AA)	John Clark, DE (AA proxy)
Doug Grout, NH (AA)	Roy Miller, DE (GA Chair)
Dennis Abbott, NH (LA Chair)	David Blazer, MD (AA)
Dan McKiernan, MA (AA proxy)	John Bull, VA (AA)
David Simpson, CT (AA)	Michelle Duval, NC (AA proxy)
Jason McNamee, RI (AA)	Robert Boyles, SC (AA)
Jim Gilmore, NY (AA)	Spud Woodward, GA (AA)
Brandon Muffley, NJ (AA proxy)	Jim Estes, FL (AA proxy)
Andy Shiels, PA (AA proxy)	

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

Other Commissioners

David Borden, RI (GA)	Sarah Peake, MA (LA)
Pat Geer, GA (GA Proxy)	Ritchie White, NH (GA)
Ed O'Brien, MD (LA proxy)	

Staff

Bob Beal	Pat Campfield
Laura Leach	Mike Waine
Toni Kerns	

Others

John Bullard	Derek Orner
Kelly Denit	Cheri Patterson
Wilson Laney	Colby Schcaht
Mike Millard	

CALL TO ORDER

The Executive Committee of the Atlantic States Marine Fisheries Commission convened in the Whitney Room of the Westin Alexandria on May 3, 2016. It was called to order at 7:45 a.m. by Chairman Doug Grout.

APPROVAL OF AGENDA

The agenda was approved with the addition of a report of the federal funding group, and the deletion of the discussion on offshore monuments.

APPROVAL OF PROCEEDINGS

The summary minutes from the February 3, 2016 meeting were approved as presented.

PUBLIC COMMENT

There was no public comment.

REPORT OF THE AOC

Vice Chair Jim Gilmore presented the report of the Administrative Oversight Committee (AOC), who met via conference call on April 27, 2016 to review the Proposed FY17 Budget. Vice Chair Gilmore moved approval of the FY17 budget; the motion passed unanimously.

STATE ASSESSMENTS/DATA USED

Mr. Beal noted that we were able to hold the state assessments level again this year.

Mr. Beal led a discussion on using confidential versus non-confidential data when calculating the state assessments. To date, we have used non-confidential data, but we have the ability to use confidential data. Mr. Beal noted that it would change

some assessments, so wanted the Executive Committee to decide which data to use. After a brief discussion, Mr. Boyles moved “The Commission should use confidential data when calculating state assessments.” The motion was seconded by Mr. Simpson and was approved unanimously.

BLACK SEA BASS MANAGEMENT IN MAINE

Mr. Keliher asked if Maine should request de minimus status with regard to the management of Black Sea Bass in Maine? He is bringing this before the Executive Committee because of the changing demographic of stocks due to climate change.

A brief discussion ensued, and Mr. Beal noted that the Mid Atlantic Fishery Management Council’s federal plan is a complicating factor in this issue, and there are many factors that weigh into this discussion, with the bottom line being “how do we manage fish stocks in light of the changing climate?”

SK RESEARCH PROJECTS

Mr. Beal provided an update on the progress of the projects currently being funded by SK, as well as requested that the committee prioritize proposed projects for new SK funding, projected to be about \$500K. After a very thorough discussion, the Chair directed the Executive Director to develop a criteria-based way to evaluate projects for use next year if we get additional SK funding.

For this year’s potential funding, Mr. Boyles moved “that we prioritize the SK funding as the fishery independent surveys minus the South Carolina red drum trammel net and low priority SEAMAP surveys.” The motion

was seconded by Mr. Abbott and it passed 12-1-2.

PDT MEMBERSHIP

Concern was expressed that having Board members on Plan Development Teams (PDTs) does not look good and potentially can cause some folks, especially in the industry, to question the objectivity of the PDT. Mr. McNamee noted that it comes down to resources, and the input of board members is valuable and suggested that perhaps board members should not vote at the table. After a brief discussion the Chair directed the Executive Director to develop a white paper with number of options, starting with status quo, and including that no Commissioner can be a member of a PDT. Mr. White requested that the existing board chairs be surveyed after developing white paper to get their feedback. The white paper will be discussed at the August Executive Committee meeting.

FUTURE ANNUAL MEETINGS

The Commission's 75th annual meeting will be held October 23 – 27, 2016 in Bar Harbor, Maine; in 2017 we'll meet in Virginia; and in 2018 we'll meet in New York.

ACFCMA FUNDING

Following previous discussions regarding stagnant ACFCMA funding relative to the increases in the "Council and Commissions" line in the NOAA budget, a document was drafted to highlight the state impacts of limited resources. Mr. Boyles moved "to approve the draft ACFCMA document as submitted, adding Florida information when received." The motion was seconded by Mr. Muffley and passed unanimously.

OTHER BUSINESS

Mr. McNamee noted that the committee was beginning to draft the risk policy and they are looking for board members to participate on this committee. If interested please let Pat Campfield know.

Mr. Keliher shared the sad news of Mr. Patten D. White's passing. He requested consideration of changing the Hart Award to the Hart-White Award. There was support for this, but due to time constraints the Chair suggested that there be further discussion about this at the August Executive Committee meeting.

CLOSED SESSION

The Executive Committee went into a closed session to discuss the ACCSP Governance issue. Ms. Cheri Patterson gave an overview of the current ACCSP governance structure.

Mr. Woodward moved "the Executive Committee bring forward to the full Commission for its consideration the integration of the ACCSP under ASMFC governance." The motion was seconded by Mr. Keliher and passed unanimously.

The Chair brought forward the annual review of the Executive Director. A request was made that next year the review be prepared before the spring meeting and circulated to the Executive Committee members so it can be discussed at the spring meeting.

ADJOURN

CHAIRMAN DOUG GROUT adjourned the Executive Committee meeting at 10:25 a.m.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Executive Committee

FROM: Management and Science Committee and the Assessment and Science Committee

DATE: April 25, 2016

SUBJECT: Changes to the Conservation Equivalency Guidance Document

ASMFC uses conservation equivalency in a number of interstate fishery management programs. Conservation equivalency (CE) allows states/jurisdictions (hereafter states) flexibility to develop alternative regulations that address specific state or regional differences while still achieving the goals and objectives of Interstate Fishery Management Plans (FMPs). A Conservation Equivalency Guidance Document was approved in 2004 to provide policy and technical guidance on the application of conservation equivalency in interstate fishery management programs developed by the Atlantic States Marine Fisheries Commission (ASMFC). This guidance document received limited implementation since its approval; therefore, current processes to establish conservation equivalency programs varies widely among species FMPs.

The Executive Committee tasked staff to review the guidance document to provide information on where there are inconsistencies with current applications and where additional clarification on process may be warranted. The guidance document is outlined in 5 major sections: General Policy Guidance, Standards for State Conservation Equivalency Proposals, Review Process, Coordination Guidance, and Public Perception. This document presents policy questions on specific sections of the document regarding guidance on development, submission, review, and approval of conservation equivalency proposals that were presented to and then considered by the Management and Science Committee (MSC) and the Assessment and Science Committee (ASC). Recommendations from the MSC and ASC were incorporated into this memo for Executive Committee review and consideration.

Section 1: General Policy Guidance

The general policy guidance section of the 2004 Guidance Document describes how the Plan Development Team (PDT) develops CE within an FMP, gives some direction on the length a program can be in place, and the committees the Plan Review Team (PRT) should see feedback from.

Policy Questions:

1) Charter Guidance: The ISFMP Charter allows for the use of CE in Commission management plans, unless the FMP specifically states it cannot be used. The general guidance section does not clearly describe Charter direction or the two ways in which conservation equivalency programs are utilized by states.

- Should the section be revised to clearly state the Charter guidance? Should it be revised to state through what process CE can be established: (1) FMPs (amendments or addenda) and (2) proposal submitted by the state?

ASC/MSC recommendation: Agreed with suggested change to reflect Charter guidance.

2) More Restrictive Measures: This section does not give direction to states when proposals are put forward for measures that are more conservative than a plan requires.

- Should the section be revised to clearly define when a CE proposal is required and when it is not? (e.g. Conservation equivalency proposals and Board approval are not required when states adopt more restrictive measures than those required in an FMP including but not limited to: higher minimum size, lower bag limit, lower quota, lower trip limit, closed or shorter seasons.)

Possible Language Change:

Conservation equivalency proposals and Board approval are not required when states adopt more restrictive measures than those required in the FMP (e.g., higher minimum size, lower bag limit, lower quota, lower trip limit, closed or shorter seasons). These changes to the management program should be included in a state's annual compliance report or state implementation plan.

ASC/MSC recommendation: Expressed concern over the difficulty in determining whether proposed measures are actually "more restrictive" due to unexpected consequences that may arise (e.g., a larger minimum size limit could increase discards). Recommend all CE proposals, regardless of the measures they propose, must be reviewed and considered by the board.

Section 2: Standards for Conservation Equivalency Proposals

This section of the Guidance Document intends to provide a template for states to follow when developing conservation equivalency proposals. Current practices are not reflected in this section.

1) Technical Committee (TC) Input: The original policy does not address that the TC may need to provide input to states regarding analysis and usable datasets prior to states submitting CE proposals.

- Should the guidance be revised to state the TC should determine a recommended level of precision for all data and analyses used in proposals unless previously determined by the management board or FMP? This information may be requested by the state prior to the submission of their proposal.

Possible Language Change:

The TC should determine a recommended level of precision for all data and analyses, unless previously determined by the board or FMP. States may request this information prior to the submission of their proposal.

ASC/MSC recommendation: Agreed with suggested change, with the clarification that states have the option, but are not required, to ask for TC input.

2) Implementation Timeframe: The Guidance Document states all proposals must include how long the equivalent measures will be in place. It also states the timeframe should be linked to the next assessment or expected collection of additional data. It states plans should sunset after 3 years unless justification is provided for a longer timeframe. Expiration of proposals is intended to provide periodic reviews. This guidance does not reflect current practice. CE timeframes are rarely linked to assessments or data collection in state proposals. Most often they either expire at the end of the fishing year or they do not have a set expiration date.

- Should the guidance be simplified to state all proposals should include the length of time the measures are intended to be in place and the timing of the reviews of the measures? This would remove the linking of the proposal timeframe to assessments and data collection.

Possible Language Change:

The proposal must include the length of time the state is requesting CE and a review schedule. If the state does not intend to have an expiration date for the CE program it should be clearly stated in the proposal with justification.

ASC/MSC recommendation: Agreed with suggested change, and requested the proposals identify the length of time measures are intended to be in place and the timing for reviews.

Section 3: Review Process

This section of the Guidance Document provides direction to states on timelines, the review process, and the approval process. The timeline guidance for proposal submission does not reflect current practice and some of the direction on what committees should review proposals is not clear. It is recommended the section header be revised to: *Review and Approval Process*.

1) Timing: The current guidance requires a state to notify the Board chair three months in advance of a Board meeting that they intend to submit a CE proposal. Completed proposals are then due two months prior to the Board meeting.

- Current practice provides more flexibility for the submission of CE proposals. Should the guidelines be changed to reflect current practice? Current practice allows the submission of proposals by the states at any time. The review of proposals submitted less than two months in advance of a board meeting is at the discretion of the Board Chair, while those submitted less than two weeks in advance are not considered at the upcoming board meeting. This practice is intended to allow a flexible submission schedule but still consider the workload of the committees reviewing the proposal.

Possible Language Change:

If a state is submitting a proposal outside of an implementation plan process, it must provide the proposal two months in advance of the next board meeting to allow committees sufficient time to review the proposal and to allow states to respond to any requests for additional data or analyses. States may submit conservation equivalency proposals less than two months in advance of the next board meeting, but the review and approval at the upcoming board meeting is at the discretion of the Species Management Board Chair. Proposals submitted less than two weeks before a meeting will not be considered for approval at that meeting.

ASC/MSC recommendation: Agreed with suggested change as described in the language above.

2) Committee Guidance: The Guidance Document does not provide clear advice on the distribution of CE proposals to committees. It first states, upon receipt of the proposal the PRT will determine what additional input will be needed from the Technical Committee, Law Enforcement Committee, the Committee on Economics and Social Sciences. This would indicate the PRT determines which committees should complete a review. The next sentence contradicts this advice by stating the PRT will distribute and make the proposal available to all committees for possible comment.

- Should the document be revised to clarify what committees should review the proposals? Under current practice, the PRT reviews the proposal and then determines which committees should review the proposal based on its content. The PRT then distributes the proposal to the necessary committees for review.

Possible Language Change:

Upon receipt of the proposal, the PRT will determine what additional input will be needed from: the Technical Committee (TC), Law Enforcement Committee (LEC), and Committee on Economic and Social Sciences (CESS). The PRT will distribute the proposal to all necessary committees for comment.

ASC/MSC recommendation: Agreed with suggested change to reflect current practice.

3) AP Guidance: Current guidance states committee reviews will occur before the AP reviews and comments on CE proposals, and that the AP will receive the other committees' reports. This is intended to give the Advisory Panel as much information as possible to aid in their recommendation to the Board. However, time constraints may not allow all committees to complete their reviews prior to the meeting of the AP.

- Should the guidance document be revised to account for possible time constraints? In general manner.

Possible Language Change:

The PRT will compile all of the input and forward the proposal and comments to the Advisory Panel when possible. However, when there are time limitations, the AP may be asked for comments on a proposal prior to completion of other committee reviews.

ASC/MSC recommendation: Agreed with suggested change, the AP may have to review the proposal before receiving other committees' reports due to time constraints.

4) PRT Recommendation: The current guidance requires the PRT to make a recommendation to the Board on approval, rejection, or conditional approval of CE proposals. However, in current practice, the PRT determines if the state's proposal is equivalent to the measures contained in the FMP. In addition, the Guidance Document does not require the PRT to evaluate whether the proposal follows this policy document.

- (1) Should the guidance document be revised to reflect current practice? It has been the responsibility of the board to determined approval, rejection, or conditional approval of CE proposals.
- (2) When the PRT reviews CE proposals, should the review indicate whether a state's CE proposal followed the guidance document?

Possible Language Change:

The PRT will forward to the Board the proposal and all committee reviews, including any minority reports. The PRT will provide comment on whether the proposal is or is not equivalent to the standards within the FMP.

The PRT reviews should address whether a state's proposal followed the CE standards outlined in this policy, and any additional specifications included in the FMP.

ASC/MSC recommendation:

- 1) Agreed with suggested change and clarification, the Board determines approval, rejection, or conditional approval.
- 2) Agreed with suggested change. Commented that CE proposals should follow the guidance document and deviation will be highlighted by the PRT.

5) Implementation Timing: Under the current guidance, conservation equivalency programs are encouraged to be implemented at the beginning of the fishing year. Specific guidance on implementation timing may not be necessary.

- Under current practice the Board sets implementation dates for CE programs upon review and approval of CE proposals. Should the document be revised to reflect this practice?

Possible Language Change:

The Board will decide whether to approve the conservation equivalency proposal and will set an implementation date through final action.

ASC/MSC recommendation: Recommended implementation timing should be requested in the original state CE proposal. The Board will then set an implementation date for CE proposals when considering them for final action, taking into account the requested implementation date.

6) Review Timeline: The current Guidance Document establishes a timeline by which the Board will review CE plans. It states the Board designates that all CE plans will be reviewed at one meeting per year. The Board does not need to establish a specific meeting to review conservation equivalency because the timing for review and approval of conservation equivalency proposals is already addressed in this policy and is not consistent with this guidance of one meeting per year.

Should this language be deleted from the guidance document?

Language to be Deleted:

Where applicable, the Board should develop a schedule for each species to designate one meeting per year to address conservation equivalency plans. When a board cannot meet in a timely manner, and at the discretion of the Board and Commission Chair, boards may have the ISFMP Policy Board re-approve conservation equivalency plans.

ASC/MSC recommendation: Agreed with suggested deletion. The Board does not need to designate a meeting to review CE proposals because they already have established a review timeline in Section 3.1 above.

Section 4: Coordination Guidance

This section of the Guidance Document discusses the considerations states should take into account when conservation equivalency proposals impact coordination of management with federal partners. The current document does not include US Fish and Wildlife Service as one of those partners.

- While management changes from US Fish and Wildlife Service are less frequently necessary than other federal partners, they do occur. Should US Fish and Wildlife Service be added to the document?

ASC/MSC recommendation: Agreed with suggested change to add US Fish and Wildlife Service.

DRAFT

Atlantic States Marine Fisheries Commission

**CONSERVATION EQUIVALENCY:
Policy and Technical Guidance Document**



Drafted – April 27, 2004

Introduction

The purpose of this document is to provide policy and technical guidance on the application of conservation equivalency in interstate fisheries management programs developed by the Atlantic States Marine Fisheries Commission. The document provides specific guidance for the states, species management boards, and the technical support groups to follow during the development and implementation of fishery management plans, amendments, or addenda; as well as guidance on development, submission, review, and approval of conservation equivalency proposals.

Background

The Atlantic States Marine Fisheries Commission (ASMFC) employs the concept of conservation equivalency in a number of interstate fishery management programs. Conservation equivalency is used to allow states a degree of flexibility in developing regulations to address specific state or regional differences while still achieving the goals and objectives of ASMFC management programs. Given that the species managed by ASMFC cross many state boundaries, it is often difficult to develop one-size-fits-all management measures, which necessitates the need to use conservation equivalency.

Conservation equivalency is currently defined in the Interstate Fisheries Management Program (ISFMP) Charter as:

“Actions taken by a state which differ from the specific requirements of the FMP, but which achieve the same quantified level of conservation for the resource under management. One example can be, various combinations of size limits, gear restrictions, and season length can be demonstrated to achieve the same targeted level of fishing mortality. The appropriate Management Board/Section will determine conservation equivalency.” The application of conservation equivalency is described in the document Conservation Equivalency Policy and Technical Guidance Document

In practice, the ASMFC frequently uses the term “conservation equivalency” in different ways depending on the language included in the plan (see appendix 1). For example in the Tautog FMP, conservation equivalency is used in the broadest sense, in that all states were required to achieve a 29% reduction in fishing mortality with no specific options listed in the document. In the Summer Flounder FMP, each state is required to achieve a state-specific reduction using the table and methodology developed annually by the Management Board. The Striped Bass FMP establishes a 2 fish bag limit and a 28-inch minimum size standard for the coastal recreational fishery, however states can vary these measures if it can be demonstrated that the potential recreational harvest will be equivalent to harvest that would have occurred under the standard measures in the plan.

Due to concerns over the lack of guidance on the use of conservation equivalency and the lack of consistency between fishery management programs, the ISFMP Policy Board accepted a recommendation from the Management and Science Committee and formed a sub-committee to address conservation equivalency. This sub-committee was charged

with developing a workshop to “develop options and recommendations for improving the use and effectiveness on conservation equivalency in Commission fishery management plans”. This workshop was held on October 17, 2001 and provided definite recommendations for refining the application of this management tool.

Based on the results of the workshop another sub-committee was formed comprised of commissioners and representatives from technical committees, the Law Enforcement Committee, the Management and Science Committee, the National Marine Fisheries Service, and the Committee on Economics and Social Sciences. The recommendations included in this document were developed by this sub-committee during meetings on December 3-4, 2002 and December 3, 2003. These recommendations will be reviewed and approved by the Management and Science Committee and ISFMP Policy Board.

General Policy Guidance

Conservation equivalency is a tool the ASMFC uses frequently to provide the states flexibility in developing and implementing regulations to achieve the goals of interstate fisheries management programs. The use of conservation equivalency will continue to be an integral part of the Commission management process.

During the development of a management document the Plan Development Team (PDT) has the responsibility to recommend if conservation equivalency should be permitted for that species. The board should provide a specific determination if conservation equivalency is an approved option for the fishery management plan, since conservation equivalency may not be appropriate or necessary for all management programs. The PDT should consider stock status, data availability, range of the species, socio-economic information, and the potential for more conservative management when stocks are overfished or overfishing is occurring when making a recommendation on conservation equivalency. During the approval of a management document the Board will make the final decision on the inclusion of conservation equivalency.

If conservation equivalency is determined to be appropriate, the conservation equivalency process should be clearly defined and specific guidance should be supplied in the fishery management documents. Each of the new fishery management plans, amendments, or addenda should include the details of the conservation equivalency program. The guidance should include, at a minimum, a list of management measures that can be modified through conservation equivalency, evaluation criteria, review process, and monitoring requirements. If possible, tables including the alternative management measures should be developed and included in the management documents. The development of the specific guidance is critical to the public understanding and the consistency of conservation equivalency implementation.

The states have the responsibility of developing conservation equivalency proposals for submission to the Plan Review Team (see standards detailed below). Upon receiving a conservation equivalency proposal the PRT will initiate a formal review process as detailed in this guidance document. The state submitting the conservation equivalency

proposal has the obligation to ensure proposed measures are enforceable. If the PRT has a concern regarding the enforceability of a proposed measure it can task the Law Enforcement Committee with reviewing the proposal. Upon approval of a conservation equivalency proposal, the implementation of the program becomes a compliance requirement for the state. Each of the approved programs should be described and evaluated in the annual compliance review and included in annual FMP Reviews.

The management programs should place a limit on the length of time that a conservation equivalency program can remain in place without re-approval by the Board. Some approved management programs may require additional data to evaluate effects of the management measures. The burden of collecting the data falls on the state that has implemented such a conservation equivalency program. Approval of a conservation equivalency program may be terminated if the state is not completing the necessary monitoring to evaluate the effects of the program.

The Plan Review Team (PRT) will serve as the “clearing house” for approval of conservation equivalency proposals. All proposals will be submitted to the PRT for review. The PRT will have the responsibility of collecting all necessary input from the technical committee, Law Enforcement Committee, and Committee on Economics and Social Sciences. The PRT will compile input from all of the groups and forward a recommendation to the management board. Review and input from the Advisory Panel will also be forwarded to the board.

Standards for state conservation equivalency proposals

Each state that is seeking to implement a conservation equivalency program must submit a proposal for review and approval. It is the state’s responsibility to supply the necessary information and analysis for a complete review of the proposal. The following section details the information that needs to be included in each proposal. Proposals that include an excessive number of options may delay timely review by the PRT and other groups and may ultimately delay the report to the Board. The states should limit the number of options included in a proposal or prioritize the options for review.

1. The proposal must include rationale on why or how an alternate management program is needed in the state. Rationale may include, but are not limited to, socio-economic grounds, fish distribution considerations, size of fish in state waters, interactions with other fisheries, protected resource issues, and enforcement efficiency.
2. Each proposal must include a description of how the alternative management program meets all relevant FMP objectives and management measures (FMP standards, targets, and reference points). This description must include necessary analyses to quantify the effects of the alternate management program. The analyses should be based on the most recent Board approved stock assessment. There should be sufficient information included in the proposal for the Plan

Review Team to review the proposal without additional documentation or explanation.

3. Each proposal must include a description of available datasets used in the analysis, description of how the data are collected, detailed description of state level data collection programs, and information on sampling targets/sample distribution/CV/post-stratification/etc. The proposal should also describe limitations of data and any data aggregation. All the landings data used should have a set level of precision as determined by the Technical Committee. The species technical committee should develop data standards for other types of data that may be used in a conservation equivalency proposal. Any states that do not meet the approved precision standards should conduct sensitivity analyses to determine the effects of the uncertainty in the data.
4. The proposal must include the length of time the state is requesting conservation equivalency. The timeline should be linked to the next assessment update or the expected collection of additional data. The timeline should be consistent with plan horizon with a maximum of 3 years (sunset) unless justification is provided for a longer period of time or an indefinite period of time is requested. A state can resubmit an updated proposal following the expiration and the board can re-approve the alternate measures. The expiration of conservation equivalency programs is intended to provide periodic reviews of alternate plans to ensure they are consistent with the relevant plan objectives.
5. Each proposal must justify any deviations from the conservation equivalency procedures detailed in the FMP. The state should conduct analyses to compare new procedures to procedures included in the plan, as appropriate, including corroborative information where available.
6. Each proposal should include a plan for follow-up and monitoring of potential impacts of the conservation equivalency proposal. This plan should include a description of the process that will document the results from a conservation equivalency measure relative to the FMP requirements and the annual reporting requirements. This proposal must provide a monitoring schedule to evaluate the effectiveness of a conservation equivalency program.

Review Process

Implementation of new amendments/FMPs should include timelines and a review process for conservation equivalency proposals. However, the review process and timeline needs to be established for all conservation equivalency proposals that are submitted outside of the implementation of a new management document.

The following is a list of the steps and timelines for review and approval of conservation equivalency proposals. Any deviations from the following process should be included in the plan/amendment.

1. Conservation equivalency should be approved by the Management Board and, where possible implemented at the beginning of the fishing year.
2. A state must declare the intent to submit a conservation equivalency proposal to the species board chair three months prior to the a scheduled ASMFC meeting week. The state will then be required to submit the proposal to the board chair two months prior to the meeting week. The board chair will then submit the proposal to the Plan Review Team (PRT) for review.
3. The PRT should notify the state that the proposal is complete.
4. Upon receipt of the proposal the PRT will determine what additional input will be needed from the Technical Committee, Law Enforcement Committee, the Committee on Economics and Social Sciences. The PRT will distribute and make the proposal available to all committees for possible comment. The review should include a description of the impacts on or from adjoining jurisdictions or other management entities (Councils and/or NMFS). If possible this description should include qualitative descriptions addressing enforcement, socio-economic issues and expectations from other states perspective (shifts in effort). The review should highlight efforts to make regulations consistent across waterbodies. The PRT will compile all of the input and provide a recommendation for approval of the proposal to the management board.
5. The PRT will compile all of the input and forward the proposal and comments to the Advisory Panel. The Chair of the Advisory Panel (AP) will compile the AP Comments and provide to the Management Board.
6. The PRT will provide the following type of recommendations – approval, rejection, or conditional approval. The PRT should provide rationale for the recommendation, including improvements that could be made if the proposal was rejected. The report to the board should include the input provided by all the committees that were consulted by the PRT. Any minority reports that were developed should also be forwarded to the board. If possible the PRT should identify potential cumulative effects of all conservation equivalency plans under individual FMPs (e.g. impacts on stock parameters).
7. The management board will review and take action on the proposal. Board action should be based on the PRT recommendation as well as other factors such as impacts to adjoining states and federal management programs. A schedule should be developed for each species to provide one scheduled meeting per year to address conservation equivalency plans, where applicable. When a board cannot meet in a timely manner and at the discretion of the board and Commission Chair, the boards have the option to have the ISFMP Policy Board approve the conservation equivalency plan.

8. The PRT will evaluate whether the measures implemented under a state conservation equivalency plan are in compliance as part of the annual compliance review. The PRT will also evaluate whether the state conservation plan meets the goals of the species FMP. The board will determine if modification of the state conservation equivalency plan is required.

Coordination Guidance

The Commission's interstate management program has a number of joint or complementary management programs with NOAA Fisheries and the Fishery Management Councils. Conservation equivalency creates additional burden on the Commission to coordinate with our federal fishery management partners.

The Commission's FMPs may include recommendations to NOAA Fisheries for complementary EEZ regulations. Conservation equivalency measures may alter some of the recommendations contained in the FMPs, which would require that the Commission notify NOAA Fisheries of any changes. The Commission needs to consider the length of time that it will take for regulations to be implemented in the EEZ and try to minimize the frequency of requests to the federal government.

The protocol for NOAA fisheries implementing changes varies for the different species managed by the Commission. The varying protocols need to be considered as conservation equivalency proposals are being developed and reviewed.

When necessary for complementary management of the stock, the ASMFC Chair will request federal partners to consider changes to federal regulations may be required.

Public Perception

A lack of public understanding of the conservation equivalency process has led to a perception that some states are allowed to implement regulations that are less restrictive than the standards in the plan. The public has also expressed concern over not fully understanding how conservation equivalency management options are developed.

The development of this document is the first step in helping the public better understand conservation equivalency. Another important step to foster public understanding is the inclusion of management options in Commission FMPs and Amendments. If the public has access to the options that the states can select from, a major source of confusion is eliminated. Also, the public should be informed that conservation equivalency does not change the allocation between jurisdictions included in the plan.

The states need to work with the fishing public to better describe conservation equivalency and provide an explanation of why a state's regulations may differ from their neighbors.

Conservation Equivalency Subcommittee membership:

Stu Kennedy (Chair)
Rob O'Reilly
Harry Mears
Anne Lange
Bill Goldsborough
Pete Jensen
Kathy Hattala
Doug Grout
Ernie Beckwith

Bruce Buckson
Paul Caruso
Joe Fessenden
John Carmichael
Vishwanie Maharaj
Melvin Shepard
Byron Young
Steve Doctor

APPENDIX 1

The following appendix details the management measures for each ASMFC managed species that can be modified through conservation equivalency. This appendix also includes a summary of the management measures that the states have developed and are currently implemented through conservation equivalency.

Note: This document is a summary of the conservation equivalency measures and procedures included in ASMFC fishery management plan. It does not supercede any of the language included in the plans.

American Eel

The American Eel FMP states: "With approval of the American Eel Management Board, a state may vary its regulatory specifications listed in Section 4, so long as that state can show to the Board's satisfaction that the goals and objectives of this FMP will still be met." Section 4 of the FMP includes the Management Program Implementation, therefore a state can modify any provision included in the FMP through conservation equivalency.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

American Lobster

Amendment 3 to the FMP for American Lobster outlines the adaptive management limitations for lobster management. The Amendment states that the following measures cannot be altered through conservation equivalency:

- Prohibition on possession of berried or scrubbed lobsters
- Prohibition on possession of lobster meats, detached tails, claws or other parts of lobster
- Prohibition on spearing lobsters
- Prohibition on possession of V-notched female lobsters
- Requirement for biodegradable "Ghost" panel for Traps
- Minimum Gauge Size
- Limits on Landings by fishermen using gear or methods other than traps

Any lobster management measure that is not listed above may be modified through conservation equivalency.

Current Measures Implemented

New Hampshire: The Lobster Management Board approved a New Hampshire program that allows a portion of their Area 1 fishermen 1,200 traps and the rest

600 traps rather than the 800 trap allocation for everyone as specified in Addendum III.

Massachusetts: The Lobster Management Board approved a Massachusetts program for the Outer Cape Cod which uses 1999 through 2001 as qualifying years to identify potential participants and allocates traps based on fishing performances during 2000 and 2002 with pounds as the qualifying parameter. The Outer Cape Cod plan in Addendum III used 1999 through 2000 as the qualifying years and fishermen reported catch reports as the qualifying parameter.

New Jersey: The Lobster Management Board approved a New Jersey conservation equivalency proposal allowing New Jersey to implement an alternative permitting and trap allocation system then what was outlined in Addendum I.

Atlantic Croaker

There is no mention of Conservation Equivalency in the 1987 FMP for Atlantic croaker.

Current Measures Implemented

Conservation equivalency is not applicable to Atlantic croaker management.

Atlantic Herring

Under Addendum II to the Atlantic Herring FMP the states are permitted to alter any measure for which a compliance criteria is in place provided that approval is obtained prior to implementation. The compliance measures that are included in the plan are:

- Report, annually, the amount harvested by fixed gears in state waters
- Provide a description of the operation and amount of fish mealed in conjunction with herring processing activities
- Enact spawning restrictions
- Prohibit landings when TAC has been attained in an area or sub-area
- Prohibit directed fishing for herring in state waters when the TAC has been attained in an area or sub-area
- Prohibit landing to IWPs when harvested from a closed area or sub-area
- Daily fixed gear landings be reported on a weekly basis
- Provide an annual report on any mealing activity in the state

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Atlantic Menhaden

Amendment 1 provides states the opportunity to request permission to implement an alternative to any mandatory compliance measure. States submitting alternative proposals must demonstrate that the proposed action will not contribute to overfishing of the resource. All changes in state plans must be submitted in writing to the Board and to the Commission either as part of the annual FMP Review process or the Annual Compliance Reports.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Atlantic Striped Bass

Amendment 6 allows for the use of conservation equivalency in the management of striped bass. States/jurisdictions are permitted to modify recreational minimum size limits and bag limits to remain consistent with the 2 fish at 28-inch minimum standard in the plan. The commercial minimum size can also be decreased with a corresponding decrease in commercial quota. The plan states that the minimum size limits cannot be implemented below 18-inches.

Current Measures Implemented

Maine:	Recreational Fishery	1 fish 20”-26” or over 40”; no 2 nd fish
New York:	Hudson Recreational	1 fish 18, 24 or 26 inches w/ or w/out spawning closure
Maryland:	Coastal Comm. Fishery	24 inch min size limit;
reduced quota		
North Carolina:	Albemarle/Roanoke Rec	18 inch minimum size limit
	Albemarle Commercial	18 inch minimum size limit

Atlantic Sturgeon

Amendment 1 to the Atlantic Sturgeon Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Atlantic sturgeon management.

Black Sea Bass

The Black Sea Bass Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Black sea bass management.

Bluefish

The Bluefish Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Bluefish management.

Horseshoe Crab

The Horseshoe Crab Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Horseshoe crab management.

Northern Shrimp

Amendment 1 to the Northern Shrimp Fishery Management Plan does not provide for conservation equivalency

Current Measures Implemented

Conservation equivalency is not applicable to Northern shrimp management.

Red Drum

Amendment 2 to the Red Drum FMP allows any state to request permission to implement an alternative to any mandatory compliance measure. States submitting alternative proposals must demonstrate that the proposed action will not contribute to overfishing of the resource. All changes in state plans must be submitted in writing to the Board and to the Commission either as part of the annual FMP Review process or the Annual Compliance Reports.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Scup

Addendum XI to the Scup Fishery Management Plan provides the details for conservation equivalency in the 2004 recreational fishery. This Addendum also allows the Board to establish annual conservation equivalency procedures through future Board action. Under Addendum XI, the states from Massachusetts through New York must

develop a combination of size limits, bag limits, and seasonal closures to achieve a state-specific reduction. The states from New Jersey through North Carolina must implement minimum size limits, seasonal closures, and bag limits as described in the Addendum. Conservation equivalency is not permitted in the commercial fishery.

Current Measures Implemented

The states from Massachusetts through New York have implemented measures that achieve the necessary reduction for their recreational fisheries in 2004.

Shad and River Herring

Amendment 1 to the Shad and River Herring FMP allows a state to vary their recreational and commercial management programs so long as that state can show to the Board's satisfaction that the target fishing mortality rate or the overfishing definition will not be exceeded. Also, Amendment 1 states that alternative management regimes may also include other indices of their equivalency (e.g., eggs-per-recruit, yield-per-recruit, etc.), in addition to fishing mortality protection. States shall submit proposals for altering their regulatory program for American shad, hickory shad, or river herring prior to implementing any changes.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Spanish Mackerel

There is no mention of Conservation Equivalency in the 1990 FMP for Spanish mackerel.

Current Measures Implemented

Conservation equivalency is not applicable to Spanish mackerel management.

Spiny Dogfish

The Interstate FMP for Spiny Dogfish allows the states to submit a proposal and receive Board approval to change any compliance requirement in the FMP. The compliance requirements included in the FMP are:

- Must close state waters when the quota is harvested
- Required to report landings weekly to NMFS
- State permitted dealers must report weekly
- Implement possession limits that comply with the annual specifications
- State issued exempted permits for biomedical harvest, limited to 1,000 fish (must report in annual compliance report)
- State prohibition of finning

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Spot

There is no mention of Conservation Equivalency in the 1987 FMP for spot.

Current Measures Implemented

Conservation equivalency is not applicable to Spot management.

Spotted Seatrout

There is no mention of Conservation Equivalency in the 1984 FMP for Spotted seatrout

Current Measures Implemented

Conservation equivalency is not applicable to Spotted seatrout management.

Summer Flounder

The Summer Flounder, Scup, and Black Sea Bass Management Board annually establish the process for applying conservation equivalency to the summer flounder recreational fishery. Each year the Board establishes state-specific targets (numbers of fish) that the states must achieve through combinations of minimum size limits, bag limits, and seasonal closures. Conservation equivalency is not permitted in the commercial summer flounder fishery.

Current Measure Implemented

All of the states have developed proposals and are currently implementing regulations that are consistent with the 2004 state-specific targets.

Tautog

Addendum III to the Tautog FMP required each state to make a 29% reduction in fishing mortality (25% reduction in exploitation rate) in the recreational fishery by April 1, 2003. States were required to submit proposals for this reduction and all proposals were reviewed and approved by the TC, the AP, and the Board.

Current Measures Implemented

All of the states have implemented approved measures to achieve the reduction that is required under Addendum III.

Weakfish

Amendment 3 to the Weakfish FMP required states to achieve a 32% reduction in the weakfish exploitation rate (F) from the 1990-1992 reference period. This level of reduction was carried over into Amendment 4. Appendix I of Amendment 4, an updated Evaluation Manual (O'Reilly 2002), provides states guidance in establishing their reduction plans. A state has the ability to adjust its commercial fishery regulations and choose from several creel limit/minimum size combinations for its recreational fishery to achieve the 32% reduction.

To achieve the fishing mortality reduction, states' commercial fisheries are constrained by size limits, gear restrictions, and possibly seasonal and area closures. Amendment 4

established a minimum size in the recreational fishery of 12 inches total length. However, it also provided states with a pre-determined suite of conservation equivalencies for recreational fishery regulations. States may choose a minimum size and creel limit combination of 12 inches/7 fish, 13 inches/8 fish, 14 inches/9 fish, or 15+ inches/10 fish.

Current Measures Implemented

All states regulate their commercial fisheries using combinations of minimum fish and mesh sizes and closed seasons to achieve the required reduction. The states have also implemented a combination of recreational minimum size limit and bag limits that are consistent with Amendment 4.

Winter Flounder

The current plan, states do not have to comply with any specific requirements. Therefore, conservation equivalency is currently not applicable for winter flounder. Amendment 1 is in development and will contain compliance criteria and the Board will decide which of these are available to change through conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to winter flounder management.

APPENDIX 2

Current Plan Review Team Membership

American Eel Plan Review Team

Herb Austin (VA)
Mel Bell (SC)
Dan Kuzmeskus (USFWS)
Lydia Munger (ASMFC)
Vic Vecchio (NY)
Gail Wippelhauser (ME)

American Lobster Plan Review Team

Richard Allen (RI)
Clare McBane (NH)
Dan McKiernan (MA)
Bob Ross (NMFS)
Carrie Selberg (ASFMC)
Carl Wilson (ME)

Atlantic Croaker Plan Review Team

Herb Austin (VA)
Wilson Laney (USFWS)
Tina Moore (NC)
Harley Speir (MD)
Nancy Wallace (ASMFC)

Atlantic Herring Plan Review Team

Megan Gamble (ASMFC)
David Libby (ME)
Clare McBane (NH)
William Overholtz (NMFS)

Atlantic Menhaden Plan Review Team

Matt Cieri (ME)
Ellen Cosby (VA)
Trisha Murphey (NC)
Douglas Vaughn (NMFS)

Atlantic Striped Bass Plan Review Team

Megan Gamble (ASMFC)
Wilson Laney (USFWS)
Gary Shepherd (NMFS)

Atlantic Sturgeon Plan Review Team

Kim McKown (NY)
Tom Meyer (NMFS)

Ted Smith (SC)
Brad Spear (ASMFC)
Dick St. Pierre (USFWS)

Black Sea Bass Plan Review Team

Michael Armstrong (MA)
Beth Burns (NC)
Nancy Butowski (MD)
Toni Kerns (ASMFC)
Chris Moore (MAFMC)

Bluefish Plan Review Team

Elliot Atstupenas (USFWS)
Herb Austin (VA)
Vic Crecco (CT)
Louis Daniel (NC)
Toni Kerns (ASMFC)
Najih Lazar (RI)
Chris Moore (MAFMC)
Roger Pugliese (SAMFC)

Horseshoe Crab Plan Review Team

Tom Meyer (NMFS)
Stewart Michels (DE)
Eric Schrading (USFWS)
Brad Spear (ASMFC)

Northern Shrimp Plan Review Team

Clare McBane (NH)
Dan Schick (ME)
Brad Spear (ASMFC)

Red Drum Plan Review Team

John Merriner (NMFS)
Michael Murphy (FL)
Lee Paramore (NC)
Roger Pugliese (USFWS)
Nancy Wallace (ASMFC)
Charlie Wenner (SC)

Scup Plan Review Team

Michael Armstrong (MA)
Beth Burns (NC)
Bill Figley (NJ)
Mark Gibson (RI)
Toni Kerns (ASMFC)

Chris Moore (MAFMC)
David Simpson (CT)
Byron Young (NY)

Shad and River Herring Plan Review Team

Lydia Munger (ASMFC)
Dick St. Pierre (USFWS)
Sara Winslow (NC)

Spanish Mackerel Plan Review Team

Henry Ansley (GA)
Randy Gregory (NC)
Nancy Wallace (ASMFC)
Gregg Waugh (SAFMC)

Spiny Dogfish Plan Review Team

Megan Gamble (ASMFC)
Tina Moore (NC)
Gregory Skomal (MA)

Spot Plan Review Team

Herb Austin (VA)
John Schoolfield (NC)
Harley Speir (MD)
Nancy Wallace (ASMFC)

Spotted Seatrout Plan Review Team

Beth Burns (NC)
Michael Murphy (FL)
John Pafford (GA)
Nancy Wallace (ASMFC)
Charlie Wenner (SC)

Summer Flounder Plan Review Team

Michael Armstrong (MA)
Toni Kerns (ASMFC)
Wilson Laney (USFWS)
Najih Lazar (RI)
Chris Moore (MAFMC)
Mark Terceiro (NMFS)
Carter Watterson (NC)
Byron Young (NY)

Tautog Plan Review Team

Paul Caruso (MA)
Jason McNamee (RI)

Lydia Munger (ASMFC)
David Simpson (CT)

Weakfish Plan Review Team

Rick Cole (DE)
Toni Kerns (ASMFC)
Rob O'Reilly (VA)

Winter Flounder Plan Review Team

Lydia Munger (ASMFC)
Deb Pacileo (CT)
Sally Sherman (ME)
Alice Weber (NY)

ASMFC Standard Operating Procedures for Meetings

As established by the Interstate Fisheries Management Program Charter, the Atlantic States Marine Fisheries Commission (Commission) uses Roberts Rules of Order to conduct its business. There are some deviations from Roberts Rules adopted by the Commission. The following operating procedures are proposed to help make Commission meetings more effective and efficient.

Quorum

- The presence of Commissioners representing a majority of the state members (>50%) constitute a quorum at a meeting of the Commission.
- Any state shall be recorded as present when represented by one or more of its Commissioners.
- A quorum for any Commission group shall be a majority of the members of such body, provided that any such body may petition the Executive Committee in advance for approval of an alternative quorum procedure.

Voting

- The Commission's Business Session, and management boards and sections shall be by state (or by jurisdiction or federal agency) with one vote per state. A state's vote shall be determined by the majority of that state's delegation of Commissioners who are present. Based on the number of delegates present, votes may be cast in favor, opposed, in abstention, or null. A null vote occurs when only two state delegates are present and they cannot agree on a position.
- No person may, by proxy, vote more than once on any issue.
- Any Commissioner or Commissioner Proxy or duly authorized representative of a jurisdiction or agency that is a member of a management board/section may make or second any motion; provided the maker of the motion and second (when necessary) must each come from a different state, jurisdiction, or agency.
- Any meeting-specific proxy appointed by a Legislative or Governors' Appointee Commissioner may not vote on a final action being considered by a management board/section. Meeting-specific proxies may vote on preliminary decisions such as issues to be included in a public hearing draft or approval of public information documents.
- A final action is defined as: fishery specifications (including but not limited to quotas, trip limits, possession limits, size limits, seasons, area closures, gear requirements), allocation, final approval of FMPs/amendments/addenda, emergency actions, conservation equivalency plans, and non-compliance recommendations. A meeting-specific proxy may participate in the deliberations of the meeting, including making and seconding motions.
- The roll must be called for all final actions unless there is no objection to the motion.
- A two-thirds majority, which is required for an emergency action, extending a management action, or amending/rescinding a final action, is defined by the entire voting membership. However, federal agency abstentions do not count when determining the total number of votes.

Process

- An individual may not be recognized to speak on an issue more than two times during a single board meeting.

- At any time in the meeting based on concern regarding limited time availability to conduct the full business of the board/section or in cases when extensive debate on an issue has occurred, the chair can limit debate to one in favor/one against.
- After all members have had the opportunity to speak on an issue twice, the chair will limit debate to one in favor/one against. If there is no one left to speak in favor/against the chair will call the vote on the motion.
- If the chair believes there may not be opposition to the motion, he/she will seek board consent of the action by asking “If there is no objection, this item will be adopted.” After pausing for any objections, the chair states “As there are no objections, this item is adopted unanimously.” It is not necessary to ask for a show of hands.
- If the chair thinks too much time is being consumed by speakers, he/she can set a time limit on such speeches.
- If a motion has several parts, and a board/section member wishes to vote differently on these parts, that member should move to divide the motion, addressing each issue separately.

Definitions

Postpone Indefinitely – This action is taken when a board/section member intends to stop any further discussion of the issue at the meeting. The issue may be reintroduced at a later meeting.

Postpone to Time Certain – This action is used to delay action on a pending question until a specific day, meeting, hour or after a certain event. Then, when that time comes, the motion is brought forward for reconsideration by the board/section.

Table – This action is used to postpone discussion of an item until later in the meeting or at a later date. Many people think tabling a motion is tantamount to killing it, but it is used to set a pending motion aside temporarily in order to address a more pressing or urgent issue.

Call the Question – This is used to terminate a debate so that a motion can be voted on.

Amend – This action is used to change a motion after it has been debated. Amendments enable you to affect changes to pending questions in the following four ways:

- By inserting (or adding, if placing at the end) words, sentences, or paragraphs
- By striking out words, sentences, or paragraphs
- By striking out and inserting words (with the words inserted replacing the words struck out)
- By amending by substitution (a form of strike out and insert applied to paragraphs or entire motions)

Substitute – A substitute motion is a form of amendment. If a motion is on the floor, first recourse should be to work with the motion and try to amend it through normal protocol. If, however, the motion is poorly worded, if new information comes to light during course of debate, or if other pressing circumstances develop, it may be necessary to substitute a new motion for the original motion or significant parts of a motion.

Reconsider – A body can reconsider only with respect to a decision made in the current meeting, or on the next day, if the session lasts more than one day.

Atlantic States Marine Fisheries Commission

South Atlantic State/Federal Fisheries Management Board

*August 2, 2016
10:15– 11:45 a.m.
Alexandria, Virginia*

Draft Agenda

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

1. Welcome/Call to Order (*J. Estes*) 10:15 a.m.
2. Board Consent 10:15 a.m.
 - Approval of Agenda
 - Approval of Proceedings from May 2016
3. Public Comment 10:20 a.m.
4. Discuss Commission Involvement in Cobia Management (*L. Daniel*) **Action** 10:30 a.m.
 - Discuss possible management scenarios
 - Recommend to the ISFMP Policy Board how the Commission should be involved in cobia management
5. Red Drum Working Group Report (*J. Kipp*) 11:05 a.m.
 - Presentation of progress on follow up tasks to the red drum assessment
6. Progress Report on the Spot and Atlantic Croaker Benchmark Stock Assessments (*J. Kipp*) 11:25 a.m.
7. Consider 2015 Fishery Management Plan Review and State Compliance for Red Drum and Atlantic Croaker (*T. Kerns*) **Action** 11:35 a.m.
8. Other Business/Adjourn 11:45 a.m.

The meeting will be held at the Westin, 400 Courthouse Square, Alexandria, Virginia; 703.253.8600

Vision: Sustainably Managing Atlantic Coastal Fisheries

MEETING OVERVIEW

South Atlantic State/Federal Fisheries Management Board Meeting

Tuesday, August 2, 2016

10:15 – 11:45 a.m.

Alexandria, Virginia

Chair: Jim Estes (FL) Assumed Chairmanship: 02/16	Technical Committee Chair: Red Drum: Mike Murphy (FL) Atlantic Croaker: Chris McDonough (SC)	Law Enforcement Committee Representative: Capt. Bob Lynn (NC)
Vice Chair: Pat Geer	Advisory Panel Chair: Tom Powers (VA)	Previous Board Meeting: May 5, 2016
Voting Members: NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS, SAFMC (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2016

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

4. Discuss Commission Involvement in Cobia Management (10:30 -11:05 a.m.) Action

Background

- The South Atlantic Council Fishery Management Council (Council) requested the Commission consider joint or complementary management of cobia with the Council.
- In 2105, 82% of the cobia harvest occurred in state waters. The ACL was exceeded by approximately 91,000 pounds.
- The Council is looking for a more flexible management approach to allow for timely adjustments of measures but still provide equitable access across multiple jurisdictions while meeting conservation goals.
- The Policy Board directed staff to draft a white paper to outline how Cobia management would work under a joint, complementary, ASMFC only or Council only plan (**supplemental materials**).

Presentations

- L. Daniel will present the management white paper to the Board.

Board actions for consideration at this meeting

- Recommend how to the ISFMP Policy Board how the Commission should be involved in cobia management.

4. Red Drum Working Group Report (11:05 – 11:25 a.m.)**Background**

- The 2016 update stock assessment and peer review was presented to the Board in May of 2016.
- The models , using Stock Synthesis framework, suggest overfishing is occurring in both the northern and southern regions. The northern model predicts low adult abundance (age 6+) since 1989. The southern model shows increasing F, resulting in low escapement of juveniles from the fishery.
- The Board had questions/concerns regarding the assessment inputs, reference points, and model types and tasked the TC/SAS to investigate several questions.
- The TC/SAS has begun work on the tasks.

Presentations

- J. Kipp will present progress on the TC/SAS tasks (**meeting materials**)

Board actions for consideration at this meeting

- None

7. Progress Update on Spot and Atlantic Croaker Stock Assessments (11:25 – 11:35 a.m.)**Background**

- A data workshop for both species was held in September 2015.
- The first of two assessment workshops was held in February 2016.
- It is expected that both assessments will be completed in late 2016.

Presentations

- Stock assessment update by J. Kipp

7. 2016 Fishery Management Plan Reviews (11:35 -11:45 a.m.) Action**Background**

- Atlantic Croaker State Compliance Reports are due on July 1, 2016. The Plan Review Team reviewed each state report and compiled the annual FMP Review. Delaware (commercial), South Carolina (commercial), Georgia (commercial and recreational), and Florida (commercial) have applied for *de minimis*.
- Red Drum State Compliance Reports are due on July 1, 2015. The Plan Review Team reviewed each state report and compiled the annual FMP Review. New Jersey and Delaware have applied for *de minimis*.

Presentations

- Overview of the Atlantic Croaker and Red Drum FMP Review Reports by T. Kerns. (**supplemental materials**)

Board actions for consideration at this meeting

- Accept 2016 FMP Reviews and State Compliance Reports
- Approve *de minimis* requests

10. Other Business/Adjourn

DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
SOUTH ATLANTIC STATE/FEDERAL FISHERIES MANAGEMENT BOARD

The Westin Alexandria
Alexandria, Virginia
May 5, 2016

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These minutes are draft and subject to approval by the South Atlantic State/Federal Fisheries Management Board. The Board will review the minutes during its next meeting.

INDEX OF MOTIONS

1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of February 2016** by consent (Page 1).
3. **Move to approve the stock assessment and peer review for management advice** (Page 21).
Motion by Wilson Laney; second by John Clark. Motion postponed (Page 23).
4. **Move to postpone the approval of the stock assessment and peer review for management advice until the following tasks can be completed by the Technical Committee and Stock assessment Committee:**
 - Evaluate if current biological reference point types and values are appropriate for red drum, given the species life history.
 - Investigate the feasibility of an F-based reference point for juvenile red drum.
 - Evaluate how red drum life history and fishery management measures affect the validity of age-based models.
 - Evaluate whether the South region continuity run of the statistical catch-at-age model can be made informative for management; and if yes, complete a continuity run.
 - Evaluate if a North region continuity run of the statistical catch at age model would be informative for management purposes; and if yes, complete a continuity run.
 - Evaluate tag return rates for each region and determine if tag return data should be incorporated into a new run of the SS3 model.

(Page 23). Motion by Robert Boyles; second by Lynn Fegley. Motion carried (Page 28).
5. **Motion to adjourn** by Consent (Page 29).

These minutes are draft and subject to approval by the South Atlantic State/Federal Fisheries Management Board. The Board will review the minutes during its next meeting.

ATTENDANCE

Board Members

Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Robert Boyles, SC (AA)
Russ Allen, NJ, proxy for D. Chanda (AA)	Patrick Geer, GA, proxy for Rep. Nimmer (LA)
John Clark, DE, proxy for D. Saveikis (AA)	Jim Estes, FL, proxy for J. McCawley (AA)
Craig Pugh, DE, proxy for Rep. Carson (LA)	Spud Woodward, GA (AA)
Lynn Fegley, MD, proxy for D. Blazer (AA)	Nancy Addison, GA (GA)
Ed O'Brien, MD, proxy for Del. Stein (LA)	Martin Gary, PRFC
Chris Batsavage, NC, proxy for B. Davis (AA)	Wilson Laney, USFWS
Doug Brady, NC (GA)	John Carmichael, SAFMC

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

Ex-Officio Members

Staff

Toni Kerns	Megan Ware
Robert Beal	Mike Waive

Guests

Derek Orner, NOAA	Kelly Denit, NMFS
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These minutes are draft and subject to approval by the South Atlantic State/Federal Fisheries Management Board. The Board will review the minutes during its next meeting.

The South Atlantic State/Federal Management Board of the Atlantic States Marine Fisheries Commission convened in convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 5, 2016, and was called to order at 10:022 o'clock a.m. by Chairman Jim Estes.

CALL TO ORDER

CHAIRMAN JIM ESTES: I would like to call the South Atlantic Board to order please, if everybody can find their seats and take your conversations outside if you need to. My name is Jim Estes, I am the Administrative Commissioner from Florida, and I am going to try to facilitate the meeting today.

APPROVAL OF AGENDA

CHAIRMAN JIM ESTES: We all have an agenda. Are there any additions or changes suggested for the agenda? Seeing none; are there any objections to the approval of the agenda? Seeing none; the agenda is approved as written.

APPROVAL OF PROCEEDINGS

CHAIRMAN JIM ESTES: You all have proceedings from our February, 2016 meeting. Are there any suggested changes from those proceedings? Seeing none; are there any objections to approving those proceedings? Seeing none; those proceedings are approved.

PUBLIC COMMENT

CHAIRMAN JIM ESTES: I don't think that we have any folks that have signed up for public comment on items not on the agenda. Is there anyone in the gallery over here that would like to speak on items not on the agenda? Seeing none; we'll get right to our program. This is going to be a little bit unusual today.

We're going to have a couple presentations, and one of our presenters, Mike Murphy, could not make it here last night because of weather. The planes were flying around in circles apparently over Tampa, and he couldn't make it. We're going to try to have him on the phone

to make his presentation via a webinar. Be patient with us, because we may have some audio issues.

2016 RED DRUM BENCHMARK STOCK ASSESSMENT REPORTS

NORTHERN STOCK

CHAIRMAN JIM ESTES: Maybe we can start out with Jeff. Can you present the red drum stock assessment for the northern region?

MR. JEFF KIPP: I'll start by going off just a little overview and background information. Then I'll get right into the results for the northern stock assessment. Then we'll continue on with Mike presenting on the southern stock assessment. Just to start off, I would like to thank the board for their patience as we've waited for these stock assessments for the red drum stocks. But just a little background on this red drum process. We did go to a SEDAR 44 review workshop with assessment models using stock synthesis statistical framework in August, 2015.

We were experiencing some issues in developing stable models. The objective of that review workshop changed a little bit; to receive recommendations from the Peer Review Panel so that we can improve and achieve stable models to be reviewed later for management advice. The Peer Review Panel during that process did endorse our transition to stock synthesis, and the information on that review workshop and the original stock assessment models are provided in SEDAR 44 stock assessment report, which was provided in your meeting materials. Following that review workshop we did work to make those recommendations and implement them into the stock synthesis models. Once we had achieved our final preferred models, those were evaluated in a desk review for the purpose of advising management of the red drum stocks.

The information on those final preferred models is in Addendum II to the SEDAR 44 stock assessment report, which was also provided in

meeting materials. Some quick background on assessment history, the red drum stock originally as a coastwide unit was assessed in 1990; and there were a couple other assessments through the nineties, using mostly per recruit analyses and virtual population analysis.

The most recent update of virtual population analysis was done in 2000. The most recent assessment was SEDAR 18 in 2009, when there was a transition from a virtual population analysis model to a statistical catch-at-age model. With that SEDAR 18, the peer review did note some limitations and concerns with the model used in that assessment.

First off the plus group was 6 plus for the stocks, and that includes 90 percent of the age structure in the northern stock, and 83 percent of the age structure in the southern stock. Therefore, there were no reliable abundance or biomass benchmarks coming from that assessment for either stock.

They did note that the plus group abundance is estimated in the initial population in those models was unexpectedly large; given the estimates of abundance in the younger age classes. In previous meetings with this board it was noted that a primary goal for management of these stocks was to declare an overfished or not overfished status.

For that to be done there was the need for reliable biomass estimates and a biomass benchmark. Also, the northern model specifically was fit to external tag-based F estimates in some published literature. This estimate was highly dependent on these estimates, which indicated some inconsistencies between those fishing mortality estimates and the other data sources in the model.

The peer reviewers did also note a lack of tagging program sampling design, and a potential for some areas being under sampled and others being over sampled; and therefore

for those F estimates in the model, not necessarily representative of the entire stock unit. The catch-at-age data in that model was developed externally.

The peer reviewers noted that some of that data, specifically in then earlier years, was developed with sparse biological data and often pulled over the different fleets in the model. Also, the model structure was noted as a major source of uncertainty in the estimates of the stock status indicators. That structure was very sensitive to the scalars that were specified for selectivity at age in that model.

The southern stock estimates, all estimates including the SPR estimates out of that model, were too uncertain to make quantitative statements about stock status; and were used more for a qualitative in general determination of stock status for the southern stock. These limitations led us to stock synthesis framework. It is a supported peer reviewed framework for calibrating population dynamics models; and it serves as a platform moving forward for future stock assessments. It is widely used in the stock assessment community. It is highly flexible and customizable to many data types and stock characteristics. A lot of these options already built in to this framework were great for addressing some of the existing concerns noted in SEDAR 18 with the statistical catch-at-age model used in that assessment.

It is also a comprehensive proposition and quantification of data uncertainty, and provides model diagnostics for model misspecification. The red drum stocks are defined as two management units, a northern stock and a southern stock split at the North Carolina/South Carolina border. That is consistent with SEDAR 18 and some of the earlier virtual population analysis assessments done.

This split is supported by differences in genetics, life history characteristics, habitat use, and tagging data. Getting into the results of the northern red drum model, the age structure modeled in this model is from age zero; which

are fish spawned the previous fall, to 41 plus. Now there is a 41 plus, plus group as opposed to a 6 plus, plus group.

Just to clear up some confusion ahead of time, any time you see an age reference now with this under the stock synthesis framework, it is different than the definition under the old catch-at-age model. That is just because of how stock synthesis is configured. Age 0 in the stock synthesis model is Age 1 in SEDAR 18.

Any time you see a SEDAR 18 age referred to, just subtract one from that and that would be equal to the stock synthesis age structure. In this model there is an initial population estimated, and that would be in January, 1989, when the model starts. Those initial population estimates are informed by previous removals and also recruitment deviations.

Annual abundance and biomass are then projected forward from the initial population, from 1989 to 2013, our terminal year in our model; as a function of Age 0 recruitment, growth, maturity, natural mortality and fishing mortality. I did mention that we made some revisions to the assessment model following the SEDAR 44 review workshop, and just a quick overview on some of those changes that were made.

The model start year was changed from 1950 to 1989. We originally tried to bring some more historic information into the model. However, generally the peer reviewers noted that there was really only removals data prior to 1989; so there was really no information on the length compositions or any type of indices of abundance.

They suggested using 1989 as a start year, which is actually consistent with SEDAR 18. Fishing mortality parameterization was changed. The selectivity functions for the harvest fleets were simplified from a 6 parameter functional form to a 3 parameter functional form. There were also some

selectivity changes that were excluded, relative to the model in the previous configuration.

Also the tag recapture sub-model was excluded from the base model in the new revised model. This is a figure with the input data used in the model by year and type. You've got year on the X axis and the data sources on the Y axis. There is catch from four different sources, there are two commercial fleets; one with gillnet and beach seine gears, and another commercial fleet with other types of gears. I think it is mostly fixed gears like pound nets.

There is a recreational harvest fleet, and then there is a recreational release fleet, which is assumed discards to the fish that are released alive in the recreational fishery. There were five abundance indices used in this model; the first in North Carolina JAI, which is their seine survey and would be Age 0 fish.

The North Carolina Independent Gillnet Survey for Age 0s and then also for Age 1s, the North Carolina Longline Survey, which is probably the most notable addition to the data sources from SEDAR 18; which covers the mature spawning portion of the stock, and a recreational CPUE from the MRIP data.

There is also length composition data that is fit to in the model for each of the fishing fleets, and then for indices of abundance that are aggregated over age; so that would be the North Carolina Longline Index and the recreational CPUE. Then there are also age-at-length compositions for the harvest fleets and also the North Carolina Longline Survey.

These are the removals for the northern stock from the commercial fleets. As you can see it is highly variable and dominated by the gillnet beach seine fleets. Most of those removals generally come from North Carolina. The gillnet beach seine fleet does include estimated discards. Those discards are observed as either discarded dead or discarded alive.

They include all the discarded dead fish and 5 percent of the discarded alive fish that are assumed to die post release. These are the recreational removals in the model; again highly variable, but you can see that there has been an increasing component of recreational release mortalities over time. Again, most of these removals generally come from North Carolina from year to year; I think with a notable exception in 2012, there is quite a large catch in Virginia.

Just a note, there is an assumed 8 percent mortality rate of the fish that are released alive in the recreational fisheries. These are the model fits to the indices of abundance; the four that cover the young-of-year or the sub-adult fish. The top left hand panel is the North Carolina seine survey, which is Age 0 fish.

Next to that in the top right hand panel is the independent gillnet survey, indexing Age 0 fish. In the lower left hand panel is the independent gillnet survey for the Age 1 fish, and in the lower right hand panel is the fit to the recreational CPUE index; which covers several age classes, which are informed by the length composition and the input age data.

You can see that these are quite variable across these age specific indices; and there does appear to be a slightly increasing trend over the recreational CPUE. This is the adult North Carolina Longline Index; starting at 2007 we have information from that through 2013. Again this covers multiple age classes informed by the length composition for that survey and the age data collected from that survey.

These are the selectivity estimates at length from the model. The three strongly dome shaped selectivity patterns in the middle of the figure are the harvest fleets. You can see that the harvest occurs within the slot limits between roughly 45 and 70 centimeters. The broader dome shaped selectivity patterns are from the recreational CPUE and the recreational discards that cover, mostly those sub-adult fish and then decline as those fish immigrate from

the estuaries and are also protected by the upper end of the slot limit. Then the gold logistic or flat-top shaped selectivity curve is from the North Carolina Longline Survey. These are the fishing mortality estimates from the model for Ages 0 through 5 by fleets, with the gold line is the fishing mortality estimates for the recreational harvest fleet to the highest fishing mortality over the time series. The blue is from the commercial gillnet beach seine fleet.

The green line is fishing mortality for the commercial other fleet, other gears; and the red line is the fishing mortality of recreational releases or the discard mortality of those fish. You can see that there is generally a declining pattern in fishing mortality over all those fleets, with the exception of the recreational discard fleet; which does increase over that time.

These are just the annual fishing mortality estimates over all fleets for ages 0 through 5. You can see the fishing mortality declines through the nineties, and then generally becomes relatively stable through the remaining time series. These are the numbers estimated at age. You've got age class going up the Y axis with year along the X axis.

You can see that recruitment is quite variable and be able to look at that also in the next figure I have. The red line is the mean age of the population in that given year. You can see a slight decreasing trend in the mean age of the population. There are some older year classes you can see moving through the population; and those year classes are generally informed from that longline survey and the age data collected from that longline survey.

You can see in the lower right hand corner there does appear to be a response to that decreasing fishing mortality; although at a low rate. These are just the recruitment estimates, so just the Age 0 recruits in thousands of fish. You can see the solid blue dot is the average recruitment. Then the other recruitment estimates generally fluctuate around that average recruitment value with a notable large

year class in 2012; which are actually fish spawned in the fall of 2011.

The reference points looked at in this assessment was carried over from the last assessment and from Amendment II to the red drum fishery management plan; which are static spawning potential ratios. The SPR target identified in Amendment II is a 40 percent SPR, and the threshold is a 30 percent SPR.

Annual SPR values below the threshold indicate overfishing on the stock. These SPR values are a measure of reproductive potential, in terms of spawning stock biomass produced by a cohort over time. Here it is interpreted as the amount of spawning stock biomass that would make it through the population under the current fishing mortality, relative to if there was no fishing mortality occurring.

These are the SPR estimates for the northern stock. On the top figure are the annual SPR estimates, with 95 percent confidence intervals. You can see that the model is estimating SPR values that are below the threshold of 30 percent SPR throughout the time series. In the figure below that are the running three year averages, which the peer reviewers in SEDAR 18 noted as more informative due to the inter-annual variability in SPR.

You can see that decrease in fishing mortality reflected in the SPR values where SPR is decreasing over the early nineties. Then it increases after that and becomes relatively stable in the 2000s; looking at the three year running average. This is the spawning stock biomass level that is associated with that 40 percent SPR target. If the stock was fished for a long period of time under that SPR, the fishing mortality associated with that SPR level, this spawning stock biomass is the biomass that would be expected to be in the population. You can see here again the spawning stock biomass is estimated to be below that target level associated with a target SPR level throughout the model time series.

Looking at uncertainty of the model estimates, we did a retrospective analysis where you peeled years of data off and reran the model to try and identify if there is any kind of inconsistent bias in the estimates, as you peel that data off and go back in time. There is some slight variation in some of the population estimates; but there was no consistent pattern.

We also looked at sensitivity analysis, and we looked at quite a few different sensitivities. There is more information on each of these within the Addendum II. We looked at catch-at-age being input directly for the North Carolina Longline Index instead of length compositions. We looked at some different selectivity assumptions and functions.

We looked at a higher recreational release mortality rate of 16 percent. We tried estimating the natural mortality within the model, variance adjustments to the way the data are weighted within the model. We excluded the recreational CPUE index in a model run. We also included the North Carolina Independent Gillnet Age 2 Index.

We looked at including the base tag recapture sub-model that was originally in the stock synthesis model that went to the SEDAR 44 peer review workshop; and we also looked at an iteration of that with the tag reporting rates not estimated but fixed, at a value from the literature. Then also because some of the concerns we've seen that we'll get into coming up in the discrepancies between the estimates coming out of the stock synthesis model, and what was estimated in SEDAR 18.

We developed this alternative, what we're calling here a catch-at-age model where we input catch-at-age directly, which was much more similar to the inputs in SEDAR 18; to build sort of a bridge between the stock synthesis model and the old catch-at-age model used in SEDAR 18. These are plots of the SPR estimates from those different sensitivity model runs.

In the upper left hand panel you can see those are all the sensitivities that we included on the list before. You can see that most of them fall below the SPR threshold, with an exception of the sensitivity run with the tag-recapture model and the reporting rates fixed to 49 percent. We're assuming that 49 percent of tags are reported.

In the base model with the tag reporting rates estimated, those reporting rates were being estimated at 9 to 10 percent; so much lower than what is fixed from the literature, and that model is predicting a much larger stock with much lower fishing mortality. In the lower right hand corner is just the comparison without that tag reporting sensitivity run to look more closely at the other sensitivity runs.

The base model run is the dark bolded black lines; so that you can see how the other sensitivities fall around that base model. There was a lot of concern in obviously that tag recapture model and how to treat it and incorporate it into stock synthesis. We originally estimated the tag reporting rates within the model, and then went back and considered fixing that reporting rate; because during the peer review workshop we identified that as having a significant effect on the scale of the population estimates. I put together this table here to try and highlight some of the differences in the tag reporting rates, and how they're interpreted in stock synthesis and those that are available in the literature; to try and get at why some of these discrepancies are occurring, why there are some differences between what is estimated in stock synthesis with the other data sources, and what is available in the literature.

In the top row are the estimates from the base stock synthesis model with the tag recapture model; and as I mentioned the reporting rates are being estimated from 9 to 12 percent, depending on the fleet. This covers Ages 0 to 16, and these reporting rates are reported as fleet specific reporting rates; so they are estimated as fleet specific reporting rates.

The time period of fish tags used in the model is from 1989 to 2004. Released fish, so fish captured and released in the recreational fishery are not included in our model; due to how that model is configured. Some of the differences, these are all papers published by Bacher, et al. with some reporting rate estimates.

The first is estimated at 18 percent, and that is closer than the others to the estimates coming out of the stock synthesis model. Those estimates are for, again the entire age range, so 0 to 3 plus is the way they have the age structure in that paper. But this reporting rate is for all fleets combined; so if there is variation in reporting rate by fleet, which we expect, then there would be differences between those reporting rates.

Also, the time period of tags used in that paper to estimate those reporting rates include the years 2005 and 2006, which are years when high reward tags were released into the population for a higher reward tag recapture study. There is likely the potential for increased reporting rate of also low reward tags; the original reward tags that are included in the earlier tag data.

In the Bacher, et al. 2009 paper, there are some additional reporting rate estimates; these are much higher and that is the value that we used in the sensitivity run was the 0.49, so we're assuming that approximately 50 percent of tags were reported. These estimates were only for Age 1 fish. Those are the only ages used in this analysis.

Again, if there are differences in reporting rates across ages, particularly for those that fall outside the slot limit with these Age 1s mostly falling inside the slot limit; then those would lead to differences in reporting rates. Also some of the fleet designations are a little different. The reporting rates are for either all fleets combined, or the recreational and commercial fleets alone.

These estimates also include the years when there was high reward tags released into the population. These reporting rates in Bacheiler, et al. in 2009 were estimated based on an assumed 100 percent reporting rate of high reward tags, which is a typical assumption in high reward tag studies. However, if that is not an accurate assumption and the reporting rate of those high reward tags is lower; that would bias the tag reporting rate of the low reward tags high.

There are some differences and I think these are to try and get at explaining why the differences are coming from the stock synthesis model, and the estimates reported in the literature. Also in addition to that these are the abundance estimates coming from SEDAR 18; which I'll get into in a minute. The stock synthesis base *model in blue and then the reporting rate alternative, with that reporting rate fixed. You can see the reporting rate estimate fixed essentially just scales the population up. The trends are exactly the same as the base model, it is just scaling the population estimates up for abundance; and that is going to result in a lower fishing mortality with the same catch levels going in. You can see here that those abundance estimates in the top left hand corner are Age 0 recruits.

Next to that are the Ages 0 through 5, abundance aggregated, and then in the lower panel are Ages 6 plus; so the plus group abundance. You can see that those abundance estimates coming from that tag reporting rate sensitivity run are consistently inconsistent with the estimates coming out of the stock synthesis model, and also SEDAR 18.

With this information and the inconsistencies in the tag reporting rates and how to treat that; the Stock Assessment Subcommittee made the decision to exclude the tag recapture model from the base model being presented to the desk reviewers for evaluation. Then this is a comparison to some of the estimates from past assessments.

There is a gold line that estimates spawning potential ratios from the virtual population analysis back in the nineties and 2000 by Vaughn and Carmichael, and it estimates SPR over a blocked period for two periods. Those SPR estimates are more in line with the catch-at-age alternative that we put together to bridge between stock synthesis base model and the SEDAR 18 results.

Then the SEDAR 18 results are much higher than what's being estimated in the stock synthesis base model, the stock synthesis catch-at-age alternative, and also the Vaughan and Carmichael SPR estimates. I'll go through a couple of slides here to explain why some of those differences are occurring.

The first is the selectivity; SPR values are highly dependent on selectivity estimates and highly sensitive to selectivity estimates. You can see that there are some differences in the selectivities being estimated by fleets from the SEDAR 18 model, the stock synthesis base model in orange, and the catch-at-age alternative model; which was built to bridge kind of the gap between those two models.

In the top left hand corner is the selectivity in the most recent years for the commercial gillnet beach seine fleet. In the panel next to that in the top right is the commercial other fleet. In the lower left hand corner is the recreational harvest fleet. Next to that on the lower right hand corner is the recreational discard mortalities. What you can see here is that the stock synthesis model tends to estimate selectivity at age higher for some of the older ages typically associated with above the slot limit than SEDAR 18, and also in some cases the catch-at-age alternative.

I will note that for SEDAR 18, again that was noted as a major model uncertainty was how to specify the selectivity estimates. Those estimates for some of the older ages had a constraint on them that would pull those estimates closer to a central value. In stock

synthesis the selectivity over the ages is estimated freely for all the ages.

There has been some note about the selectivity comparing to some selectivity estimates out of, again these Bachelier et al. papers that look at selectivity estimates through a tag recapture study. But I will note that in 2010, Bachelier et al. published a paper updating some of the selectivity estimates; which resulted in an increase in selectivity at age for some of those older ages above the slot limit. What I have in these figures is selectivity at length, which is how selectivity is estimated in stock synthesis. The stock synthesis estimates are the green lines, so again going by fleet in the top left hand corner is the commercial gillnet beach seine fleets; next to that is the commercial other fleet. In the lower left hand corner is the recreational harvest fleet, and next to that is the recreational discard fleet.

The stock synthesis selectivity estimates at length are in green and the Bachelier et al. 2010 selectivity estimates are in blue. You can see that they do match up quite well with the selectivity estimates from the stock synthesis model. The black lines indicate the management slot limit currently in place.

These shifts that they found in selectivity at length, these revisions, they also translate to higher selectivity at age for some of the intermediate ages. They showed the comparison to some of their estimates in their 2008 paper, and showed that they're estimating a higher selectivity at age for some of the ages above the slot limit.

Then this is a comparison of fishing mortalities from the Bachelier et al. 2008 paper in black, the stock synthesis base model in blue, and the SEDAR 18 model in red. Something to note here is, going back again as I noted before, the SEDAR 18 model fits to fishing mortality estimates from this Bachelier et al. paper.

As we would expect, it is fitting closely to those fishing mortality estimates and essentially

treating those F estimates as data. Those F estimates are not included in stock synthesis. The hope was that the tag recapture data would be incorporated through the tag recapture model, but as I mentioned before that is not included in the base model.

The SEDAR 18 results are strongly influenced and driven by the fishing mortality estimates out of that Bachelier et al. paper, whereas the stock synthesis model does not incorporate those fishing mortality estimates. There is also a slight difference in the maturity schedules being used in stock synthesis relative to what was used in SEDAR 18.

In the data workshop we went back and reanalyzed some of the maturity data. This is all maturity data from a paper Ross et al. from 1995 and we were able to pull the data from that paper and found that the classification of developing fish was immature. Going by a more recent publication by Brown and Peterson and also et al. in 2011, which has been widely accepted as a standardized reproductive methodology paper, those fish were reclassified as mature.

This led to a slight increase in maturity at age, most notably for Age 3. The SPR estimates are also a function of the mature fish; so with the increase in maturity there is going to be a slight decrease in SPR relative to SEDAR 18, because more fish are vulnerable to the fishing mortality. Again just noting the abundance estimates, the primary difference between SEDAR 18 and stock synthesis base model is the plus group.

You can see that the Age 0 abundance in the upper left hand figure is quite similar for SEDAR 18 and stock synthesis; with the abundance aggregated over Ages 0 to 5 in the upper right hand figure. SEDAR 18 in the black line is estimating a little bit more of a response, it is estimating lower fishing mortality and estimating a little bit more of a response of the abundance of those age classes; but follows a similar trend to the stock synthesis base

estimates. If you look in the lower figure that is the abundance of the plus group. Again this, I think, goes back to the concern noted by the peer review in SEDAR 18 that the abundance of the plus group was highly uncertain; almost to the point of being uninformative. Whereas, stock synthesis makes an improvement on this by incorporating some catch information before the model times series, and also some recruitment deviations from the data included in the model to estimate a more accurate initial age structure.

Some recommendation from the peer reviewers, the most noted was probably to continue exploration and incorporation of that tag recapture sub-model in the stock synthesis model. Increased temporary resolution of model time step, right now it is an annual time step and there is some thought that because of fast growth of red drum throughout the year that we're finding the temporal resolution to a more seasonal model may improve the estimates of age and length.

Also a recommendation to further evaluate the data weighting within the model, and some recommendations from the Technical Committee, which has constantly been a concern is to collect size composition data from the recreational releases; to inform the size structure of those fish vulnerable to recreational discard mortality, and to further investigate the discard mortality rates of those fish.

SOUTHERN STOCK

CHAIRMAN JIM ESTES: That concludes the presentation on the northern stock, and I think we're going to transition over to Mike Murphy to present on the southern stock.

MR. MIKE MURPHY: I am going to go over a quick synopsis of the southern red drum assessment. Jeff has introduced a lot of the process in the review. Before reviewing some of the more important data inputs, I would like

to also go over a quick review of previous assessments; if I could have the next slide.

Prior to 1996 red drum were managed as a single stock on the Atlantic Coast by the council and by the Atlantic States Marine Fisheries Commission, and '96 is recognized as two stocks for the reasons Jeff just outlined. Since then there have been assessments that have estimated static spawning potential ratio and a series of management benchmarks have been set up.

Early on Vaughan, in 1996, in Vaughan and Carmichael assessments found very low static SPRs, and the Commission went with a first-step approach of trying to recover the stock to a 10 percent SPR level. Then with that second assessment it was note that that recovery on that first step had occurred in the early nineties.

An update of the assessment methodology to a statistical catch-at-age resulted in a marked change in the estimated spawning potential ratio at SEDAR 18. As you can see while it was very uncertain, and as Jeff mentioned the final review was that only qualitative information could be taken from that assessment, the general upshot was that the red drum exceeded some of the management thresholds at the time, but that there was an obvious declining trend in the SPR.

The current assessment, SEDAR 44, is for the years '89 through 2013. Early versions of this assessment attempted to use data back through 1950, but in general reviewers discouraged that work because of the very sparse data prior to the late eighties; in terms of age structure and the uncertainty in the catch.

I'm just going to go over some important model inputs here pretty quickly. First the removals, the different fleets included in the service stock model are all exclusively recreational right now. There was a small commercial and still is a small commercial fishery in Georgia, and there was one in South Carolina. However, the Committee determined that the size structure

and landings of these were really equivalent to the recreational harvest; so small, commercial harvest was just included in the recreational harvest estimates. As Jeff mentioned, for the analysis of the live release deaths, that is the fish that are released in a live condition that eventually die, we assumed an 8 percent release discard mortality rate for the base model.

The graph shows that there has been a sharp drop in landings that the model didn't use, if you look at the early landings from the mid eighties down to 1989. Since then there has been a general overall increase in the total kill, which would be the green lines. The landings have been fairly flat, although recently they've increased; and the live release deaths have increased slowly over time.

Just as an aside, the red dash lines are actually the model fits to these data; so you can see that the model essentially replicates the landings that we input as data. The catch composition of each of the fleets is important to the stock synthesis model, and here I've just pulled out the 2011, 2013 averages showing the actual data in the black lines of the length frequencies for the different fleets in the assessment, and then the red dash line is the model predicted values.

I've also superimposed on these graphs the minimum and maximum sizes for the different states in green. You can see in all states the harvest fleets generally capture a lot of fish close to the minimum size limit. In particular Georgia, most of the catch is quite close to the minimum size limit; whereas in South Carolina and Florida a lot of the harvested catch is spread out throughout that slot limit.

There was a lot of effort to establish the sizes of released fish for this assessment. Jeff mentioned how really that is still a recommendation for more information. What the committee decided to do in the end was to use the tag and recaptured fish reported by anglers; as to have been released at the time of

recapture as a proxy for the lengths of released fish in the recreational fishery.

In addition to that Florida that has a logbook that had some information from volunteer anglers on the sizes of their released fish. In general the data were almost exclusively from those South Carolina tag recapture-released animals. You can see the sizes of those fish are generally centered around the upper size limit, if not above the upper size limit.

Many of the releases in the red drum fishery are for large sub-adult fish with a minor proportion of them being at the lower end of the slot; according to the data used in the analysis. Now these of course infer ages within the analysis, the growth estimated in SS3 is used to convert the length composition data that is input into ages.

You can see from here again just a summary slide of the most recent average. Most of the harvest in South Carolina are Ages 0 to 1, in Georgia Age 0 and 1 also; with the predominance of Age 0s, and in Florida Age 1 and 2. The live releases are a much larger size age range from say, mostly Age 1 through Age 3 or 4.

Now, in addition to these removals there are several scientific surveys of red drum that we use to guide the determination of red drum abundance trends. Overall most of these indices supported the other indices that used gear that captured similar sized fish. Here I show four of the young-of-the-year or Age 0 indices; these are in orange, the South Carolina stop net. In blue the South Carolina trammel net survey from '94 onward. In black the Florida seine survey from '98 onward, and then the Georgia gillnet survey from 2003 onward. You can see the coherence in the trends.

The red line is the model fit to this age group. You can see that this includes small year classes that are consistently recorded for, say year 2000, and then another small year class in 2005, and some larger year classes like 2003 and a

more recent 2010 year class. If you look at this closely without a lot of these confidence limits, recruitment has shown a very slow increasing trend in the southern region.

Likewise we have relative abundance indices for Age 1, and these show the same coherence in general; a little bit less agreement between the indices, but you do see those same small year classes, just over the next year obviously, so for 2001 and then for 2007 of the small year classes I just mentioned.

A difference here in the most recent years in South Carolina we see a fairly strong downward trend from 2010 onward. This trend is not picked up in the Florida hull seine data; and I just mention that as really some reasoning behind sensitivity I'll mention in a minute. Finally for indices, we had a number of surveys on older age classes.

The MRIP Survey, which is a total catch rate for anglers that is standardized as an index of the overall abundance of the fish available to the recreational fishery. It is shown from 1991 to 2013 in the graph on the left in black. Superimposed on that is the Age 2 survey from Florida, which is the oldest age specific survey.

That may not actually capture the exact same age classes as the MRIP survey, but it was just convenient to throw on the slide. One thing I'll note here is that the MRIP survey had fairly tight confidence limits compared to the other indices. It has a strong impact on driving the trends and abundance for use in the model, and as opposed to what we saw for South Carolina these last three years or four years for the MRIP index actually indicates an increasing trend in abundance.

On the right we had a number of longline surveys that are being used to monitor the relative abundance of the adult portion of the stock. The fits to these are actually not great in the model because of the number of age classes involved. The dynamic changes in the surveys, for instance seen on the right with the South

Carolina one mile survey that was conducted for a while in the mid-nineties and early 2000s that dynamics cannot be picked up by the analysis; because that generally is a sum of about 40 year classes that dominate in that group.

What the model is predicting is an increasing trend in abundance early on, which is seen a little bit in the later years of that survey; and then more of a leveling of the abundance in the surveys that you see on the right there, which are the Georgia longline in blue, and the South Carolina one-third mile longline, which is a revision of that one mile longline that was conducted earlier.

Jeff really went over well the assessment development and review process. I'm not going to mention anything further on that. What I'm going to do though is quickly go over the revised base model and the findings for changes in biomass, fishing mortality, recruitment, and the result in SPR. In these I'm going to include graphs that include the trends in those characteristics for the different sensitivities that were run. Sensitivities were run for different levels or different ways to estimate natural mortality, either within the SS3 model or external to the SS3 model; different levels of steepness, different levels of the release mortality. That 8 percent was bumped up to 16 percent as a sensitivity.

Whether the MRIP Index was included or whether it was excluded from the model, as I've mentioned that difference between the MRIP trend and some of the other indices caught the eye of the panels of that sensitivity, and then whether the tag/recapture data are included in the model or not.

I'm not going to really mention the retrospective analysis, but that was also conducted for the 2009 through 2012 terminal years. There was some indication of a retrospective effect on the total biomass, but not on fishing mortality or other features. Here is a slide of the assessment findings, the total

biomass and the spawning stock biomass, which much of that nearly doubled between 1989 and 2008; but then has remained flat through 2013

You can see that in the reflection of the fits to those longline indices. A sensitivity run using the lower steepness value of 0.8 can be seen as that green line that is well outside of the upper 95 percent confidence limit for spawning biomass. That sensitivity indicated a much larger stock. Another sensitivity of steepness at 0.9 also indicated a stock level that was at the 95th percentile confidence limit, so those were both influential in determining or influencing the models estimate of the total biomass.

When we excluded the MRIP Index it predicted much lower starting values of starting biomass; so that is that lower dotted line there. But the biomass recovered to about the same level as seen in the base model. You can see if you look at recruitment that upward trend that I mentioned earlier on when we were looking at the Age 0 indices.

Just for the sake of time, the sensitivities generally fell within the 95 percent confidence limits of the base model estimates with the sensitivity with the lowest steepness value which indicated the higher biomass; also indicating a higher level of recruitment. Now the summary average fishing mortality rates show the decreasing trend from the early nineties through the late nineties, and then a flat period a more recent increasing trend.

Again the sensitivities that were superimposed on the fishing mortality, the sensitivities for the higher biomass and recruitment of course indicated that the catch taken from that biomass resulted in a lower fishing mortality rate; and vice versa for the sensitivities that indicated a lower biomass or a lower recruitment.

Now the SPRs of course are quite related to the estimates of fishing mortalities; essentially in an inverse kind of way. The SPRs also showed, the base model showed a trend around the 30

percent threshold through the late nineties; bumping up above those levels for a little while, and then descending back to that area of 30 percent, until about 2010 when the SPR levels are estimated to be quite a bit lower than the threshold levels set as the benchmarks.

Now looking at the spawning potential ratio a little closer, again I indicated the sensitivities which indicated a higher biomass and lower F_s also showed a higher static SPR. That's what you can see as the green. In addition the sensitivity to the two X release mortality or the 16 percent release mortality indicated a much steeper drop off in SPR over time; which would be expected. As you've seen the number of released fish that subsequently died at 8 percent has increased through time; so that increasing catch is exacerbated if you assume that there has actually been the 16 percent release mortality.

That has a stronger impact on reducing the spawning potential ratio. Now I was just going to sort of end this summary talk with some graphs indicating how SPR has changed across analyses. Often we do within analyses retrospectives, but this is sort of an across analyses retrospective for SPRs.

I've showed this one already where the earliest estimates of SPRs were quite low, but based on much different data than we have available now; and then the SEDAR 18 estimate, which was highly uncertain but indicated at least a base level that was much above the 40 percent target. For SEDAR 44, we also developed a continuity model, which I would actually call a pseudo continuity model.

Where we used the SEDAR 18 model framework, but had to make some modifications to accommodate the new datasets that were used. It wasn't really just a continuation of the data that were used in SEDAR 18, but it was actually a replacement of those data with the newly adjusted MRIP information; and any other updates we had.

As you can see, if you use that and look at the continuity, we see a trend that is just below the SEDAR 18 line and continues on; but also with a decreasing trend in SPR. Superimposed on this is the SEDAR 44 base model. Here we see this marked depression in the estimate of SPR. Really the question out now is what can we attribute this to?

Here I've taken away the 95 percent confidence limits for the old SEDAR 18 model and then put the confidence limits on the new SEDAR 44 assessment model. One of the things we were interested in is to see if the aging of fish through the growth function in SS3 had a strong impact on the results.

What the green dotted line is is an externally generated age structure for the catches; as was done as import data for the continuity model, but applied to the SS3 model. It seems to for most of the time series, seems to indicate that SS3 and continuity approach are showing or giving fairly similar age structure data.

Some of the hope that may be going to a seasonal model and capturing growth in a better way; that may not really change the level of the SEDAR 44 assessment, because it seems to be consistent in terms of converting lengths to ages with the findings of the continuity model. But there are some differences in the weight at age, and as Jeff mentioned in maturity and all of those things put together could have certainly an impact on this level of SPR, this change that we're seeing.

Jeff mentioned in more detail than I'm going to mention, the continuity model selectivity functions were quite different than are used in SS3; and relied on some very simplified assumptions of relationships of selectivity between ages. There was some compression and some scaling issues that certainly made, at least when we started this process for a new assessment, made it clear to the assessment panel I think for the most part that it was time to move to another platform that would really eliminate some of that more subjective area of

that analysis. Another thing that may be important here is that since we are beginning in 1989, the initial condition of the stock can have a very big impact on essentially this level of SPR.

Jeff hinted at that when he showed some of the 6 plus group biomass estimates, and how much different they were between the continuity in the SS3 model runs. I think some work needs to be done to investigate how that plays into setting this level of SPR.

Really with that, that is the information I wanted to provide for the southern stock. I'll end it there, and wait until after Jeff Brust's presentation for questions. Thank you.

PEER REVIEW PANEL REPORT

MR. JEFF BRUST: Thank you very much, my name is Jeff Brust. I was Chair of the Peer Review for both the northern and southern stocks of the red drum stock assessment. As Mike and Jeff have mentioned, this was a multi-step review process. The initial plan was for the completed models to go through the SEDAR 44 review in August of 2015.

The Peer Review Panel for that workshop was myself as Chairman, Gavin Fay with U. Mass, Dartmouth, and then three reviewers from the Center for Independent Experts. The CIE; Sven Kupschus, Carmen Fernández and Jamie Gibson, they are all very active in the CIE review process, and so you've probably seen their names before with other ASMFC related species.

As Jeff and Mike mentioned, the models were not complete at the time of the SEDAR review, so the objectives of that meeting was changed to provide guidance to the assessment team on how to continue the development of those models to establish stable and converged models. Following the SEDAR the assessment team went back, followed up on a lot of the suggestions that that the SEDAR panel suggested.

They completed the models in March of this year, and then the second step of the review process was a desk review that happened late March and early April. The reviewers for that were myself and Dr. Fay. There were ten terms of reference for this review listed up here. Because we did not have final models during the SEDAR review, we were not able to address all of the terms of reference during that review; so this is just a table of which terms of reference were addressed during which of the portions of the peer review.

Terms of Reference 1 and 2, they were addressed at the SEDAR. Term of Reference 3, this is the meat and potatoes of the assessment itself. Because we didn't have finalized models the panel was only able to provide guidance on this Term of Reference 3; the model structure and the parameterization.

Then the desk review this spring finalized the review of that as well as Terms of Reference 4, 5, 6, 7 and 8 and Term of reference 9 and 10, they were addressed mainly by the SEDAR, so again providing guidance on how to move forward both with the modeling and for future assessments. Our general conclusions are that both panels agree with the shift from the statistical catch-at-age framework to the SS3 framework.

It provides a lot more flexibility and incorporates a lot of the types of analyses that were being done externally before. I did want to mention, both panels felt that the assessment team put in an amazing amount of effort. They did a fantastic job, not only switching the model from the statistical catch-at-age framework to the SS3, developing the new input files; adding all the new bells and whistles that they weren't able to do in the SCA, as well as addressing the inquiries and the recommendations from the panels to develop these stable models. I wanted to make that known that we appreciate the work that they put in and we think they did a fantastic job. The panels both agree, while primarily the desk review, the preferred models as presented by

Jeff and Mike, these represent the best available science that incorporates the scientific knowledge of the assessment team and the technical committees.

The overall finding that both northern and southern stocks are below the SPR 30 percent threshold, we support that. It is not on this slide, but overall we do recommend that these models are the ones that are used for management. We see them as suitable for management. Specifically for each of the Terms of Reference, the Term of Reference 1 is to evaluate the thoroughness of the data used in the models.

It is our conclusion that the assessment team conducted a thorough search of the available datasets. They evaluated each of the datasets, they had I think seven or eight specific criteria against which each of the datasets were evaluated. They did a thorough job against that. The panel supports the justifications for which indices and which datasets were included and how they were used in the model.

There were a couple of datasets that we suggested could get more evaluation. I think the northern model included a sensitivity run of one of the indices that was originally excluded; was recommended as possibly being included, so I believe that was included in the sensitivity runs. But overall they did a thorough job. We agree with the data sources that were used and how they were evaluated.

Term of Reference 2 is stock structure. The assessment team maintained the structure that has been used since 1996 or so, this is the split at the North Carolina/South Carolina border. This split is based on life history differences. There is some information from tagging data that there is limited movement across this border and there is some recent genetic work as well that supports this.

The panel concurs that this split is appropriate and should be maintained. Term of Reference 3 is to evaluate the methods and models used to

evaluate the population. Again, we agree that the shift to the SS3 was an appropriate move. Jeff mentioned a lot of the issues that SEDAR 18 had with the statistical catch-at-age the SS3 framework is more flexible, it is well tested, it is well supported, and it is used widely throughout the fisheries management.

There are a couple of new modules; the tagging module in particular. It is relatively new to the SS3 framework. It has gotten a lot of review at the beta testing level. I am not aware of it being used in practice a lot, so I think there is a growing body of evidence on how to use that module. The data that were being used for both the north and south in that module will definitely need some more exploration; particularly as we've seen that at least the northern model is sensitive to how those data are used.

The recommendation from the August workshop, the SEDAR workshop was to greatly simplify the models. The assessment team had extended the time series back to 1950; they had incorporated a number of selectivity time blocks. Because of the problems that we were seeing in the model stability and convergence, the panel recommended to greatly simplify the model get converged models that are working that are relatively realistic and then start adding complexity back in. The assessment team, they did that. They did a phenomenal job. They tracked down what appeared to be causing the major issues with the models that we saw back in August. They did significant dozens of sensitivity runs to evaluate the uncertainty in the model; and so the preferred models that were just presented now, we think they are a significant improvement over what was presented back in August.

There is still potential to add some complexity. The models were greatly simplified since August. Some of that complexity has been added back in for these preferred models. There is still some ability possibly to again, maybe extend the time series back prior to the 1989 start year. Term of Reference 4, evaluate

the diagnostics, again I mentioned they did dozens of sensitivity runs; many of which were presented here.

The models are robust to most of the assumptions that are used for the data and the model framework. For those that are more sensitive, such as the tagging in the northern region, the panel agrees with the parameterization that was selected. It seemed based on the available information, particularly the tagging module; the way the tagging data is used in the preferred model is what we see as the best way to move forward at this time.

As both of them, Mike and Jeff mentioned, there are no consistent patterns in the retrospective pattern. Term of Reference 5 is to evaluate the methods used to characterize uncertainty in the estimated parameters. Again, both regions did a thorough job. They looked at a number of different ways to characterize uncertainty, likelihood, profiles, bootstrapping and a number of different ways.

In most cases the results were consistent among these different methods. There was some uncertainty. There was an error in some of the bootstrap runs that was noticed after it was too late to correct the model and get it out to the panel in time for review in the southern region; but overall we didn't feel that that was a debilitating aspect of the uncertainty characterization.

There were a couple other runs that we thought might be important to run; such as a sensitivity over the tag reporting rate. There were two that were done, possibly using the value from the Bachelier, 2008 paper of 0.18, or even doing a whole profile over a range of different values would have been very informative to see how the estimated parameters would change with those different values.

Essentially what level of reporting rate is critical to change from that overfishing to not overfishing status in terminal years? Term of Reference 6 was minority reports; there was no

minority report so that one was pretty easy. Term of Reference 7, recommend the best estimates of stock biomass and other biological parameters.

As I said, the panel concurs that the assessment reports as presented here, they incorporate the expert knowledge and best available science and so we conclude that the assessment reports represent the best estimate of population and fishery dynamics for both regions. Term of Reference 8, evaluate the choice of reference points.

The reference points that are used for this assessment were established under Amendment II back in 2002. The target is an SPR of 40 percent and a threshold of 30 percent. No alternative reference points were presented for this assessment, and the panel saw no reason why they should be changed. In recent years the average values for both the north and the south were below the threshold SPR value of 30 percent. Here you've seen these plots before. The top left is the northern SPR relative to both the target and the threshold, and the lower right is the south relative to the target and the threshold.

Term of Reference 9 is to review the research recommendations. The research recommendations generally fell out into two main categories; those for better understanding the life history of red drum and those that were relative to the model performance. During the SEDAR review the recommendation in the short term was to address the ones that could help us understand model performance.

The SEDAR panel also included or suggested additional research recommendations; which as I've mentioned the assessment team, they addressed a lot of those research recommendations in the short term. There are some life history ones that should be looked into. Jeff mentioned a couple, Mike mentioned a couple; in terms of release mortality rates and things like that.

There were a few recommendations within the desk review, but those were more investigative model performance kind of things for future assessments; rather than data collection type research recommendations. Term of Reference 10, recommend timing of the next benchmark, back in August this was addressed by the SEDAR panel. Back in August when we didn't have a complete model, the recommendation was to complete the models and do the next benchmark as quickly as possible.

I believe under the ASMFC process that is what this desk review was; so I believed we have addressed that one. Then following the next benchmark the timing of updates in the next benchmarks are, given the life history of this species and the long lived nature and the slow response possibly of the increase in biomass and SPR because of their long lived life history, the five year trigger is probably the minimum.

We might be able to go longer given the life history of this critter before we do the next benchmark. That is not withstanding any information that we get on life history or model performance or things like that that might be impetus for an updated benchmark. But based just on life history, five years at the very minimum is probably realistic. Just one conclusion, yes so again it was an impressive performance by the assessment team both in the north and the south. They've done a lot of work.

It is very impressive what they've done. The new modeling framework is an improvement over the statistical catch at age used during SEDAR 18. Both the northern and the southern models are well described and appropriately parameterized. They've adequately evaluated the uncertainty in the model structure and the data that was used for it. The results of both models are robust to most of the assumptions that are used. Again, the panel recommends both model are suitable for use in management. That Mr. Chairman is my presentation.

CHAIRMAN ESTES: Thank you, Jeff, Jeff and Mike. Obviously a whole bunch of work was done with this. I'm reminded of, I think it was the late 1990s when I did a simple VPA on black croppery in Lake Okeechobee and I thought I was on the cutting edge. I don't know what has happened to the world. Everything has gotten a lot more complicated, obviously.

I think what we'll do now is before we have questions maybe we'll have lunch, and during lunch you can chew your sandwich or whatever it is and chew the information that you just heard, and so we'll come back from lunch in a half hour at 12:15 and reconvene, if that is all right with everybody. Thank you.

(Whereupon a recess was taken.)

CHAIRMAN ESTES: What I originally thought that we would do with the questions, and I think there are going to be quite a few questions; because this was pretty complex. First of all, do we have Mike back on the phone yet? Hang on just a second, we'll call Mike back. Okay here we go.

I thought originally that it would be simpler to ask questions about the northern model and questions about the southern model and questions about the review. But I think after hearing all the information that we got today, I think it is just throw it open. Do we have questions about the assessment or the review?

MR. CHRIS BATSAVAGE: I guess going back to the information on the tagging data that was for the northern stock. There was obviously difficulty in estimating the reporting rate. They I guess tried the estimate of the reporting rate that was derived from the model and then the one from Bacheler et al. which is 0.49.

It was discussed here in the presentation that the 0.18 was considered but wasn't tried, and some of that was due to the concerns of that time period covered a couple years where there were high reward tags; so there might have been a little bias in the reporting rates. But I

guess a question that I have about that is I think just even thinking forward as far as trying to use tagging data in the future.

With tagging studies part of your success in the reporting rate is just the outreach that you do to get the word out to the fishing community about the tags, and make sure that you are turning them in to the right group. That has come and gone over the years, as far as the amount of effort. If I guess more outreach is done in future tagging studies, could that also cause concerns regarding bias for trying to determine what an appropriate tag reporting rate might be for either looking at this further or future use down the road for the red drum assessment?

MR. BRUST: Yes, so currently one of the limitations of the tag recapture model within stock synthesis is that recording rates by fleet are not allowed to vary with time. This was one of the recommendations because of those releases of high reward tags and the expected increase or the potential increase in reporting rate of even low reward tags; due to the advertisement of those high reward tags in the population.

This was a primary recommendation by not only the stock assessment team, but also by the peer reviewers that we pursue incorporating a time varying tag recapture reporting rate into the model. Our hope is that that is something that can be incorporated down the road; and as I mentioned earlier, one of the reasons to moving to stock synthesis is that it is supported and peer reviewed and used in the assessment community. Kind of the authors and the leaders on that project are responsive to incorporating some of these bells and whistles or changes in options to the model; to incorporate some of these unique situations. If that was in the future plans to increase outreach, to try and increase reporting rate and buy-in of the tagging programs; that hopefully down the road could be incorporated through a time-varying tag reporting rate.

CHAIRMAN ESTES: Wilson, I think you were next.

DR. WILSON LANEY: I've got two questions. The first one is for Jeff and Jeff and Mike, I guess; and that is, do you all think that it could be because of the difficulty in sampling the full range of the population that that is a contributing factor to why the SPR is so apparently low? That is question one.

Then question two is, I know from some of the work that Julie Harris has done at NC State that there is a way that you can do some genetic evaluation on juveniles and get an estimate of the number of adults in the spawning population that had to produce that juvenile or those juveniles. It seems to me that we have an opportunity, possibly, to use that approach to get sort of an independent reality check on the SPR estimate, and especially since Robert in South Carolina.

South Carolina has selectively stocked some areas with juvenile red drum, and we would know in that case exactly how many parents they had. I mean you could do the genetics on the stocked fish; and determine that that estimate of parentage coincides with the numbers that you used to propagate those fish.

But then you could also do it on wild fish, and maybe that would be sort of a supplemental approach to our standard assessment techniques, to try to get an independent idea of what the spawning stock population size really is. Just any comments or thoughts you might have on that second question would be welcome as well. Thanks again guys for a super job on using all the data to the maximum extent you could, and doing a great job on the assessment.

MR. KIPP: Yes, I'll take a stab at those and let Mike jump in if he wants to add to it. One of the kinds of consistent uncertainties with red drum specifically is this selectivity of fish as they exit the slot limit and immigrate to the offshore population or the spawning population; and

what that selectivity is, because the SPR estimates are highly sensitive to those selectivities; because SPR is just a function of the fishing mortality and the selectivity at age of those fish.

Ideally you would have a fishery that has flat top selectivity, at least one fishery where it provides a lot of information on the removals of red drum; and that provides information on kind of the magnitude of those fish that exit the slot and the older mature fish. Yes that is something to consider is the low frequency of catch of the adult fish.

There is not a lot of information on estimating that selectivity as those fish kind of move into less vulnerable states. The second question you had, Wilson, was on the genetics. There was a genetics study; I think it was in South Carolina. It may have been Tanya Darden; I can't remember exactly who the author on that was. But they did something along the lines of what you are referring to, which is trying to get kind of a genetic estimate of the population size.

I recall just a line in that publication or that study that said that the estimates on the population sizes from those genetic analyses corroborated the population sizes; strictly speaking I think qualitatively that the southern stock is much larger than the northern stock. But I don't know that it got more in depth than that. Mike, if you have anything to add.

MR. MURPHY: I could hear some of that. I would just have to say that those are certainly important information going forward. If we can nail down any kind of an absolute estimate of abundance of adults that would really help the scaling in the stock assessments. I know we've done some work on the Gulf Coast where we've taken fin clips from individual adult red fish; and actually been able to identify them as individuals, and use that as a natural tag.

It is certainly plausible to do a large scale tag recapture program if you can get enough, I guess volunteers or scientists to submit those

kinds of samples to a lab and set up something in a scientific fashion. It might be possible to get an estimate of the adult stock; which would be a huge plus for the assessment.

Now that has certainly been something on the Gulf Coast where there is a federal fisheries management plan still in place; where they've thrown lots and lots of money into the traditional mark/recapture estimates programs to try to get an estimate of the adult population size. That and things like egg and larval surveys, which are fraught with other errors to sort of back cast what was the number of adults that produced those numbers of eggs. That's it.

MR. JOE CIMINO: I want to thank well everybody for all the hard work that they've done. I guess I'll start with, I appreciate what Wilson has said and Mike's response; because I have concerns with both the models and kind of this scale of where they are estimating this biomass to be and the SPR rates. I certainly support if any further work can be done on that it would be appreciated.

I have one specific question for the northern assessment model as well; and I guess it may be to both Jeff's. Correct me if I'm wrong, but I didn't hear it much in the presentation, but the talk about only one JAI going into the northern model; and conflicting signals when you have large catch with an assumption that maybe there was a stronger juvenile recruit coming through the Chesapeake Bay.

My question is I guess basically, were there any thoughts on a way to address that; perhaps weight the North Carolina JAI with any of the information that is available north of them? Because it seems like, and this is the part where I would ask you to correct me if I'm wrong, but it seems like the model is sort of penalizing SPR here because of high catches.

I'm assuming that those high catches are really just coming because the fish are available. Any thoughts on a way to address it, was it enough of a concern? It didn't seem to make the

presentation on one of the things to be addressed.

MR. KIPP: Yes that is something we saw, and I don't know if I can bring up a slide here just to illustrate. But right now there is only a North Carolina JAI in the model. There are no JAIs that we reviewed outside of that that we thought were useful for the model. We hoped that by bringing in the MRIP Index that that would incorporate some information outside of North Carolina. But that is something that we did see there. For example, in 2002 there was a large catch by the recreational fleet; both harvest and discard mortalities.

That is consistent with a large year class moving through the population. However, the indices if you look at the North Carolina JAI, the 2002 year class are the smallest over that entire index. If you look at the MRIP it is extremely large, but the model misses that signal coming through the MRIP Index and tries to kind of balance between that signal coming from the North Carolina Index and also from the MRIP Index; and essentially compromises between those indices and that conflicting signal.

There are some things we did with data weighting; there are things like iterative reweighting you can do that are built in within stock synthesis. Some of the sensitivities we did around that didn't suggest large differences in the population estimates. We didn't really pursue that any further than that; other than to note that there is the potential for pulses of fish that are missed through just having primarily North Carolina indices in the model.

MR. BRUST: To that point, Joe. I don't remember specifically if it made it into the research recommendations, but I do recall some discussion at the SEDAR workshop about only having one index. We know similar species there are regional variability among years. As this is showing, if they are not showing up in North Carolina where are they coming from? Having additional young-of-year indices from other regions would be very helpful to inform

the model, and help it figure out what is happening in years like this 2002 year class.

MR. CIMINO: Just a follow up. The JAI is a pipe dream for us, and hopefully eventually we will find a way to get a survey that captures these. I kind of was hoping to hear that there might be something else to explore that we could do to find a signal on these younger fish. My only thought is we did spend some time for a past assessment with this; doing length based stuff through our tagging program for smaller fish, and then kind of setting up ages based on seasonal length fins. I know North Carolina has done similar work, so just a thought.

MS. FEGLEY: I really recognize the challenges that this assessment has presented so kudos to the team for sticking with it and coming to this outcome. I do have a lot of questions. I always have some concerns when things look so different from benchmark to benchmark; although it does happen. I'm wondering, in particular I have some questions about the relationship between the spawning stock biomass and the SPR fishing mortality and recruitment.

I'm wondering can you pull up the graph of the SSB for the northern stock. I'm looking at Page 80 of the assessment; which has the SSB, the SBR and the recruitment all in one panel in the document. The question is it looks to me like the SSB, which is fairly flat through the recent part of the time series, and this speaks to this question of scale that Joe brought up. It looks to me like it's sitting right at about 1,000 metric tons. Is that right?

MR. KIPP: Kirby will bring this up. There was a slight error in the reporting of that spawning stock biomass in that figure that was provided in Addendum II. That was halved from what it should have been; and I apologize for not pointing that out earlier. This is the corrected. It is really just everything is just adjusted by 100 percent, so it is two times that in the spawning stock biomass plot. That's the only thing that was affected; trends, all the other estimates,

SPR and everything else were not. It was just a reporting into that figure that was incorrect.

MS. FEGLEY: It is at about 4,000 metric tons. Is that a realistic number? It is pretty low; it's a pretty low number for a fish that lives out to 40 years. Just to move on from there. Then in 2012, we had that very high recruitment and then the F goes through the roof and the SPR goes down. I am just trying to put together in my head. I am trying to put it all together and what would cause the F to go up so high in 2012; concurrent with that large year class? Is that discards of little fish? Is that what's going on?

MR. KIPP: Yes so that would be attributed to a very high discard event. There were a lot of discarded fish, and again 8 percent of those are assumed to die post release. That affects the fishing mortality, and I think this comes back somewhat to the indices again. There is some conflicting information in the indices that are included in the model; where it doesn't suggest that that was necessarily as big of a year class as would account for all of that increasing catch.

Therefore it is going to estimate a high F, large removal and not that necessarily big of a year class. It was big, obviously for this time period, but you can see in the indices of abundance some are overestimated and some are underestimated for that year class. Again it is a conflict in that year class across these indices; and trying to compromise that fit to those different indices.

It comes out with a year class and then that large removal event, and estimates a high fishing mortality; which is then spread over all of the age classes in the fishery as a function of the selectivity of those fish at that age. That is why it is leading to a low SPR; then the first part of your question, the spawning stock biomass.

Again one of the differences between stock synthesis and the old catch-at-age model is that that initial population is estimated as a function of previous fishing; which is in this case we took

a ten year average of the removals observed and used that as kind of a catch before the model period, to fish down that stock.

It fits to that catch and then fishes down the stock to get it to a point where it thinks it is, and then also incorporates some deviations of those age classes in that initial population structure; based on other information in the data. For example, we saw a big year class coming through some of the older ages in that abundance plot.

That is mostly driven by the age data collected in the longline survey, which would suggest that that year class was a very large recruitment event way back in, I think it was the seventies, '74. It is estimating a very, very depleted spawning stock biomass in that initial year; which would indicate intense fishing pressure for a long period prior to the start of the model year.

CHAIRMAN ESTES: Other questions. No more questions so we had a couple of stock assessments, so now we need to discuss any actions that we might need to take. Is everybody tired from dinner?

DR. LANEY: Well, I guess one action Mr. Chairman would be to make a motion to approve or accept I guess in the terminology the assessment documents for management advice. I would move to make that motion.

CHAIRMAN ESTES: Do I have a second? John Clark second. If I can have it up on the board I'll read it. Move to approve the stock assessment for management advice. Let's have some discussion about that if we might.

MR. ROBERT H. BOYLES, JR.: Motion to postpone. I understand there are some questions about the assessment that I think I could benefit from some advice from the Technical Committee.

CHAIRMAN ESTES: I need some parliamentary assistance here.

EXECUTIVE DIRECTOR ROBERT E. BEAL: You'll need a second for Robert's motion to postpone; and Robert is that for a time certain?

MR. BOYLES: Yes, and I'm not trying to be cute here with this. I think there are some things that I could use some technical advice for. Let me be clear, I think it is important to acknowledge the terrific work of the assessment. Please don't look at this as a negative. I just think there are some questions that I've got going over in my mind. I don't really want to postpone it, Wilson. But I'm not quite ready to approve the assessment just yet. I've got some questions for the TC.

CHAIRMAN ESTES: Do we have a second? Lynn, a second from Lynn, now a discussion on the motion to postpone.

MS. FEGLEY: I just have a question. At such time if the report is approved and the report is that we're overfished and overfishing is occurring, I agree with Mr. Boyles. The work here is phenomenal and it is a challenging case; but there are just so many questions that I think need to be answered. Can somebody clarify? Does the plan, would the board be obligated to take management action immediately? Is that how that would work?

MS. MEGAN WARE: Under Amendment II that would trigger management action, so whether that would be an addendum or an amendment, however the board would want to proceed.

MR. A. G. SPUD WOODWARD: Mr. Chairman, we've not received any guidance from our Technical Committee on this matter. I think there are some things that we could benefit from if they were to do some things. I think I actually have the text of a motion that I've given to Megan that at the appropriate time I would like to put up for consideration.

CHAIRMAN ESTES? Okay, let's deal with this one first. Robert, is there a timeframe for your motion to postpone?

MR. BOYLES: Let me ask this question again, not trying to be cute here. I guess I've got a procedural question. I would think that we could get the information from the TC that is in the text that Mr. Woodward just referred to, I would think by the August meeting; but I would look to staff for that.

Megan, if that is something you thought the TC, we could convene on a conference call or a series of conference calls perhaps. I guess my question; Mr. Chairman is if we accept the assessment for management advice, can we still ask this question? Again I am not trying to be cute with the motion to postpone. But there are some things that I would feel more comfortable if I had a better handle on with myself.

MS. WARE: I think that is really going to depend on what work you guys want the TC to accomplish. Before we were talking about the statistical catch-at-age model and potentially looking at runs with that. In speaking yesterday, if we came to the conclusion that if we were just to add the data, the extra years of data to that model, not adding the longline survey or any new data sources; that that might take four months to do runs for both northern and southern and get those all complete and ready to go.

I think if you want to add additional data sources such as the longline survey and kind of beef up maybe that model a bit, it would take more like six months; because we would then probably want to peer review that if you are interested in using this for management. Again, I think it is dependent on the goals of what you guys have, if you are interested in pursuing a different model that is going to take longer. If you want to beef up that statistical catch-at-age model that will take a bit longer.

MR. BOYLES: Mr. Chairman let me be clear. My motion is not intended to postpone indefinitely, based on our training we had yesterday. We certainly want to move through and move on issue that we will need to move on. Let me say,

Megan, when you said four months I was hopeful August. Let me say motion to postpone until the annual meeting.

EXECUTIVE DIRECTOR BEAL: We let Colette go about two hours too early I think. Robert, you asked a question earlier about if you approve the main motion to approve the assessment and peer review for management advice, what does that mean and can you change it? I think the short answer is no, you can't change it.

If you approve it for the document that you have in front of you now; the assessment and the results and the peer review for management advice that becomes the foundation for management advice, and the board will have to react to the information that is contained in that document. If this board is seeking additional technical work, one way to do it may be to – it gets tricky.

But modify the current motion that is on the board to postpone, and include the technical work that you guys would like to see. Move to postpone until the Technical Committee completes a certain list of tasks. Then the revisitation of that motion or the assessment is linked to when the TC finishes their work; it is not linked to a meeting of the commission. That may be one way to do it. That is up to the board. That may take a motion to amend your motion to postpone, but I think that is workable. We can stumble through that I think.

MR. BOYLES: I am not ready to approve this for management advice. I guess that is where I am. There are some questions that I've got. Having said that I recognize that there are some things we need to do. We've certainly got strong interest in this fishery in my state and some concern with my anglers about the status of the stock. We've worked ourselves into this so let me try this. Motion to postpone until the Technical Committee can review the information requested by the board and that information requested will be put up here shortly.

CHAIRMAN ESTES: Okay right now we didn't say this and I'm not probably going to do this right, but I'm treating this as a substitute motion for the original motion. Is there more discussion on that?

DR. LANEY: I'm scratching my head trying to remember our training yesterday, but from a parliamentary standpoint further anything if I was able to withdraw my motion; or would that just further confuse the issue?

CHAIRMAN ESTES: I'll look to Bob for help, but I think that we have another motion on the table, so I don't think that you can do that now. Is that correct, Bob?

EXECUTIVE DIRECTOR BEAL: Can you repeat the question, I was side barring with some folks.

CHAIRMAN ESTES: That's okay. Wilson asked if he could remove his original motion, withdraw it?

EXECUTIVE DIRECTOR BEAL: No, just because it is property of the board now and it's been debated and there are actually motions to amend it and change it that have been subsequently made. We're in an awkward spot. Robert started a second motion; you've got another motion to postpone. We need to sort the two motions to postpone out; I think is our first step.

CHAIRMAN ESTES: We cannot treat the second motion as a substitute motion for the first?

EXECUTIVE DIRECTOR BEAL: Yes okay, the wording is there now. You know the other option is to actually include the details of those tasks within this motion; if the board chooses to do that.

CHAIRMAN ESTES: I'm afraid to ask, but go ahead.

MR. ADAM NOWALSKY: Given that it's Mr. Boyles own motion, he would be within his realm of capability to amend his motion and

then if there is no objection from the board that would then become his motion. He has the right to amend his own motion; and then as long as there is no objection that becomes the motion up for debate.

CHAIRMAN ESTES: Okay is there any objection to Robert amending his motion? Seeing none; Robert do you have an amendment?

MR. BOYLES: Mr. Chairman where I am is acknowledging the great work of the stock assessment, but with a number of questions that I think are appropriate for the Technical Committee to review. Some of those questions I think there is language, Megan that you've got that perhaps you could display for the group.

MS. WARE: Yes, let me get Kirby to finish what he's working on and then we'll pull that up.

MR. BOYLES: Mr. Chairman, since we've received unanimous consent for me to amend that motion that is what I would like to do. But I would like for the body to see the amendment, so give us just a moment please.

Mr. Chairman my motion is to amend the motion to postpone until the Technical Committee and the Stock Assessment Subcommittee can complete the following tasks. Evaluate if current biological reference point types and values are appropriate for red drum given the species life history. Investigate the feasibility of an F-based reference point for juvenile red drum. Evaluate how red drum life history and fishery management measures affect the validity of age-based models. Evaluate whether the South region continuity run in the statistical catch-at-age model can be made informative for management and if yes, complete that continuity run. Evaluate if a North region continuity run of the statistical catch-at-age model would be informative for management purposes, and if yes, complete a continuity run. Evaluate tag return rates for each region and determine if the tag return data should be incorporated into a new run of the SS3 model.

CHAIRMAN ESTES: I believe we already have a second. I suppose I am supposed to read this again. Move to postpone; to move the task of the Red Drum Technical Committee and Stock Assessment Subcommittee. Are we changing? Excuse me.

EXECUTIVE DIRECTOR BEAL: Can I barge in here for a moment Mr. Chairman. I think since the board gave Robert the latitude to modify his motion to postpone. I think this motion is simply worded; move to postpone the approval of the stock assessment peer review until. Take out the words to amend on the screen.

If this becomes the motion to postpone until all these tasks are completed, whenever this is done is when the board will come back and revisit this. Under this scenario there are really only two motions in play; the motion to postpone and then the original motion that was made by Dr. Laney to approve the documents. I think that reflects where the board wanted to go and the latitude they gave Robert, and it may simplify things. There are only two motions in play now.

CHAIRMAN ESTES: Got it, so let me read the substitute motion. Motion to postpone the approval of the stock assessment and peer review until the following tasks can be completed by the Technical Committee and the Stock Assessment Subcommittee with the following: Evaluate if current biological reference point types and values are appropriate for red drum, given the species life history.

Investigate the feasibility of an F-based reference point for juvenile red drum. Evaluate how red drum life history and fishery management measures affect the validity of age-based models. Evaluate whether the South region continuity run of the statistical catch-at-age model can be made informative for management; and if yes, complete a continuity run.

Evaluate if a North region continuity run of the statistical catch-at-age model would be informative for management purposes; and if yes, complete a continuity run. Evaluate tag return rates for each region and determine if tag return data should be incorporated into a new run of the SS3 model; motion by Mr. Boyles, seconded by Ms. Fegley. Do we have any discussion about the motion?

MR. WOODWARD: I would just like to speak in favor of the motion. We don't have a crisis here. We've got a long-lived fish; we've got some metrics of the population that shows some stability. We don't have a depleted spawning biomass; at least we don't believe we do. What we've got is an indication of a trend that increasing fishing mortality that jeopardizes recruitment to this spawning stock biomass. I certainly support us taking a more deliberative and measured approach to make sure we gain as much confidence as we can before we consider making management changes.

CHAIRMAN ESTES: Other discussion?

MR. BOYLES: Again, I want to reiterate my appreciation and support of all the great work that has gone into this with the assessment. I think as Mr. Woodward suggested, this is something, there is a lot riding on this, particularly in the south. As I have indicated earlier, the data that we see in South Carolina certainly give us pause and we certainly want to make sure that we get this right; and find an appropriate management response forward.

I believe if these things, if we could get the TC and the SAS to help inform us on these things, then I would feel much more comfortable in moving forward with a management document. I want to be clear that I think at least from the anecdotal and scientific information from my state, there is strong interest and belief that we need to do something. But the standard to which we're held in our legislature requires that we make sure that we've got some of these

things sorted out, so thank you, Mr. Chairman, I would support the motion.

MR. BATSAVAGE: I also support the motion. Kind of adding to the previous comments, in terms of the Technical Committee review, I know obviously a lot of great work was done and it took a long time to get to where we are today; with all the data and the complexity of this model. I think this motion is kind of looking at some extra things to look at to kind of give us a clear picture of what the stock status is like.

But in kind of getting to where we are today. I understand that a lot of work was done in a short period of time; in order to kind of get to the May meeting. I think when this gets reviewed by the Technical Committee and the Stock Assessment Subcommittee that to try to give them the time necessary to accomplish these tasks.

This is a long list. Megan already kind of gave us a rough estimate of the time it could take to complete some of this stuff. I think it's just really important as Robert said to make sure we get this right, as far as what the stock status is. At the same time I understand as far as other tasks that this board and commission staff have, as far as stock assessments and all. This is going to maybe disrupt the schedule and that but I think this is important enough to try to be very thorough; as far as completing these to see what the stock status is.

CHAIRMAN ESTES: Other comments?

DR. LANEY: I certainly think that the list that Robert and presumably Spud have provided us; a worthy list and would certainly like to hear the answer to all of those evaluations myself. I just have a process question for Bob, I guess; and that is if we have assessments that have been done and we have a Peer Review Panel approval of those.

I guess we're not obligated to immediately go ahead and accept that. But it almost seems in some respects, and I can talk to Robert and

Spud about this and Chris offline. But it almost seems in some respects like we don't like the answer and we're looking for a better answer maybe.

EXECUTIVE DIRECTOR BEAL: You know it is a good point, Wilson. I think this is more of some technical questions to get the board more comfortable with the answers of the assessment. Are there responses that the Technical Committee and Stock assessment Committee can provide to the board to make them more comfortable with it; or are there other ways of looking at the signal that came out of that assessment?

This has been done in the past, where the board at the Commission have received stock assessments and peer reviews and not been immediately approved and some additional tasking for the Tech Committee has been given. This isn't the first time that the Commission has gone down this road; for better or for worse.

But while I had my hand up, I think the other thing, and Chris started talking about it briefly; which is the assessment folks that were involved in this assessment. Their work plans were pretty full and they were already moving on to, I know Jeff Kipp was working on croaker and spot for this board and some of the state folks that had some involvement were moving on to other species as well.

I am not speaking for or against this motion. It is probably worthy of some discussion that if the technical folks are asked to do these things, there may be some delays in other assessments that are before the commission as well. The plan right now, I think Megan can probably comment better than I can on the exact workload.

There are two ways out of this box, one is to find some other help to work on red drum or spot and croaker at the state level; or the other is things may have to be postponed. I think those are both reasonable options. But we just need to have an open discussion about that and

really control the expectations about all the workload really for these folks, probably through the end of the calendar year; if not into next year. I don't know if staff can comment. Megan may have some ideas on other workloads and other projects that are going on. It's probably worthwhile.

MR. PAT GEER: Bob covered part of what I wanted to touch on. But I also wanted to perhaps ask Mike and Jeff if any pieces or elements of the tasks onboard within the motion have been addressed in part. If there are any comments you guys could make relative to continuity runs that may have already been done.

MR. MURPHY: When I looked at these, when we did the original assessment for review when the SS3 models are not in adequate shape, we did have continuity runs for the north and south. I think as you saw in my presentation, we do have estimates of SPR. Now, the only thing in these statements that gives me a little pause is whether these continuity runs can be made informative for management.

That is really not something the Technical Committee is going to be able to decide. We can certainly make it technically as accurate and proficient as we can. But I think it would require a review to find out if it is informative enough for management. That's all I have.

MR. KIPP: Yes, I don't have anything to add. I agree with Mike.

MR. JOHN CLARK: I certainly agree with the motion to postpone. Pat pretty much asked what I was curious about, was how much of this had already been considered. Just curious as to what the process would be to kind of change the reference points for this species.

MS. WARE: I just wanted to get back to Bob's comment about changes that this might have down the road or implications for other workload. I think that if we pursue the statistical catch-at-age model, as I said that is

probably a four to six month endeavor; so that could delay croaker and spot assessments, which Jeff is currently working on.

It has the potential if it takes up to those six months to impact river herring and/or sturgeon. I just wanted to make sure the board is aware of that. That is fine if you guys want to prioritize red drum above those other assessments. I just wanted to make sure everyone kind of knows what the implications are moving forward.

John, to answer your question about reference points, we could task the TC to look at different options, come up with their recommendation. It would take an addendum to change the reference points, but I would recommend that if there is management action taken that that kind of all be included in one document.

CHAIRMAN ESTES: Any other comments or discussion?

MR. BOYLES: Again, maybe not to put too fine a point on it here. We have interest in South Carolina, as I've mentioned, with our fishery independent data as well as our fishery dependent data that give us pause about the status of our stock. As many of you have heard me talk about around the table, we are required to legislate management actions. We have as I said, a lot riding on this stock assessment, and our comments to some of our constituents, who have already approached our legislature about making management changes.

I don't want to have to do this twice. I think there are some things that clearly for the region that we need to make sure everybody is onboard; and so that is one of the motivations for my motion. Let's make sure we get this as tight and as right as we can for everybody to be onboard; so that I'll be confident in going to my general assembly and saying, hey we need to make some management changes and here's what we recommend.

MS. FEGLEY: Just a question for Bob or maybe Megan. If given the impacts of this on other assessments like sturgeon and herring. Would this have to go through the Policy Board at some point, or can this board just decide?

EXECUTIVE DIRECTOR BEAL: Lynn, that's a good point. We're kind of doing this on the fly, so it is hard to estimate exactly what the impacts would be to some of these other species. I know croaker and spot. Jeff was intending to kind of switch gears and to go over to both of those species and work on them directly between now and kind of the end of the year, or at least November; so Jeff, is that right, those two, if there is not additional assistance from the states.

Those two will be directly affected by this. I'm not sure about the other species that you mentioned, but there may be some impacts there as well. I think if this motion were to pass, it may make some sense for staff to go back and look at the timeline and the workload of other species, and get together on a conference call sooner rather than later with at least the state directors, if not the whole South Atlantic Board.

The state directors I say that because you folks are the ones that have control over the assessment folks in the states, and you can see what their workload looks like; and then come up with a plan for at least these three species that this board is working on. We can re-estimate the timing for spot and croaker and to get this red drum worked on, if that seems to make sense. Because you're doing this a little bit on the fly as well. You may not know exactly what the workload of all the assessment folks in your states are; and you may need to go back and talk to folks at home and see what horsepower is available from your states, and we can do some staff work to estimate timelines and other things and collateral damage. But we probably can't do all of that here today, and a conference call, seems to me anyway, to make a lot of sense to do in the next couple weeks if we can pull it off.

CHAIRMAN ESTES: Well, let's see where we're at. See if this all makes any difference. I think it is time for us to; all those in favor of the motion please raise your right hand. Let's back up, let me read it again. Motion to postpone the approval of the stock assessment and peer review for management advice until the following tasks can be completed by the Technical Committee and Stock Assessment Subcommittee.

Evaluate if current biological reference point types and values are appropriate for red drum, given the species life history. Investigate the feasibility of an F-based reference point for juvenile red drum. Evaluate how red drum life history and fishery management measures affect the validity of age-based models.

Evaluate whether the South region continuity run of the statistical catch-at-age model can be made informative for management; and if yes, complete a continuity run. Evaluate if a North region continuity run of the statistical catch at age model would be informative for management purposes; and if yes, complete a continuity run.

Evaluate tag return rates for each region and determine if tag return data should be incorporated into a new run of the SS3 model; motion by Mr. Boyles, seconded by Ms. Fegley. Having said that those in favor of the motion please raise your right hand, those not in favor like sign; abstentions, null votes. The motion passes 10 to 0. Now I think we have to go back and make this the original motion. I will read it again. I should probably have it memorized; motion to postpone the approval of the stock assessment.

MR. NOWALSKY: Point of order, Mr. Chairman.

CHAIRMAN ESTES: Yes, sir.

MR. NOWALSKY: It is not an amendment or a substitution that becomes the main motion, I don't believe. It was just a motion to postpone, so it is now done. Mr. Boyles as I recalled

modified his motion to postpone; which was accepted by the board. But that was the main motion. That is my belief of what transpired.

MR. BOYLES: Yes sir, Mr. Chairman. That is my understanding as well. If you recall, I believe the history here, Dr. Laney suggested a motion to approve. My motion was to postpone. My understanding of our procedure is that motion to postpone is now dispensed with the main motion. I think we're on to other business, so thank you, Adam.

CHAIRMAN ESTES: Thank you, Adam. Okay the next thing on our agenda was to discuss the next steps for management of red drum. I think that we can dispense with that agenda item right now. We don't need to go through all this again, I don't think.

PROGRESS REPORT ON SPOT AND ATLANTIC CROAKER ASSESSMENTS

CHAIRMAN ESTES: Jeff, if you would please talk about the stock assessment for spot and croaker.

MR. JEFF KIPP: I am just going to give a quick update to the board on the spot and croaker assessment progress. We did have our first stock assessment workshop in Charleston, South Carolina the week following the winter meeting; February 8th through the 10th, to discuss modeling approaches and some different analyses.

We are moving forward with a catch survey analysis as the model and a surplus production model for spot, and stock synthesis for croaker. We've had several progress calls since that assessment workshop; and we do have one coming up next week to review bycatch estimates. We will on that call schedule our second stock assessment workshop for later this summer. The review is currently scheduled for this fall; and that's all I had.

CHAIRMAN ESTES: Any questions for Jeff? Seeing none; we'll go on to our next agenda item.

MS. TONI KERNS: I don't have a question, do we need Mike? We hung up on him, okay. I was just going to say bye to Mike and we would hang up on him, so never mind.

NORTH CAROLINA REPORT ON SPANISH MACKEREL POUND NET LANDINGS

CHAIRMAN ESTES: The next agenda item is review of the North Carolina report on landings in the commercial pound net fishery. I think, Chris, you are going to make a presentation on that?

MR. BATSAVAGE: Just a verbal report that refers to basically the report that we provided. I think it was in the supplemental material for the South Atlantic Board; just a quick background. Addendum I to the Spanish Mackerel Fishery Management Plan allows states to reduce the commercial size limit to 11.5 inches forklength in the pound net fishery from July through September.

The report that we provided details the results of our sampling to monitor the impact on the harvest of Spanish mackerel in North Carolina. The pound net landings of Spanish mackerel last year in the state for pound nets were about 40,000 pounds; or 7 percent of the total commercial landings of Spanish mackerel.

Prior year landings from pound nets range anywhere from around 19,000 to over 38,000 pounds and accounted for about 3 to 4 percent of the total commercial landings in the state. When I talk about commercial landings in the state, by gear gillnets account for the vast majority of the landings; somewhere in the 90 percent range. Pound nets are a pretty small component of the landings.

The proportion of Spanish mackerel pound net landings in numbers of fish between that 11.5 and the otherwise 12 inch size limit during the

months of July through September was 7 percent in 2015, and has ranged from 8 to 16 percent since 2012. The proportion of Spanish mackerel pound net landings again in numbers of fish that were less than 11.5 inches during that July through September time period, were 15 percent in 2015; but that undersize rate has range anywhere from less than 1 percent to 16 percent since 2012.

Basically Spanish mackerel landings of fish less than 12 inches from the pound net fishery are very small. By that as an example, like last year it was around 5,000 pounds and in 2014 it was 1,100 pounds. You compare that to the total commercial harvest in the state it is fairly insignificant. Then finally, just so people are aware, if you read this report and compare it to the one from last year. There were a couple data corrections made from prior years. Those are described in the report, I basically wanted to just flag that to explain inconsistencies in the harvest proportions if someone was to look at last year's report and compare it to this one. That concludes the Spanish mackerel update.

ELECT VICE-CHAIR

CHAIRMAN ESTES: Do we have any questions for Chris? Okay we'll go to our last agenda item and that is elect a Vice Chair. Are there any nominations? Robert.

MR. BOYLES: I would like to nominate Pat Geer of Georgia to serve as Vice-Chair of the Board.

CHAIRMAN ESTES: Seconded by Russ, are there any other nominations? Is there any objection for Pat coming up here and replacing me? If not, congratulations, Pat.

ADJOURNMENT

CHAIRMAN ESTES: Meeting is adjourned.

(Whereupon the meeting was adjourned at 1:19 o'clock p.m. on May 5, 2016)



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MEMORANDUM

TO: South Atlantic State/Federal Fisheries Management Board
FROM: Red Drum SAS/TC Working Group
DATE: July 15, 2016
SUBJECT: Progress on Red Drum Assessment Follow-up Tasks

At the ASMFC's May Meeting week, the South Atlantic Board (Board) was presented the 2016 Red Drum Stock Assessment and Peer Review. Members of the board had some concerns and questions regarding the assessment. The board developed several tasks for the Technical Committee and Stock Assessment Committee (TC/SAS) to address their concerns and questions. The TC/SAS working group has been working on the tasks assigned by the Board. Below is a summary of the progress made on each of the Board tasks.

Biological Reference Points

Board Task: Investigate whether the current biological reference point for overfishing (SPR40% target, SPR30% threshold) is appropriate given the species' long life history. This task is two-fold in that the Board is interested in whether spawning potential ratio is an appropriate metric and whether the 30% threshold and 40% target are suitable goals. The Board also requests the development for an overfished reference point recommendation.

Working Group Progress:

Spawning potential ratio (SPR) is one of the most (if not the most) commonly used reference points to assess overfishing. This is because *static* SPR (analogous to a "single year" of SPR, whereas *transitional* SPR is like a "running average") maps 1-to-1 with fishing mortality (F). However, it must be noted that it assumes the cohorts have been fished using a constant F pattern through their lifespans.¹ In other words, if there are changes in exploitation patterns, uncertainty around a static SPR (used in red drum's assessment) increases. Additionally, SPR in general does not necessarily measure the actual spawning potential of a population, so it "must be augmented by monitoring actual trends in the actual size of the spawning stock."²

The TC/SAS will continue exploring the literature and evaluate any potential alternatives for measuring overfishing. Regardless of what is settled, the SAS will follow the above suggestion and develop/propose a supplemental reference point (based on biomass or recruitment) to be used in conjunction with the overfishing reference point.

If it's decided that SPR is the appropriate overfishing reference point for red drum, the SAS will need to determine whether or not the threshold/target levels of 30%/40% are appropriate. The fishing mortality (if applied continuously) that produces an SPR of 35-40% is often

considered safe, especially with fisheries prone to recruitment variability (as seen with red drum).³ For less resilient or data-poor stocks, a higher SPR value, such as $F_{70\%SPR}$, may be warranted.⁴ However, due to the large number of spawning age classes, red drum should theoretically be resilient.

The TC/SAS will discuss whether or not red drum should be considered “data-rich” and “resilient.” These terms are always vague and relative, so it will be up to the TC/SAS to weigh the 30%/40% values against other alternatives for the SPR target and threshold.

Developing a reasonable overfished reference point will depend upon the reliability of spawning stock biomass (SSB) estimates, as the large plus-group (ages 7 onward grouped together) led to uncertainty in the SSB in the previous assessment. If that issue is resolved in this assessment, there may be more confidence in a biomass-based reference point. Clark (1991) suggests the neighborhood of 35-40% unfished biomass, saying, *“It is clear that even if unfished spawning biomass were known only very roughly, say with a precision of the half-to-double variety, one could still be reasonably sure of getting something close to MSY simply by holding the spawning biomass in vicinity of 35-40% of the estimated unfished level.”*⁵

One alternative the SAS is exploring is a recruitment-based reference point based on independent surveys. While not a biomass-based reference point, it can provide information on the abundance of fish that will soon enter the fishery. For example, North Carolina’s seine survey, which measures age-0 abundance of red drum, has been shown to correlate with age-2 commercial harvest and age-2 recreational catch two years later.⁶ This reference point could be employed in a manner similar to the “stoplight” frameworks for spot and Atlantic croaker, where thresholds that are breached in multiple years trigger management considerations and/or responses. Additionally, setting a biomass-based reference point based on maximum recruitment has already been suggested in the past,⁷ so these two together could provide important stock information.

The TC/SAS will finish updating and running the proposed models (SS3 and now the traditional statistical catch-at-age) and evaluate the ability of spawning stock biomass to be used for developing overfished reference points. Additionally, the TC/SAS will need to determine the feasibility, for both the northern and southern regions, of utilizing independent data on recruitment (first, seeing if the southern region has an appropriate survey). After that, the TC/SAS will come up with the specific thresholds that would cause the fishery to go from “green to yellow” and “yellow to red.”

Other ongoing analyses include fitting stock-recruit data and overlaying different values of escapement on the stock-recruit curves. This exercise will help determine roughly how much recruitment would be associated with various potential escapement rates. Preliminary analysis has already been done for the southern region and results suggest escapement of red drum could be as low as 20% before losses in recruitment are seen. This might be more difficult to do for the northern model, where environmental variability (*e.g.*, cold kills) often play a larger role in determining recruitment than spawning stock size. Also, the SAS is investigating whether enough

data exists to perform a meta-analysis for the purposes of estimating the stock-recruitment relationship.

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F-Based Reference Point

Board Task: Given concerns regarding the appropriateness of the current reference point and the lack of data on adult red drum, the Board would like to see an investigation of the feasibility of an F-based reference point that looks strictly at the harvest* of juvenile red drum. The Board looks for guidance on whether this type of reference point would provide an appropriate level of information for management.

* In a 6/13/2016 conference call, Robert Boyles confirmed that the Board's interpretation of 'harvest' does include B2 mortality.

Working Group Progress:

Potential advantages of using sub-adult fishing mortality

- Since the majority of fishing mortality occurs on the sub-adult component of red drum, there is a tight link between sub-adult fishing mortality and spawning potential ratio (SPR). This close relationship is evident from the results produced by the Stock Synthesis 3 (SS3) base runs, which show log-linear relationships between SPR and sub-adult fishing mortality (sum of F , ages 0-5 years¹) with $R^2 \approx 0.99$ (Fig. 1, top two panels).

¹ Ages using Stock Synthesis 3 notation. (i.e. Fish turn age 0 on their first Jan 1st of life at a biological age of ~4 months; they turn age 1 on their second Jan 1st of life at a biological age of ~16 months, etc.)

- An advantage of focusing on sub-adults is that it is the most data-rich part of the stock. This should provide greater certainty in estimating reference points associated with sub-adult data parameters.
- Focusing on sub-adult mortality may allow reference points to be estimated (and cross-validated) by a variety of methods. For example, in addition to estimates produced by stock assessment models, sub-adult mortality may be estimated from fishery-independent survey data, or from stand-alone tag return models. The latter two methods may enable reference points to be tracked more frequently (e.g. annually) than stock assessment updates (~5 years). (Note, however, that state-run fishery-independent surveys and tagging programs operate over relatively small spatial scales when compared with the scale of the entire northern and southern red drum stocks).

Potential disadvantages of using sub-adult fishing mortality

- It is unclear how to derive a suitable sub-adult F reference point. This issue has been addressed previously with Gulf of Mexico red drum. The Florida Division of Fisheries Management was requested to examine relationships between spawning stock, recruitment and escapement (i.e. sub-adult fishing mortality). They concluded that it is difficult to derive a suitable reference point due to poor information about stock recruitment relationships (Murphy, pers. comm., 2016). The lack of good stock-recruitment information results in a variety of equally feasible scenarios that produce very different sustainable escapement rates (see Fig. 2).
- Although most of the red drum fishery targets the sub-adults, B2 (live release) fishing mortality of fish outside the harvestable slot limit may also have an important effect on the sustainability of the stock. B2s are a significant source of red drum fishing mortality, although allocating B2 mortality across sizes/ages of red drum has been a particularly difficult issue in red drum stock assessments due to the lack of good information on the sizes of discarded fish. Notwithstanding these difficulties, results from the SS3 base runs suggest that adult fishing mortality has been increasing in the southern stock (Fig. 3). This agrees with anecdotal evidence of a growing catch-and-release fishery for adult red drum in some areas. Changes in adult mortality patterns have an obvious direct effect on spawning capability. Therefore, a risk of using just sub-adult F as a management reference point is that it fails to account for long-term changes in adult mortality rates, potentially depleting the spawning stock.
- Another potential risk of relying just on sub-adult F as a reference point is that, in order for the stock to be sustainable, it assumes no decline in recruitment over time. If recruitment were to decline, spawning stock biomass could also decline to unsustainable levels, even if sub-adult fishing mortality was maintained below a previously sustainable reference point. Stochastic variation in recruitment may have additional influences on the choice of a sub-adult F reference point (Holden & Conrad, 2015).

Figure 1 Relationships between static spawning potential ratio (SPR) and fishing mortality. (Data from Stock Synthesis 3 base runs for the southern (left) and northern (right) Atlantic red drum stock assessments). Top row: sub-adult fishing mortality (sum of ages 0-5); middle row: age 1 fishing mortality; bottom row: adult fishing mortality (sum of ages 6-40). Fitted lines are back-transformed linear regressions of Ln(SPR) vs F (solid lines: intercept fixed at SPR = 100%; dash-lines: intercept fitted).

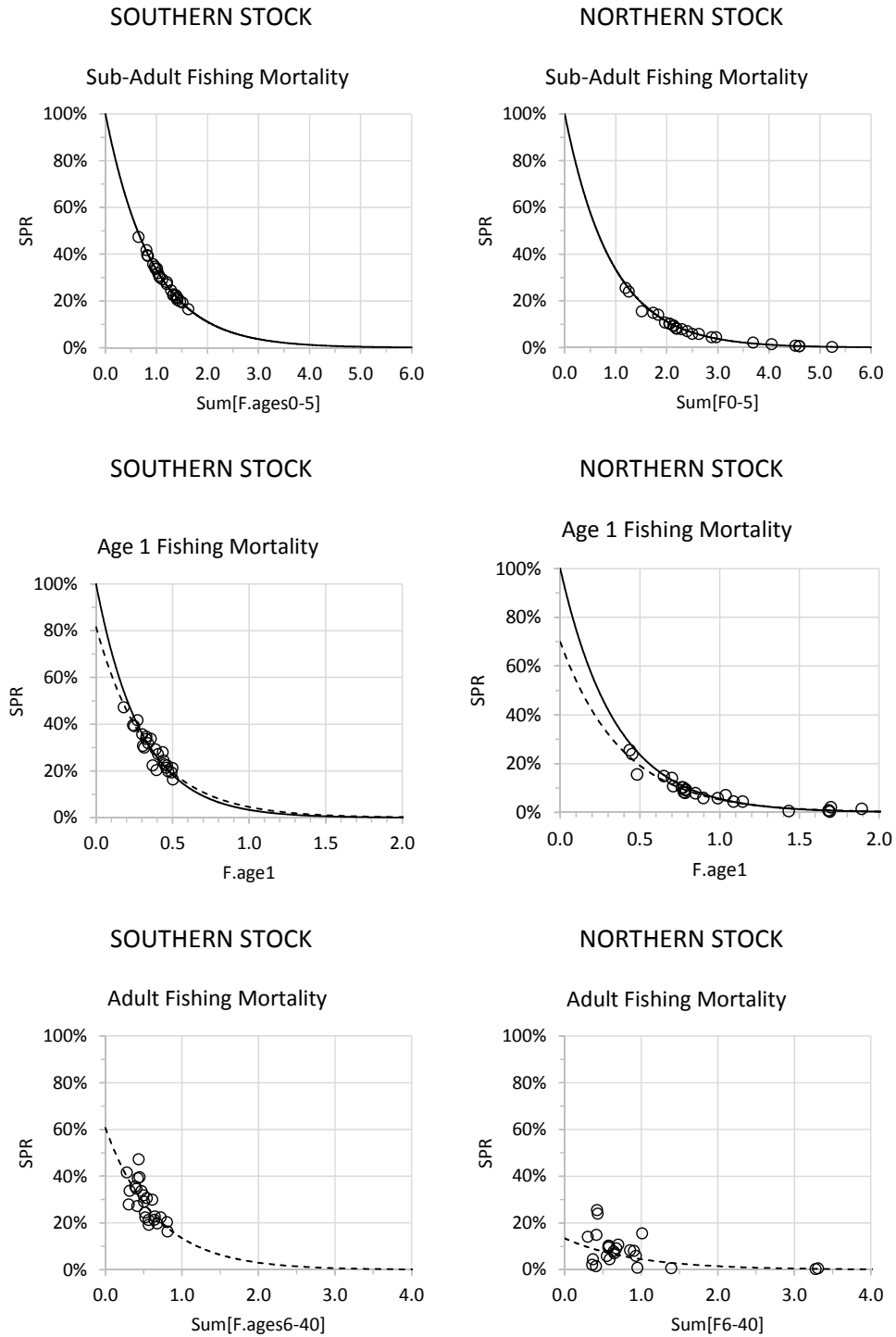


Figure. 2 Two plausible spawner-recruit relationships (pink lines fitted to blue diamonds) for Gulf of Mexico red drum that result in different sustainable levels of sub-adult escapement. Radiating dash lines show expected levels of recruitment (intersects with the pink spawner-recruit relationship) associated with sub-adult escapement rates (percentages). (Plots from [Murphy, pers. comm., 2016](#)).

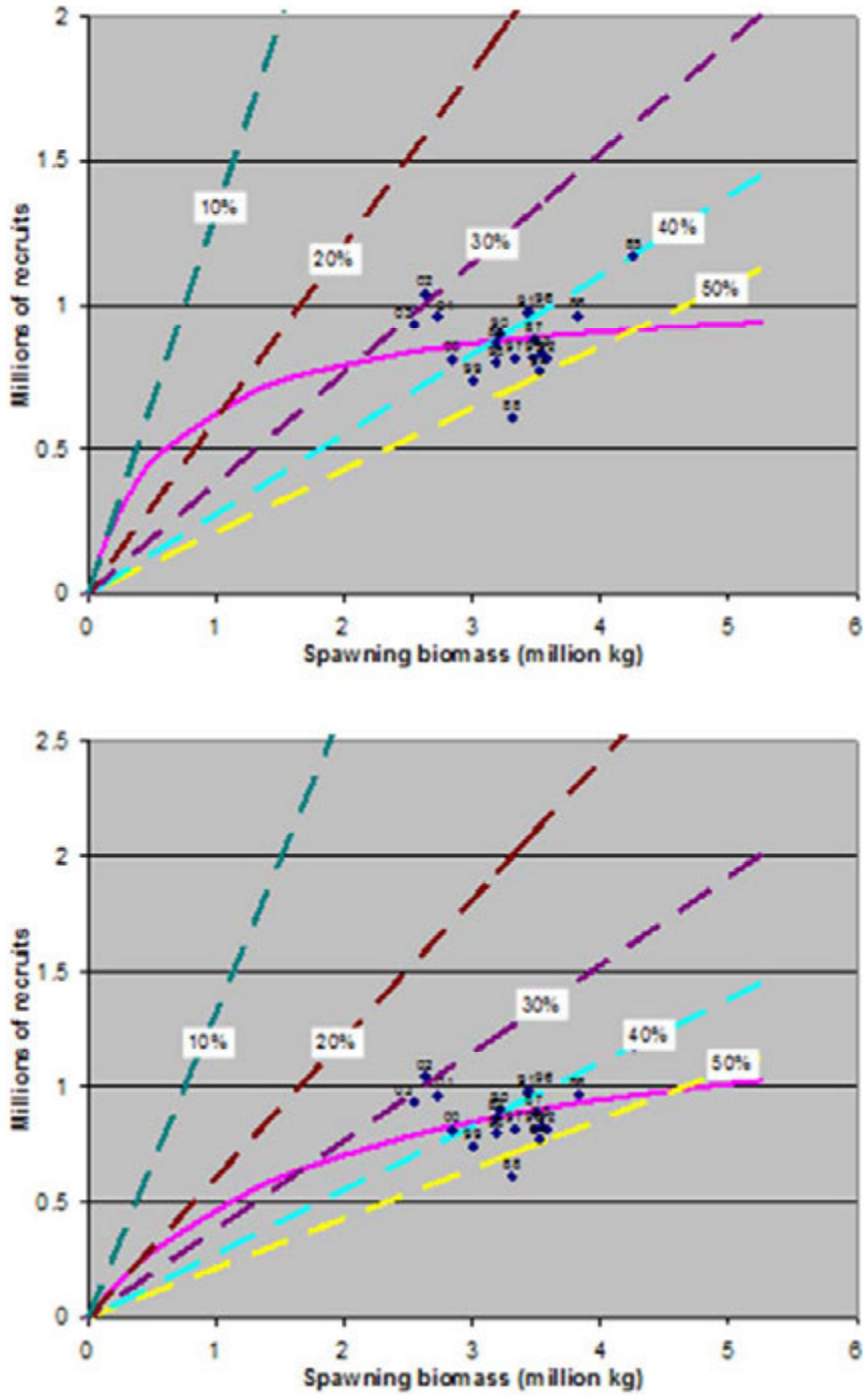
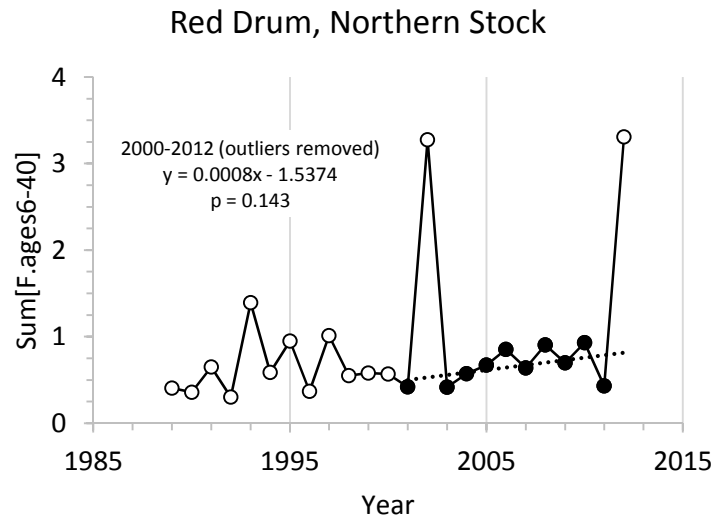
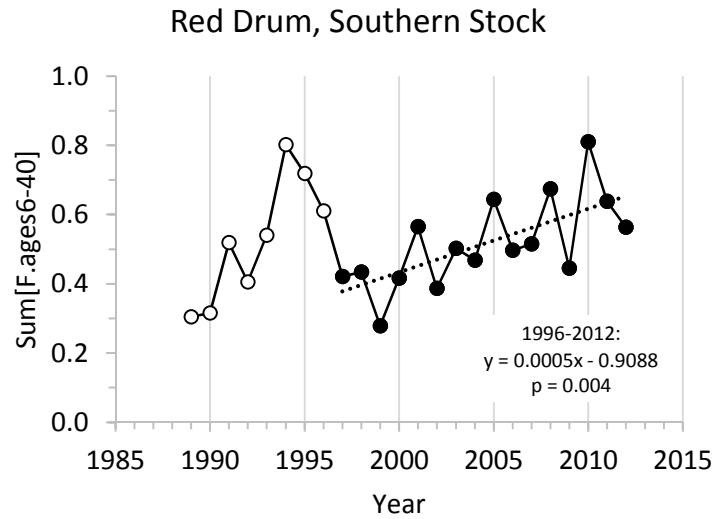


Figure 3. Temporal changes in adult red drum (ages 6-40) fishing mortality, based on outputs from Stock Synthesis 3 base runs.



Continuity Runs

Board Task

Southern Model Continuity Run: The Board asks for an investigation of whether the previous statistical-catch-at-age model would be useful for management and, if so, to conduct a continuity run for the southern region. The Board does not specify if the continuity run should only contain data sources used in SEDAR 18 and leaves it to the discretion of the investigators to incorporate new data sources as they see fit; if it is believed additional data sources will significantly improve the performance of the statistical-catch-at-age model, the Board encourages these additions.

Northern Model Continuity Run: The Board similarly asks for the investigation of whether the previous statistical-catch-at-age model would be useful for management in the northern region and, if so, to conduct a continuity run. The Board does not specify if the continuity run should strictly contain data sources used in SEDAR 18 and leaves it to the discretion of the investigators to incorporate new data sources as they see fit; if additional data sources will significantly improve the performance of the statistical-catch-at-age model, the Board encourages these additions.

Working Group Progress

The TC and SAS were tasked with conducting continuity runs of the statistical catch-at-age (SCAA) model used in SEDAR18 for comparison to the new Stock Synthesis 3 (SS3) model used in SEDAR44. The TC/SAS are updating the SCAA model inputs to correspond, as well as possible, with those used in SS3. Therefore, these are not true continuity runs (i.e. only updates to the data inputs used in SEDAR18). This will allow for a comparison of the results between the two models, focusing on the effect of the change in models between the two assessments.

The TC/SAS had a conference call at the end of June to discuss what changes would need to be made to inputs for the SCAA model to better match the inputs used for the SS3 model. All data inputs were checked by each state and updates are being made to the natural mortality, maturity, and weight-at-age vectors. In addition, indices were changed to match those used in SS3 and the adult long line surveys were added to the SCAA models. Due to time constraints and data concerns, the southern model will not include any tagging data and the northern model will only use tagging data through 2004, as in SEDAR18. Additional changes may also be made to the model code, such as not estimating the catchability coefficients for the indices and deriving them instead.

Once all updates to the data are finalized and changes are made within the model code, model runs will be conducted. While retrospective and some sensitivity analyses are expected to be done by the October management board meeting, the goal of these continuity runs will be to compare the SCAA output to the SS3 output. Should the Management Board wish to consider the SCAA as a preferred model, additional diagnostic tests (e.g. jitter analysis, additional sensitivity analysis, etc.) would need to be conducted following the October board meeting, as well as possibly another peer review to recommend this model for management use.

Tag Return Rates

Board Task: Given the sensitivity of the SS3 models to the tag return reporting rate, the Board asks for an evaluation of potential tag return rates for each region and determine if the tag return data should be incorporated into new model runs. The Board is specifically interested in a run which uses an 18% tag return rate, per the suggestion of the desk review report.

Working Group Progress

The final base run of the SS3 model for the southern stock estimated the reporting rate for the South Carolina harvest fleet of about 32%. This is within the range of reporting rates determined for inshore fisheries tagging programs in South Carolina in the past (21% Jenkins et al. 2000; 57-63% Denson et al. 2002), similar to rates reported by black drum and red drum anglers from Texas (28% Matlock 1981) but lower than reporting rates for a highly prized common snook fishery in Florida (60-70% Taylor et al. 2006). The base run of the SS3 model for the northern stock did not include tag-recapture data. When these data are included in the model, the model estimates reporting rates much lower ($\approx 10\%$) than the reporting rates estimated in previous studies of tagged red drum in North Carolina (Table 1).

The exclusion of tag-recapture data from the southern base model had little impact on the estimates of spawning potential ratio (Fig. 4). This apparently indicates that the analysis of data for age/length composition, catch, indices of abundance, etc., gave similar estimates of fishing mortality as those derived when the tag/recapture data were included. The inclusion of tag-recapture data in the northern model also had little impact on the estimates of spawning potential ratio (Table 2).

When the reporting rates were fixed at different (and less likely) values in the southern base model, higher reporting rates of 60% gave SPR's similar to that estimated for SEDAR 18 and lower reporting rates of 18% gave SPR's that, on average, were about 30% lower than the basemodel levels. When the reporting rate for the recreational harvest fleet was fixed below $\approx 50\%$ in the northern model (including the 18% scenario), the model estimated SPRs similar to the base model (Table 2). When the reporting rate was fixed at or greater than 50%, the model converged on a solution with much higher SPRs and a much larger stock size. Evaluation of the likelihoods of these reporting rate values shows a conflict among the data signals (Fig. 5). A low reporting rate is supported by the length composition data and the tag-recapture data, while a higher reporting rate is supported by the age data and index of abundance data. The total negative log likelihood increases as the reporting rate is fixed at increasing values, indicating the best model solution is the run with the reporting rates estimated. This ridged shift in model solutions as well as the apparent conflict among data sources may indicate a lack of information to estimate these parameters (Cass-Calay et al. 2014), given the northern stock base model configuration and input data.

Additional work is being conducted to analyze the tag-recapture data external to SS3 through a Brownie et al. (1985) or Seber (1970) approach to estimating survival. These analyses will be naïve to the change in selectivity across ages but adjustment factors based on the SS3-base-model estimated selectivities can be employed to correct for this bias.

Table 1. Reporting rate estimates from the SS3 model for northern stock red drum and from previous studies of tagged red drum in North Carolina.

Reporting Rate	Estimate	Ages	Fishery	Time Period of Fish	Treatment of Released Tags	Tags	M			
							0	1	2	3
SS3 Tag Model	0.09-0.12	0-16	Fleet-Specific	1989-2004	Not Included	NC DMF	0.2	0.129	0.1	0.1
Bacheler et al. 2008	0.18	0-3+	All Fleets Combined	1983-2006	Included	NC DMF	0.3	0.22	0.2	0.1
Bacheler et al. 2009	0.49	1	All Fleets Combined	2005-2007	Included	NC DMF	NA	0.38/0.04	NA	NA
Bacheler et al. 2009	0.77	1	Recreational Fleets Combined	2005-2007	Included	NCSU	NA	NA	NA	NA
Bacheler et al. 2009	0.44	1	Commercial Fleets Combined	2005-2007	NA	NCSU	NA	NA	NA	NA

Table 2. Static spawning potential ratio estimates for northern stock red drum from the base model and the model with tag-recapture data included and reporting rates estimated or the reporting rate of the recreational harvest fleet fixed at values from 10% to 95%.

Year	Base	Estimate Reporting Rate	Fixed Recreational Harvest Fleet Reporting Rate																				
			10%	15%	18%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%		
1989	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.62	0.56	0.59	0.62	0.64	0.66	0.68	0.70	0.71	0.72
1990	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.62	0.66	0.68	0.71	0.73	0.75	0.76	0.77	0.79	0.80	0.80
1991	0.07	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.10	0.76	0.78	0.80	0.82	0.83	0.84	0.86	0.86	0.87	0.87	0.88	0.88
1992	0.14	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.15	0.16	0.18	0.86	0.87	0.89	0.90	0.90	0.91	0.92	0.92	0.93	0.93	0.93	0.93
1993	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.69	0.72	0.75	0.77	0.79	0.80	0.81	0.82	0.83	0.84	0.84	0.84
1994	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.08	0.82	0.84	0.86	0.87	0.88	0.89	0.90	0.90	0.91	0.91	0.91	0.91
1995	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.77	0.79	0.81	0.83	0.84	0.85	0.86	0.87	0.88	0.88	0.88	0.88
1996	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.06	0.07	0.09	0.12	0.87	0.89	0.90	0.91	0.92	0.92	0.93	0.93	0.94	0.94	0.94	0.94
1997	0.16	0.14	0.14	0.15	0.15	0.16	0.17	0.18	0.19	0.21	0.26	0.90	0.91	0.92	0.93	0.93	0.94	0.94	0.95	0.95	0.95	0.95	0.95
1998	0.06	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.08	0.09	0.11	0.82	0.84	0.85	0.87	0.88	0.88	0.89	0.90	0.90	0.91	0.91	0.91
1999	0.10	0.09	0.09	0.10	0.10	0.10	0.11	0.12	0.13	0.14	0.17	0.84	0.85	0.87	0.88	0.89	0.90	0.90	0.91	0.91	0.91	0.92	0.92
2000	0.10	0.09	0.09	0.10	0.10	0.10	0.11	0.12	0.13	0.14	0.17	0.82	0.83	0.85	0.86	0.87	0.88	0.89	0.89	0.90	0.90	0.91	0.91
2001	0.26	0.24	0.24	0.25	0.25	0.25	0.26	0.27	0.28	0.30	0.33	0.86	0.88	0.89	0.90	0.91	0.91	0.92	0.92	0.93	0.93	0.93	0.93
2002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.59	0.63	0.66	0.68	0.70	0.72	0.74	0.75	0.76	0.76	0.77	0.77
2003	0.15	0.14	0.14	0.14	0.15	0.15	0.16	0.17	0.18	0.20	0.24	0.88	0.89	0.90	0.91	0.92	0.92	0.93	0.93	0.94	0.94	0.94	0.94
2004	0.09	0.08	0.09	0.09	0.09	0.10	0.11	0.11	0.13	0.14	0.18	0.84	0.86	0.87	0.88	0.89	0.90	0.91	0.91	0.92	0.92	0.92	0.92
2005	0.09	0.08	0.08	0.09	0.09	0.09	0.10	0.11	0.12	0.13	0.16	0.84	0.86	0.87	0.88	0.89	0.90	0.91	0.91	0.92	0.92	0.92	0.92
2006	0.08	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.11	0.12	0.15	0.83	0.85	0.86	0.87	0.88	0.89	0.90	0.90	0.91	0.91	0.91	0.91
2007	0.08	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.11	0.14	0.81	0.83	0.85	0.86	0.87	0.88	0.89	0.89	0.90	0.90	0.90	0.90
2008	0.08	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.12	0.14	0.81	0.83	0.85	0.86	0.87	0.88	0.89	0.89	0.90	0.90	0.90	0.90
2009	0.11	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.13	0.15	0.17	0.82	0.84	0.85	0.86	0.88	0.88	0.89	0.90	0.90	0.90	0.91	0.91
2010	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.08	0.09	0.11	0.78	0.80	0.81	0.83	0.84	0.85	0.86	0.87	0.88	0.88	0.88	0.88
2011	0.24	0.23	0.23	0.23	0.24	0.24	0.25	0.26	0.27	0.29	0.32	0.88	0.89	0.90	0.91	0.91	0.92	0.93	0.93	0.93	0.93	0.93	0.94
2012	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.62	0.65	0.68	0.70	0.73	0.74	0.76	0.77	0.78	0.78	0.79	0.79
2013	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.07	0.76	0.79	0.81	0.82	0.84	0.85	0.86	0.86	0.87	0.87	0.88	0.88	0.88
Negative Log Likelihood		11,412	11,413	11,445	11,476	11,501	11,570	11,647	11,729	11,813	11,899	11,757	11,759	11,761	11,763	11,764	11,765	11,766	11,767	11,768	11,768	11,768	11,768

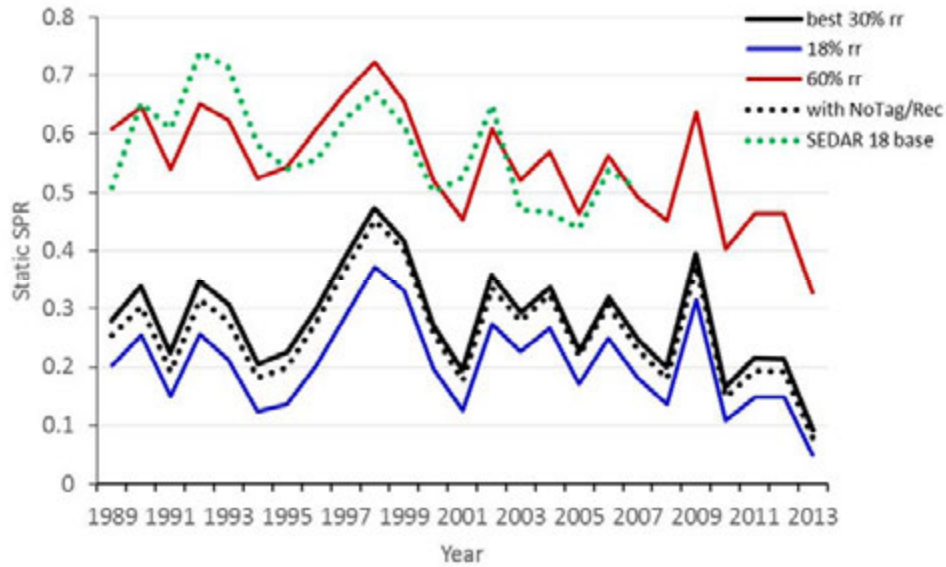


Figure 4. Static spawning potential ratios for southern stock red drum under different configurations for the inclusion of tag-recapture data into the analysis.

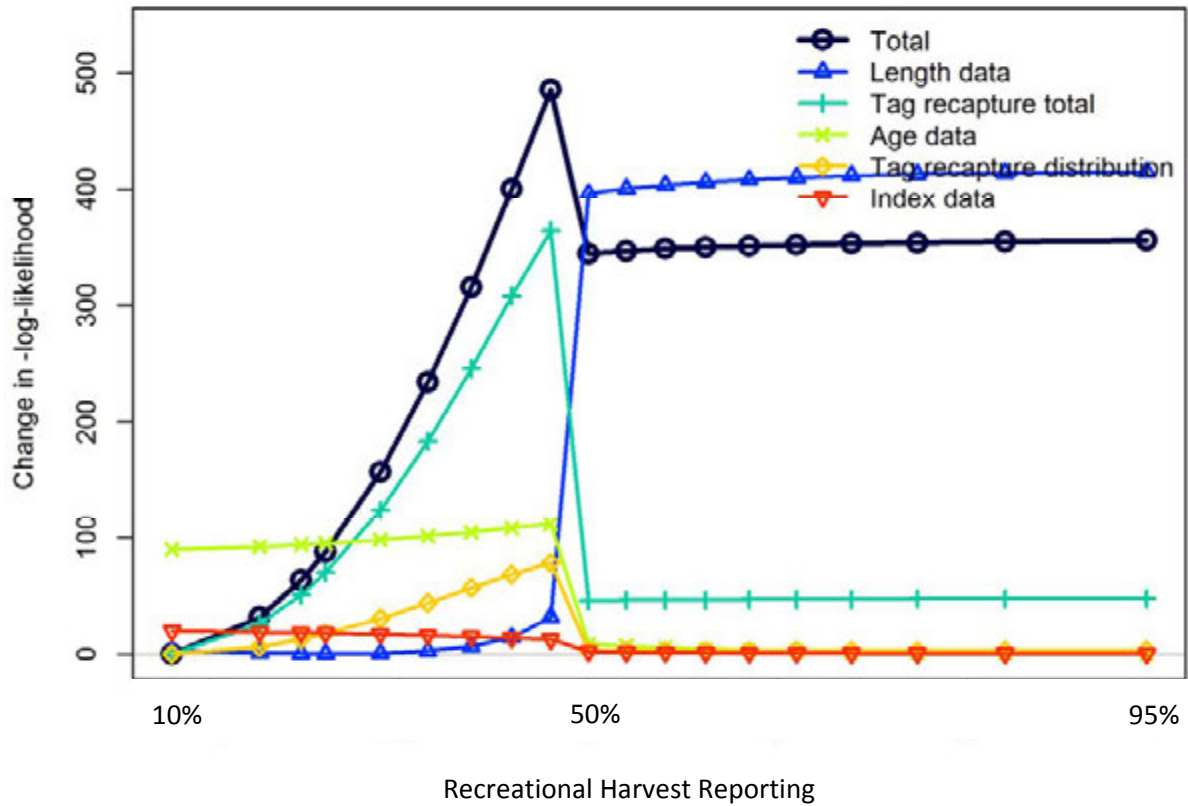


Figure 5. Change in negative log likelihood across different fixed values for the reporting rate of the recreational harvest fleet in the northern model.

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Validity of Age-Based Models

Board Task: The Board is concerned that the lack of information on adult red drum, especially in the northern stock, may impact the ability of the stock synthesis models to accurately

measure stock abundance. As a result, the Board asks for an evaluation of how red drum life history and current regulations (namely the moratorium on fishing in federal waters) may limit the validity of an age-based model such as SS3.

Working Group Progress

Age-based models provide a framework capable of providing managers with estimates of fishing mortality that can be separated into year and age effects as well as providing information on the abundance and age structure of a population, given all necessary inputs are available.

The prior stock assessment, SEDAR 18, incorporated a statistical catch-at-age model (SEDAR 18, 2009). The model used standard inputs such as fishery catches, abundance indices and age compositions but also, for the northern region, incorporated externally derived F-at-age estimates reported from a tag recapture model (Bacheler et al. 2009). The model configuration also included a very large proportion of the population in a plus group (ages-7+). This plus group was necessitated by the sparseness of information on adult fish from either dependent or independent sources and a scarcity of aging data at older ages. This dearth of information on the adult stock led to model results that were considered uninformative regarding biomass reference points. Determinations on the overfishing status, however, was considered useful through the use of static SPR, given that the majority of catch and indices were indicative of sub-adult ages (1-3).

For the northern stock, estimated parameters in the model were heavily influenced by the inclusion of the tagging data. This dependence on the tagging data was a concern, particularly with how the model was configured (i.e. tagging estimates used were derived external to the model). A high priority research need in the review recommended that the tagging data should be integrated within the SCA model to ensure that assumptions used when analyzing the tagging data would be fully incorporated into the estimates of the SCA. The southern stock, which lacked F-at-age estimates from tagging data, had much higher uncertainty in the SPR estimates.

The move from the SCA model to the SS3 framework was in response to recommendations from SEDAR 18 and the ongoing need to provide managers with reliable estimates of spawning stock biomass. SS3 provides an integrated modelling approach that is capable of addressing many of the concerns made during SEDAR 18. For example, SS3 allows for integration and analysis of tagging data internal to the model. The framework also allows for the direct fitting of index, length and age composition data. The integrated design requires less processing and/or assumptions about data external to the model and is capable of accounting for uncertainty in the various data inputs.

Lack of information on adult red drum

As noted above, the lack of information on adult red drum has precluded prior assessments from providing reliable estimates of spawning stock biomass. More recent efforts through the red drum longline surveys in Georgia, South Carolina and North Carolina provide fishery

independent indices of abundance and age-structure information that is incorporated into the SS3 framework. While informative, it should be noted that relative to the life-span of red drum (40+ years), these indices offer a short time-series for evaluation (2007 for Georgia and North Carolina; 1994 for South Carolina).

Some noted sources of data gaps and assumptions impacting estimates for adult red drum include:

1. Regulations

- Regulations implemented by the states between 1998-2002 prohibited harvest on adults (no harvest over 27 inches from states NJ south) limiting information on this portion of the stock.
- Concern also exists with accurate accounting when adult harvest was legal. Adult red drum catches have traditionally been noted as poorly represented in the catch. In part, low catches could be due to a large portion of the adult fishery occurring at night while recreational sampling was exclusively in daytime hours. Extending MRIP sampling to include night time intercepts has been a long-standing research recommendation of the TC (note: night sampling is in place under MRIP where it is “needed” as described by NOAA but this did not start until 2016).

2. Life History and management strategy

- Ontogenetic shifts in life history likely reduce availability of red drum to the fishery with increasing age. Immature fish are described as ubiquitous with shorelines and shallow habitat in estuaries. This changes with the onset of maturity (age 3+) and subsequent movement out of estuaries (presumably to areas of reduced vulnerability; i.e. offshore).
- No fishery dependent or independent surveys fully select for fish over a wide range of sizes, particularly as fish move from sub-adults to adults. Most surveys collect data on sub-adults or juveniles. The adult indices from the longline surveys are likely fully selected around age 5+.
- There can be difficulty in estimating selectivity given the decreased availability due to both the life history changes and the slot limit. Model results will be sensitive to any assumptions about the descending limb of a dome shaped selectivity curve.

3. Size distribution of recreational releases

- Length information on releases is largely unknown and must be assumed from other sources.
- The proportion of releases to harvest has increased over time, increasing any potential bias. Release mortality exceeds harvest mortality in some years.
- Decreased bag limits, increasing catch and release practices in the fishery, and possible increased effort in the fishery have led to an increase in the number of fish released alive.
- Size distribution for all releases (sub-adult and adult) is implied from tagging data. To the extent that these tagged fish do not represent the size of fish in the population at-large, the resulting assumed length frequency will be biased. Potential exists in the north that this is biased towards large fish due to volunteers in the red drum tagging program being instructed not to tag red drum under 27 inches.

the lobster bait crisis

<http://www.southcarolinasporthsman.com/details.php?id=5390>



OPINIONS & RESPONSES

COBIA CRISIS RESPONSE WAS PERFECT FOR SOUTH CAROLINA

South Carolina officials get it right on cobia crisis

By Dan Kibler July 01, 2016

South Carolina's well thought-out and measured response to the crisis of cobia should be an example for other states, especially several neighbors to the north.

The S.C. Department of Natural Resources' marine division knew several years ago that it might have a problem on its hands with cobia numbers. Fishermen were all telling the same story: they weren't seeing as many of the extremely popular gamefish during the spring spawning run in the Broad River and Port Royal and St. Helena sounds as in past years.



SCDNR studies showed that those fish, genetically, were a specific sub-species of a larger population that migrates north each spring and south again in the fall. These fish live off our coast and migrate inshore to spawn, then back out. They don't start in Key West and wind up off the Chesapeake Bay.

South Carolina officials were ahead of the cobia crisis, but states to our north had other ideas. Photo by Brian Cope

SCDNR knew there were problems. Federal fisheries managers warned of more potential problems late last fall, informing all Atlantic coast states north of Florida that too many cobia had been caught during 2015 and that they

could expect some possible restrictions in 2016 to ensure that the annual catch quota wasn't exceeded a second year in a row.

SCDNR got to work immediately, and when federal officials announced on March 8 that cobia fishing in federal waters would close on June 20, the state already had legislation in the works to change regulations to try and avoid the over-harvest. On April 29, the governor signed a bill that closed the season south of Jeremy's Inlet on Edisto Island from May 1-May 31 and cut the daily creel limit in the same area from two to one, with a limit of no more than three cobia per boat for that period of time between June 1 and the federal closure on June 20.

Mel Ball, director of SCDNR's marine division, said, "We were already in the process of establishing the area from Edisto south to the Georgia line ... when this overage occurred."

Now, contrast this with our neighbors. In late May, the commission that oversees North Carolina's marine fisheries voted to go out of compliance with the feds. The agency came up with a plan that would extend the season through September, with a lower creel limit, higher size minimum and a division of the cobia pot that was obviously done to satisfy the charter captains north of Cape Hatteras who were the ones who had caught most of the 2015 overage. A week later, the commission that oversees Virginia's marine fisheries voted to go out of compliance with the feds in state waters, keeping the season open until Aug. 30 but instituting a one-fish daily creel limit (two fish per boat) and a 40-inch size minimum.

The complaint heard from both states? "If we'd had more time. If we'd known earlier, we could have done something."

Apparently, officials in South Carolina were listening last fall, and our cobia fishery will be better for it.

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SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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July 15, 2016

Mr. Robert E. Beal
Executive Director
Atlantic States Marine Fisheries Commission
1050 N. Highland St., Suite 200 A-N
Arlington, VA 20001

Dear Bob:

On behalf of the South Atlantic Fishery Management Council, I am requesting the Atlantic States Marine Fisheries Commission review the enclosed draft Coastal Migratory Pelagics Framework 4 (Cobia) document at your upcoming August 2016 meeting. John Carmichael will be attending and he will be able to answer any questions that may arise concerning the amendment. Public hearings are being held in August and the schedule is available from our website: <http://safmc.net/meetings/public-hearing-and-scoping-meeting-schedule>. Please note that we are holding a hearing on August 9th in Virginia Beach during the Mid-Atlantic Council's meeting. In addition, a webinar Q&A and hearing will be held on August 1st to provide the public unable to attend a hearing an opportunity to comment. Any assistance in spreading the word about these hearings would be greatly appreciated.

The Commission is a trusted partner in developing all of our fishery management plans, and we value the Commission's input. The public comment period ends at 5 pm on August 19th and our staff will be compiling all comments and input for our September briefing book. We would appreciate receiving the Commission's comments by August 22nd so that they can be included in our briefing book.

We also know that you will be discussing the Council's request that the Commission consider participating in joint or complimentary management of the cobia resource with the Council. John will be able to answer any questions the Commission may have.

We look forward to continuing our strong partnership in managing our fishery resources. Please do not hesitate to contact me if you have any questions.

Best regards,

A handwritten signature in black ink, appearing to read "Gregg", is shown on a light gray rectangular background.

Gregg T. Waugh
Executive Director

cc: Council members and staff

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Draft

Framework Amendment 4

to the Fishery Management Plan
for the Coastal Migratory Pelagics Fishery
of the Gulf of Mexico and
Atlantic Region

Management Measures for Atlantic Cobia



July 15, 2016



Environmental Assessment Regulatory Impact Review Regulatory Flexibility Analysis
A publication of the South Atlantic Fishery Management Council pursuant to
National Oceanic and Atmospheric Administration (NOAA) Award Number FNA10NMF4410012

Framework Amendment 4 to the Fishery Management Plan for the Coastal Migratory Pelagics Fishery of the Gulf of Mexico and Atlantic Region with Environmental Assessment and Regulatory Impact Review

Proposed action:	Modify recreational and commercial management measures for Atlantic migratory group cobia
Lead agency:	Framework Amendment – South Atlantic Fishery Management Council (South Atlantic Council) Environmental Assessment – National Marine Fisheries Service (NMFS) Southeast Regional Office
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Summary

The South Atlantic Fishery Management Council (South Atlantic Council) is proposing Framework Amendment 4 to the Fishery Management Plan for the Coastal Migratory Pelagics Fishery (CMP FMP) in the Gulf of Mexico and Atlantic Region (Framework Amendment 4) to consider changes to harvest limits, recreational fishing year, and recreational accountability measures for Atlantic migratory group cobia.

In accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act and regulations found at 50 CFR 622.389 (Adjustment of Management Measures), the intent of Framework Amendment 4 is to lengthen the recreational fishing season under the current constraints of the annual catch limit in place and provide fair access to the Atlantic cobia resource for fishermen in all states. Framework Amendment 4, with the integrated Environmental Assessment, will be available for public review before and during each South Atlantic Council meeting where the action will be discussed, during the proposed rule phase of the rulemaking process, and online at www.safmc.net.

Actions

Action 1. Modify the recreational management measures for Atlantic cobia
Action 1-1: Modify the recreational harvest limits for Atlantic cobia
Action 1-2: Modify the minimum size limit for Atlantic cobia

Action 2. Modify the recreational fishing year for Atlantic cobia*

Action 3. Modify the recreational accountability measures for Atlantic cobia

Action 4. Establish a commercial trip limit for Atlantic cobia

*NOTE: The current framework procedure for the CMP FMP does not allow changes to the fishing year through a framework amendment. In September 2016, the South Atlantic Council will need to remove the action from Framework Amendment 4, and start work on an FMP amendment (plan amendment) that will include an action to change the fishing year.

Abbreviations and Acronyms Used in the FMP

ABC	acceptable biological catch	FMP	fishery management plan
ACL	annual catch limits	FMU	fishery management unit
AM	accountability measures	HAPC	Habitat Area of Particular Concern
ACT	annual catch target	M	natural mortality rate
B	a measure of stock biomass in either weight or other appropriate unit	MARMAP	Marine Resources Monitoring Assessment and Prediction Program
B_{MSY}	the stock biomass expected to exist under equilibrium conditions when fishing at F _{MSY}	MFMT	maximum fishing mortality threshold
B_{OY}	the stock biomass expected to exist under equilibrium conditions when fishing at F _{OY}	MMPA	Marine Mammal Protection Act
B_{CURR}	The current stock biomass	MRFSS	Marine Recreational Fisheries Statistics Survey
CLM	Commercial Landings Monitoring System	MRIP	Marine Recreational Information Program
CMP	coastal migratory pelagics	MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
CPUE	catch per unit effort	MSST	minimum stock size threshold
EA	environmental assessment	MSY	maximum sustainable yield
EEZ	exclusive economic zone	NEPA	National Environmental Policy Act
EFH	essential fish habitat	NMFS	National Marine Fisheries Service
ESA	Endangered Species Act	NOAA	National Oceanic and Atmospheric Administration
F	a measure of the instantaneous rate of fishing mortality	NS	National Standard
F_{30%SPR}	fishing mortality that will produce a static SPR = 30%	OFL	overfishing limit
F_{CURR}	the current instantaneous rate of fishing mortality	OY	optimum yield
F_{MSY}	the rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of B _{MSY}	PSE	percent standard error
F_{OY}	the rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of B _{OY}	RIR	regulatory impact review
FEIS	final environmental impact statement	SEDAR	Southeast Data Assessment and Review
		SEFSC	Southeast Fisheries Science Center
		SERO	Southeast Regional Office
		SPR	spawning potential ratio
		SRD	Science and Research Director
		SSC	Scientific and Statistical Committee

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Chapter 1. Introduction

1.1 What Actions are Being Proposed?

Framework Amendment 4 to the Fishery Management Plan for Coastal Migratory Pelagic Resources (CMP FMP) in the Gulf of Mexico and Atlantic Region includes actions to modify recreational and commercial harvest limits, change the recreational fishing year and modify recreational accountability measures for Atlantic migratory group cobia in the exclusive economic zone (EEZ) from the Georgia/Florida line through the Mid-Atlantic region.

The current framework procedure for the CMP FMP does not allow changes to the fishing year through a framework amendment. In September 2016, the South Atlantic Fishery Management Council (South Atlantic Council) will need to remove Action 2 from Framework Amendment 4, and start work on an FMP amendment (plan amendment) that will include an action to change the recreational fishing year. The South Atlantic Council is also exploring options for latitudinal season openings for recreational harvest of Atlantic cobia, which would be included in a future plan amendment.

1.2 Who is Proposing these Actions?

The coastal migratory pelagics (CMP) fishery is managed jointly by the Gulf of Mexico Fishery Management Council (Gulf Council) and the South Atlantic Council. Amendments to the FMP (plan amendments) must be approved by both the Gulf Council and the South Atlantic Council. Because this is a framework amendment that applies to the South Atlantic and Mid-Atlantic regions, only the South Atlantic Council is proposing the actions and will give final approval on the actions. The plan and framework amendments are submitted to the National Marine Fisheries Service (NMFS), which implements the actions on behalf of the Secretary of Commerce. NMFS is a line office in the National Oceanic and Atmospheric Administration.

South Atlantic Fishery Management Council

- Responsible for conservation and management of fish stocks
- The South Atlantic Council consists of 13 voting members appointed by the Secretary of Commerce and 4 non-voting members. The Mackerel Committee of the South Atlantic Council also includes two voting seats for representatives from the Mid-Atlantic Fishery Management Council. The management area is from 3 to 200 nautical miles off the coasts of North Carolina, South Carolina, Georgia, and Florida through the Atlantic side of Key West. The South Atlantic Council manages the CMP Fishery through the Mid-Atlantic region.
- Develop management plans/amendments and recommends regulations to NMFS for implementation

1.3 Why is the South Atlantic Council Considering Action?

In 2015, recreational landings for the Atlantic migratory group (Georgia to New York¹) cobia exceeded the 2015 recreational annual catch limit (ACL) of 630,000 lbs. The current accountability measure for Atlantic cobia requires that if landings exceed the ACL, the National Marine Fisheries Service (NMFS) must file a notice to reduce the length of the following recreational season by the amount necessary to ensure recreational landings may achieve the recreational annual catch target (ACT), but do not exceed the recreational ACL.

On March 9, 2016, NMFS announced that the 2016 recreational season for Atlantic cobia in federal waters would close on June 20, 2016. Because the closure would be at the time of year when recreational fishing for cobia is highest, the early closure is expected to have negative social and economic impacts on recreational anglers, for-hire businesses, for-hire clients, and associated support businesses, such as tackle shops. The negative effects of the closure will likely be most significant for recreational fishermen and businesses in North Carolina and Virginia. **Table 1.3.1** shows recreational landings of cobia by state.

Table 1.3.1. Recreational landings of Atlantic cobia from 2005-2015. Data sources: MRIP and SEFSC

Year	VA Landings	NC Landings	SC Landings	GA Landings	TOTAL ATLANTIC
2005	577,284	322,272	5,793	3,358	908,707
2006	733,740	104,259	101,018	4,824	943,841
2007	322,887	90,197	268,677	64,708	746,469
2008	167,949	66,258	50,108	257,690	542,006
2009	552,995	123,061	76,229	3,997	756,282
2010	232,987	561,486	65,688	79,855	940,015
2011	136,859	121,689	3,565	90,375	352,488
2012	36,409	68,657	224,365	105,193	434,623
2013	354,463	492,969	19,130	29,224	895,786
2014	214,427	277,489	31,927	20,642	544,485
2015	718,647	630,373	123,952	67,804	1,540,776

* There are no MRIP-estimated recreational landings of Atlantic cobia in states north of Virginia.

The South Atlantic Council is considering changes to management measures for Atlantic cobia harvest in federal waters in order to extend the fishing seasons for commercial and recreational harvest under the current annual catch limits, and to provide fair access to the Atlantic cobia resource for fishermen in all states. The framework amendment includes actions to modify the recreational bag limit, establish a recreational vessel limit, increase the recreational minimum size limit, change the recreational accountability measures, and modify the commercial harvest limits.

The Council also included an action to change the recreational fishing year in this framework amendment (Action 2). ***However, changes to the fishing year cannot be made through the framework procedure and the action will be moved to a future fishery management plan amendment at the September 2016 Council meeting.***

¹ No landings were reported north of Virginia.

Federal regulations for commercial and recreational harvest of Atlantic cobia in the EEZ (Georgia through New York) include a minimum size limit of 33 inches fork length (FL) and a possession limit of 2 fish per person per day. Regulations are consistent for state waters of Georgia and some areas of South Carolina (see below). In the Mid-Atlantic, recreational harvest in state waters of New Jersey and New York is subject to a minimum size limit of 37 inches total length (TL) and a bag limit of 2 fish per person per day.

Virginia, North Carolina and South Carolina have recently implemented management changes for cobia harvest in state waters. Effective June 1, 2016, the recreational harvest limits in Virginia state waters is 1 fish per person and 2 fish per boat; the minimum size limit is 40 inches total length (TL) and no more than one cobia over 50 inches TL is allowed per boat; no gaffing will be permitted; and state waters will close for the year on August 30, 2016. The meeting summary is available at: http://www.mrc.virginia.gov/Commission_Summaries/cs0516.shtm.

In February 2016, the North Carolina Marine Fisheries Commission approved a reduction in the recreational bag limit in North Carolina state waters to one fish per person per day effective on February 27, 2016 (see <http://portal.ncdenr.org/web/mf/proclamation-ff-09-2016>). The North Carolina Commission made additional changes to cobia harvest in state waters in May 2016. Effective May 23, 2016, the recreational minimum size limit is 37 inches fork length and state waters will close on September 30, 2016. On for-hire trips, the harvest limit is 4 cobia per vessel per day or 1 cobia per person per day if fewer than four people are on board. Private recreational harvest is only allowed on Monday, Wednesday and Saturday, with a vessel limit of 2 cobia per day and a bag limit of 1 cobia per person per day if there is only one person on board. Shore-based cobia harvest is allowed seven days a week with a recreational bag limit of 1 fish per person per day. The proclamation is available here: <http://portal.ncdenr.org/web/mf/proclamation-ff-25-2016>.

In April 2016, the governor of South Carolina approved legislation to establish a Southern Cobia Management Zone, which included state waters from Jeremy Inlet, Edisto Island, to the South Carolina/Georgia boundary. Effective May 1, 2016, cobia harvest in the Zone is limited to catch and release only for May 1 through May 31, and is limited to 1 fish per person per day or 3 fish per vessel per day, whichever is lower, from June 1 through April 30. The full language of the bill is available here: <https://legiscan.com/SC/text/H4709/2015>.

In March 2016, the South Atlantic Council sent a letter to the Atlantic States Marine Fisheries Commission (ASMFC) requesting that the ASMFC consider complementary management measures for cobia. In May 2016, the Interstate Fisheries Management Program Policy Board discussed cobia and the ASMFC has started exploring options for the development of an interstate fishery management plan for cobia. The Policy Board directed the South Atlantic Board of the ASMFC to develop alternatives for developing an FMP that is either joint, complementary, or exclusively managed by the Commission in order to determine what type of FMP is the best way to move forward. Minutes from the Policy Board meeting are available here: <https://youtu.be/x5N02CdnPRQ>. In August 2016, the ASFMC's South Atlantic Board will discuss management of cobia and review potential directions for complementary management.

CMP Joint Fishery Management Plan Objectives

The current management objectives in the joint CMP FMP as amended are:

- 1) The primary objective of this FMP is to stabilize yield at the maximum sustainable yield (MSY), allow recovery of overfished populations, and maintain population levels sufficient to ensure adequate recruitment.
- 2) To provide a flexible management system for the resource which minimizes regulatory delay while retaining substantial Council and public input in management decisions and which can rapidly adapt to changes in resource abundance, new scientific information, and changes in fishing patterns among user groups or by areas.
- 3) To provide necessary information for effective management and establish a mandatory reporting system for monitoring catch.
- 4) To minimize gear and user group conflicts.
- 5) To distribute the total allowable catch of Atlantic migratory group Spanish mackerel between recreational and commercial user groups based on the catches that occurred during the early to mid-1970s, which is prior to the development of the deep water run-around gillnet fishery and when the resource was not overfished.
- 6) To minimize waste and bycatch in the fishery.
- 7) To provide appropriate management to address specific migratory groups of king mackerel.
- 8) To optimize the social and economic benefits of the CMP fisheries.

The actions proposed in the amendment specifically help to meet CMP FMP Objectives 2 and 8.

1.3.1 Purpose and Need Statement

Purpose for Action

The purpose of this amendment is to revise the management measures for Atlantic migratory group cobia to ensure consistent, stable and equitable fishing opportunities for all participants in the Atlantic cobia component of the CMP fishery.

Need for Action

The need for this amendment is to respond to changing fishery characteristics for Atlantic migratory group cobia, while increasing social and economic benefits of the CMP fishery through sustainable fishing opportunities and harvest of Atlantic cobia.

1.4 Which species and areas would be affected by the actions?

Three species—king mackerel, Spanish mackerel, and cobia—are included in the CMP FMP; however, cobia is the only species addressed in this framework amendment. Cobia is managed as two migratory groups—Atlantic and Gulf of Mexico. The actions in this amendment would address management of Atlantic migratory group cobia (Atlantic cobia) only.

The stock boundary between the Atlantic and Gulf of Mexico groups of cobia is established at the Georgia/Florida line, with the Atlantic cobia management area extended through the Mid-Atlantic region (**Figure 1.4.1**). The boundary is based on the approach used in the most recent stock assessment (SEDAR 28, 2013), which incorporated new information about the two stocks through genetic data and tagging studies. Although cobia caught off the east coast of Florida are considered Gulf cobia and counted toward the Florida east coast's allocation of the Gulf annual catch limit (ACL), the South Atlantic Council manages the area through the Council boundary in the Florida Keys.



Figure 1.4.1. Boundary between Atlantic and Gulf group cobia

Chapter 2. Proposed Actions and Alternatives

Action 1: Modify the recreational management measures for Atlantic cobia

Action 1-1: Modify the recreational harvest limits for Atlantic cobia

Alternative 1 (No Action). Do not modify the possession limit of 2 fish per person per day for Atlantic cobia that are not sold.

Preferred Alternative 2. Establish a recreational bag limit for Atlantic cobia.

Preferred Sub-alternative 2a. 1 fish per person per day

Sub-alternative 2b. 2 fish per person per day

Preferred Alternative 3. Establish a recreational vessel limit for Atlantic cobia.

Sub-alternative 3a. 1 fish per vessel per day

Sub-alternative 3b. 2 fish per vessel per day

Preferred Sub-alternative 3c. 3 fish per vessel per day

Sub-alternative 3d. 4 fish per vessel per day

Sub-alternative 3e. 5 fish per vessel per day

Sub-alternative 3f. 6 fish per vessel per day

Action 1-2: Modify the minimum size limit for recreational harvest of Atlantic cobia

Alternative 1 (No Action). Do not modify the minimum size limit of 33 inches fork length (FL) for recreational and commercial harvest of Atlantic cobia.

Preferred Alternative 2. Modify the minimum size limit for Atlantic cobia for recreational and commercial harvest of Atlantic cobia.

Sub-alternative 2a. 34 inches FL

Sub-alternative 2b. 35 inches FL

Preferred Sub-alternative 2c. 36 inches FL

Sub-alternative 2d. 37 inches FL

Sub-alternative 2e. 38 inches FL

Sub-alternative 2f. 39 inches FL

Sub-alternative 2g. 45 inches FL

Sub-alternative 2h. 50 inches FL

NOTE: Action 1-2 includes language to apply changes to the minimum size limit to commercial harvest, but the Council indicated that this action would apply to only recreational harvest.

Analysis of the alternatives assumed that the changes to the minimum size limit would apply only to recreational harvest. At their September 2016 meeting, the Council will revise the language to specify that the action applies to only the recreational minimum size limit, and will consider modifying the commercial minimum size limit in a future amendment.

Discussion:

Action 1 includes two sub-actions that would implement recreational harvest limits through personal bag limits, vessel limits, minimum size limits, or a combination of these management measures. The intent of this action is to ensure a longer fishing season for recreational cobia, and a combination of harvest limits and size limits are often effective in slowing the rate of harvest.

Action 1-1 includes alternatives to modify the recreational possession limit and to establish a vessel limit. Currently in the federal regulations, Atlantic cobia are designated as “sold” or “not sold” to differentiate between commercial and recreational harvest, respectively. The current possession limit for commercial and recreational trips harvesting Atlantic cobia in federal waters is the same: 2 fish per person.

Under **Alternative 1 (No Action)**, the current recreational possession limit for Atlantic cobia would remain as 2 fish per person. **Preferred Alternative 2** would establish the recreational bag limit as 1 fish per person per day (**Preferred Sub-alternative 2a**) or 2 fish per person per day (**Sub-alternative 2b**). **Preferred Alternative 3** would establish a vessel limit for recreational cobia harvest at 1 fish (**Sub-alternative 3a**), 2 fish (**Sub-alternative 3b**), 3 fish (**Preferred Sub-alternative 3c**), 4 fish (**Sub-alternative 3d**), 5 fish (**Sub-alternative 3e**) or 6 fish (**Sub-alternative 3f**).

Table 2.1.1 shows the estimated dates when recreational landings would meet the recreational ACL of 620,000 lbs (for 2016 and subsequent years) under the different combinations of bag/vessel limit and minimum size limit based on recreational harvest patterns in 2013 through 2015. Estimated dates when recreational landings would reach the recreational ACL are later in the fishing year or not at all if the bag limit is 1 per person, and for the lower vessel limits. Larger minimum size limits also extend estimated date for reaching the recreational ACL.

The current preferred alternatives in **Actions 1-1** and **1-2** (highlighted in **Table 2.1.1**) are estimated to result in landings reaching the recreational ACL around the third week of July, under the current recreational fishing year of January 1- December 31 and assuming consistent harvest limits in state and federal waters.

Table 2.1.1. Estimated dates when Atlantic cobia recreational landings would meet the recreational ACL (620,000 lbs for 2016 and subsequent years) under the range of minimum size limits, bag limits, and vessel limits, under the current fishing year of January 1- December 31. Highlighted cells are the current Preferred Sub-alternatives in Action 1.

Minimum Size Limit (inches fork length)									
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per person	2-Jul	5-Jul	10-Jul	17-Jul	23-Jul	31-Jul	5-Aug	None	None
2 per person	30-Jun	3-Jul	7-Jul	14-Jul	20-Jul	28-Jul	1-Aug	None	None
Vessel Limit									
1	30-Jul	4-Aug	11-Aug	22-Aug	22-Sep	None	None	None	None
2	11-Jul	15-Jul	20-Jul	28-Jul	5-Aug	15-Aug	21-Aug	None	None
3	5-Jul	9-Jul	13-Jul	20-Jul	27-Jul	5-Aug	10-Aug	None	None
4	3-Jul	6-Jul	11-Jul	18-Jul	24-Jul	2-Aug	7-Aug	None	None
5	2-Jul	6-Jul	10-Jul	17-Jul	23-Jul	1-Aug	6-Aug	None	None
6	30-Jun	4-Jul	8-Jul	15-Jul	21-Jul	29-Jul	3-Aug	None	None

Note: This analysis assumed that the recreational bag limit, vessel limit and minimum size limit would be consistent in state and federal waters for the South Atlantic and Mid-Atlantic regions. Additionally, the estimated dates were generated based on recreational landings from 2013-2015.

Table 2.1.2 shows the current regulations in state waters compared to the bag limits and vessel limits in **Preferred Alternatives 2 and 3 in Action 1-1**.

Table 2.1.2. Bag limits and vessel limits in state waters of Virginia, North Carolina, South Carolina and Georgia, compared to limits in options under **Preferred Alternatives 2 and 3 in Action 1-1**.

	Bag limit	Vessel limit	Consistent Sub-alternatives
Virginia	1 fish	2 fish	Sub-alternatives 2a (Pref), 3b
North Carolina	1 fish	For-hire: 4/vessel or 1 person when less than 4 people on board Private: 2 fish on vessels with more than 1 person on board	Sub-alternative 2a (Pref), 3d (for-hire), 3b (private)
South Carolina – north of Jeremy Inlet, Edisto Island	2 fish	None	Sub-alternative 2b
South Carolina-south of Jeremy Inlet, Edisto Island	1 fish June 1- Apr 30 Catch and release only May 1-May 31	3 fish per vessel or 1 fish per person, whichever is lower	June 1- Apr 30: Sub-alternatives 2a (Pref) and 3c (Pref)
Georgia	2 fish	None	Sub-alternative 2b

Action 1-2 includes alternatives to modify the current minimum size limit for recreational harvest of Atlantic cobia. Under **Alternative 1 (No Action)**, the minimum size limit for recreational harvest would remain at 33 inches fork length. **Sub-alternatives 2a-2h** under **Preferred Alternative 2** would increase the minimum size limit to 34, 35, 36, 37, 38, 39, 45, or 50 inches fork length. **Table 2.1.3** shows the current minimum size limits in state waters compared to the options minimum size limit in **Preferred Alternative 2**.

Table 2.1.3. Minimum size limits in state waters of Virginia, North Carolina, South Carolina and Georgia, compared to limits in options under **Preferred Alternative 2** in **Action 1-2**.

	Minimum size limit	Consistent Sub-alternatives
Virginia	40 inches total length	None, but comparable to Sub-alternatives 2b or 2c (Pref).
North Carolina	37 inches fork length	Sub-alternative 3d
South Carolina	33 inches fork length	Alt 1 No Action
Georgia	33 inches fork length	Alt 1 No Action

Comparison of Alternatives:

Biological Effects

Overall, the lower harvest limits combined with higher minimum size limit will be most effective to decrease recreational landings. The Council has currently selected **Preferred Alternative 2, Preferred Sub-alternative 2c** under Action 1-2, which is a minimum size limit of 36 inches fork length (FL). Action 1-2, **Preferred Alternative 2, Preferred Sub-Alternative 2c** (36 inch size limit) in combination with the preferred alternatives of **Action 1-1, Preferred Alternative 2, Preferred Sub-Alternative 2a** (1 fish bag limit) and **Preferred Alternative 3, Preferred Sub-alternative 3c** (three fish per vessel limit) would result in a decrease in landings of 15.1%.

Economic Effects

MRIP estimates indicate that on most trips where cobia are landed, there is not more than one cobia harvested per person. Based on this assumption, is not likely that lowering the bag limit to 1 fish per person will impact most recreational cobia trips. While the overall economic effect is expected to be minor, some CS may be lost on trips when more than 1 fish per person could be kept and the angler desires to do so. The economic effects of a vessel limit are similar to those described under a reduced bag limit, but these effects will be more pronounced on trips where the vessel limit is more restrictive than the bag limit. **Action 1-1/Preferred Sub-alternative 3c** is expected to reduce cobia harvest by 4.4%, signaling some potential negative economic effects. It is unclear how this option will impact overall fishing effort and thus for-hire NOR or revenue for other fishing-related businesses, but the lower vessel limit options are more likely to create heightened negative economic effects.

In general, increasing the size limit for a species typically has little long-term economic effect unless the larger size limit is set so high that it negatively impacts long-term effort or it results in greater numbers of fish reaching spawning size and/or fish have higher fecundity prior to being harvested. **Action 1-2/Preferred Sub-alternative 2c** sets the size limit at 36 inches FL and is expected to initially decrease harvest by 10.7%, showing that the majority of cobia kept are at or

above this limit and most trips will not be negatively affected. There may be some positive economic benefits from this size limit change should it help maintain or increase the overall cobia stock biomass in the long-term as well as prevent closures or prolong the fishing season.

When the implementation of vessel limits, reduced bag limits, and increased size limits are taken into the account, they are anticipated to mitigate the likelihood of a harvest closure if the recreational ACL is caught or prolonging the harvest season. Should a harvest closure occur, there may be loss of CS and anglers may decide to forgo some fishing trips due to the closure, depending on the closure timing. While some economic benefits will still be realized from catch and release fishing during a harvest closure, anglers often value being able to harvest cobia, resulting in a decrease in overall recreational effort. As a consequence, there will be negative economic effects to for-hire operators and other fishing related businesses due to the reduced recreational fishing activity and the reduction in angler expenditures on durable and non-durable goods that go along with this activity.

Social Effects

In general, the social effects of modifying the recreational harvest limits would be associated with the biological costs of each alternative as well as the effects on current recreational fishing opportunities. While the potential measures in this action could restrict recreational fishing opportunities for Atlantic cobia, the harvest limits could help to extend the recreational fishing season by slowing the rate of harvest. Different levels of recreational fishing opportunities under each alternative could affect recreational anglers and for-hire businesses targeting Atlantic cobia, particularly in North Carolina and Virginia. In general, benefits to the recreational sector will result from harvest limits that lengthen the fishing season, but still maintain harvest limits large enough to have minimum effect on recreational trip satisfaction.

The social effects of the potential harvest limits will depend on the effect on how the measures or combination of measures can restrict the number of fish that can be kept, which could affect recreational trip satisfaction, and the trade-off required to keep the season open by slowing the rate of harvest.

Administrative Effects

Establishing bag limits, vessel limits and size limits will have result in an administrative burden associated with rulemaking, outreach, education and enforcement. However, the impact is expected to be minimal based on the alternatives proposed in this amendment.

Action 2: Modify the recreational fishing year for Atlantic cobia

Alternative 1 (No Action). Do not modify the current recreational fishing year of January 1 through December 31.

Preferred Alternative 2. Modify the recreational fishing year for Atlantic cobia to be May 1 through April 30.

Alternative 3. Modify the recreational fishing year for Atlantic cobia to be June 1 through May 31.

Alternative 4. Modify the recreational fishing year for Atlantic cobia to be April 1 through March 31.

NOTE: Changes to the fishing year cannot be made through the framework procedure so the Council will need to move Action 2 to a plan amendment at their September 2016 meeting. This will delay action if the Council decides to change the recreational fishing year.

Discussion:

Action 2 includes alternatives to modify the recreational fishing year for Atlantic cobia. The Council is considering this change because a later start date of the fishing year may result in recreational landings reaching the recreational ACL later in the year, after the primary time of year when cobia is targeted. **Figure 2.2.1** shows the peak in recreational landings around the middle of the year.

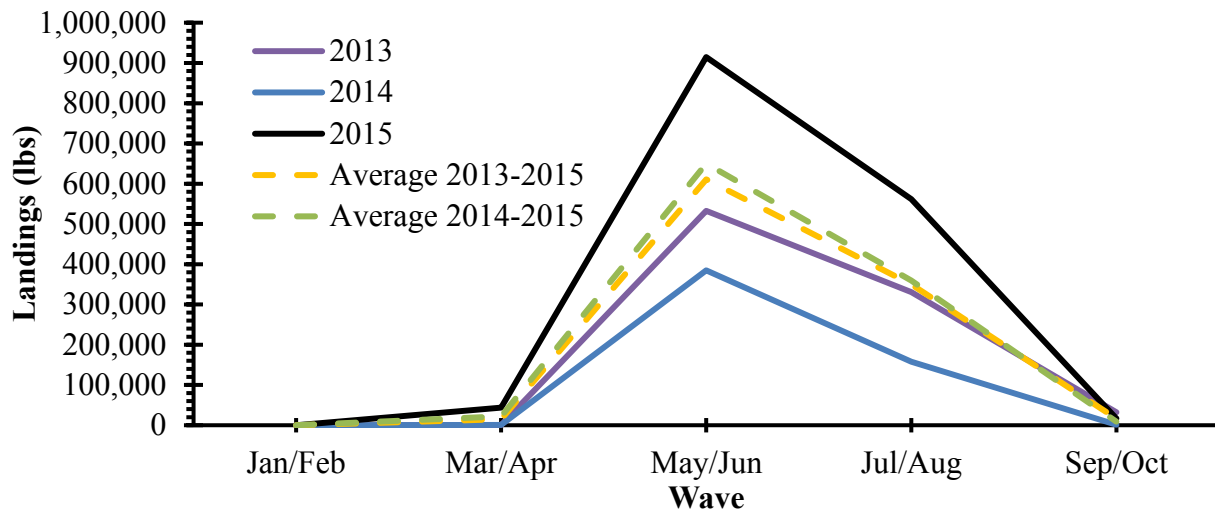


Figure 2.2.1. Atlantic recreational landings for January-October of 2013, 2014, 2015, average 2013-2015 landings, and average 2014-2015 landings by two-month wave. The landings for 2015 are preliminary. Source: SEFSC Recreational ACL Dataset

Alternative 1 (No Action) would not change the current recreational fishing year of January 1 through December 31. **Preferred Alternative 2** would change the recreational fishing year to start on May 1 and end on April 30; **Alternative 3** would change the recreational fishing year to start on June 1 and end on May 31; and **Alternative 4** would change the recreational fishing year to April 1 through March 31.

Table 2.2.1 shows the estimated dates when recreational landings would reach the recreational ACL under the potential harvest limits in Action 1 if the fishing year was May 1 through April 30 (**Preferred Alternative 2**). Under the bag limit, vessel limit and minimum size limit that the Council has currently selected as the preferred alternatives in Action 1, recreational landings would likely reach the ACL between July 19 and July 23 if the fishing year opened on May 1. These estimates assume that regulations are consistent in state and federal waters, and is based on recreational landings patterns in fishing years 2013 through 2015.

Table 2.2.1. Estimated dates when Atlantic cobia recreational landings would meet the recreational ACL under the range of minimum size limits, bag limits, and vessel limits, if the fishing year is changed to May 1-April 30 (**Preferred Alternative 2**). Highlighted cells are the current Preferred Sub-alternatives in Action 1.

Minimum Size Limit (inches fork length)									
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	5-Jul	8-Jul	13-Jul	19-Jul	26-Jul	3-Aug	8-Aug	None	None
2 per Person	2-Jul	6-Jul	10-Jul	16-Jul	23-Jul	31-Jul	4-Aug	None	None
Vessel Limit									
1 per Vessel	2-Aug	7-Aug	14-Aug	25-Aug	20-Mar	None	None	None	None
2 per Vessel	14-Jul	18-Jul	23-Jul	31-Jul	8-Aug	18-Aug	24-Aug	None	None
3 per Vessel	8-Jul	12-Jul	16-Jul	23-Jul	30-Jul	8-Aug	13-Aug	None	None
4 per Vessel	6-Jul	9-Jul	14-Jul	21-Jul	27-Jul	5-Aug	10-Aug	None	None
5 per Vessel	5-Jul	8-Jul	13-Jul	20-Jul	26-Jul	4-Aug	9-Aug	None	None
6 per Vessel	3-Jul	7-Jul	11-Jul	18-Jul	24-Jul	1-Aug	6-Aug	None	None

Note: As with **Table 2.1.1** this analysis assumed consistent regulations in state and federal waters, and estimated the dates based on recreational landings from 2013-2015.

As noted above, changes to the fishing year are not allowed under the framework procedure for the Coastal Migratory Pelagics Fishery Management Plan. The Council will move this action to a plan amendment, which will delay action on any potential change to the recreational fishing year. The Council will review the effects of the potential change to the recreational fishing year

because the start date of the fishing year could affect season length under the potential changes to bag limit, vessel limit and minimum size limit in Action 1.

Comparison of Alternatives:

Biological Effects

If the Council were to select more restrictive management harvest limits (**Action 1-1**) or minimum size limits (**Action 1-2**), there would be the potential to extend the season. Under the most restrictive harvest limits and minimum size limits in **Action 1**, it is expected that recreational landings would not reach the recreational ACL. Changing the fishing year in **Preferred Alternative 2** would only increase the time before landings reached the recreational ACL by about three days from **Alternative 1 (No Action)**, largely because the pulse nature of the fishery, and the bulk of the landings occur during May/June and the landings from January-April are minimal. Under **Alternative 3**, landings would not reach the ACL until later in the fishing year, and would ensure that the fishery would be open during the early part of the year, giving fishing opportunities to those fishing off North Carolina and South Carolina. **Alternative 4** provides a very similar closure date as **Alternative 1** and **Alternative 2** because the bulk of the landings occur in May, just after the proposed start of the fishing year.

Economic Effects

Changing the start and end dates of a fishing year does not in and of itself create economic effects except if the entire ACL is taken prior to the end of the fishing year. Overall, ensuring that each state has a time period to harvest cobia while the fish are present in large numbers off of their coastal waters would ensure economic benefits are derived from the cobia fishery and the economic value and impacts are distributed in an equitable manner among coastal communities in the South and Mid Atlantic. The majority of cobia effort and harvest occurs after May 1, therefore **Preferred Alternative 2** and **Alternative 4** will have minimal impacts on the overall cobia fishery. Under **Preferred Alternative 2** and more so under **Alternative 3**, there is potential for negative economic effects to occur if harvest was closed for the remainder of a given fishing year in the southern part of the range at the beginning of the typical cobia season, especially in Georgia, South Carolina, and North Carolina.

Social Effects

Modification to the fishing year and establishing closed season could have negative effects on the recreational sector by limiting fishing opportunities, but could also benefit the recreational sector by allowing the season to be open during peak harvest times during the year. Because recreational most harvest occurs in May-July, current landings patterns indicate that the estimated dates when recreational landings would reach the recreational ACL are similar under **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 4**, and would have similar effects on recreational fishermen and associated businesses. Starting the fishing year on June 1 (**Alternative 3**) may help keep recreational landings from reaching the recreational ACL early in the summer, but could also restrict access to cobia in the late spring and early summer months if there is a current or future management measure that results in a closure at the end of the fishing year.

Alternatives 2-4 also would result in different fishing years for the commercial and recreational sectors. This would increase the complexity of Atlantic cobia management, in addition to limiting the conditions that could be places on accountability measures, as discussed in **Section 4.3**.

Administrative Effects

There will be no difference in the administrative burden between **Preferred Alternative 2, Alternative 3 and Alternative 4**. However, these action alternatives will have a greater administrative burden than **Alternative 1 (No Action)**. These impacts will be associated with rule-making, quota monitoring, outreach and education and enforcement.

Action 3: Modify the recreational accountability measures for Atlantic cobia

Alternative 1 (No Action): Do not revise the recreational accountability measures (AMs) for Atlantic cobia as established in Amendment 18 (GMFMC/SAFMC 2011).

Preferred Alternative 2. If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, ~~then during the following fishing year,~~ recreational landings will be monitored for a persistence in increased landings. If necessary, the Regional Administrator shall publish a notice to reduce the length of the following fishing season to ensure that recreational landings meet the recreational ACT but do not exceed the recreational ACL, based on the recreational landings in the previous year. The length of the recreational season will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary. The ACT for 2016 and subsequent fishing years is 500,000 lbs, as established in CMP Amendment 20B.

Sub-alternative 2a. The Regional Administrator will reduce the length of the following fishing year only if the species is overfished.

Preferred Sub-alternative 2b. The Regional Administrator will reduce the length of the following fishing year only if the total ACL (commercial ACL and recreational ACL) is exceeded.

Sub-alternative 2c. The Regional Administrator will reduce the length of the following fishing year only if the species is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded.

Alternative 3. If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, the Regional Administrator shall publish a notice to reduce the recreational ACL in the following fishing year by the amount of the recreational overage. The length of the recreational season will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary. The ACT would also be adjusted according to the following formula: recreational sector ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater].

Sub-alternative 3a. The Regional Administrator will reduce the recreational ACL and ACT of the following fishing year only if the species is overfished.

Sub-alternative 3b. The Regional Administrator will reduce the recreational ACL and ACT of the following fishing year only if the total ACL (commercial ACL and recreational ACL) is exceeded.

Sub-alternative 3c. The Regional Administrator will reduce the recreational ACL and ACT of the following fishing year only if the species is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded.

Alternative 4. If recreational landings reach or are projected to reach the recreational ACL, the Regional Administrator shall publish a notice to close the recreational sector for the remainder of the fishing year, unless, using the best scientific information available, the Regional Administrator determines that a closure is unnecessary.

Sub-alternative 4a. If the species is overfished.

Sub-alternative 4b. Regardless of the overfished status of the species.

Alternative 5. If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, ~~then during the following fishing year,~~ recreational landings will be monitored for a persistence in increased landings. If necessary, the Regional Administrator shall publish a notice to reduce the recreational vessel limit for the following fishing year to ensure that recreational landings meet the recreational ACT but do not exceed the recreational ACL, based on the recreational landings in the previous year. The recreational vessel limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary. The ACT for 2016 and subsequent fishing years is 500,000 lbs, as established in CMP Amendment 20B.

Sub-alternative 5a. The Regional Administrator will reduce the recreational vessel limit for the following fishing year only if the species is overfished.

Sub-alternative 5b. The Regional Administrator will reduce the recreational vessel limit for the following fishing year only if the total ACL (commercial ACL and recreational ACL) is exceeded.

Sub-alternative 5c. The Regional Administrator will reduce the recreational vessel limit for the following fishing year only if the species is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded.

Discussion:

The AMs for the Atlantic migratory group of cobia were established in Amendment 18 (GMFMC/SAFMC 2011) as follows:

Commercial

The commercial AM for this stock is to prohibit harvest, possession, and retention when the commercial quota (total ACL x commercial allocation) is met or projected to be met. All purchase and sale is prohibited when the commercial quota is met or projected to be met.

If total Atlantic cobia landings exceeds the stock ACL, and Atlantic cobia are overfished, based on the most recent status of U.S. Fisheries Report to Congress, the commercial ACL for following fishing year will be reduced by the amount of any applicable sector-specific ACL overage in the prior fishing year.

Recreational

If the recreational sector quota (total ACL x recreational allocation) is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACT for the following fishing year, but only if the Total ACL is exceeded. The season length will allow recreational landings to achieve the applicable recreational ACT but not exceed the applicable recreational ACL.

To calculate the recreational season length if this AM is triggered, the RA will use the following direction from Amendment 18:

Compare the recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year (fishing years) running average. If in any year the ACL is changed, the sequence of future ACLs will begin again starting with a single year of landings compared to the ACL for that year, followed by two-year average landings compared to the ACL in the next year, followed by a three-year average of landings ACL for the third year and thereafter.

If the recreational ACL is exceeded, the Assistant Administrator for Fisheries shall file a notification with the Office of the Federal Register to reduce the recreational ACL in the following year by the amount of the overage, if the Total ACL is exceeded and the stock is overfished. The ACT would also be adjusted according to the following formula: recreational sector ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater].

Because Amendment 20B (GMFMC/SAFMC 2014) changed the ACL beginning in 2015 (based on the SEDAR 28 (2013) stock assessment), only the 2015 landings are used to determine whether the recreational or stock ACL was exceeded such that the AM is triggered. For 2015, both the recreational ACL and the stock ACL were exceeded, and NMFS published a notice to reduce the length of the 2016 fishing season to ensure that 2016 recreational landings did not exceed the 2016 recreational ACL.

Alternative 1 (No Action) would not modify the recreational AMs for Atlantic cobia, with no changes to the three-year rolling average used for evaluation when landings exceed the ACL. **Preferred Alternative 2** would modify the recreational AMs reduce the season length of the following fishing year if recreational landings exceeded the recreational annual catch limit (ACL), and the evaluation would be *based only on that year's recreational landings*. Under **Sub-alternative 2a**, the reduced season length would be implemented only if Atlantic cobia were designated as overfished. Under **Preferred Sub-alternative 2b**, the AM would only be triggered if the total ACL was exceeded as well as the recreational ACL. Under **Sub-alternative 2c**, the season would be shortened if both the recreational and total ACL were exceeded, and Atlantic cobia was designated as overfished.

Alternative 3 would modify the recreational AMs reduce the recreational ACL of the following fishing year if recreational landings exceeded the recreational annual catch limit (ACL). Under **Sub-alternative 3a**, the reduced recreational ACL would be implemented only if Atlantic cobia were designated as overfished. Under **Sub-alternative 3b**, the AM would only be triggered if the total ACL was exceeded as well as the recreational ACL. Under **Sub-alternative 3c**, the season would be shortened if both the recreational and total ACL were exceeded, and Atlantic cobia was designated as overfished. **Sub-alternative 3c** is consistent with the current post-season AM to reduce the recreational ACL under **Alternative 1 (No Action)**.

Alternative 4 would modify the recreational AMs to include an in-season closure if recreational landings met or were projected to meet the recreational ACL. The in-season closure would occur only if Atlantic cobia are designated as overfished under **Sub-alternative 4a**, but would occur regardless of stock status under **Sub-alternative 4b**. An in-season closure could help reduce the

likelihood of a substantial overage of the recreational ACL, because recreational harvest could be prohibited sooner.

Alternative 5 would establish a recreational AM to reduce the recreational vessel limit during the following fishing year if recreational landings exceeded the recreational annual catch limit (ACL), and the evaluation would be *based only on that year’s recreational landings*. The reduced vessel limit would only apply for the fishing year following the year with the overage. After the year with the reduced vessel limit, the vessel limit would return to the permanent limit as determined in Action 1-1, unless recreational landings continue to exceed the recreational AM. If this occurs for more than one year, there could be multiple years with a vessel limit lower than the permanent vessel limit specified in Action 1-1.

Under **Sub-alternative 5a**, the reduced vessel limit would be implemented only if Atlantic cobia were designated as overfished. Under **Sub-alternative 5b**, the AM would only be triggered if the total ACL was exceeded as well as the recreational ACL. Under **Sub-alternative 5c**, the vessel limit would be reduced the next fishing year if both the recreational and total ACL were exceeded, and Atlantic cobia was designated as overfished.

Under this action, the Council may select multiple alternatives and sub-alternatives as the preferred alternatives to establish the AM system for recreational harvest of Atlantic cobia. The post-season accountability measures of a reduced season length (**Preferred Alternative 2**), reduced recreational ACL (**Alternative 3**) and reduced vessel limit (**Alternative 5**) could be used *in combination or separately* to mitigate an overage and/or ensure the subsequent fishing year’s landings do not exceed that year’s ACL, as determined by the Regional Administrator.

Table 2.3.1 contains a summary of the recreational AMs under each alternative and sub-alternative. The highlighted sections show the AMs that would align with the preferred alternatives in the Generic AM amendment (SAFMC 2015).

Table 2.3.1. Summary of Recreational AMs under the alternatives

	In-season AM	Post-season AM
Alternative 1 (status quo)	No in-season closure	Reduced season length so ACT is met but ACL not exceeded ONLY if rec ACL and total ACL are exceeded. Use the rolling average of most recent 3 years. Reduce the recreational ACL if rec ACL and total ACL are exceeded, AND Atlantic cobia is designated as overfished.
Alternative 2. Sub-alt 2a		Reduce season length based on last year’s landings if overfished
Alternative 2. Sub-alt 2b (Preferred)		Reduce season length based on last year’s landings if total ACL exceeded

Table 2.3.1 continued. Summary of Recreational AMs under the alternatives		
	In-season AM	Post-season AM
Alternative 2. Sub-alt 2c		Reduce season length based on last year's landings if total ACL exceeded and overfished
Alternative 3 Sub-alt 3a		Reduce rec ACL by amount of the overage if overfished
Alternative 3 Sub-alt 3b		Reduce rec ACL by amount of the overage if total ACL exceeded
Alternative 3 Sub-alt 3c		Reduce rec ACL by amount of the overage if total ACL exceeded and overfished
Alternative 4 Sub-alt 4a	In-season closure when rec ACL is met or projected to be met if overfished	
Alternative 4 Sub-alt 4b	In-season closure when rec ACL is met or projected to be met regardless of stock status	
Alternative 5. Sub-alt 5a		Reduce vessel limit based on last year's landings if overfished
Alternative 2. Sub-alt 5b		Reduce vessel limit based on last year's landings if total ACL exceeded
Alternative 5. Sub-alt 5c		Reduce vessel limit based on last year's landings if total ACL exceeded and overfished

Comparison of Alternatives:

Biological Effects

Under the current AMs, NMFS must file a notice at or near the beginning of the following fishing year to reduce the length of the recreational season by the amount necessary to ensure recreational landings may achieve the recreational ACT, but do not exceed the recreational ACL. To determine whether an ACL has been exceeded, Amendment 18 required using 2011 landings in the first year, then the average of 2011/12 in the second year and then a three-year average of landings in the third year onwards, unless an ACL changed, in which case the first single year of landings will be compared to the ACL. Because Amendment 20B changed the ACL beginning in 2015 (based on the stock assessment), only the 2015 landings are used to determine whether the recreational or stock ACL was exceeded such that the AM is triggered. For 2015, both the recreational ACL and the stock ACL were exceeded, and thus, the length of the 2016 fishing

season must be reduced.

Economic Effects

Assuming the recreational ACL is exceeded, greater short-term negative economic effects would be expected from **Alternative 3** sub-alternatives than from **Alternative 2** sub-alternatives. Minimizing ACL overages under **Alternative 4** has long-term positive economic effects. The overall economic effects of **Alternative 5** would vary based on the severity of the vessel limit reduction. However, if the ACL is not exceeded in any given season, there would be no differences between **Alternatives 1-5**.

Social Effects

Accountability measures can have significant direct and indirect social effects because, when triggered, can restrict harvest in the current season or subsequent seasons. While the negative effects are usually short-term, they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects. In general, the most long-term benefits for the stock and for sustainable fishing opportunities will result from a combination of measures to slow the rate of harvest during the year (as in **Preferred Alternative 2** and **Alternative 5**) and to mitigate an overage in a following year (as in **Alternatives 3** and **4**). Implementing a lower vessel limit as the accountability measure in **Alternative 5**, particularly as the first measure in a series of potential post-season AMs, would be expected to have less negative effects on recreational fishermen than a post-season that would shorten the season. However, some flexibility in how these AMs are triggered, such as conditions in the sub-alternatives of the stock being overfished or the total ACL being exceeded, can help to mitigate the negative short-term impacts on fishermen and associated businesses and communities.

Administrative Effects

Modifying the accountability measure is an administrative action which will have implications for rule making, outreach and education. However, none of the alternatives are expected to be more administratively burdensome than the others.

Action 4: Establish a commercial trip limit for Atlantic cobia

Alternative 1 (No Action). Do not modify the possession limit of 2 fish per person per day.

Alternative 2. Establish a commercial trip limit for Atlantic cobia of 2 fish per person per day. The trip limit will decrease to 1 fish per person per day when 75% of the commercial ACL has been met.

Alternative 3. Establish a commercial trip limit for Atlantic cobia of 6 fish per vessel per day. The trip limit will decrease to 3 fish per vessel per day when 75% of the commercial ACL has been met.

Alternative 4. Establish a commercial trip limit for Atlantic cobia of 2 fish per person per day, with no more than 6 fish per vessel per day. The trip limit will decrease to 1 fish per person per day, with no more than 3 per vessel per day when 75% of the commercial ACL has been met.

Discussion:

Cobia are unique among federally managed species in the southeast region, in that there is no federal commercial permit requirement to harvest cobia from federal waters to sell commercially. The daily possession limit of two cobia per person applies to both recreational and commercial catch. This makes the distinction between recreationally caught cobia and commercially caught cobia difficult, and the regulations define them as “cobia that are not sold” and “cobia that are sold.” For purposes of this discussion, we will use the following terms interchangeably: “recreational” with “cobia that are not sold” and “commercial” with “cobia that are sold.”

Although there is not a federal commercial permit requirement to fish for and sell cobia caught in federal waters, all cobia from federal waters must be sold to a federally permitted dealer. Therefore, cobia harvested from a vessel fishing without any federal vessel fishing permit may only sell to a dealer that has a state license but not a federal license.

Alternative 1 (No Action) would not change the possession limit of 2 fish that applies to commercial harvest of Atlantic cobia. **Alternative 2** would establish a commercial trip limit of two fish per person per day with a possible reduction to one fish per person per day when commercial landings reach or are projected to reach 75% of the commercial ACL (37,500 lbs). **Alternative 3**, if added, would establish a vessel limit for commercial harvest of Atlantic cobia of 6 fish per vessel per day. When commercial landings reach or are projected to reach 75% of the commercial ACL, the vessel limit will decrease to 3 fish per vessel per day. Reducing the commercial landings of commercial catch through bag or vessel limits proposed in **Alternative 2** and **Alternative 3** may reduce commercial harvest enough to lengthen the fishing season.

In this action, the Council is considering a commercial trip limit with a step-down when 75% of the commercial ACL is met to extend the season length by slowing the rate of harvest, and to reduce the risk of commercial harvest exceeding the commercial ACL. The commercial ACL for

Atlantic cobia is 50,000 lbs in 2016 and subsequent years, and the trigger for the step-down under **Alternatives 2-4** would be 37,500 lbs.

Table 2.4.1 shows the month each year when actual Atlantic cobia commercial landings reached 75% of the current commercial ACL and when landings reached 100% of the current commercial ACL. The analysis is based on the commercial fishing year of January 1 through December 31 (the Council is not considering a change for the commercial fishing year). In more recent years, the step-down would have occurred in the fall or late summer, but in years with lower landings, a step-down may not occur at all.

Additional analysis is in progress and will be included in the next version of the document.

Table 2.4.1. Estimated month when actual Atlantic cobia commercial landings reached 75% of the commercial ACL (37,500 lbs ww) and the current commercial ACL (50,000 lbs ww).

Year	Total Commercial Landings	Month when landings reached 75% of ACL	Month when landings reached current ACL
2005	29,290	--	--
2006	31,990	--	--
2007	32,037	--	--
2008	33,739	--	--
2009	42,385	November	--
2010	56,393	September	November
2011	33,963	--	--
2012	42,176	September	--
2013	53,108	August	November
2014	69,197	August	September
2015 (P)	83,148	July	August

Note: 2015 landings are preliminary.

Data sources: SERO Quota Monitoring and SEFSC.

Comparison of Alternatives:

Biological Effects

Based on historic landings, in many years the reduced trip limit would not go into effect. In recent years, reducing the trip limit when 75% of the ACL was met would likely have extended the season and prevented potential closures of the commercial fishery. **Alternatives 2-4** would potentially be more restrictive than **Alternative 1 (No Action)** because it would reduce the commercial trip limit to 1 fish per person when 75% of the commercial ACL is reached, restricting harvest of cobia on commercial trips.

Economic Effects

Generally, trip limits are not considered to be economically efficient because they require an increase in the number of trips and associated trip costs to land the same amount of fish.

However, the negative economic effects of this inefficiency can be offset by price support resulting from the supply limitations and the lengthening of seasons. Given the relatively restrictive commercial limit on cobia of 2 fish per person per day, the fewer the trips that have to stop keeping cobia because the trip limit has been reached would result in the least amount of direct negative economic effect, assuming the ACL is not met and the season does not close. Presumably the step down in trip limits present in **Alternative 2** through **Alternative 4** would allow the commercial cobia fishery to remain open longer, which may help offset the negative economic effects of the reduced trip limit.

Social Effects

In general, a commercial trip limit may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded, but trip limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away. Additionally, if the trip limit is too low, the commercial ACL may not be met. In most years, it is more unlikely that the step-down in **Alternatives 2-4** at 75% of the commercial ACL will be implemented and the effects of **Alternative 1 (No Action)** through **Alternative 4** would be minimal or none for the commercial sector. However, in years with higher levels of commercial landings, the lower commercial limit in **Alternatives 2-4** may help slow the rate of harvest and reduce the likelihood of an early in-season closure or an overage.

Administrative Effects

There will be no difference in the administrative burden between **Alternative 2, Alternative 3 and Alternative 4**. However, these action alternatives will have a greater administrative burden than **Alternative 1**. These impacts will be associated with rule-making, quota monitoring, outreach and education and enforcement.

Chapter 3. Affected Environment

This section describes the affected environment in the proposed project area. The affected environment is divided into five major components:

- **Habitat environment** (Section 3.1)
- **Biological environment** (Section 3.2)
- **Economic environment** (Section 3.3)
- **Social environment** (Section 3.4)
- **Administrative environment** (Section 3.5)

3.1 Habitat Environment

The South Atlantic Fishery Management Council (South Atlantic Council) has management jurisdiction of the federal waters (3-200 nautical miles) offshore of North Carolina, South Carolina, Georgia, and Florida. The continental shelf off the southeastern U.S., extending from the Dry Tortugas, Florida, to Cape Hatteras, North Carolina, encompasses an area in excess of 100,000 square km (Menzel 1993). Based on physical oceanography and geomorphology, this environment can be divided into two regions: Dry Tortugas, Florida, to Cape Canaveral, Florida, and Cape Canaveral, Florida, to Cape Hatteras, North Carolina. The continental shelf from the Dry Tortugas, Florida, to Miami, Florida, is approximately 25 km wide and narrows to approximately 5 km off Palm Beach, Florida. The shelf then broadens to approximately 120 km off Georgia and South Carolina before narrowing to 30 km off Cape Hatteras, North Carolina. The Florida Current/Gulf Stream flows along the shelf edge throughout the region. In the southern region, this boundary current dominates the physics of the entire shelf (Lee et al. 1994).

In the northern region, additional physical processes are important and the shelf environment can be subdivided into three oceanographic zones (Atkinson et al. 1985; Menzel 1993), the outer shelf, mid-shelf, and inner shelf. The outer shelf (40-75 meters (m)) is influenced primarily by the Gulf Stream and secondarily by winds and tides. On the mid-shelf (20-40 m), the water column is almost equally affected by the Gulf Stream, winds, and tides. Inner shelf waters (0-20 m) are influenced by freshwater runoff, winds, tides, and bottom friction. Water masses present from the Dry Tortugas, Florida, to Cape Canaveral, Florida, include Florida Current water, waters originating in Florida Bay, and shelf water. From Cape Canaveral, Florida, to Cape Hatteras, North Carolina four water masses are found: Gulf Stream water; Carolina Capes water; Georgia water; and Virginia coastal water.

Spatial and temporal variation in the position of the western boundary current has dramatic effects on water column habitats. Variation in the path of the Florida Current near the Dry Tortugas induces formation of the Tortugas Gyre (Lee et al. 1992, 1994). This cyclonic eddy has horizontal dimensions of approximately 100 km and may persist near the Florida Keys for several months. The Pourtales Gyre, which has been found to the east, is formed when the Tortugas Gyres moves eastward along the shelf. Upwelling occurs in the center of these gyres, thereby adding nutrients to the near surface (<100 m) water column. Wind and input of Florida Bay water also influence the water column structure on the shelf off the Florida Keys (Smith 1994; Wang et al. 1994). Further, downstream, the Gulf Stream encounters the “Charleston Bump”, a topographic rise on the upper Blake Ridge where the current is often deflected offshore resulting in the formation of a cold, quasi-permanent cyclonic gyre and associated upwelling (Brooks and Bane 1978). On the continental shelf, offshore projecting shoals at Cape Fear, Cape Lookout, and Cape Hatteras, North Carolina, affect longshore coastal currents and interact with Gulf Stream intrusions to produce local upwelling (Blanton et al. 1981; Janowitz and Pietrafesa 1982). Shoreward of the Gulf Stream, seasonal horizontal temperature and salinity gradients define the mid-shelf and inner-shelf fronts. In coastal waters, river discharge and estuarine tidal plumes contribute to the water column structure.

The water column from Dry Tortugas, Florida, to Cape Hatteras, North Carolina, serves as habitat for many marine fish and shellfish. Most marine fish and shellfish release pelagic eggs when spawning and thus, most species utilize the water column during some portion of their early life history (Leis 1991; Yeung and McGowan 1991). Many fish inhabit the water column as adults. Pelagic fishes include numerous clupeoids, flying fish, jacks, cobia, bluefish, dolphin, barracuda, and the mackerels (Schwartz 1989). Some pelagic species are associated with particular benthic habitats, while other species are truly pelagic.

3.2 Biological and Ecological Environment

3.2.1 Fish Populations Affected by this Amendment

The actions in this amendment only apply to the cobia sector of the coastal migratory pelagics fishery.

3.2.1.1

Cobia is a member of the family Rachycentridae but is managed in the CMP FMP because of its migratory behavior. Cobia is distributed worldwide in tropical, subtropical and warm-temperate waters. In the western Atlantic it occurs from Nova Scotia, Canada, south to Argentina, including the Caribbean Sea. It is abundant in warm waters off the coast of the U.S. from the Chesapeake Bay south and throughout the Gulf. Cobia prefer water temperatures between 68-86°F. Seeking shelter in harbors and around wrecks and reefs, cobia is often found off south Florida and the Florida Keys. As a pelagic fish, cobia are found over the continental shelf as well as around offshore reefs. It prefers to reside near any structure that interrupts the open water such as pilings, buoys, platforms, anchored boats, and flotsam. Cobia is also found inshore inhabiting bays, inlets, and mangroves.

3.2.1.2 Cobia Reproduction

Cobia form large aggregations, spawning during daylight hours between June and August in the Atlantic Ocean near the Chesapeake Bay, off North Carolina in May and June, and in the Gulf during April through September. Spawning frequency is once every 9-12 days, spawning 15-20 times during the season. During spawning, cobia undergo changes in body coloration from brown to a light horizontal-striped pattern, releasing eggs and sperm into offshore open water. Cobia have also been observed spawning in estuaries and shallow bays with the young heading offshore soon after hatching. Cobia eggs are spherical, averaging 1.24mm in diameter. Larvae are released approximately 24-36 hours after fertilization.

3.2.1.3 Cobia Development Growth and Movement Patterns

Newly hatched larvae are 2.5 mm (1 inch) long and lack pigmentation. Five days after hatching, the mouth and eyes develop, allowing for active feeding. A pale yellow streak is visible, extending the length of the body. By day 30, the juvenile takes on the appearance of the adult cobia with two color bands running from the head to the posterior end of the juvenile.

Weighing up to a record 61 kg (135 lbs), cobia are more common at weights of up to 23 kg (50 lbs). They reach lengths of 50-120 cm (20-47 inches), with a maximum of 200 cm (79 inches). Cobia grow quickly and have a moderately long life span. Maximum ages observed for cobia in the Gulf were 9 and 11 years for males and females, respectively, while off the North Carolina coast maximum ages were 14 and 13 years, respectively. Females reach sexual maturity at 3 years of age and males at 2 years in the Chesapeake Bay region. During autumn and winter months, cobia migrate south and offshore to warmer waters. In early spring, migration occurs northward along the Atlantic coast.

3.2.2 Description of the Fishery

Currently, no commercial vessel permit is required for harvest or sale of cobia. Recreational fishermen may sell cobia to federal dealers if they have a for-hire CMP permit or a commercial king or Spanish mackerel permit. Cobia is considered a limited harvest species and the commercial trip limit and recreational bag limit are two per person per day.

Cobia from the east coast of Florida are part of the Gulf of Mexico migratory group. Cobia from the Florida/Georgia border north to New York are considered one stock and have an ACL of 50,000 lb for the commercial sector and 620,000 lbs for the recreational sector.

Commercial landings have declined since the highest landings in 1996 (Vondruska 2010). Over the last 5 years (2011-2015), annual landings have averaged approximately 50,516 lb (**Table 3.2.2.1**). Most commercial cobia landings are in Florida and landings are highest during summer.

Recreational Landings off Virginia and North Carolina have been increasing in recent years and in 2015, landings off Virginia and North Carolina accounted for the highest landings in the

region (**Table 3.2.2.1**). Landings in New York are relatively minor. According to landings data, the majority of these landings originate from state waters (e.g., pound net landings or landings originating within Chesapeake Bay)

Table 3.2.2.1. Annual commercial and recreational landings of cobia in the Atlantic.

Year	Commercial Landings	Recreational Landings
2005	29,290	915,300
2006	31,990	980,071
2007	32,037	745,776
2008	33,739	537,767
2009	42,385	760,841
2010	56,393	938,527
2011	33,963	347,527
2012	42,176	496,173
2013	53,108	895,925
2014	69,197	544,952
2015	83,148 (P)	1,541,535

Source: SEFSC ACL Landings Dataset, 2015 Commercial Quota Monitoring Program
Landings in whole weight.

Table 3.2.2.2. Recreational landings (pounds whole weight) of cobia from Georgia through New York during 2013-2015.

Year	GA	SC	NC	VA	Total
2013	29,224	19,130	492,969	354,463	895,786
2014	20,642	31,927	277,489	214,427	544,485
2015	67,804	123,952	630,373	718,647	1,540,776

Source: Southeast Fisheries Science Center

3.2.3 Status of Stocks

Cobia

Both the Gulf and Atlantic migratory groups of cobia were assessed by SEDAR 28 in 2013. The SEDAR 28 stock assessment for Atlantic migratory group cobia (2013c) determined that the stock is not overfished or experiencing overfishing. The Gulf Council’s review (GMFMC 2013a) of the SEDAR 28 stock assessment of Gulf migratory group cobia (2013a) determined that the stock was not overfished or experiencing overfishing.

3.2.4 Protected Species

All sea turtle species occurring in the Atlantic Ocean are listed as either endangered or threatened under the Endangered Species Act (ESA). The actions discussed in this amendment may potentially affect five sea turtle species: the endangered leatherback, the endangered hawksbill, the endangered Kemp’s ridley, the Northwest Atlantic distinct population segment

(DPS) of the threatened loggerhead, and the threatened green, except for breeding populations of green turtles in Florida, which are listed as endangered.

The South Atlantic and Carolina DPS of the threatened Atlantic sturgeon, and the endangered smalltooth sawfish, also occur within the area encompassed by the CMP FMP. Additionally, two threatened *Acropora* coral species, elkhorn and staghorn, can be found in areas off Florida.

Species of large whales protected by the ESA that occur throughout the Atlantic Ocean include the blue whale, humpback whale, fin whale, North Atlantic right whale, sei whale, and the sperm whale. Additionally, the West Indian manatee also occurs both in the Gulf of Mexico and the Atlantic Ocean. These species are also considered depleted under the Marine Mammal Protection Act (MMPA). Depleted and endangered designations afford special protections from captures, and further measures to restore populations to recovery or the optimum sustainable population are identified through required recovery (ESA species) or conservation plans (MMPA depleted species). Numerous other species of marine mammals listed under the MMPA occur throughout the Atlantic Ocean.

Aside from the aforementioned protected species, portions of designated critical habitat *Acropora* corals and the North Atlantic Right Whale also occur within areas encompassed by the alternatives in this amendment.

In a 2015 biological opinion, NMFS determined that the proposed continued authorization of the CMP Fishery, including the cobia sector is not likely to adversely affect any listed whales (i.e., blue, sei, sperm, fin, humpback, or North Atlantic right whales), Gulf sturgeon, or elkhorn and staghorn corals. NMFS also determined that CMP Fishery is not likely to adversely affect designated critical habitats for elkhorn and staghorn corals or loggerhead sea turtles, and will have no effect on designated critical habitat for North Atlantic right whale.

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, Atlantic sturgeon, and the smalltooth sawfish are all likely to be adversely affected by the CMP fishery. Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles area all highly migratory, travel widely throughout the GOM and South Atlantic, and are known to occur in areas subject to shrimp trawling. The distribution of Atlantic sturgeon and smalltooth sawfish within the action area is more limited, but all of these species do overlap in certain regions of the action area and these species have the potential to be been incidentally captured in CMP fisheries. According to the 2015 Biological Opinion on CMP fisheries (NMFS 2015), the only gear type likely to adversely effect sea turtles, smalltooth sawfish, and Atlantic sturgeon is gill nets.

The Gulf and South Atlantic CMP hook-and-line fishery is classified in the 2013 Marine Mammal Protection Act List of Fisheries as a Category III fishery (78 FR 53336, August 29, 2013), meaning the annual mortality and serious injury of a marine mammal resulting from the fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

The Gulf and South Atlantic CMP gillnet fishery is classified as a Category II fishery. This classification indicates an occasional incidental mortality or serious injury of a marine mammal

stock resulting from the fishery (1-50% annually of the potential biological removal). The fishery has no documented interaction with marine mammals; NMFS classifies this fishery as Category II based on analogy (i.e., similar risk to marine mammals) with other gillnet fisheries.

3.3 Economic Environment

3.3.1. Commercial Sector

There is no federal permit required for the commercial harvest of Atlantic migratory group cobia. However, commercial harvest of cobia in the EEZ may be sold only to dealers with a federal dealer permit. As of May 16, 2016, there were 417 entities with a Gulf and South Atlantic Dealer permit.

Total Landings and Dockside Revenues

Additional information on commercial landings and fishing for cobia can be found in Amendment 18 to the CMP FMP (GMFMC/SAFMC 2011) and Amendment 20B to the CMP FMP (GMFMC/SAFMC 2014), and is incorporated herein by reference.

Prior to 2015, the management area for Atlantic cobia extended from the east coast of Florida through New York. Effective in 2015, the harvests of cobia in east Florida has been considered part of the Gulf migratory group, thus the current management area for Atlantic cobia extends from Georgia through New York. For this section, all states from Virginia to New York are combined as one area denoted as MA (Mid-Atlantic).

From 2010 through 2015, annual commercial landings of Atlantic cobia ranged from approximately 33,000 lbs whole weight (ww) to 83,000 lbs ww (**Table 3.3.1.1**). Dockside revenues from those landings ranged from approximately \$79,000 to \$233,000 (2014 \$) (**Table 3.3.1.1**). The average dockside price for those six years was \$2.43 per lb ww (2014\$). The highest landings and revenues occurred in 2015 whereas the lowest for both landings and revenues occurred in 2011. When Florida east coast was still part of the management area for Atlantic cobia, commercial harvest reached the sector's quota of 125,712 lbs ww in 2014 and was closed on December 11, 2014. Under the modified management area, the quota for Atlantic cobia was revised to 60,000 lbs ww in 2015 and 50,000 lbs ww in 2016 and thereafter. Although landings exceeded the 2015 quota, no quota closure was imposed. As of May 31, 2016, commercial landings of Atlantic cobia were about 11,718 lbs. This amount trails slightly that of the 2015 landings from January through May.

North Carolina has been the top producer of cobia, followed by the Mid-Atlantic states and South Carolina/Georgia (**Table 3.3.1.1**). Georgia and South Carolina landings are combined for confidentiality purposes because of the relatively small amount of cobia landings in Georgia. Virginia (not shown in the table) accounted for most of the Mid-Atlantic landings. One notable feature for the Mid-Atlantic area is the surge in landings in 2013 and 2014, although they were still lower than landings in North Carolina. Mid-Atlantic landings continued to increase in 2015 but not as rapidly as in the previous two years.

Table 3.3.1.1. Commercial Atlantic cobia landings (lbs ww) and revenues (2014 \$) by state/area, 2010-2015.

	GA/SC	NC	MA	Total
	Pounds (ww)			
2010	3,174	43,737	9,364	56,275
2011	4,610	19,950	9,233	33,793
2012	3,642	32,008	6,309	41,959
2013	4,041	35,496	13,095	52,632
2014	4,180	41,848	23,111	69,139
2015	3,555	52,315	27,277	83,148
Average	3,867	37,559	14,732	56,158
	Dockside Revenues (2014 \$)			
2010	\$11,377	\$70,377	\$19,976	\$101,730
2011	\$19,666	\$37,893	\$21,666	\$79,224
2012	\$15,554	\$66,887	\$14,597	\$97,038
2013	\$15,639	\$79,397	\$35,792	\$130,828
2014	\$13,320	\$95,462	\$67,972	\$176,754
2015	\$11,151	\$147,160	\$75,360	\$233,672
Average	\$14,451	\$82,863	\$39,227	\$136,541

Georgia landings are very small and so are combined with those of South Carolina.

Source: SEFSC Commercial ACL Dataset (December 2015) for 2010-2014 data; D. Gloeckner (pers. comm., 2016) for 2015 data.

Commercial fishermen harvest cobia using various gear types. In **Table 3.3.1.2**, hook and line includes handline, longline, power assisted line, and troll line while “others” includes traps, other net gear, dredges/gigs/spears, and unclassified gear. Handline has been the foremost gear type used in harvesting cobia, followed closely by gillnets, and then by a host of other types. Within the other category, the largest landings were assigned to “unclassified gear.” Although not shown in the table, handline accounted for the biggest share of the hook and line landings. Longline has been a minor gear type in the commercial harvest of cobia.

Table 3.3.1.2. Commercial Atlantic cobia landings (lb ww) and revenues (2014\$) by gear, 2010-2015.

	Hook and Line	Gillnets	Others	Total
	Pounds (ww)			
2010	26,758	23,495	6,022	56,275
2011	18,322	9,177	6,294	33,793
2012	12,962	21,091	7,906	41,959
2013	28,356	13,343	10,933	52,632
2014	37,082	23,540	8,517	69,139
2015	37,702	36,417	9,030	83,148
Average	26,864	21,177	8,117	56,158
	Dockside Revenues (2014 \$)			
2010	\$49,095	\$38,605	\$14,030	\$101,730
2011	\$39,265	\$18,242	\$21,717	\$79,224
2012	\$29,677	\$43,875	\$23,486	\$97,038
2013	\$69,433	\$30,206	\$31,189	\$130,828

2014	\$99,959	\$55,275	\$21,520	\$176,754
2015	\$108,165	\$100,130	\$25,377	\$233,672
Average	\$65,932	\$47,722	\$22,886	\$136,541

“Hook and line” includes handline, longline, power assisted line, and troll line; “others” include traps, dredges/gigs/spears, other net gear, and unclassified gear.

Source: SEFSC Commercial ACL Dataset (December 2015) for 2010-2014 data; D. Gloeckner (pers. comm., 2016) for 2015 data.

On average, May is the peak month for cobia landings and dockside revenues (**Figure 3.3.1.1**). January through April and December are the lowest months for landings and revenues. There are, however, some notable variations from the general average. Two peak landings occurred in 2012 (June and October) and in 2014 (May and August) (**Figure 3.3.1.2**). In terms of revenues, the 2014 peak occurred in August (**Figure 3.3.1.3**). In 2010 and 2011, landings steeply dropped off after their peaks, but in later years the decline appears to be more gradual. This perhaps suggests an increasing interest in fishing for cobia later in the year. Noticeable is the November and December spike in landings and revenues for 2015 relative to the earlier years.

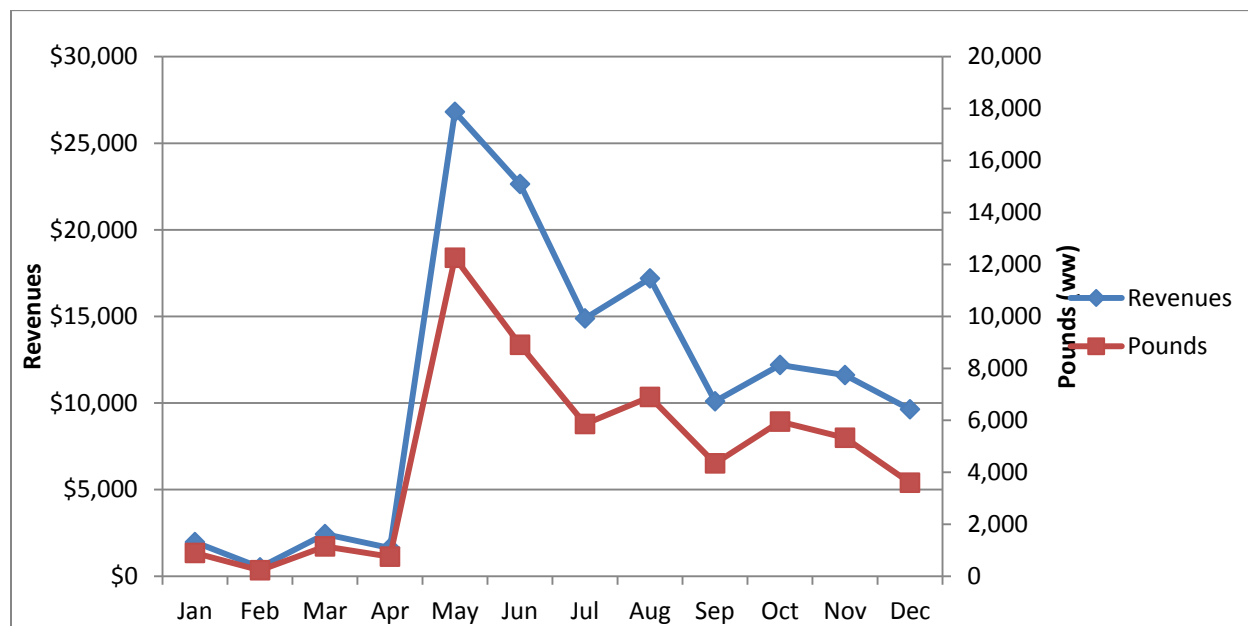


Figure 3.3.1.1. Average (2010-2015) monthly Atlantic cobia landings (lbs ww) and revenues (2014 \$). Source: SEFSC Commercial ACL Dataset (December 2015) for 2010-2014 data; D. Gloeckner (pers. comm., 2016) for 2015 data.

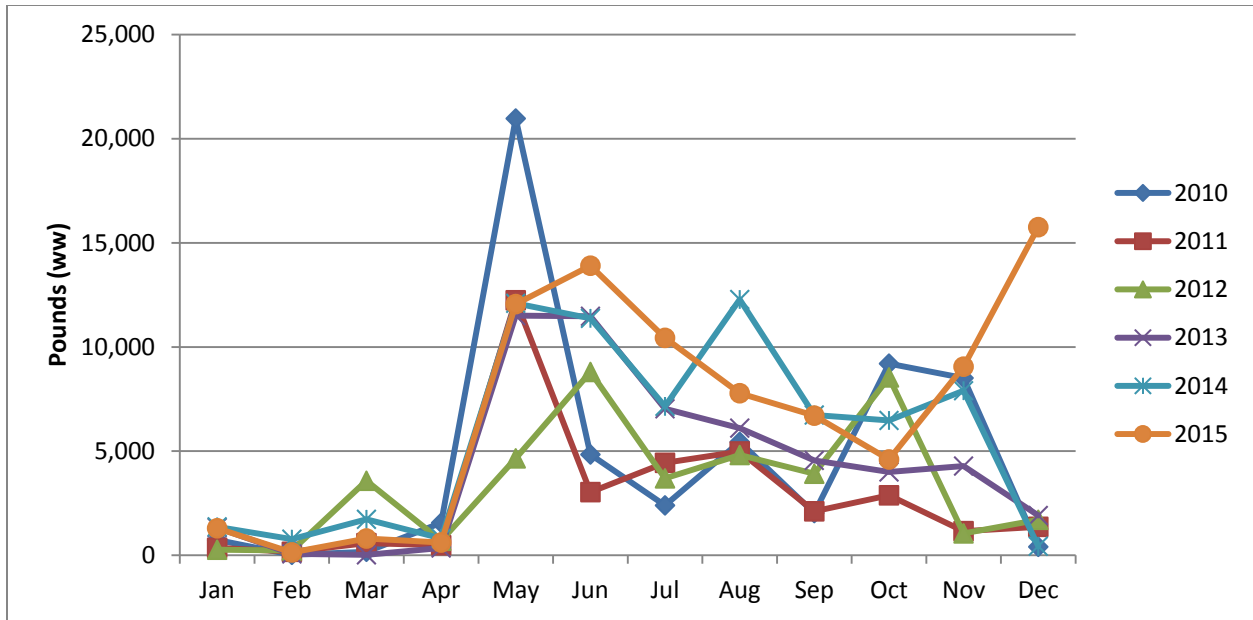


Figure 3.3.1.2. Monthly Atlantic cobia landings (lbs ww), 2010–2015. Source: SEFSC Commercial ACL Dataset (December 2015) for 2010-2014 data; D. Gloeckner (pers. comm., 2016) for 2015 data.

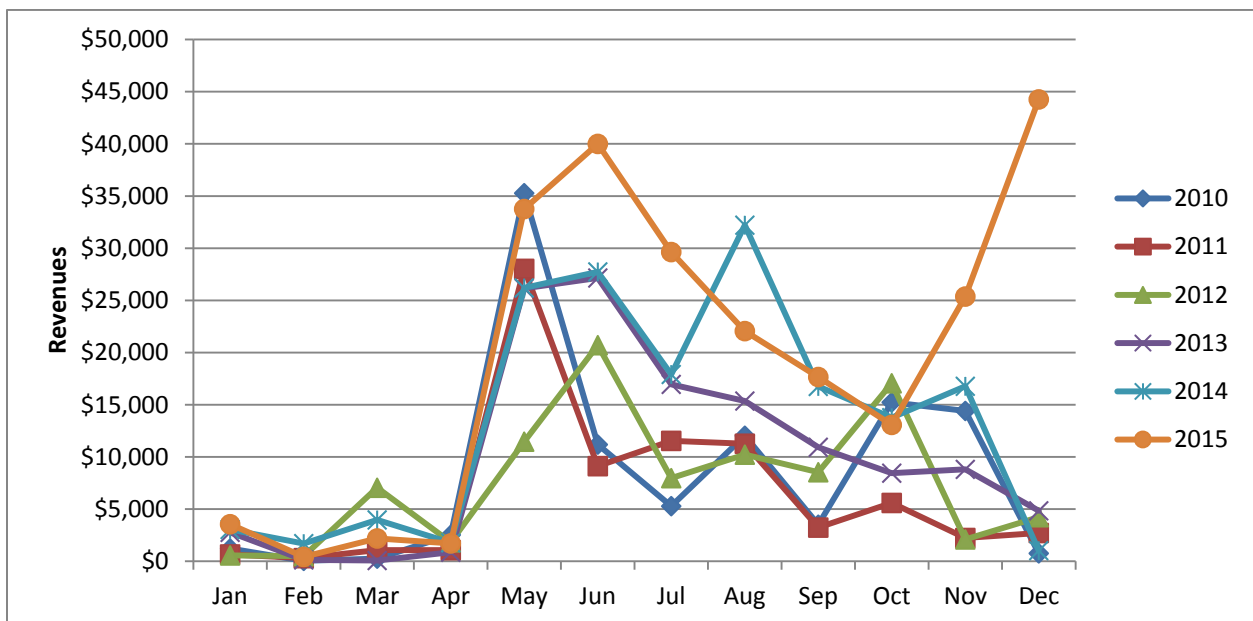


Figure 3.3.1.3. Monthly Atlantic cobia revenues (2014 \$), 2010–2015. Source: SEFSC Commercial ACL Dataset (December 2015) for 2010-2014 data; D. Gloeckner (pers. comm., 2016) for 2015 data.

Vessel Trips, Landings, and Dockside Revenues

The following vessel trip level summary is based on logbook information for landings and NMFS Accumulated Landings System (ALS) for prices and so would not exactly match with the landings and revenues presented above. From 2010 through 2015, excluding the Mid-Atlantic states, an annual average of 98 vessels took 318 commercial trips that combined landed an

average of 13,469 lbs gutted weight (gw) of cobia annually with a dockside value (2014 dollars) of \$31,115 (**Table 3.3.1.3**). Average annual dockside revenue from cobia represented approximately 3.6% of total dockside revenues from trips that landed cobia from 2010 through 2015.

Table 3.3.1.3. South Atlantic vessels and trips with cobia landings by weight (lb gw) and dockside revenue (2014 \$), 2010–2015.

Year	Number vessels that landed cobia	Number trips that landed cobia	Cobia landings (lb gw)	Dockside revenue from cobia (2014 \$)	'Other species' landed with cobia (lb gw)	Dockside revenue from 'other species' landings (2014 \$)	Total dockside revenue (2014 \$) from trips with cobia landings
2010	96	320	15,422	\$30,665	359,263	\$815,180	\$845,845
2011	96	265	9,695	\$23,919	337,688	\$879,590	\$903,509
2012	92	331	13,027	\$30,078	307,053	\$707,214	\$737,292
2013	103	335	14,078	\$34,612	311,009	\$891,488	\$926,099
2014	109	383	15,384	\$36,623	340,692	\$882,715	\$919,338
2015	89	273	13,206	\$30,793	248,572	\$797,419	\$828,213
Average	98	318	13,469	\$31,115	317,380	\$828,934	\$860,049

Source: SEFSC-SSRG Economic Panel Data, 2016.

On average, the vessels that harvested cobia also took 2,338 trips per year without cobia landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed cobia was \$74,066 (2014 dollars) (**Table 3.3.1.4**). Annual dockside revenue from cobia landings represented, on average, approximately 0.4% of the total dockside revenue from all commercial landings from 2010 through 2015. Average annual dockside revenue per vessel from all landings was \$74,066 as compared to \$318 per vessel from cobia only.

Table 3.3.1.4. South Atlantic dockside revenues (2014 \$) from all sources for vessels that landed cobia in trips with or without cobia, 2010–2015.

Year	Number vessels that landed cobia	Dockside revenue from cobia (2014 \$)	Dockside revenue from 'other species' jointly landed with cobia (2014 \$)	Dockside revenue from 'other species' landed on trips without cobia (2014 \$)	Total dockside revenue (2014 \$)	Average total dockside revenue per vessel (2014 \$)
2010	96	\$30,665	\$815,180	\$4,803,688	\$5,649,533	\$58,849
2011	96	\$23,919	\$879,590	\$5,427,004	\$6,330,512	\$65,943
2012	92	\$30,078	\$707,214	\$4,876,666	\$5,613,958	\$61,021
2013	103	\$34,612	\$891,488	\$5,697,926	\$6,624,025	\$64,311

2014	109	\$36,623	\$882,715	\$9,600,851	\$10,520,189	\$96,515
2015	89	\$30,793	\$797,419	\$7,871,829	\$8,700,042	\$97,753
Average	98	\$31,115	\$828,934	\$6,379,661	\$7,239,710	\$74,066

Source: SEFSC-SSRG Economic Panel Data, 2016.

Tabulation of vessel/trip level information for Mid-Atlantic vessels similar to that in Table 3.3.1.3 or Table 3.3.1.4 is not available. However, an approximation of similar information for the Mid-Atlantic vessels is presented in Table 3.3.1.5 that focuses only on cobia landings and revenues. Total revenues from cobia landings and revenues are the same as those presented in Table 3.3.1.1 and vessel/trip information is based on dealer weighout database (Larkin, pers. comm. 2016).

Table 3.3.1.5. Mid-Atlantic vessels and trips with cobia landings by weight and dockside revenue (2014 \$), 2010–2015.

Year	Number of vessels that landed cobia	Number of trips that landed cobia	Cobia landings	Dockside revenue from cobia (2014 dollars)	Revenue per vessel from cobia
2010	25	129	9,364	\$19,976	\$799
2011	21	139	9,233	\$21,666	\$1,032
2012	22	131	6,309	\$14,597	\$664
2013	32	134	13,095	\$35,792	\$1,119
2014	21	153	23,111	\$67,972	\$3,237
2015	25	383	27,277	\$75,360	\$3,014
Average	24	178	14,732	\$39,227	\$1,644

Source: Table 3.3.1.1 for cobia landings and revenues; dealer weighout database for vessels and trips.

Imports

Information on the imports of fish (fresh, frozen, or other product forms) is available at: http://www.st.nmfs.noaa.gov/st1/trade/cumulative_data/TradeDataProduct.html. In 2014, the U.S imported approximately 2.5 million metric tons of edible fishery products, valued at \$20.2 billion. Information on the imports of each individual species is not generally available, but imports of cobia have been reported in the last few years. Imports of cobia were 435 metric tons valued at \$2.54 million in 2012, 641 metric tons valued at \$4.433 million in 2013, and 769 metric tons valued at \$7.032 million in 2014. These amounts are contrasted with the total domestic harvest of cobia of 82.3 metric tons valued at \$0.519 million in 2012, 93 metric tons valued at \$0.633 million in 2013, and 102.5 metric tons valued at \$0.695 million in 2014 (data available at: <http://www.st.nmfs.noaa.gov/commercial-fisheries/publications/index>). Although the levels of domestic production and imports are not totally comparable for several reasons, including considerations of different product form such as fresh versus frozen, and possible product mislabeling, the difference in the magnitude of imports relative to amount of domestic harvest is indicative of the dominance of imports in the domestic market. Final comparable data for more recent years is not currently available.

Commercial Sector Business Activity

Estimates of the business activity (economic impacts) in the U.S. associated with Atlantic cobia harvests were derived using the model developed for and applied in NMFS (2011). Business activity for the commercial sector is characterized in the form of jobs, income impacts (wages, salaries, and self-employed income), and output (sales) impacts (gross business sales). Income impacts should not be added to output (sales) impacts because this would result in double counting. The estimates of economic activity include the direct effects (effects in the sector where an expenditure is actually made), indirect effects (effects in sectors providing goods and services to directly affected sectors), and induced effects (effects induced by the personal consumption expenditures of employees in the direct and indirectly affected sectors). The average annual total ex-vessel revenues from cobia and their associated economic activities are presented in **Table 3.3.1.6**.

Table 3.3.1.6. Average (2010-2015) annual dockside revenues from Atlantic cobia and associated business activities. Dollar values are in 2014 dollars.

State	Average Annual Dockside Revenue (thousands)	Total Jobs	Harvester Jobs	Output (Sales) Impacts (thousands)	Income Impacts (thousands)
GA/SC ¹	\$14.192	1	1	\$47	\$20
NC	\$82.863	5	2	\$285	\$120
MA ²	\$39.227	3	1	\$188	\$69

¹Combines revenues from Georgia and South Carolina but uses South Carolina multipliers.

²Combines revenues from all Mid-Atlantic states but uses Virginia multipliers.

Source: Economic impact results calculated by NMFS SERO using the model developed for NMFS (2011b).

3.3.2 Recreational Sector

The following focuses on recreational landings and effort (angler trips) for Atlantic group cobia. The major sources of data summarized in this description are the Recreational ACL Dataset (SEFSC MRIPACLspec_rec81_15wv6_17Mar16_w14and15LACreel) for landings and the NOAA fisheries website for accessing recreational data (<http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/index>) for effort. Additional information on the recreational sector of the CMP fishery contained in previous amendments is incorporated herein by reference [see Amendments 18 and 20B].

The recreational sector is comprised of a private component and a for-hire component. The private component includes anglers fishing from shore (all land-based structures) and private/rental boats. The for-hire component is composed of charter boats and headboats (also called partyboats). Although charter boats tend to be smaller, on average, than headboats, the key distinction between the two types of operations is how the fee is determined. On a charter boat trip, the fee charged is for the entire vessel, regardless of how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

Permits

A federal charter/headboat (for-hire) vessel permit is required for harvesting CMP species, including cobia, when fishing on for-hire vessels. The South Atlantic for-hire permit is an open access system. As of May 16, 2016, there were 1,494 valid (non-expired) or renewable South Atlantic charter/headboat pelagic fish permits. A renewable permit is an expired permit that may not be actively fished, but is renewable for up to one year after expiration. Although the for-hire permit application collects information on the primary method of operation, the resultant permit itself does not identify the permitted vessel as either a headboat or a charter boat, operation as either a headboat or charter boat is not restricted by the permitting regulations, and vessels may operate in both capacities. However, only selected headboats are required to submit harvest and effort information to the NMFS Southeast Region Headboat Survey (SRHS). Participation in the SRHS is based on determination by the SEFSC that the vessel primarily operates as a headboat. There were 73 South Atlantic vessels registered in the SRHS as of February 22, 2016 (K. Fitzpatrick, NMFS SEFSC, pers. comm.).

Information on South Atlantic charter boat and headboat operating characteristics, including average fees and net operating revenues, as reported in Holland et al. (2012), and financial and economic impact information on Northeast for-hire vessels, as reported in Steinback and Brinson (2013), is incorporated herein by reference.

There are no specific federal permitting requirements for recreational anglers to fish for or harvest cobia. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed amendment.

Harvest

On average, from 2010 through 2015, the recreational sector landed approximately 793,000 lbs ww of Atlantic cobia (**Table 3.3.2.1**). North Carolina has been the dominant state in recreational landings of cobia, followed by the Mid-Atlantic states, South Carolina, and Georgia. Virginia (not shown in the table) accounted for most of the recreational landings in the Mid-Atlantic. Noticeable in the table is the surge in the recreational landings of cobia for all states in 2015, resulting in 2015 landings that were more than double the recreational ACL.

The private/rental mode has been by far the most dominant fishing mode for harvesting cobia (**Table 3.3.2.2**). Headboats have provided the lowest contribution to recreational landings of cobia. Information reported in **Table 3.3.2.2** indicates that the 2015 surge in recreational landings can be attributed to substantial landings increases by the charter and private/rental fishing modes. Charter boat landings more than doubled while private/rental mode landings more than tripled in 2015. In the particular case of the South Carolina charter boat sector, increasing landings of cobia caught from offshore waters (greater than 3 miles) partly compensated for the declining landings from estuarine and nearshore waters (0-3 miles) since about 2007 [South Carolina Cobia Management Needs (PowerPoint Presentation), SC DNR, 2016].

Table 3.3.2.1. Annual recreational landings (lbs ww) of Atlantic cobia, by state, 2010-2015.

	Georgia	South Carolina	North Carolina	Mid-Atlantic	Total
2010	77,064	63,678	559,476	237,528	937,746
2011	88,049	1,554	119,678	137,931	347,213
2012	102,996	222,353	66,645	103,995	495,989
2013	28,427	19,159	492,998	354,463	895,048
2014	19,768	32,010	277,846	214,426	544,050
2015	67,250	124,057	631,024	718,647	1,540,978
Average	63,926	77,135	357,945	294,498	793,504

2015 data is preliminary.

Source: SEFSC MRIPACLspec_rec81_15wv6_17Mar16.

Table 3.3.2.2. Annual recreational landings (lbs ww) of Atlantic cobia, by fishing mode, 2010-2015.

	Charter	Headboat	Private/Rental	Shore	Total
2010	133,110	2,747	789,996	11,893	937,746
2011	23,608	1,886	282,728	38,990	347,213
2012	39,729	1,671	385,777	68,811	495,989
2013	73,623	5,485	815,940	0	895,048
2014	46,528	5,701	453,871	37,950	544,050
2015	102,941	1,741	1,400,338	35,957	1,540,978
Average	69,923	3,205	688,108	32,267	793,504

2015 data is preliminary.

Source: SEFSC MRIPACLspec_rec81_15wv6_17Mar16.

Peak recreational landings of cobia occurred in the May-June wave each year from 2010 through 2015 (**Figure 3.3.2.1**). Recreational landings steeply increased from the March-April wave to their peak and also steeply declined after the peak wave. Landings are concentrated around the May-June and July-August waves.

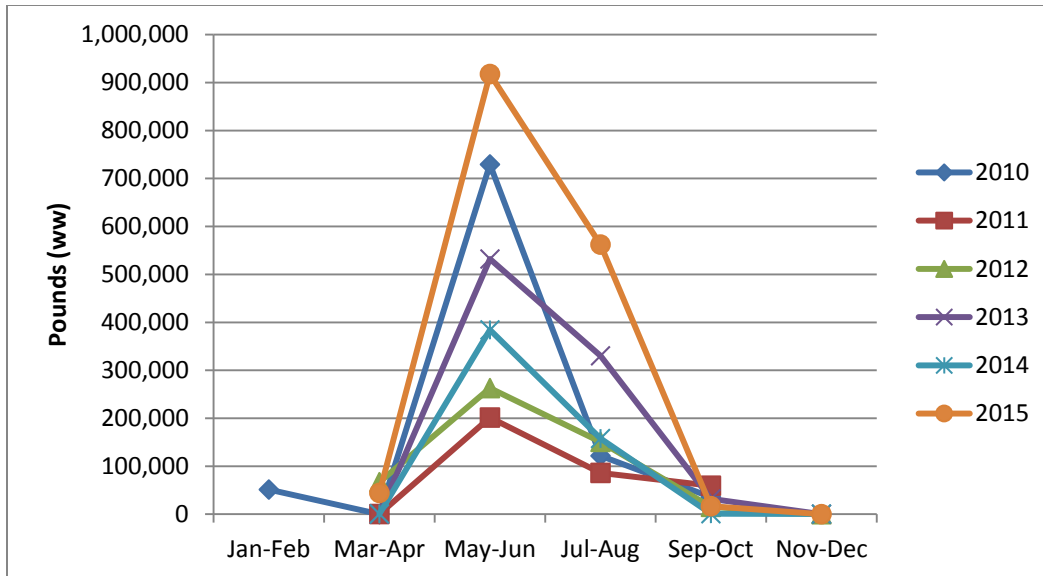


Figure 3.3.2.1. Distribution of Atlantic cobia recreational harvest, by wave, 2010-2015. 2015 data is preliminary.

Source: SEFSC MRIPACLspec_rec81_15wv6_17Mar16.

Effort

Recreational effort derived from the Marine Recreational Statistics Survey/Marine Recreational Information Program (MRFSS/MRIP) database can be characterized in terms of the number of trips as follows:

Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or second primary target for the trip. The species did not have to be caught.

Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.

Total recreational trips - The total estimated number of recreational trips in the Gulf, regardless of target intent or catch success.

Other measures of effort are possible, such as the number of harvest trips (the number of individual angler trips that harvest a particular species regardless of target intent), and directed trips (the number of individual angler trips that either targeted or caught a particular species), among other measures, but the three measures of effort listed above are used in this assessment.

Estimates of annual Atlantic cobia effort (in terms of individual angler trips) for 2010-2015 are provided in **Table 3.3.2.3** for target trips and **Table 3.3.2.4** for catch trips. Target and catch trips are shown by fishing mode (charter, private/rental, shore) for each state. Estimates of cobia

target and catch trips for additional years, and other measures of directed effort, are available at <http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/queries/index>.

Cobia, like dolphin, is one of the few species where target trips generally exceed catch trips. The 2010-2015 average target trips were 4,519 for the charter mode, 130,360 for the private/rental mode, and 28,293 for the shore mode (**Table 3.3.2.3**). In contrast, the average catch trips were 3,114 for the charter mode, 33,329 for the private/rental mode, and 6,840 for the shore mode (**Table 3.3.2.4**). This is suggestive of a relatively strong interest in fishing for cobia among recreational anglers across all fishing modes. For each state, the private/rental mode has been the most dominant fishing mode both in target and catch effort.

Table 3.3.2.3. Target trips for Atlantic cobia, by fishing mode and state, 2010-2015.

Year	Charter				
	Georgia	S. Carolina	N. Carolina	Mid-Atlantic	Total
2010	0	3,349	3,029	358	6,736
2011	22	2,940	1,416	525	4,903
2012	0	1,025	345	156	1,526
2013	160	0	2,446	24	2,630
2014	0	1,452	1,703	295	3,450
2015	792	1,290	2,765	3,022	7,869
Average	162	1,676	1,951	730	4,519
	Private/Rental				
2010	5,453	14,228	49,358	67,730	136,769
2011	4,030	24,554	26,400	49,180	104,164
2012	2,495	57,543	23,320	37,706	121,064
2013	12,235	22,373	50,883	53,981	139,472
2014	1,322	23,365	50,112	49,075	123,874
2015	12,236	9,684	58,658	76,241	156,819
Average	6,295	25,291	43,122	55,652	130,360
	Shore				
2010	0	2,030	14,950	9,838	26,818
2011	0	0	10,090	2,366	12,456
2012	0	914	12,444	14,939	28,297
2013	0	627	15,977	5,693	22,297
2014	0	2,395	17,085	18,565	38,045
2015	0	363	21,925	19,554	41,842
Average	0	1,055	15,412	11,826	28,293

2015 data is preliminary

Source: <http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/queries/index>.

Table 3.3.2.4. Catch trips for Atlantic cobia, by fishing mode and state, 2010-2015.

Year	Charter				Total
	Georgia	South Car.	North Car.	Mid-Atlantic	
2010	97	1,301	4,398	237	6,033
2011	400	0	1,655	135	2,190
2012	140	372	472	156	1,140

2013	160	48	2,798	24	3,030
2014	55	110	1,559	72	1,796
2015	0	879	2,652	963	4,494
Average	142	452	2,256	265	3,114
Private/Rental					
2010	3,320	2,939	18,433	13,600	38,292
2011	4,145	606	8,156	9,291	22,198
2012	3,296	5,134	4,869	6,658	19,957
2013	1,157	3,699	21,047	14,256	40,159
2014	1,436	2,957	10,561	14,803	29,757
2015	2,351	4,396	18,740	24,121	49,608
Average	2,618	3,289	13,634	13,788	33,329
Shore					
2010	0	0	6,192	0	6,192
2011	0	0	6,528	0	6,528
2012	0	0	7,983	2,055	10,038
2013	0	0	2,673	0	2,673
2014	0	3,268	6,128	0	9,396
2015	0	2,697	3,514	0	6,211
Average	0	994	5,503	343	6,840

2015 data is preliminary

Source: <http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/queries/index>.

Headboat data in the Southeast does not support the estimation of target or catch effort because target intent is not collected and the harvest data (the data reflects only harvest information and not total catch) are collected on a vessel basis and not by individual angler. **Table 3.3.2.5** contains estimates of the number of headboat angler days for the South Atlantic states for 2010-2015. Georgia and South Carolina data are combined for confidentiality purposes.

Table 3.3.2.5. South Atlantic headboat angler days, by state, 2010-2015.

	GA/SC	NC	TOTAL
2010	46,908	21,071	67,979
2011	46,210	18,457	64,667
2012	42,064	20,766	62,830
2013	42,853	20,547	63,400
2014	44,092	22,691	66,783
2015	41,479	22,716	64,195
Average	43,934	21,041	64,976

Source: NMFS Southeast Region Headboat Survey (SRHS).

Economic Value

Economic value can be measured in the form of consumer surplus (CS) per additional cobia kept on a trip for anglers (the amount of money that an angler would be willing to pay for a fish in excess of the cost to harvest the fish). There is no available estimate of CS for cobia, but dolphin or king mackerel CS estimates may be close proxies. The estimated values of the CS per fish for a second, third, fourth, fifth, and sixth king mackerel kept on a trip are approximately \$100, \$67,

\$49, \$39, and \$32, respectively. For dolphin, the values for the second, third, fourth, fifth, and sixth kept fish are \$15.19, \$10.13, \$7.46, \$5.88, and \$4.85, respectively (Carter and Liese 2012; values updated to 2014 dollars).

With regards to for-hire businesses, economic value can be measured by producer surplus (PS) per passenger trip (the amount of money that a vessel owner earns in excess of the cost of providing the trip). Estimates of the PS per for-hire passenger trip are not available. Instead, net operating revenue (NOR), which is the return used to pay all labor wages, returns to capital, and owner profits, is used as a proxy for PS. The estimated NOR value is \$153.45 (2014 dollars) per charter angler trip (Liese and Carter 2012). The estimated NOR value per headboat angler trip is \$52.97 (2014 dollars) (C. Liese, NMFS SEFSC, pers. comm.). Estimates of NOR per cobia target trip are not available.

Recreational Sector Business Activity

Estimates of the business activity (economic impacts) associated with recreational angling for cobia were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRFSS to collect economic expenditure information, as described and utilized in NMFS (2011). Estimates of these coefficients for target or catch behavior for individual species are not available. Estimates of the average expenditures by recreational anglers are also provided in NMFS (2011) and are incorporated herein by reference.

Business activity for the recreational sector is characterized in the form of jobs, output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Job and output (sales) impacts are equivalent metrics across both the commercial and recreational sectors. Income impacts (commercial sector) and value-added impacts (recreational sector) are not equivalent, though similarity in the magnitude of multipliers generated and used for the two metrics may result in roughly equivalent values. Similar to income impacts, value-added impacts should not be added to output (sales) impacts because this would result in double counting.

Estimates of the average cobia effort (2010-2015) and associated business activity (2014 dollars) are provided in **Table 3.3.2.6** for South Atlantic states and Virginia. Cobia target trip is selected as the measure of cobia effort. Target trips for cobia in the Mid-Atlantic, other than Virginia, are very negligible.

3

The estimates of the business activity associated with recreational trips for cobia are only available at the state level. Addition of the state-level estimates to produce a regional or national total will underestimate the actual amount of total business activity because summing the state estimates will not capture business activity that leaks outside the individual states. A state estimate only reflects activities that occur within that state and not related activity that occurs in another state. For example, if a good is produced in South Carolina but sold in North Carolina, the measure of business activity in North Carolina associated with the sale in North Carolina does not include the production process in South Carolina. Assessment of business activity at the national (or regional) level would capture activity in both states and include all activity except that which leaks into other nations.

It is noted that these estimates do not, and should not be expected to, represent the total business activity associated with a specific recreational harvest sector in a given state or in total. For example, these results do not state, or should be interpreted to imply, that there are only 11 jobs associated with the charter sector in South Carolina. Instead, as previously stated, these results relate only to the business activity associated with target trips for cobia. **Few businesses or jobs would be expected to be devoted solely to cobia fishing.** The existence of these businesses and jobs, in total, is supported by the fishing for, and expenditures on, the variety of marine species available to anglers throughout the year.

Table 3.3.2.6. Summary of cobia target trips (2010-2015 average) and associated business activity, South Atlantic states. Output and value added impacts are not additive. Dollar values are in thousands and in 2014 dollars.

	Georgia	South Carolina	North Carolina	Virginia*
	Charter			
Target Trips	162	1,676	1,951	730
Output/Sales Impact	\$71	\$988	\$994	\$85
Value Added Impact	\$40	\$570	\$567	\$144
Jobs Impact	1	11	10	1
	Private/Rental			
Target Trips	6,295	25,291	43,122	55,558
Output/Sales Impact	\$285	\$1,162	\$3,319	\$2,145
Value Added Impact	\$178	\$686	\$2,017	\$3,408
Jobs Impact	3	14	32	34
	Shore			
Target Trips	0	1,055	15,412	11,826
Output/Sales Impact	\$0	\$140	\$1,795	\$337
Value Added Impact	\$0	\$83	\$1,056	\$535
Jobs	0	2	19	6
	All Modes			
Target Trips	6,457	28,022	60,485	68,114
Output/Sales Impact	\$356	\$2,290	\$6,108	\$2,567
Value Added Impact	\$218	\$1,339	\$3,641	\$4,088
Jobs Impact	4	26	61	41

*Headboat target trips in Virginia are negligible.

Source: Effort data from the MRIP, economic impact results calculated by NMFS SERO using the model developed for NMFS (2011b).

Estimates of the business activity (impacts) associated with headboat effort for cobia in the Southeast are not available. The headboat sector in the Southeast is not covered in the MRFSS/MRIP, so estimation of the appropriate impact coefficients for the headboat sector has not been conducted. While appropriate impact coefficients are available for the charter sector, potential differences in certain factors, such as the for-hire fee, rates of tourist versus local participation, and expenditure patterns, may result in significant differences in the business impacts of the headboat sector relative to the charter sector.

3.4 Social Environment

With the establishment of two migratory groups of cobia and setting of ACLs and ACTs in Amendment 18 and the establishment of a subzone for the Florida East Coast Zone in Amendment 20B to the Coastal Pelagic Fishery Management Plan (SAFMC 2012) the recent harvesting patterns reflect shifts in effort or changes in species range/status. The community description below is divided into the two subzones of Atlantic Group and Florida East Coast Zone with both recreational and commercial fishing communities identified for both zones and a description of Mid-Atlantic fishing communities included. The regional quotients are based upon their subzone landings. For more comprehensive demographic descriptions of many communities included, see the SERO Community Snapshots² and for Mid-Atlantic communities, see the NEFSC Community Snapshots.³

South Atlantic Group Recreational Fishing Communities

There is little data on cobia harvest at the community level for recreational fishing communities. One set of data that does provide some indication of where cobia is recreationally harvested is from the headboat survey. **Figure 3.4.1** provides cobia landings trends for fishing communities in the South Atlantic Group for the time series from 2010 to 2014. The communities of Calabash, NC, Tybee Island, GA and Atlantic Beach, NC have all seen increases in their landings trend since 2010 in **Figure 3.4.1**. Others like Myrtle Beach, SC and Carolina Beach, NC have seen a recent downturn in their landings from 2013 to 2014.

² http://sero.nmfs.noaa.gov/sustainable_fisheries/social/community_snapshot/index.html

³ <http://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php>

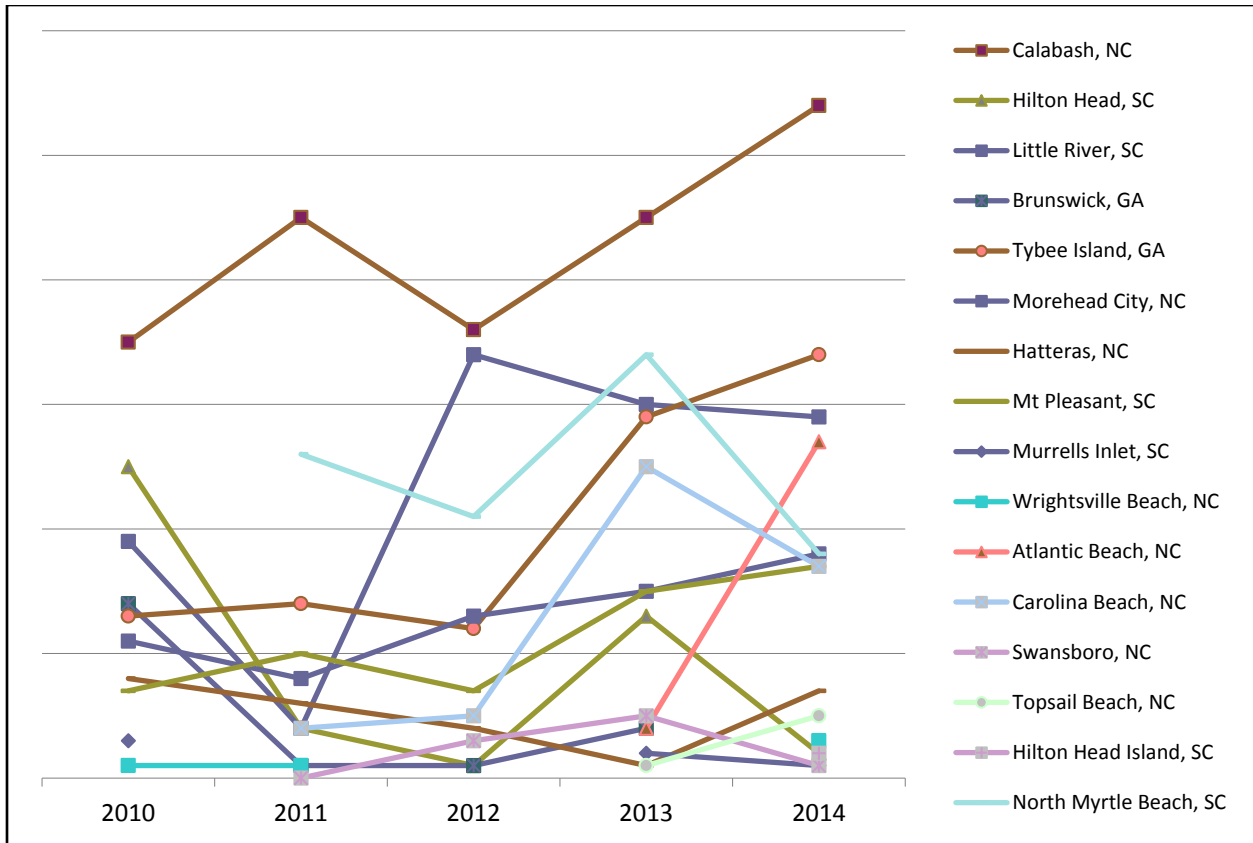


Figure 3.4.1. Cobia Headboat Landing Trends Atlantic Group Fishing Communities.
 Source: NMFS Southeast Region Headboat Survey (SRHS).

Recreational fishing communities for the Atlantic Group are listed in **Figure 3.4.2**. These communities were selected by their index ranking based on a factor analysis of a number of criteria including number of charter permits and recreational fishing infrastructure as listed under the Marine Recreational Information Program (MRIP) survey identified within each community. There are two thresholds included in **Figure 3.4.2** that correspond to both 1 and ½ standard deviations from the mean. The recreational engagement score is standardized so the mean is zero. Several communities in North Carolina and South Carolina exceed the threshold of 1 standard deviation which suggests those communities are highly engaged in recreational fishing. While this measure is not specific to cobia, but an overall recreational engagement measure, it is assumed that there would be more harvest of cobia from these ports recreationally because of increased effort.

The communities of Atlantic Beach, Hatteras, Manteo, Morehead City, NC and Charleston, Hilton Head, Little River and Murrells Inlet, SC all exceed the threshold of 1 standard deviation and likely have some dependence upon recreational fishing. The communities of Carolina Beach, Kill Devil Hills, Nags Head, Oak Island, Wanchese, Wilmington, NC and Mount Pleasant, SC all exceed the ½ standard deviation threshold and would also likely have some dependence upon recreational fishing within their economies, but not as much as those that exceed both thresholds. These communities may experience some effects of changes to management as they exhibit substantial recreational fishing activity. Unfortunately, we are

unable at this time to describe cobia harvest within a community and must rely on an overall recreational fishing measure.

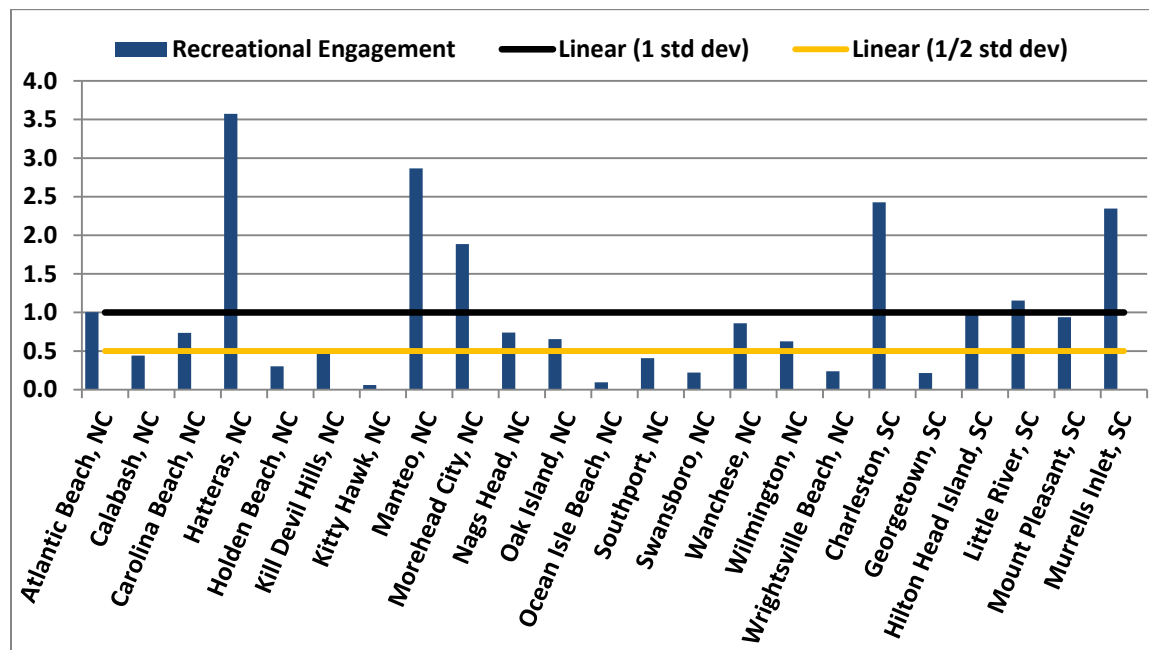


Figure 3.4.2. Recreational Engagement for Cobia Atlantic Group Fishing Communities. Source: SERO Community Social Vulnerability Indicators 2016.

Atlantic Group Commercial Fishing Communities

The communities ranked in **Figure 3.4.3** represent those top 16 communities in terms of their commercial landings of cobia within the Atlantic Group states. The data are based upon dealer data aggregated at the community level. The communities are ranked according to their landings of cobia as a percent of all cobia landings within the Atlantic Group. The community of Hatteras has seen a marked increase in its RQ for cobia in 2014, whereas other communities, such as Wanchese and Avon have seen a marked decrease in their RQ in the past few years. In fact, most communities in **Figure 3.4.3** have seen decreases in their RQ.

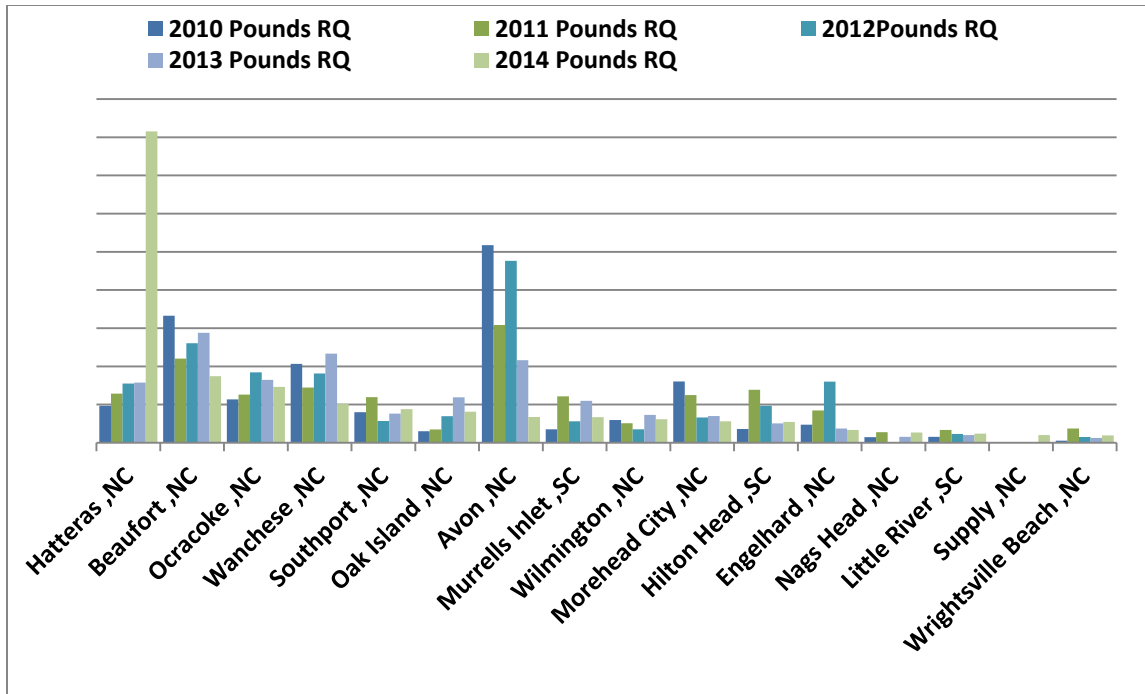


Figure 3.4.3. Cobia Commercial Regional Quotient for Atlantic Group Fishing Communities. SEFSC Commercial ALS Dataset with dealer address

Mid-Atlantic Group Recreational Fishing Communities

Data on the recreational harvest of cobia from the Northeast headboat survey is sparser than for the South Atlantic. Many landings data do not have a homeport associated with them. From the data that is available the communities of Other Northumberland, VA and Hampton, VA have seen recent increases in their cobia harvest. Most of the recreational harvest of cobia in the Mid-Atlantic is from private boat sector (Personal communication, Eric Thunberg NEFSC) for which we do not have data at the community level.

Mid-Atlantic Group Commercial Fishing Communities

Commercial landings of cobia in the Mid-Atlantic have recently increased as shown in **Figure 3.4.4**. The communities of Arlington (County), VA; Norfolk, VA; and Frederick (County), VA have seen substantial increases in their cobia harvest in 2014.

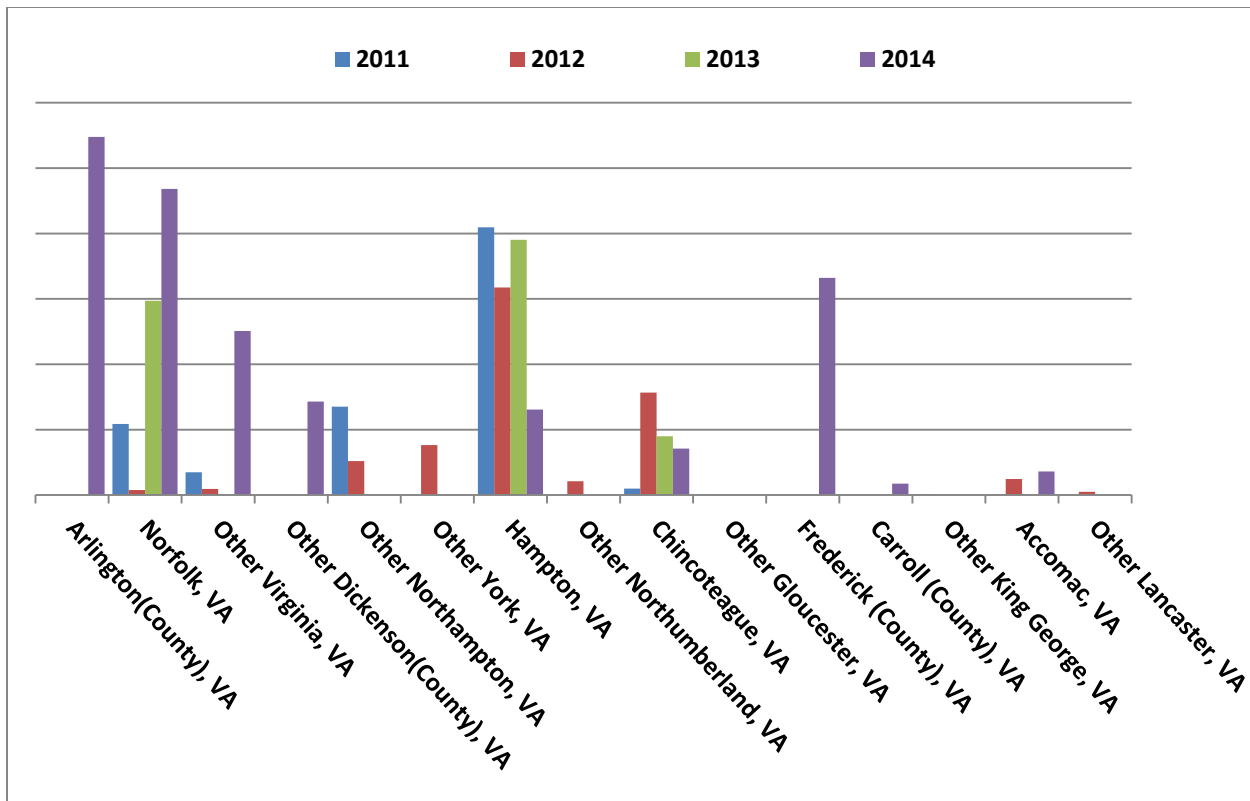


Figure 3.4.4. Cobia Commercial Regional Quotient for Mid-Atlantic Group Fishing Communities. NEFSC Commercial Landings Dataset with dealer address. Eric Thunberg (Pers Comm 2016).

Environmental Justice

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. This executive order is generally referred to as environmental justice (EJ).

The three indices are poverty, population composition, and personal disruptions. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community’s vulnerability (Jepson and Colburn 2013; Jacob et al. 2013). Indicators such as increased poverty rates for different groups, more single female-headed households and households with children under the age of 5, disruptions such as higher separation rates, higher crime rates and unemployment all are signs of populations experiencing vulnerabilities. These vulnerabilities signify that it may be difficult for someone living in these communities to recover from significant social disruption that might stem from a change in their ability to work or maintain a certain income level. For those communities that exceed the threshold of 1 Standard Deviation for all indices, it would be expected that they would exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

The suite of indices created to examine the social vulnerability of Atlantic Group fishing communities are depicted in **Figures 3.4.5** and **3.4.6**. No community exceeds both thresholds for all three vulnerabilities in **Figure 3.4.5**. The community of Manteo seems to demonstrate the most vulnerability by exceeding the 1 standard deviation threshold for Poverty and exceeding the ½ standard deviation for Personal Disruption. Calabash, Southport, Morehead City and Wilmington are the only other communities that exceed a threshold for any of their indicators.

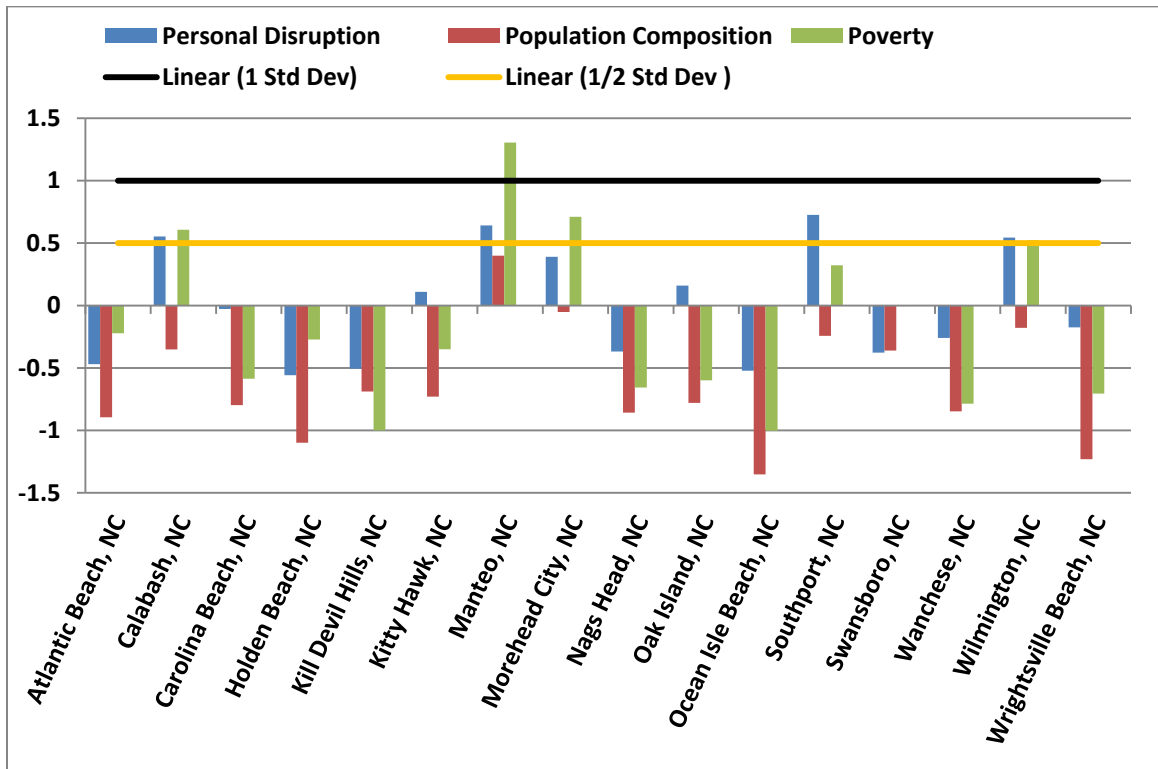


Figure 3.4.5. Social Vulnerability Indices for Atlantic Group Fishing Communities. Source: SERO Community Social Vulnerability Indicators 2016.

The other communities that were included in the Atlantic Group also demonstrate little vulnerability, except Georgetown, SC and Beaufort, NC. These two communities exceed the 1 Standard Deviation thresholds for both personal disruption and poverty. Georgetown, SC has a relatively high score for the population composition measure which includes number of minorities.

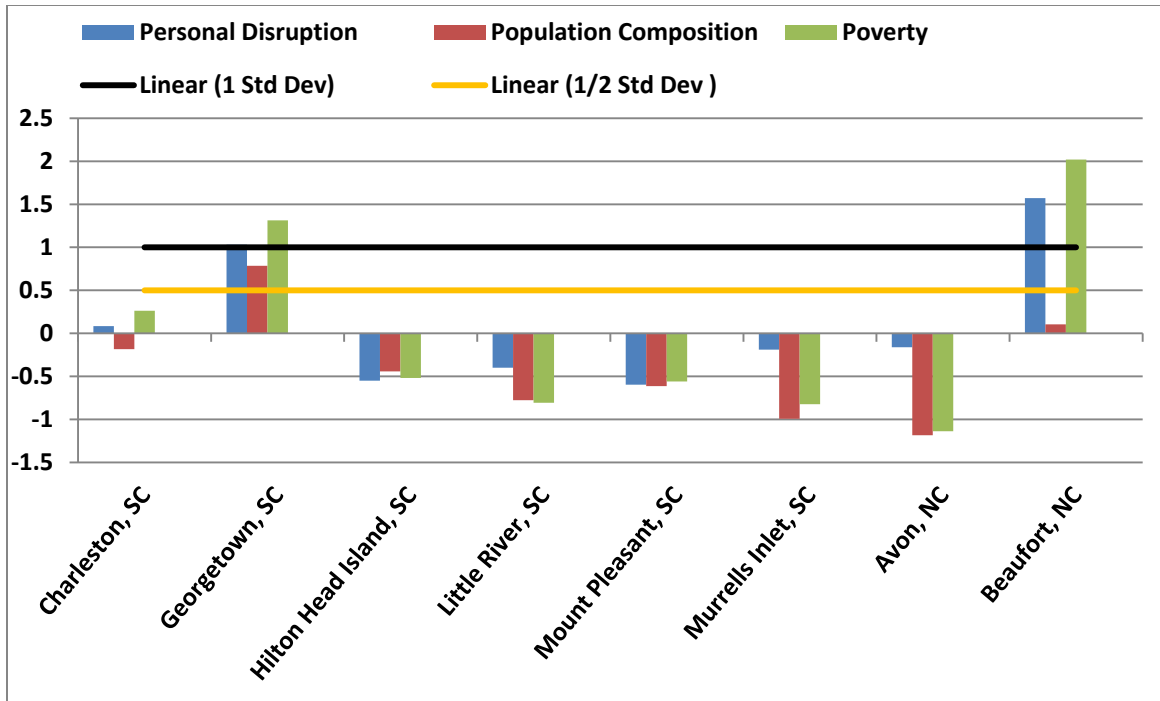


Figure 3.4.6. Social Vulnerability Indices for Atlantic Group Fishing Communities.cont.

Source:

SERO Community Social Vulnerability Indicators 2016.

For the Mid-Atlantic communities presented in **Figure 3.4.7**, District 9 in Accomack County, VA and Norfolk are the only communities that exceed one or both thresholds for all three indices. Districts 3 and 6 in Accomack County also demonstrate some vulnerability with both personal disruption and poverty exceeding one or both thresholds; the same is true for District 5 in Northampton County, VA.

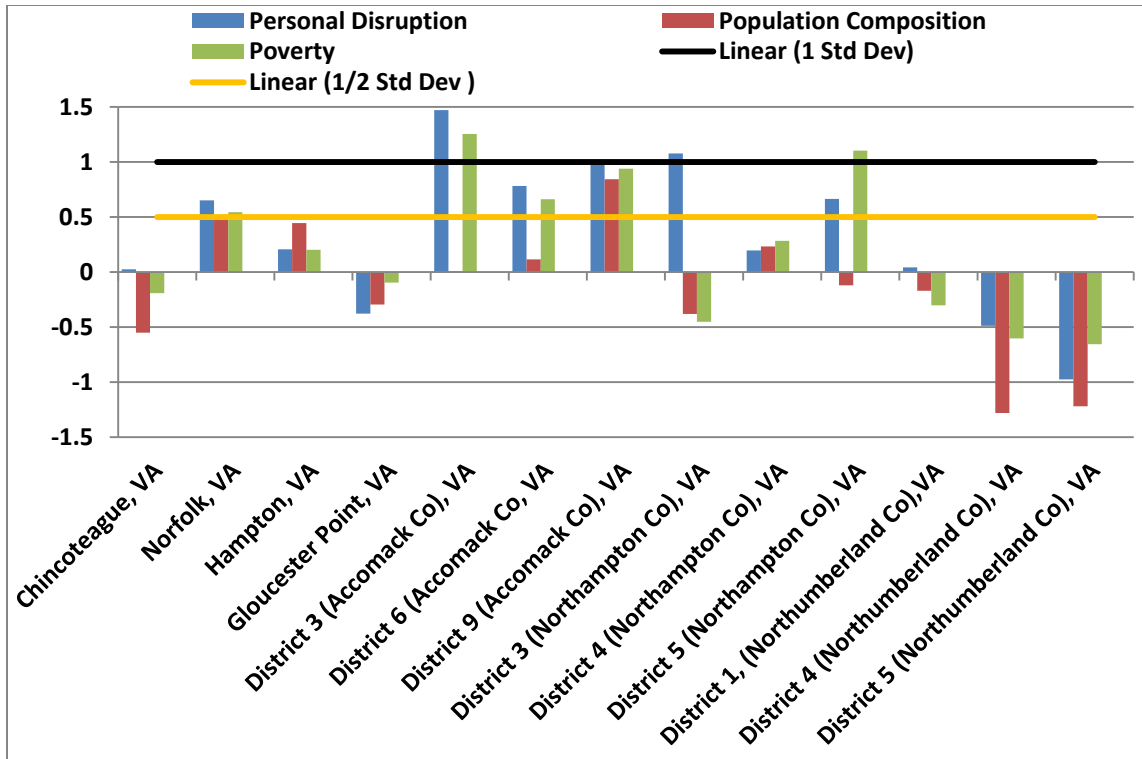


Figure 3.4.7. Social Vulnerability Indices for Mid-Atlantic Group Fishing Communities
 Source: SERO Community Social Vulnerability Indicators 2016.

While these measures identify those communities that demonstrate social vulnerability, we cannot say for sure that fishermen in these communities will suffer the same vulnerabilities. Although we have information concerning the community’s overall status with regard to minorities and poverty and other social vulnerabilities, we do not have such information for fishermen themselves. Therefore, we can only place our fishing activity within the community as a proxy for understanding the role that these social indicators have in the vulnerability of those being affected by regulatory change. While subsistence fishing is also an activity that can be affected by regulatory change, we have very little, if any, data on this activity at this time. We assume that the effects to other sectors will be similar to those that affect subsistence fishermen who may rely on cobia.

3.5 Administrative Environment

3.5.1 The Fishery Management Process and Applicable Laws

3.5.1.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; 16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The U.S. claims through the Magnuson-Stevens Act, sovereign rights and exclusive fishery management authority over most fishery resources within the EEZ, an area extending 200 nautical miles (nm) from the seaward

boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the U.S. EEZ.

Responsibility for federal fishery management decision-making is divided between the U.S. Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for collecting and providing the data necessary for the councils to prepare fishery management plans and for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the Magnuson-Stevens Act and with other applicable laws. In most cases, the Secretary has delegated this authority to NMFS.

The South Atlantic Council is responsible for conservation and management of fishery resources in federal waters of the U.S. South Atlantic. These waters extend from 3 to 200 nm offshore from the seaward boundary of the States of North Carolina, South Carolina, Georgia, and east Florida to Key West. The South Atlantic Council has 13 voting members: one from NMFS; one each from the state fishery agencies; and eight public members appointed by the Secretary. Non-voting members include representatives of the U.S. Fish and Wildlife Service, US Coast Guard (USCG), and Atlantic States Marine Fisheries Commission (ASMFC).

The Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) has two voting seats on the South Atlantic Council's Mackerel Committee but does not vote during Council sessions. The Mid-Atlantic Council is responsible for fishery resources in federal waters off New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. The coastal migratory pelagic fishery is jointly managed with the Gulf of Mexico Fishery Management Council (Gulf Council). Therefore, the Gulf Council reviewed CMP Framework 2 and voted to approve it for Secretarial review.

The Councils use their respective Scientific and Statistical Committees (SSC) to review data and science used in assessments and fishery management plans/amendments. Regulations contained within FMPs are enforced through actions of the NMFS' Office for Law Enforcement (NOAA/OLE), the USCG, and various state authorities.

The public is involved in the fishery management process through participation at public meetings, on advisory panels, and through council meetings that, with some exceptions, are open to the public. The regulatory process is in accordance with the Administrative Procedures Act, in the form of "notice and comment" rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

3.5.1.2 State Fishery Management

The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments have the authority to manage their respective state fisheries including enforcement of fishing regulations. Each of the eight states exercises legislative and regulatory authority over their states' natural resources through discrete administrative units. Although each agency listed below is the primary administrative body with

respect to the state's natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources.

The states are also involved through the Gulf States Marine Fisheries Commission and the ASMFC in management of marine fisheries. These commissions were created to coordinate state regulations and develop management plans for interstate fisheries.

NMFS' State-Federal Fisheries Division is responsible for building cooperative partnerships to strengthen marine fisheries management and conservation at the state, inter-regional, and national levels. This division implements and oversees the distribution of grants for two national (Inter-jurisdictional Fisheries Act and Anadromous Fish Conservation Act) and two regional (Atlantic Coastal Fisheries Cooperative Management Act and Atlantic Striped Bass Conservation Act) programs. Additionally, it works with the commissions to develop and implement cooperative State-Federal fisheries regulations.

More information about these agencies can be found from the following web pages:

Florida Fish and Wildlife Conservation Commission <http://www.myfwc.com>

Georgia Department of Natural Resources, Coastal Resources Division <http://crd.dnr.state.ga.us/>

South Carolina Department of Natural Resources <http://www.dnr.sc.gov/>

North Carolina Department of Environmental and Natural Resources
<http://portal.ncdenr.org/web/guest/>

Virginia Marine Resources Commission <http://www.mrc.virginia.gov/>

3.5.1.3 Enforcement

Both the NOAA/OLE and the USCG have the authority and the responsibility to enforce regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi-mission agency, which provides at sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with all but one of the states in the Southeast Region (North Carolina), which granted authority to state officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the states has increased through Joint Enforcement Agreements, whereby states conduct patrols that focus on federal priorities and, in some circumstances, prosecute resultant violators through the state when a state violation has occurred.

NOAA General Counsel issued a revised Southeast Region Magnuson-Stevens Act Penalty Schedule in June 2003, which addresses all Magnuson-Stevens Act violations in the Southeast Region. In general, this penalty schedule increases the amount of civil administrative penalties that a violator may be subject to up to the current statutory maximum of \$120,000 per violation. The Final Penalty Policy was issued and announced on April 14, 2011 (76 FR 20959).

Chapter 4. Environmental Effects and Comparison of Alternatives

4.1 Action 1: Modify the recreational management measures for Atlantic cobia

Action 1-1: Modify the recreational harvest limits for Atlantic cobia

Alternative 1 (No Action). Do not modify the possession limit of 2 fish per person per day for Atlantic cobia that are not sold.

Preferred Alternative 2. Establish a recreational bag limit for Atlantic cobia.

Preferred Sub-alternative 2a. 1 fish per person per day

Sub-alternative 2b. 2 fish per person per day

Preferred Alternative 3. Establish a recreational vessel limit for Atlantic cobia.

Sub-alternative 3a. 1 fish per vessel per day

Sub-alternative 3b. 2 fish per vessel per day

Preferred Sub-alternative 3c. 3 fish per vessel per day

Sub-alternative 3d. 4 fish per vessel per day

Sub-alternative 3e. 5 fish per vessel per day

Sub-alternative 3f. 6 fish per vessel per day

Action 1-2: Modify the minimum size limit for recreational harvest of Atlantic cobia

Alternative 1 (No Action). Do not modify the minimum size limit of 33 inches fork length (FL) for recreational and commercial harvest of Atlantic cobia.

Preferred Alternative 2. Modify the minimum size limit for Atlantic cobia for recreational and commercial harvest of Atlantic cobia.

Sub-alternative 2a. 34 inches FL

Sub-alternative 2b. 35 inches FL

Preferred Sub-alternative 2c. 36 inches FL

Sub-alternative 2d. 37 inches FL

Sub-alternative 2e. 38 inches FL

Sub-alternative 2f. 39 inches FL

Sub-alternative 2g. 45 inches FL

Sub-alternative 2h. 50 inches FL

NOTE: Action 1-2 includes language to apply changes to the minimum size limit to commercial harvest, but the Council indicated that this action would apply to only recreational harvest. Analysis of the alternatives assumed that the changes to the minimum size limit would apply only to recreational harvest. At their September 2016 meeting, the Council will revise the language to specify that the action applies to only the recreational minimum size limit, and will consider modifying the commercial minimum size limit in a future amendment.

4.1.1 Biological Effects

Action 1-1 and **Action 1-2** would implement harvest limits through recreational bag limits, vessel limits, size limits, or a combination of these management measures. Recreational cobia landings for the Atlantic migratory group (Georgia to New York¹) in 2015 were substantially higher than previous years. The 2015 recreational landings were higher than both 2013 and 2014 landings (**Table 4.1.1.1**).

Table 4.1.1.1. Recreational landings (lbs) for Waves 1 through 5 for 2013, 2014, and 2015 by state. In 2013, 138 lbs were reported for Wave 6; no landings in Wave 6 of 2014; and only 71 lbs were reported for Wave 6 in 2015. All landings for 2015 are preliminary.

Wave	State	2013		2014		2015	
		Landings	Wave Total	Landings	Wave Total	Landings	Wave Total
1		0	0	0	0	0	0
2	NC	121		600		142	
	SC	306	427	24	624	44,310	44,452
3	GA	8,801		18,028		66,928	
	SC	11,781		15,976		71,916	
	NC	445,578		228,231		585,568	
	VA	66,476	532,636	122,740	384,975	193,795	918,208
4	GA	20,395		2,500		876	
	SC	6,914		15,449		7,619	
	NC	16,456		48,246		33,881	
	VA	286,937	330,703	91,687	157,882	519,139	561,514
5	GA	28		114		0	
	SC	129		478		107	
	NC	30,814		412		10,782	
	VA	1,050	32,021	0	1,004	5,713	16,601
Total			895,787		544,485		1,540,775

Source: SEFSC Recreational ACL Dataset

¹ No landings were reported north of Virginia.

The 2015 recreational landings from Waves 1-5 reached 245% of the recreational ACL and 231% of the stock ACL (recreational and commercial ACLs combined). Only 71 pounds whole weight of cobia were reported in Wave 6 of 2015. The majority of the landings occurred off Virginia and North Carolina with much lower landings off Georgia and South Carolina. Florida landings (both east and west coast) are considered to be part of the Gulf of Mexico stock.

The number of cobia caught per person in 2014 and 2015 were not statistically significantly different between the years (t-test, $df = 1$, $P = 0.8495$). However, from 2013 to 2015 there was an increase in the average weight of cobia (**Figure 4.1.1.1**) which contributed to the high landings of cobia in 2015. Another contributing factor to the high landings of cobia in 2015 was the increase in fishing effort. The recreational trips that targeted cobia from New York to Georgia increased by 25% from 2014 to 2015 (**Figure 4.1.1.2**).

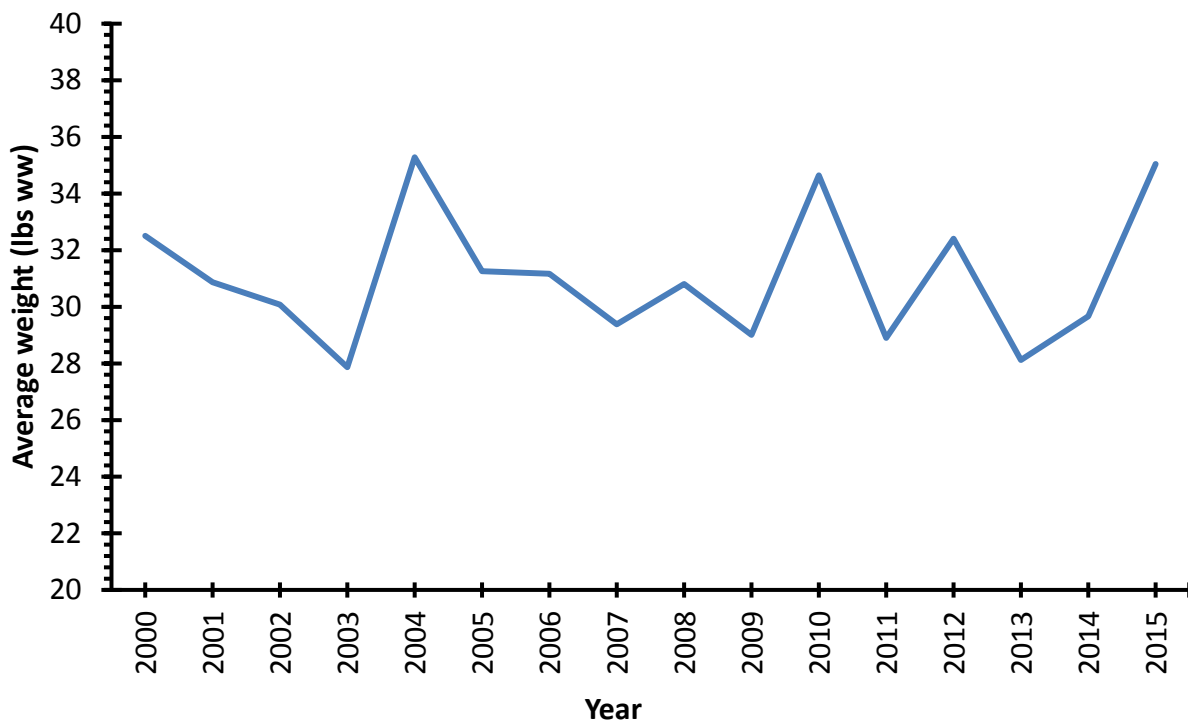


Figure 4.1.1.1 Average weights of cobia from New York to Georgia. The average weight for 2015 is preliminary. Source: SEFSC Recreational ACL Dataset

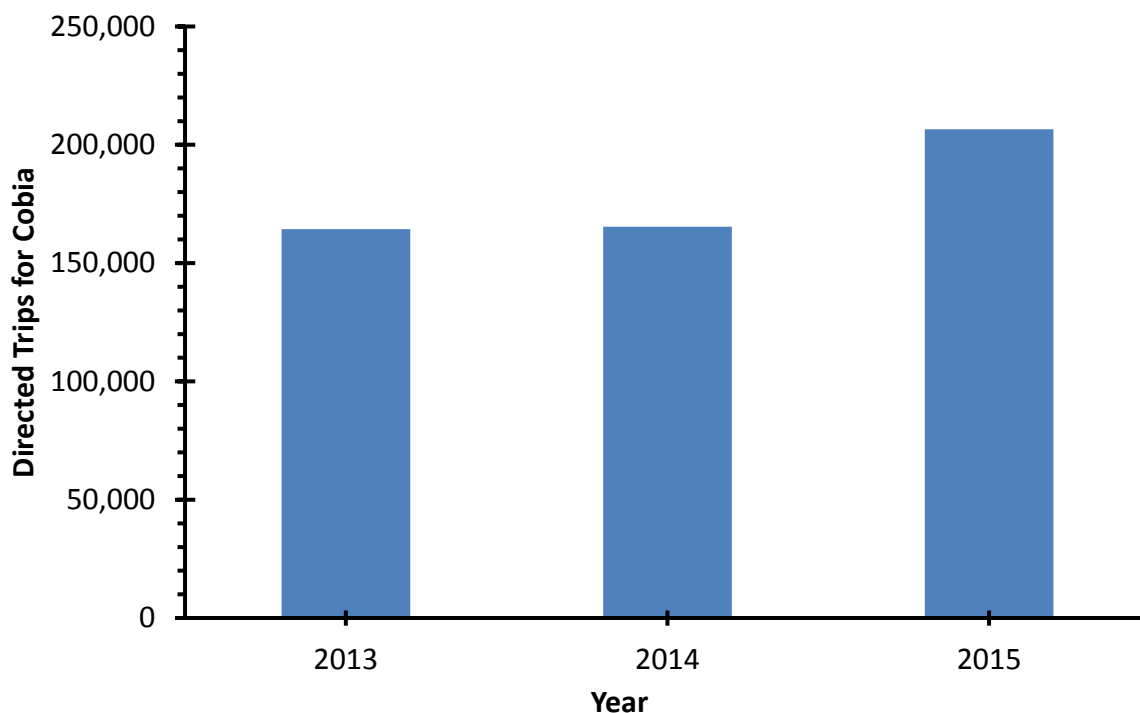


Figure 4.1.1.2. Directed recreational trips for cobia from New York to Georgia. The number of trips for 2015 are preliminary. Source: NOAA Office of Science and Technology Dataset

The recreational cobia sector closed on June 20, 2016 because the fish harvested was 245% greater than the annual catch limit. The actions in this amendment are intended to lengthen the fishing season for recreational cobia sector in upcoming years by implementing a combination of harvest limits and size limits. **Action 1-1** analyzes the impact harvest limits and an increase in the minimum size limits will have on recreational cobia. **Table 4.1.1.2** shows the estimated percent decrease of the combinations of actions under **Action 1-1** and **Action 1-2**. The reductions assume the regulations are implemented in both state and federal waters. The recreational bag limit for both North Carolina and Virginia is one fish per person.

Alternative 1 (No Action) would not modify the possession limit of 2 fish per person per day for Atlantic cobia that are not sold. Under this alternative, with current rates of fishing effort, it would be expected that the Atlantic cobia landings would not decrease from previous years.

At their June 2016 meeting, the Council selected **Preferred Alternative 2, Preferred Sub-Alternative 2a (one fish per person bag limit)** and **Preferred Alternative 3, Preferred Sub-alternative 3c (three fish per vessel limit)**. The Council’s intent was that whichever was more restrictive would apply. For example, if there were less than three people on the vessel, the one fish per person bag limit would apply. If there were more than three people on a vessel, the three fish per vessel limit would apply.

Table 4.1.1.2. Estimated percent decrease in Atlantic cobia landings for a combination of minimum size limits, bag limits, and vessel limits as proposed by Action 1-1 and Action 1-2. The highlighted cells indicate the Preferred alternatives.

Action 1-2 Minimum Size Limit									
	Alt 1 33 inch FL	Sub-alt 2a 34 inch FL	Sub-alt 2b 35 inch FL	Sub-alt 2c 36 inch FL	Sub-alt 2d 37 inch FL	Sub-alt 2e 38 inch FL	Sub-alt 2f 39 inch FL	Sub-alt 2g 45 inch FL	Sub-alt 2h 50 inch FL
Action 1-1 Harvest Limits	Bag Limit								
Sub-alt 2a 1 per Person	2.0	4.9	8.1	12.7	16.7	21.3	23.8	59.5	73.7
Sub-alt 2b 2 per Person	0	0	0	0	0	0	0	0	0
Vessel Limit									
Sub-alt 3a 1 per Vessel	20.4	23.3	26.5	31.1	35.1	39.7	42.2	77.9	92.1
Sub-alt 3b 2 per Vessel	8.8	11.7	14.9	19.5	23.5	28.1	30.6	66.3	80.5
Sub-alt 3c 3 per Vessel	4.4	7.3	10.5	15.1	19.1	23.7	26.2	61.9	76.1
Sub-alt 3d 4 per Vessel	2.7	5.6	8.8	13.4	17.4	22.0	24.5	60.2	74.4
Sub-alt 3e 5 per Vessel	2.1	5.0	8.2	12.8	16.8	21.4	23.9	59.6	73.8
Sub-alt 3f 6 per Vessel	0.9	3.8	7.0	11.6	15.6	20.2	22.7	58.4	72.6

Preferred Alternative 2, Preferred Sub-alternative 2a and Sub-alternative 2b would establish a recreational bag limit of one or two fish, respectively. Under a one fish recreational bag limit, with the current size limit of 33 inches (**Preferred Alternative 2, Preferred Sub-alternative 2a**), a 2% reduction would be seen in the landings of Atlantic cobia. **Sub-alternative 2b**, which would continue the two fish bag limit, would not result in a reduction of landings.

Preferred Alternative 3 and associated sub-options would implement a vessel limit of one to six fish per vessel per day. **Preferred Alternative 3, Preferred Sub-alternative 3c** would implement a three fish per vessel harvest limit. Based on the analysis in **Table 4.1.2**, this harvest limit alone would result in a 4.4% reduction in Atlantic cobia landings. All of the other sub-alternatives under **Preferred Alternative 3** would result in a reduction of landings, with the highest reduction being a one fish vessel limit, at 20.4% (**Preferred Alternative 3, Sub-alternative 3a**) and the lowest reduction with a six fish vessel limit at .9% (**Preferred Alternative 3, Sub-alternative 3f**). If the minimum size limit is increased under Action 1-2 the reduction in landings would increase.

The reduction in Atlantic cobia landings decreases as the bag limits and vessel limits are paired with an increased size limit (**Action 1-2**). Alternatives were considered to keep the size limit at 33 inches FL (**Alternative 1**) or Sub-alternatives under **Preferred Alternative 2** to increase it to 34 inches FL (**Sub-alternative 2a**), 35 inches FL (**Sub-alternative 2b**), 36 inches FL (**Preferred Sub-alternative 2c**), 37 inches FL (**Sub-alternative 2d**) 38 inches FL (**Sub-alternative 2e**), 39 inches FL (**Sub-alternative 2f**), 45 inches FL (**Sub-alternative 2g**) and 50 inches FL (**Sub-alternative 2h**).

The Council has currently selected **Preferred Alternative 2, Preferred Sub-alternative 2c** under Action 1-2, which is a minimum size limit of 36 inches fork length (FL). Action 1-2, **Preferred Alternative 2, Preferred Sub-Alternative 2c** (36 inch size limit) in combination with the preferred alternatives of **Action 1-1, Preferred Alternative 2, Preferred Sub-Alternative 2a** (1 fish bag limit) and **Preferred Alternative 3, Preferred Sub-alternative 3c** (three fish per vessel limit) would result in a decrease in landings of 15.1%.

This amendment is also proposing changes to the fishing year start date so it is useful to review the analysis under **Action 2**. This analysis predicts the date when the ACL will be reached based on the proposed harvest limit and size limits in Action 1-1 and Action 1-2.

4.1.2 Economic Effects

Action 1-1

The current recreational possession limit for Atlantic cobia in federal waters is 2 fish per person with no vessel limit and a minimum size limit of 33 inches fork length, however in 2016, the states of South Carolina, North Carolina, and Virginia have implemented various cobia regulations specifying alternative size limits, vessel limits, harvest days and/or harvest seasons for state waters (**Table 2.1.1**). Given the varying cobia regulations that are in place, it is difficult to estimate the economic effects, but assuming the Council's selected management options for cobia are also adopted in state waters, the anticipated economic effects are as follows.

Alternative 2 establishes the definition of a recreational bag limit. Functionally, **Sub-alternative 2b** (2 fish per person bag limit) is equivalent to **Alternative 1 (No Action)** for the recreational sector (2 fish per person possession limit for Atlantic cobia that are not sold), therefore there are no anticipated economic effects. **Preferred Sub-alternative 2a** would limit the possession of cobia to 1 fish per person. MRIP estimates indicate that on most trips where

cobia are landed, there is not more than one cobia harvested per person. Based on this assumption, is not likely that lowering the bag limit to 1 fish per person will impact most recreational cobia trips. In relation to overall harvest, the marginal decrease from the reduced bag limit is approximately 2%, signaling a likely minimal impact on consumer surplus (CS) in the recreational cobia fishery (**Table 4.1.1.2**). While the overall economic effect is expected to be minor, some CS may be lost on trips when more than 1 fish per person could be kept and the angler desires to do so. Additionally, some for-hire operations and other fishing-related businesses may be negatively impacted should anglers decide to forgo taking or take fewer trips for cobia due to the lowered bag limit. The extent to which angling effort will be impacted is unknown and will be variable, but this may especially be a concern for anglers and fishing related businesses at times when substitute fish species are not readily available.

Alternative 3, Sub-alternatives 3a – 3f range from 1 to 6 fish per vessel in one fish increments, with **Sub-alternative 3f** (6 fish per vessel) being least restrictive compared to **Sub-alternative 3a** (1 fish per vessel). The economic effects of a vessel limit are similar to those described under a reduced bag limit, but these effects will be more pronounced on trips where the vessel limit is more restrictive than the bag limit. **Preferred Sub-alternative 3c** is expected to reduce cobia harvest by 4.4%, signaling some potential negative economic effects. It is unclear how this option will impact overall fishing effort and thus for-hire NOR or revenue for other fishing-related businesses, but the lower vessel limit options are more likely to create heightened negative economic effects.

Action 1-2

In general, increasing the size limit for a species typically has little long-term economic effect unless the larger size limit is set so high that it negatively impacts long-term effort or it results in greater numbers of fish reaching spawning size and/or fish have higher fecundity prior to being harvested. Size limits that result in more spawning and/or higher fecundity would result in more direct, long-term, positive economic effects presumably through the availability of increased numbers of fish in the future. However, there can be some direct, short-term negative economic effects as fewer fish would be available to harvest until the current population grows into the new minimum size and/or the biomass of harvestable fish increases. The further that the increase in size limit differs from **Alternative 1 (No Action)**, the probability increases for lengthened short-term negative economic effects, but this action could also eventually result in greater long-term positive economic outcomes as long as the increased size limit would result in a larger spawning biomass that would create additional fishing and harvest opportunities.

Size limits set towards the upper typical biological limits of cobia length has the potential to discourage fishing effort in the short and long-term if the likelihood of a successful fishing trip that involves harvesting cobia is not likely. In this case, it can be expected that negative economic effects will occur as fishery participants reduce effort or switch to substitute fisheries that may exhibit a lower CS or may reduce expenditures, thereby negatively effecting for-hire and fishing related businesses as well as the economies of coastal communities. **Preferred Sub-alternative 2c** sets the size limit at 36 inches FL and is expected to initially decrease harvest by 10.7%, showing that the majority of cobia kept are at or above this limit and most trips will not be negatively affected (**Table 4.1.1.2**). It is unclear at this time how many trips this size limit

would impact, but given the relatively fast growth of cobia and how close this size limit is to the current size limit of 33 inches FL, short-term negative economic effects are expected to be minimal. There may be some positive economic benefits from this size limit change should it help maintain or increase the overall cobia stock biomass in the long-term as well as prevent closures or prolong the fishing season.

When the implementation of vessel limits, reduced bag limits, and increased size limits are taken into the account, they are anticipated to mitigate the likelihood of a harvest closure if the recreational ACL is caught or prolonging the harvest season. Should a harvest closure occur, there may be loss of CS and anglers may decide to forgo some fishing trips due to the closure, depending on the closure timing. While some economic benefits will still be realized from catch and release fishing during a harvest closure, anglers often value being able to harvest cobia, resulting in a decrease in overall recreational effort. As a consequence, there will be negative economic effects to for-hire operators and other fishing related businesses due to the reduced recreational fishing activity and the reduction in angler expenditures on durable and non-durable goods that go along with this activity. The extent to which these negative economic effects may occur and the distribution of the effects will be highly dependent on the timing of the harvest closure. The earlier the harvest closure, the greater the likely overall negative economic effects, and the more concentrated these effects will be in states residing in the northern range of the typical cobia spawning migration in the Atlantic, namely North Carolina and Virginia.

Assuming the ACL is equally met under the different alternatives, there are potential economic benefits of prolonging the time that harvest is open with measures that decrease the number of fish landed per trip, but maintain or increase the number of trips taken. While there is no specific CS value available for recreationally caught Atlantic cobia, proxy values are available for dolphin and king mackerel, and are included in **Section 3.3.2**. These values show a diminishing marginal return per fish as more fish are kept on a trip. Under this scenario, keeping harvest per trip at a lower level via a combination of bag limits, trip limits, and/or size limits while maximizing fishing effort will help increase overall CS in the recreational cobia fishery. Additionally, the higher levels of effort will help maintain NOR for charter and head boat operators.

Table 4.1.2.1 shows the estimated number of cobia landed per state from 2013-2015. Average total landings over the time series were used to calculate estimated CS under a range of size limits, bag limits, and vessel limits in relation to the reductions specified in **Table 4.1.1.2 (Section 4.1.1)**. Estimated values of CS for king mackerel as found in **Section 3.3.2** were used as a proxy for cobia, as recreational bag limits and size limits are more similar for these two species than for dolphin. Given the range of CS estimates per fish based on how many fish are kept on a trip, the value for the second kept fish (\$100) and the sixth kept fish (\$32) were used to provide an upper bound (**Table 4.1.2.2**) and lower bound (**Table 4.1.2.3**) estimate of overall CS for recreational cobia landings under the different regulatory scenarios. It is important to note that these CS estimates are for harvest only and do not include economic benefits that may be derived from catch and release fishing or the economic effects of varying projected closure dates.

Table 4.1.2.1. Annual recreational landings (numbers of fish) of Atlantic cobia, by state/region, 2013-2015.

Year	GA	SC	NC	MA	Total
2013	1,189	634	19,224	10,586	31,633
2014	792	1,137	9,804	6,404	18,137
2015	2,282	4,182	16,166	21,755	44,385
Average	1,421	1,984	15,065	12,915	31,385

Source: <http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/queries/index>.

Table 4.1.2.2. Upper bound estimate of consumer surplus (2014 \$) for Atlantic cobia landings under a combination of minimum size limits, bag limits, and vessel limits.

Minimum Size Limit (FL)									
	33"	34"	35"	36"	37"	38"	39"	45"	50"
Bag Limit									
1 per Person	\$3,075,730	\$2,984,714	\$2,884,282	\$2,739,911	\$2,614,371	\$2,470,000	\$2,391,537	\$1,271,093	\$825,426
2 per Person	\$3,138,500	\$3,047,484	\$2,947,052	\$2,802,681	\$2,677,141	\$2,532,770	\$2,454,307	\$1,333,863	\$888,196
Vessel Limit									
1 per Vessel	\$2,498,246	\$2,407,230	\$2,306,798	\$2,162,427	\$2,036,887	\$1,892,516	\$1,814,053	\$693,609	\$247,942
2 per Vessel	\$2,862,312	\$2,771,296	\$2,670,864	\$2,526,493	\$2,400,953	\$2,256,582	\$2,178,119	\$1,057,675	\$612,008
3 per Vessel	\$3,000,406	\$2,909,390	\$2,808,958	\$2,664,587	\$2,539,047	\$2,394,676	\$2,316,213	\$1,195,769	\$750,102
4 per Vessel	\$3,053,761	\$2,962,744	\$2,862,312	\$2,717,941	\$2,592,401	\$2,448,030	\$2,369,568	\$1,249,123	\$803,456
5 per Vessel	\$3,072,592	\$2,981,575	\$2,881,143	\$2,736,772	\$2,611,232	\$2,466,861	\$2,388,399	\$1,267,954	\$822,287
6 per Vessel	\$3,110,254	\$3,019,237	\$2,918,805	\$2,774,434	\$2,648,894	\$2,504,523	\$2,426,061	\$1,305,616	\$859,949

Table 4.1.2.3. Lower bound estimate of consumer surplus (2014 \$) for Atlantic cobia landings under a combination of minimum size limits, bag limits, and vessel limits.

Minimum Size Limit (FL)									
	33"	34"	35"	36"	37"	38"	39"	45"	50"
Bag Limit									
1 per Person	\$984,234	\$955,108	\$922,970	\$876,771	\$836,599	\$790,400	\$765,292	\$406,750	\$264,136
2 per Person	\$1,004,320	\$975,195	\$943,056	\$896,858	\$856,685	\$810,486	\$785,378	\$426,836	\$284,223
Vessel Limit									
1 per Vessel	\$799,439	\$770,313	\$738,175	\$691,976	\$651,804	\$605,605	\$580,497	\$221,955	\$79,341
2 per Vessel	\$915,940	\$886,815	\$854,676	\$808,478	\$768,305	\$722,106	\$696,998	\$338,456	\$195,842
3 per Vessel	\$960,130	\$931,005	\$898,866	\$852,668	\$812,495	\$766,296	\$741,188	\$382,646	\$240,032
4 per Vessel	\$977,203	\$948,078	\$915,940	\$869,741	\$829,568	\$783,370	\$758,262	\$399,719	\$257,106
5 per Vessel	\$983,229	\$954,104	\$921,966	\$875,767	\$835,594	\$789,396	\$764,288	\$405,745	\$263,132
6 per Vessel	\$995,281	\$966,156	\$934,018	\$887,819	\$847,646	\$801,447	\$776,339	\$417,797	\$275,184

4.1.3 Social Effects

In general for **Action 1-1**, the social effects of modifying the recreational harvest limits would be associated with the biological costs of each alternative (see **Section 4.1.1**), as well as the effects on current recreational fishing opportunities. While **Alternatives 2 and 3** could restrict recreational fishing opportunities for Atlantic cobia, the harvest limits could help to extend the recreational fishing season by slowing the rate of harvest.

Different levels of recreational fishing opportunities under each alternative could affect recreational anglers and for-hire businesses targeting Atlantic cobia, particularly in North Carolina and Virginia (see **Section 3.3**). In general, benefits to the recreational sector will result from harvest limits that result in a longer fishing season but still maintain harvest limits large enough to have minimum effect on recreational trip satisfaction.

The social effects of the potential harvest limits will depend on the effect on how the measures or combination of measures can restrict the number of fish that can be kept, which could affect recreational trip satisfaction, and the trade-off required to keep the season open by slowing the rate of harvest. **Table 4.1.3.1** shows the estimated date when recreational landings would reach the current recreational ACL (620,000 lbs) under the combination of the harvest limits in Action 1. The estimated dates in **Table 4.1.3.1** indicate how each combination can slow the rate of harvest, which would be expected to not trigger any current or future accountability measures for recreational harvest of Atlantic cobia. Overall, the higher minimum size limits and lower bag and vessel limits are more likely to slow the rate of harvest, but will also likely affect trip satisfaction.

Table 4.1.3.1. Estimated dates when Atlantic cobia recreational landings would meet the recreational ACL (620,000 lbs for 2016 and subsequent years) under the range of minimum size limits, bag limits, and vessel limits, under the current fishing year of January 1- December 31. Highlighted cells are the current Preferred Sub-alternatives in Action 1.

	Minimum Size Limit (inches fork length)								
	33	34	35	36	37	38	39	45	50
	Bag Limit								
1 per person	2-Jul	5-Jul	10-Jul	17-Jul	23-Jul	31-Jul	5-Aug	None	None
2 per person	30-Jun	3-Jul	7-Jul	14-Jul	20-Jul	28-Jul	1-Aug	None	None
	Vessel Limit								
1	30-Jul	4-Aug	11-Aug	22-Aug	22-Sep	None	None	None	None
2	11-Jul	15-Jul	20-Jul	28-Jul	5-Aug	15-Aug	21-Aug	None	None
3	5-Jul	9-Jul	13-Jul	20-Jul	27-Jul	5-Aug	10-Aug	None	None
4	3-Jul	6-Jul	11-Jul	18-Jul	24-Jul	2-Aug	7-Aug	None	None
5	2-Jul	6-Jul	10-Jul	17-Jul	23-Jul	1-Aug	6-Aug	None	None
6	30-Jun	4-Jul	8-Jul	15-Jul	21-Jul	29-Jul	3-Aug	None	None

Note: This analysis assumed that the recreational bag limit, vessel limit and minimum size limit would be consistent in state and federal waters for the South Atlantic and Mid-Atlantic regions. Additionally, the estimated dates were generated based on recreational landings from 2013-2015.

In general, measures that reduce the number of fish that a recreational angler can keep may negatively affect trip satisfaction. Under alternatives that would maintain the current measures (**Alternative 1 (No Action)** and **Sub-alternative 2b in Action 1b**, and **Alternative 1 (No Action)** in **Action 1-2**) will have the identical effects on recreational fishermen, which will be minimal at the individual level when considering trip satisfaction. However, no changes to the harvest limits will likely result in recreational landings reaching the recreational ACL earlier in the year, which could trigger recreational accountability measures (AMs) or require additional measures to be implemented in the future.

As measures are more restrictive, there would be more expected negative effects on trip satisfaction for recreational fishermen. Additionally, lower vessel limits will have more negative effects on boats and trips with more fishermen on board, such as on headboat trips. The most negative short-term effects would be expected under **Preferred Sub-alternative 2b** than under **Sub-alternative 2b** under **Action 1-1**. The most negative effects on recreational fishermen would be expected from the vessel limits in **Action 1-1/Preferred Alternative 3** under **Sub-alternative 3f**, followed by **Sub-alternative 3e**, **Sub-alternative 3d**, **Preferred Sub-alternative 3c**, **Sub-alternative 3b**, and then **Sub-alternative 3a**. When considering the minimum size limit in **Action 1-2**, the most negative effects on trip satisfaction and recreational fishermen would be expected under **Sub-alternative 2h**, followed by **Sub-alternative 2h**, **Sub-alternative 2g**, **Sub-alternative 2f**, **Sub-alternative 2e**, **Sub-alternative 2d**, **Preferred Sub-alternative 2c**, **Sub-alternative 2b** and then **Sub-alternative 2a**.

4.1.4 Administrative Effects

Establishing bag limits, vessel limits and size limits will have result in an administrative burden associated with rulemaking, outreach, education and enforcement. However, the impact is expected to be minimal based on the alternatives proposed in this amendment.

4.2 Action 2: Modify the fishing year for Atlantic cobia

Alternative 1 (No Action). Do not modify the current fishing year of January 1 through December 31.

Preferred Alternative 2. Modify the fishing year for Atlantic cobia to be May 1 through April 30.

Alternative 3. Modify the fishing year for Atlantic cobia to be June 1 through May 31.

Alternative 4. Modify the fishing year for Atlantic cobia to be April 1 through March 31.

4.2.1 Biological Effects

Under **Alternative 1 (No Action)**, the fishing year would remain aligned with the calendar year. **Alternative 2** would implement a fishing year to start May 1 which corresponds with peak landings (**Figure 4.2.2.1**). **Alternative 3** would modify the fishing year to be June 1-May 31. **Alternative 4** would modify the fishing year to start April 1 and run through March 31st.

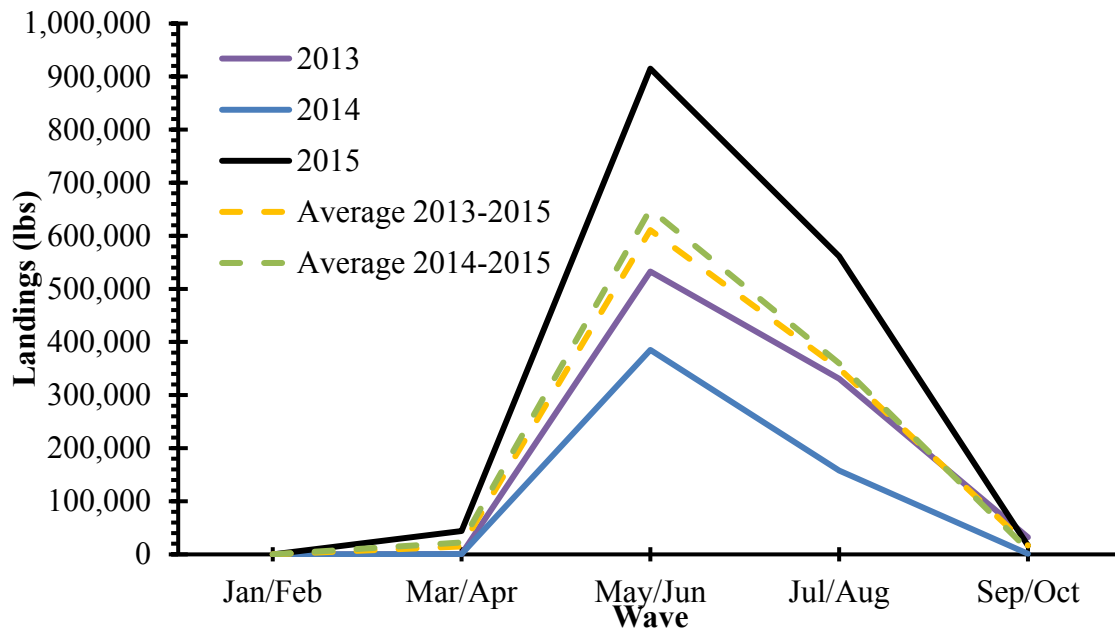


Figure 4.2.2.1. Atlantic recreational landings for January-October of 2013, 2014, 2015, average 2013-2015 landings, and average 2014-2015 landings by two-month wave. The landings for 2015 are preliminary. Source: SEFSC Recreational ACL Dataset

Under **Alternative 1 (No Action)** the fishing year would remain aligned with the calendar year. Action 1-2, **Preferred Alternative 2, Preferred Sub-Alternative 2c** (36 inch size limit) in combination with the preferred alternatives of **Action 1-1, Preferred Alternative 2, Preferred Coastal Migratory Pelagics**

Sub-Alternative 2a (1 fish bag limit) and **Preferred Alternative 3, Preferred Sub-alternative 3c** (three fish per vessel limit) would result in an in-season closure of about July 20th (**Table 4.2.1**). If the Council were to select more restrictive management harvest limits (**Action 1-1**) or minimum size limits (**Action 1-2**), there would be the potential to extend the season. Under **Action 1-1, Preferred Alternative 3, sub-alternative 3a and Action 1-2, Preferred Alternative 2, sub-alternative 2h**, the most restrictive harvest limits and minimum size limits, it is expected that no in season closure would occur.

Table 4.2.1.1. Estimated ACL overage dates for **Alternative 1 (no Action) of Action 2** under a range of size limits, bag limits, and vessel limits as proposed in **Action 1-1** and **Action 1-2**. Alternative 1 has the current fishing year of January 1 through December 31st. The highlighted cells indicate the Preferred Alternatives under Action 1-1 and Action 1-2.

Minimum Size Limit (inches fork length)									
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per person	2-Jul	5-Jul	10-Jul	17-Jul	23-Jul	31-Jul	5-Aug	None	None
2 per person	30-Jun	3-Jul	7-Jul	14-Jul	20-Jul	28-Jul	1-Aug	None	None
Vessel Limit									
1	30-Jul	4-Aug	11-Aug	22-Aug	22-Sep	None	None	None	None
2	11-Jul	15-Jul	20-Jul	28-Jul	5-Aug	15-Aug	21-Aug	None	None
3	5-Jul	9-Jul	13-Jul	20-Jul	27-Jul	5-Aug	10-Aug	None	None
4	3-Jul	6-Jul	11-Jul	18-Jul	24-Jul	2-Aug	7-Aug	None	None
5	2-Jul	6-Jul	10-Jul	17-Jul	23-Jul	1-Aug	6-Aug	None	None
6	30-Jun	4-Jul	8-Jul	15-Jul	21-Jul	29-Jul	3-Aug	None	None

Note: This analysis assumed that the recreational bag limit, vessel limit and minimum size limit would be consistent in state and federal waters for the South Atlantic and Mid-Atlantic regions. Additionally, the estimated dates were generated based on recreational landings from 2013-2015.

Preferred Alternative 2 would modify the fishing year for cobia to be from May 1 - April 30. This would ensure that the season is open during the peak landings period of May/June (**Figure 4.2.1.1**). **Table 4.2.1.2** estimates the date the ACL would be reached, based on the average of 2013-2015 landings. This table provides closure dates for all alternatives under Action 1-1 and Action 1-2. The combination of Action 1-2, **Preferred Alternative 2, Preferred Sub-Alternative 2c** (36 inch size limit) and the preferred alternatives of **Action 1-1, Preferred Alternative 2, Preferred Sub-Alternative 2a** (1 fish bag limit) and **Preferred Alternative 3, Preferred Sub-alternative 3c** (three fish per vessel limit) and **Action 3, Preferred Alternative 2** would result in an in-season closure of about July 23rd. This would only increase the fishing year by about three days from **Alternative 1** (no action) largely because the pulse nature of the fishery. As shown in **Figure 4.2.1**, the bulk of the landings occur during May/June and the landings from January-April are minimal. If the Council were to select more restrictive management harvest limits (**Action 1-1**) or minimum size limits (**Action 1-2**), there would be the potential to extend the season or with the most restrictive harvest limits and minimum size limits.

For example, under **Action 1-1, Preferred Alternative 3, sub-alternative 3a and Action 1-2, Preferred Alternative 2, sub-alternative 2h**, the most restrictive harvest limits and minimum size limits, it is expected that no in season closure would occur.

Table 4.2.1.2. Estimated ACL overage dates for **Action 2, Preferred Alternative 2** under a range of size limits, bag limits, and vessel limits as proposed in Action 1-1 and Action 1-2. Alternative 2 proposes a fishing year of May 1 through April 30. The highlighted cells indicate the Preferred Alternatives under Action 1-1 and Action 1-2.

	Minimum Size Limit (inches fork length)								
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	5-Jul	8-Jul	13-Jul	19-Jul	26-Jul	3-Aug	8-Aug	None	None
2 per Person	2-Jul	6-Jul	10-Jul	16-Jul	23-Jul	31-Jul	4-Aug	None	None
Vessel Limit									
1 per Vessel	2-Aug	7-Aug	14-Aug	25-Aug	20-Mar	None	None	None	None
2 per Vessel	14-Jul	18-Jul	23-Jul	31-Jul	8-Aug	18-Aug	24-Aug	None	None
3 per Vessel	8-Jul	12-Jul	16-Jul	23-Jul	30-Jul	8-Aug	13-Aug	None	None
4 per Vessel	6-Jul	9-Jul	14-Jul	21-Jul	27-Jul	5-Aug	10-Aug	None	None
5 per Vessel	5-Jul	8-Jul	13-Jul	20-Jul	26-Jul	4-Aug	9-Aug	None	None
6 per Vessel	3-Jul	7-Jul	11-Jul	18-Jul	24-Jul	1-Aug	6-Aug	None	None

Note: This analysis assumed that the recreational bag limit, vessel limit and minimum size limit would be consistent in state and federal waters for the South Atlantic and Mid-Atlantic regions. Additionally, the estimated dates were generated based on recreational landings from 2013-2015.

Alternative 3 would modify the fishing year for cobia to be from June 1-May 31. **Table 4.2.1.3** estimates the date the ACL would be reached, based on the average of 2013-2015 landings. This table provides closure dates for all alternatives under Action 1-1 and Action 1-2. The combination of **Action 1-2, Preferred Alternative 2, Preferred Sub-Alternative 2c** (36 inch size limit) and the preferred alternatives of **Action 1-1, Preferred Alternative 2, Preferred Sub-Alternative 2a** (1 fish bag limit) and **Preferred Alternative 3, Preferred Sub-alternative 3c** (three fish per vessel limit) with the fishing year change proposed under Alternative 3 would result in an in-season closure of about May 8th. The bulk of the landings occur in May (**Figure 4.2.1.1**) and under this alternative the fishery would be closed during their peak season. This action would ensure that the fishery would be open during the early part of the year, giving fishing opportunities to those fishing off North Carolina and South Carolina, although the landings have been historically low in North Carolina in Wave II (**Table 4.1.1.1**).

Table 4.2.1.3. Estimated ACL overage dates for **Action 2, Alternative 3** under a range of size limits, bag limits, and vessel limits as proposed in Action 1-1 and Action 1-2. Alternative 3 proposes a fishing year of June 1 through May 31. The highlighted cells indicate the Preferred Alternatives under Action 1-1 and Action 1-2.

Minimum Size Limit (inches fork length)									
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	4-Oct	18-Apr	19-May	25-May	30-May	14-May	16-May	None	None
2 per Person	31-Aug	27-Oct	1-May	4-May	8-May	12-May	14-May	None	None
Vessel Limit									
1 per Vessel	13-May	16-May	19-May	25-May	30-May	None	None	None	None
2 per Vessel	3-May	5-May	8-May	12-May	16-May	21-May	24-May	None	None
3 per Vessel	4-Apr	2-May	4-May	8-May	12-May	16-May	19-May	None	None
4 per Vessel	22-Oct	1-May	3-May	7-May	10-May	14-May	17-May	None	None
5 per Vessel	7-Oct	21-Apr	3-May	6-May	9-May	14-May	16-May	None	None
6 per Vessel	7-Sep	19-Mar	2-May	5-May	8-May	13-May	15-May	None	None

Note: This analysis assumed that the recreational bag limit, vessel limit and minimum size limit would be consistent in state and federal waters for the South Atlantic and Mid-Atlantic regions. Additionally, the estimated dates were generated based on recreational landings from 2013-2015.

Alternative 4 would modify the fishing year for cobia to be from April 1-March 31. **Table 4.2.1.4** estimates the date the ACL would be reached, based on the average of 2013-2015 landings. This table provides closure dates for all alternatives under Action 1-1 and Action 1-2. The combination of Action 1-2, **Preferred Alternative 2, Preferred Sub-Alternative 2c** (36 inch size limit) and the preferred alternatives of **Action 1-1, Preferred Alternative 2, Preferred Sub-Alternative 2a** (1 fish bag limit) **and Preferred Alternative 3, Preferred Sub-alternative 3c** (three fish per vessel limit) with the fishing year change proposed under Alternative 4 would result in an in-season closure of about July 22. This alternative provides a very similar closure date as **Alternative 1** and **Alternative 2** because the bulk of the landings occur in May, just after the proposed start of the fishing year.

Table 4.2.1.4. Estimated ACL overage dates for **Action 2, Alternative 4** under a range of size limits, bag limits, and vessel limits as proposed in **Action 1-1** and **Action 1-2**. Alternative 4 proposes a fishing year of April 1 through March 31. The highlighted cells indicate the Preferred Alternatives under Action 1-1 and Action 1-2.

	Minimum Size Limit (inches fork length)								
	33	34	35	36	37	38	39	45	50
Bag Limit									
1 per Person	3-Jul	7-Jul	11-Jul	18-Jul	25-Jul	2-Aug	7-Aug	None	None
2 per Person	1-Jul	4-Jul	8-Jul	15-Jul	21-Jul	29-Jul	3-Aug	None	None
Vessel Limit									
1 per Vessel	31-Jul	6-Aug	13-Aug	23-Aug	22-Oct	None	None	None	None
2 per Vessel	12-Jul	17-Jul	22-Jul	30-Jul	6-Aug	16-Aug	22-Aug	None	None
3 per Vessel	6-Jul	10-Jul	15-Jul	22-Jul	29-Jul	7-Aug	12-Aug	None	None
4 per Vessel	4-Jul	8-Jul	12-Jul	19-Jul	26-Jul	3-Aug	8-Aug	None	None
5 per Vessel	3-Jul	7-Jul	11-Jul	18-Jul	25-Jul	2-Aug	7-Aug	None	None
6 per Vessel	2-Jul	5-Jul	10-Jul	16-Jul	23-Jul	31-Jul	5-Aug	None	None

With all of these fishing year alternatives if the Council were to select more restrictive management harvest limits (**Action 1-1**) or minimum size limits (**Action 1-2**), there would be the potential to extend the season. If the Council were to consider the most restrictive harvest limits (**Action 1-1, Preferred Alternative 2**) and minimum size limits (**Preferred Alternative 2, sub-alternative 2e, sub-alternative 2f, sub-alternative 2g and sub-alternative 2h**), there would likely not be an in-season closure. **Action 1-1, Preferred Alternative 3, Preferred sub-alternative 3c** in combination with the more restrictive minimum size limits under Action 1-2 (**Preferred Alternative 2, sub-alternative 2e, sub-alternative 2f, sub-alternative 2g and sub-alternative 2h**) would also result in no in-season closure.

4.2.2 Economic Effects

Changing the start and end dates of a fishing year does not in and of itself create economic effects except if the entire ACL is taken prior to the end of the fishing year. Shifting the start date to a time that would result in a lower CS in the recreational fishery could result in negative economic effects. The opposite would be true if the start of the fishing year was changed to a period when the fish would be more valuable.

Overall, ensuring that each state has a time period to harvest cobia while the fish are present in large numbers off of their coastal waters would ensure economic benefits are derived from the cobia fishery and the economic value and impacts are distributed in an equitable manner among coastal communities in the South and Mid Atlantic. While some economic benefits for the recreational sector will be accrued from catch and release fishing during a time when harvest is

closed, overall recreational effort will be higher when harvest is allowed. This increased effort will lead to more interactions with cobia, thus contributing to higher CS and economic impacts that may be attributed to the species.

The majority of cobia effort and harvest occurs after May 1, therefore **Preferred Alternative 2** and **Alternative 4** will have minimal impacts on the overall cobia fishery. Under **Preferred Alternative 2** and more so under **Alternative 3**, there is potential for negative economic effects to occur if harvest was closed for the remainder of a given fishing year in the southern part of the range at the beginning of the typical cobia season, especially in Georgia, South Carolina, and North Carolina. If this closure were to potentially last until June 1 under **Alternative 3** anglers in these states could lose the majority of their opportunity to harvest cobia, thereby reducing CS in the cobia fishery and creating negative economic effects for the for-hire sector, other fishing related business, and coastal communities in these states.

4.2.3 Social Effects

Modification to the fishing year and establishing closed season could have negative effects on the recreational sector by limiting fishing opportunities, but could also benefit the recreational sector by allowing the season to be open during peak harvest times during the year. A later start date (**Preferred Alternative 2**, **Alternative 3**, and **Alternative 4**) could help extend the season into the summer or later. **Tables 4.2.1.1-4.2.1.4 (Section 4.2.1)** show the estimated dates when recreational landings would reach the recreational ACL under the potential measures in **Action 1** under different fishing years, which gives an idea of how fishing year would affect the rate of harvest.

Because recreational most harvest occurs in May-July, current landings patterns indicate that the estimated dates when recreational landings would reach the recreational ACL are similar under **Alternative 1 (No Action)**, **Preferred Alternative 2**, and **Alternative 4 (Tables 4.2.1.1, 4.2.1.2 and 4.2.1.4)** and would have similar effects on recreational fishermen and associated businesses. Starting the fishing year on June 1 (**Alternative 3; Table 4.2.1.3**) may help keep recreational landings from reaching the recreational ACL early in the summer, but could also restrict access to cobia in the late spring and early summer months if there is a current or future management measure that results in a closure at the end of the fishing year.

Alternatives 2-4 also would result in different fishing years for the commercial and recreational sectors. This would increase the complexity of Atlantic cobia management, in addition to limiting the conditions that could be placed on accountability measures, as discussed in **Section 4.3**.

4.2.4 Administrative Effects

There will be no difference in the administrative burden between **Alternative 2**, **Alternative 3** and **Alternative 4**. However, these action alternatives will have a greater administrative burden than **Alternative 1**. These impacts will be associated with rule-making, quota monitoring, outreach and education and enforcement.

4.3 Action 3: Modify the recreational accountability measures for Atlantic cobia

Alternative 1 (No Action): Do not revise the accountability measures (AMs) for Atlantic cobia.

Preferred Alternative 2. If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, recreational landings will be monitored for a persistence in increased landings. If necessary, the Regional Administrator shall publish a notice to reduce the length of the following fishing season to ensure that recreational landings meet the recreational ACT but do not exceed the recreational ACL, based on the recreational landings in the previous year. The length of the recreational season will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary. The ACT for 2016 and subsequent fishing years is 500,000 lbs, as established in CMP Amendment 20B.

Sub-alternative 2a. The Regional Administrator will reduce the length of the following fishing year only if the species is overfished.

Preferred Sub-alternative 2b. The Regional Administrator will reduce the length of the following fishing year only if the total ACL (commercial ACL and recreational ACL) is exceeded.

Sub-alternative 2c. The Regional Administrator will reduce the length of the following fishing year only if the species is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded.

Alternative 3. If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, the Regional Administrator shall publish a notice to reduce the recreational ACL in the following fishing year by the amount of the recreational overage. The length of the recreational season will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary. The ACT would also be adjusted according to the following formula: recreational sector ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater].

Sub-alternative 3a. The Regional Administrator will reduce the recreational ACL and ACT of the following fishing year only if the species is overfished.

Sub-alternative 3b. The Regional Administrator will reduce the recreational ACL and ACT of the following fishing year only if the total ACL (commercial ACL and recreational ACL) is exceeded.

Sub-alternative 3c. The Regional Administrator will reduce the recreational ACL and ACT of the following fishing year only if the species is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded.

Alternative 4. If recreational landings reach or are projected to reach the recreational ACL, the Regional Administrator shall publish a notice to close the recreational sector for the remainder of the fishing year, unless, using the best scientific information available, the Regional Administrator determines that a closure is unnecessary.

Sub-alternative 4a. If the species is overfished.

Sub-alternative 4b. Regardless of the overfished status of the species.

Alternative 5. If recreational landings, as estimated by the Science and Research Director, exceed the recreational ACL, recreational landings will be monitored for a persistence in increased landings. If necessary, the Regional Administrator shall publish a notice to reduce the recreational vessel limit for the following fishing year to ensure that recreational landings meet the recreational ACT but do not exceed the recreational ACL, based on the recreational landings in the previous year. The recreational vessel limit will not be reduced if the Regional Administrator determines, using the best scientific information available, that a reduction is unnecessary. The ACT for 2016 and subsequent fishing years is 500,000 lbs, as established in CMP Amendment 20B.

Sub-alternative 5a. The Regional Administrator will reduce the recreational vessel limit for the following fishing year only if the species is overfished.

Sub-alternative 5b. The Regional Administrator will reduce the recreational vessel limit for the following fishing year only if the total ACL (commercial ACL and recreational ACL) is exceeded.

Sub-alternative 5c. The Regional Administrator will reduce the recreational vessel limit for the following fishing year only if the species is overfished and the total ACL (commercial ACL and recreational ACL) is exceeded.

4.3.1 Biological Effects

As discussed above, the accountability measures (AM) for the Atlantic migratory group of cobia were established in Amendment 18 to the FMP. The current AM for the recreational sector requires that if the sum of the recreational and commercial landings exceed the stock ACL (recreational ACL plus commercial ACL) the AM is triggered. In this case, the National Marine Fisheries Service (NMFS) must file a notice at or near the beginning of the following fishing year to reduce the length of the recreational season by the amount necessary to ensure recreational landings may achieve the recreational ACT, but do not exceed the recreational ACL. To determine whether an ACL has been exceeded, Amendment 18 required using 2011 landings in the first year, then the average of 2011/12 in the second year and then a three-year average of landings in the third year onwards, unless an ACL changed, in which case the first single year of landings will be compared to the ACL. Because Amendment 20B changed the ACL beginning in 2015 (based on the stock assessment), only the 2015 landings are used to determine whether the recreational or stock ACL was exceeded such that the AM is triggered. For 2015, both the recreational ACL and the stock ACL were exceeded, and thus, the length of the 2016 fishing season must be reduced.

4.3.2 Economic Effects

The modifications to the recreational AMs proposed in **Action 3** will potentially make the accountability measures for Atlantic cobia the same as or closer to those set by the Council for other species (SAFMC 2016). **Alternative 2** options are potentially less restrictive than those of **Alternative 3**, as **Alternative 2** options will monitor landings for a persistence in increased landings, and would result in a reduced length of following season, if necessary. **Alternative 3** options will automatically reduce the recreational sector ACL in the next season by the amount

of overage. Assuming the recreational ACL is exceeded, greater short-term negative economic effects would be expected from **Alternative 3** options than from **Alternative 2** options. However, if the ACL is not exceeded in any given season, there would be no differences between **Action 3** alternatives.

Alternative 4 gives the regional administrator (RA) authority to implement in season closures for cobia in case the ACL is met or project to be met. If the ACL is exceeded, the regional administrator could close the fishery to limit the size of the overage. **Sub-alternative 4a** would allow the RA to implement an in season closure only if the species is overfished. **Sub-alternative 4b** would allow the closure regardless of stock status. Minimizing ACL overages has long-term positive economic effects.

Alternative 5 is similar to **Alternative 2**, but allows the RA to implement reduced recreational vessel limits for cobia in case the ACL is consistently exceeded after being monitored for persistence. The overall economic effects would vary based on the severity of the vessel limit reduction.

4.3.3 Social Effects

Accountability measures can have significant direct and indirect social effects because, when triggered, can restrict harvest in the current season or subsequent seasons. While the negative effects are usually short-term, they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects. Some of those effects are similar to other thresholds being met and may involve switching to other species or discontinuing fishing altogether. Those restrictions usually translate into reduced opportunity for harvest which in turn can change fishing behaviors through species switching if the opportunity exists. That behavior can increase pressure on other stocks or amplify conflict. If there are no opportunities to switch species then losses of income or fishing opportunities may occur which can act like any downturn in an economy for fishing communities affected. If there is a substantial downturn then increased unemployment and other disruptions to the social fabric may occur. While these negative effects are usually short term, they may at times induce other indirect effects through the loss of fishing infrastructure that can have a lasting effect on a community.

In general, the most beneficial in the long term for the stock and for sustainable fishing opportunities a combination of an in-season closure and a payback provision. However, some flexibility in how these AMs are triggered, such as conditions of the stock being overfished or the total ACL being exceeded, can help to mitigate the negative short-term impacts on fishermen and associated businesses and communities.

Alternative 1 (No Action) would not modify the current recreational AMs for Atlantic cobia, including the use of the three-year rolling average in the evaluation of an overage. The rolling average may penalize the recreational sector by incorporating one year of very high landings into the evaluation of recreational landings for the next three years. **Preferred Alternative 2** would remove the rolling average and use only the most recent year's landings to evaluate the overage.

This would likely be more beneficial to recreational fishermen because one year of high landings would not result in multiple years of a shortened season. The conditions to trigger the AM in **Sub-alternative 2a**, **Preferred Sub-alternative 2b**, and **Sub-alternative 2c** help to reduce the likelihood that the AM will be triggered, and only if it is necessary to minimize negative effects on the Atlantic cobia resource.

Alternative 3 would implement a reduction in the subsequent year's recreational ACL if there is an overage, which could negatively affect the season length and recreational fishing opportunities. However, the conditions under **Sub-alternatives 3a-3c** will help to only implement the AM when necessary to minimize negative effects on the Atlantic cobia resource. **Alternative 4** would modify the AMs to include an in-season closure if the recreational ACL is expected to be met, which could help to avoid exceeding the ACL and post-season AMs to be triggered, but could also shorten the current year's fishing season. It would be less likely that an in-season closure would be triggered under **Sub-alternative 4a** than under **Sub-alternative 4b**.

Implementing a lower vessel limit as the accountability measure in **Alternative 5**, particularly as the first measure in a series of potential post-season AMs, would be expected to have less negative effects on recreational fishermen than a post-season that would shorten the season. The conditions to trigger the AM in **Sub-alternatives 5a-5c** help to reduce the likelihood that the AM will be triggered, and only if it is necessary to minimize negative effects on the Atlantic cobia resource.

4.3.4 Administrative Effects

Modifying the accountability measure is an administrative action which will have implications for rule making, outreach and education. However, none of the alternatives are expected to be more administratively burdensome than the others.

4.4 Action 4: Establish a commercial trip limit for Atlantic cobia

Alternative 1 (No Action). Do not modify the possession limit of 2 fish per person per day.

Alternative 2. Establish a commercial trip limit for Atlantic cobia of 2 fish per person per day. The trip limit will decrease to 1 fish per person per day when 75% of the commercial ACL has been met.

Alternative 3. Establish a commercial trip limit for Atlantic cobia of 6 fish per vessel per day. The trip limit will decrease to 3 fish per vessel per day when 75% of the commercial ACL has been met.

Alternative 4. Establish a commercial trip limit for Atlantic cobia of 2 fish per person per day, with no more than 6 fish per vessel per day. The trip limit will decrease to 1 fish per person per day, with no more than 3 per vessel per day when 75% of the commercial ACL has been met.

4.4.1 Biological Effects

Cobia are unique among federally managed species in the southeast region, in that no federal commercial vessel fishery permit is required to commercially harvest cobia in federal waters. In federal waters there is a daily possession limit of two cobia per person that applies to both recreational and commercial catch. This makes the distinction between recreationally caught cobia and commercially caught cobia difficult, and the regulations define them as “cobia that are not sold” and “cobia that are sold.” For purposes of this discussion, we will use the following terms interchangeably: “recreational” with “cobia that are not sold” and “commercial” with “cobia that are sold.” Although a federal commercial vessel fishing permit is not required to fish for and sell cobia, federally permitted dealers can only buy cobia harvested from federally permitted fishing vessels; therefore, cobia harvested from a vessel fishing without any federal vessel fishing permit may only sell to a dealer that has a state license but not a federal license. The ACL for commercial cobia from Georgia to New York is 60,000 pounds.

The action alternatives under Action 4 propose a commercial trip limit once 75% of the commercial ACL is reached. **Alternative 1 (no action)** would not change the possession limit of cobia of 2 fish per person per day. **Alternative 2** would modify the commercial trip limit of 2 fish per person per day once 75% of the ACL to 1 fish per person per day. **Alternative 3** proposes a commercial trip limit of six fish per vessel per day but this would be decreased to three fish per vessel per day once 75% of the ACL has been met. **Alternative 4** would establish a commercial trip limit of 2 fish per person per day with no more than six fish per vessel per day. Once 75% of the ACL has been met, the trip limit will decrease to 1 fish per person per day with no more than three fish per vessel.

Table 4.4.1 reviews the commercial landings from 2005-2015 as well as when the landings

reached 75% of the ACL.

Table 4.4.1.1 Estimated month when actual Atlantic cobia commercial landings reached 75% of the commercial ACL (37,500 lbs ww) and the current commercial ACL (50,000 lbs ww).

Year	Total Commercial Landings	Month when landings reached 75% of ACL	Month when landings reached current ACL
2005	29,290	--	--
2006	31,990	--	--
2007	32,037	--	--
2008	33,739	--	--
2009	42,385	November	--
2010	56,393	September	November
2011	33,963	--	--
2012	42,176	September	--
2013	53,108	August	November
2014	69,197	August	September
2015	83,148 (P)	July	--

Based on historic landings, in many years the reduced trip limit would not go into effect. Outside of a brief closure period in December 2014, the commercial cobia fishery has not faced a closure, but some years the ACL has been exceeded. The amended ACL for the Atlantic stock cobia (GA to NY) did not go into effect until 2015. However, based on **Table 4.4.1**, in recent years, reducing the trip limit when 75% of the ACL was met would likely have extended the season and prevented potential closures of the commercial fishery.

Alternative 2 would potentially be more restrictive than **Alternative 1 (No Action)** because it would reduce the commercial trip limit to 1 fish per person when 75% of the commercial ACL is reached, restricting harvest of cobia on commercial trips. Without additional trip-level analyses, it is not possible at this time to determine how restrictive a 6 fish or 3 fish per vessel per day would be in comparison to cobia landings that have occurred on commercial trips in recent years (**Alternative 3**). Presumably the step down in trip limits present in **Alternative 2** through **Alternative 4** would allow the commercial cobia fishery to remain open longer, which may offer benefits to the fishermen by allowing a longer season.

4.4.2 Economic Effects

Generally, trip limits are not considered to be economically efficient because they require an increase in the number of trips and associated trip costs to land the same amount of fish. However, the negative economic effects of this inefficiency can be offset by price support resulting from the supply limitations and the lengthening of seasons. Given the relatively restrictive commercial limit on cobia of 2 fish per person per day, the fewer the trips that have to

stop keeping cobia because the trip limit has been reached would result in the least amount of direct negative economic effect, assuming the ACL is not met and the season does not close. There are no specific trip costs available for trips landing cobia, therefore specific values associated with trip costs cannot be estimated.

Alternative 2 would potentially be more restrictive than **Alternative 1 (No Action)** because it would reduce the commercial trip limit to 1 fish per person when 75% of the commercial ACL is reached, reducing revenue received from cobia landed on commercial trips. **Alternative 3** would establish a vessel limit of 6 fish per vessel per day that would decrease to three fish per vessel per day. Without additional trip-level analyses, it is not possible at this time to determine how restrictive a 6 fish or 3 fish per vessel per day would be in comparison to cobia landings that have occurred on commercial trips in recent years. Presumably the step down in trip limits present in **Alternative 2** through **Alternative 4** would allow the commercial cobia fishery to remain open longer, which may help offset the negative economic effects of the reduced trip limit.

Based on historic landings, in many years the reduced trip limit would not go into effect. Outside of a brief closure period in December 2014, the commercial cobia fishery has not faced a closure, but some years have seen the ACL exceeded. Additionally, the amended ACL for the Atlantic stock cobia (GA to NY) did not go into effect until 2015. However, based on **Table 4.4.1.1**, in recent years, reducing the trip limit when 75% of the ACL was met would likely have extended the season and prevented potential closures of the commercial fishery. There are long-term economic benefits to not exceeding the ACL and actions that prevent or delay closures would allow fishermen to continue to produce income from cobia incidentally caught later in the year.

4.4.3 Social Effects

In general, a commercial trip limit may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded, but trip limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away. Additionally, if the trip limit is too low, the commercial ACL may not be met.

However, commercial harvest of Atlantic cobia is limited and likely comes from incidental catch on trips targeting other species. Additionally, the commercial limit is already very low as applied at the crew member level or the vessel level. In most years, it is more unlikely that the step-down in **Alternatives 2-4** at 75% of the commercial ACL will be implemented (**Table 4.4.1.1**) and the effects of **Alternative 1 (No Action)** through **Alternative 4** would be minimal for the commercial sector. However, in years with higher levels of commercial landings, the lower commercial limit in **Alternatives 2-4** may help slow the rate of harvest and reduce the likelihood of an early in-season closure or an overage.

4.4.4 Administrative Effects

There will be no difference in the administrative burden between **Alternative 2, Alternative 3 and Alternative 4**. However, these action alternatives will have a greater administrative burden than **Alternative 1**. These impacts will be associated with rule-making, quota monitoring, outreach and education and enforcement.

Chapter 5. Council's Choice for the Preferred Alternatives

5.1 Modify the recreational management measures for Atlantic cobia

Action 1-1: Modify the recreational harvest limits for Atlantic cobia

Action 1-2: Modify the minimum size limit for recreational harvest of Atlantic cobia

5.1.1 Public Comments and Recommendations

5.1.2 Council's Choice for Preferred Alternative

5.2 Modify the recreational fishing year for Atlantic cobia

5.2.1 Public Comments and Recommendations

5.2.2 Council's Choice for Preferred Alternative

5.3 Modify the recreational accountability measures for Atlantic cobia

5.3.1 Public Comments and Recommendations

5.3.2 Council's Choice for Preferred Alternative

5.4 Establish a commercial trip limit for Atlantic cobia

5.4.1 Public Comments and Recommendations

5.4.2 Council's Choice for Preferred Alternative

Chapter 6. Cumulative Effects

TO BE UPDATED

6.1 Affected Area

The immediate impact area would be the federal 200-mile limit of the Atlantic off the coasts of South Carolina, Georgia, and east Florida to Key West, which is also the South Atlantic Fishery Management Council's (South Atlantic Council) area of jurisdiction. The range of the affected species is described in **Section 3.2**. For this action, the cumulative effects analysis (CEA) includes an analysis of actions and events dating back to 2010 and through what is expected to take place approximately before or within 2015-2016.

6.2 Past, Present, and Reasonably Foreseeable Actions Impacting the Affected Area

Past Actions

The reader is referred to **Appendix C** for a list of all past regulatory activity for species in the CMP FMP. Recently implemented actions are listed below.

Amendment 18 to the CMP FMP (GMFMC/SAFMC 2011) established annual catch limits (ACL), annual catch targets (ACT), and accountability measures (AM) for king mackerel, Spanish mackerel, and cobia. The amendment also established both Atlantic and Gulf of Mexico (Gulf) migratory groups for cobia; modified the framework procedures; and removed the following species from the fishery management unit: cero, little tunny, dolphin and bluefish.

Generic amendments have been implemented requiring headboats in the South Atlantic and Gulf to report each week through electronic means. Regulations in the South Atlantic went into place on January 27, 2014, and regulations in the Gulf went into place on March 5, 2014.

Amendment 20A (GMFMC/SAFMC 2013a) allows certain types of sale of recreationally caught fish in each region. For the Atlantic region, Amendment 20A allows the sale of recreationally caught king and Spanish mackerel only from state-permitted tournaments where the proceeds are donated to charity. In addition, the amendment removes the income requirement for king and Spanish mackerel commercial permits. This action could increase the number of Spanish mackerel permits, which are open access.

Amendment 20B (GMFMC/SAFMC 2014b), which has been approved by the Gulf of Mexico and South Atlantic Fishery Management Councils, would establish transit provisions for travel through areas that are closed to king mackerel fishing, establish regional quotas for Atlantic migratory group king and Atlantic migratory group Spanish mackerel, modify the CMP FMP framework procedures, and modify the Gulf and Atlantic migratory group cobia ACLs and ACTs. NMFS published the proposed rule for Amendment 20B on October 31, 2014. The

amendment is expected to be approved for implementation prior to implementation of Framework Amendment 2.

The Joint Dealer Reporting Amendment, which was effective on August 7, 2014, is intended to improve the timeliness and accuracy of fisheries data reported by permitted dealers. The amendment created one dealer permit for all federally-permitted dealers in the southeast region. Previously, no dealer permit was previously required for CMP species. Requiring dealers to report landings data electronically each week is expected to improve in-season quota monitoring efforts, which would increase the likelihood that AMs can be implemented prior to commercial ACLs being exceeded.

A formal consultation was recently completed for the coastal migratory pelagics (CMP) fishery, triggered by the 2012 listing of five distinct population segments (Gulf of Maine, New York Bight, Chesapeake Bay, Carolina, and South Atlantic) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) under the Endangered Species Act. Additionally, in August 2014, the NMFS issued a final determination to newly list five Caribbean coral species found in the South Atlantic region as threatened and to maintain the threatened listing for the *Acropora* species (elkhorn and staghorn coral).

Reasonably Foreseeable Future Actions

Expected Impacts from Past, Present, and Future Actions

6.3 Consideration of Climate Change and Other Non-Fishery Related Issues

Climate Change

The Environmental Protection Agency's climate change webpage (<http://www.epa.gov/climatechange/>) provides basic background information on measured or anticipated effects from global climate change. A compilation of scientific information on climate change can be found in the United Nations Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007). Those findings are incorporated here by reference and are summarized. Global climate change can affect marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise, and through increases in wave height and frequency, loss of sea ice, and increased risk of diseases in marine biota. Decreases in surface ocean pH due to absorption of anthropogenic carbon dioxide emissions may affect a wide range of organisms and ecosystems. These influences could negatively affect biological factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators.

In the Southeast, general impacts of climate change have been predicted through modeling, with few studies on specific effects to species. Warming sea temperature trends in the southeast have been documented, and animals must migrate to cooler waters, if possible, if water temperatures

exceed survivable ranges (Needham et al. 2012). Mackerels and cobia are migratory species, and may shift their distribution over time to account for the changing temperature regime. However, no studies have shown such a change yet. Higher water temperatures may also allow invasive species to establish communities in areas they may not have been able to survive previously. An area of low oxygen, known as the dead zone, forms in the northern Gulf each summer, which has been increasing in recent years. Climate change may contribute to this increase by increasing rainfall that in turn increases nutrient input from rivers. This increased nutrient load causes algal blooms that, when decomposing, reduce oxygen in the water (Kennedy et al. 2002; Needham et al. 2012). Other potential impacts of climate change to the southeast include increases in hurricanes, decreases in salinity, altered circulation patterns, and sea level rise. The combination of warmer water and expansion of salt marshes inland with sea-level rise may increase productivity of estuarine-dependent species in the short term. However, in the long term, this increased productivity may be temporary because of loss of fishery habitats due to wetland loss (Kennedy et al. 2002). Actions from this amendment are not expected to significantly contribute to climate change through the increase or decrease in the carbon footprint from fishing.

Weather Variables

Hurricane season is from June 1 to November 30, and accounts for 97% of all tropical activity affecting the Atlantic basin. These storms, although unpredictable in their annual occurrence, can devastate areas when they occur. Although these effects may be temporary, those fishing-related businesses whose profitability is marginal may go out of business if a hurricane strikes.

Deepwater-Horizon Oil Spill

On April 20, 2010, an explosion occurred on the Deepwater Horizon MC252 oil rig, resulting in the release of an estimated 4.9 million barrels of oil into the Gulf. In addition, 1.84 million gallons of Corexit 9500A dispersant were applied as part of the effort to constrain the spill. The cumulative effects from the oil spill and response may not be known for several years.

Indirect and inter-related effects on the biological and ecological environment of the CMP fishery in concert with the Deepwater Horizon MC252 oil spill are not well understood at this time. Changes in the population size structure could result from shifting fishing effort to specific geographic segments of populations, combined with any anthropogenically induced natural mortality that may occur from the impacts of the oil spill. Direct and indirect impacts on the food web from phytoplankton, to zooplankton, to mollusks, to top predators in the South Atlantic have not been significant and are not likely to be significant in the future.

6.4 Overall Impacts Expected from Past, Present, and Future Actions

The proposed management actions are summarized in **Chapter 2** of this document. Detailed discussions of the magnitude and significance of the impacts of the preferred alternatives on the human environment appear in **Chapter 4** of this document. None of the impacts of the action in this framework, in combination with past, present, and future actions have been determined to be significant. Though Amendment 20A, Amendment 20B, Framework Amendment 1, and South Atlantic Framework Action 2013, all supported by Environmental Assessments, contain actions that affect the species addressed in this framework action (Framework Amendment 2), the

additive effects, beneficial and adverse, on the species and the fishery are not expected to result in a significant level of cumulative impacts.

The proposed action would not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places as these are not in the South Atlantic Exclusive Economic Zone (EEZ). This action is not likely to result in direct, indirect, or cumulative effects to unique areas, such as significant scientific, cultural, or historical resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas as the proposed action is not expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort within the South Atlantic region. The U.S. Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the South Atlantic EEZ. The proposed actions are not likely to cause loss or destruction of these national marine sanctuaries because the actions are not expected to result in appreciable changes to current fishing practices.

6.5 Monitoring and Mitigation

The effects of the proposed action are, and will continue to be, monitored through collection of landings data by states, NMFS, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. The proposed action relates to the harvest of an indigenous species in the Atlantic, and the activity being altered does not itself introduce non-indigenous species, and is not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, it does not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread on non-indigenous species.

None of the beneficial or adverse impacts from the proposed management action (as summarized in **Chapter 2** of this document) have been determined to be significant. See **Chapter 4** for the detailed discussions of the magnitude of the impacts of the preferred alternatives on the human environment. The action in CMP Framework Amendment 2 would not have significant biological, social, or economic effects because even though the action could extend fishing opportunities, accountability measures are also considered, and are in place to ensure overfishing does not occur. Therefore, the cumulative effects of the action proposed in CMP Framework Amendment 2 are not expected to affect bycatch, diversity and ecosystem structure of fish communities, or safety at sea of fishermen targeting CMP species, and other species managed by South Atlantic Council. Based on the cumulative effects analysis presented herein, the proposed action will not have any significant adverse cumulative impacts compared to, or combined with, other past, present, and foreseeable future actions

Chapter 7. List of Interdisciplinary Plan Team (IPT) Members

Name	Agency/Division	Title
Kari MacLauchlin	SAFMC	IPT Lead/Fishery Social Scientist
Karla Gore	SERO /SF	IPT Lead/Fishery Biologist
David Carter	SEFSC	Economist
Brian Chevront	SAFMC	Deputy Director
Rick DeVictor	SERO/SF	Fishery Biologist
John Hadley	SAFMC	Fishery Economist
Stephen Holiman	SERO/SF	Economist
Michael Jepson	SERO/SF	Fishery Social Scientist
Michael Larkin	SERO/LAPP	Biologist
Tony Lamberte	SERO/SF	Economist
Jennifer Lee	SERO/PR	Protected Resources
Scott Sandorf	SERO	Technical Writer
Noah Silverman	SERO	NEPA Specialist
Monica Smit-Brunello	NOAA GC	General Counsel
Iris Lowery	NOAA GC	General Counsel
Jocelyn D' Ambrosio	NOAA GC	General Counsel

NMFS = National Marine Fisheries Service, GMFMC = Gulf of Mexico Fishery Management Council, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel, OLE= Office of Law Enforcement

Chapter 8. Agencies Consulted

Responsible Agencies

Coastal Migratory Pelagics Framework Amendment 2

South Atlantic Fishery Management Council (Administrative Lead)

4055 Faber Place Drive, Suite 201

Charleston, South Carolina 29405

843-571-4366/ 866-SAFMC-10 (TEL)

843-769-4520 (FAX)

www.safmc.net

Gulf of Mexico Fishery Management Council

2203 North Lois Avenue, Suite 1100

Tampa, Florida 33607

813-348-1630/ 888-833-1844 (TEL)

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Environmental Assessment:

NMFS, Southeast Region

263 13th Avenue South

St. Petersburg, Florida 33701

727- 824-5301 (TEL)

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List of Agencies, Organizations, and Persons Consulted

SAFMC Law Enforcement Advisory Panel

SAFMC King and Spanish Mackerel Advisory Panel

SAFMC Scientific and Statistical Committee

North Carolina Coastal Zone Management Program

South Carolina Coastal Zone Management Program

Georgia Coastal Zone Management Program

Florida Coastal Zone Management Program

Florida Fish and Wildlife Conservation Commission

Georgia Department of Natural Resources

South Carolina Department of Natural Resources

North Carolina Division of Marine Fisheries

Virginia Marine Resources Commission

Atlantic States Marine Fisheries Commission

National Marine Fisheries Service

- Washington Office

- Office of Ecology and Conservation

- Southeast Regional Office

- Southeast Fisheries Science Center

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Appendix A. Glossary

Allowable Biological Catch (ABC): Maximum amount of fish stock than can be harvested without adversely affecting recruitment of other components of the stock. The ABC level is typically higher than the total allowable catch, leaving a buffer between the two.

ALS: Accumulative Landings System. NMFS database which contains commercial landings reported by dealers.

Biomass: Amount or mass of some organism, such as fish.

B_{MSY}: Biomass of population achieved in long-term by fishing at F_{MSY}.

Bycatch: Fish harvested in a fishery, but not sold or kept for personal use. Bycatch includes economic discards and regulatory discards, but not fish released alive under a recreational catch and release fishery management program.

Catch Per Unit Effort (CPUE): The amount of fish captured with an amount of effort. CPUE can be expressed as weight of fish captured per fishing trip, per hour spent at sea, or through other standardized measures.

Charter Boat: A fishing boat available for hire by recreational anglers, normally by a group of anglers for a short time period.

Cohort: Fish born in a given year. (See year class.)

Control Date: Date established for defining the pool of potential participants in a given management program. Control dates can establish a range of years during which a potential participant must have been active in a fishery to qualify for a quota share.

Constant Catch Rebuilding Strategy: A rebuilding strategy where the allowable biological catch of an overfished species is held constant until stock biomass reaches B_{MSY} at the end of the rebuilding period.

Constant F Rebuilding Strategy: A rebuilding strategy where the fishing mortality of an overfished species is held constant until stock biomass reached B_{MSY} at the end of the rebuilding period.

Directed Fishery: Fishing directed at a certain species or species group.

Discards: Fish captured, but released at sea.

Discard Mortality Rate: The % of total fish discarded that do not survive being captured and released at sea.

Derby: Fishery in which the TAC is fixed and participants in the fishery do not have individual quotas. The fishery is closed once the TAC is reached, and participants attempt to maximize their harvests as quickly as possible. Derby fisheries can result in capital stuffing and a race for fish.

Effort: The amount of time and fishing power (i.e., gear size, boat size, horsepower) used to harvest fish.

Exclusive Economic Zone (EEZ): Zone extending from the shoreline out to 200 nautical miles in which the country owning the shoreline has the exclusive right to conduct certain activities such as fishing. In the United States, the EEZ is split into state waters (typically from the shoreline out to 3 nautical miles) and federal waters (typically from 3 to 200 nautical miles).

Exploitation Rate: Amount of fish harvested from a stock relative to the size of the stock, often expressed as a percentage.

F: Fishing mortality.

Fecundity: A measurement of the egg-producing ability of fish at certain sizes and ages.

Fishery Dependent Data: Fishery data collected and reported by fishermen and dealers.

Fishery Independent Data: Fishery data collected and reported by scientists who catch the fish themselves.

Fishery Management Plan: Management plan for fisheries operating in the federal produced by regional fishery management councils and submitted to the Secretary of Commerce for approval.

Fishing Effort: Usually refers to the amount of fishing. May refer to the number of fishing vessels, amount of fishing gear (nets, traps, hooks), or total amount of time vessels and gear are actively engaged in fishing.

Fishing Mortality: A measurement of the rate at which fish are removed from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Fishing Power: Measure of the relative ability of a fishing vessel, its gear, and its crew to catch fishes, in reference to some standard vessel, given both vessels are under identical conditions.

F_{30%SPR}: Fishing mortality that will produce a static SPR = 30%.

F_{45%SPR}: Fishing mortality that will produce a static SPR = 45%.

F_{OY}: Fishing mortality that will produce OY under equilibrium conditions and a corresponding biomass of B_{OY}. Usually expressed as the yield at 85% of F_{MSY}, yield at 75% of F_{MSY}, or yield at 65% of F_{MSY}.

F_{MSY}: Fishing mortality that if applied constantly, would achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}

Fork Length (FL): The length of a fish as measured from the tip of its snout to the fork in its tail.

Framework: An established procedure within a fishery management plan that has been approved and implemented by NMFS, which allows specific management measures to be modified via regulatory amendment.

Gear restrictions: Limits placed on the type, amount, number, or techniques allowed for a given type of fishing gear.

Growth Overfishing: When fishing pressure on small fish prevents the fishery from producing the maximum poundage. Condition in which the total weight of the harvest from a fishery is improved when fishing effort is reduced, due to an increase in the average weight of fishes.

Gulf of Mexico Fishery Management Council (GFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The GFMC develops fishery management plans for fisheries off the coast of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida.

Head Boat: A fishing boat that charges individual fees per recreational angler onboard.

Highgrading: Form of selective sorting of fishes in which higher value, more marketable fishes are retained, and less marketable fishes, which could legally be retained are discarded.

Individual Fishing Quota (IFQ): Fishery management tool that allocates a certain portion of the TAC to individual vessels, fishermen, or other eligible recipients.

Longline: Fishing method using a horizontal mainline to which weights and baited hooks are attached at regular intervals. Gear is either fished on the bottom or in the water column.

Magnuson-Stevens Fishery Conservation and Management Act: Federal legislation responsible for establishing the fishery management councils and the mandatory and discretionary guidelines for federal fishery management plans.

Marine Recreational Fisheries Statistics Survey (MRFSS): Survey operated by NMFS in cooperation with states that collects marine recreational data.

Maximum Fishing Mortality Threshold (MFMT): The rate of fishing mortality above which a stock's capacity to produce MSY would be jeopardized.

Maximum Sustainable Yield (MSY): The largest long-term average catch that can be taken continuously (sustained) from a stock or stock complex under average environmental conditions.

Minimum Stock Size Threshold (MSST): The biomass level below which a stock would be considered overfished.

Modified F Rebuilding Strategy: A rebuilding strategy where fishing mortality is changed as stock biomass increases during the rebuilding period.

Multispecies fishery: Fishery in which more than one species is caught at the same time and location with a particular gear type.

National Marine Fisheries Service (NMFS): Federal agency within NOAA responsible for overseeing fisheries science and regulation.

National Oceanic and Atmospheric Administration: Agency within the Department of Commerce responsible for ocean and coastal management.

Natural Mortality (M): A measurement of the rate at which fish are removed from a population by natural causes. Natural mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Optimum Yield (OY): The amount of catch that will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.

Overfished: A stock or stock complex is considered overfished when stock biomass falls below the minimum stock size threshold (MSST) (e.g., current biomass < MSST = overfished).

Overfishing: Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing).

Quota: % or annual amount of fish that can be harvested.

Recruitment (R): Number or percentage of fish that survives from hatching to a specific size or age.

Recruitment Overfishing: The rate of fishing above which the recruitment to the exploitable stock becomes significantly reduced. This is characterized by a greatly reduced spawning stock, a decreasing proportion of older fish in the catch, and generally very low recruitment year after year.

Scientific and Statistical Committee (SSC): Fishery management advisory body composed of federal, state, and academic scientists, which provides scientific advice to a fishery management council.

Selectivity: The ability of a type of gear to catch a certain size or species of fish.

South Atlantic Fisheries Management Council (SAFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The SAFMC develops fishery management plans for fisheries off North Carolina, South Carolina, Georgia, and the east coast of Florida.

Spawning Potential Ratio (Transitional SPR): Formerly used in overfished definition. The number of eggs that could be produced by an average recruit in a fished stock divided by the number of eggs that could be produced by an average recruit in an unfished stock. SPR can also be expressed as the spawning stock biomass per recruit (SSBR) of a fished stock divided by the SSBR of the stock before it was fished.

% Spawning Per Recruit (Static SPR): Formerly used in overfishing determination. The maximum spawning per recruit produced in a fished stock divided by the maximum spawning per recruit, which occurs under the conditions of no fishing. Commonly abbreviated as %SPR.

Spawning Stock Biomass (SSB): The total weight of those fish in a stock which are old enough to spawn.

Spawning Stock Biomass Per Recruit (SSBR): The spawning stock biomass divided by the number of recruits to the stock or how much spawning biomass an average recruit would be expected to produce.

Total Allowable Catch (TAC): The total amount of fish to be taken annually from a stock or stock complex. This may be a portion of the Allowable Biological Catch (ABC) that takes into consideration factors such as bycatch.

Total Length (TL): The length of a fish as measured from the tip of the snout to the tip of the tail.

Appendix B. Alternatives Considered but Rejected

Appendix C. History of Management

The Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and South Atlantic Region (CMP FMP; GMFMC/SAFMC 1982), with an environmental impact statement (EIS), was approved in 1982 and implemented by regulations effective in February 1983. Managed species included king mackerel, Spanish mackerel, and cobia. The CMP FMP treated cobia as one stock in the Atlantic and Gulf of Mexico (Gulf) and established the maximum sustainable yield (MSY) at 1.057 million pounds (mp). The optimum yield (OY) was defined as all cobia equal to or larger than 33 inches fork length (FL) that can be harvested by U.S. fishermen under current fishery conditions, and possession of cobia less than at 33 inches FL was prohibited. The management objective for cobia was to institute management measures necessary to increase yield per recruit and average size and to prevent overfishing.

CMP FMP Amendments

1. **Amendment 1**, with EIS, implemented in September 1985, provided a framework procedure for pre-season adjustment of total allowable catch (TAC) and established the fishing year as January 1 through December 31. The minimum size limit was designated as 33 inches FL or 37 inches total length (TL). Additionally, the Councils designated Problem #5 for the CMP FMP to address as: Cobia are presently harvested at a size below that necessary for maximum yield and may be overfished in some areas beyond the management area; most southeastern states have not yet adopted the recommended minimum size limit; no management action has been taken by states which have jurisdiction over cobia populations in Chesapeake Bay, which appear to have been overfished; and federal enforcement capability is limited and not believed to be very effective in this case.

Amendment 2, with an environmental assessment (EA), implemented in July 1987, except for the charter vessel permit requirements that became effective in August 1987. The amendment established federal permit requirements for for-hire vessels fishing for coastal migratory pelagics in the EEZ. For-hire vessels would comply with bag limits but could fish under a commercial quota with a commercial permit when not on under charter.

Amendment 3, with EA, was partially approved in August 1989, revised, resubmitted, and approved in April 1990. It prohibited drift gillnets for coastal pelagic species and purse seines for the overfished migratory groups of mackerels.

Amendment 5, with EA, implemented in August 1990, made the following changes in the management regime:

- Revised a specified problem that the condition of the cobia stock is unknown and increased landings over the last ten years have prompted concern about overfishing. The MSY is set at 1 mp.
- Specified parameters for ‘overfishing’ and ‘overfished’ designations
- Added cobia to the annual stock assessment procedure;

- Cobia possession limit is 2 fish per person per day with a 1-day possession limit.

Amendment 6, with EA, implemented in November of 1992, made the following changes:

- Identified additional problems and an objective in the fishery;
- Provided for rebuilding overfished stocks of mackerels within specific periods;
- Provided for biennial assessments and adjustments;
- Specified the minimum size limit 33 inches FL (remove reference to 37 inches TL).
- MSY set at 2.2 mp based on the 1992 Report of the Mackerel Stock Assessment Panel.

Amendment 8, with EA, implemented in March 1998, made the following changes to the management regime:

- Extend the management area for cobia through New York, i.e., through the jurisdiction of the Mid-Atlantic Fishery Management Council. Note: This action extended the 2 fish bag limit and 33"FL minimum size limit through the Mid-Atlantic Council's area.
- Established allowable gear in the South Atlantic and Mid-Atlantic areas as well as providing for the Regional Administrator to authorize the use of experimental gear;
- Overfishing: For species like cobia, when there is insufficient information to determine whether the stock or migratory group is overfished (transitional SPR), overfishing is defined as a fishing mortality rate in excess of the fishing mortality rate corresponding to a default threshold static SPR of 30 percent. If overfishing is occurring, a program to reduce fishing mortality rates to at least the level corresponding to management target levels will be implemented.
- Modified the Stock Assessment Panel process.
- Optimum Yield (OY) for cobia is set at MSY, currently 2.2 million pounds, in accord with the recommendation of the SPRMSC that, because of limited data, SPR not be used for cobia.
- Established various data consideration and reporting requirements under the framework procedure;
- Modified the seasonal framework adjustment measures and specifications; and revised specified problems in the fishery for the FMP

1. **Amendment 11**, with SEIS, partially approved in December 1999, included Maximum sustainable yield for species in the coastal migratory pelagic management unit is unknown. The Council reviewed alternatives and concluded the best available data supports using 30% Static SPR as a proxy for MSY. Note: This was not approved.
2. Optimum Yield (OY) for the coastal migratory pelagic fishery is the amount of harvest that can be taken by U.S. fishermen while maintaining the Spawning Potential Ratio (SPR) at or above 40% Static SPR.
3. Overfishing for all species in the coastal migratory pelagics management unit is defined as a fishing mortality rate (F) in excess of the fishing mortality rate at 30% Static SPR (F30%Static SPR) which is the coastal migratory pelagics MSY proxy. The "threshold level" for all species in the coastal migratory pelagic management unit is defined as 10% Static SPR.

Amendment 13, with SEIS, implemented August 2002, established two marine reserves in the EEZ of the Gulf in the vicinity of the Dry Tortugas, Florida known as Tortugas North and Tortugas South in which fishing for coastal migratory pelagic species is prohibited. This action

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Appendix C. Management History

complements previous actions taken under the National Marine Sanctuaries Act.

Amendment 18, with EA, implemented in January 2012 established ACLs, ACTs, and AMs for cobia. The amendment established Atlantic and Gulf migratory groups for cobia with the stock boundary set at the management boundary between the councils, and also modified the framework procedures.

Amendment 20B, with EA, implemented in March 2015 revised the ACLs and ACTs for Atlantic and Gulf cobia based on the recent stock assessment (SEDAR 28). The amendment also modified the boundary between Atlantic and Gulf cobia to be at the Georgia/Florida state line, to align with the stock boundary used in SEDAR 28.

Appendix D. **Bycatch Practicability Analysis**

Appendix E. **Regulatory Impact Review**

Appendix F. **Regulatory Flexibility Analysis**

Appendix G. **Other Applicable Law**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the Exclusive Economic Zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making are summarized below.

Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

The proposed rule associated with this amendment will include a request for public comment, and if approved, upon publication of the final rule, there will be a 30-day wait period before the regulations are effective in compliance with the APA.

Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that directly affect any land or water use or natural resource of a state’s coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency

determination are set forth in NOAA regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state's coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission to the Secretary of Commerce, NMFS will determine if this framework amendment is consistent with the Coastal Zone Management programs of the states of Florida, Georgia, South Carolina, to the maximum extent possible. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

Information Quality Act

The Information Quality Act (IQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the IQA directs the Office of Management and Budget (OMB) to issue government wide guidelines that "provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to OMB on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the IQA, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data, and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

CMP Framework Amendment 2 uses the best available information and makes a broad presentation thereof. The Southeast Fisheries Science Center has reviewed the document, and has determined the information contained in this document was developed using best available scientific information. Therefore, this document is in compliance with the IQA.

Endangered Species Act (ESA)

The ESA of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of

threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NMFS to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They conclude informally when proposed actions may affect but are “not likely to adversely affect” threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are “likely to adversely affect” threatened or endangered species or adversely modify designated critical habitat.

NMFS completed a biological opinion, evaluating the impacts of the CMP fishery on ESA-listed species on August 13, 2007 (NMFS 2007). The opinion concluded the fishery would not affect ESA-listed marine mammals, *Acropora* corals, Gulf sturgeon, or listed critical habitat for North Atlantic right whales, and is not likely to jeopardize the continued existence or recovery of any listed sea turtle species or smalltooth sawfish. However, the opinion did state that the CMP fishery would adversely affect sea turtles and smalltooth sawfish and thus NMFS issued an Incidental Take Statement for these species. Reasonable and Prudent Measures to minimize the impact of these incidental takes were specified, along with Terms and Conditions to implement them.

Subsequent to the biological opinion, NMFS made several modifications to the list of protected species for which they are responsible. These changes included: (1) the designation of *Acropora* critical habitat, (2) the determination that the loggerhead sea turtle population consists of nine distinct population segments (DPSs; 76 FR 58868), (3) the listing of five DPSs of Atlantic sturgeon, and (4) the designation of critical habitat for the Northwest Atlantic DPS of loggerhead sea turtles (79 FR 39855). Further, NMFS has proposed the listing of 66 additional coral species (7 of which are in the South Atlantic or Gulf of Mexico) and the reclassification of *Acropora* from threatened to endangered (77 FR 73220).

NMFS addressed how the designation of *Acropora* critical habitat could impact the determinations of the 2007 biological opinion in a consultation memorandum. NMFS concluded the continued authorization of the CMP fishery, is not likely to adversely affect *Acropora* critical habitat (May 18, 2010). NMFS is similarly addressing how the CMP fishery could affect the newly designated critical habitat for the NWA loggerhead DPS in an additional memorandum. This memorandum was completed on November 3, 2014.

The listing of five DPSs of Atlantic sturgeon triggered reinitiation of consultation under Section 7 of the ESA because the previous opinion did not consider what effects the CMP fishery is likely to have on this species. Atlantic sturgeon are known to be captured by fishermen fishing for CMP species, therefore NMFS Protected Resources must analyze the impacts of these potential interactions. The Sustainable Fisheries Division requested reinitiation of Section 7 consultation on November 26, 2012. Following the request for consultation the Sustainable Fisheries Division considered the effects of the fishery on Atlantic sturgeon and developed ESA 7(a)(2) and 7(d) determinations in a January 11, 2013, memorandum. The CMP fishery is currently operating under the 7(a)(2) and 7(d) determinations while consultation proceeds.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as “depleted.” A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; and Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans.

The 2015 proposed List of Fisheries classifies the Gulf and South Atlantic coastal migratory pelagic hook-and-line fishery as a Category III fishery (79 FR 50589, August 25, 2014). Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities. The Gulf and South Atlantic coastal migratory pelagic gillnet fishery is classified as Category II fishery. This classification indicates an occasional incidental mortality or serious injury of a marine mammal stock resulting from the fishery (1-50% annually of the potential biological removal). The fishery has no documented interaction with marine mammals; NMFS classifies this fishery as Category II based on analogy (similar risk to marine mammals) with other gillnet fisheries.

The action in this framework amendment is not expected to negatively impact marine mammals.

Essential Fish Habitat

The amended Magnuson-Stevens Act included a new habitat conservation provision known as Essential Fish Habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements the South Atlantic Fishery Management Council has, under separate action, approved an environmental impact statement (SAFMC 1998) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH.

An EFH consultation was completed on October 16, 2014, for this action, and determined that no adverse impacts on EFH is expected.

Executive Orders

E.O. 12630: Takings

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The NOAA Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

E.O. 12866: Regulatory Planning and Review

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations would have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act.

On June 12, 2014, the Small Business Administration issued a final rule revising the small business size standards for several industries effective July 14, 2014 (79 FR 33647). The rule increased the size standard for Finfish Fishing from \$19.0 to \$20.5 million, Shellfish Fishing from \$5.0 to \$5.5 million, and Other Marine Fishing from \$7.0 to \$7.5 million.

In light of these new standards, NMFS has preliminarily determined that the proposed action would not have a significant economic impact on a substantial number of small entities.

E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

This Executive Order mandates that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions. Federal agency responsibilities under this Executive Order include conducting their programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefit of, or subjecting persons to discrimination under, such, programs policies, and activities, because of their race, color, or national origin. Furthermore, each federal agency responsibility set forth under this Executive Order shall apply equally to Native American programs. Environmental justice considerations are discussed in detail in **Section 3.4**.

The action in this framework amendment is not expected to negatively impact minority or low-income populations.

E.O. 12962: Recreational Fisheries

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries Coordination Council (Council) responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

The action in this framework amendment does not affect the recreational sector of the coastal migratory pelagic fishery.

E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not

national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes and local entities (international too).

No federalism issues have been identified relative to the actions proposed in this amendment.

References

National Marine Fisheries Service (NMFS). 2007. Biological Opinion, ESA Section 7 Consultation for the Continued Authorization of Fishing under the Fishery Management Plan (FMP) for Coastal Migratory Pelagic Resources in the Atlantic and Gulf of Mexico (CMPR FMP). NMFS Southeast Regional Office Protected Resources Division: St. Petersburg, FL.

South Atlantic Fishery Management Council (SAFMC). 1998. Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans in the South Atlantic Region, including environmental assessment, regulatory impact review, and fishery impact statement. South Atlantic Fishery Management Council, Charleston, South Carolina. Available at: http://ocean.floridamarine.org/efh_coral/pdfs/Comp_Amend/EFHAmendCovTOC.pdf.

Atlantic States Marine Fisheries Commission

Tautog Management Board

*August 2, 2016
12:15 – 1:45 p.m.
Alexandria, Virginia*

Draft Agenda

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

1. Welcome/Call to Order (*A. Nowalsky*) 12:15 p.m.
2. Board Consent 12:15 p.m.
 - Approval of Agenda
 - Approval of Proceedings from February 2016
3. Public Comment 12:20 p.m.
4. 2016 Regional Stock Assessments for Long Island Sound (LIS) and New Jersey-New York Bight (NJ-NYB) **Action** 12:30 p.m.
 - Presentation of the LIS Stock Assessment Report (*J. Kasper*)
 - Presentation of the NJ-NY Bight Stock Assessment Report (*J. McNamee*)
 - Presentation of the Peer Review Panel Report (*P. Campfield*)
 - Consider Acceptance of Regional Stock Assessments and Peer Review Report for Management Use
5. Consider a Specific Regional Management Approach for Draft Amendment 1 (*A. Nowalsky*) **Possible Action** 1:10 p.m.
6. Update on Commercial Harvest Tagging Program (*A. Harp*) 1:40 p.m.
7. Other Business/Adjourn 1:45 p.m.

The meeting will be held at the Westin Alexandria; 400 Courthouse Square; Alexandria, VA; 703.253.8600

MEETING OVERVIEW

Tautog Management Board Meeting
August 2, 2016
12:15 – 1:45 p.m.
Alexandria, Virginia

Chair: Adam Nowalsky (NJ) <i>Assumed Chairmanship:</i> 05/15	Technical Committee Chair: Jason McNamee (RI)	Law Enforcement Committee Representative: Jason Snellbaker
Vice Chair: David Simpson (11/15)	Advisory Panel Chair: VACANT	Previous Board Meeting: February 3, 2016
Voting Members: MA, RI, CT, NY, NJ, DE, MD, VA, NMFS, USFWS (10 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 2016

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

<p>4. 2016 Regional Stock Assessments for Long Island Sound (LIS) and New Jersey-New York Bight (NJ-NYB) (12:30 – 1:10 p.m.)</p>

<p>Background</p> <ul style="list-style-type: none"> • The LIS regional stock assessment was led by the University of Connecticut and the NJ-NYB assessment was led by NJ Division of Fish and Wildlife. Both received support and advice from the Technical Committee and Stock Assessment Subcommittee. • The assessments were completed in June and a desk review was completed in July. • Tautog in the LIS region are overfished and experiencing overfishing. • Tautog in the NJ-NYB region are overfished and experiencing overfishing. • A fall 2016 stock assessment update will update the following regions with data through 2015: 1) Massachusetts-Rhode Island; 2) Connecticut through New Jersey; 3) New York-New Jersey; 4) Long Island Sound; 5) New Jersey-New York Bight; and 6) Delaware through Virginia. The results of the 2016 update will be presented at the 2016 Annual Meeting.

- LIS and NJ-NYB assessment report and the peer review panel report are in Supplemental Materials

Presentations

- Presentation of the LIS Stock Assessment Report (*Jacob Kasper, University of Connecticut*)
- Presentation of the NJ-NY Bight Stock Assessment Report (*J. McNamee*)
- Presentation of the Peer Review Panel Report (*P. Campfield*)

Board Actions for Consideration at this Meeting

- Accept the Stock Assessment Report and Peer Review Report for management use

5. Consider a Specific Regional Management Approach for Draft Amendment 1 (1:10 – 1:40 p.m.)

Background

- A benchmark stock assessment for a three-region management approach was approved for management use in February 2015
- A regional stock assessment for a four-region management approach was presented to the Board in August 2016.

Presentations

- Discussion facilitated by A. Nowalsky, Chair
- Slide showing the regional boundaries to consider by A. Harp

Board Actions for Consideration at this Meeting

- The Board may consider a three-region or four-region management approach to include in Draft Amendment 1.

6. Update on Commercial Harvest Tagging Program (1:40 – 1:45 p.m.)

Background

- The Law Enforcement Sub-Committee has developed objectives for a commercial harvest tagging program, selected tags to test and reviewed the design of a tautog tank trial that will test the feasibility of applying tags to live tautog.
- The tank trial is led by New York Division of Marine Resources and Stony Brook University and expected to be underway in August. In total, the research team expects to apply tags to 60 tautog.
- Two out of the three tags are traditionally used for livestock, therefore, the team is actively trying to determine if the tags will fit on a fish.
- **The LEC Meeting Summary that includes commercial fishermen interviews and alternative tag types are in Briefing Materials and the Tautog Tagging Trial Overview is in Supplemental Materials**

Presentations

- Tautog Tagging Trial Overview by A. Harp

Board Actions for Consideration at this Meeting

- The timeline for Draft Amendment 1 and development of a commercial harvest tagging program may differ; the Board may consider decoupling the two initiatives

7. Other Business/Adjourn

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

The Westin Alexandria
Alexandria, Virginia
February 3, 2016

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

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INDEX OF MOTIONS

1. **Approval of Agenda by Consent** (Page 1).
2. **Approval of Proceedings of November, 2015 by Consent** (Page 1).
3. **Motion to adjourn by Consent** (Page 18).

ATTENDANCE

Board Members

Dan McKiernan, MA, proxy for D. Pierce (AA)	Russ Allen, NJ, proxy for D. Chanda (AA)
William Adler, MA (GA)	Tom Fote, NJ (GA)
Jocelyn Cary, MA, proxy for Rep. Peake (LA)	Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)
Mark Gibson, RI, proxy for J. Coit (AA)	John Clark, DE, proxy for D. Saveikis (AA)
David Borden, RI (GA)	Roy Miller, DE (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Dave Simpson, CT (AA)	David Blazer, MD (AA)
Lance Stewart, CT (GA)	Bill Goldsborough, MD (GA)
Pat Augustine, NY, proxy for Sen. Boyle (LA)	Ed O'Brien, MD, proxy for Del. Stein (LA)
James Gilmore (AA)	Rob O'Reilly, VA, proxy for J. Bull (AA)
Steve Heins, NY, Administrative proxy	Peter Burns, NMFS
Emerson Hasbrouck, NY (GA)	Sherry White, USFWS

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

Ex-Officio Members

Mark Robson, Law Enforcement Committee Representative	Jason McNamee, Technical Committee Chair
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Staff

Bob Beal	Ashton Harp
Toni Kerns	Katie Drew
Mike Waive	

Guests

Kelly Denit, NOAA	Mike Luisi, MD DNR
Jeff Deem, VMRC	Darrel Young, MEFA
Jack Travelstead, CCA	Greg Murphy, PFBC
Brandon Muffley, NJ DFW	Raymond Kane, CHOIR
Bob Ballou, RI DEM	Bill Quimby, Mayflower Intl.
Arnold Leo, E. Hampton, NY	

The Tautog Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, February 3, 2016, and was called to order at 4:30 o'clock p.m. by Chairman Adam Nowalsky.

CALL TO ORDER

CHAIRMAN NOWALSKY: Good afternoon, I would like to call the Tautog Board to order. Once again I am Adam Nowalsky, Chair of the Tautog Board. With staff's assistance we will go through the board meeting today.

APPROVAL OF AGENDA

CHAIRMAN NOWALSKY: Our first agenda item is to approve the agenda. Are there any changes to the agenda? Seeing none; is there any objection to the agenda as presented? Seeing none; the agenda is approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN NOWALSKY: Our second item of business is to approve the proceedings from the November, 2015 meeting. Are there any changes to those proceedings as presented? Seeing none; is there any objection to approving them as presented? Seeing none; those proceedings are approved.

PUBLIC COMMENT

CHAIRMAN NOWALSKY: Our next order of business is public comment for those items that are not on the agenda. Is there any member of the public that would speak on an item that is not on the agenda? Seeing none; we will continue on.

UPDATE ON DRAFT AMENDMENT 1

CHAIRMAN NOWALSKY: Our next order of business is to get an update on Draft Amendment 1. Just as a summary, at the annual meeting we had the motion to move to direct the PDT to develop Draft Amendment under Option 3, which included the regions of Mass

through Rhode Island, Connecticut, New York, New Jersey and Delaware, Maryland and Virginia, and Option 4, which had the region specified as Massachusetts to Rhode Island, Long Island Sound including Connecticut and New York, New York, New Jersey excluding Long Island sound and Delaware, Maryland and Virginia.

We'll be able to go ahead and get an update on the work that the PDT has done. We'll have the opportunity today to provide some feedback and further direction on that. We'll also get an update on some of the ongoing stock assessment work for that Long Island Sound assessment and the New York/New Jersey assessment that would feed off that. Then we'll have discussion on the commercial harvest tagging program, which this board has a subcommittee of that will have a report for us as well today. With that I will turn the presentation back to Ashton.

MS. ASHTON HARP: Good afternoon. I am going to present the PDT update for Draft Amendment 1. The PDT has met twice to discuss the plan of work and scope. The PDT has also started writing certain portions of the FMP again or revising or editing portions of it. The FMP is from 1996.

There are considerable updates that need to be done in the text that don't necessarily require management decision, but just need to be updated; so that is ongoing. Just going through kind of what is inside Draft Amendment 1. There are regional management efforts and as Adam just alluded to, we're kind of waiting for some stock assessments to be done for Long Island Sound and the New York/New Jersey stock assessments. That is in a waiting pattern, but it is a very important component of Draft Amendment 1. We're also revising the FMP goals and objectives. This is under review by the PDT. Next we're also including reference points and rebuilding timeframes. This was specifically reviewed by the PDT in the two calls that we had last month and the month before. Draft language will be presented in this presentation.

Management measures, this was also reviewed by the PDT, and it does require some additional guidance from the board and also finalized stock assessments, which I'll review in this presentation. Lastly, within Draft Amendment 1 is illegal, unreported and unregulated fishing within the Tautog fishery.

As we know there seems to be a black market in the fishery and we're trying to address this. The Law Enforcement Subcommittee met and that presentation will be presented separate of this one by Mark. I just kind of want to dive into exactly the language that we're considering. I know this is a lot of words on one slide. But when we reviewed the FMP we realized that there was no specific language on, what is overfishing, what does overfished mean for this species?

We just kind of took very generic language, and to really sum up what this is saying is for overfishing, if overfishing is occurring in this fishery then the board will take steps to reduce F to the target level according to the F reduction schedule identified in the next slide. If current F exceeds the target but is below the threshold, the board should consider steps to reduce F to the target level.

That is just kind of putting that in writing within this FMP. Next we'll move to, these are kind of more items that we were looking for board guidance on. If overfishing is occurring in the fishery then there should be steps to reduce it. The PDT discussed the timeline to eliminate overfishing, and they came to the following.

The board shall reduce F to a level that is at or below the target within a maximum of three years. There is as many of you know many different timeframes that we could have looked at, it could have been the next year, it could have been spread into two years. The PDT felt that a maximum of three years, so reducing the harvest within a three year timeframe was the most

appropriate; however, we look to the board for guidance on this.

For the probability of achieving F target the board will use an X percentage for probability of achieving F target in three years. The PDT discussed a 50 percent or a 70 percent probability of reducing F to the target within a three year timeframe. However, we could not come to a consensus on a specific probability. Jason did look at certain South Atlantic species. He found that it was common for groupers, which are similar to Tautog to have a 50 percent probability of achieving F target.

However, we also found some groundfish stocks have a 75 percent probability. The PDT was not considering the 75 percent only going as high as the 70 percent probability. However, we do need to look to the board to see what is your level of risk when managing this species, and what do they feel is most appropriate probability. That is the overfishing part. Then we moved into the overfished, and similar to overfishing we just defined what it means for the stock to be overfished. If it is overfished then it says the board will take steps to increase spawning stock biomass; the target level, according to the rebuilding schedule, which will be on the next slide. Then it just says the board should consider steps to increase SSB to the target level if below. Once again this was not in the current FMP that we had. For the stock rebuilding schedule the PDT discussed this and they felt that when the stock was overfished, meaning below the spawning stock threshold, the board will take efforts to rebuild the stock to SSB target within a ten year timeframe.

We could have picked any number of years, of course ten years is the standard. We also felt that given the slow growth rate of the species that a ten year timeframe seemed most appropriate. But this is also something that we want the board to consider and provide guidance on if they think that this timeframe is appropriate.

Next we were thinking about the main focus of this amendment, which is regional management. Within a region the board can select to manage recreational and commercial fisheries using a regional standard, meaning within that region if it is the DelMarVa region, you know everyone would succumb to a certain management measure and everyone would do the exact same thing. Whether it is bag limits, seasonal closures or minimum size or – and we did take this out to public comment in the scoping period – or there could be conservation equivalency.

There is an F reduction for that region and then states could decide together or meeting separately how they would like to reduce it and reach the F target. I did want to note that for the conservation equivalency there may not be enough data at the state level to kind of parse out how to do that for conservation equivalency. But it is still a method that you guys could consider. We're not saying that it has to be considered or defined or decided today, as to whether each region should be a regional standard or have conservation equivalency.

We just want to bring it forward as something that needs to be decided eventually. Then we also specifically note that as an example, at this time the PDT recommends a 16 inch minimum size limit for the recreational and commercial fishery within each region. Now this is up for discussion, but this was kind of something that we initially saw as something that should be a regional standard within each region, so a 16 inch minimal size for recreational and commercial fisheries, but still up for debate.

Coming full circle on everything that we've kind of discussed, we're still in the very preliminary stages of reviewing the draft amendment and kind of coming up with language and we do still need guidance, so I just kind of wanted to summarize specific areas where we were looking for guidance today and that is the timeframe in which to reduce F, also the probability of achieving F target and also the stock rebuilding timeframe.

Lastly the management within each region, should it be a regional standard or conservation equivalency? This last one is more something that you guys should consider; however, it doesn't have to be decided today because we still would need to finalize stock assessments for the PDT and the TC to develop specific management measures moving forward. With that I will take questions.

CHAIRMAN NOWALSKY: Let me just add that the majority of what was discussed here is in the supplemental materials and printed out on the back table. There is a nice seven page document labeled a decision document. As Ashton indicated, a lot of it is just highlighting areas for feedback, not necessarily specific A or B type decisions that are required right now, although they certainly will come to that at some point in time. That is in your materials for further reference. It pretty much highlights everything. With that are there any specific questions for the presentation, and then we can get into discussion about these items if there are no specific questions.

Okay seeing no hands for questions, we can get into discussion on these. Hopefully with where we are with things today, are not at a place where specific motions would be needed if we can come to a consensus as a board. Again the intent here is to just give the PDT some direction as they move forward, and with that I'll turn it to the board for discussion; or not.

MR. DANIEL McKIERNAN: I might have a question for Katie to back up a little bit, if you don't mind. One of the themes that came out of our last meeting was a perception by the law enforcement community and the fishery managers that there may be more noncompliance with this species than any other that we deal with.

If we make a concerted effort to reduce that through commercial fish tagging or through, in my state we intend to work on an initiative to

increase fines. If we solve that how can that be measured in terms of the probability of achieving F? In other words, if we're going to solve a lot of the illegal harvest, how will that be revealed or manifested in our ability to achieve F?

MS. KATIE DREW: Ideally what would happen is those fish are no longer being removed. They would be part of the population and so they would contribute to the indices, they would be able to contribute to legal catch and would be registered as legal catch, and in theory that would improve the health of the population, and that would show up in the stock assessment as, you have brought down F, your population is increasing and so things are going well.

The assessment doesn't really care where those reductions come from or how that happens, it just looks to the data to make sure that the population is responding positively. To that extent when we do this process we probably won't know whether or not it is the cuts that we took that worked or whether it is the reduction in this unknown illegal harvest that happens. Because we can't quantify that illegal harvest, we can't really incorporate that into the projections. That will be one of the assumptions in the projections is that the harvest that is going to happen is known.

We won't have a way to quantify that uncertainty. That I think is actually more of an area where the board would want to consider it in a qualitative way to say, we would accept, we need a higher probability of not overfishing with legal harvest, because we're uncomfortable with the potential for unreported harvest to impact the stock. I think it is not something we can really quantify at this stage, and it would come down to more of a qualitative risk assessment from the board, I feel.

MR. McKIERNAN: Follow up. The periodicity of the assessments, if we chose let's say a 50 percent probability of achieving F based on MRIP data, then we may be forced to take a more conservative approach than is necessary if we

are simultaneously reducing poaching and approving compliance. Therefore, we might want to have a lower probability of achieving F if we're working really hard on that other side.

MS. DREW: Right, and again that is I think something for the board's consideration too. If you feel like this is going to have a positive effect on your fishery and you will achieve some kind of reduction in harvest that is not reported, then you can go with a lower probability on that basis. But again it is not something that we can quantify at this point.

MR. PATRICK AUGUSTINE: Thank you, very good job, Ashton. Thank you kindly. A question arises because I viewed this chart on Section 4.1.1, Page 6. I do notice that New Jersey and Delaware show a 15 inch minimum on the recreational and 15 inch is that primarily because of the Delaware Bay situation? That is one question.

The follow on would be, New York is at 16 and New York, the New Jersey waters combine on the south shore and they literally fish on the same body of fish and will we not have a problem there? I guess the first question, why 15? Is that because of Delaware Bay or is the rationale, is it built up in what the size has been in past years?

CHAIRMAN NOWALSKY: The current size limits are a function of the last management action that the board took, and each state was required to take a reduction and these were the size limits that were thus approved by the board to achieve those reductions.

MR. DAVID SIMPSON: All these recommendations make sense in sort of the four year standard fish and stock assessment and species that we have more confidence in. I like to include summer flounder in that but you know what we've been going through there, so even one of the better assessments on the coast can take you for a little bit of a roller coaster ride.

Tautog I don't have nearly that kind of faith in our ability to assess the stock, for one thing the reference to it being predominantly a recreational fishery. There are very large magnitude heaves in estimates from one year to the next. If I recall from the assessment correctly, the estimate of mortality or F is based on a three or four year period in the life history of a fish that lives 20 or 30 years.

I mean that just speaks to the uncertainty in the assessment. You take the slope for mortality and the only place that you can get a plausible negative slope that is in the realm of what you think it might be, there aren't 20 year old fish in there, there aren't five year old or six year old fish in there. There is a tremendous amount of variability in the growth rate of Tautog, such that a length at age key looks rather mushy, and so the age structure is quite mushy.

I am just anxious about taking standard approaches to management on this species when I'm skeptical the assessment can support it, and in particular yes, I gravitate to the natural default response is 50 percent probability. That is what was determined by court order for summer flounder. You have to have at least a 50 percent chance of success or you're not credible.

At the same time I hesitate to go out to the public and say, well we're going to take a 25 percent chance of not overfishing on Tautog, when my real question is given all this uncertainty, both the quantifiable uncertainty and the unquantifiable would we force ourselves into such a conservative management regime with this that we're going to really forego a lot of fishing opportunity. I wish I had an answer, but those are my concerns with this species that we're maybe expecting too much from the assessments.

CHAIRMAN NOWALSKY: These items are here because they are not presently in the FMP. Let me turn to staff for a moment and get clarification or from the PDT, with regards to are they now mandated by subsequent policies since

the original FMP was put in place that these definitions now exist the way they are, or it's to the discretion of the board what to include in the FMP?

MS. HARP: I would say it is to the discretion of the board, since this is not a federally managed species. It is not held to the 50 percent probability as set in Magnuson-Stevens. When we include the overfishing and the overfished definitions, it is merely just to provide accountability for how we manage this fishery, and so it is not so vague.

CHAIRMAN NOWALSKY: To set the stage, again the PDT in doing what we directed them to do looked at other FMPs and said these are items that are not there. Here are some suggestions. They are doing their job facilitating that discussion. I think you bring up some very good points. But there is no requirement that these be there or with the definitions that you see in front of you. Next up I had Russ Allen.

MR. RUSS ALLEN: I am not as uncomfortable as Dave is with some of these issues. I think the F level timeframe as well as the SSB timeframe are semi-realistic, and I know we need things in the plan such as this to make sure that we do what we need to do. As far as the other two issues, I think maybe it's something that should go out in the amendment as per public comment and whether or not we should have a 50 percent or 70 percent probability.

I am not sure how that would work out, but I know it has to be at least 50 percent. That is what you guys came up with so that is fine with me. I know on the management within a region, this was an issue that was brought up at our PID public hearing. If we are in a region with other states, we fish on different stocks depending on which of those regions we end up in.

It doesn't make sense to have the same exact regulations for each of those states. We would like to have that option of conservation equivalency within a region. Now whether or

not that goes in the plan that way, or whether it goes out for public comment that way. I know we would have public comment that would be contrary to having a regional standard.

CHAIRMAN NOWALSKY: On those comments, again there is no specific need for these definitions in there or no need for at least on any percentages. Again it is at the discretion of the board how they want to proceed. If there was no further direction given by the board to the PDT today, I would expect that when we get the draft amendment back these are the types of things we would see in it as recommended options. Would that be correct?

MS. HARP: Yes. These will come back if they are not decided today to the board.

CHAIRMAN NOWALSKY: Again, it is not a function of the decision just more guidance that we would want to direct them with.

MR. MICHAEL LUISI: Regarding the first issue, I am happy to see that there is a consideration for a time period that is more than just one year. I think we may have all learned from some experience with striped bass that a one year time period to return F to the target can be thought of as just a little too drastic. I'm happy to see that there is a consideration for multiyear reductions over a phased in period. But I will make a point to that issue that what I've learned from the experience of having dealt with the striped bass fishery and the reductions that we had to take, was that the public, the anglers, their expectation when you set a period of time is that once that period of time is exceeded or you get through the one year, two year, or three years that everything will return to normal and you'll be back to the point where you were prior to having taken the reductions that were needed.

What I would recommend is if you're looking for some opinions on these issues is that we take a little time in this draft to explain a little more thoroughly what this time period means, and

that further evaluations of the stock will lead to additional management action rather than after a three year period is over and we are at the target level that everything goes back to the way it once was. That may help manage some expectations of our stakeholders.

CHAIRMAN NOWALSKY: Okay so I am not hearing much in further direction. I did have Tom Fote.

MR. THOMAS P. FOTE: My concern is we get into these holes with species that we're not going to spend any more money to get any better research than we have. With all the constraints that are on state budgets right now, and every one of the states doesn't have a dime, especially New Jersey floating around that we're not going to get any better science done on Tautog that I can see in the next couple years. I wind up with species like black sea bass; we've had the same bad science since 1994, scup or a few other species.

Now we tried to put some money into Tautog over the years. We did some studies but it was never enough. Again the regionalization of this fishery is a lot different from sea bass. It is a lot different. When Pat says we have the same Tautog all along the South Shore into New Jersey that is not really the truth. I mean you have certain areas that combine fish like probably Long Beach on Long Island until oh Belmar in New Jersey. They probably fish, because they fish that New York Bay area.

But you get away from that Shinnecock has a different stock and Long Island Sound as we know is completely different from the others. It makes it difficult so with the mortality rate in one area might be totally different, and since this species unlike striped bass doesn't run up and down the coast with summer flounder, it is not going to be as easy to do that and we're not going to be able to tweak those numbers for the mortality of say the stock of Delaware Bay is doing fine.

But we're not going to be able to prove that because we don't have the science to do that. Then we're going to be in this hole saying that we have to assume, and I'm not too happy doing that. That is my grave concerns over when we set goals that we have no money to do the science to basically reinforce those goals and wind up with bad science.

CHAIRMAN NOWALSKY: Okay so where that leaves us unless someone makes the suggestion and we can get some consensus to change the timeframes here, remove one of these items, add something. The PDT would work towards a document that would include these items, would include both the 50 and 75 percent probabilities.

That is what is in the draft decision document. Right now you've got X percent on the board, but they do have those two numbers that they're contemplating. That would be where we would leave things at this point, and that is where the PDT would continue doing their work. I had Pat and then Dave.

MR. AUGUSTINE: I assume then we budgeted for the activities in this document that have to be completed, true, and if it's true then we're going to set a timeline as to we further develop it and what will be the next step. Then we get some answers on that and I think we ought to move forward from there.

CHAIRMAN NOWALSKY: Well, I think in terms of budgeting, the development of the draft amendment is there. It is part of the work plan and this is just part of the PDTs work that they need to do moving forward. As terms of what we direct them to do, it is not a budget question right now.

MR. SIMPSON: Regarding the first one, the timeframe. Currently our practice is to, we receive an assessment we take the management action, and we revisit how we did the next time there is a stock assessment. It occurs to me that it would be important to know the expected interval between stock assessments for Tautog

and that should be related to the interval or the timeframe to reach the target.

In other words if there isn't going to be an assessment but every six years then we should be thinking maybe of broadening our time to target, because we won't be able to evaluate it but every six years. That kind of concept, and then I was wondering Katie, on the probability I am trying to figure out what information you could provide us to help us get a better feel for what it means to get back to a target within, say three years given the uncertainty around the F estimate.

You know what does that look like and maybe compared to a couple other species that maybe have a higher level of confidence in and we're more familiar with. Is that a reasonable thing to ask? I am hoping to find a comfort level or an understanding of what we're buying before we buy it.

MS. DREW: Right so in terms of, you mean comparing to other species what levels do we use in other species or what like relative uncertainty?

MR. SIMPSON: Yes the width of the probability curve.

MS. DREW: I don't have that information off the top of my head. Obviously for Tautog it is going to be bigger, because I think there is more uncertainty in terms of the levels of catch definitely that are going into drive these F estimates. I think when we do the projections we would put more uncertainty into the catch estimates as part of the projections, understanding that the MRIP values are more uncertain for Tautog then they are for some of our more commonly encountered recreational species.

That would probably increase the range of basically potential outcomes that you would see from the projections. With the projections the sources of our uncertainty are kind of that the

amount of catch that we're taking out every year, the amount of recruitment that we're going to see every year, the amount of growth that we're going to see every year as well as sort of the uncertainty in the starting point of those projections. We start at some point and there is uncertainty around that and we project it forward and there is uncertainty around that. If we're doing short term projections, so three years or so, I think the recruitment has less of an effect on that for Tautog than it would for some of our sciaenid species that recruit very quickly into the fishery. But on the other hand again the estimates of catch and the estimates of where we start out are more uncertain.

I don't have a good way of representing what that uncertainty is going to be like in the projections, in terms of, I think the concern would be are we going to have to be more conservative with Tautog just because to get to a 50 percent probability of reducing F to that target. You need to take a more substantial cut than you would if you had a more confidence in some of these. We don't really know until we see how those projections are going to play out, in terms of what is the most important source of uncertainty in the final short term outcome.

MS. KERNS: Just a follow up on the first half of your question or statement, Dave. I think there are some plans out there, not to say this is right or wrong. But there are plans out there that say you have to reduce F within one year, and you don't necessarily do a stock assessment that year, but you set your regulations perceiving that it would reduce within one year. Whether or not that is good that you've set a set of regulations that you can't check right away is up to the board on how quickly they want to know the results of those management actions.

CHAIRMAN NOWALSKY: Go ahead follow up.

MR. SIMPSON: Yes so how we've managed Tautog so far is to say we have an assessment, we need to reduce mortality by 23 percent. We take an action that we believe will accomplish

that just kind of in the deterministic sense not in any kind of stochastic sense. We cut landings by 23 percent, we're done and we'll see how we did at the next assessment.

This is more having to take into account the uncertainty in all these estimates and the probability of achieving that target in three years takes into account all kinds of uncertainty. If your F estimate is very tight and narrow you feel confident and it probably doesn't take too conservative an action to get what you expect.

But I'm afraid with Tautog we'll find out after we sort of buy the horse that the variability looks like this, and so we have to get all the way down here in our landings to have a 50 percent probability of achieving a target within the specified timeframe. If there is a way to kind of show us what that would look like, how painful it is to be how risk averse. I think it would really be helpful to the public and to us.

CHAIRMAN NOWALSKY: I do think that question of pain is going to be dependent on some other decisions that we'll ultimately make.

UPDATES OF THE LONG ISLAND SOUND AND THE NEW YORK/NEW JERSEY STOCK ASSESSMENTS

CHAIRMAN NOWALSKY: I think seeing the level of feedback at this point it would be helpful to move into the updates of the Long Island Sound and the New York/New Jersey assessments.

We've got a couple of slides that will address some options for moving forward with regards to which datasets we can use, 2013 or integrating some more recent data into these as well; that may help guide that discussion. Let me move forward with those discussions. I'll turn back to Ashton and I know Dave and Russ will help inform that.

MS. HARP: I was actually going to move to have Dave and Russ provide updates and then I was going to show the timeline that we propose. I just want to make sure they are in line.

MR. SIMPSON: As some of you know we hit a little bump in the road with losing our postdoc at Yukon, who took a job with DFO, Department of Fisheries and Oceans in Canada where she resides. But we have moved very quickly, the University of Connecticut has to bring on a doctoral student, his name is Jacob Kasper. He is already on staff.

We're going to meet with our staff, probably three of us, our commercial statistics people, recreational statistics people and the principals involved in the assessment and this Sea Grant project is how this is being funded; Dr. Eric Schultz and Dr. Jason Vokoun. We're going to get together next week and schedule frequent meetings to accelerate the pace of progress on this and to make sure that we keep a vigorous pace on development of this; so that we don't interrupt the timeframe that we're trying to achieve here.

MR. ALLEN: Just a follow up on Dave's conversation. He hit most of the points pretty well. Jeff Brust from our office has been in contact with Jacob and is working with him and has also been in touch with Tom Smigne from NOAA on the MRIP data and is working hard to get that data to make sure Jacob is in good shape to get the Long Island Sound issue underway.

As he's going through that data he should be able to pull out the New Jersey/New York data, which would help Jeff. My conversation with Jeff yesterday was he is definitely on target for August, even with this little hiccup, and that was our original plan anyway. No way that they would have this by May, but there is definitely from Jeff's point of view looking good for the August meeting. At least some sort of preliminary estimates he would have.

CHAIRMAN NOWALSKY: Okay so that brings us to this slide, and I will let Ashton run through it.

MS. HARP: As Russ just mentioned we still are on target for the August board preview of the

Long Island Sound and New York/New Jersey stock assessments. I just wanted to expand the process beyond the August meeting. Then that means that the TC would do a catch reduction analysis, determine specific management measures and the PDT would further develop the management measures.

A full draft amendment would be proposed at the November meeting, and then in the winter time this would go out for public comment, and then the board could review Draft Amendment 1 at the February, 2017 meeting; so in one year. One thing to note about that is that this data would include data through 2013, because that is what the latest stock assessment did. In the New York/New Jersey Long Island Sound stock assessments they of course have the ability to use more current data.

However, since it is a four region approach that means that two regions would have more current data and then two regions that were previously done would only have data up until 2013. That is something to consider. With that in mind I talked to Katie, I talked to Jason; however, we have not fully discussed this with the TC. But I did want to present another timeline that would incorporate data through 2015 for all management regions. Once again, so we still have to kind of review this with the TC, but the initial thinking is that the new items are highlighted in blue, is that the board could potentially task the TC with incorporating 2015 data and do a full stock assessment update. Therefore we're not making management measures that would be implemented in 2017, based on 2013 data. We would be able to update it to 2015. This would kind of delay the entire process by one more meeting projected, so then the final draft amendment would come to review at the May, 2017 meeting.

It is just a little bit different. The one catch when talking with Katie was that we haven't checked in with the TC about the availability of age data. That could be the only process that might delay this process to get 2015 data, but we'll check

with them right after this meeting to see if it is possible. I just wanted to present a different timeline as well.

CHAIRMAN NOWALSKY: One question I had with this is how would that work, as far as the commission's work plan and availability for doing that stock assessment update in that March to October timeline?

MS. TONI KERNS: We would have to run it by the Policy Board in order to approve the update for Tautog. The ASC will be meeting this March, and then the Policy Board will be looking at a revised schedule for all assessments, and so for that side of things we would know that the policy board approved that in May. In terms of budgeting, we haven't fully discussed with staff what the needs would be; in terms of would it be in-person meetings not in-person meetings. I think if we were conservative about the number of in-person meetings we had we could make this work.

CHAIRMAN NOWALSKY: Is it something that would need to be tasked at this meeting or you could have those discussions and the board could then task the TC with that at the May meeting?

MS. KERNS: I think it is fine to do it at the May meeting, because we'll continue to work on the tasks that we need to do to populate the draft on other issues, and then this wouldn't impact that either way. Either decision we would continue to be able to move forward.

MS. HARP: Yes, the data availability probably wouldn't be until May anyway, in terms of states finalizing their age data, survey data, MRIP data anyway. It is not like we could start now, so we could wait and get I guess consensus from the Policy Board about this as a use of the TCs time and effort in May, and that would not hinder this timeline.

CHAIRMAN NOWALSKY: Okay that is what the discussion point would be potentially in May, is

whether we want to take a management action in early 2017, with data through 2013 or whether we would want to do that update and have the data be consistent across whatever regions we move forward with, with data that included 2014 and 2015. Again, at this point I would turn it back to the board. Is there a specific question the PDT would need an answer on today, or they would be able to continue moving forward with the development of the amendment?

MS. HARP: We can continue moving forward with the development of the amendment. There is still a lot to do. We just can't move forward with developing clearly specific management actions until the stock assessments have been completed. We can do all other areas, but as far as what are the bag limit season limits, we cannot move forward with that until stock assessments are completed.

MR. SIMPSON: The issue of in 2016 doing the stock assessment, do we ask Yukon to use data only through 2013? I mean I hate to ignore data that we have in hand, or do we use 2014, which is what they've been asking for recently is the more up-to-date data. I hate to come out in 2016 with a three year old data.

MR. FOTE: We always get knocked when we're doing a plan and going out to public hearing that the data is too old; that it is not showing what is happening right now. I would actually look at postponing it to the May so we actually have data up to 2015. I think that is the smart way. I think we should be doing that for others.

Since we're going to go out, and since it is going to be big, we might as well do it right. But you start showing up with data from 2013 people say that is not what is going on now. Maybe we corrected a lot of the illegal fishery, hopefully by the next year or two. I don't know. I think the closest to it when we were putting the plan out, the data we have the better it looks.

CHAIRMAN NOWALSKY: What we would have is at the May meeting we would meet again, hear

some more about the ongoing work on those assessments. We would have to make the decision about whether to task the TC with doing that update, using the updated data. Would there be the opportunity, Dave you had some very specific questions and some suggestions about how to help evaluate those rebuilding timelines. Is that something that the PDT could provide some feedback with, with some input from Dave specifically what he's looking for?

MS. KERNS: I mean to be honest it sounds like you would want to know what the catch reductions would be if we accepted a 50 percent versus a 70 percent threshold, and we won't know that until we do the actual reductions. We wouldn't know what that would be until we know the targets and the regions and everything like that.

We could do it potentially on the coast as an example if it is really important for you to know this, but the alternative would be, you could have those as the options and see those results once we finally decide on a target and a threshold and a region, and the current assessment that you want to use those data from.

Once you make those decisions we could do those calculations and show you both the catch that would give you a 50 percent and the catch that would give you a 70 percent; along with your other bag and size limit analyses. But in terms of getting that done by May, I don't think so, not in a meaningful way.

MR. SIMPSON: Yes, I certainly wouldn't ask you to do this for every assessment that's out there. I was thinking in terms of maybe one example and what is the variance around the F estimate from a typical assessment of several that were done on the coast, and how does that compare with say summer flounder or one of the better assessments; just to get a little bit of understanding of how much different it might be to manage Tautog under a set of rules that currently applies to another species we're more

familiar with, but we have higher confidence level in.

MS. KERNS: We could certainly do essentially a literature review of what is already out there and present some of these numbers in that context.

CHAIRMAN NOWALSKY: I think that is about the best we're going to get, Dave. Okay seeing no other hands; that is where we're at in the development of the amendment here right now, and then we'll look forward to that decision on whether to task the TC with that update at the May meeting.

REVIEW OF THE COMMERCIAL HARVEST TAGGING PROGRAM OBJECTIVES

CHAIRMAN NOWALSKY: That brings us to the next issue is part of the amendment with regards to reviewing of commercial tagging program objectives, and the ongoing work of the Law Enforcement Subcommittee. They do have a full report again in the supplemental materials, but we've got Mark Robson here today to provide a presentation on that work as well.

MR. MARK ROBSON: Again as he mentioned, go to the second slide here. We provided a Subcommittee report November of 2015, and received some direction from you all to develop some specific objectives for a tagging program for Tautog, and also in making sure that we explore tagging systems that would also be applicable to the live fish market as well as the regular commercial harvest. The Subcommittee is made up of three members of this board and three members of the Law Enforcement Committee.

We met via a phone conference on January 12, and as the Chairman has indicated, you have a written summary of that meeting in your materials. We spent a good bit of time initially during the conference call sort of calibrating our information and discussing what we all knew about the fishery and the circumstances behind the harvest of both live and dead fish, and more

or less framed out a basic goal statement that we perceive to be important in determining the objectives of a commercial harvest tagging program.

The goals basically needed to address adequate accountability of a system, mechanism that would insure minimizing the perceived illegal or unreported or unregulated fishing that was going on in this particular case. We also felt it was important to develop a tagging system that could be easily used and accepted by the fishing community.

We also wanted to make sure that the tags or tagging system would potentially have a neutral effect on the marketability of those fish; particularly in the live market. We also wanted to make sure that as a goal we developed objectives that provided for an effective enforcement program in conjunction with the tagging of Tautog.

Again, working on the direction that you provided to the Subcommittee, we came up with four draft objectives for the commercial tagging program. First of course we want a verifiable system that does address enforcement needs. For the officers that are out there trying to track down where some of these live fish markets are, or where fish are coming from or going to.

The tagging system would need to be set up in a way that can deal with that; particularly cross-state-type activities. Because there is a perceived cross-state activity in terms of where fish are harvested versus where they are marketed, we want to make sure that the tagging system is standardized among all the states.

Another objective is to make sure that the tag design and the make and the type of tag that's used is adequate for enforcement and tracking purposes. This would imply things like the durability of the tag, tamper proof issues and so forth. As a final objective we wanted to try to find a tagging system that ideally could be used

for both live and dead fish. In talking about the fishery itself we wound up discussing a lot of important points about tags themselves in a tagging system. Certainly we feel like we want to be able to identify where fish are harvested from by state, so there was a consensus around some sort of color coding system to identify individual states.

We want all of the tags that are used by the states to be consistent, in terms of what's on them. At a minimum they need to have a standardized identifier for year, the state they're coming from, and if they're color coded that would serve that purpose; and then some uniform tag number system that all the states could agree to.

We want tags that are tamper proof and single use. We also felt it was important to have a system for returning unused tags. This would probably help in terms of management of harvest and quotas, if there are quotas in place, and it is also from an enforcement perspective good to have a way of getting unused tags out of the system and off the water; if you will.

Again, we wanted to have a tag system that was useable both for live and dead fish, and of course having tags that can be applied to live fish and then kept on those fish for a good bit of time, is certainly a unique challenge for this fishery. Getting back to the ease of a system for use by fishermen, the tags need to be easy to attach, they need to be secure, and of course we hope for an economical tagging system for the states to apply.

As with the live fish market and live fish being tagged, we hopefully would have a type of tag that has a minimal impact on fish marketability and appearance. Some components that we talked about with regard to the fishery in general and it was certainly recognized, I think by the Subcommittee that this tends to be a more diffuse and decentralized fishery than some of the other ones that we deal with that have a tagging program in place.

We recognize that not all the states are consistent in how the fishery is regulated. For example, we have a few states that do have a limited access type program where you have permitted commercial harvesters. Other states have a more open fishery. It is certainly recognized that there is an amount of illegal harvest going on by fishermen who do not have commercial permits.

The last point, of course it is important and we had quite a bit of discussion around the issue of a tagging system, and whether you can have the tags apply to the fish at point of harvest or point of sale; it is somewhat of a dilemma. Typically from an enforcement perspective, the sooner those tags can be applied to a harvested fish the better.

You would want a point of harvest system. However, when you're looking at a state that may have an open fishery, getting tags in the hands of all of the fishermen who might be out there that would need to apply those tags at the point of harvest becomes more problematic. It is not so much a problem for a point of harvest if you have a regulated fishery with a limited number of permitted fishermen.

But obviously how the fishery is prosecuted, whether it is access open or access closed affects whether you can really realistically expect tags to be put on the fish at the point of harvest versus the point of sale. That is an important consideration in a program. At the end of our meeting we tried to summarize what we believe are some issues that we would like to get further board consideration or guidance from. These are really questions for the board. They are first of all, we expressed a strong desire, particularly members of this board, to try to make sure we consult with commercial experts on tagging and tag programs; whether it is manufacturers, commercial fishermen, fish market folks. We want to try to make sure we reach out and consult with them on the best way to develop a

tagging program and not work in a vacuum there.

Another question is, are there specific tag vendors that you as state representatives may know about who we can talk to or that we can review; and also are there states that would be available to step up and maybe help test some of these tag prototypes, especially for live Tautog, where you have some pretty unique requirements.

Also does the board have a preference for whether to continue to have a mixed fishery, where some states are limited entry versus an open fishery? If you move towards a limited entry type fishery that might allow a more serious consideration of point of harvest attachment of tags, and Mr. Chairman that concludes my report.

CHAIRMAN NOWALSKY: Great, so before we go to questions let me touch on a couple of these items here and some things that are in progress with them. With regards to the first item, staff drafted a one page memo that went out already to advisory panel members. It is the last page of the supplementary materials.

I would encourage states who know of commercial fishermen with whom should be consulted, or believe that we could get some useable feedback with on the commercial tagging program; to make sure that they have that document and to encourage them to give feedback to staff with the contact info contained therein.

With regards to the second item, there were a couple of potential tags that again are highlighted in the Law Enforcement Subcommittee meeting summary. The state of New York is looking to doing some trials when the spring fishery opens April and May. That is going to be highly dependent on water temperature and activity of those fish. I think there would be the desire for other states that are willing to participate in a trial program to do

so, and to let us know about your willingness and availability to participate today, or if not today in the not too distant future.

With that I will turn it to the board for specific questions for Mark first, and then we can have discussion about these items; also there were the four objectives that were listed. We can go back to those; it was kind of an overview of them in the presentation. They are listed in detail in the meeting material. Any questions first? Seeing no questions; question, go ahead John.

MR. JOHN CLARK: I was just curious as to whether as part of the research that went into this there are any other live fish that tags are being used on right now that have been used successfully in the type of project that is being envisioned here.

MR. ROBSON: Yes there was some discussion about tags, and I think Ashton may have more information about those too. It seemed as if they were primarily tags designed for either farm raised or aquacultured fish. I don't know if we knew of any specific live harvested fish that are being tagged at this time.

CHAIRMAN NOWALSKY: The belief was it was a pretty unique situation with what we were looking at here. Go ahead, Mark.

MR. ROBSON: Just as another point on that. Part of the consideration, I mean obviously there are game fish tags that are applied to certain kinds of fish, but the issue here is not only live fish, but these are live fish that can be apparently maintained in market situations for fairly lengthy times; up to several months is what we understand, or more. It has to be a tag that not only stays on a live fish, but doesn't hurt the fish over a long period of time.

CHAIRMAN NOWALSKY: Or impact the marketability, as well. I had Tom Fote then Roy Miller.

MR. FOTE: I always liked it when you went comments on it.

CHAIRMAN NOWALSKY: Questions, Roy?

MR. ROY MILLER: Mr. Chairman, during the course of my long career I've run into a lot of different types of tags. I'm just sitting here pondering what possibly would fulfill all the requirements for this particular tag. Are there any at this point that anyone can share with us that might be amenable for these purposes?

CHAIRMAN NOWALSKY: Well again there were two potential items that were listed here, one I know was brought forth by VIMs as I recall, which was an item and the other item that Steve Heins had brought forward that they intend to do the trials with this spring.

MR. CLARK: Just a suggestion, since I didn't realize they were going to keep these things alive so long. I mean as one supplier of course that we use for a striped bass tags, a lot of the states do, is Tide and Brooks; but obviously if you put a tag through the mouth and out the gills for a live fish that is going to be a problem.

But what about using like dark tags or T-bar tags as we use in our tagging programs for live fish, and I know we've been looking into a volunteer tagging program similar to what Virginia does now. I think you could train people that are going to be tagging these things for live fish to put something like a dark tag on, which is a very simple application device. It will probably have pretty good success of staying in the fish for a long time.

CHAIRMAN NOWALSKY: The two specific vendors that the committee had, Pentair was the name of one and Hallprint was the name of the other. Again, with regards to some of the tags that you suggested, the main concern is to avoid reusability of them. They need to be one time tags that can't be applied at the point of harvest, delivered for sale and then the fish is sold and then that tag make its way back into the field

again for potential reuse. It is a unique situation and any other suggestions that you have, we are all open to. That is why we're bringing this information for it.

MR. CLARK: If I could just follow up Mr. Chair. I was going to say Hallprint, which is in here already makes the T-bar and the dark tags and they would not be reusable. I mean once you have pulled them out of the fish they are usually not going to be able to be attached again. Floy Tag also makes a very similar tag to Hallprint, but this does seem to be a very different tagging situation from any of our other commercially landed fish situations, if you're trying to keep a fish alive for months and have a tag that is not going to affect its survival.

CHAIRMAN NOWALSKY: Mike Luisi, you had a question? Okay. Did you have your hand up, Toni, no – passing also? All right so let's move on to comments, I had Tom and then I'll come back to Mike.

MR. FOTE: I went to my first tagging workshop I think up in Woods Hole in 1986 when they said recreational people shouldn't tag fish, some of the state directors, and NMFS was trying to get us all tagging fish. The club I belonged to, Berkley Striper Club basically started tagging fish in '85.

We continue to do that and put records into the division of Fish and Wildlife. They've used the data every year, we keep meticulous records because when they started I said they had to do that otherwise I wouldn't support a tagging program. They've done it over the last 25 years. These are all catch and release fish that are basically swimming around for tags. We get returns; we know what the returns are.

We've experimented with a bunch of tags over the years, some work better, some we get further down the road, they last, and they don't impede the fish. There are certain tags I do not like, because they get algae growth and they do affect the way the fish swim. I can basically work

on that. But you need to do it at the point of harvest.

If you do it at the point of harvest you eliminate a lot of the problems. Just an example of what we did this year with the bonus tag program in New Jersey. You had to tag the fish, it had to be tagged immediately; and if you were caught with a fish that wasn't tagged immediately you got a ticket; no ifs, ands or buts.

You had to pay for the tag and the tags were all numbered so you knew exactly how. I don't see a problem with basically open fisheries or limited entry fisheries the person buys the tags. You want to fish for Tautog commercially, you go to one location; whether it is the division headquarters or someplace else, and you basically buy 50 tags.

Every time you catch more than 50 fish then you have to come back and buy tags. It keeps you able to manage your fisheries on how many tags go out, but it doesn't have to be done for limited entry, it could be done on an open fishery just the same. They just say if they are going to sell the fish legally they need a tag and they've got to come down someplace and buy those tags, and you keep the records of how many tags you purchase in a bundle.

That's how we do it with the recreational tags. Every bundle that is put out, we know all the numbers, we record who buys the tags and gives them out and the same thing with the trophy tag program this year in New Jersey. Every tag had a number, you were only allowed one tag or the party boats were allowed others.

But they came on the boat and they didn't have the tags as soon as they were on the boat, like one of the party or charterboats that were using the tags and basically didn't have the tags in their mouth immediately. The person got a warning and then got a fast ticket if we knew they were trying to get away with it. There are ways of doing it, but it really has got to be point of harvest not point of sale. Because you are going

to record immediately what tag numbers are, and you've got to call in those numbers that you used. I mean it is a little dated, but if you want to stop the illegal fishery on this fishery that is really dramatically increased over the years and it makes up a large mortality rate, I think on this fishery. It is one way of doing it and so it is the cost of doing business. When they are selling these fish for \$14.00 a pound or whatever they get on the live fish market, a \$2.00 tag isn't going to make much of a difference to them. That is the part of the expense of doing business like we all do businesses.

MR. LUISI: Over the years I've had to deal with tags in our state. Again the common thread with Maryland has to deal with striped bass. I guess my recommendation on these issues for some consideration is that I think what it really boils down to, and in the experiences that we've had in our commercial tagging program in Maryland is that unless the accountability portion of the system is lock tight.

Fishermen will find a way to get around the accountability measures unless they are really tight. What you'll end up with is even a stronger black market than what you currently have, because the tags become so valuable that unless you account for them after the season is over, and you have an audit process that you can really say that every single tag that wasn't used was returned. It opens the door for a lot of misuse.

For Tautog this isn't going to make any difference for us. We have a five fish per day limit on the commercial end. It is not going to matter. But for states that have a large fishery and maybe have hundreds of fishermen who have an ability to land Tautog on any given day, running a derby fishery with tagging and the need to have tags in your possession as a fisherman, in order to be compliant with the rules in an open derby system that doesn't have a tight accountability system will ultimately lead to trouble. I'll leave it at that.

MR. McKIERNAN: Just a follow up to Tom Fote's comments. One of the things that we talked

about in the committee was that we needed to make sure that the tag was not likely counterfeitable. If the tag is easily reproduced then as Mike Luisi said, that is going to become the coin of the realm.

Having participated in the group, I was not aware that we only had three states with state quotas, and I'm guessing that in order for this to succeed, and maybe for the plan to succeed after this addendum, we're probably going to see all states with quotas. Is that a safe assumption?

CHAIRMAN NOWALSKY: I'm not sure we've got anything in the amendment right now that would call for that. I'll turn to Toni.

MS. KERNS: I think part of the black market issue, and Jim, correct me if I'm wrong. But in New York there are recreational fishermen that sell to restaurants, which would be illegal. The recreational fishermen would no longer be able to do that; because the commercial fishery will require tags. That would be eliminating one portion of the black market that I've heard about. I don't think it would require there to be a quota. The tagging system is trying to address several issues. It is not necessary to have a quota to have tags.

MR. McKIERNAN: I just bring it up because this group was really using the striped bass model, and striped bass has state-by-state quotas. It will be interesting, because in Massachusetts with our striped bass tags, and I'm sure everybody else's, we issue a number of tags which is commensurate or close to what we think is going to be the landings. I don't know how you would decide what that would be if you don't have a quota.

CHAIRMAN NOWALSKY: Dave, to that point.

MR. SIMPSON: Yes, under Addendum 4, is that our current one? We had the reduction from some recent historical landings level. In effect we have this de facto quota. We had to move from an average of 100,000 pounds down to

70,000 pounds to achieve the percent reduction. I kind of see that we have not an explicit – I call it a backdoor quota – we cut from X to Y, you now have a limit it's a quota, it is not explicit. But our intention would be to manage to that. We translate that into a number of fish based on an average weight, and we manage it as a quota.

CHAIRMAN NOWALSKY: Mark, maybe that's something we can bring back to the committee and further refine how states are working with that. The one table in the document listed quota for three states, but as Dave suggests, other states are doing something quota based or fish based and that would be an issue that we could take up.

MR. ROB O'REILLY: The last item up there from the Law Enforcement report on limited entry versus an open fishery, I think it's fine if the state wants to have limited entry. I'm not familiar with any that do on the commercial fishery, but I know in the documentation it looked like a lot of seasonal closures. Size limits have been raised. I mean a lot has happened since 1998. I think that is what Amendment 1 sort of launched the series of reductions that we keep doing.

With seven fisheries to monitor already, I hope that why that is there from Law Enforcement, Mark is because there may have been conversations that that would be an easier way, perhaps to keep track of everyone. But in Virginia it is such a small commercial fishery, so few are involved. I don't see numbers growing. I hope that if there are suggestions from anyone that limited entry is a good option, or even quotas; that that be sort of a voluntary situation as part of the mode of reductions.

I know in Virginia, much to the chagrin of the harvesters, they always wanted seasons changed to the point now, where the big concern in Virginia is, and there may be other states too I'm sure. What was a closed season and what was an open season probably are a little different, in terms of abundance of fish. What the harvesters tell us is you know we had those

seasons which were open before, because that is when the abundance was there.

Now that is not occurring, and of course the tragedy there is how is anyone going to figure out how you open a closed season without any data? But that is a reality. The second comment I had was also about, not being negative about it, but everyone has striped bass tags. I don't know about the other states, but we do not get all the striped bass tags back even though it is in a regulation that you have to turn in your striped bass tags.

You have to realize that there are exceptions that are guiding everything. What we do in Virginia is we make the harvester sign an affidavit as to why he doesn't have the rest of the tags. It is not an abundant amount of tags. But it does happen. What Mike Luisi was saying, that is just another wrinkle to any type of tagging system, because you know you do have to have some trust as far as why someone says they did not have their tags to turn back in.

CHAIRMAN NOWALSKY: Okay so let me just frame where we are here for a moment. We were fortunate to have the couple of boards before us kind of speed things along, gave us a little extra time. We've used that time and have now surpassed our scheduled end time at this point at the end of the day. What I would like to do is I would like to get a show of hands for anybody else who wants to speak and give feedback on these items.

Then I just want to go back to the objectives for the tagging program slide that we had up, just to see if we can get any feedback on those and kind of wrap things up from there. Right now I've got Russ and Mike. Is there anyone else that wants to speak on these issues? Okay so seeing none; we'll take those two comments, maybe only one of those and then we'll go back to those objectives.

MR. ALLEN: Just real quick, maybe I missed it or maybe you guys did this already. As far as the

tags go, has there been any input from the Interstate Tagging Committee? That is all the experts up and down the coast that do that work, tagging. I don't think it has been together for a while, so I don't know if you guys looked into that group to give you some input on the tags or not?

MS. DREW: We haven't directly contacted the Interstate Tagging Committee. We certainly could. I think the Interstate Tagging Committee's expertise runs more to the research aspect of it, so how to design a tagging program that is going to keep fish you release back into the wild alive, et cetera. But we could certainly get in touch with them to talk about any potential ideas that they might have for a successful tag, in terms of keeping a fish alive; but also meeting the non-counterfeit-ability issues.

MR. ALLEN: Follow up, Mr. Chairman, and that is where I was getting to is more the live angle of things and some of the tag retention studies that have been done in the past, and whether or not those tags, and John mentioned a few of them, whether those tags work in the live market. If you have a good tag retention study that shows 50 percent retention after three months or something like that. I think you've got what you need, and those tags as John said; once they are pulled you can't use them again.

CHAIRMAN NOWALSKY: Okay good feedback, a potential other avenue. Mike you wanted to pass? Okay. Staff has brought back up the draft objectives, and again these are fully itemized in the meeting summary from the Law Enforcement Committee. Is there any feedback from the board on these?

Okay seeing none. I've heard a lot of furious typing to my right and my left up here, which I assume means we've gotten feedback from the board that we were hoping for today. I'm seeing some nods. Okay, is there any other business to come before the management board today?

Seeing none; Pat Augustine would like to make a motion.

MR. AUGUSTINE: Mr. Chairman, do you have to elect a Vice-Chairman or did I miss something?

MR. NOWALSKY: No that was actually done at the last meeting.

MR. AUGUSTINE: Thank you, it didn't show up in the agenda.

MR. NOWALSKY: We'll get that document updated, but Mr. Simpson is our Vice-Chair unless he has resigned since his election.

ADJOURNMENT

MR. AUGUSTINE: Motion to adjourn.

MR. NOWALSKY: Second by Russ Allen. Without objection the board is adjourned. Thank you all very much.

(Whereupon the meeting was adjourned at 5:49 o'clock p.m. on February 3, 2016.)

Public Comment

Ed Liotta
ed4136-977@optonline.net
New York Recreational Fisherman
April 20, 2016

“Please note the information on this page was found on the ASMFC web site.”

“The highlighted yellow was to show that Blackfish (Tautog) do migrate beyond the 3 mile state line. They should be regulated under federal just like Fluke, striped bass, and others.”

Tautog are distributed along the Northeast Atlantic coast, from Nova Scotia to Georgia, with the greatest abundances occurring in the U.S. between Cape Cod, Massachusetts, and Chesapeake Bay. North of Cape Cod, the species generally remains close to shore in waters less than 60 feet.

South of Cape Cod, they inhabit waters 40 miles offshore at depths up to 120 feet. During spring, as water temperatures approach 48° F, tautog migrate inshore to spawn in estuaries and near shore marine waters. They may remain inshore throughout the summer, then move to deeper (80-150 feet) offshore wintering areas as fall approaches and water temperatures drop below 52° F. Toward the southern end of their range, some adults may remain offshore throughout the year.

“The highlighted yellow was to show that New York had the lowest percentage.”

Over the last 30 years, recreational harvest has ranged from a time series high of 16.9 million pounds in 1986 to a low of 1.5 million pounds in 1998. Since 2000, recreational harvest has averaged 3.3 million pounds, with 2013 harvest estimated at 2.3 million pounds. Connecticut anglers accounted for 45% of the 2013 recreational harvest, followed by Rhode Island (24%), and New York (11%).

“The highlighted yellow was to show that overfishing is not occurring in New York.”

For the New York/New Jersey Region, our biomass is below our biomass threshold. We're at about 80 percent; but our fishing mortality is below our fishing mortality threshold. We are overfished but overfishing is not occurring in New York/New Jersey. Though you can't see that in the bottom right-hand corner, the confidence intervals do cross that line. I do have some scatterplots if people care to see them, but the point estimate is overfishing is not occurring in the New York/New Jersey Region. For the DelMarVa Region, the same picture. Biomass is below the biomass threshold and fishing mortality is below the fishing mortality threshold; so we are overfished, but overfishing is not occurring.

Here is just a comparison of the stock status determinations from the three models by region. You can see for the Southern New England Region all three models gave us the same determination; overfished and overfishing. For New York/New Jersey and DelMarVa, the ASAP Model and the DB-SRA gave us the same status; overfished and overfishing not occurring; but Bayesian State Space Model said not overfished for either of those regions and overfishing is not occurring.

Again, we had good concurrence between ASAP and the DB-SRA. Just boiling it down to our preferred model; the status determinations by region up here, and here is the uncertainty around those status determinations. Southern New England you can see just about every point is overfished and overfishing. For New York/New Jersey, it is a pretty wide spread, but the point estimate is overfished but not overfishing. DelMarVa is slightly more optimistic, but still overfished and not overfishing.



Atlantic States Marine Fisheries Commission

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Tautog Law Enforcement Sub-Committee Meeting Summary Conference Call May 11, 2016

Subcommittee Members: Adam Nowalsky, (Tautog Board Chair), Dan McKiernan (MA), Steve Heins (NY), Lt. Jason Snellbaker (NJ, Tautog LEC rep), Lt. Doug Messeck (DE), Major Pat Moran (MA), Capt. Dallas Bengel (NY), Major Tim Huss (NY)

Staff: Ashton Harp, Mark Robson

The purpose of the teleconference was to review and discuss procured tag samples for a tautog commercial harvest tagging program and review commercial harvester comments, suggestions and concerns on the prospect of a tagging program.

Summary of Subcommittee Feedback on Tags and Next Steps

Staff and one law enforcement member had tag samples in hand, all other participants viewed the samples via webinar. The presentation included twelve tags across six categories:

- Button tag
- Fixed length cable tie
- Adjustable cable tie
- Strap tag
- Rototag
- Plastic, graphic gill/tail tag

The Subcommittee selected three tags (button tag (A), strap tag (J) and rototag (K)) to test in a trial study on live fish. The cable tie tags (fixed and adjustable length) were ruled out because they would have to be retrofitted for fish application, did not have applicator and therefore did not meet objective 4 (easy to attach to a live fish). If the fishery was strictly a dead market fishery then tag B and H would be appropriate. Detailed feedback on each tag is provided on pages 3-8.

The next step is to design and execute a tagging study on live tautog to evaluate the feasibility of the selected tags. New York Department of Environmental Conservation will lead the study and is currently investigating study design. It is expected the study will begin in June. Massachusetts Division of Marine Fisheries is interested in replicating the New York study to garner additional buy-in from local stakeholders. **ACTION:** Request additional sample tags and applicators from each vendor for additional law enforcement testing and the New York and Massachusetts tag trails.

The timeline for development of a tagging program in relation to Draft Amendment 1 was discussed. Ultimately it was decided that the two will run concurrently, but the development of a commercial harvest tagging program should not be tied to the Draft Amendment 1 timeline. The Subcommittee felt the focus should be on developing a sound tagging program and that may not fit within the time limits of Draft Amendment 1.

An update on the tagging trial will be provided to the Subcommittee mid-June (most likely via email); included in the update will be a timeline for the trial and an overview of the study design. The Subcommittee intends to update the Board on activities at the August meeting.

The presentation from this teleconference will be shared with a Delaware Advisory Council. Any stakeholder feedback will be shared with the group.

Summary of Commercial Harvester Interviews and Subcommittee Feedback

Staff interviewed eight commercial fishermen on the prospect of a commercial harvest tagging program. A summary of harvester comments and Subcommittee feedback follows:

Common feedback included:

- Most target tautog when the black sea bass fishery closes, otherwise tautog is generally caught as an incidental catch in the black sea bass fishery
 - *Subcommittee feedback:* When developing the program all commercial harvesters will be required to attach a tag, regardless of directed or incidental harvest.
- Live fish are worth at least \$1 per pound more than dead fish; dead fish are generally worth \$3.50 per pound
- The supply chain is decentralized with lots of small-scale buyers and a few wholesale buyers
 - *Subcommittee feedback:* There are potentially more dealers than harvesters. It may be easier if states implement a limited entry program and distribute tags to harvesters, rather than distribute to a diverse group of dealers.
- Harvesters prefer to tag tautog when at the dock, not at the point of harvest. This would reduce stress on the fish and harvesters.
 - *Subcommittee feedback:* Will need to discuss the tradeoffs of tagging at the dock (before sale) versus at the point of sale.

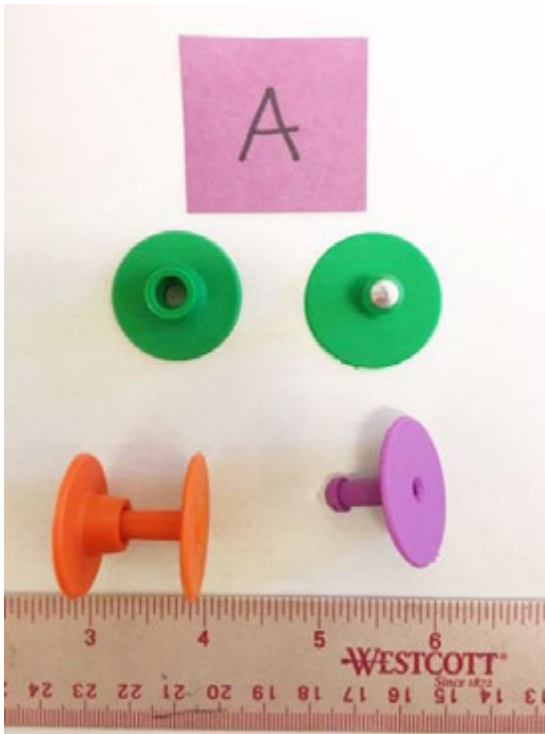
Concerns included:

- *Fish quality:* Most indicated they are targeting black sea bass, they do not want tags to affect the quality of their tautog or black sea bass catch in the fish hold. Concern the tag could damage fish swimming near the tag.
- *Tag allocation:* The allocation of permits should reflect those who actively fish for tautog.
 - *Subcommittee feedback:* A limited entry program could alleviate this concern and it would reduce the number of people that would have to return unused tags. In the interim states without limited entry can review trip reports to determine the number of active participants by state.
- *Tag application:* Tags needs to be easy to use; should have an applicator (that is not a plier)
 - *Subcommittee feedback:* Selected tags for the tagging trial have applicators.
- *Tag removal:* Concern the tag could be unintentionally ripped off when transferring fish (via nets) or in tanks (by rubbing against other fish).
 - *Subcommittee feedback:* Tags selected for the tagging trail are relatively small and will be tested under conditions that a harvester would encounter.
- *Tag cost:* Uncertainty about who will pay for the tags and applicators.
 - *Subcommittee feedback:* This can be dealt with on a state by state basis, which will include the development of a formula (biological metric) to determine the number of tags needed for each state. For example: the formula could be = prior year landings / average weight of commercial harvested tautog. According to harvester feedback the

average weight is 3 pounds. Staff provided a crude estimate of the number of tags that would have been necessary in 2014 using the previously mentioned formula (landings/weight of fish). In 2014, the commercial fishery would have required 93,347 tags (280,042 pounds / 3 lbs).

- *Pennsylvania*: There are illegal tautog in Philadelphia, therefore the state should be included in the tagging program.
 - *Subcommittee feedback*: Pennsylvania would likely adopt the New Jersey regulations, as they have previously done with the minimum size limit.

Tag Overview and Subcommittee Feedback



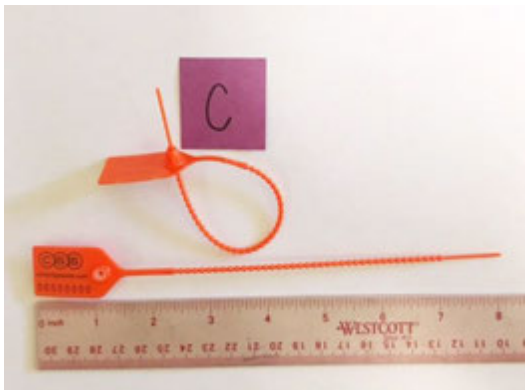
A. QC Supply – button tag that is attached with an applicator; tag traditionally used for livestock, could be attached to the operculum or base of the caudal fin

- *Subcommittee feedback*: The tag is heavy duty and cannot be easily manipulated or re-used. It comes in multiple colors and has enough room to apply state, year and unique ID. There was concern that it might be too large for a fish and since it is a generic livestock tag it might be easily obtained online (and duplicated illegally).
- Tag selected for trial study



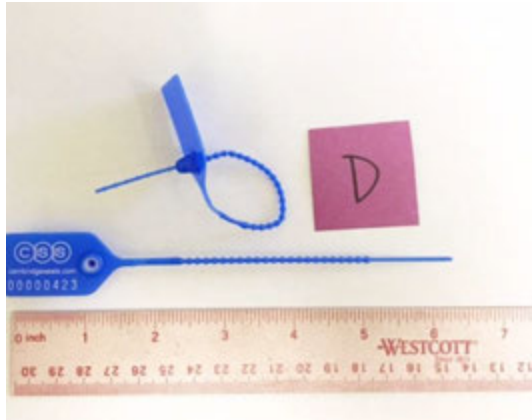
B. Cambridge Seals – fixed length cable tie; this tag is used in MA, CT and NC striped bass tagging program

- *Subcommittee feedback:* This tag is appropriate for a dead fish. In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



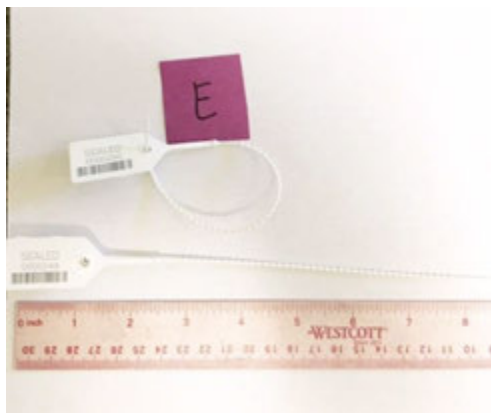
C. Cambridge Seals – 8 inch, medium duty

- *Subcommittee feedback:* In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



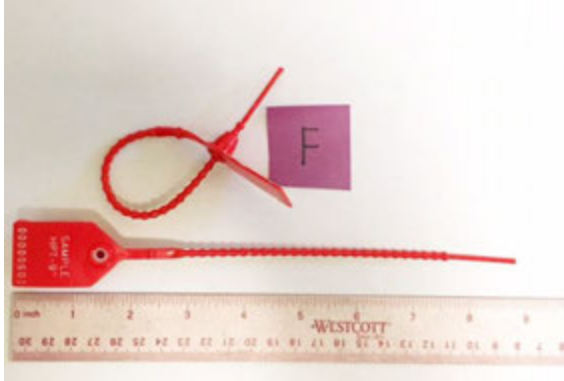
D. Cambridge Seals – medium duty, 6.5 inches

- *Subcommittee feedback:* In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



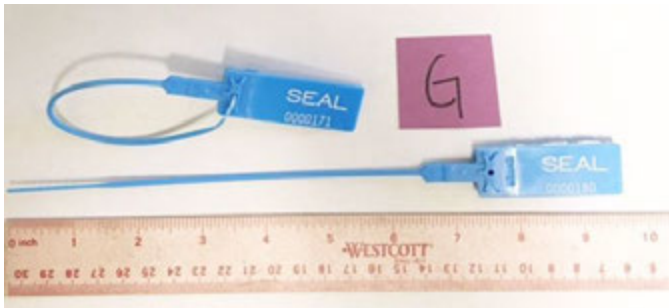
E. Cambridge Seals – light-weight, 8 inch

- *Subcommittee feedback:* This tag is too light-weight to be applied to a fish. In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



F. Cambridge Seals – heavy-duty, 9 inch adjustable cable tie

- *Subcommittee feedback:* In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



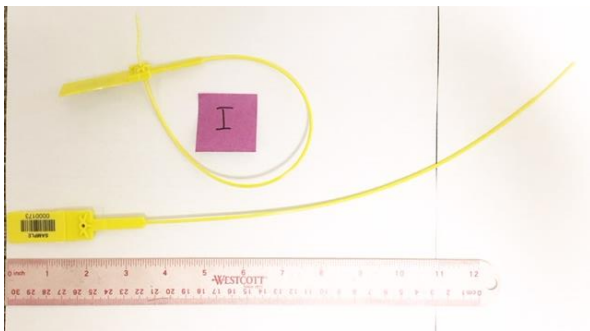
G. Tyden Brooks – Adjustable cable tie

- *Subcommittee feedback:* This tag is too light-weight to be applied to a fish. In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



H. Tyden Brooks – Adjustable cable tie

- *Subcommittee feedback:* This tag could be appropriate for a dead fish. In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



I. Tyden Brooks – Adjustable cable-tie

- *Subcommittee feedback:* In general, none of the cable tie tags meet the needs of a commercial harvest tagging program. Principally, they are not designed for fish, which poses an even greater challenge if applying to a live fish. Harvesters and managers are looking for tags that come with an applicator for ease of use. Other concerns included the size of the tag (large) and the potential for harvesters to cut and re-use a tag several times. Delaware noted the state has defined ‘used tags’ as tags that have been “cut, broken or deformed” to deter re-use.



- J. National Band – strap tag made of monel (nickel-copper); attached to the operculum or lower jaw with an applicator, does not come in other colors**
- *Subcommittee feedback:* The best option as far as size. Law enforcement attempted to open the tag using pliers and was not successful, as it was deformed in a manner that would be noticeable. The durability of the tag outweighed the lack of color options (i.e. silver only).
 - The following unique IDs can be applied to each tag: (6 refers to the year, 2016)
 - Massachusetts: M#####6 (# range from 1-20,000)
 - Rhode Island: R#####6 (# range from 1-18,000)
 - Connecticut: C#####6 (# range from 1-2,000)
 - New York: Y#####6 (# range from 1-40,000)
 - Etc.
 - Tag selected for trial study



K. **OS ID (Norway based) – rototags; generally attached the operculum or base of the dorsal fin via an applicator**

- *Subcommittee feedback:* The variety of colors is favorable, however the tag may be too large.
- **ACTION:** Given these are also used in the livestock industry, staff should look for similar tags by a U.S. based company. However, if the tags are readily available then they might be easy to replicate.
- Tag selected for trial study



L. **Ketchum (Canada based) – Plastic, graphic tags; used in multiple U.S. traceability programs and difficult to replicate**

- *Subcommittee feedback:* Concerned the plastic fastener and associated fastener could be easily acquired and therefore the plastic tags could be re-used. As a result, this tag was not recommended.

Atlantic States Marine Fisheries Commission

Horseshoe Crab Management Board

*August 2, 2016
2:00 – 3:30 p.m.
Alexandria, Virginia*

Draft Agenda

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

1. Welcome/Call to Order (*J. Gilmore*) 2:00 p.m.
2. Board Consent 2:00 p.m.
 - Approval of Agenda
 - Approval of Proceedings from May 2016
3. Public Comment 2:05 p.m.
4. Review and Consider Recommendations from the Adaptive Resource Management (ARM) Subcommittee on Revisions to the ARM Framework (*J. Lyons*) **Action** 2:15 p.m.
5. Discuss Additional Bait Trials (*R. Ballou*) **Possible Action** 3:00 p.m.
6. Other Business/Adjourn 3:30 p.m.

The meeting will be held at the Westin Alexandria; 400 Courthouse Square; Alexandria, VA; 703.253.8600

Vision: Sustainably Managing Atlantic Coastal Fisheries

MEETING OVERVIEW

Horseshoe Crab Management Board Meeting

Tuesday May 3, 2016

2:00 p.m. – 3:30 p.m.

Alexandria, Virginia

Chair: Jim Gilmore (NY) Assumed Chairmanship: 10/14	Horseshoe Crab Technical Committee Chair: Steve Doctor (MD)	Law Enforcement Committee Representative: Doug Messeck (DE)
Vice Chair: Dr. Malcolm Rhodes (SC)	Horseshoe Crab Advisory Panel Chair: Dr. Jim Cooper (SC)	Previous Board Meeting: May 3, 2016
Shorebird Advisory Panel Chair: Dr. Sarah Karpanty (VA)	Delaware Bay Ecosystem Technical Committee Chair: Greg Breese (FWS)	
Voting Members: MA, RI, CT, NY, NJ, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (16 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2016 Board Meeting

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

4. Review and Consider Recommendations from the Adaptive Resource Management (ARM) Framework (2:15 – 3:00 p.m.) Action

Background

- At the 2016 Winter Meeting, the Board supported moving forward with a short-term, partial review of the ARM Framework to be conducted by the ARM Subcommittee in consultation with the Horseshoe Crab Technical Committee subcommittee.
- The ARM Subcommittee met twice a month from February through July 2016 to consider components of the ARM Framework to be updated. Areas of possible change in the ARM Framework include valuation of female horseshoe crabs, alternative harvest packages, abundance thresholds for allowing female horseshoe crab harvest, and the possibility of

including biomedical data in the ARM Framework moving forward (**Supplemental Materials**)

Presentations

- Recommendations on Revisions to the ARM Framework by J. Lyons

Board actions for consideration at this meeting

- Consider approval of recommendations from the ARM Subcommittee to the ARM Framework

6. Discuss Additional Bait Trials (3:00 -3:30 p.m.) Possible Action

Background

- In February 2016, the Board was presented the results of the 2014 alternative horseshoe crab bait trials conducted in Connecticut and Rhode Island. Based on the results of the trials, the Board tasked staff with developing a cost comparison.
- In May 2016, the Board was presented considerations by the Artificial Bait Trials Working Group and Advisory Panel in conducting a cost comparison. Based on the Board discussion, the Board expressed interest in conducting additional bait trials in the future.
- In July 2016, the Board was presented a prospectus for considering conducting additional bait trials in fall 2016. (**Briefing Materials**)

Presentations

- Prospectus for continuing alternative bait trials by R. Ballou

Board actions for consideration at this meeting

- Consider tasking the Technical Committee with conducting additional alternative bait trials

7. Other Business/Adjourn

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

The Westin Alexandria
Alexandria, Virginia
May 3, 2016

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

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INDEX OF MOTIONS

1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of February 2016** by Consent (Page 1).
3. **Move to add Horseshoe Crab to the stock assessment schedule in 2018 and to task the Stock Assessment Subcommittee and Technical Committee to complete a regional 'black box' benchmark stock assessment.** (Page 11). Motion by Bob Ballou; second by Bill Adler. Motion carried (Page 14).
4. **Motion to adjourn,** by Consent (Page 14).

ATTENDANCE

Board Members

Bill Adler, MA (GA)	Roy Miller, DE (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Mike Luisi, MD, proxy for D. Blazer (AA)
Dan McKiernan, MA, proxy for D. Pierce (AA)	Bill Goldsborough, MD (GA)
David Borden, RI (GA)	Cathy Davenport, VA (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Kyle Schick, VA, proxy for Sen. Stuart (LA)
Bob Ballou, RI, proxy for J. Coit (AA)	Rob O'Reilly, VA, proxy for J. Bull (AA)
Dave Simpson, CT (AA)	Michelle Duval, NC, proxy for B. Davis (AA)
James Gilmore, NY (AA)	Robert Boyles, Jr., SC (AA)
Emerson Hasbrouck, NY (GA)	Mel Bell, SC, proxy for M. Rhodes (GA)
Mike Falk, NY, proxy for Sen. Boyle (LA)	Pat Geer, GA, proxy for Rep. Nimmer (LA)
Russ Allen, NJ, proxy for D. Chanda (AA)	Spud Woodward, GA (GA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	James Estes, FL, proxy for J. McCawley (AA)
Tom Fote, NJ (GA)	Mike Millard, USFWS
David Saveikis, DE (AA)	Chris Wright, NMFS
Craig Pugh, DE, proxy for Rep. Carson (LA)	Martin Gary, PRFC

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

Ex-Officio Members

Steve Doctor, Technical Committee Chair	Doug Messeck, Law Enforcement Representative
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Staff

Robert Beal	Kirby Rootes-Murdy
Toni Kerns	Kristen Anstead
Ashton Harp	

Guests

Doug Grout, NH (AA)	Stewart Michels, DE DFW
Rep. Sarah Peake, MA (LA)	John Clark, DE DFW
Sen. Brian Langley, ME (LA)	Cheri Patterson, NH F&G
Loren Lustig, PA (GA)	Brandon Muffley, NJ DFW
Jim Lyons, USGS	Mark Gibson, RI DEM
Charles Lynch, NOAA	Jason McNamee, RI DEM
Derek Orner, NOAA	Benjie Swan, Limuli Labs
Kelly Denit, NMFS	Raymond Kane, CHOIR
Alli Murphy, NMFS	Arnold Leo, E. Hampton, NY
Gregg Waugh, SAFMC	Brett Hoffmeister, Associates of Cape Cod, Inc.
Joe Cimino, VMRC	Allen Burgenson, Lonza Walkersville, Inc.
Jeff Deem, VMRC	David Bush, NCFA
Andy Shields, PA Fish & Boat	Christine Lecker, Wako Chemicals, USA

The Horseshoe Crab Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 3, 2016, and was called to order at 10:28 o'clock p.m. by Chairman James J. Gilmore.

CALL TO ORDER

CHAIRMAN JAMES J. GILMORE: Welcome everybody; this is the Horseshoe Crab meeting. My name is Jim Gilmore; I'm the Administrative Commissioner for New York; and I'll be chairing the meeting today. We've got a few things to go over and one action, hopefully. Well, why don't we just get into it?

APPROVAL OF AGENDA

CHAIRMAN GILMORE: First off, we have an agenda before us. There are several items on the agenda. Are there any changes to the agenda? Seeing none; we'll assume they're adopted by consensus.

APPROVAL OF PROCEEDINGS

CHAIRMAN GILMORE: We also had the proceedings from the February, 2016 meeting that was in your briefing package. Does anybody have any changes to those proceedings? Seeing none; we'll adopt those by consensus.

PUBLIC COMMENT

CHAIRMAN GILMORE: Before each meeting we offer a time period for the public to come up to the public microphone and provide public comment. This would be on actions that are not on the agenda. If you want to have a comment during some of the discussions that are on the agenda; hold those off until later. But if someone wants to make a comment, now would be the time to do it.

I had two people sign up, Benjie; let's see if Benjie is in the room. Your comment was on the agenda topic, so we'll take that later on. Christina Lecker,

if you would like to go up to the public microphone. I'm sorry. Okay great, all right we'll hold those off until later. Okay let's jump right into it.

UPDATE ON THE ADAPTIVE RESOURCE MANAGEMENT FRAMEWORK REVIEW

CHAIRMAN GILMORE: We have an update on the adaptive resource management framework review; and Jim Lyons is going to give us a presentation on that.

MR. JIM LYONS: Good morning everyone; my name is Jim Lyons; I am with the USGS Patuxent Wildlife Research Center. I have been part of the Adaptive Resource Management Subcommittee since it was formed in about 2009, here today to report on the progress of the subcommittee on this review of the adaptive resource management framework, and tell you a little bit about what we've been working on.

This type of review is a standard part of adaptive resource management, and it provides the opportunity for us to examine all the elements of the adaptive management framework; and determine if they are functioning as intended, and if they are still adequate. It is a process that was laid out in the 2009 report on the framework, and something that we've started earlier this year.

In our first meetings of the subcommittee back in the beginning of 2016 we started to begin this process of the review, and produced a list of components of the framework that could be part of the review; and came up with a number of short term things that we thought could be completed in less than a year, and a number of longer term things that would probably take more investment of time and resources; and brought those to the board at the February meeting. The board directed us at that time to take up the short term items, which is what I'm here to report on.

These are things that we will be completing by the fall of this year. The short term items, there are three parts of the review, one is to review the monitoring programs that are part of this decision making framework for horseshoe crabs and for red knots. The decision making framework requires population assessments of those two species each year, and so we're evaluating the current monitoring and how well that is functioning for both species.

The second part of the review involves looking at the harvest packages or the options in our decision making framework, and asks if they are adequate or if they could be improved somehow. The third part is the objective function, which is the target of the optimization routine that produces the recommendations each year.

There are several components to this objective function or reward function, and we're looking at those and asking if they could be improved. I'm going to say a few words about each of these components, and let you know our progress on each. The first part of the review as I said, is evaluating the monitoring programs for horseshoe crabs and red knots.

With respect to horseshoe crabs, the decision making framework requires population size estimates for four age and sex classes every year. These data have probably been the most problematic part of the framework, because the framework was designed with the Virginia Tech Trawl Survey operating as a way to produce these population size estimates; but as you know the trawl survey hasn't been fully funded since 2011.

It was partially funded in 2012, but not operating in 2013, '14, or '15. Currently funding is in place for 2016. In the meantime we've been using some alternatives or some ad hoc approaches that are part of the review. One of them is a composite index approach that we developed in 2015. This composite index uses multiple surveys

and multiple years to produce one index of population status for horseshoe crabs.

Then we correlated that composite index with the same years of the Virginia Tech Trawl Survey, and we attempt to predict what the Virginia Tech Trawl Survey would produce for an estimate were it running. Despite the evidence that there's pretty good correspondence between this composite index and the Virginia Tech Trawl Survey in the years that they were run together, this is an indirect measure and something that we could improve on.

We're considering or have reviewed in our subcommittee other approaches, including a mark-recapture approach estimating population size, which seems like it might be limited because of the amount of tagging effort that would be required to make that adequate. Then finally we are discussing the potential for a catch survey model to provide the data necessary for the horseshoe crab monitoring.

But the catch survey model seems to have quite a bit of potential, but would require several years of data from a trawl survey to put that model together. All of that leads us to the suggestion that the Virginia Tech Trawl Survey is the most direct and most appropriate way to monitor horseshoe crabs; and we're emphasizing in the review that it would be in the best interest of the framework if we could secure funding for that trawl survey. We have a draft report of this part of the review that looks at each of these components, the Virginia Tech Trawl Survey, the Composite Index, mark-recapture approaches and the catch-survey model; and evaluates the pros and cons of each. We'll be summarizing recommendations for the board with that report.

The second part of our review, the monitoring part of this review is related to red knots and the mark-recapture and mark-re-sight approach that we use to estimate red knot population sizes. We recently created a new study design and a new

sampling plan for the mark- re-sight data as part of this review to make sure that the data on the bird populations are consistent with the modeling approach and reviewed this sampling plan with the field crews; and brought more clarity to the way that those data are collected, so that they can produce reliable population size estimate.

Then finally with respect to monitoring, we've had some discussions about the potential for biomedical data if available to improve the framework. It is not clear what would be available and when, so we have to continue to discuss this in more detail; and could provide recommendations on how we might be able to use aggregated data if it were available.

The second part of this major review is to look at the alternative harvest packages, the options that are available to us, and then ask if the harvest is being limited by the options that we have; and could we maybe improve on the set of packages that we're currently evaluating. The current framework has five packages.

As part of this review we've produced an alternative set of packages, including some with more potential for female harvest. We're continuing to evaluate the potential changes to the options that go into the framework, and if they can be improved some members of the subcommittee emphasized that the currently female harvest is constrained more by utility thresholds that are part of the framework.

The framework has population size thresholds for the female crab population and the red knot population. We're currently below both of those thresholds, so despite changes to the alternative harvest packages, it is not clear that there would be an increase in female harvest because of the state of these populations with respect to those thresholds.

But we're going to continue to discuss those alternatives in detail, and provide some

recommendations on changes there. Finally the third part of this monitoring review is about the objective function. As I said that is the target in the optimization routine. It is a reward function that is composed of utility from both female harvest and from male harvest.

Most of the work so far has been related to constraints that are placed on male harvest with a utility function. The suggestion was that there is some redundancy in this constraint on male harvest, with some elements of the crab population dynamics model. Currently there is a constraint in the reward function related to the sex ratio of the population, such that utility of harvest is lowered when the sex ratio is below three to one.

But there is also a part of the population dynamics model that reduces population growth when sex ratio is declining as well. There might be some redundancy there, and the subcommittee has been exploring simulations and scenarios to determine the impacts of removing this constraint from the reward function. So far, preliminary results suggest that there would not be major changes in recommended harvest, or the changes in harvest levels, if we simplified the model and streamlined or simplified the reward function, and streamlined the framework by removing that sex ratio constraint.

We'll have more definitive recommendations about that for the August meeting. Then finally, we also have had some conversation about the change in status of red knots. As you know the species was listed under the Endangered Species Act as threatened in December of 2014. We have discussed the potential for implications of that on our decision making framework.

But for the most part we feel like it is probably not going to have strong implications for what we're doing, because the decision making framework is already supporting conservation of red knots, and probably is doing the best that we

can with respect to that species. But we will be including that in our report to the board.

In conclusion then, I was going to wrap up with some next steps for this process. We want to finish the reviews that I've mentioned and compile these recommendations, and present those to the Delaware Bay Technical Committee and the Horseshoe Crab Technical Committee in an in-person meeting at some point this summer; and present these recommendations to them. Then produce final recommendations for the board for the August meeting. With that I will be happy to answer any questions you might have about the review of the adaptive resource management.

CHAIRMAN GILMORE: Great update; questions for Jim?

MR. EMERSON C. HASBROUCK: You may have mentioned this and I might have missed it. What is the status of the funding for the trawl survey?

MR. LYONS: The trawl survey is funded for this year. But I believe that it is just for, my knowledge of the status of the funding for the trawl survey is that it is funded for 2016; but not beyond that. Other than that there may be other folks that would have more information about that.

CHAIRMAN GILMORE: Other questions from the left side of the room, until we fix the microphone link?

DR. MIKE MILLARD: Thanks Jim, great update. It is good to hear the progress on these three short term affects. Thinking back, I want to draw your attention to the two long term efforts that were also put on the table at the last meeting. I think those included revisiting the suite of models that make up the ARM.

Second, transferring that software routine over to a more efficient package, I think it would be a

mistake to let those fall off the table. I've heard from some of the ARM members about that and I guess I would like to hear your opinion about those two long term efforts, and if and when we should bring those back up again.

MR. LYONS: Yes the two long term items, including assessing the population dynamics models for horseshoe crabs and for red knots, and for converting the framework to new software that would allow more flexibility and improve the process. The committee feels those are important items, but they would probably require additional staff and some help with that. We continue to be interested in those, and emphasize the importance of those improvements. They would probably be more substantial changes and more substantial improvements to the process than the short term items, and we're hoping that we can do them at some point.

CHAIRMAN GILMORE: Any other questions for Jim? Maybe we can get a few new microphones in on that trawl survey funding or whatever. All right we're going to move on. Thanks, Jim, we look forward to the August updates and how much progress we're going to make.

BIOMEDICAL DATA CONFIDENTIALITY AND STOCK ASSESSMENT PLANNING

CHAIRMAN GILMORE: The next discussion item is on biomedical data confidentiality and stock assessment planning. I believe Kristen is going to kick this off with a presentation, and then we'll have some comments.

MS. KRISTEN ANSTEAD: Good morning, I'm going to update you on where we are with the biomedical data confidentiality, and how we could move forward with doing a stock assessment for horseshoe crab. The last benchmark was done in 2009, and that was a coastwide trend analysis.

There were some additional models explored for the Delaware Bay at that time, and a surplus production model and a catch survey. But they omitted the biomedical data, so when it came time to do an update in 2013, only the coastwide trend analysis was updated; because they didn't include the biomedical in those other analyses, and it was thought that those really need to be included going forward.

We suspect that the biomedical now accounts for greater than 10 percent of the coastwide mortality, and so moving forward we really need to account for that in the models. Because of the data confidentiality issues around the biomedical, the TC did not recommend doing the scheduled benchmark in 2016; and instead we prioritized this review of the ARM model.

The ARM model finds the optimal harvest levels, and it links it to red knots, and it was designed to be a supplement to the stock assessment, not a replacement for. We still need to find a way to move forward to assess the population as a whole. One of the reasons that we need to do this on a regional basis is that there is evidence that there is localized spawning density, size structure, movement, and we're not capturing that by doing an assessment on a coastwide level.

There are also different harvest pressures along the coast from the bait fishery, the biomedical, so there are different mortalities in each of these regions; and I'm included two graphs here. The top one is some trends in New England. Those are some indices from Rhode Island and Massachusetts. It is not a comprehensive list but it is just to show you that in recent years there has been a decline in the stock in New England.

The second graph are two indices from New York that is also experiencing a decline overall. Delaware Bay populations and the southeast seem to be either level or increasing. They are doing well. But these two populations are not,

and that is what we're sort of missing by not doing a regional assessment of this stock.

I think the last time a benchmark was done in 2009, there were four biomedical facilities. We now have six, and so we have one in Massachusetts, one in New Jersey, one in Maryland, two in Virginia, and one in South Carolina. If we look at that as far as a regional assessment is concerned, we're still running into the rule of threes here, where you have to have three separate contributors to the fishery data; so that you can't identify any one contributor. In New England we have one facility, so we can't use the biomedical data there in a transparent way.

We have zero in New York, and one in the southeast. We do have four in the Delaware Bay region, so we have discussed the possibility of being able to do an assessment using the biomedical data in that region. But it is still sort of a gray area, because if we have done a coastwide assessment and published those numbers of what the biomedical is landing, bleeding, and the mortality associated with that.

Arguably, then if we did the same for the Delaware Bay, New England could subtract the Delaware Bay numbers, their own numbers from that coastwide, and identify what example southeast is harvesting and bleeding; so we have violated confidentiality that way potentially. The likelihood of being able to do a Delaware Bay assessment and include that biomedical in a transparent way is probably still unlikely; even though we have more than three in that region.

We've explored some different ways to try to use this data. We contacted each state and just to confirm that they all follow the rules of threes, when it comes to confidentiality, and they do. We also talked about potentially changing the permitting, so when biomedical is issued a permit it has to say explicitly in there this data must be used publicly in the stock assessment.

But that is also probably not an option, because it would be trumped by confidentiality rules. The Stock Assessment Subcommittee met in March to brainstorm ideas with how to use this data in a stock assessment. Additionally, these issues were brought up at the ASC/MSC joint meeting last month, and both of these committees concluded that a regional assessment probably can't be done using the biomedical data.

The AP also discussed this in a phone call recently, and they did express some concern about that Delaware Bay region, and trying to use that data even though there are more than three companies there. These are options that have been previously discussed over the last few years. One was to release all the biomedical data to the public, and the biomedical companies were not comfortable with this option; and it does violate confidentiality.

Another option would be to release the biomedical to the SAS and TC, and when we publish reports we could regroup it coastwide. The biomedical was in favor of this, but the TC did have concerns regarding transparency of publishing a stock assessment without these numbers being explicitly in the document.

Another option that has been thrown around is proportioning out that mortality, so taking the coastwide mortality and divvying it up equally between the six biomedical facilities and using the data that way on a regional basis. But this is also a little tricky, because either it isn't accurate, then when its peer reviewed the peer review panel will say; well is this data representative of the truth, and we say no. Then why did we use it in the model that is not informative if it is not representing the truth.

If it is representing the truth then that might violate confidentiality, because then we would be saying parsing this out equally is representative of the truth, and now we've identified pretty much what the landings, the bleeding numbers, and the

mortality for each of those facilities are. This option isn't probably helpful either. These are our current options. We can continue to delay the benchmark indefinitely, and that is sort of where we are right now. We could do a turn of the crank update, and similarly to what we did in 2013, just update those coastwide trend analyses; again this would not address those regional populations or start to identify the issues in New England and New York.

But there is still information here. We would update some of the trends and see overall how the population is doing, and it would not include the biomedical data. We could do a transparent coastwide assessment. If we did this we could explore some other modeling opportunities, potentially even regionally.

We could explore different modeling for the Delaware Bay, kind of like the benchmark in 2009 did with the surplus production or the catch survey, and incorporate the biomedical this time. But that would not be transparent, or we could do a nontransparent regional black box benchmark. To do this the SAS, the TC, and the Peer Review Panel would all get access to confidential data.

We would do a full assessment by region, including the biomedical, and then publish a nontransparent report. These are sort of the options that we have right now. We are looking for guidance from the board on how to proceed to get an assessment done for this population. I'll go back to the next slide, and I'm happy to take any questions you might have.

CHAIRMAN GILMORE: First, do we have questions for Kristen?

MR. DAVID V. BORDEN: Under Item Number 4, do I understand this correctly that the confidential data would be made available to the individuals doing the stock assessment, but all of those individuals would basically have had to sign

one of these confidentiality forms? Okay so, I guess my own preference here, I think it is important to do the regional assessment in as fine a detail as we need to do.

I would be comfortable supporting that. I would also note that it might be a good idea; I mean a lot of the state directors I think have signed the same forms; so maybe we could have a subcommittee of the board, appointed by the chair that got access to the same confidential data, so that it would be more transparent.

CHAIRMAN GILMORE: It's a good idea. Other questions?

MR. DANIEL McKIERNAN: Yes, a question on Number 4. It talks about recommending regional allocation adjustments. Could you clarify that?

MS. ANSTEAD: If we were able to assess each of these populations regionally, it could adjust the recommended harvest levels. But that is where we get into kind of a tricky area. It wouldn't be transparent so we would be saying we would recommend an adjustment in this way, but we can't tell you why; because those numbers can't be published. We can show trends on a graph without labeling the axis, but that would be the most amount of information we could provide to support that guidance. I don't know if you have anything to add, Kirby.

CHAIRMAN GILMORE: Other questions, Rob O'Reilly.

MR. ROB O'REILLY: I had trouble picking up everything, but about four years ago one of the problems was the cap had been exceeded, and where does that stand today?

MR. KIRBY ROOTES-MURDY: Rob is referring to a coastwide cap on biomedical mortality, and again that is what we aggregate all the biomedical data across the coast. It is set at approximately 57,000

crabs, so if that number is exceeded on an annual basis that is the threshold.

That number has been exceeded, I can double check, but I believe at least each of the last four years; at which point the board, at least according to the FMP, is tasked to take management action; and the board has declined taking management action during those points when that has been brought up.

MR. CHRIS BATSAVAGE: Just a couple clarifying questions. The permits that are issued from the states are the biomedical industry; are they considered a fisherman under those permits?

MR. ROOTES-MURDY: Thank you for that question. I sent around a memo to the administrative commissioners outlining the confidentiality rules for each of the states. Generally that information provided by the states really focused on what the data that was received from biomedical harvesters was viewed at.

Depending on the state, it varies on how the collection of horseshoe crabs for biomedical purposes are viewed as either scientific or a directed commercial harvest. In terms of the data itself, this data is viewed as catch data and that is how it is submitted; this data is submitted to the states and the states then submit it to the commission for review. But it varies from state-to-state on whether it's a scientific or biomedical collection, or a harvest for the purpose of biomedical use.

MR. BATSAVAGE: It seems to me that the commission should direct the states to issue their permits so that they are considered a fisherman, and then that way you would pool them with the other fishermen. Then we wouldn't have this confidentiality issue.

MR. ROOTES-MURDY: This brings it back to the issue of the rule of three. In terms of looking at fisheries data, fishery resource data, you need to

have at least three contributors; that is either three fishermen or three dealers; and the biomedical facilities are viewed in the context of this fishery as dealers.

Regardless of whether the permit is issued ascribing them as being a fisherman or not, the data itself is treated with this rule of three, so you still need to have an aggregate of at least three; in order to get out of that when you're looking at this data on a regional basis, regardless of whether they're considered fishermen or not.

MR. BATSAVAGE: I'm still a bit confused that they would be treated as a dealer, even though they're issued a fishing permit.

MR. ROOTES-MURDY: Well again, depending on the state, the state either issues out harvest permits for biomedical purposes or scientific permits. But that data is treated as confidential under the rule of three; regardless of whether they are viewed as specifically fishing for commercial landings, or if they are harvesting for biomedical use.

MR. BATSAVAGE: I understand that. But if they're pooled with the other fishermen, if they're catching fish and they're issued a permit to catch fish, then they're considered a fisherman, right? Why would they be considered both a dealer and a fisherman?

CHAIRMAN GILMORE: Robert Boyles has got something on this.

MR. ROBERT H. BOYLES, JR.: Chris, maybe I can help you out. South Carolina has reported, we do have a biomedical facility. Any number I report is going to be a confidential number, any number I report. It is protected. We protect it to protect the confidentiality of the actor there, because all our crabs, by permit all of our crabs in South Carolina are returned to the water.

There is no bait harvest in South Carolina. It is exclusively a biomedical fishery. But if I give you X number then my South Carolina operator's competitors are going to know the size of their fishery. Does that make sense? There is no way around that confidentiality without the rule of three.

MR. BATSAVAGE: Yes that clarifies it, but I am just trying to figure out a way of getting around it in an easier way than we're approaching it right now. Is the data that is being collected that would fall under the Act? Therefore we would still have to follow the rule of three?

CHAIRMAN GILMORE: Chris, I appreciate the efforts to try to get around this. Staff has been going through this for quite a while right now, and every one of them they come up with really comes down to it is really subject to a challenge. We're thinking that any of those ideas, including what you're going for, sounds great on paper; but it just really leaves us open to a challenge, so I don't think they're going to work. Any other questions?

MR. STEWART MICHAELS: Kirby, I think I've asked this question before, but what is the competitive advantage or disadvantage to these companies for knowing how many crabs are harvested in an area? Have the biomedical firms given any indication of that? I have some understanding about public perception and the perception of environmental groups, but competitively speaking, what difference does it make if you know that Company A harvested say 10,000 crabs in a given year?

MR. ROOTES-MURDY: I'll give it a shot, but then we have biomedical representatives in the audience and I think they would probably be more equipped to answer it. But my understanding as it has been communicated in our exchange with AP members is that when looking at this information, one company could figure out how effective another company is in

producing or procuring the ingredients, the blood needed for lysate.

Looking at it on a competitive advantage they could make the argument they are doing it more effectively than their competitors, in the number of crabs they are using to secure that lysate. But I will turn it over to one of the biomedical representatives if they would prefer to elaborate or provide more information.

CHAIRMAN GILMORE: Benjie, do you want to? If you go down to the end, get your backpack on it is quite a walk.

MS. BENJIE L. SWAN: Benjie Swan with Limuli Laboratories. I think that the horseshoe crabs themselves are equivalent to the product. It is not that we add a whole bunch of other things to the product. If I say I collect a thousand crabs that means I have a thousand units of product to sell. I think it lets your competitor know an awful lot about your company.

Say if you're very small and people, maybe the general public or the people that buy from you don't realize you're so small, but they find out you're that small and they'll say, well I don't want to work with them, I want to work with the big guy or something like that. I think it could hurt a company that way.

Then say a company has problems with collecting horseshoe crabs, and their numbers drop to a certain level. There could be a rumor that goes around that that company is going to fall and go out of business, and that would be a scramble for their people that they sell to, to find someone else, even though they may be just decided to have a down year that year or something.

Say if they ramp up whatever they're making and they collect more crabs, then people would maybe think, oh they either had problems or they're doing really well. Let's go with that company. Then we all know the environmental concerns; that if you're a big company and you're

doing well that environmental companies might go after you, or if you're small they'll say, well we don't really need that company because they're so small.

Let's get them out of this region that's very sensitive or something like that. I think there is an awful lot that could happen to a company if the numbers are out. I will say that the industry started in the 1970s, and since that time I have grown up with confidentiality. It is like engrained in us that you do not discuss your numbers. My comments were I did have another suggestion on how to work within the numbers.

CHAIRMAN GILMORE: Why don't you, Benjie, hold off on that. But actually stay there, because my plan is actually to get a motion up and then go around. Then we can get your comments in a few minutes. Just stay right there for a while.

MR. HASBROUCK: I've got a couple of questions. I want to make sure that I fully understand the issue here. We know what the total harvest is for biomedical. But the assessment will be better if it's done on a regional basis, so that is where the issue is. We know what the total harvest is for biomedical.

But we can't divvy it up or allocate it to the specific regions. Then also, in the last assessment that was done, for the biomedical harvest, are all of those crabs considered harvested dead essentially, or is there a mortality factor that is applied? If there is a mortality factor what is that based on?

MS. ANSTEAD: Yes in the assessment we always have a table that is how many were collected, how many were bled coastwide, and then we assign 15 percent mortality. That is just what that has been decided based on the literature of how many crabs survive. It isn't that they're all considered dead. They bleed them, they return them to the water, and we think 85 percent of them go on to live. It is not a huge amount, but in

that 15 percent it could be lower, it could be higher. The literature ranges from 8 to 30; so that would be another part that could be explored if we were to look at incorporating this data into the assessment. But right now we give them 15 percent mortality. Does that answer your question?

DR. MILLARD: Two questions and a comment. Clearly Option Number 4, at least in my mind gets us the most correct answer. I could certainly support that. One question would be, is there a precedent for that or are we going to hit a road block down the road for this lack of transparency thing that is currently unforeseen, or have we done this before?

The second question pertains to this notion of the 15 percent mortality. Having read the supplemental material I know that the biomed firms have some issue with that number. I would say if they have data that would be better, for us to get a better estimate of that mortality associated with bleeding; we would love to see it. Can we ask them to either generate or produce data? Once they enter into this assessment routine, can we ask them to produce data that gets us a better estimate of that mortality?

EXECUTIVE DIRECTOR ROBERT E. BEAL: Well, I can comment on Mike's first question which is is there any precedent for this type of assessment with the commission. The short answer is no. This would be a unique arrangement. The longer answer is, at times the Technical Committees and other groups, Stock Assessment Subcommittees when they're working on assessments will look into one or two datasets that are confidential, and they'll close the doors for a little while, and then reopen them and go on with the assessment.

But this would be, due to these confidentiality constraints it would have to be from beginning to end closed door Technical Committee meetings and Stock Assessment Committee meetings;

definitely for the north and the south. We'll see what we can work out in the Mid-Atlantic, but that may be a problem as well.

It would just be the information coming back to the board would be much less detailed than your standard assessment, because it would just be trends, probably not even link back to real numbers with those trends. You just see a line moving up or moving down, and the magnitude of that line would be a bit of a mystery to the board and to the public. It creates a lot of problems for the commission, this issue.

MR. ROOTES-MURDY: To your second question regarding asking for a mortality estimate from the facilities. I think at this point we could look forward to doing an assessment where we would ask the biomedical companies to provide those estimates if they feel that they differ from what the current number is. That would be considered in the literature review, the review of the data. Much like we would do with any other assessment and trying to account for mortality estimates for the species.

MR. MCKIERNAN: If I could fast forward into the future when we do an assessment and we try to execute some management. My question is how important is the landings by the bait harvesters in various regions that allow it, relative to this number? If we're struggling with getting this number correct, and we don't have accurate numbers from our bait harvesters for a variety of reason, such as a lot of guys may be harvesting their own bait; and we don't have that dealer check, a second level of verification. Where are we going with this? How important is the other harvest, the bait level harvest? How important is that accuracy in the final assessment?

MR. ROOTES-MURDY: Dan, I'll take a stab at it. One of the reasons why this has continued to be a sticking point and coming back to the assessment is because since the late 1990s the annual amount of bait harvest has continued to drop

through management actions. Over time as that number, the annual harvest for bait has gone down regionally and coastwise, the biomedical landings catch has both increased; but not quite on the same slope exponentially.

But what has happened is that the point where we're at now is that the proportion of the harvest that is going to biomedical is greater than it was say 20 years ago. That is where when we're looking at this data for an assessment purpose it needs, the TC and Stock Assessment Subcommittee feel that it needs to be considered, needs to be included in order to get the accurate picture for those regional populations.

In terms of coming out of the assessment for management decisions that is still to be determined how that would play out. Kristen I think gave a good overview of how that information can be presented to the public. But it is still unclear how the board will need to consider the results of it when making management changes or decisions in the future.

MR. ROBERT BALLOU: At the appropriate time I am prepared to offer a motion, but before I do I am curious as to the timing of a benchmark. If the board were to support moving forward, when would be the appropriate time to target a benchmark?

MS. ARNSTEAD: If we did a coastwide benchmark, doing it not regionally, transparent coastwide. That could probably be done in 2018, I think we said, and that would probably be the same timeline for the black box assessment. A turn of the crank update could potentially be done in 2017.

CHAIRMAN GILMORE: Okay based upon the discussion I think it's pretty clear, we need to move the stock assessment along from a coastwide perspective, but also in my state it is getting more and more difficult to manage this resource with a lot of indication that the stock is

in decline. Dan, my bigger concern, even from the bait is the illegal harvest that still seems to be going on I think in a bunch of places. On that note I'm looking for a motion. Bob Ballou if you would like to offer one.

MR. BALLOU: Yes I would like to move to add horseshoe crab to the stock assessment schedule in 2018, and to task the Stock Assessment Subcommittee and Technical Committee to complete a black box stock assessment.

CHAIRMAN GILMORE: Do we have a second to that motion?

MS. TONI KERNS: Question to Bob, is that a regional assessment or a coastwide?

MR. BALLOU: That would be regional. That would be a full benchmark that would allow for a regional. If we need to add that I just assumed that was inherent in the motion. That is certainly the intent.

CHAIRMAN GILMORE: Second by Bill Adler. Discussion on the motion?

MR. ADAM NOWALSKY: If we can't disclose numbers and all we're looking at is a line on a chart without any markings. How do we apply that to management?

MS. ANSTEAD: I'm not totally clear on this either. It would be a learning experience. I think we could still make advice. But that is one of the parts of doing a black box assessment. We could still find when we go into this assessment that the numbers haven't changed. We still may end up doing a trend analysis.

We don't have a magic solution if we go to the regional assessment. We still might end up doing a trend analysis for each of these regions, and come out with similar advice as we have in the past. But there certainly is going to be a learning experience here in how we present this data. I

don't know if you want to add anything, Kirby. It is a good question.

MR. ROOTES-MURDY: Yes, I think Kristen answered it well. The broadest way to look at it at this point is that the advice coming out of an assessment could either say that there needs to be adjustments to management to reduce mortality. Those pieces of advice could be done on a regional level.

The problem we run into is that depending on what region you're talking about that might present issues of confidentiality, right. We can't, for example in the southeast, disclose what the fishing mortality estimate might be without violating confidentiality. There will be some points in what comes out of this assessment that at this point, it is still unclear how that information could be presented to the board to make management decisions.

CHAIRMAN GILMORE: Adam, we're breaking new ground here, we understand that. But we really need to get this assessment going. Because of this confidentiality issue, I mean we've got to try something. We don't have all the answers yet to it, but I think if we start, at least it is a good way to move this along instead of just sitting here spinning our wheels.

MR. BRANDON MUFFLEY: I had a similar comment to Adam. I mean I agree wholeheartedly we need to do an assessment, 2009 was the last one; and it was a trend analysis. I think we need to do something to get us to speed, in terms of where we are with this stock. I still grapple with how we're going to deal with this from a management perspective.

I agree that it may be the best way to approach it, but other than the TC having the best information in front of them and a good model, I don't know how we can apply it at the board level; in terms of what we're going to do. I am just still struggling with how we're going to move forward with this.

I support the assessment and what we're trying to do. I just don't know how it is going to play out.

CHAIRMAN GILMORE: Understood.

MR. O'REILLY: I guess my question is about the regional specifics. Just a few years ago there was concern expressed for New York north, I'll call it a management unit, and that the mortality rates were perceived as high at that time. Once we go forward here, will we have the ability to have that type of advice coming back from the assessment using this approach, which I certainly understand what Robert Boyles said. I agree with that. But at the same time, are we going to find ourselves in a situation where we can't definitively indicate a problem; even though we suspect there is a regional problem?

EXECUTIVE DIRECTOR BEAL: Jim, I'm kind of in the same spot as everyone else. We don't have all the answers. But I can envision an output from an assessment that has a lot of relative terms. In other words, fishing mortality is up 15 percent or down 15 percent or the stock is overfished and overfishing is occurring, some of the general terms that we use.

If you envision some figures coming out of this assessment, the vertical access may not have exact units on it. But we can use some relative terms there, and with the years across the horizontal access to inform the board. It is going to confound things, but hopefully we can provide at least some general terms that are valuable to the board.

We had a bit of an internal dialogue, or at least I did with one of the assessment folks on, if we reported F rate in one panel and biomass in another panel, could someone do the math, go back and recalculate what landings were from one of the segments? It is pretty hard to do that. That means you would have to have the code of the assessment and everything else.

I think as this evolves, and we study the confidentiality rules, I think we can work with the board to present something that is of some value; not just a wiggly line on a piece of paper that doesn't mean anything. I think there is going to be some relative growth in the stock or decrease in stock; the same thing with the F rate. We'll see what we can do.

MR. BORDEN: I see this as two separate issues, and the two separate issues are basically, I think the commission should attempt to do the best possible stock assessment we can do on the species. That is one part of it. I think that is pretty easy to do. All the TC and people that are working on the stock assessment are bound by the confidentiality rules, so they do that. It's a black box. Then you've got this whole separate issue of how we disseminate it.

I think Bob just characterized a couple of really good points. But I would add to what Bob just said that to a large extent it is going to depend on the results of the assessment, as to how you can disseminate it, what ways you can mask it; and so forth. I support the motion going forward; and what I would suggest is we continue to work on the second part of this as that information comes along.

CHAIRMAN GILMORE: Good point, Dave. I would like to go to the public now and take a couple of comments from them. Benjie, did she disappear on us? There she is. Oh, okay go ahead.

MR. ALLEN BURGENSEN: Hi, my name is Allen Burgenson; I'm with Lonza Walkersville in Walkersville, Maryland. I actually had some responses or answers for Mr. Millard's question. Several years ago I presented to this board our collection of mortality complete; for a couple of years. Our mortality rates that we've seen are between 3 and 5 percent.

Yes, we do dispute the 15 percent number. It is just not true. The original number was set by a

paper from Rudloe, using collection methods that we don't use, the entire industry do not use. Several years ago we also as an entire industry, came up with the fisheries best management practice on how we collect and treat the animals, and then return them to the sea. Like I said before, our numbers that we believe are between 3 and 5 percent. We've also worked with Dr. Jim Berkson of Virginia Tech. We supported graduate students at that facility for many, many years. There are many graduate theses out there on collection of horseshoe crabs and different mortality rates due to bleeding.

Like I said, the numbers are out there and they have been presented to this board before. One more comment that I did have though, or two more comments. One is the idea of harvest for the biomedical industry. We don't use the term harvest, because harvest implies they are dead. We don't kill them. We use the word collection.

We collect, we bleed, and we return to the sea. Like I said, 3 to 5 percent of the crabs may unfortunately die. But one more issue about our product. We're not manufacturing product just to manufacture product. Our product is required by law in the United States and other foreign companies. Pharmaceutical companies are the ones who are driving our demand.

We're not making it and storing it up in a warehouse somewhere. We're making it, and as soon as we make it, it is already spoken for by a pharmaceutical company; if anything were to happen to that supply chain, where we could not meet our customers' needs. Our pharmaceutical and medical device customers needs; that has serious implications for the health system in the United States and around the world. That's it for me.

MS. SWAN: I had a couple comments, but a couple of them were already addressed. The one was that if we expose the Delaware Bay numbers that one company in New England or the one

company in the southeast, their numbers would no longer be confidential. I did have one other suggestion. I am uncertain how the low estimate for biomedical mortality would affect the modeling conclusions.

I would maybe suggest, and I don't know if this is hard to do or not, but we run the model attributing all the biomedical mortality, the estimate; the 78,000 to the region, and then run the model attributing 0 mortality, and see if there is a difference in the conclusion. Possibly you could report it maybe as a range; that the range can go and treat it that way. It is just something you could look at to see if it would really matter, what we're arguing about, if it would really make a difference in the conclusion.

CHAIRMAN GILMORE: Back to the board, other comments on this? Go ahead, Stew.

MR. MICHAELS: Well, I'll support this, but only because I have to. I mean I am really concerned about what is going on in New England and New York, and I think that we need to try and better understand what's going on up there so that we can move forward with management. I am very disappointed that we can't come up with a better solution than this. I am uncomfortable with the precedents that it sets. But simply in the interest of moving forward I guess, I am kind of forced into supporting this motion.

CHAIRMAN GILMORE: Any other comments before we take this to a vote? Okay seeing none; do we need any time to caucus? Okay I guess not. **All those in favor of this motion please raise your right hand; all those opposed any null votes, any abstentions? Okay motion passes unanimously.**

REVIEW OF THE ALTERNATE BAIT COST COMPARISON

CHAIRMAN GILMORE: The next order of business is a review of the alternate bait cost comparison; and Kirby is going to do a presentation on this.

MR. ROOTES-MURDY: We're running a little bit behind, so I'm going to try to go through this as quickly as possible, but field any questions you guys might have. Just a quick background, in February of 2014, the board requested that the alternative bait made by LaMonica Fine Foods be tested through an Alternative Bait Working Group.

In the fall of 2014, Rhode Island and Connecticut took part in those bait trials, and in February of this year the board requested a cost analysis be conducted, based on the results of that alternative bait trial in Rhode Island and Connecticut. We had the Alternative Bait Working Group meet via conference call on March 30th, and we discussed some of the results and lessons learned from the trials in 2014.

The working group is made up of Delaware representatives, Rhode Island, Connecticut and Massachusetts; and Delaware and Massachusetts were both interested in taking part in these trial to begin with, but were unable to – well, Massachusetts was unable to secure the bait and Delaware found that they didn't have an adequate number of conch fishermen that were willing to take part in the bait trials.

The general sentiments from the working group, was concern about how logistically it played out last time. Securing the bait from LaMonica proved to be difficult for Connecticut and Rhode Island. The consistency of the bait that was used also presented challenges in using it in a bait bag or cup; and storage was another factor.

They had a couple of questions for LaMonica moving forward, on whether it would be really effective or not. The group kind of put forward a couple of cost considerations. One of the big things to note is that the cost of horseshoe crabs varies by region. Between the Mid-Atlantic and the New England region you get different cost, not only by crab but by sex.

In the Mid-Atlantic females are valued approximately two-to-one, approximately \$2.00 for a female \$1.00 for a male. In New England both males and females are valued approximately the same at about \$3.50 to \$4.00 per crab. Other cost considerations we were trying to look at was refrigeration and transportation. Staff reached out to LaMonica Fine Foods to get some more information on really the cost specifics. One of the key things was some questions about what the actual bait cost per piece of bait.

What we found was that the price per box of bait was about \$40.00; and what that broke out to was there were assumed to be 50 pieces of bait in each of these slabs of the bait that came from LaMonica. They individually cost a little less than a dollar, at \$0.80. I spoke with Mike LaVecchia, of LaMonica Fine Foods, and he said that moving forward he would be interested in maintaining the price at \$40.00 per box.

It should be noted that the TC, and this is included in the memo that went out with the meeting materials; that they needed to double up many times on the dosage or the amount of crab that was used, so while it was \$0.80 per piece, if you have to double it you're getting into more, \$1.60 maybe \$2.00. Another point that was brought up of concern by the TC was delivery cost. It turns out there was not any charge, delivery cost, for deliveries to New Bedford, and Mr. LaVecchia made a note that he could deliver to New Bedford moving forward, and Mid-Atlantic locations and possibly South Atlantic locations if requested. But he is looking into trying to secure facilities for that. The other main question was the number of crabs that goes into the Eco-Bait that Mr. LaVecchia makes.

It should be noted that the Eco-Bait as it was labeled alternative bait in the alternative bait trials. Eco-Bait does contain horseshoe crabs, and depending on how the mixture goes, it is approximately 4 to 5 female crabs per slab or 8 to 10 male crabs. In terms of each piece of bait,

your range could be anywhere between a tenth of a crab to a quarter of a crab per piece of bait.

Now keeping in mind if you need to double that dosage, then it could be anywhere between one-fifth of a crab or half a crab. Mr. LaVecchia also noted that crabs used in the bait came from all over the coast. He didn't just secure them from the Mid-Atlantic or New England or southeast, they were from all over, and wasn't able to provide specifics on where each bait-slab came from; in terms of the crabs.

There was an AP call, the AP summary is included in the meeting materials as well, and feedback from the Advisory Panel on the alternative bait trials was that it should be noted conservation measures are already in place in a number of states. The AP feels that this should be kind of considered when looking at making any requirements or changes or using Eco-Bait moving forward; and that most buy their bait from the dealer that they operate with, in order to sell either their conch or eel.

It is a direct exchange in going out on the open market and securing Eco-Bait would be a transition for many of them. Another key thing is that Eco-Bait has been labeled as I said, alternative or artificial; and many of the AP members felt that this is misleading, as it does contain horseshoe crab; it just strives to have a lower amount of horseshoe crab in each piece of bait.

The last recommendation that the AP made was that further bait trials and studies should be conducted along the coast. Off of that I wanted to get a better handle on what the regulations were along the coast. This is the best collection I was able to get for looking at conch and whelk regulations.

This is trying to look at specifically if there are any requirements at the state level on the number of crabs that can go into a bait bag or cup. From

what I was able to find, only Delaware and Virginia have specifics on the record that outline out how much crab can go into your bait bag or cup. Other states don't have any specifications on that when it comes to conch or whelk.

If you take issue with these please let me know, because I got this information primarily from Technical Committee members. I also looked at it for American eel, and I received information from TC members on this. Similarly there are limits on the amount of crabs that people can take who might be using them for eel bait bags or cups.

But these are daily trip limits and these are not the number of crabs that go into a bait bag; so that is the ones that have an asterisk next to them. As noted, South Carolina has no allowance for horseshoe crabs that can be used. New Jersey has a requirement that if there are crabs that are being used by eel fishermen, they have to be collected from outside of the state of New Jersey; and have a receipt of that. In summary, the Table 4, looking at this cost comparison is included in the memo, it is Table 1. Overall it is unclear that the Eco-Bait that LaMonica Fine Foods produces is cost competitive; that is cheaper, easier to secure, a better option than what current fishermen are using in their process of making their bait bags and cups right now, with an amalgamation of crabs, green crabs, finfish along the coast. At this point I'm happy to take any questions people have on the memo and my presentation.

MR. WILLIAM A. ADLER: This is more of a question for Delaware and Virginia. On Page 3 of the handout, where no more than one-half of a female horseshoe crab or one male horseshoe crab can be used as bait in a conch pot. I am just wondering how that is enforced. Apparently Delaware and Virginia are okay with it, but I just don't understand how that is enforced. I don't know who is measuring a half of a female or one male in a conch pot. Does anybody have any

ideas? Maybe Delaware and Virginia can explain to me how that is done.

MR. MICHAELS: Mr. Chairman, the gentleman to your right happens to be our enforcement agent in Delaware, and I think Mr. Messeck can probably handle that.

LIEUTENANT DOUG MESSECK: Good morning, my name is Doug Messeck; I'm a Law Enforcement Committee representative, and also an enforcement agent from Delaware. In answering your question, it can be very subjective; but what we're looking at is when we open up the bag is we are best at we can do piecing that crab together.

What we are finding is becoming an ongoing issue is it is in colder weather. If you put bait in one day how it handles and goes to the next day, and then if you can add additional to that; but you're still locked into the half crab per day or the one full crab. When we're pulling these pots in Delaware at least, we are pulling up. We are inspecting the bags, and we are physically looking at what's inside the bag.

MR. ADLER: Okay.

MR. O'REILLY: I'll respond differently. I think there is a lot of incentive, and our industry maybe 10 years ago was aware that VIMS was doing a lot of study, and that is where the bait bag idea came from and using half a crab. At the same time, it isn't always the case that there is an abundance of horseshoe crabs.

That certainly happened within the last five or six years that supply was getting very low. I think it is more of an incentive. I don't know, I can't say for a fact that there have been any tickets written for improper use of the bait bags. I don't know that. But I know more about the incentive part of it.

That bait bag followed a lot of experiments with different types of bait for the conch fishery. That

is what I know about that. My question from earlier does refer to the advisory panel, and Kirby I think you did a really good characterization of what occurred there. It was very interesting to read those situations that they had, and the information.

What I'm wondering about the advisory panel, do they talk about quantities of horseshoe crabs? Do you get an idea on a coastwide basis for the whelk fishery, channel whelk fishery or for the eel fishery what is the amount of horseshoe crabs? Because that eventually might give us some idea about this different bait type, as to what it would really do in terms of be a conservation agent. I don't know whether they've had that conversation at the advisory panel or not. I am very aware that recently within the last couple years there was some back storage of horseshoe crabs in freezers. I think that came out somewhere in the report as well, but again that is sort of an ebb and flow of being able to have enough product available.

MR. ROOTES-MURDY: Just so that it is fully clear, the AP is made up of representatives from both the biomedical and the bait industries. For the call and subsequent e-mails out to the AP, I didn't receive a lot of comments from AP members who were in the bait industry across the coast. Rick Robbins took part; he is on the AP from Virginia; and a couple of others.

But there frankly isn't great representation right now of the bait industry along the coast. To get a handle of how the number of crabs is used per state, I wasn't able to characterize that very well in an informal, anecdotal way relative to what the regulations are. But again I would like to use this as a pitch that states should come back and look at what their current Horseshoe Crab AP representation is, and make sure that they are participating and taking part in this process.

CHAIRMAN GILMORE: Other questions, Bob Ballou.

MR. BALLOU: Well, more of a comment if it is okay. I do feel that this is a very important initiative; and I really appreciate the work that has been done so far. Clearly more work seems to be needed, and I would strongly support moving forward with the recommendations offered by the AP. On the one hand we're essentially looking a gift horse in the mouth, in that we have LaMonica Foods, a private sector entity, willing to engage. I really think we should keep the momentum going for that reason.

As well, what has come out so far are some pretty impressive figures; both in terms of conservation benefits with crab savings in the range of a half to a fifth of what it would otherwise be used. The Eco-Bait, in my view, does look appealing from the standpoint of utilizing less crabs, or reducing mortality on crabs in the bait fishery; to put it that way. Then the cost issue is still to be determined, and I think that's why we need to do more work. But if you use the Delaware standard, and I guess perhaps the Virginia as well of let's say half a female per trap.

By New England standards, in terms of the cost that equates to about \$2.00 per trap, and if you double up the Eco-Bait that is \$1.60, so I calculate a 30 percent savings right there for New England fishermen using Eco-Bait. For all the right reasons the arrows seem to be going in the right ways on this. For that reason I think we should keep the momentum going.

I can certainly volunteer Rhode Island's continued participation, given all the challenges of course in terms of logistics and the issues associated with getting this Eco-Bait to fishermen. I realize that's a challenge. But I think it's an important issue, and I think we should continue moving forward on it.

CHAIRMAN GILMORE: Well that kind of gets us half of what we need. I got a good recommendation to continue this. But I think we need more participation, I think is part of the

problem. I'm not sure, and I don't want to put anyone on the spot. But it would be helpful to have other states that would get into these trials that I think would help this along. Go ahead, Roy.

MR. ROY W. MILLER: It is my understanding from these trials that the substitute baits were used in conjunction with the conch fishery or whelk fishery. I wondered, had they been used in an eel fishery if the baits that were comprised of female horseshoe crabs might have proven to be more effective.

It is my understanding, and perhaps Craig Pugh can chime in on this, that a female horseshoe crab is better bait for eel fishing. That may influence the amount of bait and the price of bait and everything else. I wonder if in future trials we might seize upon the opportunity to do some tests with eel fishermen as well.

ADJOURNMENT

CHAIRMAN GILMORE: Any other questions? Okay so it sounds like we've got at least a good recommendation to continue with these trials, and we'll see if we can improve this as we move along. We're down to just other business. Is there any other business to come before the Horseshoe Crab Board? Seeing none; I will entertain a motion to adjourn; Bill Adler, seconded by everyone. Thank you, everybody.

(Whereupon the meeting adjourned at 11:46 o'clock a.m. on May 3, 2016.)



Atlantic States Marine Fisheries Commission

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

MEMORANDUM

June 6, 2016

To: Horseshoe Crab Management Board and Technical Committee
From: Robert Ballou, RI Department of Environmental Management
RE: Alternative Bait Trials

This is a follow-up to the brief discussion at the May 2016 Board meeting, which concluded with a general agreement to continue moving forward with efforts to explore the viability of ecobait as an alternative bait source.

As a quick reminder, the Board first addressed the issue at its February 2014 meeting, agreeing at that time to initiate an initial set of trials. Those trials took place in the fall of 2014, in RI and CT. The results were presented at the February 2016 meeting, and a follow-up cost analysis was presented at the May 2016 meeting. Although the results were generally mixed, and not conclusive, they held promise, prompting the Board's interest in continuing forward with more analysis of the issue.

Here are some suggested next steps:

- 1) Draft a brief statement of goals and objectives;
- 2) Gauge interest on the part of other board members (states) to participate in a second round of alternative bait trials this fall;
- 3) Reconvene the Alternative Bait Working Group to develop a plan for the next round of trials;
- 4) Present the plan to the Board at our August 2016 meeting; and
- 5) Conduct a second round of trials this fall.

I have been in touch with Toni Kerns and Kirby Rootes-Murdy from the Commission; they suggested that a memo like this would help to lay the groundwork and determine the level of interest on the part of the Board for moving forward as proposed. Accordingly, Toni and Kirby will be transmitting this memo to the Board and seeking feedback.

Attached is a brief, draft *Prospectus*, intended to frame the issue (at least in the way one Board member sees it).

M16-55

Horseshoe Crab Alternative Bait Initiative

Prospectus

Goal: Determine whether there are viable alternatives to the sole use of horseshoe crabs in fisheries that rely upon HSCs as a primary bait source.

Issue: Horseshoe crabs are used as bait by commercial fishermen, particularly those who target whelk and eels. Uncertainty regarding the population status of HSCs, particularly in southern New England, raises concern over the long-term viability of HSCs as a bait source. Alternative bait (aka composite “ecobait”), which utilizes lesser amounts of HSCs, is available, but further analysis is needed to assess its viability.

Proposal: Conduct second round of trials using alternative bait to assess its viability

Factors to be analyzed:

- Efficacy – Does alternative bait work as well, if not better, than HSCs?
- Cost – Do the costs of using alternative bait compare favorably with the costs of using HSCs?
- Handling/logistics – Does the process of obtaining, storing, and utilizing alternative bait compare favorably with the process of obtaining, storing, and utilizing HSCs?
- Conservation benefits – Do the mortality levels associated with the production of alternative bait (HSCs, plus other species) compare favorably with the mortality levels associated with the sole use of HSCs?

Atlantic States Marine Fisheries Commission

Coastal Sharks Management Board

*August 2, 2016
3:45 – 4:30 p.m.
Alexandria, Virginia*

Draft Agenda

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

- | | |
|--|-----------|
| Welcome/Call to Order (<i>A. Nowalsky</i>) | 3:45 p.m. |
| 1. Board Consent | 3:45 p.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from May 2016 | |
| 2. Public Comment | 3:50 p.m. |
| 3. Draft Addendum IV for Final Approval Final Action | 4:00 p.m. |
| • Review Options (<i>A. Harp</i>) | |
| • Summary of Public Comment (<i>A. Harp</i>) | |
| • Advisory Panel Report (<i>L. Gillingham</i>) | |
| • Law Enforcement Committee Report (<i>M. Robson</i>) | |
| • Consider Final Approval of Addendum IV | |
| 4. Consider 2015 FMP Review and State Compliance for Coastal Sharks (<i>A. Harp</i>) Action | 4:15 p.m. |
| 5. Review and Populate Advisory Panel Membership (<i>A. Harp</i>) Action | 4:20 p.m. |
| 6. Elect Vice-Chair Action | 4:25 p.m. |
| 7. Other Business/Adjourn | 4:30 p.m. |

The meeting will be held at The Westin Alexandria, 400 Courthouse Square, Alexandria, Virginia; 703.253.8600

MEETING OVERVIEW

Coastal Sharks Management Board Meeting

August 2, 2016

3:45 – 4:30 p.m.

Alexandria, Virginia

Chair: Adam Nowalsky (NJ) Assumed Chairmanship: 10/14	Vice Chair: VACANT	Law Enforcement Committee Representative: Chrisolm Frampton
Coastal Shark Technical Committee Chair: Carolyn Belcher (GA)	Coastal Shark Advisory Panel Chair: Lewis Gillingham (VA)	Previous Board Meeting: May 5, 2016
Voting Members: ME, MA, RI, CT, NY, NJ, DE, MD, VA, NC, SC, GA, FL, NMFS, USFWS (15 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2016

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

3. Draft Addendum IV for Final Approval - Final Action (4:00 – 4:15 p.m.)
Background <ul style="list-style-type: none"> • Draft Addendum IV proposes to amend the Coastal Sharks FMP to allow smooth dogfish carcasses to be landed with corresponding fins removed from the carcass as long as the total retained catch, by weight, is composed of at least 25 percent smooth dogfish at the time of landing. • The alternative option (catch composition requirement) in Draft Addendum IV is consistent with federal regulations put into place via Amendment 9 to the Atlantic HMS FMP. • Status quo: Commercial fishermen to land smooth dogfish carcasses with corresponding fins removed from the carcass, year-round. Current management measures were implemented via Addendum II to the Coastal Sharks FMP.

- **Draft Addendum IV, Public Comment Summary, Advisory Panel Report and Law Enforcement Report in Briefing Materials**

Presentations

- Review Options in Draft Addendum IV (*A. Harp*)
- Summary of Public Comment (*A. Harp*)
- Advisory Panel Report (*L. Gillingham*)
- Law Enforcement Committee Report (*M. Robson*)

Board Actions for Consideration at this Meeting

- Review and consider final approval of Addendum IV

4. Consider 2015 FMP Review and State Compliance for Coastal Sharks – Action (4:20 – 4:25 p.m.)

Background

- State compliance reports are due on August 1.
- The Plan Review Team reviewed each state report and drafted the 2015 FMP Review. **(Supplemental Materials)**

Presentations

- Overview of the 2015 Fishery Management Plan Review by A. Harp

Board Actions for Consideration at this Meeting

- Accept the 2015 Fishery Management Plan Review and approve *de minimis* requests

5. Review and Populate Advisory Panel Membership - Action

Background

- Katie Westfall (Environmental Defense Fund) was nominated to the Coastal Sharks Advisory Panel **(Briefing Materials)**
- States to consider re-populating the Advisory Panel

Presentations

- Nominations by A. Harp

Board Actions for Consideration at this Meeting

- Approve nominations

6. Elect Vice-Chair (Action)

7. Other Business/Adjourn

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

The Westin Alexandria
Alexandria, Virginia
May 5, 2016

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

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INDEX OF MOTIONS

1. **Approval of agenda by consent** (Page 1).
2. **Approval of proceedings of February 2016 by consent** (Page 1).
3. **Move to approve Addendum IV for public comment** (Page 5). Motion by John Clark; second by Bill Adler. Motion carried (Page 5).
4. **Motion to adjourn** by consent (Page 5).

ATTENDANCE

Board Members

Dan McKiernan, MA, proxy for D. Pierce (AA)	Mike Luisi, MD, proxy for D. Blazer (AA)
Bill Adler, MA (GA)	Rob O'Reilly, VA, proxy for J. Bull (AA)
Jason McNamee, RI, proxy for J. Coit (AA)	Cathy Davenport, VA (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Chris Batsavage, NC, proxy for B. Davis (AA)
Colleen Giannini, CT, proxy for D. Simpson (AA)	Rep. Bob Steinburg, NC (LA)
Steve Heins, NY, proxy for J. Gilmore (AA)	Douglas Brady, NC (GA)
Mike Falk, NY, proxy for Sen. Boyle (LA)	Robert Boyles, Jr., SC (AA)
Emerson Hasbrouck, NY (GA)	Pat Geer, GA, proxy for Rep. Nimmer (LA)
Russ Allen, NJ, proxy for D. Chanda (AA)	Nancy Addison, GA (GA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Spud Woodward, GA (AA)
Tom Fote, NJ (GA)	James Estes, FL, proxy for J. McCawley (AA)
Craig Pugh, DE, proxy for Rep. Carson (LA)	Wilson Laney, USFWS
John Clark, DE, proxy for D. Saveikis (AA)	Margo Schultz-Haugen, NMFS

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

Ex-Officio Members

Staff

Robert Beal	Katie Drew
Toni Kerns	Ashton Harp

Guests

Kelly Denit, NMFS	Karyl Brewster-Geisz, NMFS
Clifford Hitt, NMFS	Ray Kane, CHOIR
Jeff Deem, VMRC	Arnold Leo, E. Hampton, NY

The Coastal Sharks Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 5, 2016, and was called to order at 9:48 o'clock a.m. by Chairman Adam Nowalsky.

CALL TO ORDER

CHAIRMAN ADAM NOWALSKY: Good morning everyone. I would like to convene the Coastal Sharks Management Board. My name is Adam Nowalsky; I'll be Chairing the Board this morning. To my left I've got FMP Coordinator, Ashton Harp. Our primary order of business today will be to review and consider the approval of Addendum IV for public comment.

Before we get to that point I would first like to welcome a couple of new faces here that we've got today; Colleen from Connecticut, Mike from New York to the Coastal Sharks Management Board. With that we'll move into the agenda. Our first order of business will be to approve the agenda as presented here.

APPROVAL OF AGENDA

CHAIRMAN NOWALSKY: Are there any changes to the agenda? Is there any objection to accepting the agenda as presented? Seeing none; the agenda is approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN NOWALSKY: Our next order of business is to approve the proceedings from the February, 2016 board meeting. Are there any comments, discussion or changes to those proceedings? Seeing none; is there any objection to accepting those proceedings? Those proceedings are hereby approved.

CHAIRMAN NOWALSKY: Next order of business is for any public comment not on the agenda. There was nobody signed up. Is there anyone from the audience who would like to speak on any issues not on the agenda? Seeing none; we'll move on to our next order of business, which is a presentation from Ashton on Addendum IV.

REVIEW AND CONSIDER APPROVAL OF ADDENDUM IV FOR PUBLIC COMMENT

CHAIRMAN NOWALSKY: This addendum today is being presented as a draft that would go out for public comment with any changes discussed today. I'll turn to Ashton for a presentation.

MS. ASHTON HARP: At the request of the board in February, the PDT developed draft Addendum IV, which I'll walk through today. The presentation is divided into three parts. First of all going into the smooth dog fish background and that is the species of focus for this addendum. Then I'll move into the catch composition analysis, which is the regulatory issue that we'll be discussing in this addendum.

Lastly, I'll walk through the smooth dogfish management options, and as I mentioned, the board has the potential to approve this for public comment. It will then go to public hearings and written comment over the summer, and I would present the summary of those at the August board meeting.

Smooth dogfish, a little bit about the species, it is the only species within the smoothhound complex that is found in the Atlantic, and oftentimes we use the word smoothhound and smooth dogfish interchangeably. But for the purposes of this addendum we want to be species specific, and that is because of the Shark Conservation Act. Within the Act there is a limited exception on the fins naturally attached to policy. It allows for individuals engaged in commercial fishing for smooth dogfish, to remove fins at sea, provided they meet certain requirements; which I'll discuss in the next slide.

Prior to 2016, smooth dogfish were only managed in state waters. They were not part of the highly migratory species FMP prior to 2016. This slide provides information about how smooth dogfish processing at sea is managed in state waters. A commercial fisherman can land smooth dogfish carcasses, with corresponding

fins removed from the carcass, provided they meet certain requirements.

They must possess a valid state commercial fishing license, and the fin to carcass ratio is set at 12 percent. They automatically already meet two other requirements, which is to be fishing within 50 nautical miles of the baseline of an Atlantic state; Maine through Florida. The two bullets that you see on the board were included in Addendum II and are consistent with the Shark Conservation Act.

Now, in federal waters, smooth dogfish is managed effective March 15th of 2016, and Amendment IX is how they became effectively managed by the Highly Migratory Species division. Included in Amendment IX is a catch composition requirement for federally permitted vessels, in order to remove smooth dogfish fins at sea.

This requirement came from NOAA Fisheries interpretation of the Shark Conservation Act phrase that says; one must be fishing for smooth dogfish in order for the limited exception to apply. They defined this kind of directed effort as, a trip where smooth dogfish comprised at least 25 percent, by weight, of the total retained catch onboard at the time of landing.

This brings us to the February motion. The board made a motion to initiate an addendum to address the processing at sea disconnect between federal and state waters. There is only one issue in this addendum, and it is the catch composition requirement. Now we're moving into the body of the addendum that was presented in meeting materials.

As I mentioned, there are differing regulations in state versus federal waters now. Currently vessels with a federal smoothhound commercial permit, must comply with the 25 percent catch composition requirement; whereas fishermen with a state commercial fishing license are not held to any catch composition requirement.

You may be asking yourself, well why 25 percent? We discussed this a little bit at the last board meeting, but I'll just briefly go into it again. Public comment during the Amendment IX rule making process, and landings data, indicate the smooth dogfish fishery is very much a mixed fishery. There was consideration of a higher catch composition, meaning the majority of the catch on the boat would have had to have been smooth dogfish, in order to process at sea.

But this was ultimately not used, given the multispecies nature of this fishery. Anything higher than 25 percent was deemed inappropriate, because it would only increase regulatory discards. That is because fishermen generally start processing smooth dogfish once it is brought onboard. This is done immediately, so the shark meat will not spoil. When we started analyzing the catch composition analysis, we went to the data availability. The PDT had a discussion about what data was available, and what could be used for this addendum. We ultimately used the available data from the federal vessel trip reports, to analyze catch composition on smooth dogfish trips. We would have liked to have used or looked at a state-by-state analysis, or a coastwide analysis, but data limitations did not allow us to do this.

For example, when I first went to the PDT and we kind of wanted to see smooth dogfish landings just in the harvest from state waters versus federal waters. We could not see that so we were road blocked pretty quickly on the amount of data that we had. As far as where smooth dogfish are harvested, we could only see it by statistical area.

Those statistical areas where smooth dogfish are harvested ride the line between the federal and state boundaries. There is a lot of fishing around the three-mile line, but at this time we cannot attribute it to state or federal waters. A little bit going into the data, this chart shows landings by gear type.

As you can see, a large portion of this fishery uses sink gillnets to harvest smooth dogfish. As shown here, as much as 75 percent of landings are attributed to sink gillnet gear. We focused on sink gillnet gear for this addendum. The species caught in sink gillnet gear, the pie chart shows that smooth dogfish is a dominant target species, with 39 percent of the sink gillnet catch.

Often other species, along with the targeted species are caught as well. In this case other species include spiny dogfish at 8 percent, bluefish at 29 percent, and croaker at 8 percent. This table I am going to take a minute to explain. Each column represents the year from 2003 to 2014. The first row shows the number of sink gillnet trips within each year that landed a smooth dogfish.

It ranges from 550 trips to more recently 1,300 trips. Then the second row further looks into, of these trips that are landing smooth dogfish, how many would meet the 25 percent catch composition requirement? On average, almost half of the reported trips would meet the 25 percent catch composition requirement, and would be considered a directed fishing trip.

Then we also looked at, of the overall landings for sink gillnets, how many smooth dogfish were on those trips? This pie chart shows that highliner trips, meaning trips where smooth dogfish comprised 75 percent of the overall catch onboard, are responsible for the majority of smooth dogfish landings, so in fact they're responsible for about 81 percent of the overall landings.

This shows that all those sink gillnets can catch a range of species. Fishermen can and do target smooth dogfish effectively. That brings us to the fishery considerations. In summary, based on the VTR analysis of sink gillnet trips, the majority of smooth dogfish landings were caught on trips that retained at least 75 percent smooth dogfish. Almost half of the trips that landed smooth dogfish in sink gillnet gear,

would be considered a directed smooth dogfish trip.

The 25 percent catch composition is unlikely to change fishing effort to a great extent. This moves us into the management program options considered today. There are two options. Option A is status quo, and this simply means that no catch composition requirement applies. This would also mean that the state and federal FMPs would not be consistent on this issue, whereas if you moved to Option B, this would establish a catch composition requirement for commercial processing for smooth dogfish at sea; and I'll read it. Fishermen in state waters and in possession of a valid state commercial license, can eviscerate and remove the head and all shark fins of smooth dogfish while at sea, provided smooth dogfish make up at least 25 percent by weight of total catch onboard at the time of landing. Fishermen may retain other sharks onboard, provided the fins of shark species remain naturally attached to the carcass through offloading, as already described in the coastal sharks FMP. The language in this option is consistent with what is Amendment IX. With that I'll take questions.

CHAIRMAN NOWALSKY: Thank you for that presentation, Ashton. Do we have any questions for Ashton? Mike.

MR. MICHAEL LUISI: Ashton, you mentioned initially when you started looking at catch, whether it was federal or state waters or by state that you kind of immediately came upon road blocks. Are there any suggestions as to how we could get around those, or figure out a way to look at the data to be able to tease out the state landings?

I think where these fish are being caught is an important element to this, to determine whether or not we implement similar measures in federal waters or state waters. The question is, is there something you can provide us, or any ideas as to how we might be able to get around those road blocks?

MS. HARP: This was a question that I came around to with the PDT several times. In certain states that have a trip ticket system, like North Carolina, we are able to see state landings in state versus federal waters; and I have that slide to show you. But in other states it is just not there. When I asked they were like, what is available in ACCSP is what we have available for this fishery.

Also, it would take a considerable amount of work to do some of this, especially the catch composition analysis, not even determining if it is state versus federal waters; that's hard, but also doing a catch composition analysis in addition. The PDT thought about this and then thought about the motion that was described at the board; that the intent of this is to kind of be consistent or present an option that is consistent with the federal FMP, and should we go down this road not knowing if we're going to get the amount of data that we want?

MR. CHRIS BATSAVAGE: Ashton, you used the VTR data for your analysis, and that basically is for boats with a northeast permit. Did you have any information on vessels with like southeast permits, for folks fishing in the South Atlantic to get an idea of their catch composition, or even possibly where they're fishing; as far as state or federal waters, based on statistical area that they are recording?

MS. HARP: We did not look at that information specifically, but in North Carolina we did see that about 62 percent of the harvest is in state waters. We know that as you know, North Carolina is split between the northeast and the southeast regions, and so one of the caveats that I did put in the addendum is that this federal VTR data only considers people who have a northeast regional permit, so it would include a good portion of North Carolina and everyone below that.

MR. JASON McNAMEE: This is a little off the topic of catch composition, but I became aware that the PDT had a discussion about another potential inconsistency, and this is language of

offloading, which is in the federal plan. In our plan it is harvest and landing. What I am trying to get a sense from you, Ashton, was that itemized out as something that is important and something we should potentially do for this, since we're in the process of potentially taking an action here; or it just kind of language, and the last thing that we don't necessarily need to worry about. I'm just trying to get a sense of your opinion on that.

MS. HARP: Okay, so this was a language in Option B. Just go back one slide. You'll see that we say in the first line that for the catch composition requirement, it is for the total catch onboard at the time of landing. That is fine. That is consistent with Amendment IX. Then the PDT had some talk about the term offloading.

Right now we say fishermen may retain other sharks onboard, provided the fins of other shark species remain naturally attached to the carcass through offloading. The majority of the PDT felt that it was important to be consistent with Amendment IX and use the term offloading, although that is not a term that is commonly used with the commission.

Carol can be more specific on this, but the term was used because it is more specific. It requires that a vessel would not only have to land, but it would have to offload those sharks as well. They felt that that language was important to them, and we felt that if we want to be consistent with Amendment IX, then we should incorporate that language into this option as well.

CHAIRMAN NOWALSKY: Follow up, Jay?

MR. McNAMEE: It actually is in there in a way that is consistent; at least in the addendum that is going out for comment, it is in there in a consistent way.

MS. HARP: Yes it is in there, and it is consistent with Amendment IX, with the federal text as well.

CHAIRMAN NOWALSKY: Okay seeing no other hands up, I would entertain a request for any changes to the addendum, or seeing none; what is the will of the board, as far as moving it forward for public comment? A motion to move it forward would be required. Mr. Clark.

MR. JOHN CLARK: Move to approve the addendum for public comment.

CHAIRMAN NOWALSKY: I have a second from Bill Adler. We'll get that up and then I'll read it. Move to approve Addendum IV for public comment. **Motion by Mr. Clark, second by Mr. Adler, discussion on the motion, seeing none is there any objection to the motion? Seeing none; the motion passes.** Is there any other business to come before us on the matter of the addendum, Ashton?

MS. HARP: No.

CHAIRMAN NOWALSKY: Do we need to address requests for public hearings here?

MS. HARP: Yes, if your state would like a public hearing, can you please see me after the meeting, and I can start setting that up right away.

ADJOURNMENT

CHAIRMAN NOWALSKY: Okay, is there any other business to come before the board? Seeing no other business, and having completed the agenda; the board is adjourned. Thank you.

(Whereupon the meeting was adjourned at 10:07 o'clock a.m. on May 5, 2016.)

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM IV TO THE COASTAL SHARKS INTERSTATE FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT



ASMFC Vision: Sustainably Managing Atlantic Coastal Fisheries

**The Atlantic States Marine Fisheries Commission
Seeks Your Input on Coastal Sharks Management**

The public is encouraged to submit comments regarding this document during the public comment period. Comments will be accepted until **5 p.m. on July 11, 2016**. Regardless of when they were sent, comments received after that time will not be included in the official record.

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

1. Attend public hearings held in your state or jurisdiction.
2. Refer comments to your state’s members on the Coastal Sharks Management Board or Coastal Sharks Advisory Panel, if applicable.
3. Mail, fax, or email written comments to the following address:

Ashton Harp
1050 North Highland St., Suite 200 A-N
Arlington, VA 22201
Fax: (703) 842-0741
aharp@asmfc.org (subject line: Draft Addendum IV)

If you have any questions please call Ashton Harp at 703.842.0740.

Commission’s Process and Timeline

February 2016	Coastal Sharks Board Tasks PDT to Develop Draft Addendum IV
Feb-May 2016	PDT Develops Draft Addendum IV for Public Comment
May 2016	Coastal Sharks Board Reviews Draft Addendum IV and Considers Its Approval for Public Comment
June-July 2016	Board Solicits Public Comment and States Conduct Public Hearings
August 2016	Board Reviews Public Comment, Selects Management Options and Considers Final Approval of Addendum IV
TBD	Provisions of Addendum IV are Implemented

1. Introduction

Atlantic shark fisheries from Maine through the east coast of Florida are currently managed through complementary fishery management plans by the Atlantic States Marine Fisheries Commission (ASMFC) and NOAA Fisheries Highly Migratory Species (HMS) Management Division. ASMFC coordinates interstate management of Atlantic sharks in state waters (0-3 miles) via the 2008 Coastal Sharks Interstate Fishery Management Plan (FMP) and Addenda I-III. Management authority in the exclusive economic zone (3-200 miles from shore) lies with NOAA Fisheries via the 2006 Consolidated Atlantic HMS FMP and Amendments.

The smoothhound shark complex is one of several shark species groupings managed in state and federal waters; it includes two species: smooth dogfish (*Mustelus canis*) and Florida smoothhound (*Mustelus norrisi*). The latter is not considered in this document; the focus of Draft Addendum IV is on smooth dogfish, specifically.

As allowed under current regulations, commercial fishermen can land smooth dogfish carcasses with corresponding fins removed from the carcass. Draft Addendum IV proposes to amend the Coastal Sharks FMP to allow smooth dogfish carcasses to be landed with corresponding fins removed from the carcass as long as the total retained catch, by weight, is composed of at least 25 percent smooth dogfish. If approved, fishermen could retain smooth dogfish in an amount less than 25 percent of the total catch provided the smooth dogfish fins remain naturally attached to the carcass. Additionally, fishermen could retain other sharks on board regardless of the percent catch composition of smooth dogfish, the fins of other shark species must remain naturally attached to the carcass through landing.

2. Statement of the Problem

The purpose of the Draft Addendum is to maintain consistency between federal and state FMPs, where possible, and to better incorporate the intent of the smooth dogfish exemption in the Shark Conservation Act of 2010 (SCA) into state regulations. In November 2015, NOAA Fisheries published the final rule for Amendment 9 to the 2006 Consolidated Atlantic HMS FMP which brought smoothhound sharks under federal management effective March 15, 2016. In addition to other management measures, Amendment 9 established a catch composition requirement in order to remove smooth dogfish fins at sea. In February 2016, the Coastal Sharks Management Board initiated a Draft Addendum to consider establishing the federal catch composition requirement in state waters for removal of smooth dogfish fins while at sea.

3. Background

3.1 Prior Federal and State Regulations

The Shark Finning Prohibition Act of 2000 prohibits shark finning—the removal of shark fins and disposal of shark carcasses at sea—within United States waters. Thus, shark fins and carcasses must be landed together. This requirement was included in the Coastal Sharks FMP, remains in effect, and is not the focus of this addendum.

The SCA requires all sharks in the United States to be landed with their fins naturally attached to the carcass but includes a limited exception for smooth dogfish. The exception allows fishermen engaged in commercial fishing for smooth dogfish to remove the fins of smooth dogfish if the following minimum requirements are met: possess a valid state commercial fishing license, are fishing within 50 nautical miles from the baseline of an Atlantic state (Maine through Florida), and the total weight of smooth dogfish fins landed cannot exceed 12 percent of the total dressed weight of smooth dogfish carcasses. To complement the federal FMP and the SCA, these provisions were included in the Coastal Sharks FMP via Addendum II in 2013.

3.2 Consideration of a Smooth Dogfish Catch Composition in State Waters

This addendum and NOAA Fisheries Amendment 9 provide an analysis of vessel trip report (VTR) data. The available VTR data captures gear and landings data on fishermen with a federal Northeast Region permit¹ from 2003-2014. Given commercial fishermen with only a state fishing license (i.e. non-federally permitted vessels) are not required to submit a vessel trip report it is not possible to separate smooth dogfish harvest in state versus federal waters. As a result, south Atlantic fishermen² or fishermen not holding a Northeast permit may not be captured in this VTR analysis.

NOAA Fisheries Amendment 9 brings smoothhound sharks under federal management and implements the smooth dogfish-specific provisions in the SCA. The SCA specifies the exception for smooth dogfish to have their fins removed at sea applies when “an individual is engaged in commercial fishing for smooth dogfish,” as opposed to fishing for other species or when fishing and incidentally catching smooth dogfish. In Amendment 9, NOAA Fisheries interprets the phrase “commercial fishing for smooth dogfish” to mean a trip where smooth dogfish comprise at least 25 percent of the total retained catch.

NOAA Fisheries selected 25 percent in response to public comments during the rulemaking process and landings data indicating the mixed nature of the fishery. Sink

¹ Prior to 2016, smooth dogfish were not managed in federal waters. Therefore a federal directed shark limited access permit was not required. As a result of NOAA Fisheries Amendment 9, a federal smoothhound commercial permit was developed and is now a requirement in order to harvest smooth dogfish in federal waters.

² North Carolina is separated by management areas north and south of Cape Hatteras, creating a split in the smooth dogfish fishery between the state waters and the federal Northeast and Southeast regions.

gillnet gear, the predominant gear used in the directed smooth dogfish fishery (Figure 1), often catch other species such as bluefish, croaker and spiny dogfish (Figure 2). Therefore, it was determined that a retained catch composition of at least 25 percent smooth dogfish is an indication that effort was directed on the species.

The 25 percent catch composition requirement was implemented in federal waters (effective March 15, 2016) and is presented in this document as an option for state waters.

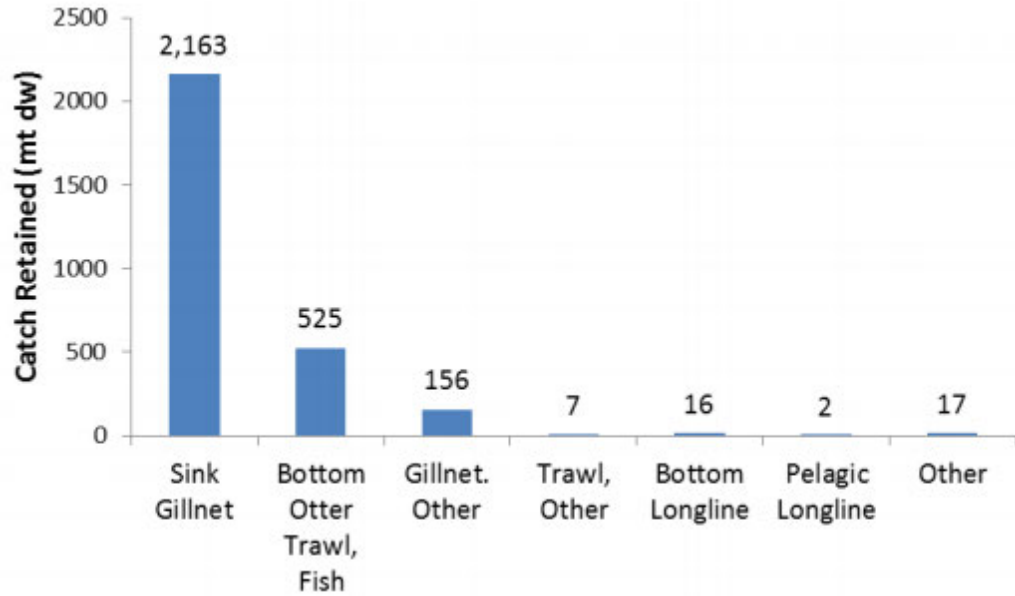


Figure 1. Smooth Dogfish Landings by Gear Type (2003-2014);
Source: Vessel Trip Report (VTR) data, 2003-2014 (NMFS 2015b)

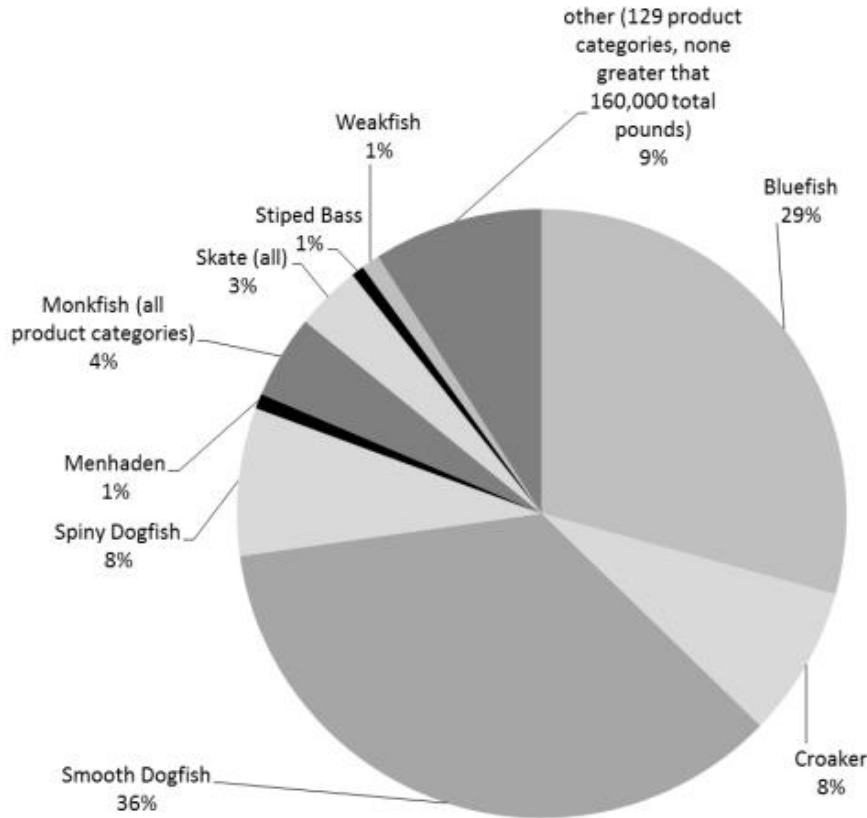


Figure 2. Species caught with smooth dogfish in sink gillnet gear, relative levels;
Source: VTR data, 2003-2014 (NMFS 2015b)

On average, almost half of the reported trips that landed smooth dogfish in sink gillnet gear between 2003 and 2014 would be considered a ‘directed’ smooth dogfish fishing trip, meaning the retained catch on these trips was comprised of at least 25 percent smooth dogfish (Table 1).

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of trips	590	633	548	677	626	550	878	1,184	1,207	1,237	1,282	1,295
Number of trips that landed ≥ 25 % smooth dogfish	315	364	229	202	264	256	447	710	647	629	606	582
Percentage of trips that landed ≥ 25 % smooth dogfish	53%	58%	42%	30%	42%	47%	51%	60%	54%	51%	47%	45%

Table 1. Number and percentage of trips landing smooth dogfish in sink gillnet gear, by year; Source: VTR data, 2003-2014 (NMFS 2015b)

When analyzing sink gillnet trips and landings together the data indicated the majority (81%) of smooth dogfish landings came from trips with a high catch composition (i.e. at least 75% smooth dogfish were retained, Figure 3).

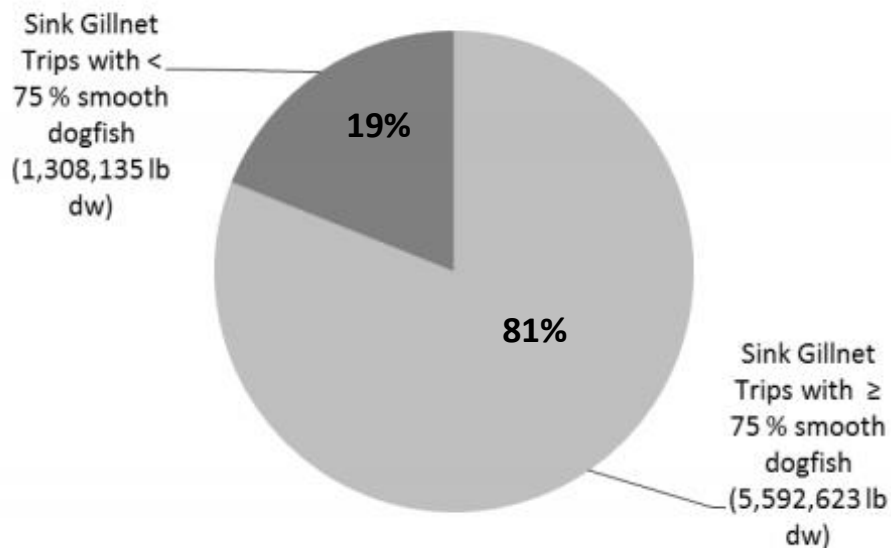


Figure 3. Proportion of smooth dogfish landings from trips using sink gillnets where the percent of the catch retained was greater than or less than 75 percent smooth dogfish; Source: VTR Data, 2003-2014 (NMFS 2015b)

Fishery Considerations

Based on the VTR analysis, the majority of landings were caught on trips that retained at least 75 percent smooth dogfish (Figure 3). In addition, almost half of the trips that landed smooth dogfish in sink gillnet gear would be considered a 'directed' smooth dogfish trip (Table 1). Therefore, a 25 percent catch composition is unlikely to change fishing effort to a great extent. As such, landings would likely remain near pre-SCA levels.

Enforcement Considerations

Allowing the removal of smooth dogfish fins at sea should not raise enforcement concerns or impact the conservation of non-smooth dogfish sharks because smooth dogfish carcasses can be easily identified from other shark carcasses by the presence of a pre-dorsal ridge, and by the lack of fin spines and dorsal spots. While other "ridgeback sharks" have an interdorsal ridge, smooth dogfish are the only shark species in the Atlantic that have a pre-dorsal ridge (Figure 4).

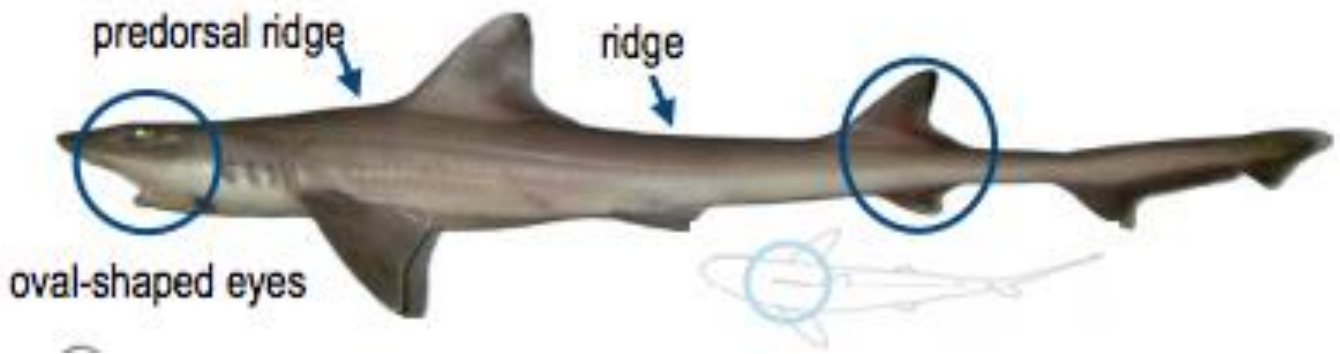


Figure 4. Distinctive Characteristics on a Smooth Dogfish Shark

4. Management Program Options

The Coastal Sharks Management Board is considering two catch composition options to amend the FMP. Option A would retain the current language used to manage the smooth dogfish fishery (*i.e.*, no catch composition requirement); in this case the state and federal FMPs would not be consistent on this issue. Option B would implement the catch composition requirement in state waters to complement the requirement in the federal FMP.

The SCA exemption is specific to smooth dogfish, therefore all smoothhound processing at sea references in Addendum II will be replaced with smooth dogfish.

Option A: Status Quo

Fishermen in state waters and in possession of a valid state commercial fishing license can eviscerate and remove the head and fins of smooth dogfish while at sea in accordance with *Section 3.5* of Addendum II to the Coastal Sharks Interstate FMP, which stipulates “commercial fishermen may remove all smoothhound shark fins year round.”

Option B: Establish a Catch Composition Requirement for Commercial Processing of Smooth Dogfish at Sea

The following text will be added to Addendum II, Section 3.5 Smooth Dogfish Shark Commercial Processing at Sea

Fishermen in state waters and in possession of a valid state commercial fishing license can eviscerate and remove the head and all shark fins of smooth dogfish (*Mustelus canis*) while at sea provided smooth dogfish make up at least 25 percent, by weight, of total catch on board at the time of landing. Fishermen may retain other sharks on board provided the fins of other shark species remain naturally attached to the carcass through offloading, as described in *Section 4.3.11* of the Coastal Sharks FMP.

5. Compliance

States must implement Addendum IV according to the following schedule to be in compliance with the Coastal Sharks FMP: TBD

6. Literature Cited

NMFS. 2015a. Final Rule implementing Amendment 9 to the 2006 Consolidated Highly Migratory Species Fishery Management Plan. NOAA, NMFS, Highly Migratory Species Management Division, Silver Spring, MD. Available at: <https://www.federalregister.gov/articles/2015/11/24/2015-29516/atlantic-highly-migratory-species-smoothhound-shark-and-atlantic-shark-management-measures>

NMFS. 2015b. Final Environmental Assessment for Amendment 9 to the 2006 Consolidated Highly Migratory Species Fishery Management Plan. NOAA, NMFS, Highly Migratory Species Management Division, Silver Spring, MD. Available at: http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am9/a9_final_ea.pdf

Shark Conservation Act of 2010, Pub. L. No. 111-348, 124 Stat. 3668. 2010. Retrieved from <https://www.congress.gov/111/plaws/publ348/PLAW-111publ348.pdf>



Atlantic States Marine Fisheries Commission

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703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

July 13, 2016

To: Coastal Sharks Management Board

From: Ashton Harp, ISFMP Coordinator

RE: Public Comment on Draft Addendum IV

The following pages represent a summary of comments received by ASMFC as of July 11, 2016 at 5:00 p.m. (closing deadline) on Draft Addendum IV to the Coastal Sharks Interstate Fishery Management Plan.

A total of 15 written comments were received during the public comment period. Four organizations provided comments: Oceana, Shark Advocates International, Project AWARE and the Humane Society of the United States. In addition, 11 individual comments were received. A summary of written comments is provided on page 2.

Public hearings were held in the following states: Connecticut, New York, New Jersey, Maryland, North Carolina. In total, 8 members of the public attended the public hearings. A brief summary of the comments received at the public hearings is provided on page 3.

Copies of the written comments, as well as state public hearing summaries follow this memo.

ISSUE 1: SMOOTH DOGFISH CATCH COMPOSITION REQUIREMENT

Written Comment Summary

Option	Description	Individual	Organization	Total
A	Status Quo Harvesters can remove the fins of smooth dogfish at sea, year-round	3		3
B	Implement a 25% catch composition requirement in order to remove the fins of smooth dogfish at sea (mirrors regulations for federal vessels)			
Not an option in Draft Addendum IV	Require all smooth dogfish to be landed with fins naturally attached, regardless of catch composition	8	4	12

Three North Carolina fishermen are in favor of status quo (Option A). Those in favor of status quo want to provide the best quality product to the consumer which entails processing immediately after a smooth dogfish is brought onboard the vessel. If the fins are to remain attached then it adds more time and handling to the product, which will reduce quality. One harvester commented that processing smooth dogfish is a time intensive endeavor, therefore, one cannot afford to discard any amount of smooth dogfish in the event the sharks had been processed, but the catch composition requirement was not met.

There were no comments in favor of Option B, catch composition requirement. One harvester said they would be in favor of an alternative that provides a conservation benefit for the resource, but Option B does not do that.

Twelve comments are in favor of a fins naturally attached policy for smooth dogfish (an option not provided in Draft Addendum IV). Commenters acknowledged the Shark Conservation Act of 2010 allows for the smooth dogfish exception, adding ASMFC should be more restrictive because a fins-attached approach is the simplest, most enforceable method for preventing shark finning. All organizations generally made the comment that as long as there is a market demand for shark fins, finning is a potential threat to all shark species, including smooth dogfish. Oceana commented that a 12% fin-to-carcass ratio is not enforceable, citing a 2014 ASMFC Law Enforcement Committee report.

Public Hearing Summary

All participants were in favor of status quo. Maryland harvesters cited safety concerns, potential waste of the resource, at sea weight estimates and fishing technique as reasons to oppose Option B. In particular, fishermen in Maryland use an accumulation method to remain profitable, meaning they catch a lot of fish and many different species. They are concerned their at sea weight *estimates* may result in not meeting the catch composition requirement and subsequently having to discard already processed smooth dogfish. North Carolina harvesters are in favor of status quo because it provides the best quality product to the consumer, noting smooth dogfish is sold primarily as a meat product. One participant commented that some fishermen south of Hatteras may opt to fish solely in state waters for smooth dogfish as long as the fishery remained at status quo. All participants commented that Option B does not provide a conservation benefit for the resource.

General Comments

- All participants commented on their dissatisfaction with the catch composition requirement in NOAA Fisheries final rule for Amendment 9 to the Atlantic HMS Fishery Management Plan.
- Related to shark fin bans, one participant noted that it denies access market access to a product that is legally caught by U.S. fishermen.

From: [Tommy McArthur](#)
To: [Ashton Harp](#)
Subject: Draft Addendum IV
Date: Wednesday, May 25, 2016 11:25:01 AM

Mrs. Harp,

I am sending you my public comment for Draft Addendum IV on the Smooth Dog FMP. I am a Sinknetter from Beaufort NC and I do participate in the Smooth Dog Fishery, Also I have the new Smooth Hound Shark open access permit that came out this year. Also here in NC the trip ticket program that is used by NCDMF does separate the harvest between state and federal waters and has been in place since 1994. I support going with option A status quo. Also this option would allow fishermen to give the consumer a better quality product by allowing them to be better able to ice the catch down more efficiently and handling them less. Whereas if not allowed to go ahead and clean and fin the Smooth Dogs and just put them in ice with the fins still attached, would add more time and handling to the product, as well as an additional time where the product is being kept out of the ice furthermore, giving an additional temperature change and reducing the quality and shelf life of the product before it reaches the consumer.

Sincerely,

[Tommy McArthur](#)

[867 Hwy 101](#)

[Beaufort,NC 28516](#)

[\(252\)725-9454](#)

[Owner/Operator F/V Mackenzie Dawn](#)

[“Tell me and I forget, teach me and I may remember, involve me and I learn.”](#)
[— Benjamin Franklin](#)

Ashton Harp

From: White, Holly <Holly.White@ncdenr.gov>
Sent: Monday, July 11, 2016 3:57 PM
To: Ashton Harp
Cc: FV; Michelle Duval; Charlton Holloman Godwin
Subject: Public Comment Addendum IV

Hi Ashton,

I just got off the phone with one of our shark fishermen Jake Griffin (Wanchese, NC) CC'd on this e-mail. He has been in Alaska for over a month now with limited cell phone reception, and no access to e-mail. I told him that I would shoot you an e-mail with his recommendation on Coastal Shark Addendum IV.

He supports status quo for processing smooth dogfish at sea.

Thanks,
Holly White
Biologist
Division of Marine Fisheries
Department of Environmental Quality

252 264 3911 office
Holly.White@ncdenr.gov Email

1367 U.S. 17 South
Elizabeth City, 27909



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

Chris Hickman
Hatteras, North Carolina
June 30, 2018

Chris Hickman called to voice his support for Option A, status quo, for the following reason:

- If they don't process smooth dogfish when caught then the meat will spoil
- If targeting bluefish or king mackerel then only a few smooth dogfish may be caught, however they would like to harvest for meat, which requires processing the shark immediately.
- Processing smooth dogfish is very labor intensive. Fisherman can't afford to process smooth dogfish that they may have to discard.
- If this was helping solve a conservation issue then he would be support it, but it isn't.

Ashton Harp

From: Susan Bunch <helentheshark@outlook.com>
Sent: Thursday, July 07, 2016 1:36 PM
To: Ashton Harp
Subject: Dogfish are Sharks, Please Change Fin Removal Law

Dear Mr. Harp,

I am writing to express my concern that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea, they do not follow the best practice suggested (a "fins-attached" landing rule) to all shark species.

I understand this is technically 'allowed' under an exception in the Shark Conservation Act, but we need a change. The fins-attached approach has been mandated for all other US sharks because it is the simplest, most enforceable method for preventing shark finning. Better catch data can also result. Shark finning is getting a lot of media attention with Texas leading the way with a new ban and a huge movement behind it thanks to groups like Project Aware.

I would be grateful if you would convey to the Commissioners my strong support for ending all at-sea removal of shark fins (including those from smooth dogfish). My contact information is below, and I thank you for your time.

Yours sincerely,

Susan Bunch
Voice of @HelenTheShark on Twitter
<https://twitter.com/HelenTheShark>
State of Washington
(425) 681-9328

Ashton Harp

From: Albano, Laurie A <Lalbano@northwell.edu>
Sent: Monday, July 11, 2016 4:07 PM
To: Ashton Harp
Subject: DRAFT ADDENDUM IV

Dr. Mr. Harp:

I'd like to add my voice and call for an end to the smooth dogfish exceptions to Atlantic state bans on at sea shark fin removal. It's time this heavily fished shark enjoyed the same finning protections that other sharks do.

Thank you for listening.

Sincerely yours,

Laurie Albano

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Ashton Harp

From: Alex Almeida <apogee711@gmail.com>
Sent: Tuesday, July 05, 2016 9:48 AM
To: Ashton Harp
Subject: Protect Sharks

Subject line: Draft Addendum IV

FAO: Ashton Harp, Fishery Management Plan Coordinator (aharp@asmfc.org)

Dear Mr. Harp:

As a strong supporter of shark conservation and Project AWARE, I am writing to express my concern that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea.

I understand this is allowed under an exception in the Shark Conservation Act, but also know that states may opt to apply the best practice (a "fins-attached" landing rule) to all shark species. The fins-attached approach has been mandated for all other US sharks because it is the simplest, most enforceable method for preventing shark finning. Better catch data can also result.

I would be grateful if you would convey to the Commissioners my strong support for ending all at-sea removal of shark fins (including those from smooth dogfish).

Thank you.

Yours sincerely,

A Almeida

P.S. Sharks, like any apex predator, is significant in the stability of a community of life, and when in decline can impact the community in ways that lead to disorganization, collapse and death, the effects of which we may not be cognizant of until it is too late.

--

Alex Almeida

Ashton Harp

From: "Chris@*_**"@ <cdkscully@gmail.com>
Sent: Sunday, July 03, 2016 10:53 PM
To: Ashton Harp
Subject: Draft Addendum IV - FAO: Ashton Harp, Fishery Management Plan Coordinator

Dear Mr. Harp:

As a strong supporter of shark conservation and Project AWARE, I am writing to express my concern that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea.

I understand this is allowed under an exception in the Shark Conservation Act, but also know that states may opt to apply the best practice (a "fins-attached" landing rule) to all shark species. The fins-attached approach has been mandated for all other US sharks because it is the simplest, most enforceable method for preventing shark finning. Better catch data can also result.

I would be grateful if you would convey to the Commissioners my strong support for ending all at-sea removal of shark fins (including those from smooth dogfish).

Thank you.

Yours sincerely,
Christine Kwiecinski
New York

Ashton Harp

From: Peter Maguire <peter.maguire@gmail.com>
Sent: Friday, July 01, 2016 9:39 PM
To: Ashton Harp
Subject: Subject line: Draft Addendum IV

Dear Mr. Harp:

As a strong supporter of shark conservation and Project AWARE, I am writing to express my concern that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea.

I understand this is allowed under an exception in the Shark Conservation Act, but also know that states may opt to apply the best practice (a "fins-attached" landing rule) to all shark species. The fins-attached approach has been mandated for all other US sharks because it is the simplest, most enforceable method for preventing shark finning. Better catch data can also result.

I would be grateful if you would convey to the Commissioners my strong support for ending all at-sea removal of shark fins (including those from smooth dogfish).

Surely you must come to your senses and end the finning trade (buying, selling and shipping) for all sharks. There can not be any exceptions. Are you not aware that the whole planet is in danger? Are you aware what will happen if sharks are disappear from our oceans. The food chain will collapse and then this will spell the end of mankind as we know it. It blows my mind in this day and age that finnin is still allowed here in the United States.

Thank you.

Yours sincerely,

Peter Maguire

New Haven, CT

Ashton Harp

From: Leslie Siegel <lsiegel79@gmail.com>
Sent: Friday, July 01, 2016 3:20 PM
To: Ashton Harp
Subject: Draft Addendum IV

Dear Mr. Harp:

As a strong supporter of shark conservation and Project AWARE, I am writing to express my concern that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea.

I understand this is allowed under an exception in the Shark Conservation Act, but also know that states may opt to apply the best practice (a "fins-attached" landing rule) to all shark species. The fins-attached approach has been mandated for all other US sharks because it is the simplest, most enforceable method for preventing shark finning. Better catch data can also result.

I would be grateful if you would convey to the Commissioners my strong support for ending all at-sea removal of shark fins (including those from smooth dogfish).

Thank you.

Yours sincerely,

Leslie Siegel
Annandale, Virginia

Ashton Harp

From: J Riedel <ragy90@live.com>
Sent: Friday, July 01, 2016 2:36 PM
To: Ashton Harp
Subject: PLEASE PROTECT DOGFISH SHARKS - NO EXCEPTIONS TO FINNING

Dear Mr. Harp:

As a strong supporter of shark conservation and Project AWARE, I am writing to express my concern that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea.

I understand this is allowed under an exception in the Shark Conservation Act, but also know that states may opt to apply the best practice (a "fins-attached" landing rule) to all shark species. The fins-attached approach has been mandated for all other US sharks because it is the simplest, most enforceable method for preventing shark finning. Better catch data can also result.

I would be grateful if you would convey to the Commissioners my strong support for ending all at-sea removal of shark fins (including those from smooth dogfish).

Thank you.

Yours sincerely,

Jacob Riedel
New Jersey

Ashton Harp

From: Jo McClain <jolynnmcclain@yahoo.com>
Sent: Friday, July 01, 2016 10:34 AM
To: Ashton Harp
Subject: Draft Addendum IV

Dear Mr. Harp:

As a strong supporter of shark conservation and Project AWARE, I am writing to express my concern that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea.

I understand this is allowed under an exception in the Shark Conservation Act, but also know that states may opt to apply the best practice (a "fins-attached" landing rule) to all shark species. The fins-attached approach has been mandated for all other US sharks because it is the simplest, most enforceable method for preventing shark finning. Better catch data can also result.

I would be grateful if you would convey to the Commissioners my strong support for ending all at-sea removal of shark fins (including those from smooth dogfish).

Thank you.

Yours sincerely,
Jo Lynn McClain
Virginia

Sent from my iPhone

July 11, 2016

Via e-mail to aharp@asmfc.org

Ashton Harp
Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland St., Suite 200 A-N
Arlington, VA 22201
E-mail: aharp@asmfc.org

Re: *Draft Addendum IV to the Coastal Sharks Interstate Fishery Management Plan*

Dear Ms. Harp:

Oceana, the largest international ocean conservation organization solely focused on protecting the world's oceans, appreciates the opportunity to submit comments on *Draft Addendum IV to the Coastal Sharks Interstate Fishery Management Plan*. Oceana is working to protect sharks from overexploitation and becoming incidental bycatch in fisheries in the United States and around the world. Oceana's efforts to protect sharks in the United States include advocating at state and federal levels against shark finning, encouraging private sector entities to stop selling shark fins, calling for full-chain traceability for all species, including sharks, and litigating to protect threatened shark species. *Draft Addendum IV* seeks to amend the FMP to permit smooth dogfish shark carcasses to be landed with fins detached from the carcass so long as the total catch, by weight, is comprised of at least 25 percent of smooth dogfish sharks.¹ While the proposal is a step in the right direction, it does not go far enough to adequately conserve smooth dogfish sharks as well as other non-exempted sharks and ensure a sustainable fishery. Therefore, Oceana urges the Atlantic States Marine Fisheries Commission ("ASMFC") to require that *all* smooth dogfish sharks be landed with their fins naturally attached, regardless of catch composition.

One of the greatest threats facing sharks is the demand for their fins, which has led to the practice of finning – the act of cutting the fins off of a shark and discarding its body at sea, where it could drown, bleed to death, or be eaten alive by other fish.² Congress enacted the Shark Conservation Act of 2010 ("SCA") to require that all sharks in commercial fisheries be landed with their fins naturally attached to the carcass.³ The SCA, and Addendum II to the FMP implementing the SCA, exempts smooth dogfish

¹ ASMFC, *Draft Addendum IV to the Coastal Sharks Interstate Fishery Management Plan for Public Comment 1*, https://www.asmfc.org/uploads/file/573de908CoastalSharksDraftAddendumIV_PublicComment.pdf (last visited July 11, 2016). Smooth dogfish shark are also called "smoothhound shark," and the Latin name is *Mustelus canis*.

² Oceana, *Shark Fin Trade: Why it Should Be Banned in the United States* 1, 3 (June 2016), http://usa.oceana.org/sites/default/files/shark_fin_ban_announcement_report_final_low-res.pdf

³ 16 U.S.C. § 1857(1)(P).

sharks as long as the fin-to-carcass ratio does not exceed 12 percent.⁴ On March 15, 2016, Amendment 9 to the 2006 Consolidated Atlantic Highly Migratory Species FMP became effective; Amendment 9 brings smooth dogfish sharks under federal management and requires that smooth dogfish make up at least 25 percent of the total retained catch in order to remove the fins of smooth dogfish while at sea.⁵ To accord with the requirement implemented in federal waters, the phrase “commercial fishing for smooth dogfish” is interpreted in *Draft Addendum IV* to mean a trip where smooth dogfish sharks comprise at least 25 percent of the total retained catch.⁶ Thus, if *Draft Addendum IV* is approved, fishermen could retain smooth dogfish sharks in an amount less than 25 percent of the total catch provided that the fins remain naturally attached to the carcass.⁷ For amounts at or above 25 percent of the total catch, fisherman would be allowed to remove the fins of smooth dogfish sharks, provided the fin-to-carcass ratio does not exceed 12 percent, *i.e.*, the total weight of the smooth dogfish fins landed cannot exceed 12 percent of the total dressed weight of smooth dogfish carcasses.⁸ As result, commercial fishermen can land smooth dogfish carcasses with corresponding fins removed from the carcass.

For the following reasons, Oceana urges the ASMFC to require that *all* smooth dogfish sharks be landed with their fins naturally attached, regardless of catch composition.

- Fin-to-carcass ratios are not enforceable.

Fishermen directly target some sharks, including the smooth dogfish shark, for their meat.⁹ In addition, significant market demand for shark fins often leads to finning.¹⁰ To meet this market demand, finning of smooth dogfish sharks or other non-exempted shark species could be occurring as a result of the smooth dogfish shark exemption, which hinges upon vigilant enforcement of the 12 percent fin-to-carcass ratio. As the ASMFC Law Enforcement Committee has acknowledged, however, fin-to-carcass ratios are “not enforceable.”¹¹ Fin-to-carcass ratios are unenforceable in part, because it is difficult to determine the difference between the fins of smooth dogfish sharks and prohibited shark species.¹² Even enforcement officers with high levels of experience and training have difficulty correctly identifying shark species by examining carcasses or fins.¹³ Thus, both smooth dogfish sharks and other prohibited species of sharks could be finned at sea without detection. The consensus among Law Enforcement

⁴ 16 U.S.C. § 1857(1)(final paragraph); ASMFC, *Addendum II to the Interstate Fishery Management Plan for Atlantic Coastal Sharks: Smoothhound Shark State Shares* (May 2013), http://www.asmfc.org/uploads/file/smoothDogfishAddendumII_May2013.pdf.

⁵ National Marine Fisheries Service, Highly Migratory Species Management Division, *Final Rule Implementing Amendment 9 to the 2006 Consolidated Highly Migratory Species Fishery Management Plan* at Table 1.1 (Nov. 2015), http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am9/a9_final_ea.pdf; Atlantic Highly Migratory Species; Smoothhound Shark and Atlantic Shark Management Measures – Final Rule, 80 Fed. Reg. 73,128, 73,136-37, 73,146. (Nov. 24, 2015).

⁶ ASMFC, *Draft Addendum IV to the Coastal Sharks Interstate Fishery Management Plan for Public Comment 2*, https://www.asmfc.org/uploads/file/573de908CoastalSharksDraftAddendumIV_PublicComment.pdf (last visited July 11, 2016).

⁷ *Id.* at 3.

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ ASMFC, *Enforcement Issue Summary – Issue 14-1 – Shark Finning Regulations and Enforceability 1* (Feb. 14, 2014), http://www.asmfc.org/files/LEC/LEC_SharkFinning_Feb2014.pdf (noting that Law Enforcement Committee members from NOAA, USCG and the states of Massachusetts, Rhode Island, New York, New Jersey, Delaware, North Carolina, Georgia and Florida unanimously found fin-to-carcass ratio allowances for sharks that are processed at sea to be unenforceable).

¹² *Id.*

¹³ *Id.* at 1-2

Committee members is that “there are no enforcement issues if fins are secured naturally to the carcass.”¹⁴ Indeed, the Law Enforcement Committee concluded that fin attachment is “the preferred method of enforcement, allowing for more accurate identification of species and successful enforcement of finning restrictions or prohibitions.”¹⁵

- The most recent stock assessment for smooth dogfish sharks found that the exploitation status, biomass status, and biological reference points are unknown.

In addition, like many sharks, smooth dogfish sharks reach sexual maturity late (female 4.4 years; male 2.5 years), grow slowly, and produce few offspring (3-18 pups; an average of 9.53 pups every year), thereby making them particularly vulnerable to overexploitation.¹⁶ In 2015, the smooth dogfish stock assessment determined that the current stock exploitation status and the current stock biomass status are unknown.¹⁷ The stock assessment determined that biological reference points are also unknown.¹⁸ Because sharks face twice the risk of extinction resulting from fishing pressure than do other fish,¹⁹ a precautionary approach to protect the smooth dogfish shark should be adopted by the ASMFC.

As long as there is market demand for shark fins, finning is a potential threat to all shark species, including smooth dogfish sharks. The exemption from the fins-naturally-attached rule for smooth dogfish sharks creates a loophole whereby both smooth dogfish sharks and other prohibited sharks could be subjected to finning. While the clarification of the catch composition in *Draft Addendum IV* is a step in the right direction, it does not go far enough to adequately conserve smooth dogfish sharks as well as other non-exempted sharks and ensure a sustainable fishery. Regardless of the 25 percent catch composition proposed in *Draft Addendum IV*, the 12 percent fin-to-carcass ratio could result in undetected finning of smooth dogfish sharks and other shark species. As the ASMFC’s own Law Enforcement Committee determined that fin-to-carcass ratio allowances are unenforceable and given that the most recent stock assessment for this species determined that the status of the stock is unknown, Oceana urges a precautionary approach that would require all smooth dogfish sharks to be landed with fins naturally attached to the carcass.

Oceana appreciates the opportunity to provide input on *Draft Addendum IV* and thanks the ASMFC staff for their time. Oceana will continue to be engaged in this process moving forward.

Sincerely,

/s/

Mariah Pflieger
Marine Scientist, Responsible Fishing Campaign

¹⁴ *Id.* at 2.

¹⁵ *Id.*

¹⁶ Southeast Data, Assessment and Review (SEDAR), *SEDAR 39 – Stock Assessment Report – HMS Atlantic Smooth Dogfish Shark* at 14 (Mar. 2015), http://sedarweb.org/docs/sar/S39_Atl_smooth_dog_SAR.pdf

¹⁷ *Id.* at Table 1.

¹⁸ *Id.* at Table 2.

¹⁹ Oceana, *Shark Fin Trade: Why it Should Be Banned in the United States* 3 (June 2016), http://usa.oceana.org/sites/default/files/shark_fin_ban_announcement_report_final_low-res.pdf.



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July 7, 2016

Ashton Harp
Atlantic States Marine Fisheries Commission
Fishery Management Plan Coordinator
1050 N. Highland St. Suite 200 A-N
Arlington, VA 22201

Dear Ms. Harp,

The Humane Society of the United States (HSUS) urges the ASMFC to require that all sharks are landed with fins naturally attached.

We are concerned that several Atlantic states allow the fins of smooth dogfish sharks to be removed at sea. While this is allowed under an exception in the Shark Conservation Act of 2010, individual states may choose to apply the best practice and follow a fins attached landing rule to all shark species. This fins attached approach has been mandated for all other sharks landed in the US as it is the most enforceable and effective method for preventing shark finning and gathering accurate data on shark landings and trade in shark products.

The HSUS has long advocated for the protection of sharks at both the state and federal level. Finning is cruel and wasteful and all sharks, even small sharks such as dogfish, should be afforded protection from this practice.

We support strong finning bans and ending all at-sea removal of shark fins, including those from smooth dogfish to ensure that the U.S. continues to be a global leader in shark conservation.

Sincerely,

Nicole Paquette
Vice President, Wildlife Protection
The Humane Society of the United States

July 11, 2016

Ashton Harp
Atlantic States Marine Fisheries Commission
1050 North Highland St., Suite 200 A-N
Arlington, VA 22201



Dear Ms. Harp:

Shark Advocates International and Project AWARE appreciate this opportunity to comment on Draft Addendum IV to the Coastal Sharks Interstate Fishery Management Plan and related measures aimed at preventing the wasteful practice of shark finning (slicing off a shark's fins and discarding the body at sea), particularly with respect to smoothhound sharks (smooth dogfish).

We have long been concerned about the Shark Conservation Act (SCA) Savings Clause that exempts Atlantic smooth dogfish from the bans on at-sea fin removal that apply to all other sharks taken in U.S. fisheries. We take this opportunity to reiterate our strong support for requiring that smooth dogfish be landed with fins naturally attached, for the reasons outlined below.

As detailed in a 2010 report¹ from the European Elasmobranch Association (EEA) and the International Union for Conservation of Nature (IUCN) Shark Specialist Group, under such a policy:

- Enforcement burden is greatly reduced;
- Information on species and quantities of sharks landed is vastly improved;
- "High-grading" (mixing bodies and fins from different animals) is impossible; and
- Value of the finished product can be increased.

The study concluded that:

- Prohibiting the removal of fins on-board vessels is the "*only fail-safe, most reliable, least expensive means to prevent finning and measure compliance.*"

A 2007 expert study² on enforcing finning bans concluded that a fin-to-carcass ratio is a complicated and inadequate tool for preventing finning because of differences in cutting techniques and variability among species' fin sizes and values.

Furthermore, the 12% fin-to-carcass ratio established in the SCA is more than twice the limit used previously in U.S. fisheries and has little scientific basis. A comprehensive 2005 study of such fin-to-carcass ratios for 14 shark species conducted by National Marine Fisheries Service (NMFS), the University of Florida, and the Florida Fish & Wildlife Research Institute calculated the smooth dogfish fin-to-dressed-carcass ratio at 3.51%³. The higher the ratio, the greater the room for undetected finning.

¹ Fowler, S. and Séret, B. 2010. *Shark fins in Europe: Implications for reforming the EU finning ban*. European Elasmobranch Association and

² Hareide, N. R., Carlson J., Clarke, M., Clarke, S., Ellis, J., Fordham, S., Fowler, S., Pinho, M., Raymakers, C., Serena, F., Seret, B. and Polti, S. (2007). *European Shark Fisheries: a preliminary investigation into fisheries, conversion factors, trade products, markets and management measures*. European Elasmobranch Association.

³ Baremore I.E., B. Winner, N. Kohler, and J. Mello. 2005. Differences in the ratios of fin to carcass weight among fourteen species of sharks. Joint Meeting of Ichthyologists and Herpetologists, 21st annual meeting of the American Elasmobranch Society, Tampa, Florida, USA, 6-11 July 2005 (abstract and presentation).

Fin-to-carcass ratios have been addressed in a number of peer-reviewed technical studies in recent years. Notably, in April 2012, the *Journal of Fish Biology* published a special issue on “The Current Status of Elasmobranchs: Biology, Fisheries and Conservation” that includes a University of British Columbia Fisheries Centre global review of species-specific fin to body weight ratios and relevant legislation⁴. Authors report that:

- Mean and median wet fin to body mass ratios were 3% and 2.2%, respectively;
- A 5% ratio is too high and provides “*an opportunity for fishers to harvest extra fins from more sharks without retaining all of the corresponding shark carcasses*”;
- Generalized fin-to-carcass ratios present a “*dangerous loophole*”;
- Species and/or fleet-specific ratios are not a practical solution due to difficulties associated with high-grading and accurate species identification;
- Requiring all sharks be landed with fins attached is the best way to close finning loopholes, and makes it is “*easier for trained observers at landing sites to record the number, mass and species of sharks landed, making data collection and monitoring more straightforward and accurate.*”

The above-mentioned analyses back up the ultimate conclusion of a 2006 assessment of fin-to-carcass ratios⁵ produced by NMFS scientists for the International Commission for the Conservation of Atlantic Tunas:

- “*The only guaranteed method to avoid shark finning is to land sharks with all fins attached.*”

Because of these advantages, NMFS prohibited at-sea shark fin removal in the Atlantic in 2008, long before SCA adoption, and in the accompanying rulemaking process summarized associated benefits: “*This requirement will improve enforcement, species identification, data quality for future stock assessments, and further prevent the practice of shark finning.*”

It is important to note that smooth dogfish fins, although not highly valued for shark fin soup, are exported to Asia in substantial amounts. In fact, studies of Hong Kong fin trade auctions found that 39% of fins by weight were from small, undifferentiated sharks, including dogfish⁶. Smooth dogfish fins in particular have been shown to retail for \$160/kg in Singapore markets⁷.

The possibility for undetected finning under an excessive ratio limit is not restricted to smooth dogfish. In the Final Environmental Impact Statement for Amendment 3 to the Atlantic Highly Migratory Species Fishery Management Plan, NMFS stated that requiring smooth dogfish fins to remain naturally attached to the carcass was necessary to facilitate enforcement and species identification, “*as the dressed carcass and detached fins of a smooth dogfish could be misidentified as a dressed carcass or detached fins of a SCS, juvenile LCS, or spiny dogfish.*” We stress that juvenile large coastal species, many of which are severely depleted and prohibited (e.g. dusky and sandbar sharks), are at great risk for finning from the opportunity and incentive to high-grade under a 12% smooth dogfish fin-to-carcass ratio.

⁴ Biery, L. and Pauly, D. (2012). A global review of species-specific shark fin to body weight ratios and relevant legislation. *Journal of Fish Biology*. DOI: 10.1111/j.1095-8649.2011.03215.x

⁵ Cortes, E. and Neer, J. A. (2006). Preliminary reassessment of the validity of the 5% fin to carcass weight ratio for sharks. *ICCAT Collective Volume of Scientific Papers* 59, 1025–1036.

⁶ Clarke, S., unpublished data.

⁷ Clarke, S. 2005. Trade in Shark Products in Singapore, Malaysia & Thailand. Southeast Asian Development Center and ASEAN, Singapore.

Smooth dogfish are regularly landed in east coast ports with their fins still attached. The technique of making a partial cut and folding fins against the shark's carcass, perfected by U.S. Atlantic shark fishermen, is also an option for addressing industry concerns about safety and efficient storage.

Last, we are also troubled that the exceptions to our national fins-attached requirement, particularly through the most lenient fin-to-carcass ratio in the world, can undermine U.S. efforts to promote best practices for shark conservation on a global scale.

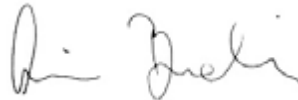
Based on this information and for these reasons, we believe smooth dogfish fin-to-carcass weight ratio limits threaten finning ban enforcement, data collection, and shark conservation in this country and beyond. We urge all Atlantic states to opt out of ratios and instead simply apply their bans on at-sea removal of fins to species of sharks.

Thank you for considering our views.

Sincerely,



Sonja Fordham
President
Shark Advocates International



Ania Budziak
Associate Director, Science & Policy
Project AWARE

COASTAL SHARKS PUBLIC HEARING FOR DRAFT ADDENDUM IV

Ocean Pines, Maryland

June 21, 2016

7 Total Attendees

Meeting staff (2): Ashton Harp (ASMFC), Angel Willey (MD DNR)

Meeting Participants (5): Roger Wooleyhan, Kirk Stewart (F/V Luna), Merrill Campbell (Southern Connection Ocean City (SCOC), Kerry Harrington (F/V Seaborn), Shah Amir

Issue 1: Catch Composition Requirement for Commercial Processing of Smooth Dogfish at Sea

Five participants are in favor of *Option A (status quo)* and opposed to the catch composition requirement for the following reasons:

- Waste: Their business is largely geared toward the meat market and smooth dogfish need to be processed immediately to maintain a quality product. If a fishermen are not able to meet the catch composition requirement then one would have to discard smooth dogfish that had already been cut and brined. It is considered mismanagement if fishermen are required to discard a resource that has already been processed.
 - Multiple people commented that processing sharks is hard work and time intensive. One can't afford to throw back processed meat.
- Fishing method: Maryland fishermen fish differently than other states. They use the accumulation method meaning they catch a lot of fish and many different species of fish depending on the time of year and water conditions. They can't afford to discard any fish.
- At sea weight estimates: This regulation could unintentionally turn fishermen into "outlaws" because weight of catch is estimated at sea. Fishermen cannot with any degree of certainty know that they met the catch requirement until the fish are landed.
 - Fishermen do not make a lot of money in the smooth dogfish market. One participant commented that they would expect to make \$150 on a day trip or \$500 on a 3-day trip.
- Safety: There are safety concerns associated with meeting this requirement. One might have to extend the length of their trip and set the nets again to try to meet the catch composition requirement.
- Conservation: One participant asked what this addendum did for the conservation of the smooth dogfish. Then noted that the conservation of the resource is not mentioned in the document and the Commission should manage the resource to ensure maximum sustainable yield. The catch composition requirement was seen as an unnecessarily complicated way to micromanage the fishery. Further, the participant was upset the Commission had even proposed the catch composition alternative alternative.

Other Comments

- All participants commented on their dissatisfaction with the NOAA Fisheries final rule for Amendment 9 to the Highly Migratory Fishery Management Plan.

COASTAL SHARKS PUBLIC HEARING FOR DRAFT ADDENDUM IV

Manteo, North Carolina

June 23, 2016

4 Total Attendees

Meeting staff (2): Ashton Harp (ASMFC), Holly White (NC DMR)

Meeting Participants (2): Charlie Locke (F/V Salvation), James Fletcher

Issue 1: Catch Composition Requirement for Commercial Processing of Smooth Dogfish at Sea

Two participants are in favor of *Option A (status quo)* and opposed to the catch composition requirement for the following reasons:

- Seen as making a regulation to make a regulation, however it will not save one shark, it does not have a conservation benefit. It will increase discards and impedes maximum sustainable yield
- Fishermen in other fisheries are not regulated on how they dress their fish, why is there so much management for sharks.
- Only adds more trouble and regulations for fishermen, especially smooth dogfish fishermen that are primarily landing a meat product. There is only one fin buyer left in the United States and the buyer does not want chips (small coastal shark fins).
- The catch composition requirement and the recent bill introduced in Congress ([H.R. 5584](#) Shark Fin Trade Elimination Act of 2016, June 23, 2016) were seen as potential measures that will end the shark fishery in U.S. waters.
- It is an additional complication for fishermen which could be passed onto the consumer in the form of a price increase.
- This could affect the quality of the meat because fishermen will have to wait to process smooth dogfish until they have finished fishing and can estimate weight for each species
- The majority of smooth dogfish landings are south of Hatteras because there is a lot of effort in the winter. Most day fishermen can't get out further than state waters at that time of year.
 - One participant noted that in discussions with other fishermen (south of Hatteras) there was a desire to fish solely in state waters so they can avoid 1) having to complying with a catch composition requirement and 2) going through the process of getting a federal smoothhound commercial fishing permit

Other Comments

- There was confusion over the issuance of federal smoothhound commercial permits. One participant thought NC fishermen would need to obtain a northeast and a

southeast region federal smoothhound commercial permit and subsequently follow the varying reporting requirements for each. This was seen as burdensome.

- Regarding shark fin bans, one participant noted that it denies access to the product to certain markets, even though this is a product that is legally caught by American fishermen.
- One participant noted that they have never seen law enforcement at the dock to check the fin-to-carcass ratio or the fins naturally attached policy; this would be one more regulation applied to fishermen.

COASTAL SHARKS PUBLIC HEARING FOR DRAFT ADDENDUM IV

New York

June 28, 2016

4 Total Attendees

Meeting staff (2): Ashton Harp (ASMFC), Jim Gilmore (NYDMR), Emerson Hasbrouck

Meeting Participants (1): Victor Vecchio

Issue 1: Catch Composition Requirement for Commercial Processing of Smooth Dogfish at Sea

- No comment on the issue.

COASTAL SHARKS PUBLIC HEARING FOR DRAFT ADDENDUM IV

New Jersey

June 22, 2016

0 Total Attendees

NJ Bureau of Marine Fisheries: Tom Baum, Russ Allen

Meeting Participants: None

Issue 1: Catch Composition Requirement for Commercial Processing of Smooth Dogfish at Sea

- No public participation

COASTAL SHARKS PUBLIC HEARING FOR DRAFT ADDENDUM IV

Old Lyme, CT

June 28, 2016

0 Total Attendees

CT DEEP: David Simpson, Director (CT DEEP Marine Fisheries Division), Mark Alexander (CT DEEP Marine Fisheries Division), Colleen Giannini (CT DEEP Marine Fisheries Division)

Meeting Participants: None

Issue 1: Catch Composition Requirement for Commercial Processing of Smooth Dogfish at Sea

- No public participation



Atlantic States Marine Fisheries Commission

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

Coastal Sharks Advisory Panel Conference Call 6 Total Attendees

July 14, 2016

Advisory Panel: Lewis Gillingham, Sonja Fordham, Peter Grimbilas, Rusty Hudson

Staff: Ashton Harp (ASMFC)

Public: Angel Willey (MD DMR)

Issue 1: Catch Composition Requirement

The sub-set of the Advisory Panel did not vote in favor of either option on the conference call. One participant was in favor of a fins naturally attached policy for smooth dogfish, regardless of catch composition. The other two participants did not provide comments on the issue.

One AP member sent a comment, via email, in favor of Option B (catch composition requirement).

General comments:

- Two participants commented on [H.R. 5584](#) Shark Fin Trade Elimination Act of 2016 (Congress introduced on June 23, 2016) and New Jersey's recent shark fin ban. They are not in favor of a shark fin ban.
- One participant said the smooth dogfish market is weak at this time, therefore, the fishery is not as active as it previously has been.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

July 11, 2016

To: Coastal Sharks Management Board
From: Law Enforcement Committee
RE: LEC review of Draft Addendum IV to the Coastal Sharks IFMP

The Law Enforcement Committee (LEC) of the Atlantic States Marine Fisheries Commission (ASMFC) met via conference call on July 8, 2016 to review and provide comments on proposed management options in Draft Addendum IV to the Coastal Sharks Interstate Fishery Management Plan. The following members were in attendance:

LEC: Capt. Steve Anthony (NC); Capt. Grant Burton (FL); Deputy Chief Jon Cornish (ME); Lt. Mike Eastman (NH); Asst. Director Larry Furlong (PA); Special Agent-in-Charge Honora Gordon (USFWS); Capt. Jamie Green (VA); Capt. Tim Huss (NY); Capt. Rob Kersey (MD); Capt. Bob Lynn (GA); Capt. Doug Messeck (DE); Maj. Pat Moran (MA); Director Kyle Overturf (CT); Lt. Colby Schlaht (USCG); Lt. Jason Snellbaker (NJ)

LEC ALTERNATES: Eric Provencher (NOAA OLE)

OTHER ATTENDEES: David Borden (RI)

STAFF: Ashton Harp; Toni Kerns; Kirby Rootes-Murdy; Mark Robson; Megan Ware

The LEC reviewed the management options and rationales contained in Addendum IV and recommends Option B, allowing at-sea fin removal for smooth dogfish as long as the total retained catch, by weight, is composed of at least 25% smooth dogfish. The LEC makes this recommendation in support of consistency of regulations between state and federal waters, an overriding concern for enforcement generally. Members of the LEC discussed the difficulties of catch inspections and shark identification but recognized that smooth dogfish possess physical features potentially distinguishing them from other shark species. Nonetheless, this requires some level of training for officers in the field.

The LEC reiterates its long-standing position that processing of catch at sea presents significant enforcement challenges (*Guidelines for Resource Managers on the Enforceability of Fishery Management Measures, Second Ed. 2015*). In the case of smooth dogfish being landed, officers must contend with proper identification of species, determination of a legal percentage of fins relative to total dressed weight, and now a determination that a 25% catch composition threshold has been met. While consistency of regulations between state and federal waters is a positive step, this remains a difficult set of regulations from an enforcement perspective.

The LEC appreciates the opportunity to review and provide advice concerning this proposal.



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

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

Form submitted by: Tim Fitzgerald State: NY
(your name)

Name of Nominee: Katie Westfall

Address: 1875 Connecticut Ave. NW

City, State, Zip: Washington, DC 20009

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

Phone (day): 202 572 3376

Phone (evening): 202 607 6775

FAX: _____

Email: kwestfall@edf.org

FOR ALL NOMINEES:

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

1. Coastal Sharks
2. _____
3. _____
4. _____

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

yes _____ no X

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

yes _____ no X

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

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

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

Rainbow, brook, brown, and cutthroat trout

Catfish, whiting, sailor's choice, and sea trout

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? _____ years

2. Is the nominee employed only in commercial fishing? yes _____ no _____

3. What is the predominant gear type used by the nominee? _____

4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? _____

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____ years

2. Is the nominee employed only in the charter/headboat industry? yes _____ no _____

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

3. How many years has the nominee lived in the home port community? _____ years

If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

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

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____ years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? ~20 years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes X no _____
If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

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

Nominee Signature:  _____

Date: 7/11/16

Name: **Katie Westfall**

(please print)

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

State Director

State Legislator

Governor's Appointee

Atlantic States Marine Fisheries Commission

Atlantic Sturgeon Management Board

*August 2, 2016
4:45 – 5:30 p.m.
Alexandria, Virginia*

Draft Agenda

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

- | | |
|---|-----------|
| 1. Welcome/Call to Order (<i>R. Beal</i>) | 4:45 p.m. |
| 2. Board Consent | 4:45 p.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from February 2016 | |
| 3. Public Comment | 4:50 p.m. |
| 4. Update on 2017 Benchmark Stock Assessment (<i>K. Drew</i>) | 5:00 p.m. |
| 5. Review and Discuss Comment on NOAA Proposed Rules Designating Critical Habitat for Atlantic Sturgeon (<i>K. Damon-Randall</i>) Action | 5:10 p.m. |
| 6. Elect Chair and Vice-chair (<i>R. Beal</i>) Action | 5:30 p.m. |
| 7. Other Business/Adjourn | 5:30 p.m. |

The meeting will be held at the Westin Alexandria; 400 Courthouse Square; Alexandria, VA; 703-253-8600

Vision: Sustainably Managing Atlantic Coastal Fisheries

MEETING OVERVIEW

Atlantic Sturgeon Management Board Meeting

August 2, 2016

4:45 – 5:30 p.m.

Alexandria, Virginia

Chair: Vacant	Technical Committee Chair: Ian Park (DE)	Law Enforcement Committee Rep: Brannock/Meyer
Vice Chair:	Advisory Panel Chair: Vacant	Previous Board Meeting: February 2016
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, VA, NC, SC, GA, FL, D.C., PRFC, USFWS, NMFS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 2016

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

4. Update on 2017 Benchmark Stock Assessment (5:00 – 5:10 p.m.)

Background

- The Board initiated development of a coastwide benchmark stock assessment in 2013.
- Terms of reference for the assessment were approved by the Board in February 2014.
- The assessment is currently on schedule for peer-review in mid-2017.

Presentations

- Update on the 2017 Benchmark Stock Assessment by K. Drew

5. Review and Comment on NOAA Proposed Rules Designating Critical Habitat for Atlantic Sturgeon (5:10 – 5:30 p.m.) Action

Background

- In June, NOAA published two proposed rules, one for each regional office, designating critical habitat for Atlantic sturgeon (**Briefing Materials**).

Presentations

- Overview of proposed rules by K. Damon-Randall

Board Action for Consideration

- Provide comment to NOAA Fisheries on the proposed rules

6. Elect Chair and Vice Chair (R. Beal) Action

7. Other Business/Adjourn

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

The Westin Alexandria
Alexandria, Virginia
February 3, 2016

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

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1. **Approval of Agenda by Consent** (Page 1)
2. **Approval of Proceedings of November 2015** by Consent (Page 1)
3. **Move to approve Jared Flowers and David Kazyak to the Sturgeon Stock Assessment Subcommittee** (Page 2). Motion by Louis Daniel; second by Bill Adler. Motion carried (Page 2).
4. **Move to nominate Louis Daniel for Sturgeon Vice-chairman** (Page 5). Motion by Martin Gary; second by Pat Augustine. Motion carried (Page 5).
5. **Move to approve the 2016 FMP review for the 2013 and 2014 fishing years** (Page 7). Motion by Bill Adler; second by Pat Augustine. Motion carried (Page 7).
6. **Adjournment by consent** (Page 7)

ATTENDANCE

Board Members

Terry Stockwell, ME, proxy for P. Keliher (AA)	Leroy Young, PA, proxy for J. Arway (AA)
Sen. Brian Langley, ME (LA)	Loren Lustig, PA (GA)
Stephen Train, ME (GA)	Tom Moore, PA, proxy for Rep. Vereb (LA)
Douglas Grout, NH (AA)	Roy Miller, DE (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	John Clark, DE, proxy for D. Saveikis (AA)
Ritchie White, NH, (GA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Jocelyn Cary, MA, proxy for Rep. Peake (LA)	Bill Goldsborough, MD (GA)
Dan McKiernan, MA, proxy for D. Pierce (AA)	Ed O'Brien, MD, proxy for Del. Stein (LA)
Bill Adler, MA (GA)	Rob O'Reilly, VA, proxy for J. Bull (AA)
Mark Gibson, RI, proxy for J. Coit (AA)	Kyle Schick, VA, proxy for Sen. Stuart (LA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Louis Daniel, NC (AA)
Dave Simpson, CT (AA)	Douglas Brady, NC (GA)
Lance Stewart, CT (GA)	Ross Self, SC, proxy for R. Boyles (AA)
Pat Augustine, NY, proxy for Sen. Boyle (LA)	Patrick Geer, GA, proxy for Rep. Nimmer (LA)
Steve Heins, NY, proxy for J. Gilmore (AA)	Malcolm Rhodes, SC (GA)
Russ Allen, NJ, proxy for D. Chanda (AA)	Jim Estes, FL, proxy for J. McCawley (AA)
Emerson Hasbrouck, NY (GA)	Martin Gary, PRFC
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Sherry White, USFWS
Tom Fote, NJ (GA)	Kim Damon-Randall, NMFS
	Dan Ryan, DC, proxy for B. King

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

Ex-Officio Members

Staff

Robert Beal	Katie Drew
Mike Waive	Max Appelman
Toni Kerns	

Guests

The Atlantic Sturgeon Fisheries Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, February 3, 2016, and was called to order at 11:36 o'clock a.m. by Chairman John Clark.

CALL TO ORDER

CHAIRMAN JOHN CLARK: The first item of business is to approve the agenda.

APPROVAL OF AGENDA

CHAIRMAN CLARK: Are there any changes to the agenda? Seeing none; the agenda is approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN CLARK: The second item is approval of the proceedings from February, 2014. It has been a while for this board; any changes to the proceedings? Seeing none; that is approved.

PUBLIC COMMENT

CHAIRMAN CLARK: Item Number 3, public comment; we have not had anybody sign up to comment. Would anybody from the public like to make a comment on an item not on the agenda?

UPDATE ON THE 2017 BENCHMARK ASSESSMENT

CHAIRMAN CLARK: Seeing none; we will now move on to Item Number 4, which is an update on the 2017 benchmark assessment that Katie Drew will be giving us.

DR. KATIE DREW: I'll keep this quick. We are still on track for a review in early 2017. We are in the process of finalizing the data from all the states for a terminal year of 2015 in the assessment. We've been pretty lucky in getting the acoustic tagging data together. We still have some sources to track down.

But for the most part people have been very cooperative in providing that data, which we look forward to using. We have had to switch assessment modelers for the tagging model, but the new person who hopefully will be approved today as the next agenda item is very well qualified and experienced with this kind of tagging model; and is coming up to speed quickly on that front.

We're also in the process of having those acoustically tagged fish genetically analyzed; so that we can assign them to a DPS, and hopefully get down to a more fine scale estimate of mortality from that model. Basically everything is under control and we're still on track for a 2017 assessment review, and if you have any questions I am happy to answer them.

CHAIRMAN CLARK: Any questions for Katie? Yes, Ross.

MR. ROSS SELF: I have heard there have been some concerns about accessing the genetics data. How is that going to play against getting the stock assessment completed on time? Do you have any concerns with that impacting the schedule for completion?

DR. DREW: Not excessive concerns on that front. I think really the only impact would potentially be a reduction in the sample size of fish that we could actually assign to a DPS for some analyses. There are limitations in terms of money and actual sample availability, but I think we'll be able to get the vast majority of available samples analyzed, and included in the assessment, and it should not delay the assessment in that regards.

**REVIEW AND POPULATE THE STOCK
ASSESSMENT SUBCOMMITTEE MEMBERSHIP**

CHAIRMAN CLARK: Any other questions for Katie? Seeing none; we move on to Agenda Item 5, which is Review and Populate the Stock Assessment Subcommittee membership; and I'll turn that over to Max.

MR. MAX APPLEMAN: As Katie alluded to; there are two stock assessment subcommittee memberships that need board approval; that is for Jared Flowers and David Kazyak. First Jared, he is a recent hire at North Carolina DMF. He has done some extensive work with sturgeon and other anadromous species in the U.S.

As Katie mentioned, he is a very qualified and experienced candidate to head the tagging model portion of the assessment; which was formerly headed by Will Smith, who recently left North Carolina and is no longer a member on the Stock Assessment Subcommittee. The other nominee is David Kazyak; who is a postdoc with the USGS.

A lot of his recent work has been focused on estimating census population size of the Hudson River Atlantic sturgeon population; which is part of the objective of the stock assessment. The SAS, the Stock Assessment Subcommittee intends to incorporate David's work into the assessment and kind of avoid any duplicate efforts to do that part.

Also, he has some experience with genetics data and analysis and this is a big plus for the Stock Assessment Subcommittee, since the majority of those members are somewhat unfamiliar with those kinds of datasets; again just looking for board approval here for Jared Flowers and David to the Sturgeon SAS, thank you, Mr. Chair.

CHAIRMAN CLARK: We'll need a motion. Can I have a motion; Dr. Daniel.

DR. LOUIS B. DANIEL: **Motion to approve Jared Flowers and David Kazyak as members of the Stock Assessment Subcommittee.**

CHAIRMAN CLARK: Second by Bill Adler. Is there any objection to these? **Seeing none; the motion passes unanimously, and they are both on the Stock Assessment Subcommittee.**

**OVERVIEW OF NOAA FISHERIES CRITICAL
HABITAT DESIGNATION PROCESS FOR
ATLANTIC STURGEON**

CHAIRMAN CLARK: Okay the next item on our agenda is an overview of NOAA Fisheries Critical Habitat Designation Process for Atlantic Sturgeon; and I will turn it over to Kim Damon-Randall of NOAA. She is in the back of the room there.

MS. KIM DAMON-RANDALL: I am going to talk a little bit about process; that critical habitat designation process, just because I'm not sure if everybody is familiar with it. Under the ESA, the Secretary of either Commerce or Interior has to designate critical habitat based on the best available information.

But they also have to consider whether or not the benefits of including critical habitat outweigh the economic impacts, the impacts of national security and other relevant impacts; when they're specifying areas as particular habitat. This is a little bit different than listing, where economics doesn't factor into the listing decision. Areas can be excluded from critical habitat designation if the benefits of excluding outweigh the benefits of including them, as long as it doesn't result in the extinction of the species. Section 4B, 6C requires the final regulation designating critical habitat of a listed species be published concurrently with the final listing determination if prudent and determinable. If it is not

determinable at the time of listing it can be extended one year, but not more than one year. Just as a reminder, the final listing for the five Atlantic sturgeon DPSs was in February, 2012. It is over that one year timeframe that are allotted under the ESA.

Critical habitat is defined as the specific areas within the geographical area occupied by the species at the time that it is listed, in which are found those physical or biological features that are essential to the conservation of the species and that may require special management consideration or protection. Also it can include specific areas that are outside the geographic area occupied by the species at the time it is listed, if it is determined that those areas are essential for the conservation of the species.

The Secretary shall designate all lands owned or controlled by the Department of Defense, sorry shall not designate; that is an important word, not, all lands that are owned or controlled by the Department of Defense if they have an integrated natural resources management plan that has been determined to provide benefits for the species for which the critical habitat may have been proposed.

We can exclude DOD lands if the in-ramp is protective enough of the listed species and the habitat. In the process we have to first identify the areas that meet the definition of critical habitat, and then we have to do the Section 4B2 analysis, which allows us to consider those impacts and balance the benefits versus the adverse impacts of either including or excluding critical habitat in the designation.

The first thing that we have to do is determine the geographical area that is occupied by the species. For Atlantic sturgeon that is a very wide geographical area that extends from Canada to Florida. Then we have to look at what the physical and biological features are that are essential to the conservation of the species.

Then we have to determine whether any features may require special management considerations or protections. Then we delineate the specific areas that contain those essential features, and we determine whether or not there are any unoccupied areas that are essential for the conservation of the species. The next step is to do the Section 4B2 analysis. We consider the economic or other impacts of designating any particular areas as critical habitat. We need to weigh the benefits of excluding a particular area against the benefits of including it.

We have to look at whether or not there are conservation plans or partnerships, whether or not there are tribal lands, national security and homeland security impacts, and also military lands; and look at the economic impacts of what would happen if that habitat was designated. Then we determine whether any particular areas should be excluded from critical habitat, and areas can again as I said earlier, be excluded as long as the failure to include them does not result in the extinction of the species.

Who is affected by critical habitat? The key benefit of designating critical habitat is to put other federal agencies on notice that they must consult with NOAA Fisheries if they intend to authorize, fund, or carry out an action that may affect the critical habitat of the species listed under the ESA. In these situations we would provide guidance as to how the action can be carried out in a manner that avoids or minimizes impacts to critical habitat. It is very focused on federal actions. For Atlantic sturgeon, some of you may have known that we were sued to designate critical habitat, because we were past that statutory deadline. We entered into a settlement agreement with the Natural Resources Defense Council and Delaware River Keeper that we would file

our proposed rules in the Federal Register by November 30th of 2015.

We actually went back to the court and asked for an extension to that deadline, so it has been extended to May 27, 2016. We've gathered the biological information into biological source documents that form the basis for the designation. New information for a couple of the rivers in the southeast was provided by the peer reviewers.

We did ask the Sturgeon Technical Committee to serve as peer reviewers, and we got some very good information from them. Some of that was new and that is being incorporated into the Southeast Rule as they work forward as they work forward on development of that rule. Both economic analyses were peer reviewed by economic experts.

We used the Biological Source Document and the economic analyses to serve as the basis for the one rule that is being developed for the three distinct population segments in the GARFO region, and one for the two DPSs in the southeast region. Both rules will go through the internal clearance process. They will file with the Federal Register by May 27th, 2016, which means that they'll be actually published in the Federal Register a couple days after that.

We've agreed to doing a 90 day public comment period, normally it is a 60 day public comment period; but we looked at the schedule of the ASMFC meetings and knew that fell right before the August ASMFC meeting, so we decided just to go ahead and extend it for 90 days. We will host public meetings throughout the range to obtain public comment. If it is helpful, we can come to the August ASMFC board meeting if you have one, and present on what the designations include.

CHAIRMAN CLARK: Are there any questions for Kim on this?

MR. DAVID V. BORDEN: Just to the last point. I think it would be very helpful to have a presentation on this at the August board meeting.

MR. WILLIAM A. ADLER: May I ask, it seems to me that the whole coast and all the rivers could be critical habitat. I get very worried about what that means, because I've dealt with that with the whale issue on critical habitats. I guess maybe the Norfolk Navy Base will be okay, because it is military, I guess. I just get worried about how much of this coast and rivers are actually going to be designated, and then what happens to the – for instance the fishing industry that may be impacted there? I am just cautious and I get worried about too much critical habitat.

CHAIRMAN CLARK: Do you have any response to that, Kim?

MS. DAMON-RANDALL: I think one thing to keep in mind is any federal action that is going to go through a Section 7 consultation that would look at affects to critical habitat, has to impact those physical and biological features that we've identified. We just designated a broader area of critical habitat for right whales. It is pretty much the entire Gulf of Maine in the northeast, so very wide geographic area. But the fishing industry does not have impacts on what those physical and biological features are for right whale critical habitat; so it is not having any impact on the fishing industry. Just keep that in mind that whatever the action is that we're consulting on has to affect those physical and biological features.

CHAIRMAN CLARK: Next question is from Bill Goldsborough.

MR. WILLIAM J. GOLDSBOROUGH: I was just wondering how and to what extend our Habitat Committee is in the loop on this. I suspect they will be meeting at the spring

meeting, but I'm not certain about that. In any case, we certainly want them in the loop.

MS. TONI KERNS: The Habitat Committee has their own spring meeting, so it wouldn't be at the main meeting week. But they do have a meeting, and we can work with Lisa and Kim to have a discussion. But they have not been discussing this listing yet.

CHAIRMAN CLARK: Next we have Tom Fote.

MR. THOMAS P. FOTE: I always love this listing of critical habitat, because it affects maybe fishermen and a few other people; but when it comes to the Army Corps of Engineers and their projects like widening of the channels in every river so they can bring in the huge tankers that are now destroying all the sloping along the riverbank and everything else. They seem to get exempted.

You know the ports also get exempted, because they can even outvote a Governor's Consistency Ruling. Always I look at this with a cynical eye, especially when you get, I guess part of the Department of Defense as a former Army Corps of Engineer officer, I realize that we get exempted from things we shouldn't get exempted; like destroying the lumps off the New Jersey coast to basically put sand on beaches. That is also sturgeon habitat. They're out there swimming.

DR. DANIEL: I stay anxious about all this. I guess my question would be, you know based on history if it would be possible for us to have an opportunity to look at and review this before it's published; as a partner in sturgeon management with the National Marine Fisheries Service. That might have helped the actual listing discussion decision, so perhaps we could be involved in that before it is published in the Federal Register.

MS. DAMON-RANDALL: We did ask the Sturgeon Technical Committee to review the biological information that forms the basis for

the critical habitat designation. I would have to talk to our attorneys, but I think because of the way that the federal decision process is, I am not sure we can share anything before it is published, because it would be considered pre-decisional. But I can talk to our attorneys and get back to you on that.

ELECT VICE-CHAIR

CHAIRMAN CLARK: Are there any other questions for Kim? Okay not seeing any; we'll move on to our next item, which is an action item. We need to elect a Vice-Chair. Is there a motion from the floor?

MR. MARTY GARY: **I move to nominate Dr. Louis Daniel from the state of North Carolina to be the next Vice-Chairman of the Atlantic States Marine Fisheries Commission Atlantic Sturgeon Management Board.**

CHAIRMAN CLARK: Pat Augustine, second.

MR. PATRICK AUGUSTINE: **I move to close nomination and cast one vote in favor of Mr. Daniel to become the new Vice-Chair; welcome sir, congratulations!**

CHAIRMAN CLARK: Do we have any objections? Seeing none; congratulations, Louis. You are the new Vice-Chair.

OTHER BUSINESS

CHAIRMAN CLARK: We are already on to other business. Since we are moving right along here, we're going to go ahead and do the FMP Review, which was on the original agenda and Max will take that.

MR. APPELMAN: I'll get through this pretty quickly. As we know there is a complete moratorium for Atlantic sturgeon since 1997, and harvest in the EEZ has been prohibited since '98. These moratoria are expected to remain in place until a

minimum of 20 protected year class of spawning females can be exhibited and that the FMP is modified at that point to permit harvest or possession.

Bycatch, in 2013 a total of 288 Atlantic sturgeons were reported as bycatch in various fisheries on the Atlantic Coast, 208 were reported in 2014. A majority of these were reported from the Federal Observer Program, the NEFOP data, and the South Carolina Winyah Bay American shad gillnet fishery; approximately 70 percent of the 2013 and 2014 reported bycatch.

It is also important to note though that there continues to be an underreporting concern regarding bycatch. This is in part due to the ESA listing that everyone is aware of. This has led to some states to terminate some of their voluntary logbook programs for bycatch reporting. Ship strikes continue to be a source of mortality for Atlantic sturgeon.

In 2013 there were 26 sturgeon carcasses reported in the Delaware Estuary and an additional 23 reported in 2014, and this does include fish reporter from Pennsylvania's portion of the Delaware River. As we've alluded to, the current moratorium is partially in response to the 1998 assessment and again in 2012 after several status reviews, NMFS did publish a final rule declaring the Gulf of Maine DPS as threatened and the other four as endangered.

In response to this listing, the board initiated that coastwide assessment, which is currently underway and scheduled for review in early 2017. As Katie explained, the TC, the Stock Assessment Subcommittee and its working groups are working very hard to see that that assessment is completed on schedule.

A quick habitat highlight that I wanted to provide for the board is that in Maine on the Penobscot River, the last of three dams have been removed, which blocked historical habitat

since 1830. According to some telemetry results, Maine DMR has demonstrated that Atlantic sturgeons have been using this newly available habitat for spawning, so that is good news for Maine.

As part of compliance, states are required to submit information on the results of bycatch in other fisheries, any independent monitoring results, the status of habitat, and information on aquaculture operations. Also we ask that states provide an overview of any ongoing research; and there was an extensive list of those studies included in the FMP review document that went out in supplemental materials. There are a couple copies in the back of the room if anyone wants to look at that. After review the Plan Review Team found that all states and jurisdictions did meet the requirements for the Atlantic sturgeon FMP. There were a few recommendations though from the PRT. One is for states to continue to coordinate with the commission regarding the progress of incidental take permits under Section 10 of the ESA. North Carolina and Georgia have received Section 10 ITPs for commercial gillnet operations.

I am aware that Rhode Island is also pursuing an ITP for their fisheries. These are the only states that I'm aware of at this point, so if a state was left out here, please get in touch with me and let me know. That concludes the FMP Review. Thank you, Mr. Chair I'll take any questions.

CHAIRMAN CLARK: Questions; Dr. Daniel.

DR. DANIEL: Maybe a comment and a question. First, North Carolina we do have our ITP in place. We have been doing observed trips in all the areas where we've seen sturgeon, and we've seen a lot of sturgeon; mostly juveniles. Most of the big sturgeon basically are represented by big holes in gillnets, we think.

That is going to increase that number significantly, the 288. It just dawned on me, I'm wondering, and Katie may be able to answer this question, if there is enough information in the Observer Program thus far to be of any use in the stock assessment, because that should be providing us with some, at least over time it is going to provide us with some good CPUE and abundance information. I don't know if you've even considered that yet or it is probably too short a time series to use at this point.

DR. DREW: That's a good question. We are intending to use the federal observer program, try to look at that as a CPUE of bycatch over time as an index of abundance; because it is a longer time series. But we'll definitely be including North Carolina, and actually South Carolina's bycatch information.

Partly as just trying to get estimates of bycatch that we can compare to the observer program; to kind of give us some bounds on what is being taken. We will look at it for a potential CPUE, but as you point out, the time series is really too short to have a lot of contrast to be useful in that effect. But it is definitely information that we are looking at and will incorporate into the stock assessment.

CHAIRMAN CLARK: Any more questions about the FMP review? Not seeing any; can we get a motion to approve the FMP review?

MR. ADLER: Yes, I make a motion to approve the FMP report.

CHAIRMAN CLARK: Do we have a second? Pat Augustine seconds the motion. **The motion is up, are there any objections to this motion? Seeing none; the motion is approved.**

Is there any other business to come before the Sturgeon Board? Seeing none; we are adjourned, thank you. I'm sorry, Roy, did you have something?

MR. ROY W. MILLER: I did Mr. Chairman. This was not on the agenda so I am just proposing that this question be considered in the future. We might want to consider how to provide our fishermen in our respective jurisdictions a greater level of comfort with reporting bycatch of Atlantic sturgeon. My perception is that there is considerable reluctance to provide that kind of information for fear of running afoul of the legal system. I would like to explore in the future perhaps, better ways to communicate that information to increase that level of comfort, so that we get more accurate landings statistics – or not landings but more accurate – bycatch statistics.

ADJOURNMENT

CHAIRMAN CLARK: Thanks, Roy. Let me slow down then. Is there anything else to come before the Sturgeon Board? Now seeing now; we are adjourned, thank you.

(Whereupon the meeting was adjourned at 12:04 o'clock p.m. on February 3, 2016.)

the Act, including the factors identified in this finding and explanation (see Request for Information, above).

Conclusion

On the basis of our evaluation of the information presented under section 4(b)(3)(A) of the Act, we have determined that the petition to remove the golden-cheeked warbler from the List of Endangered and Threatened Wildlife does not present substantial scientific or commercial information indicating that the requested action may be warranted. Therefore, we are not initiating a status review for this species.

We have further determined that the petition to list the U.S. population of northwestern moose (*Alces alces andersoni*) as an endangered or threatened DPS presents substantial scientific or commercial information indicating that the requested action may be warranted. Because we have found that the petition presents substantial information indicating that the petitioned action may be warranted, we are initiating a status review to determine whether this action under the Act is warranted. At the conclusion of the status review, we will issue a 12-month finding in accordance with section 4(b)(3)(B) of the Act, as to whether or not the Service believes the petitioned action is warranted.

It is important to note that the "substantial information" standard for a 90-day finding differs from the Act's "best scientific and commercial data" standard that applies to a status review to determine whether a petitioned action is warranted. A 90-day finding does not constitute a status review under the Act. In a 12-month finding, we will determine whether a petitioned action is warranted after we have completed a thorough status review of the species, which is conducted following a substantial 90-day finding. Because the Act's standards for 90-day and 12-month findings are different, as described above, a substantial 90-day finding does not mean that the 12-month finding will result in a finding that the petitioned action is warranted.

References Cited

A complete list of references cited is available for each species addressed in this document on the Internet at <http://www.regulations.gov> and upon request from the appropriate person listed under **FOR FURTHER INFORMATION CONTACT**, above.

Authors

The primary authors of this document are the staff members of the Branch of

Recovery and State Grants, Ecological Services Program, U.S. Fish and Wildlife Service.

Authority

The authority for these actions is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: May 25, 2016.

Stephen Guertin,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 2016-13120 Filed 6-2-16; 8:45 am]

BILLING CODE 4333-15-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 226

[Docket No. 150818735-6236-01]

RIN 0648-BF28

Endangered and Threatened Species; Designation of Critical Habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments of Atlantic Sturgeon

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: We, the National Marine Fisheries Service (NMFS), propose to designate critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments (DPSs) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). The specific areas proposed for designation include approximately 244 kilometers (152 miles) of aquatic habitat in rivers in Maine, New Hampshire, and Massachusetts for the Gulf of Maine DPS, approximately 547 kilometers (340 miles) of aquatic habitat in rivers in Connecticut, Massachusetts, New York, New Jersey, Pennsylvania, and Delaware for the New York Bight DPS, and approximately 729 kilometers (453 miles) of aquatic habitat in rivers in Maryland, Virginia, and the District of Columbia for the Chesapeake Bay DPS of Atlantic sturgeon. We are soliciting comments from the public on all aspects of the proposal, including information on the economic, national security, and other relevant impacts of the proposed designations, as well as the benefits to the DPSs.

DATES: Comments on this proposed rule must be received by September 1, 2016.

Public hearings and public information meetings: We will hold two public hearings and two public informational meetings on this proposed rule. We will hold a public informational meeting from 2 to 4 p.m., in Annapolis, Maryland on Wednesday, July 13 (see **ADDRESSES**). A second public informational meeting will be held from 3 to 5 p.m., in Portland, Maine on Monday, July 18 (see **ADDRESSES**). We will hold two public hearings, from 3 to 5 p.m. and 6 to 8 p.m., in Gloucester, Massachusetts on Thursday, July 21 (see **ADDRESSES**).

ADDRESSES: You may submit comments, identified by the NOAA-NMFS-2015-0107, by either of the following methods:

- *Electronic Submissions:* Submit all electronic public comments via the Federal eRulemaking Portal. Go to www.regulations.gov / #!docketDetail;D=NOAA-NMFS-2015-0107, Click the "Comment Now!" icon, complete the required fields, and enter or attach your comments.

- *Mail:* Kimberly B. Damon-Randall, Assistant Regional Administrator, Protected Resources Division, NMFS, Greater Atlantic Regional Office, 55 Great Republic Drive, Gloucester, MA 01930.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by us. All comments received are a part of the public record and will generally be posted for public viewing on www.regulations.gov without change. All personal identifying information (e.g., name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. We will accept anonymous comments (enter "N/A" in the required fields if you wish to remain anonymous).

Public informational meetings and public hearings: The July 13, 2016, public informational meeting will be held at the Environmental Protection Agency, Information and Conference Center, 410 Severn Avenue, Annapolis, MD 21403. The July 18, 2016, public informational meeting will be held at the Gulf of Maine Research Institute, Cohen Center, 350 Commercial Street, Portland, Maine 04101. The July 21, 2016, public hearings will be held at the NMFS, Greater Atlantic Region Fisheries Office, 55 Great Republic Drive, Gloucester, MA 01930. People needing reasonable accommodations in order to attend and participate or who have questions about the public

hearings should contact Lynn Lankshear, NMFS, Greater Atlantic Region Fisheries Office (GARFO), as soon as possible (see **FOR FURTHER INFORMATION CONTACT**).

FOR FURTHER INFORMATION CONTACT:

Lynn Lankshear, NMFS, GARFO at 978–282–8473; Julie Crocker, NMFS, GARFO at 978–282–8480; or Lisa Manning, NMFS, Office of Protected Resources at 301–427–8466.

SUPPLEMENTARY INFORMATION:

In accordance with section 4(b)(2) of the ESA (16 U.S.C. 1533(b)(2)) and our implementing regulations (50 CFR 424.12), this proposed rule is based on the best scientific information available concerning the range, biology, habitat, and threats to the habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon. We have reviewed the information (e.g., provided in reports, peer-reviewed literature, and technical documents) and have used it to identify the physical and biological features essential to the conservation of each DPS, the specific areas within the occupied areas that contain the essential physical and biological features that may require special management protection, the federal activities that may impact those features, and the potential impacts of designating critical habitat for each DPS. We have gathered this information for all three DPSs into a single document, the Draft Biological Information and ESA section 4(b)(2) Source Document. The economic impacts of the proposed critical habitat designations for each DPS are described in the document titled, Draft Economic Impact Analysis of Critical Habitat Designation for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments of Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*), which was prepared by King and Associates, Incorporated. These supporting documents are available on the Federal eRulemaking Portal at <http://www.regulations.gov>. Electronic copies can also be obtained at <http://www.greateratlantic.fisheries.noaa.gov/protected/atlsturgeon/index.html> or upon request (see **ADDRESSES**).

We invite the submission of information that may help to identify other physical or biological features. For example, while we know that there are specific estuarine areas that sturgeon often use for foraging (e.g., the mouth of the Merrimack and Saco rivers), and we can identify aggregation areas (e.g., off of western Long Island, New York) and general movement patterns in the marine environment (e.g., typically

within the 50 meter depth contour) to and from estuarine areas, we could not identify what the specific features are of these habitats that make them important to sturgeon and that may require special management.

Background

Under section 4 of the ESA, critical habitat shall be specified to the maximum extent prudent and determinable at the time a species is listed as threatened or endangered (16 U.S.C. 1533(b)(6)(C)). We concluded that critical habitat was not determinable for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs when we published the final listing rule (77 FR 5880, February 6, 2012). However, we anticipated that critical habitat would be determinable in the future, given on-going research. We, therefore, announced in the final rule that we would propose critical habitat for each DPS in a separate rulemaking.

Section 3(5)(A) of the ESA defines critical habitat as the specific areas within the geographical area occupied by the species at the time it is listed on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protections, and specific areas outside the geographical area occupied by the species at the time it is listed that are essential for the conservation of the species (16 U.S.C. 1532(5)(A)). Conservation is defined in section 3(3) of the ESA as “. . . to use, and the use of, all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary . . .” (16 U.S.C. 1532(3)). Therefore, critical habitat is the habitat essential for the species’ recovery. However, section 3(5)(C) of the ESA clarifies that except in those circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species.

As described in section 4(b)(2) of the ESA, we are required to designate critical habitat based on the best available scientific data and after taking into consideration the economic impact, impact on national security, and any other relevant impact, of specifying any particular area as critical habitat. Section 4(b)(2) provides us with discretion to exclude particular areas from a designation if the benefits of excluding that area outweigh the benefits of including it in the designation, unless failure to designate

such areas as critical habitat will result in the extinction of the species. Finally, section 4(a)(3)(B) prohibits designating as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense or designated for its use, that are subject to an Integrated Natural Resources Management Plan (INRMP) prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a conservation benefit to the species, and its habitat, for which critical habitat is proposed for designation. Although not expressly stated in section 4(b)(2), our regulations clarify that critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction (50 CFR 424.12(g)).

Once critical habitat is designated, section 7(a)(2) of the ESA requires Federal agencies to ensure that any action they fund, authorize or carry out is not likely to destroy or adversely modify that habitat (16 U.S.C. 1536(a)(2)). This requirement is in addition to the section 7(a)(2) requirement that Federal agencies ensure that their actions are not likely to jeopardize the continued existence of ESA-listed species. Specifying the geographic location of critical habitat also facilitates implementation of section 7(a)(1) of the ESA by identifying areas where Federal agencies can focus their conservation programs and use their authorities to further the purposes of the ESA. Critical habitat requirements do not apply to citizens engaged in activities on private land that do not involve a Federal agency. However, designating critical habitat can help focus the efforts of other conservation partners (e.g., State and local governments, individuals and nongovernmental organizations).

Accordingly, our step-wise approach for identifying potential critical habitat areas for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs included the following: (1) Identify the physical and biological features essential to the conservation of the DPS and which may require special management considerations or protection; (2) identify specific areas where those features occur within the occupied geographic range of a particular DPS; (3) identify any unoccupied habitat essential to the conservation of a particular DPS; (4) consider economic, national security, or any other impacts of designating critical habitat and determine whether to exercise our discretion to exclude any particular areas; and (5) determine whether any area that contains essential

features is covered under an INRMP that provides a conservation benefit to the DPS.

Biology and Habitat of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic Sturgeon

Although there is considerable variability among species, all sturgeon species (order *Acipenseriformes*) have some common life history traits. They all: (1) Occur within the Northern Hemisphere; (2) spawn in freshwater over hard bottom substrates; (3) generally do not spawn annually; (4) are benthic foragers; (5) mature relatively late and are relatively long lived; and, (6) are relatively sensitive to low dissolved oxygen levels (Dees, 1961; Vladykov and Greeley, 1963; Klyashtorin, 1976; Bemis and Kynard, 1997; Sulak and Randall, 1999; Billard and Lecointre, 2001; Secor and Niklitschek, 2002; Pikitch *et al.*, 2005).

Atlantic sturgeon have all of these traits. They occur along the eastern coast of North America from Hamilton Inlet, Labrador, Canada, to Cape Canaveral, Florida, USA (Bigelow and Welsh, 1924; Dees, 1961; Vladykov and Greeley, 1963; Scott and Scott, 1988; NMFS and USFWS, 2007; T. Savoy, CT DEEP, pers. comm.). They have a lifespan of up to 60 years, although the typical lifespan is probably much shorter (Sulak and Randall, 2001; Balazik *et al.*, 2010). As described in the Status Review, Atlantic sturgeon reach maturity at about 5 to 34 years of age, after years of moving between marine waters and coastal estuaries, and spawn in freshwater of tidal-affected rivers every 1 to 5 years (males) or 2 to 5 years (females) (NMFS and USFWS, 2007). Analysis of stomach contents for adults, subadults (*i.e.*, sexually immature Atlantic sturgeon that have emigrated from the natal estuary), and juveniles (*i.e.*, sexually immature Atlantic sturgeon that have not yet emigrated from the natal estuary) confirms that Atlantic sturgeon are benthic foragers (Ryder, 1888; Bigelow and Schroeder, 1953; Johnson *et al.*, 1997; Secor *et al.*, 2000; NMFS and USFWS, 2007; Guilbard *et al.*, 2007; Hatin *et al.*, 2007; Savoy, 2007; Dzaugis, 2013; McLean *et al.*, 2013).

An adomous species, Atlantic sturgeon are spawned in freshwater of rivers that flow into a coastal estuary. Tagging records and the relatively low rate of gene flow reported in population genetic studies provide evidence that Atlantic sturgeon return to their natal river to spawn (NMFS and USFWS, 2007). Spawning sites are well-oxygenated areas with flowing water

ranging in temperature from 13 °C to 26 °C, and hard bottom substrate such as cobble, coarse sand, hard clay, and bedrock (Ryder, 1888; Dees, 1961; Vladykov and Greeley, 1963; Scott and Crossman, 1973; Gilbert, 1989; Smith and Clugston, 1997; Bain *et al.*, 2000; Collins *et al.*, 2000; Caron *et al.*, 2002; Hatin *et al.*, 2002; Mohler, 2003; Greene *et al.*, 2009; Balazik *et al.*, 2012; Hager *et al.*, 2014). Water depth leading to spawning sites may be highly variable. Since the exact location of spawning is unknown, spawning depth is also uncertain. Atlantic sturgeon in spawning condition have been tracked and captured near presumed spawning habitat at depths up to 27 m (Borodin 1925; Dees 1961; Scott and Crossman 1973; Shirey *et al.*, 1999; Bain *et al.*, 2000; Hatin *et al.*, 2002; Balazik *et al.*, 2012; Hager *et al.*, 2014).

Within minutes of being fertilized, the eggs become sticky and adhere to the substrate for the relatively short and temperature-dependent period of larval development (Ryder, 1888; Vladykov and Greeley, 1963; Murawski and Pacheco, 1977; Smith *et al.*, 1980; Van den Avyle, 1984; Mohler, 2003). In hatchery studies, hatching occurred approximately 60 hours after egg deposition at water temperatures of 20 °C to 21 °C and 96 hours after egg deposition with a water temperature of approximately 18 °C (Smith *et al.*, 1980; J. Fletcher, USFWS pers. comm. in Mohler, 2003).

Larval Atlantic sturgeon (*i.e.*, less than 4 weeks old, with total lengths less than 30 mm; Van Eenennaam *et al.*, 1996) are assumed to inhabit the same areas where they were spawned and live at or near the bottom (Ryder, 1888; Smith *et al.*, 1980; Bain *et al.*, 2000; Kynard and Horgan, 2002; Greene *et al.*, 2009). The best available information for behavior of larval Atlantic sturgeon is described from hatchery studies. Upon hatching, larvae are nourished by the yolk sac, are mostly pelagic (*e.g.*, exhibit a “swim-up and drift-down” behavior in hatchery tanks; Mohler, 2003), and move away from light (*i.e.* negative photo-taxis; Kynard and Horgan, 2002; Mohler, 2003). Within days, larvae exhibit more benthic behavior until the yolk sac is absorbed at about 8 to 10 days post-hatching (Kynard and Horgan, 2002; Mohler, 2003). Post-yolk sac larvae occur in the water column but feed at the bottom of the water column (Mohler, 2003; Richardson *et al.*, 2007).

The next phase of development, referred to as the juvenile stage, lasts months to years in brackish waters of the natal estuary (Hatin *et al.*, 2007; NMFS and USFWS, 2007; Greene *et al.*, 2009; Calvo *et al.*, 2010; Schueller and

Peterson, 2010). Juveniles occur in oligohaline waters (salinity of 0.5 to 5 parts per thousand) and mesohaline waters (salinity of 5 to 18 parts per thousand) of the natal estuary during growth and development. They will eventually move into polyhaline waters (salinity of 18–30 parts per thousand) before emigrating to the marine environment. Larger, presumably older, juveniles occur across a broader salinity range than smaller, presumably younger, juveniles (Hatin *et al.*, 2007; McCord *et al.*, 2007; Munro *et al.*, 2007; NMFS and USFWS, 2007; Sweka *et al.*, 2007; Greene *et al.*, 2009; Calvo *et al.*, 2010).

The distribution of Atlantic sturgeon juveniles in the natal estuary is a function of physiological development and habitat selection based on water quality factors of temperature, salinity, and dissolved oxygen, which are inter-related environmental variables. In laboratory studies, juveniles less than a year old (also known as young-of-year) had reduced growth at 40 percent dissolved oxygen saturation with salinity of 8 and 15 parts per thousand and temperature at 12 °C, 20 °C, and 28 °C. They grew best at 70 percent dissolved oxygen saturation with salinity of 8 and 15 parts per thousand and temperature of 12 °C and 20 °C (*i.e.*, dissolved oxygen concentrations greater than 6.5 mg/L), and selected for conditions that supported growth (Niklitschek and Secor, 2009; Niklitschek and Secor, 2010). Similar results were obtained for age-1 juveniles (*i.e.*, greater than 1 year old and less than 2 years old), which have been shown to tolerate salinities of 33 parts per thousand (*e.g.*, a salinity level associated with seawater), but grow faster in lower salinity waters (Niklitschek and Secor, 2009; Allen *et al.*, 2014).

Once suitably developed, Atlantic sturgeon leave the natal estuary and enter marine waters (*i.e.*, waters with salinity greater than 30 parts per thousand) which marks the beginning of the subadult life stage. In the marine environment, subadults mix with adults and subadults from other river systems (NMFS and USFWS, 2007; Grunwald *et al.*, 2008; Dunton *et al.*, 2010; Erickson *et al.*, 2011; Dunton *et al.*, 2012; Wirgin *et al.*, 2012; Waldman *et al.*, 2013; O’Leary *et al.*, 2014; Wirgin *et al.*, 2015a; Wirgin *et al.*, 2015b). Atlantic sturgeon travel long distances in marine waters, aggregate in both ocean and estuarine areas at certain times of the year, and exhibit seasonal coastal movements in the spring and fall (NMFS and USFWS, 2007; Dunton *et al.*, 2010; Dunton *et al.*, 2012; Erickson

et al., 2011; Oliver *et al.*, 2013; Wippelhauser and Squiers, 2015). Existing and new technologies are providing additional information for the life history and distribution of the Atlantic sturgeon in marine waters (Nelson *et al.*, 2013; Breece *et al.*, 2016). However, there is still a paucity of data to inform distribution of subadult and adult Atlantic sturgeon within the marine environment and their habitat use.

The exact spawning locations for Gulf of Maine, New York Bight and Chesapeake Bay DPS Atlantic sturgeon are unknown but inferred based on the location of freshwater, hard substrate, water depth, tracking of adults to upriver locations and the behavior of adults at those locations, capture of young-of-year and, in limited cases, larvae, and historical accounts of where the caviar fishery occurred. Based on one or more of these lines of evidence, multiple sites have been identified within many of the rivers used for spawning (NMFS and USFWS, 2007; Simpson, 2008; Hager, 2011; Austin, 2012; Balazik *et al.*, 2012; Breece *et al.*, 2013). Spawning sites at different locations within the tidal-affected river would help to ensure successful spawning given annual changes in the location of the salt wedge.

Male Atlantic sturgeon in spawning condition have been observed to stage in more saline waters of the coastal estuary before moving upriver once the water temperature reaches approximately 6 °C (43 °F). They may spend weeks moving upstream and downstream of the presumed spawning area(s) before moving back downriver to the lower estuary and residing there until outmigration in the fall. In contrast, spawning females move upriver when temperatures are closer to 12 °C to 13 °C (54 ° to 55 ° F), return downriver relatively quickly, and may leave the estuary and travel to other coastal estuaries until outmigration to marine waters in the fall (Smith *et al.*, 1982; Dovel and Berggren, 1983; Smith, 1985; Bain, 1997; Bain *et al.*, 2000; Collins *et al.*, 2000; NMFS and USFWS, 2007; Greene *et al.*, 2009; Balazik *et al.*, 2012; Breece *et al.*, 2013).

There is a growing body of evidence that some Atlantic sturgeon river populations have two spawning seasons comprised of different spawning adults (Balazik and Musick, 2015). Evidence of fall spawning for the Carolina and South Atlantic DPSs was available when the five Atlantic sturgeon DPSs were listed under the ESA (77 FR 5914; Smith *et al.*, 1984; NMFS and USFWS 1998; Collins *et al.*, 2000). Since the listings, additional evidence of fall as well as

spring spawning has been obtained for the Chesapeake Bay DPS (Balazik *et al.*, 2012; Hager *et al.* 2014; Kahn *et al.*, 2014). Spring is the only currently known spawning period for the Gulf of Maine and New York Bight DPSs. However, an 1870's report of Atlantic sturgeon spawning during August in the Hudson River (Dovel and Berggren, 1983) and other historical information (Borodin, 1925; Balazik and Musick, 2015) suggests spring and fall spawning runs were typical, and may still occur in many areas of the Atlantic sturgeon's range. Given seasonal changes in the location of the salt-wedge for estuarine systems, it is likely that fall spawning would occur or would have occurred further upstream than the locations for spring spawning in rivers.

In addition to providing access to spawning habitat, estuaries provide foraging opportunities for subadult and adult Atlantic sturgeon. Stomach content analysis of Atlantic sturgeon captured in coastal estuaries confirm that sturgeon are foraging in coastal estuaries (Hatin *et al.*, 2007; Savoy, 2007; Calvo *et al.*, 2010; Wippelhauser, 2012; Dzaugis, 2013; McLean *et al.*, 2013; McLean *et al.*, 2014). The occurrence of subadult and adults in association with the salt front (Brundage and Meadows, 1982; Savoy and Shake, 1993; Collins *et al.* 2000; Savoy and Pacileo, 2003; Hatin *et al.*, 2007; Calvo *et al.*, 2010; Hager, 2011; Balazik, 2012; Breece *et al.*, 2013), a biologically-rich area of estuaries, also suggests use of estuarine waters for seasonal foraging. At least some Atlantic sturgeon subadults and adults move between estuarine environments in the spring through fall (Savoy and Pacileo, 2003; Simpson, 2008; Collins *et al.*, 2000; Balazik *et al.*, 2012).

The directed movement of subadult and adult Atlantic sturgeon to coastal estuaries in the spring is reversed in the fall (NMFS and USFWS, 2007; Greene *et al.*, 2009; Hager, 2011; Erickson *et al.*, 2011; Balazik *et al.*, 2012; Wippelhauser, 2012; Oliver *et al.*, 2013). The whereabouts of these fish once they leave coastal estuaries is uncertain. Atlantic sturgeon aggregate off of Long Island, New York and off of the Virginia/North Carolina coastline (Laney *et al.*, 2007; Dunton *et al.*, 2015). Others have been tracked to the southern extent of the range (T. Savoy, CT DEEP, pers. comm.) while at least one was tracked to the more northern area of the subspecies range, the Back River, Maine, in winter (G. Zydlewski, Univ. of Maine, pers. comm.). Two adults originally tagged in the Delaware River were detected in the Appomattox River, Virginia (C. Hager, Chesapeake

Scientific, pers. comm.) during the winter. A recent study of Atlantic sturgeon tracked in the Delaware Bay found that some of the fish migrating from the estuary in the fall remained in nearby coastal marine waters within a plume of water flowing out from the estuary, suggesting a continued affinity with the estuary even after emigrating from the estuary proper (Oliver *et al.*, 2013). Further work suggests Atlantic sturgeon distribution in the marine environment is affected more by the characteristics of the water (*e.g.*, eddies, coastal upwelling, temperature) than characteristics of the landscape (*e.g.*, depth, substrate) (Breece *et al.*, 2016).

To identify specific habitats used by an Atlantic sturgeon DPS, we considered available information that described: (1) Capture location and/or tracking locations of a subadult or adult Atlantic sturgeon identified to its DPS by genetic analysis; (2) capture location and/or tracking locations of a subadult or adult Atlantic sturgeon identified to its DPS based on the presence of a tag that was applied when the sturgeon was captured as a juvenile in its natal estuary; (3) capture or detection location of adults in spawning condition (*i.e.*, extruding eggs or milt) or post-spawning condition (*e.g.*, concave abdomen for females); (4) capture or detection of young-of-year and other juvenile age classes; and, (5) collection of eggs or larvae. In the case of estuaries of known spawning rivers, we assumed based on the available information that a portion of the subadults and adults present originated from that river and, thus, the habitats used by subadults and adults in a spawning river were indicative of habitats used by the DPS which spawned in the river. Previous studies have demonstrated that a combination of microsatellite and mitochondrial DNA analyses provide the most accurate information to identify an Atlantic sturgeon to its DPS, and using mitochondrial analysis, alone, provides much lower assignment accuracy given the prevalence of a common Atlantic sturgeon haplotype (NMFS and USFWS, 2007; Wirgin *et al.*, 2012; Waldman *et al.*, 2013). Therefore, when reviewing the available information on habitats used by Atlantic sturgeon, we also considered what genetic analyses were used to assign the sampled sturgeon to its DPS of origin.

The Kennebec River was the only known spawning river for the Gulf of Maine DPS when the DPS was listed as threatened (NMFS and USFWS, 2007; 77 FR 5880, February 6, 2012). Spawning has since been confirmed in the Androscoggin River (Wippelhauser, 2012). The Brunswick Dam at Pejepscot

Falls, the head-of-tide, is the upstream limit of Atlantic sturgeon distribution in the Androscoggin River. The dam is located approximately 10 kilometers upstream of the confluence of the Kennebec and Androscoggin rivers (ASMFC, 1998; NMFS and USFWS, 2007; NMFS, 2013; Wippelhauser and Squiers, 2015). The Lockwood Dam at river kilometer 103 is the current upstream limit for Atlantic sturgeon in the Kennebec River; it is located at the site of a natural falls (NMFS and USFWS, 2007). From 1837 to 1999, the Edwards Dam was the upstream limit of Atlantic sturgeon in the Kennebec River. Located near the head-of-tide, approximately 29 kilometers downstream of the Lockwood Dam at Augusta, the Edwards Dam (rkm 74) prevented Atlantic sturgeon from accessing historical habitat. Sturgeon were sighted above the former Edwards Dam site after removal of the dam and in June 2005, an Atlantic sturgeon was incidentally captured at river kilometer 102 (NMFS and USFWS, 2007; Wippelhauser, 2012).

Substrate type in the Kennebec estuary is largely sand and bedrock (Fenster and Fitzgerald, 1996; Moore and Reblin, 2008). Mesohaline waters occur upstream of Doubling Point during summer low flows, transitioning to oligohaline waters and then essentially tidal freshwater from Chops Point (the outlet of Merrymeeting Bay) upriver to the head-of tide on the Kennebec and Androscoggin rivers (ASMFC, 1998; Kistner and Pettigrew, 2001). A thorough description of the Kennebec Estuary is provided in Moore and Reblin 2008.

During the period 1977–2001, Atlantic sturgeon in spawning condition (*i.e.*, ripe males releasing sperm) or of size presumed to be sexually mature adults (*i.e.*, greater than 150 cm total length) were caught between river kilometers 52.8 and 74 of the Kennebec River during the months of June and July, the likely spawning season. From 2009 to 2011, 31 sturgeon, including 6 ripe males, were caught in the Kennebec River between river kilometers 70 and 75 (Wippelhauser, 2012; Wippelhauser and Squiers, 2015). Sturgeon in the Upper Kennebec Estuary (defined as river kilometer 45 to river kilometer 74 at head-of tide in the cited document) repeatedly moved between river kilometers 48 and 75 (Wippelhauser, 2012). An additional eight sturgeon, including one ripe male, were caught in the Androscoggin in June and July of 2009–2011 (Wippelhauser, 2012). Three larvae were also captured in the Upper Kennebec Estuary, 1 to 1.6 river kilometers upstream of river kilometer

74, the former Edwards Dam site (Wippelhauser, 2012).

The Merrymeeting Bay and Lower Kennebec Estuary are used by post-spawn adults, juveniles, and other life stages at least as late as November, and some Atlantic sturgeon may overwinter in Merrymeeting Bay (Wippelhauser, 2012). Sturgeon captured and tagged in the Saco and Penobscot rivers are also detected in the Kennebec Estuary, typically Merrymeeting Bay and downstream locations, although at least one male, captured in the Saco in 2010, was the single ripe male also captured in the Androscoggin suggesting that the Saco and Penobscot are important habitat areas for the Androscoggin spawning population (Wippelhauser, 2012). However, genetic information identifying the river of origin of the Atlantic sturgeon is not yet available.

While there is no current evidence that Atlantic sturgeon are spawning in Gulf of Maine rivers other than the Kennebec and Androscoggin, captures of sturgeon in the Merrimack and Penobscot Rivers as well as the presence of the features necessary to support reproduction and recruitment in these rivers indicate that there is the potential for spawning to occur (Kieffer and Kynard, 1993; Fernandes *et al.*, 2010; Wippelhauser, 2012). The 1998 and 2007 status reviews for Atlantic sturgeon described information for presence of Atlantic sturgeon in the Piscataqua River, including capture of a large female Atlantic sturgeon in spawning condition in 1990. The presence of this female (NMFS and USFWS, 1998; ASSRT, 2007) as well as the presence of the features necessary to support reproduction and recruitment in this river indicates that there is the potential for spawning to occur in the Piscataqua.

Genetic information is available for Atlantic sturgeon captured in six specific areas of the marine range: Minas Basin, Bay of Fundy, Canada; the Connecticut River estuary; Long Island Sound; the Atlantic Ocean off of Rockaway, New York; the Atlantic Ocean off of Delaware Bay; and, the Atlantic Ocean off of Virginia/North Carolina (Laney *et al.*, 2007; Wirgin *et al.*, 2012; Waldman *et al.*, 2013; O'Leary *et al.*, 2014; Wirgin *et al.*, 2015a). Atlantic sturgeon belonging to the Gulf of Maine DPS comprised 35 percent of the Minas Basin, Bay of Fundy samples collected in the summer, suggesting this is an important foraging area for the Gulf of Maine DPS. The DPS comprised less than 2 percent to 14.5 percent of Atlantic sturgeon sampled in the Connecticut River, Long Island Sound, the Atlantic Ocean off of Rockaway,

New York, and the Atlantic Ocean off of Delaware Bay. The DPS was not detected in the sampled Atlantic sturgeon incidentally captured during winter from waters off of Virginia/North Carolina.

At the time of listing, the Delaware and Hudson rivers were the only known spawning rivers for the New York Bight DPS of Atlantic sturgeon (Dovel and Berggren, 1983; Bain, 1998; Kahnle *et al.*, 1998; NMFS and USFWS, 2007; Calvo *et al.*, 2010). In spring 2014, several small Atlantic sturgeon were captured in the Connecticut River (T. Savoy, CT DEEP, pers. comm.). We presume these to be juveniles less than a year old based on their apparent size seen in a photo provided in the Connecticut Weekly Diadromous Fish Report, report date May 20, 2014. Though it was previously thought that the Atlantic sturgeon population in the Connecticut had been extirpated (Savoy and Pacileo, 2003; NMFS and USFWS, 2007), capture of these juvenile Atlantic sturgeon strongly suggests that spawning is occurring in this river. For the Housatonic River, the 1998 and 2007 status reviews for Atlantic sturgeon described information for historical presence of Atlantic sturgeon in that river, including Whitworth's (1996) reference to a large fishing industry for Atlantic sturgeon (NMFS and USFWS, 1998; NMFS and USFWS, 2007). Since the commercial fisheries targeted spawning sturgeon, historical captures of sturgeon in the Housatonic River as well as the presence of the features necessary to support reproduction and recruitment in this river indicates that there is the potential for spawning to occur in the Housatonic.

The Hudson River is one of the most studied areas for Atlantic sturgeon. The upstream limit for Atlantic sturgeon on the Hudson River is the Federal Dam at the fall line, approximately river kilometer 246 (Dovel and Berggren, 1983; Bain, 1998; Kahnle *et al.*, 1998; Everly and Boreman, 1999). Recent tracking data indicate Atlantic sturgeon presence at this upstream limit (D. Fox, DESU, pers. comm.). Sturgeon occurring in the upstream limits of the river are suspected, but not yet confirmed, to belong to the New York Bight DPS.

Spawning may occur in multiple sites within the river (Dovel and Berggren, 1983; Van Eenennaam *et al.*, 1996; Kahnle *et al.*, 1998; Bain *et al.*, 2000). The area around Hyde Park (approximately river kilometer 134) is considered a likely spawning area based on scientific studies and historical records of the Hudson River sturgeon fishery (Dovel and Berggren, 1983; Van Eenennaam *et al.*, 1996; Kahnle *et al.*,

1998; Bain *et al.*, 2000). Habitat conditions at the Hyde Park site are described as freshwater year round with substrate, including bedrock, and waters depths of 12 to 24 meters (Bain *et al.*, 2000). Similar conditions occur at river kilometer 112, an area of freshwater and water depths of 21 to 27 meters (Bain *et al.*, 2000).

Catches of Atlantic sturgeon less than 63 cm fork length suggest that these sexually immature fish utilize the Hudson River estuary from the Tappan Zee (river kilometer 40) through Kingston (river kilometer 148) (Dovel and Berggren, 1983; Haley, 1999; Bain *et al.*, 2000). Seasonal movements of the immature fish are apparent as they primarily occupy waters from river kilometers 60 to 107 during summer months and then move downstream as water temperatures decline in the fall, primarily occupying waters between river kilometers 19 to 74 (Dovel and Berggren, 1983; Haley, 1999; Bain *et al.*, 2000). In a separate study, Atlantic sturgeon ranging in size from 32 to 101 cm fork length were captured at highest concentrations during spring in soft-deep areas of Haverstraw Bay, even though this habitat type comprised only 25 percent of the available habitat in the Bay (Sweka *et al.*, 2007).

In the Delaware River, there is evidence of Atlantic sturgeon presence from the mouth of the Delaware Bay to the head-of-tide at the fall line near Trenton on the New Jersey side and Morrisville on the Pennsylvania side of the River, a distance of 220 river kilometers (Shirey *et al.*, 1997; Brundage and O'Herron, 2007; Simpson, 2008; Calvo *et al.*, 2010; Fisher, 2011; Breece *et al.*, 2013). There are no dams on the Delaware River and an Atlantic sturgeon carcass was found as far upstream as Easton, PA in 2014 (M. Fisher, DE DNREC, pers. comm.), suggesting that sturgeon can move beyond the fall line.

The presence of hard bottom habitat, the location of the salt-wedge in April through July, and tracking of adult Atlantic sturgeon in spawning condition suggests that spawning habitat for Atlantic sturgeon occurs within the Delaware River between river kilometer 125 (near Claymont, Delaware) and the fall line at river kilometer 211 (landmarks of Trenton, New Jersey, and Morrisville, Pennsylvania) (Sommerfield and Madsen, 2003; Simpson 2008; Breece *et al.*, 2013).

Twenty Atlantic sturgeon less than 30 cm fork length (26.2 to 34.9 cm total length) and presumed to be less than one year old were captured in the Delaware River from September through November 2009 and tracked for up to

one year using a passive acoustic array (Calvo *et al.*, 2010; Fisher, 2011). The data collected indicate this life stage makes use of Delaware River habitats from river kilometers 105 to 199 with seasonal changes in distribution (Fisher, 2009; Calvo *et al.*, 2010; Fisher, 2011). For example, during the winter months, some remained around river kilometer 134 (*i.e.*, the Marcus Hook area) while others moved upstream or downstream, exhibiting migrations in and out of the area (Calvo *et al.*, 2010; Fisher, 2011). Overall, the studies demonstrated the complexity of habitat needs for juvenile Atlantic sturgeons in the natal estuary during the first 1 to 2 years. In contrast to juveniles, subadult Atlantic sturgeon occur further downriver in polyhaline waters of the Bay and River (Brundage and Meadows, 1982; Lazzari *et al.*, 1986; Shirey *et al.*, 1997; Shirey *et al.*, 1999; Simpson, 2008; Brundage and O'Herron, 2009; Calvo *et al.*, 2010; Fisher, 2011).

The Connecticut River has long been known as a seasonal aggregation area for subadult Atlantic sturgeon, and both historical and contemporary records document presence of Atlantic sturgeon in the river as far upstream as Hadley, MA (Savoy and Shake, 1993; Savoy and Pacileo, 2003; NMFS and USFWS, 2007). The Enfield Dam located along the fall line at Enfield, CT prevented upstream passage of Atlantic sturgeon from 1827 until 1977 when it was breached (NMFS and USFWS, 2007). Although Atlantic sturgeon may generally remain below the fall line, an Atlantic sturgeon was captured at the Holyoke Dam fish lift in 2006, upstream of Enfield (NMFS and USFWS, 2007). As noted previously, the capture of juvenile Atlantic sturgeon in the Connecticut River in May 2014 (T. Savoy, CT DEEP, pers. comm.; Connecticut Weekly Diadromous Fish Report, report date May 20, 2014) suggests spawning may be occurring in the river.

The genetics information for Atlantic sturgeon captured in six specific areas of the marine range demonstrated that Atlantic sturgeon belonging to the New York Bight DPS were present in each area. In addition, the New York Bight DPS was the most represented DPS in each collection, comprising 55 percent to 87 percent of the sturgeon sampled in each area, with the exception of the Minas Basin collection where the New York Bight DPS comprised only 1 to 2 percent of the sampled sturgeon (Laney *et al.*, 2007; Wirgin *et al.*, 2012; Waldman *et al.*, 2013; O'Leary *et al.*, 2014; Wirgin *et al.*, 2015a). The results suggest that New York Bight DPS Atlantic sturgeon travel great distances, including into Canadian waters, but

occur most predominantly in marine waters in areas off New York and the Mid-Atlantic Bight.

At the time of listing, the James River was the only known spawning river for the Chesapeake Bay DPS (NMFS and USFWS, 2007; Hager, 2011; Balazik *et al.*, 2012). Since the listing, spawning has been confirmed to occur in the Pamunkey River, a tributary of the York River (Hager *et al.*, 2014; Kahn *et al.*, 2014). Spawning is also suspected to be occurring in Marshyhope Creek, a tributary of the Nanticoke River, based on the presence of adult sturgeon in spawning condition in areas and at times when spawning would be expected to occur (Maryland DNR, web article, September 17, 2014).

Adult Atlantic sturgeon enter the James River in the spring, with at least some eventually moving as far upstream as Richmond (river kilometer 155), which is also the head-of-tide and close to the likely upstream extent of Atlantic sturgeon in the river, given the presence of Boshers Dam at the fall line (approximately river kilometer 160) (Bushnoe *et al.*, 2005; Hager, 2011; Balazik *et al.*, 2012). Adults disperse through downriver sites and begin to move out of the river in late September to early October, occupy only lower river sites by November, and are undetected on tracking arrays in the lower river by December, suggesting that the sturgeon leave the river for the winter (Hager, 2011; Balazik *et al.*, 2012).

The availability of hard-bottom habitat remains relatively limited in the James River and appears to be significantly reduced compared to the amount of available hard-bottom habitat described in historic records (Bushnoe *et al.*, 2005; Austin, 2012). In general, tracked adults occurred further upstream during the late summer and early fall residency (*e.g.*, river kilometer 108 to river kilometer 132; Balazik *et al.*, 2012) than during the spring and early summer residency (*e.g.*, river kilometer 29 to river kilometer 108; Hager, 2011), suggesting two different spawning areas depending on season.

The capture of adult Atlantic sturgeon in spawning condition in the low salinity waters of the Pamunkey River, a major tributary of the York River, in August 2013, and subsequent genetic testing demonstrate that there is a spawning population of Atlantic sturgeon in the Pamunkey River (Hager *et al.*, 2014; Kahn *et al.*, 2014). The York River is 55 kilometers long from its mouth, after which it divides into two major tributaries, the Mattaponi and the Pamunkey Rivers (Bushnoe *et al.*, 2005; Friedrichs, 2009; Reay, 2009). The

transition to freshwater typically occurs within these tributaries (Friedrichs, 2009; Reay, 2009). Bushnoe *et al.* (2005) previously reviewed available information on substrate, salinity, and dissolved oxygen for the Pamunkey and Mattaponi rivers and concluded that Atlantic sturgeon spawning habitat was likely present in each river.

For the Susquehanna and Potomac Rivers, the 1998 and 2007 Atlantic sturgeon status reviews provided the information for presence of Atlantic sturgeon in the rivers, including: (1) Historical newspaper accounts of large sturgeon in the lower reaches of the Susquehanna River during the period 1765 to 1895; (2) personal communication of a limited but more recent sturgeon fishery on the Susquehanna near Perryville, Maryland (R. St. Pierre, USFWS, personal comm.); (3) several sightings of sturgeon near the Susquehanna River mouth during the period 1978 to 1987; (4) a historical fishery for Atlantic sturgeon in the Potomac; and (5) observations of a large mature female Atlantic sturgeon in the Potomac River in 1970 (NMFS and USFWS, 1998; NMFS and USFWS, 2007). Since the commercial fisheries targeted spawning sturgeon, historical captures of sturgeon in the Susquehanna and Potomac Rivers, as well as the presence of the features necessary to support reproduction and recruitment in each river, indicate that there is the potential for spawning to occur in both the Susquehanna and Potomac.

The 1998 and 2007 status reviews for Atlantic sturgeon described information for presence of Atlantic sturgeon in the Rappahannock River, including commercial landings data from the 1880s and incidental captures reported to the U.S. Fish and Wildlife Service Reward Program in the 1990's (NMFS and USFWS 1998; NMFS and USFWS, 2007). Most recently, in September 2015, researchers captured a male Atlantic sturgeon in spawning condition in the Rappahannock River (M. Balazik, Virginia Commonwealth University, pers. comm.). The historical and contemporary accounts of Atlantic sturgeon in the Rappahannock River (NMFS and USFWS, 1998; ASSRT, 2007), as well as the presence of the features necessary to support reproduction and recruitment in this river indicate that there is the potential for spawning to occur in the Rappahannock.

The condition of Atlantic sturgeon captured in the late summer-fall in the James River (*e.g.*, adults expressing milt or eggs), the rapid upstream movement of adults in the fall, and the aggregation of adults relative to the salt wedge

provide evidence of fall spawning in the James River (NMFS and USFWS; 2007; Hager, 2011; Balazik *et al.*, 2012). Similar evidence was found for adult sturgeon captured in the Pamunkey River in mid to late August 2013, and adult sturgeon captured in Marshyhope Creek in late August 2014 (Maryland DNR, web article, September 17, 2014). All of these instances provide evidence that Chesapeake DPS Atlantic sturgeon spawn in the fall.

The genetics information for Atlantic sturgeon captured in six specific areas of the marine range demonstrates that Atlantic sturgeon belonging to the Chesapeake Bay DPS were present in at least four of the sampled areas: The Connecticut River, Long Island Sound, the Atlantic Ocean off of Rockaway, New York, and the Atlantic Ocean off of Delaware Bay. The DPS comprised approximately 5 percent to 21 percent of the Atlantic sturgeon sampled in these areas (Waldman *et al.*, 2013; O'Leary *et al.*, 2014; Wirgin *et al.*, 2015a). The Chesapeake Bay DPS was not detected in the relatively small number of samples collected from Atlantic sturgeon captured in the winter off of North Carolina (Laney *et al.*, 2007), and comprised no more than 1 percent of Atlantic sturgeon sampled in the Minas Basin in the summer (Wirgin *et al.*, 2012). The results suggest that Chesapeake Bay DPS Atlantic sturgeon travel great distances, including into Canadian waters, but occur most predominantly in marine waters of the New York and Mid-Atlantic Bight.

Geographical Area Occupied by Each DPS

Consistent with our past practice, we interpret "geographical area occupied" for critical habitat designations to mean the range of the listed entity (*e.g.*, species, subspecies or DPS) at the time of listing (45 FR 13011; February 27, 1980). In February 2016, NMFS and the USFWS published a joint final rulemaking that included a regulatory definition for "geographical area occupied" (81 FR 7417, February 11, 2016). The new definition provides clarity to the critical habitat designation process, but does not change how we approached critical habitat designations.

The marine range of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs, including coastal bays and estuaries, is Hamilton Inlet, Labrador, Canada, to Cape Canaveral, Florida (77 FR 5880, February 6, 2012). The listing rule also identified the known spawning rivers for each of these DPSs, but it did not describe the specific in-river range for any of the DPSs. Therefore, areas were considered to be

within the range of a DPS if there were: (1) Presence of Atlantic sturgeon belonging to that DPS in that area; (2) presence of Atlantic sturgeon in a similar area within the boundaries of the otherwise established DPSs range; and, for rivers, (3) all areas downstream of the farthest known upstream location of Atlantic sturgeon belonging to that DPS in that river. Areas were identified as unoccupied by a DPS if the area was completely inaccessible to Atlantic sturgeon.

Genetic analyses indicate the presence of Atlantic sturgeon belonging to the Gulf of Maine, New York Bight, and Chesapeake Bay DPS in many parts of the marine range including the Bay of Fundy, the Connecticut River Estuary, Long Island Sound, the New York Bight, and coastal waters from Delaware to North Carolina (Waldman *et al.*, 1996; Laney *et al.*, 2007; Dunton *et al.*, 2010; Dunton *et al.*, 2012; Wirgin *et al.*, 2012; Waldman *et al.*, 2013; O'Leary *et al.*, 2014; Wirgin *et al.*, 2015a). In addition, tracking and tagging studies indicate the presence of Atlantic sturgeon throughout the marine range (Vladykov and Greeley, 1963; Holland and Yelverton 1973; Dovel and Berggren, 1983; Gilbert 1989; Savoy and Pacileo, 2003; Stein *et al.* 2004; Eyster, 2006; Laney *et al.*, 2007; Dunton *et al.*, 2010; Dunton *et al.*, 2012; Oliver *et al.*, 2013). Based on our review of the literature and other available data, we concluded that Atlantic sturgeon: Typically occur in marine waters within the 50 m depth contour, but also occur in deeper marine waters; occur in many coastal sounds and bays from the Maine/Canada border to Cape Canaveral, Florida, regardless of whether or not the sound or bay is part of an estuary of a known spawning river; and, occur in tidally-affected rivers along the coast.

The "geographical area occupied" is only aquatic habitat (*e.g.*, below the high tide line). In addition, certain natural features (*e.g.*, large waterfalls) and dams are impassable barriers to sturgeon. Therefore, we consider those parts of the range that are currently inaccessible to Atlantic sturgeon due to dams, other manmade structures, or natural features to be unoccupied, and not part of the geographic area occupied by the DPS at the time of listing.

Physical and Biological Features Essential to Conservation That May Require Special Management Considerations or Protections

As described above, critical habitat is defined as those specific areas in the geographical area occupied that (1) have the physical or biological features essential to the conservation of the

listed entity, and (2) may require special management considerations or protections. Each of these two prongs must be met when designating critical habitat within the occupied geographical area. If we identify physical or biological features that are essential to the conservation of the listed entity, but there are no special management considerations or protections that may be required, then we do not designate critical habitat based on those physical or biological features. Finally, we do not designate critical habitat based solely on the presence of the listed entity. The presence of the listed entity can, however, help us identify the essential physical or biological features. For example, repeated use of an area by the listed entity suggests the presence of essential physical or biological features.

We determined that a key conservation objective for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs is to increase the abundance of each DPS by facilitating increased successful reproduction and recruitment to the marine environment. We know that each DPS is at a low level of abundance and successful reproduction and recruitment, which are essential to the conservation of the species, occur in a limited number of rivers for each DPS. Since the listing, additional rivers have either been confirmed to support spawning, or are suspected of supporting spawning for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs (Wippelhauser, 2012; Hager *et al.*, 2014; Kahn *et al.*, 2014; T. Savoy, CT DEEP, pers. comm.). Nevertheless, the number of known spawning rivers for each DPS is still limited compared to the four to six rivers for each DPS in which spawning occurred in the past (NMFS and USFWS, 2007). Further, we do not know how successful reproduction is for any of the known spawning rivers (*e.g.*, we do not have counts of the number of juveniles of each DPS or spawning river that recruit to the marine environment, compared to the number of fertilized eggs that hatched).

The term “physical or biological features” is defined as the features that support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms of

relating to principles of conservation biology, such as patch size, distribution distances, and connectivity (50 CFR 424.02). The term “special management considerations or protection” is defined as the methods or procedures useful in protecting the physical or biological features essential to the conservation of the listed species (50 CFR 424.02). In addition, the term “may” in the phrase “may require special management considerations or protections” was the focus of two cases in Federal district courts that ruled that features can meet this provision because of either a present requirement for special management considerations or protection or possible future requirements (see *Center for Biol. Diversity v. Norton*, 240 F. Supp. 2d 1090 (D. Ariz. 2003); *Cape Hatteras Access Preservation Alliance v. DOI*, 344 F. Supp. 108 (D.D.C. 2004)).

Atlantic sturgeon are estuarine-dependent, anadromous fish that require specific estuarine habitat for successful reproduction and recruitment. Adults require unimpeded access (*e.g.*, suitable water depth to be able to move freely and a lack of obstructions) to and from all spawning sites. In addition, spawning males require unimpeded access to search for spawning females throughout the spawning season. Fertilized eggs require freshwater, hard, clean substrate to adhere to, and flowing water that helps to disperse and aerate the eggs. Larval Atlantic sturgeon (less than 4 weeks old and less than 30 mm total length), assumed to inhabit the same freshwater areas where they were spawned, require hard substrate with interstitial spaces that provide refuge from predators. The relatively lengthy juvenile phase requires developing Atlantic sturgeon have access to aquatic habitat with a gradual downstream salinity gradient of 0.5 to 30 parts per thousand (*e.g.*, inclusive of oligohaline, mesohaline, and polyhaline waters), and areas of soft substrate that provide an environment for benthic prey necessary for juvenile foraging. Last, Atlantic sturgeon juvenile rearing habitat, habitat for spawning adults and subadults, and larval habitat must have sufficient levels of dissolved oxygen both before the fish are present (to enable fish to utilize the habitat when they migrate to it) and when fish arrive since Atlantic sturgeon are particularly sensitive to low oxygen levels and, similar to other fish species, will avoid habitats that are hypoxic (*i.e.*, have insufficient oxygen) (Secor and Niklitschek, 2001; Breitburg, 2002; EPA, 2003). Oxygen concentrations that fish avoid are approximately equal to

concentrations that reduce their growth rate, even when at concentration levels higher than necessary for their survival (Breitburg 2002; EPA, 2003). Lab studies have shown that a dissolved oxygen concentration of about 6.5 mg/L supports growth and habitat use of juvenile Atlantic sturgeon less than two years old (Niklitschek and Secor, 2009; Niklitschek and Secor, 2010; Allen *et al.*, 2014). The complex relationship between dissolved oxygen, temperature, and salinity, as well as other factors that can affect dissolved oxygen levels in estuaries (*e.g.*, water depth and mixing), makes it difficult for us to specify water quality parameters necessary to support Atlantic sturgeon use of reproduction and recruitment habitat. The EPA’s guidance on ambient water quality criteria for dissolved oxygen for the Chesapeake Bay recommends dissolved oxygen concentrations of greater than 9 mg/L, based on a seven-day mean, in tidal habitats with salinity of 0 to 0.5 parts per thousand for the growth of larval and juvenile tidal-fresh resident fish, including Atlantic sturgeon (EPA, 2003). This concentration has been shown to increase the likelihood of habitat use by Atlantic sturgeon juveniles less than two years old (Niklitschek and Secor 2009; Niklitschek and Secor, 2010). Since these early age groups are more sensitive to dissolved oxygen levels than older, larger juveniles, subadults, and adults, a dissolved oxygen concentration of 6 mg/L supports habitat use by all age groups. Therefore, the physical features essential for reproduction and recruitment are:

- Hard bottom substrate (*e.g.*, rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (*i.e.*, 0.0 to 0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;
- Aquatic habitat with a gradual downstream salinity gradient of 0.5 to 30 parts per thousand and soft substrate (*e.g.*, sand, mud) downstream of spawning sites for juvenile foraging and physiological development;
- Water of appropriate depth and absent physical barriers to passage (*e.g.*, locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) Unimpeded movement of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and (3) staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (*e.g.*, ≥ 1.2 m) to ensure

continuous flow in the main channel at all times when any sturgeon life stage would be in the river; and

- Water, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (1) Spawning; (2) annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment (e.g., 13 °C to 26 °C for spawning habitat and no more than 30° C for juvenile rearing habitat, and 6 mg/L dissolved oxygen for juvenile rearing habitat).

The specific oxygen concentration and temperature values are provided as examples and guidance to inform the combinations of temperature, salinity, and oxygen that support successful reproduction and recruitment.

Temperature, salinity, and oxygen are ephemeral by nature, fluctuating daily and seasonally in estuaries. Specific areas designated as critical habitat based on the four features are not expected to have water with oxygen concentration of 6 mg/L and the specific water temperatures at all times and within all parts of the area.

Barriers (e.g., dams) and in-water structures (e.g., tidal turbines) in rivers used by Atlantic sturgeon can damage or destroy bottom habitat needed for spawning and rearing of juveniles, as well as restrict movement of adults to and from spawning grounds, and prevent juveniles from accessing the full range of salinity exposure in the natal estuary. Land development, as well as commercial and recreational activities on the river, contribute to the persistence of nutrient loading and sediment deposition, which negatively affect the water quality necessary for successful spawning and recruitment. For example, nutrient loading can result in unnaturally enhanced growth of aquatic vegetation or phytoplankton and algal blooms, which disrupt normal functioning of the ecosystem, causing a variety of problems, including a lack of sufficient levels of oxygen that fish, such as Atlantic sturgeon, need to survive. Excessive sediment deposition reduces Atlantic sturgeon egg adherence on hard spawning substrate and reduces the interstitial spaces used by larvae for refuge from predators. Dredging to remove sediment build-up or to facilitate vessel traffic may remove or alter hard substrate that is necessary for egg adherence and as refuge for larvae, and may change the water depth, resulting in shifts in the salt wedge within the estuary or change other characteristics of the water quality (e.g., temperature, dissolved oxygen)

necessary for the developing eggs, larvae, and juveniles.

The features essential for successful Atlantic sturgeon reproduction may also require special management considerations or protection as a result of global climate change. Many communities and commercial facilities withdraw water from the rivers containing the features essential to Atlantic sturgeon reproduction. Water withdrawals during times of low flow can affect the position of the salt wedge, impact the water depth necessary for successful sturgeon reproduction, and affect water flow. Because dissolved oxygen concentrations increase wherever the water flow becomes turbulent, decreasing flow can result in decreases in dissolved oxygen concentrations. Attempts to control water during very high flows (e.g., spilling water from dams upriver of Atlantic sturgeon spawning and rearing habitat) can create barriers (e.g., from debris) to upstream and downstream passage of adults and juveniles. Therefore, we concluded that the features essential to the conservation of each of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs may require special management considerations or protections.

For the reasons provided above, we have concluded that the habitat features that support successful spawning and recruitment of Atlantic sturgeon juveniles to the marine environment are: Essential to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs; within the geographical area occupied by each DPS; and, may require special management considerations or protection. As such, we used these features to identify specific areas as potential critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon.

We determined another conservation objective for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs is to increase the abundance of each DPS by facilitating increased survival of subadults and adults. The ability of subadults to find food is necessary for continued survival, growth, and physiological development to the adult life stage. Likewise, given that Atlantic sturgeon mature late and do not necessarily spawn annually, increased adult survival would improve the chances that adult Atlantic sturgeon spawn more than once.

We considered all studies that have collected Atlantic sturgeon stomach contents. All of the prey species identified are indicative of benthic

foraging, and all of the identified prey are found in soft substrates. However, different types of prey were consumed, and different soft substrates were identified for the areas where Atlantic sturgeon were foraging (Bigelow and Schroeder, 1953; Johnson *et al.*, 1997; NMFS and USFWS, 2007; Guilbard *et al.*, 2007; Savoy, 2007; Dzaugis, 2013; McLean *et al.*, 2013). No data are available to differentiate areas of preferred prey items or higher prey abundance within or across estuaries. Adding to our uncertainty of the essential features that support successful foraging for growth and survival of subadults and adults, Atlantic sturgeon move between estuarine environments in the spring through fall, and can occur in estuarine environments during the winter as well (Savoy and Pacileo, 2003; Simpson, 2008; Collins *et al.*, 2000; Balazik *et al.*, 2012). For example, subadult Atlantic sturgeon spawned in one riverine system may utilize multiple estuaries for foraging and growth, including those not directly connected to their natal river. Due to the paucity of data on their estuarine needs and specific habitat or resource utilization, we could not at this time identify the physical or biological features of estuaries for foraging and growth that are essential to the conservation of the Gulf of Maine, New York Bight or Chesapeake Bay DPSs.

Subadult and adult Atlantic sturgeon use marine waters to traverse between estuarine areas, particularly within the 50 meter depth contour. In addition, several congregations of Atlantic sturgeon in the marine environment are known to occur. However, the exact importance of those areas is not known, nor whether Atlantic sturgeon are drawn to particular areas based on physical or biological features of the habitat. Therefore, while we can identify general movement patterns and behavior in the marine environment (e.g., aggregating behavior) that may contribute to subadult and adult survival, due to the paucity of data on each DPSs' needs and specific habitat utilization in the marine environment, we could not at this time identify physical or biological features in the marine environment essential to conservation of the Gulf of Maine, New York Bight or Chesapeake Bay DPSs.

Unoccupied Areas

As mentioned, the definition of critical habitat includes areas outside of the geographical area occupied by the listed entity (*i.e.*, unoccupied areas) at the time it is listed if these areas are essential to the conservation of the listed entity. We do not need to identify

physical or biological features requiring special management consideration or protection within the unoccupied areas in order to designate unoccupied areas as critical habitat. However, the area must be essential to the conservation of the listed species.

There are riverine areas outside of the geographical area occupied by the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs as a result of dams and natural falls. We considered whether these unoccupied areas were essential to the conservation of the respective DPS and concluded that they were not essential because nearly all known historical habitat is accessible to the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs (NMFS and USFWS, 2007; 77 FR 5880, February 6, 2012).

Critical Habitat Units

Critical habitat must be defined by specific limits using reference points and lines as found on standard topographic maps of the area, and cannot use ephemeral reference points (50 CFR 424.12(c)). When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat (50 CFR 424.12(d)).

The habitat containing the physical features essential to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs and that may require special management or protection is aquatic habitat of main stem rivers flowing into a coastal estuary. We are designating only occupied habitat. Atlantic sturgeon typically cannot pass dams or natural features such as waterfalls and rapids found at the fall line of rivers from Maine through Virginia. Therefore, we are defining each critical habitat unit by an upriver landmark on the main stem river (e.g., the most downriver dam or a bridge immediately downriver of the fall line of that river) and all waters of the main stem downriver of that landmark to where the waters empty at its mouth into an identified water body.

Identified Critical Habitat for Each DPS

Based on the physical features that we identified as essential for successful spawning and recruitment and the best available information, we identified five critical habitat units for the Gulf of Maine DPS as follows: (1) Penobscot River main stem from the Milford Dam downstream for 53 river kilometers to where the main stem river drainage discharges at its mouth into Penobscot Bay; (2) Kennebec River main stem from

the Ticonic Falls/Lockwood Dam downstream for 103 river kilometers to where the main stem river discharges at its mouth into the Atlantic Ocean; (3) Androscoggin River main stem from the Brunswick Dam downstream for 10 river kilometers to where the main stem river drainage discharges into Merrymeeting Bay; (4) Piscataqua River from its confluence with the Salmon Falls and Cocheco rivers downstream for 19 river kilometers to where the main stem river discharges at its mouth into the Atlantic Ocean as well as the waters of the Cocheco River from its confluence with the Piscataqua River and upstream 5 river kilometers to the Cocheco Falls Dam, and waters of the Salmon Falls River from its confluence with the Piscataqua River and upstream 6 river kilometers to the Route 4 Dam; and (5) Merrimack River from the Essex Dam (also known as the Lawrence Dam) downstream for 48 river kilometers to where the main stem river discharges at its mouth into the Atlantic Ocean. In total, these designations encompass approximately 244 kilometers (152 miles) of aquatic habitat.

The physical features essential for successful reproduction and recruitment may require special management or protection in these specific areas because of potential adverse impacts from activities such as the operation of dams, dredging operations, other construction (e.g., bridge construction or repair), and impacts from development along the river that includes wastewater treatment and water withdrawals (Ceasar *et al.*, 1976; Short, 1992; Kistner and Pettigrew, 2001; Odell *et al.*, 2006; NMFS and USFWS, 2007; Mohlar, 2008; Moore and Reblin, 2008; McFarlane, 2012).

We identified four critical habitat units for the New York Bight DPS: (1) Connecticut River from the Holyoke Dam downstream for 140 river kilometers to where the main stem river discharges at its mouth into Long Island Sound; (2) Housatonic River from the Derby Dam downstream for 24 river kilometers to where the main stem discharges at its mouth into Long Island Sound; (3) Hudson River from the Troy Lock and Dam (also known as the Federal Dam) downstream for 246 river kilometers to where the main stem river discharges at its mouth into New York City Harbor; and (4) Delaware River from the crossing of the Trenton-Morrisville Route 1 Toll Bridge, downstream for 137 river kilometers to where the main stem river discharges at its mouth into Delaware Bay. In total, these designations encompass approximately 547 kilometers (340 miles) of aquatic habitat.

The physical features that are essential to successful reproduction and recruitment may require special management or protection in these specific areas because of potential adverse impacts from, for example, the operation of dams, dredging operations, other construction (e.g., bridge construction or repair), and impacts from development along the river that includes wastewater treatment and water withdrawals (Hammerson, 2004; NMFS and USFWS, 2007; Henshaw, 2011; Breece *et al.*, 2013; 78 FR 1145).

We identified five critical habitat units for the Chesapeake Bay DPS: (1) Susquehanna River from the Conowingo Dam downstream for 16 river kilometers to where the main stem river discharges at its mouth into the Chesapeake Bay; (2) Potomac River from the Little Falls Dam downstream for 189 river kilometers to where the main stem river discharges at its mouth into the Chesapeake Bay; (3) Rappahannock River from the U.S. Highway 1 Bridge, downstream for 172 river kilometers to where the river discharges at its mouth into the Chesapeake Bay; (4) York River from its confluence with the Mattaponi and Pamunkey rivers downstream to where the main stem river discharges at its mouth into the Chesapeake Bay as well as the waters of the Mattaponi River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge crossing of the Mattaponi River, and waters of the Pamunkey River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge crossing of the Pamunkey River for a total of 192 kilometers of aquatic habitat, (5) James River from Boshers Dam downstream for 160 river kilometers to where the main stem river discharges at its mouth into the Chesapeake Bay at Hampton Roads. In total, these designations encompass approximately 729 kilometers (453 miles) of aquatic habitat.

The physical features essential for successful spawning and recruitment may require special management or protection in these specific areas because of potential adverse impacts from activities such as the operation of dams, dredging operations, other construction (e.g., bridge construction or repair), and impacts from development along the river that includes wastewater treatment and water withdrawals (Bushnoe *et al.*, 2005; CBF, 2006; NMFS and USFWS, 2007; Friedrichs, 2009; Reay, 2009; Austin, 2012; SRBC, 2013; Potomac Conservancy, 2014).

Military Lands

Section 4(a)(3)(B) of the ESA prohibits designating as critical habitat any lands

or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an INRMP prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such a plan provides a benefit to the species for which critical habitat is proposed for designation.

In February 2014, we requested information from the Department of Defense to assist in our analysis. Specifically, we asked for a list of facilities that occur within the potential critical habitat areas and available INRMPs for those facilities. There are a limited number of facilities with INRMPs that overlap with the potential critical habitat areas for the New York Bight and Chesapeake Bay DPSs. The Department of the Army identified the U.S. Military Academy—West Point, New York as a facility that overlapped with the Hudson River Critical Habitat Unit of the New York Bight DPS. The Department of the Air Force identified Joint Base Langley—Eustis, Virginia as a facility that overlapped with the James River Critical Habitat Unit of the Chesapeake Bay DPS. The Navy identified Marine Corps Base Quantico, Virginia, and Naval Support Facility Dahlgren as facilities that overlapped with the Potomac River Critical Habitat Unit, and identified Naval Weapons Station Yorktown, a complex of three facilities, as facilities that overlapped with the York River Critical Habitat Unit of the Chesapeake Bay DPS. We reviewed the INRMP for each facility and concluded that each INRMP provides a benefit to Atlantic sturgeon and its habitat belonging to the respective DPS. Therefore, in accordance with section 4(a)(3)(B) of the ESA, the particular areas of each facility with an approved INRMP that overlaps with a proposed critical habitat unit will not be part of the designated critical habitat unit. No Department of Defense facilities were identified as overlapping with potential critical habitat areas of the Gulf of Maine DPS.

Economic, National Security, and Other Relevant Impacts

The administrative cost of conducting ESA section 7 consultations was determined to be the primary source of economic impacts as a result of designating critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. We used the consultation record over the past 10 years to identify the types of Federal activities that may affect proposed Atlantic sturgeon critical habitat if implemented in the future. We also requested that federal action agencies

provide us with information on future consultations if we omitted any future actions likely to affect the proposed critical habitat. Of the types of past consultations that “may affect” some or all of the essential features in any unit of proposed critical habitat, we determined that no activities would solely affect the essential features. That is, all categories of the activities identified have potential routes of adverse effects to both Atlantic or shortnose sturgeon and the critical habitat.

There were no section 7 consultations for activities in the Housatonic River over the past ten years. Activities that have occurred did not trigger the need for section 7 consultation for a listed ESA species under NMFS jurisdiction (e.g., shortnose sturgeon), and there is no critical habitat designated in the Housatonic River for any other ESA-listed species under NMFS jurisdiction. Based on this information, the projected administrative cost of section 7 consultations likely to occur over the next ten years as a result of designating the Housatonic River Critical Habitat Unit was zero. However, the potential Housatonic River Critical Habitat Unit contains a federal navigation channel as well as a major highway bridge. Channel dredging, bridge maintenance, and bridge replacement are activities likely to trigger section 7 consultation if critical habitat for Atlantic sturgeon are designated in the Housatonic River. We expect the federal navigation channel will require periodic dredging. Bridge replacement has recently occurred (78 FR 1145; January 8, 2013), but we expect that routine maintenance will be required within the next 10 years. Therefore, the administrative section 7 costs as a result of designating the Housatonic River Critical Habitat Unit are unlikely to be zero. Based on the past history and the likely need for maintenance, we anticipate up to three formal consultations will occur over the next 10 years for federal agency actions that affect the features of the Housatonic River Critical Habitat Unit. However, consultation would also assess whether the proposed actions may affect one or more of the Atlantic sturgeon DPSs. Therefore, no incremental administrative impacts are anticipated as a result of designating critical habitat in the Housatonic River.

Nine nationwide consultations with EPA are also expected to occur within the next 10 years. These consultations will involve all listed species and designated critical habitat under NMFS's jurisdiction, and thus costs attributable solely to this proposed rule are expected to be very small. To be

conservative, we added nine consultations to each critical habitat unit, and nine to each DPS's total number of consultations. We spread the costs of these consultations (\$5,080 each) evenly across all critical habitat units included in this proposed rule and the companion proposed rule to designate critical habitat for the Carolina and South Atlantic DPSs. This resulted in a total cost of \$1,474.84 per critical habitat unit.

We cannot be certain that the numbers of informal and formal consultations involving Atlantic sturgeon critical habitat in the future will be exactly the same as the number that would have occurred during the past ten years if critical habitat was designated at the time. We also have no information about the scope, methods, exact location or timing of future actions, which are key factors for determining whether an action may adversely affect critical habitat, which essential features may be affected, and whether the action may also affect Atlantic sturgeon. Similar to economic analyses for other NMFS critical habitat designations (e.g., for Gulf sturgeon (IEc, 2003), and for the southern DPS of green sturgeon (IEc, 2009)), uncertainty was addressed by presenting three cost estimate scenarios: Consultations of low, medium, or high complexity. These cost estimate scenarios help to demonstrate how changes in the number of informal and formal consultations and differing percentages of coextensive and incremental consultations could influence the cost projections. The scenarios are: (1) Low administrative section 7 cost estimates, which are based on the assumption that the numbers of informal and formal consultations in the future will be the same as they were in the past, and that half of the consultations will be co-extensive (*i.e.*, initiated as a result of listing and critical habitat designation) and half will be incremental (*i.e.*, initiated as a result of the critical habitat designation); (2) medium administrative section 7 cost estimates, which are based on the assumption that the numbers of informal and formal consultations in the future will be the same as they were in the past, and that they will all be incremental; and, (3) high administrative section 7 cost estimates, which are based on the assumption that all consultations in the next ten years will be formal and incremental.

The regulatory baseline conditions, including the listing of the Atlantic sturgeon, will greatly affect the number of incremental consultations. Specifically, the number of incremental

consultations will likely be relatively small, because Atlantic sturgeon of a given life stage are likely to be either directly or indirectly affected by the federal activities projected to occur within the proposed critical habitat. In general, we expect Atlantic sturgeon of a given life stage could occur year round in the particular areas proposed for designation. Therefore, the section 7 consultations we anticipate to occur will need to evaluate potential effects to both the Atlantic sturgeon DPS present in the area and the critical habitat since impacts will be co-extensive. Because the high and medium administrative costs estimates both assumed that all project consultations would be incremental, we consider the low administrative cost estimates to be the most realistic costs estimates.

Based on the Draft Economic Impacts Analysis, the projected low administrative costs of designating all of the Gulf of Maine DPS critical habitat units total \$816,574.20. The individual low costs for the five critical habitat units range from \$54,274.84 for the Piscataqua River Critical Habitat Unit to \$305,874.84 for the Kennebec River Critical Habitat Unit. The medium and high administrative costs for the Gulf of Maine DPS critical habitat units total \$1,625,774.20 and \$2,707,374.20, respectively. The projected low administrative costs for the New York Bight DPS critical habitat units total \$1,418,299.301. The individual low costs for the four critical habitat units range from 31,474.84 for the Housatonic River Critical Habitat Unit to \$752,674.84 for the Hudson River Critical Habitat Unit. The medium and high administrative costs for the New York Bight DPS critical habitat units total \$2,830,699.30 and \$5,565,899.30, respectively. The projected low administrative costs of designating all of the Chesapeake Bay DPS critical habitat units total \$524,974.20. The individual low costs for the five critical habitat units range from \$45,474.84 for the Rappahannock River Critical Habitat Unit to \$276,274.84 for the Potomac River Critical Habitat Unit. The medium and high administrative costs for the Chesapeake Bay DPS critical habitat units total \$1,042,574.20 and \$1,947,374.20, respectively.

Currently, there is no information indicating that any of the section 7 consultations expected to result from the critical habitat designations will result in project modifications. However, there is potential that section 7 consultation stemming from these designations may, sometime in the future, result in project modifications and associated costs. Therefore, for

illustrative purposes, the draft economic analysis similarly presents low, medium, and high cost estimate scenarios for project modifications that may need to be made to specific projects as a result of section 7 consultation. The same caveats noted above apply to costs associated with modifications, *i.e.*, while the three broad categories of costs based on broad assumptions provide a potential range of costs, in most instances, modifications will occur as a result of coextensive impacts. It is extremely unlikely that modifications that would be required to avoid destruction or adverse modification of critical habitat would not also be required because of adverse effects to the species. Details of the cost projections and the number of past formal and informal consultations for each critical habitat unit of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs are provided in the draft economic analysis and the Draft Biological Information and 4(b)(2) Source Document.

The Navy expressed concern that designating the Kennebec River and Piscataqua River critical habitat units, including the area of the Kennebec River adjacent to the location of Bath Iron Works, a private shipbuilder for the Navy, and the area of the Piscataqua River surrounding Portsmouth Naval Shipyard on Seavey Island at the mouth of the Piscataqua River, will impact the national security. The Navy described the activities likely to occur in one or both of the particular areas as: Flooding and dewatering dry docks, updating and maintaining pier structures including pile driving, and dredging activities to maintain proper channel and berthing depths.

We considered the impact these activities are likely to have on the physical features. The physical features of critical habitat in the areas requested for exclusion are salinity suitable for older juveniles, open passage for juveniles suitably developed to leave the natal river, open passage for adults traveling through the area to and from spawning areas, open passage for subadults traveling through the area, and soft substrate. Withdrawing water from the river to flood dry docks and returning that water to the river would not change the salinity or substrate in the river and would have no impact on open passage. Maintaining and/or updating the pier structures is not likely to adversely affect salinity, but may affect open passage and substrate (*e.g.*, placing more pier structures in the area, altering the substrate to make it more suitable for the pier structure). Similarly, dredging activities to

maintain proper channel and berthing depths may affect (*e.g.*, remove) the substrate that supports foraging, and change the depth affecting salinity (*e.g.*, as a result of changes to mixing in the estuarine river or the extent of saltwater intrusion). However, dredging and maintaining and/or updating the pier structures also may affect the species. For example, construction to maintain and/or update pier structures can produce sounds that disrupt normal behaviors such as sturgeon foraging, staging, and spawning. Dredging may injure or kill sturgeon that come into contact with the gear (*e.g.*, older juveniles passing through as they leave the natal river, adults traveling through the area to and from spawning areas, and subadults traveling through the area). Therefore, we determined that any resulting consultations will likely be coextensive.

The Navy expressed concern that designating the Delaware River critical habitat unit in the area surrounding the Philadelphia Naval Yard Annex (three specific areas), will impact national security. The Navy described the activities likely to occur in the particular areas as: updating and maintaining pier structures including pile driving, dredging activities to maintain proper channel and berthing depths, barge loading and unloading, and fuel unloading.

We considered the impact these activities are likely to have on the physical features. The physical features of critical habitat in the areas requested for exclusion are salinity suitable for younger juveniles, open passage for juveniles to access all parts of the estuary needed for development, open passage for adults traveling through the area to and from spawning areas, and soft substrate. The activities described by the Navy may affect salinity, open passage, and substrate. Maintaining and/or updating the pier structures may affect open passage and substrate (*e.g.*, placing more pier structures in the area, and altering the substrate to make it more suitable for the pier structure). Dredging activities to maintain proper channel and berthing depths may affect (*e.g.*, remove) the substrate that supports foraging and spawning. Changing the depth could affect salinity (*e.g.*, as a result of changes to mixing in the estuarine river or the extent of saltwater intrusion). Barge loading and unloading, and fuel unloading may affect water quality (*e.g.*, as a result of spills). Maintaining and/or updating the pier structures, dredging, and barge traffic also may affect the species. For example, maintaining and/or updating pier structures can produce sounds that

harass sturgeon and disrupt normal behaviors such as foraging, staging, and spawning. Dredging may result in injury or death of sturgeon that come into contact with the gear (*e.g.*, older juveniles passing through as they leave the natal river, adults traveling through the area to and from spawning areas, and subadults traveling through the area). Vessels for fuel deliveries and barge traffic can strike sturgeon resulting in injuries and mortality. Since the activities described by the Navy are also likely to impact the species (*e.g.*, juveniles and spawning adults), we expect consultations will be coextensive.

The Navy also expressed concern that designating the Rappahannock and James River critical habitat units will impact national security. The activities conducted in these areas are in-water training on the Rappahannock, including small boat tactic, amphibious landings, and helicopter rope suspension techniques, and training activities on the lower James River, which include underwater diving and salvage operations, helicopter rope suspension techniques, small boat launch and recovery, high-speed boat tactics training, small boat defense drills, visit, board, search and seizure drills, integrated swimmer defense, submarine maintenance and system upgrades, sonar testing, towing of in-water devices, unmanned vehicle testing, and mine countermeasure testing.

The physical features of critical habitat in the areas requested for exclusion are salinity suitable for older juveniles, open passage for juveniles to access all parts of the estuary needed for development, open passage for adults traveling through the area to and from spawning areas, open passage for subadults traveling through the area, and soft substrate. The described training activities are not likely to adversely affect salinity, but may affect open passage and substrate (*e.g.*, from placement of structures, activities resulting in increased siltation or erosion of substrate). However, the training activities also may affect the species. For example, sonar testing and various in-water testing can produce sounds that harass sturgeon and disrupt normal behaviors such as foraging and staging. Small and large vessel operations can result in vessel strikes to sturgeon. Since the activities described by the Navy are also likely to impact the species (*e.g.*, juveniles, subadults, and adults), we expect consultations will be coextensive.

There are a number of potential beneficial impacts of designating critical

habitat that extend beyond the conservation benefits to Atlantic sturgeon. For example, protecting essential features of sturgeon habitat, including preserving water quality and natural flow regimes, will benefit other organisms that are co-located in these areas. Benefits can result from additional protections in the form of project modifications or conservation measures due to section 7 consultations or, conversely, a benefit of excluding an area from designation could be avoiding the costs associated with those protections (78 FR 53058, August 28, 2013). Because it is often difficult to quantify the benefits of designating critical habitat, Executive Order (EO) 12866, Regulatory Planning and Review, provides guidance on assessing costs and benefits. The EO directs Federal agencies to assess all costs and benefits of available regulatory alternatives, and to select those approaches that maximize net benefits.

The designation of critical habitat will provide conservation benefits such as improved education and outreach by informing the public about areas and features important to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. As stated in the Background, specifying the geographic location of critical habitat facilitates implementation of section 7(a)(1) of the ESA by identifying areas where Federal agencies can focus their conservation programs and use their authorities to further the purposes of the ESA. Designating critical habitat can also help focus the efforts of other conservation partners (*e.g.*, State and local governments, individuals and nongovernmental organizations).

Discretionary Exclusion Analysis

Based on our consideration of impacts above, we are not excluding any particular areas from the critical habitat designation based on economic, national security, or other relevant impacts. Section 4(b)(2) of the ESA provides the Secretary with broad discretion to exclude any area from critical habitat if she determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless it is determined, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned. The agency has considerable discretion in evaluating the various impacts and determining how the impacts will be considered and weighed in deciding whether to exclude any particular area.

We have analyzed the economic, national security, and other relevant impacts of designating critical habitat. Although we have used the best available information and an approach designed to avoid underestimating economic impacts, many of the potential impacts are speculative and may not occur in the future. Our conservative identification of potential, incremental, economic impacts indicates that any such impacts, if they were to occur, would be very small. Any incremental economic impacts will consist solely of the administrative costs of consultation; no project modifications are projected to be required to address impacts solely to the proposed critical habitat. The Navy requested exclusion of two areas within the Gulf of Maine DPS proposed critical habitat units, three areas within the New York Bight critical habitat units, and two areas within the Chesapeake Bay critical habitat units. As noted above, no impacts to national security are expected as a consequence of the proposed critical habitat. Other relevant impacts include conservation benefits of the designation, both to the species and to society. The designation of critical habitat will provide conservation benefits such as improved education and outreach by informing the public about areas and features important to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. There are also a number of potential beneficial impacts of designating critical habitat that extend beyond the conservation benefits to Atlantic sturgeon. For example, protecting essential features of sturgeon habitat, including preserving water quality and natural flow regimes, will benefit other organisms that are co-located in these areas. While we cannot quantify nor monetize the benefits, we believe they are not negligible and would be an incremental benefit of this designation. Therefore, we have concluded that there is no basis to exclude any particular area from the proposed critical habitat units.

Activities That May Be Affected

Section 4(b)(8) of the ESA requires that any proposed or final regulation to designate critical habitat describe briefly and evaluate those activities that may adversely modify such habitat or that may be affected by such designation. A wide variety of activities may affect critical habitat and, when carried out, funded, or authorized by a Federal agency, will require an ESA section 7 consultation. Such activities (detailed in the economic analysis) include in-water construction, dredging, bridge, culvert,

and road projects (e.g., for restoration projects), hydropower (unknown capacity), utility lines, sand and gravel mining, and activities requiring National Pollutant Discharge Elimination System permits. Private entities may also be affected by these proposed critical habitat designations if a Federal permit is required, Federal funding is received, or the entity is involved in or receives benefits from a Federal project. These activities will need to be evaluated with respect to their potential to destroy or adversely modify critical habitat. Specifically, as discussed above, activities (dredging, mining, utility lines, in water construction, placement of dams and tidal turbines) may adversely modify the substrate essential feature by removing or altering the substrate. The open passage feature may also be adversely modified by the placement of structures such as dams and tidal turbines. The salinity feature may be adversely affected by activities that impact fresh water input, such as operation of water control structures and water withdrawals, and activities that impact water depth, such as dredging. The water quality feature may be adversely affected by land development, and commercial and recreational activities on rivers may adversely affect the water quality feature by contributing to the persistence of nutrient loading, resulting in decreased dissolved oxygen levels and increased water temperature, and by increasing sediment deposition, which reduces Atlantic sturgeon egg adherence on hard spawning substrate and reduces the interstitial spaces used by larvae for refuge from predators. Dredging to remove sediment build-up or to facilitate vessel traffic may remove or alter the hard substrate that is necessary for egg adherence and as refuge for larvae, and may change the water depth, resulting in shifts in the salt wedge within the estuary or changes to other characteristics of the water quality (e.g., temperature, dissolved oxygen) necessary for the developing eggs, larvae, and juveniles. These activities would require ESA section 7 consultation when they are implemented, funded, or carried out by a federal agency.

Questions regarding whether specific activities will constitute destruction or adverse modification of critical habitat should be directed to NMFS (see **ADDRESSES** and **FOR FURTHER INFORMATION CONTACT**).

Public Comments Solicited

We request that interested persons submit comments, information, and suggestions concerning this proposed

rule during the comment period (see **DATES**). We are soliciting comments or suggestions from the public, other concerned governments and agencies, the scientific community, industry, or any other interested party concerning this proposed rule, including any foreseeable economic, national security, or other relevant impact resulting from the proposed designations. You may submit your comments and materials concerning this proposal by any one of several methods (see **ADDRESSES**). Copies of the proposed rule and supporting documentation can be found on the NMFS Greater Atlantic Region Web site at www.greateratlantic.fisheries.noaa.gov/. We will consider all comments pertaining to this designation received during the comment period in preparing the final rule. Accordingly, the final designation may differ from this proposal.

Information Quality Act and Peer Review

The data and analyses supporting this proposed action have undergone a pre-dissemination review and have been determined to be in compliance with applicable information quality guidelines implementing the Information Quality Act (IQA) (Section 515 of Pub. L. 106–554). On July 1, 1994, a joint USFWS/NMFS policy for peer review was issued stating that the Services would solicit independent peer review to ensure the best biological and commercial data is used in the development of rulemaking actions and draft recovery plans under the ESA (59 FR 34270). In addition, on December 16, 2004, the Office of Management and Budget (OMB) issued its Final Information Quality Bulletin for Peer Review (Bulletin). The Bulletin was published in the **Federal Register** on January 14, 2005 (70 FR 2664), and went into effect on June 16, 2005. The primary purpose of the Bulletin is to improve the quality and credibility of scientific information disseminated by the Federal government by requiring peer review of ‘influential scientific information’ and ‘highly influential scientific information’ prior to public dissemination. ‘Influential scientific information’ is defined as ‘information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions.’ The Bulletin provides agencies broad discretion in determining the appropriate process and level of peer review. Stricter standards were established for the peer review of ‘highly influential scientific assessments,’ defined as information

whose ‘dissemination could have a potential impact of more than \$500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest.’

The Draft Biological Information and 4(b)(2) Source Document (NMFS, 2015) and the Draft Economic Impact Analysis (King and Associates Inc., 2014) supporting this proposed critical habitat rule are considered influential scientific information and subject to peer review. To satisfy our requirements under the OMB Bulletin, we obtained independent peer review of these draft documents, and incorporated the peer review comments prior to dissemination of this proposed rulemaking. For this action, compliance with the OMB Peer Review Bulletin satisfies any peer review requirements under the 1994 joint peer review policy. The Draft Biological Information and 4(b)(2) Source Document and the Draft Economic Impact Analysis prepared in support of this proposal are available on our Web site at www.greateratlantic.fisheries.noaa.gov. Comments received from peer reviewers on these documents will also be made available via our Web site at the time of publication of the proposed rule.

Classification

Takings (Executive Order 12630)

Under E.O. 12630, Federal agencies must consider the effects of their actions on constitutionally protected private property rights and avoid unnecessary takings of property. A taking of property includes actions that result in physical invasion or occupancy of private property, and regulations imposed on private property that substantially affect its value or use. In accordance with E.O. 12630, this proposed rule would not have significant takings implications. The designation of critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon are not expected to impose additional burdens on land use or affect property values. Therefore, a takings implication assessment is not required.

Regulatory Planning and Review (Executive Order 12866)

This proposed rule has been determined to be significant for purposes of E.O. 12866. A draft economic report has been prepared to support an impacts analysis under section 4(b)(2) of the ESA.

Federalism (Executive Order 13132)

Pursuant to the Executive Order on Federalism, E.O. 13132, we determined that this proposed rule does not have significant Federalism effects and that a Federalism assessment is not required. However, in keeping with Department of Commerce policies and consistent with ESA regulations at 50 CFR 424.16(c)(1)(ii), we will request information for this proposed rule from state resource agencies in Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Delaware, Maryland, and Virginia as well as appropriate authorities for the District of Columbia. The proposed designations may have some benefit to state and local resource agencies in that the proposed rule more clearly defines the physical and biological features essential to the conservation of the species and the areas on which those features are found.

Energy Supply, Distribution, and Use (Executive Order 13211)

Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking an action expected to lead to the promulgation of a final rule or regulation that is a significant regulatory action under E.O. 12866 and is likely to have a significant adverse effect on the supply, distribution, or use of energy. OMB Guidance on Implementing E.O. 13211 (July 13, 2001) states that significant adverse effects could include any of the following outcomes compared to a world without the regulatory action under consideration: (1) Reductions in crude oil supply in excess of 10,000 barrels per day; (2) reductions in fuel production in excess of 4,000 barrels per day; (3) reductions in coal production in excess of 5 million tons per year; (4) reductions in natural gas production in excess of 25 million mcf per year; (5) reductions in electricity production in excess of 1 billion kilowatt-hours per year or in excess of 500 megawatts of installed capacity; (6) increases in energy use required by the regulatory action that exceed any of the thresholds above; (7) increases in the cost of energy production in excess of one percent; (8) increases in the cost of energy distribution in excess of one percent; or (9) other similarly adverse outcomes. A regulatory action could also have significant adverse effects if it: (1) Adversely affects in a material way the productivity, competition, or prices in the energy sector; (2) adversely affects in a material way productivity, competition or prices within a region; (3) creates a serious inconsistency or

otherwise interferes with an action taken or planned by another agency regarding energy; or (4) raises novel legal or policy issues adversely affecting the supply, distribution or use of energy arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866 and 13211.

This rule, if finalized, will not have a significant adverse effect on the supply, distribution, or use of energy. Therefore, we have not prepared a Statement of Energy Effects.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

We prepared an initial regulatory flexibility analysis (IRFA) pursuant to section 603 of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601, *et seq.*). The IRFA analyzes the impacts of this proposed rule, if enacted, on small entities. Specifically, the IRFA describes the economic impact on small entities in those areas where critical habitat is proposed, and is included as Appendix A of the Draft Biological Information and 4(b)(2) Source Document available at the location identified in the **ADDRESSES** section. A summary of the IRFA follows.

We determined that the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon warranted listing under the Endangered Species Act (ESA) and published notice of that decision on February 6, 2012 (77 FR 5880). We are required to designate critical habitat for each of the DPSs of Atlantic sturgeon (16 U.S.C. 1533(a)(3)). The critical habitat provisions of the ESA are intended to promote recovery of the ESA-listed species by prohibiting federal agency actions from destroying or adversely modifying the physical or biological features that are essential to conservation of the listed entity.

The ESA section 7 consultation requirement for critical habitat does not apply to citizens engaged in activities on private land that do not involve a Federal agency. However, there may be an impact to private citizens and small entities that are engaged in activities that involve a Federal agency action. For example, small businesses involved in construction activities such as breakwater, dock, pier, and harbor construction may be impacted if a federal agency must issue a permit for the work to be conducted, will provide funds for the work, or will otherwise be involved in carrying out the work. Such involvement by a federal agency triggers the need for section 7 consultation.

We considered three alternatives: (1) No action, (2) designating some of the identified critical habitat areas, or (3)

designating all critical habitat areas identified for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon. Under the "no action" alternative, we would not designate critical habitat for the Gulf of Maine, New York Bight or Chesapeake Bay DPSs. By comparison, designating some of the identified critical habitat areas (*i.e.*, Alternative 2) could result in an increase in the number of section 7 consultations required to avoid adverse impacts relative to the "no action" alternative, while Alternative 3 would likely result in the greatest number of section 7 consultations relative to the other alternatives.

We have determined that the physical features forming the basis for our proposed critical habitat designations are essential to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. Therefore, we rejected the no action alternative and Alternative 2. We have analyzed the economic, national security, and other relevant impacts of designating all critical habitat identified for the DPSs. Our conservative identification of potential, incremental economic impacts indicates that any such impacts, if they were to occur, would be very small. Any incremental economic impacts will consist solely of the administrative costs of consultation; no project modifications are projected to be required to address impacts solely to the proposed critical habitat. No impacts to national security are expected as a consequence of the proposed critical habitat. Other relevant impacts include conservation benefits of the designation, both to the species and to society. While we cannot quantify or monetize the benefits, we believe that the benefits of this critical habitat designation would be incremental, and that they are not negligible.

The Small Business Administration has established numerical definitions of small businesses, or "size standards," for all for-profit industries. Based on these size standards (*e.g.*, in millions of dollars or number of employees), King and Associates, Inc. (2014), concluded a high percent of business entities located in the counties that include one or more of the critical habitat units, an average of 99.8% across all units, are small businesses. However, data are not available to determine the location of these small business entities within each county in order to determine how many are located in or near areas proposed as critical habitat. Therefore, for purposes of projecting the impacts of administrative section 7 costs on small businesses in each critical habitat unit, King and Associates assumed that the

percentage of private entities involved in those consultations that are small entities is the same as the percentage of businesses that are small entities in the counties that include critical habitat units.

The same approach that was used by King and Associates to estimate low, medium, and high overall ESA section 7 administrative costs was used as a basis for developing low, medium, and high estimates of section 7 impacts on small entities. Impacted small entities may include contractors involved in construction activities such as breakwater, dock, pier, bridge, and harbor construction, contractors involved in restoration activities such as culvert replacements, and marina owners who must maintain pier and dock structures. King and Associates concluded that costs to small entities associated with the designation range from about \$16,500 to \$47,250 annually in the Gulf of Maine DPS, about \$30,000 to \$96,000 annually in the New York Bight DPS, and about \$11,000 to \$34,000 annually in the Chesapeake Bay DPS (King and Associates, Inc., 2014). We found no data to suggest that the designation would place small entities at a competitive disadvantage compared to large entities.

Coastal Zone Management Act

Under section 307(c)(1)(A) of the Coastal Zone Management Act (CZMA) (16 U.S.C. 1456(c)(1)(A)) and its implementing regulations, each Federal activity within or outside the coastal zone that has reasonably foreseeable effects on any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State coastal management programs. We have determined that any effects of this proposed designation of critical habitat on coastal uses and resources in Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Delaware, Pennsylvania, Maryland, and Virginia are not reasonably foreseeable at this time. This proposed designation may trigger ESA section 7 obligations for federal agencies. These consultations will consider effects of Federal actions on coastal uses and resources to the extent they overlap with critical habitat. We considered the range of Federal actions that this designation may affect (*e.g.*, dredging, bridge construction/repair, water withdrawals) and which may affect coastal uses and resources in the affected States. However, we do not have sufficient information on the specifics of any future activities (*e.g.*,

when, where and how they will be carried out) to characterize any of these as reasonable foreseeable. Therefore, because the effects are not reasonably foreseeable, we cannot make a determination as to whether the Federal activities will be consistent with any enforceable policies of approved State coastal management programs. Through the consultation process, we will receive information on proposed Federal actions and their effects on listed species and the designated critical habitat upon. We base any biological opinions on this information. It will then be up to the Federal action agencies to decide how to comply with the ESA in light of our biological opinion, as well as to ensure that their actions comply with the CZMA's Federal consistency requirement. At this time, we do not anticipate that this designation is likely to result in any additional management measures by other Federal agencies.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*)

This proposed rule does not contain any new or revised collection of information. This rule, if adopted, would not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations.

Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*)

This proposed rule will not produce a Federal mandate. The designation of critical habitat does not impose a legally-binding duty on non-Federal government entities or private parties. The only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7 of the ESA. Non-Federal entities which receive Federal funding, assistance, permits or otherwise require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat but, the Federal agency has the legally binding duty to avoid destruction or adverse modification of critical habitat.

We do not anticipate that this rule, if finalized, will significantly or uniquely affect small governments. Therefore, a Small Government Action Plan is not required.

Consultation and Coordination With Indian Tribal Governments (Executive Order 13175)

The longstanding and distinctive relationship between the Federal and tribal governments is defined by treaties, statutes, executive orders,

judicial decisions, and agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the Federal Government. This relationship has given rise to a special Federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian Tribes and the application of fiduciary standards of due care with respect to Indian lands, tribal trust resources, and the exercise of tribal rights.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, outlines the responsibilities of the Federal Government in matters affecting tribal interests. If NMFS issues a regulation with tribal implications (defined as having a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes) we must consult with those governments or the Federal Government must provide funds necessary to pay direct compliance costs incurred by tribal governments. The proposed critical habitat designations for Gulf of Maine, New York Bight, and Chesapeake Bay Atlantic sturgeon DPSs do not have tribal implications.

References Cited

A complete list of all references cited in this rulemaking can be found at www.greateratlantic.fisheries.noaa.gov, and is available upon request from the NMFS Greater Atlantic Region Fisheries Office in Gloucester, Massachusetts (see ADDRESSES).

List of Subjects in 50 CFR Part 226

Endangered and threatened species.

Dated: May 24, 2016.

Samuel D. Rauch, III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, we propose to amend 50 CFR part 226 as follows:

PART 226—DESIGNATED CRITICAL HABITAT

■ 1. The authority citation for part 226 continues to read as follows:

Authority: 16 U.S.C. 1533.

■ 2. Add § 226.225 to read as follows:

§ 226.225 Critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments of Atlantic Sturgeon.

Critical habitat is designated for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments (DPSs) of Atlantic sturgeon as described in paragraphs (a) through (c) of this section. The textual descriptions in paragraphs (c) through (f) of this section are the definitive source for determining the critical habitat boundaries.

(a) The physical features essential for the conservation of Atlantic sturgeon belonging to the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments are those habitat components that support successful reproduction and recruitment. These are:

(1) Hard bottom substrate (*e.g.*, rock, cobble, gravel, limestone, boulder, etc.)

in low salinity waters (*i.e.*, 0.0–0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;

(2) Aquatic habitat with a gradual downstream salinity gradient of 0.5–30 parts per thousand and soft substrate (*e.g.*, sand, mud) downstream of spawning sites for juvenile foraging and physiological development;

(3) Water of appropriate depth and absent physical barriers to passage (*e.g.*, locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support:

(i) Unimpeded movement of adults to and from spawning sites;

(ii) Seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and

(iii) Staging, resting, or holding of subadults or spawning condition adults.

Water depths in main river channels must also be deep enough (*e.g.*, ≥1.2 m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river;

(4) Water, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support:

(i) Spawning;

(ii) Annual and interannual adult, subadult, larval, and juvenile survival; and

(iii) Larval, juvenile, and subadult growth, development, and recruitment (*e.g.*, 13 °C to 26 °C for spawning habitat and no more than 30 °C for juvenile rearing habitat, and 6 mg/L dissolved oxygen for juvenile rearing habitat).

(b) Critical habitat is designated for the following DPSs in the following states and counties:

DPS	State/district—counties
Gulf of Maine	ME—Androscoggin, Cumberland, Kennebec, Lincoln, Penobscot, Sagadahoc, Somerset, Waldo, York. NH—Rockingham, Stafford. MA—Essex.
New York Bight	CT—Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland. NJ—Bergen, Burlington, Camden, Cape May, Cumberland, Gloucester, Hudson, Mercer, Monmouth, Salem. NY—Albany, Bronx, Columbia, Dutchess, Greene, Kings, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Ulster, Westchester. DE—Kent, New Castle, Sussex. PA—Bucks, Delaware, Philadelphia. D.C.—District of Columbia.
Chesapeake Bay	MD—Charles, Montgomery, Prince George's, St. Mary's. VA—Arlington, Caroline, Charles City, Chesterfield, Dinwiddie, Essex, Fairfax, Gloucester, Hanover, Henrico, Isle of Wight, King George, James City, King and Queen, King William, Lancaster, Loudoun, Middlesex, New Kent, Northumberland, Prince George, Prince William, Richmond, Spotsylvania, Stafford, Surry, Westmoreland, York.

(c) *Critical habitat boundaries for the Gulf of Maine DPS.* Critical habitat for the Gulf of Maine DPS of Atlantic sturgeon is the waters of:

(1) Penobscot River main stem from the Milford Dam downstream to where the main stem river drainage discharges at its mouth into Penobscot Bay;

(2) Kennebec River main stem from the Ticonic Falls/Lockwood Dam downstream to where the main stem river discharges at its mouth into the Atlantic Ocean;

(3) Androscoggin River main stem from the Brunswick Dam downstream to where the main stem river drainage discharges into Merrymeeting Bay;

(4) Piscataqua River from its confluence with the Salmon Falls and Cocheco rivers downstream to where the main stem river discharges at its mouth into the Atlantic Ocean as well as the waters of the Cocheco River from its confluence with the Piscataqua River and upstream to the Cocheco Falls Dam, and waters of the Salmon Falls River from its confluence with the Piscataqua

River and upstream to the Route 4 Dam; and,

(5) Merrimack River from the Essex Dam (also known as the Lawrence Dam) downstream to where the main stem river discharges at its mouth into the Atlantic Ocean.

(d) *Critical Habitat Boundaries of the New York Bight DPS.* Critical habitat for the New York Bight DPS of Atlantic sturgeon is the waters of:

(1) Connecticut River from the Holyoke Dam downstream to where the main stem river discharges at its mouth into Long Island Sound;

(2) Housatonic River from the Derby Dam downstream to where the main stem discharges at its mouth into Long Island Sound;

(3) Hudson River from the Troy Lock and Dam (also known as the Federal Dam) downstream to where the main stem river discharges at its mouth into New York City Harbor; and

(4) Delaware River at the crossing of the Trenton-Morrisville Route 1 Toll Bridge, downstream to where the main

stem river discharges at its mouth into Delaware Bay.

(e) *Critical Habitat Boundaries of the Chesapeake Bay DPS.* Critical habitat for the Chesapeake Bay DPS of Atlantic sturgeon is the waters of:

(1) Susquehanna River from the Conowingo Dam downstream to where the main stem river discharges at its mouth into the Chesapeake Bay;

(2) Potomac River from the Little Falls Dam downstream to where the main stem river discharges at its mouth into the Chesapeake Bay;

(3) Rappahannock River from the U.S. Highway 1 Bridge, downstream to where the river discharges at its mouth into the Chesapeake Bay;

(4) York River from its confluence with the Mattaponi and Pamunkey rivers downstream to where the main stem river discharges at its mouth into the Chesapeake Bay as well as the waters of the Mattaponi River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge of the Mattaponi River, and

waters of the Pamunkey River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge crossing of the Pamunkey River; and

(5) James River from Boshers Dam downstream to where the main stem river discharges at its mouth into the Chesapeake Bay at Hampton Roads.

(f) *Sites owned or controlled by the Department of Defense.* Critical habitat

for the New York Bight and Chesapeake Bay DPSs of Atlantic sturgeon do not include the following areas owned or controlled by the Department of Defense, or designated for its use, in the States of New York and Virginia.

(1) The Department of the Army, U.S. Military Academy—West Point, NY;

(2) The Department of the Air Force, Joint Base Langley—Eustis, VA;

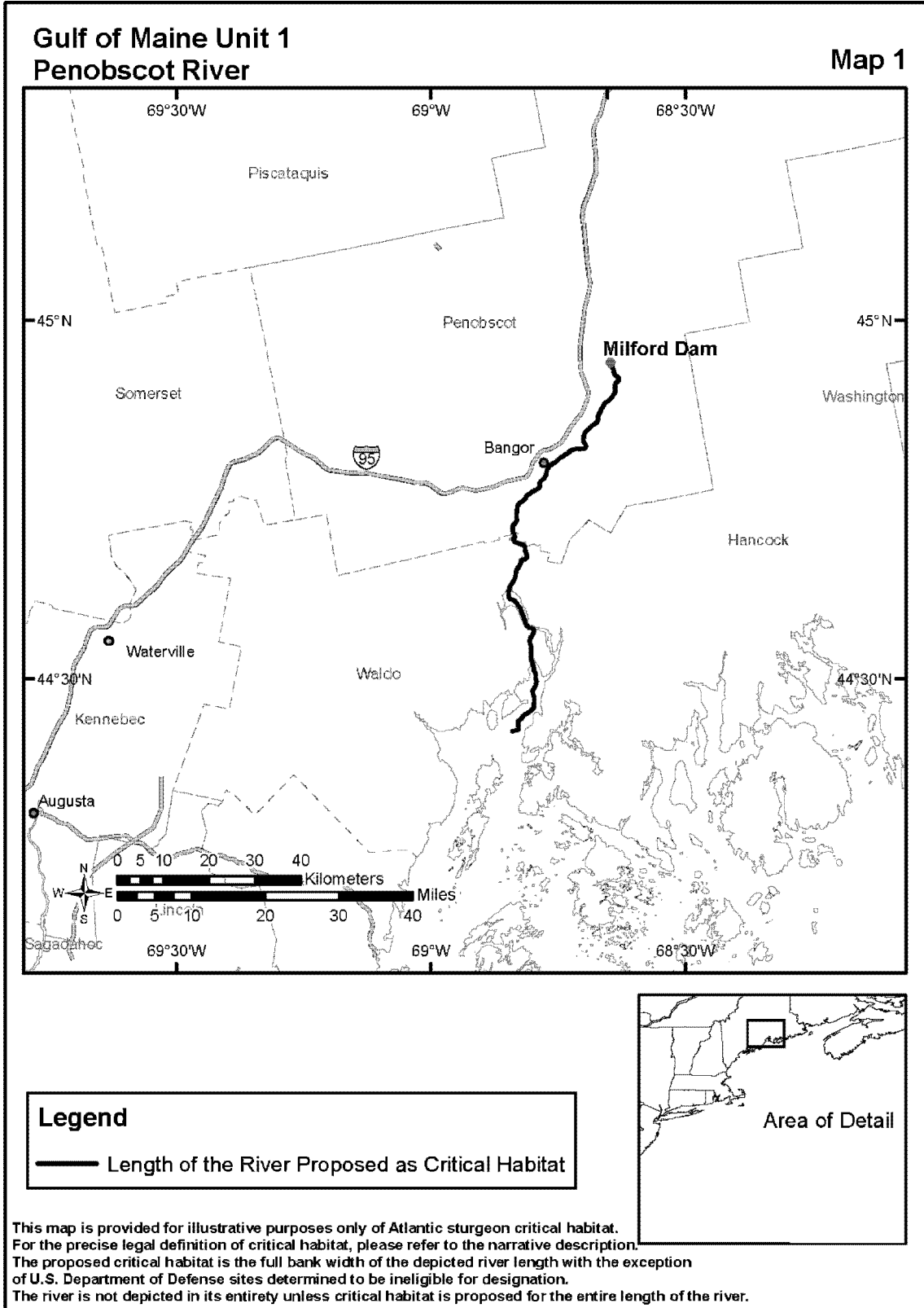
(3) The Department of the Navy, Marine Corps Base Quantico, VA;

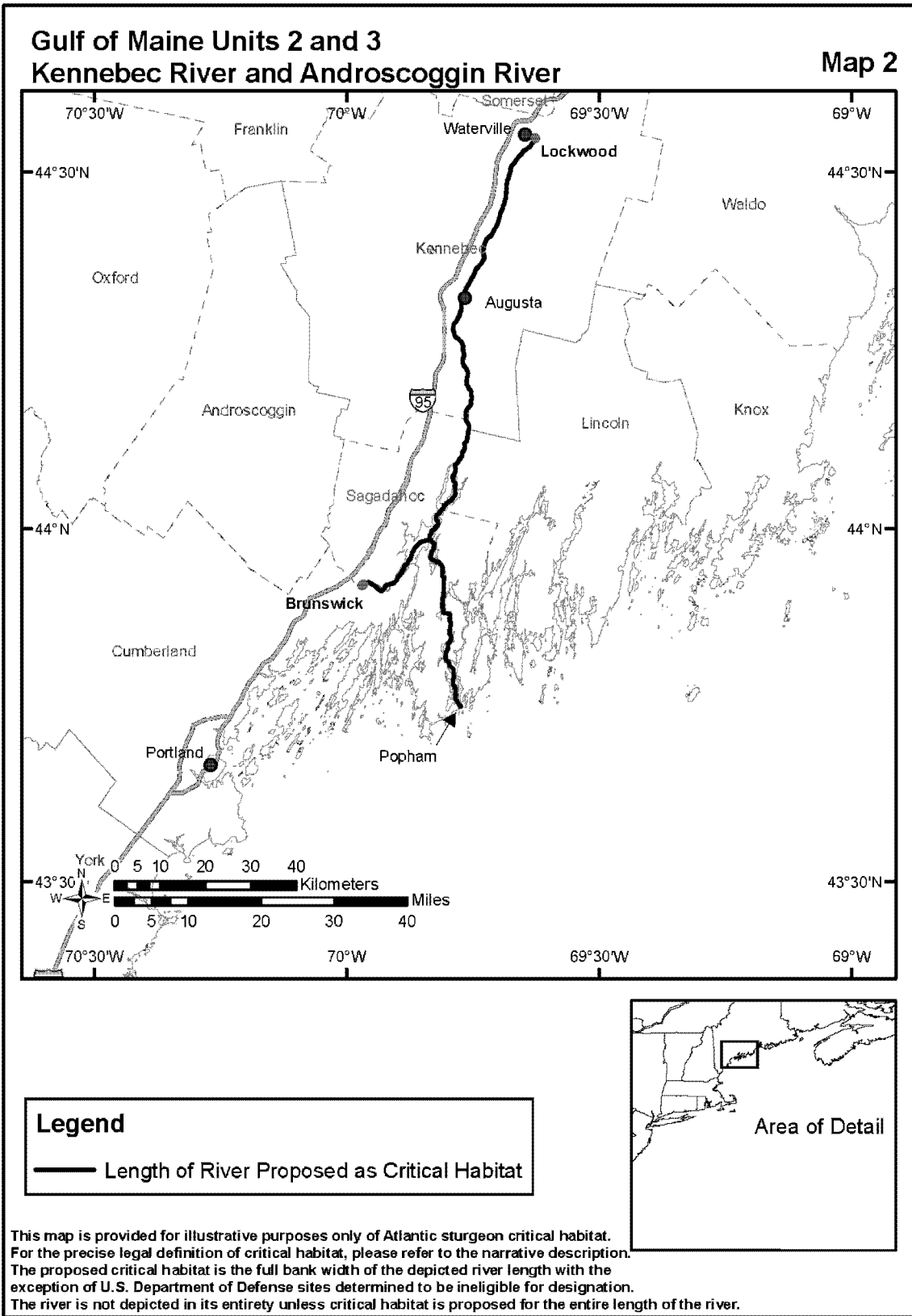
(4) The Department of the Navy, Naval Weapons Station Yorktown, VA; and,

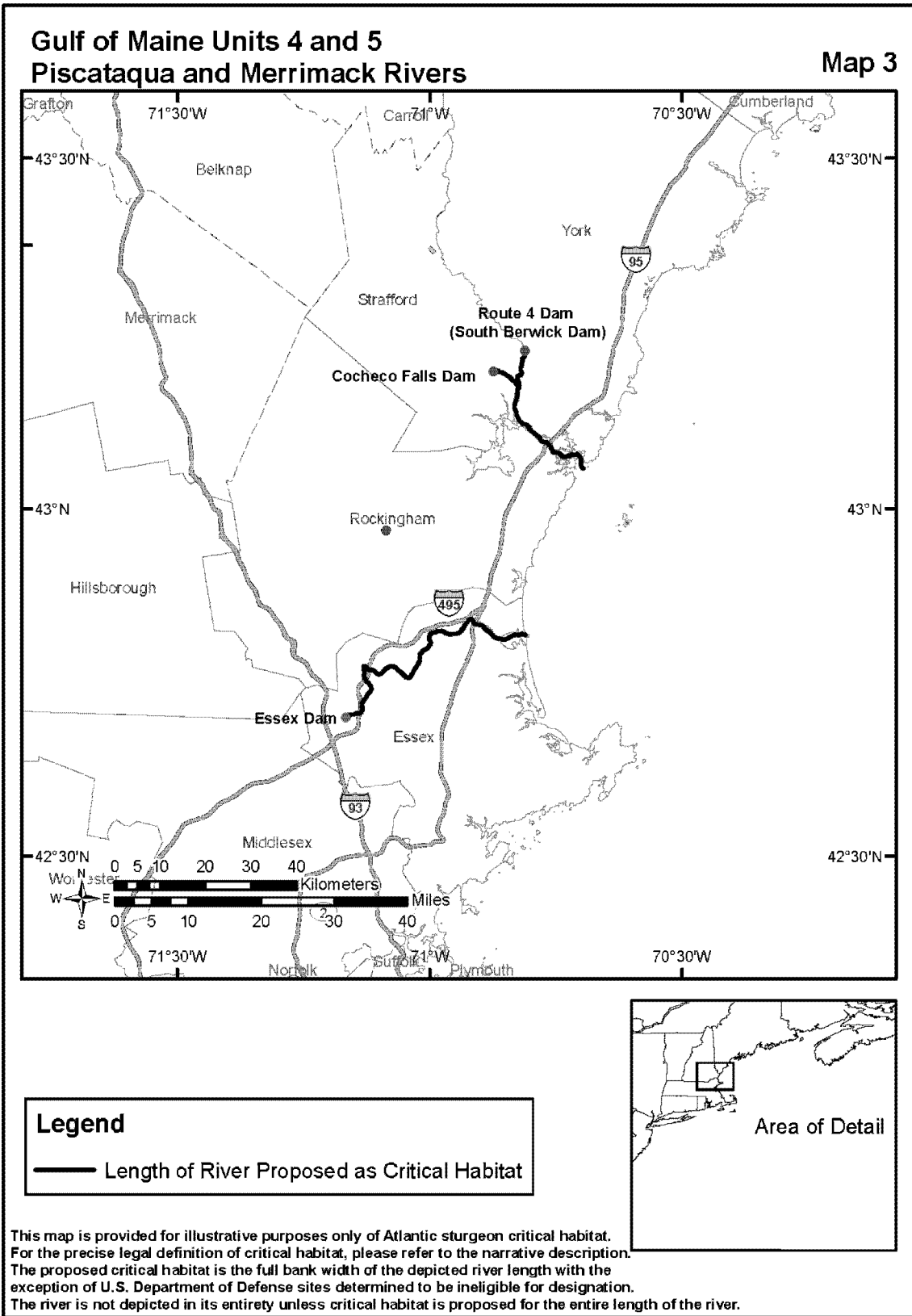
(5) The Department of the Navy, Naval Support Facility Dahlgren, VA.

(g) Maps of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs follow:

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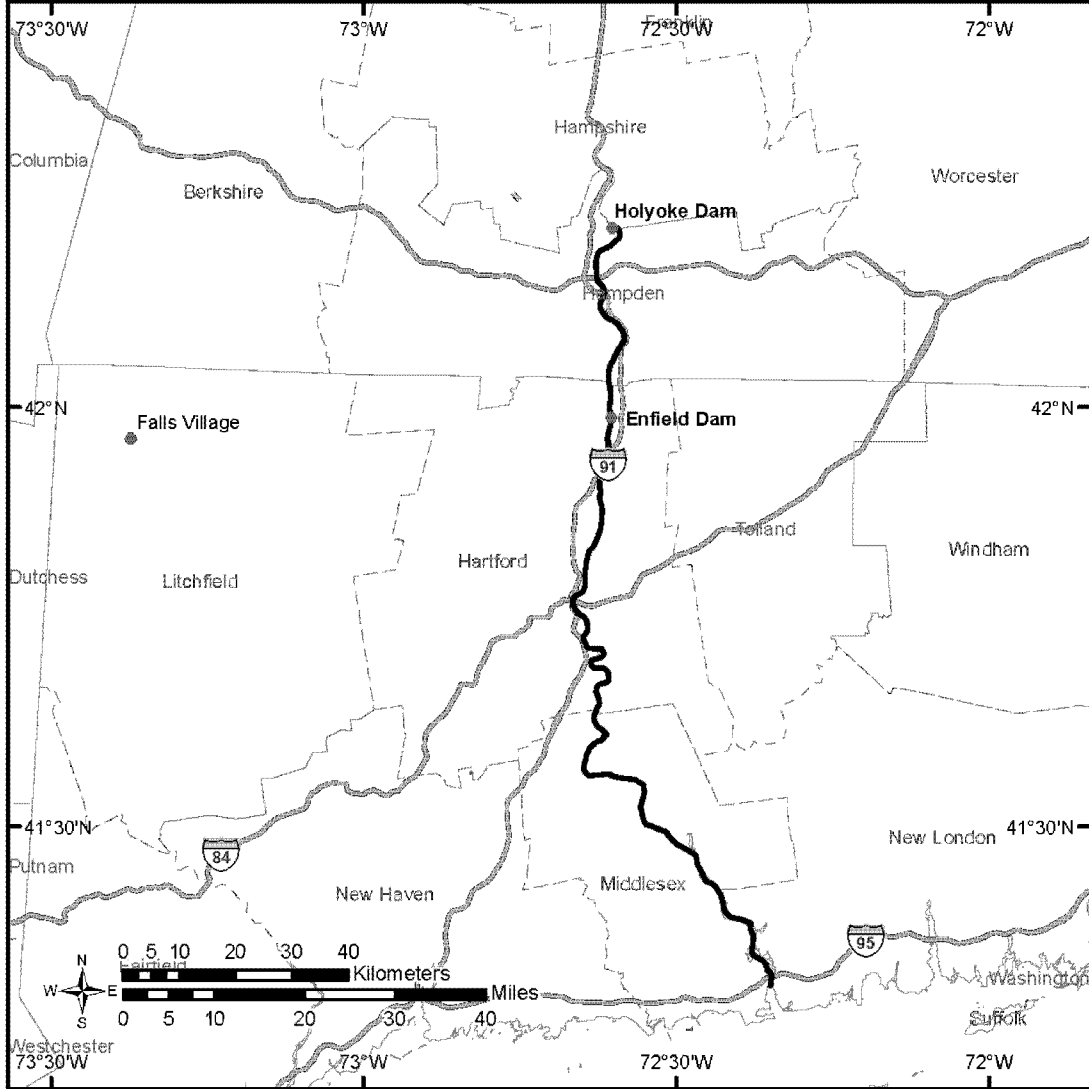






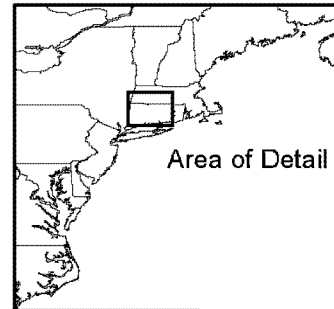
New York Bight Unit 1 Connecticut River

Map 4



Legend

— River Length Proposed as Critical Habitat

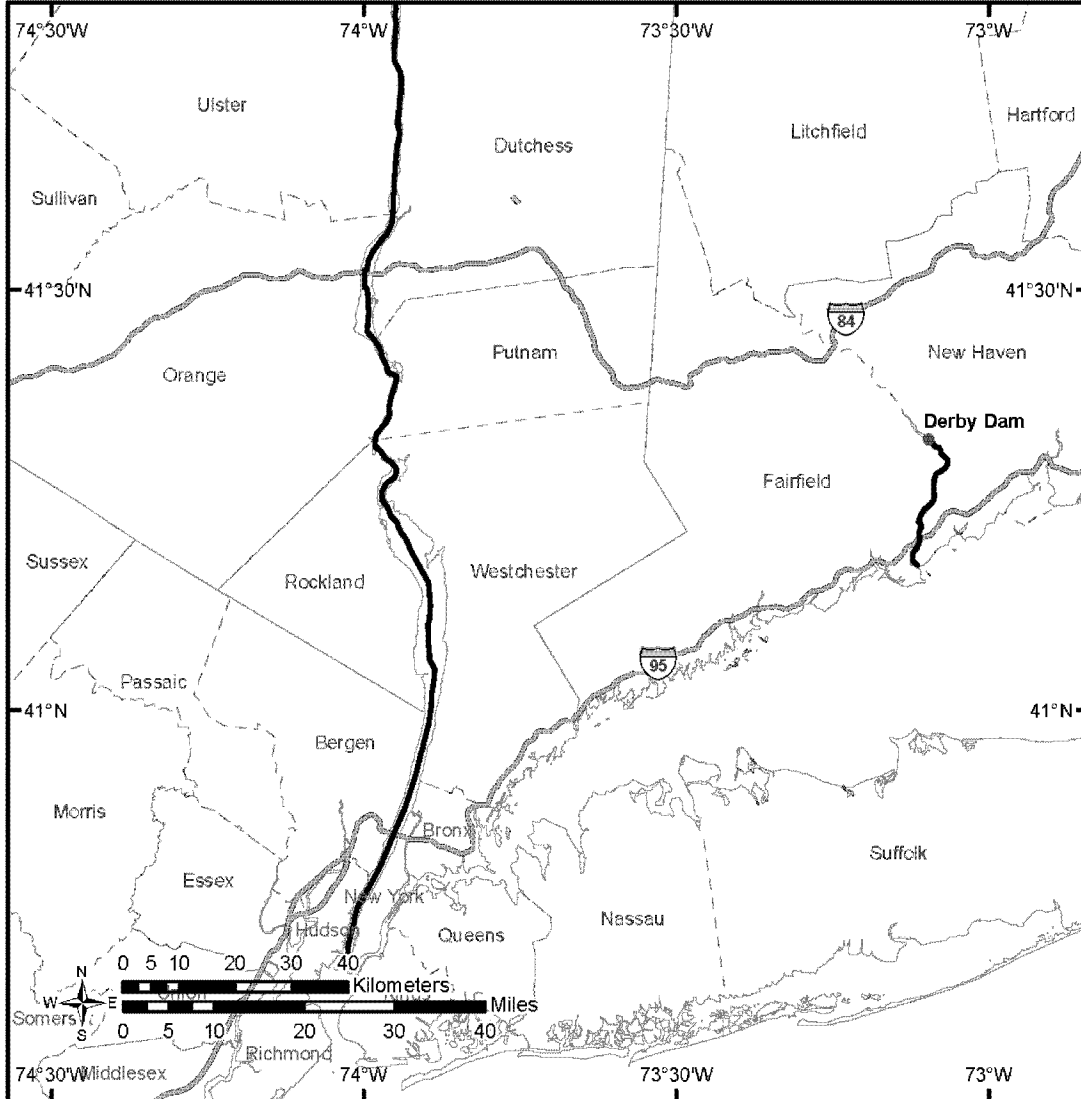


Area of Detail

This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description. The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation. The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.

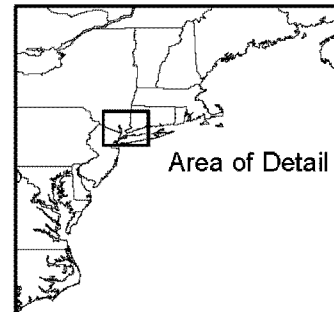
New York Bight Units 2 and 3 Housatonic River and Hudson River (Part A)

Map 5



Legend

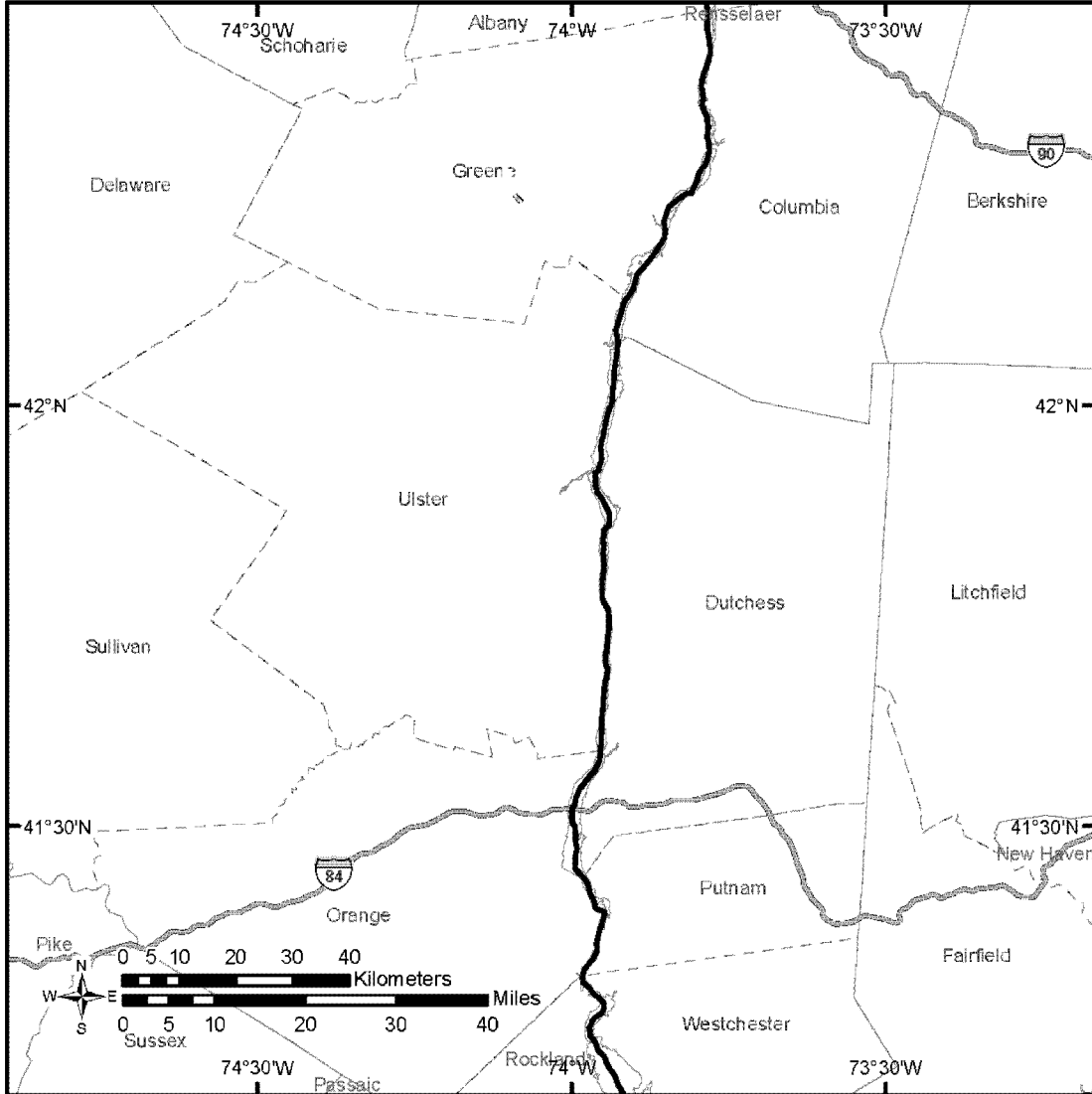
— Length of River Proposed as Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description. The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation. The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.

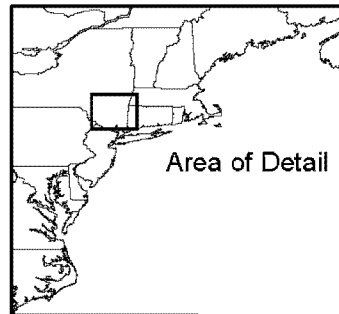
New York Bight Unit 3 Hudson River (Part B)

Map 6



Legend

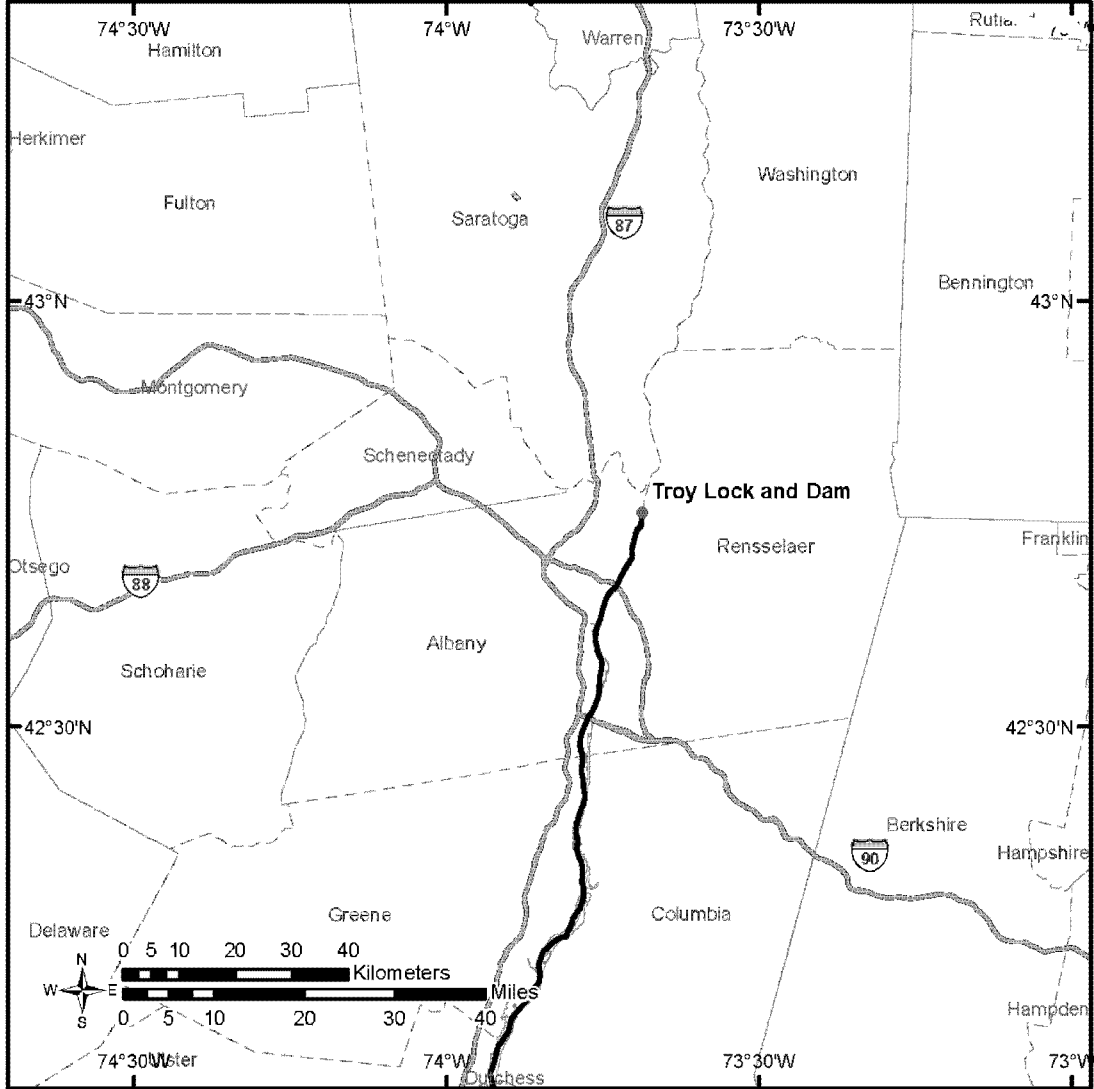
— Length of River Proposed as Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description. The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation. The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.

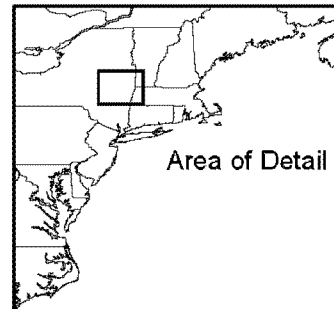
New York Bight Unit 3 Hudson River (Part C)

Map 7

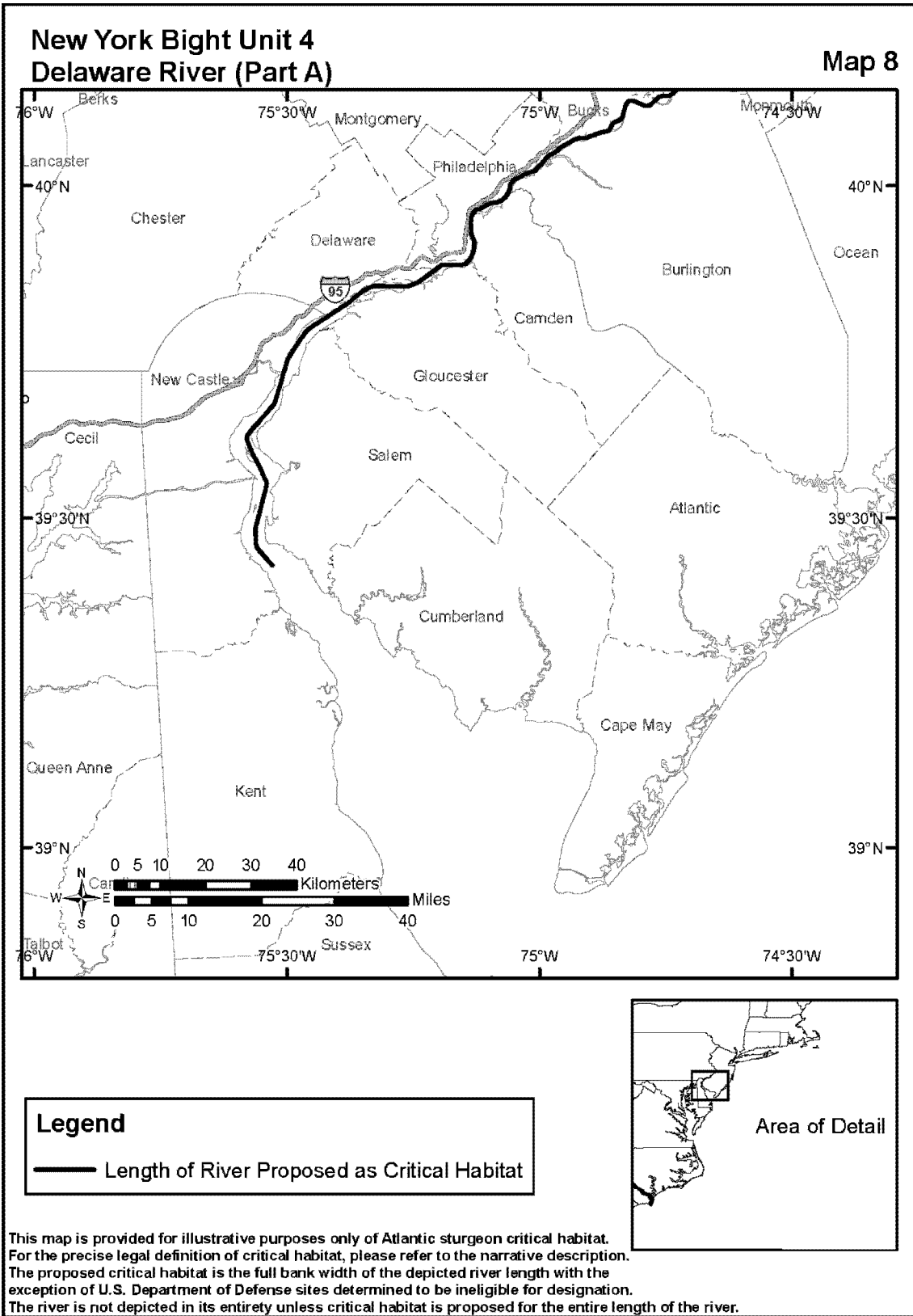


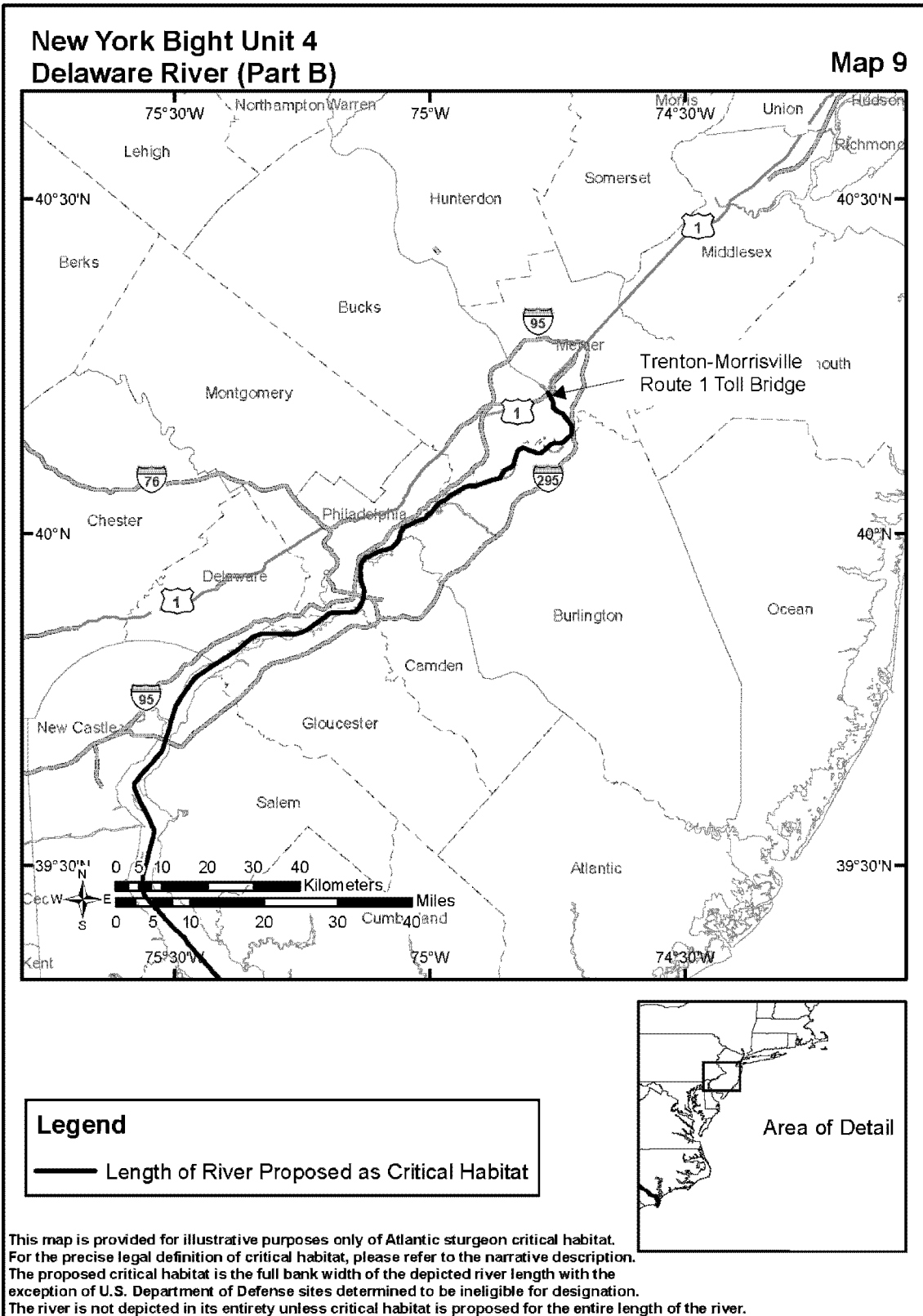
Legend

— Length of River Proposed as Critical Habitat



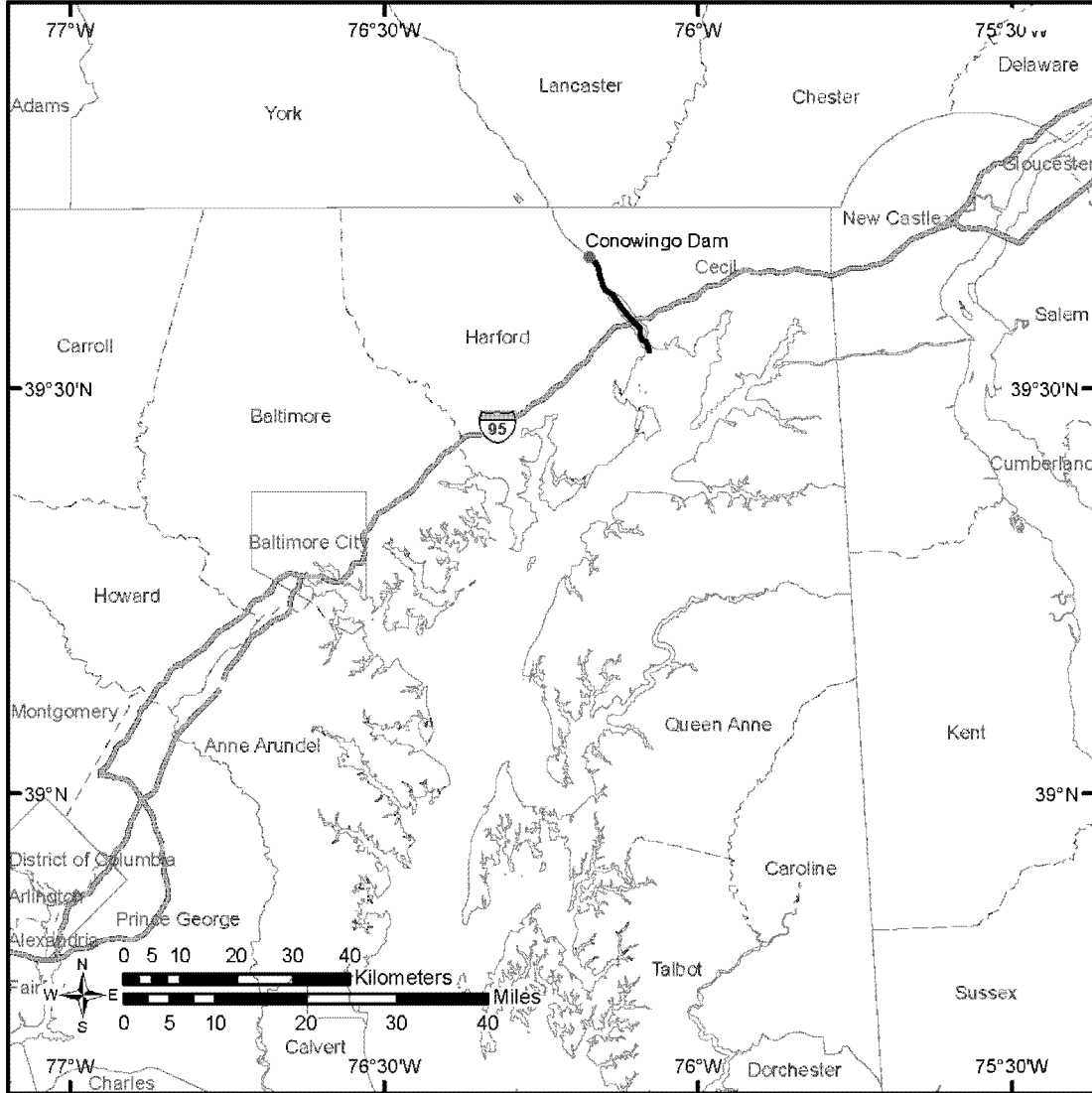
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description. The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation. The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.





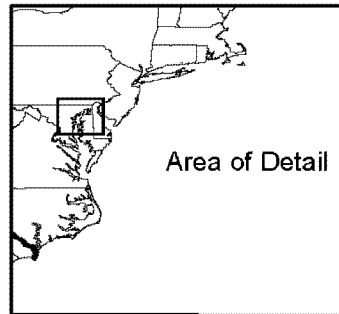
Chesapeake Bay Unit 1 Susquehanna River

Map 10



Legend

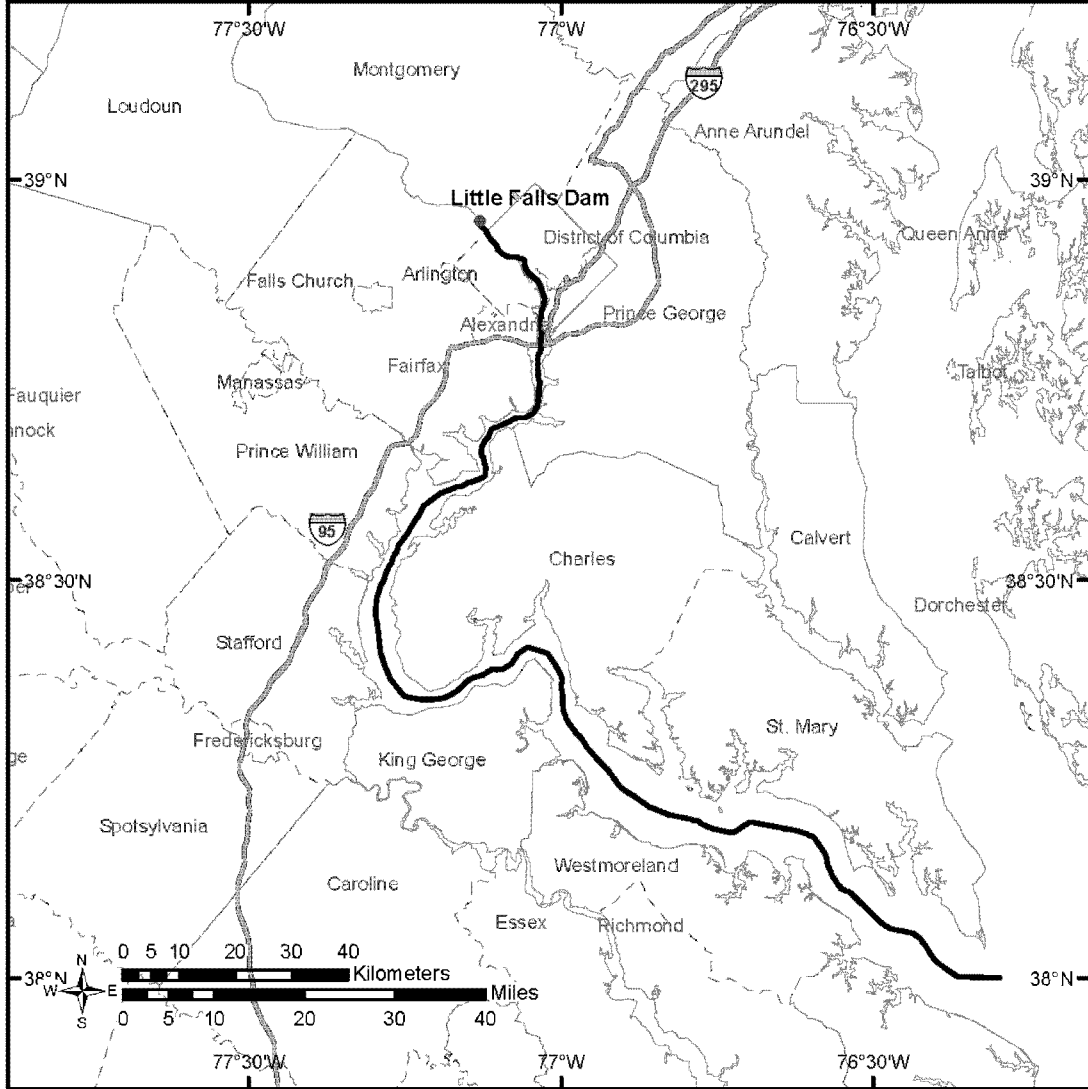
— Length of River Proposed as Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description. The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation. The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.

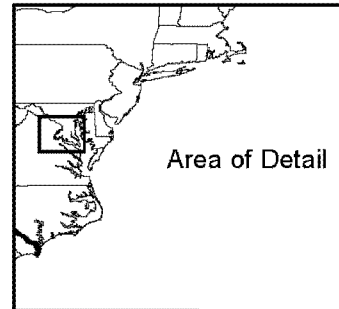
Chesapeake Bay Unit 2 Potomac River

Map 11

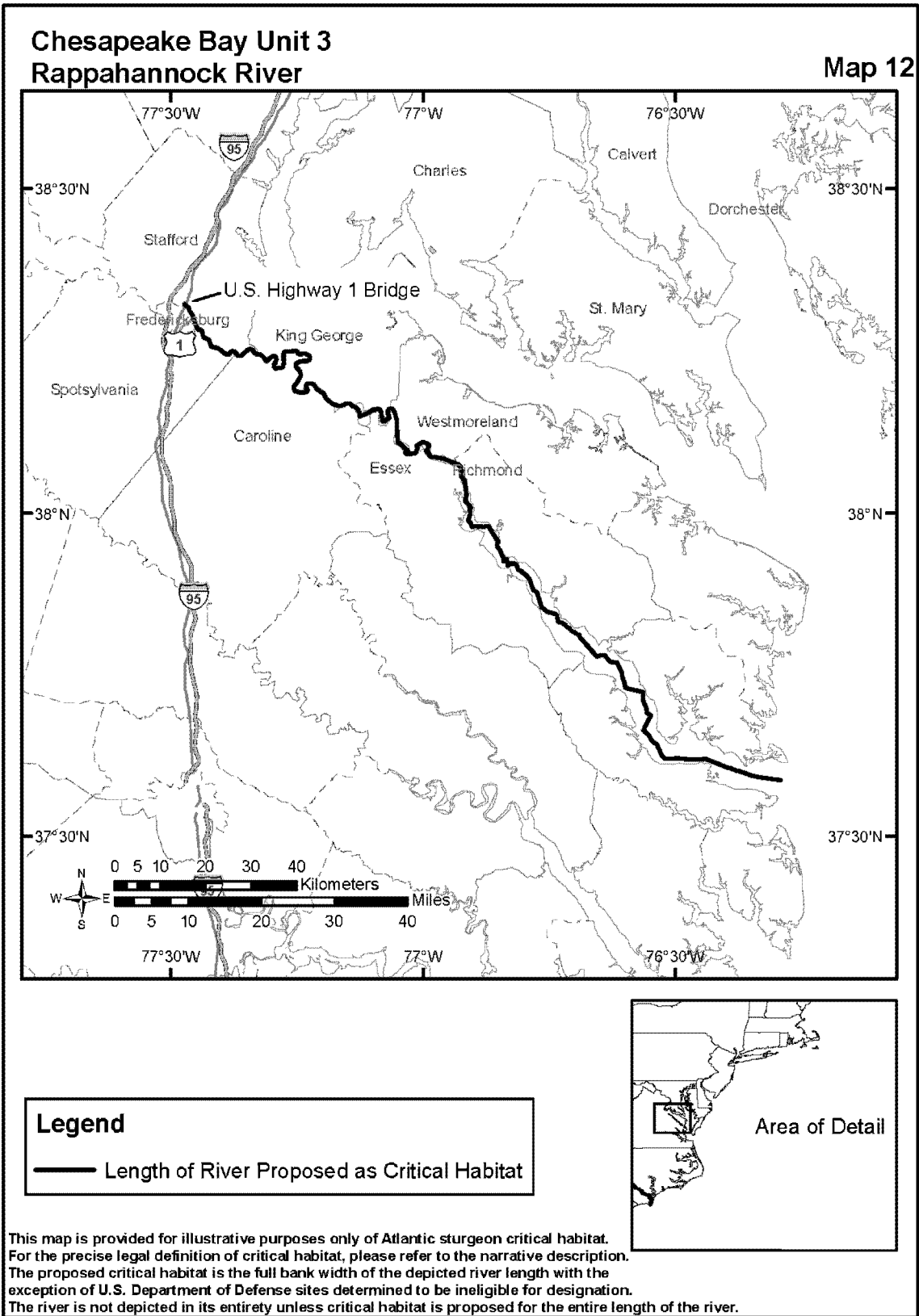


Legend

— Length of River Proposed as Critical Habitat

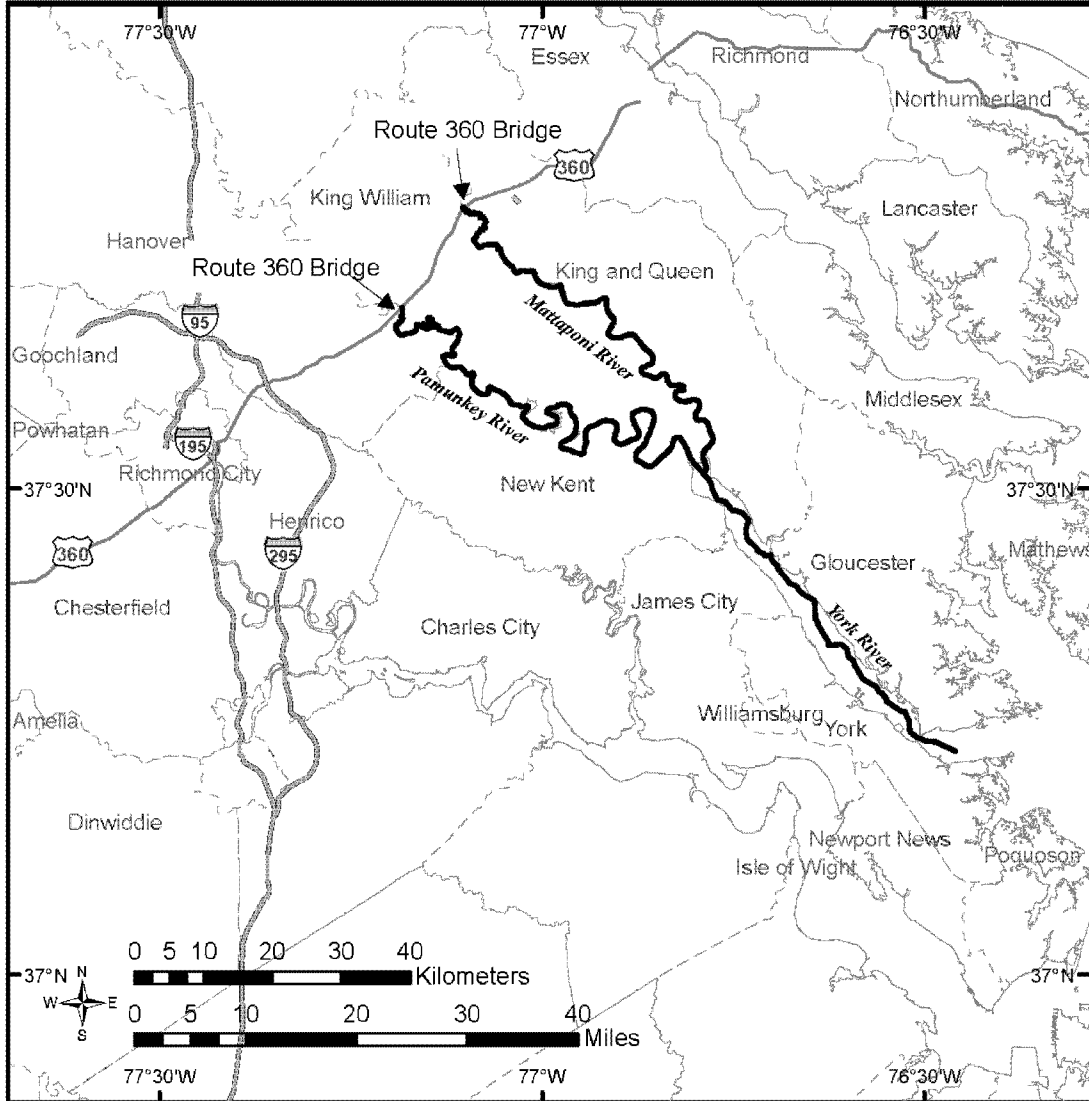


This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description. The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation. The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.



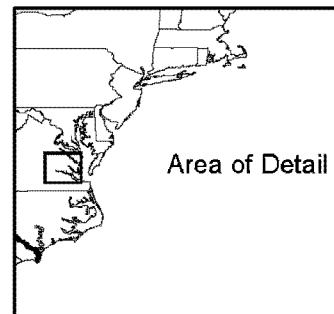
Chesapeake Bay Unit 4 York, Mattaponi, and Pamunkey Rivers

Map 13

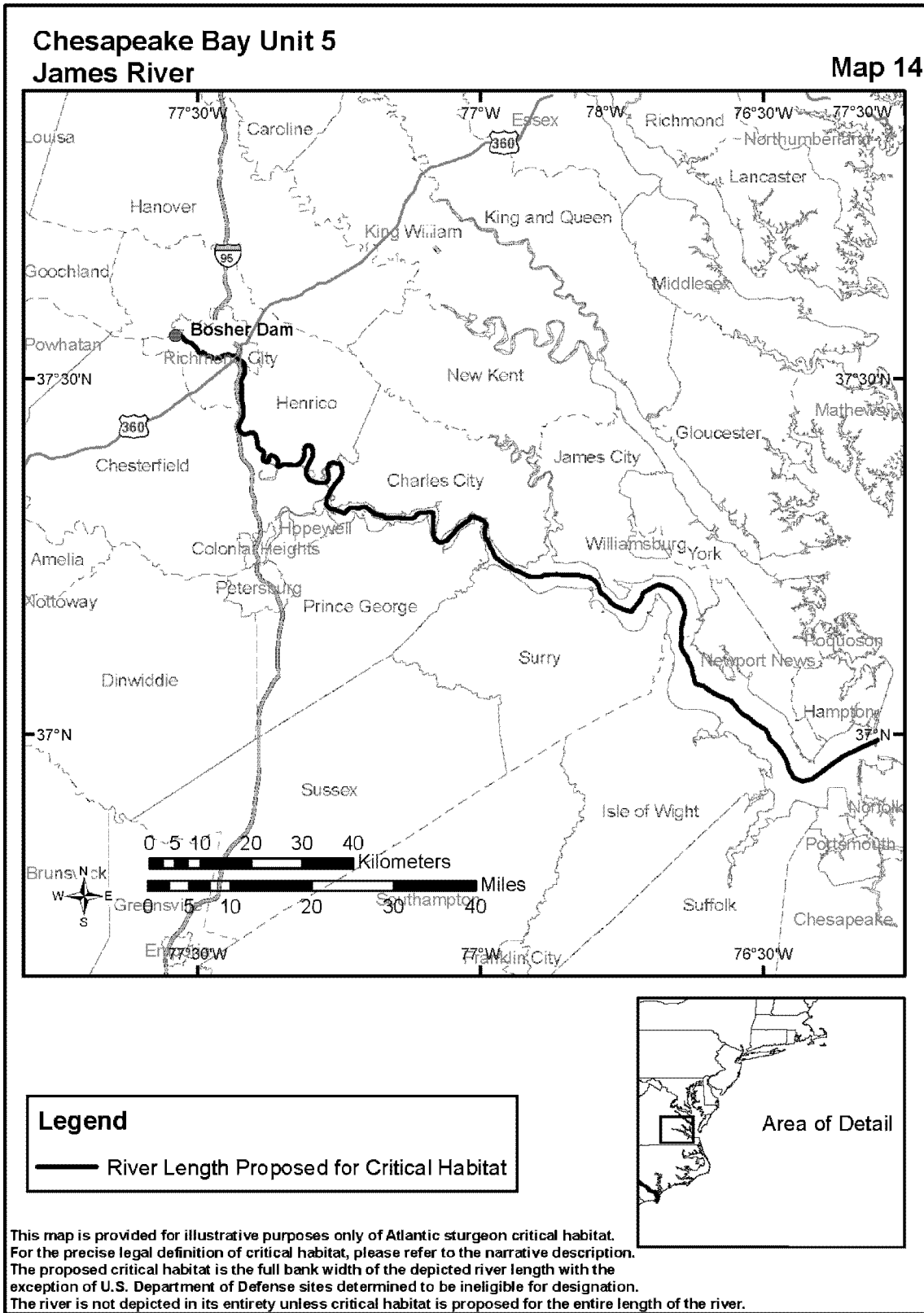


Legend

— River Length Proposed for Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description. The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation. The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.





FEDERAL REGISTER

Vol. 81

Friday,

No. 107

June 3, 2016

Part VI

Department of Commerce

National Oceanic and Atmospheric Administration

50 CFR Part 226

Endangered and Threatened Species; Critical Habitat for the Endangered Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon; Proposed Rule

DEPARTMENT OF COMMERCE**National Oceanic and Atmospheric Administration****50 CFR Part 226**

[Docket No. 150817733-6237-01]

RIN 0648-BF32

Endangered and Threatened Species; Critical Habitat for the Endangered Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: We, the NMFS, propose to designate critical habitat for the endangered Carolina distinct population segment of the Atlantic sturgeon (Carolina DPS of Atlantic sturgeon) and the endangered South Atlantic distinct population segment of the Atlantic sturgeon (South Atlantic DPS of Atlantic sturgeon) pursuant to section 4 of the Endangered Species Act (ESA). Specific occupied areas proposed for designation as critical habitat for the Carolina DPS of Atlantic sturgeon contain approximately 1,997 kilometers (km; 1,241 miles) of aquatic habitat within the following rivers: Roanoke, Tar-Pamlico, Neuse, Cape Fear, Northeast Cape Fear, Waccamaw, Pee Dee, Black, Santee, North Santee, South Santee, and Cooper, and the following other water body: Bull Creek. In addition, we propose to designate unoccupied areas for the Carolina DPS totaling 383 km (238 miles) of aquatic habitat within the Cape Fear, Santee, Wateree, Congaree, and Broad Rivers, and within Lake Marion, Lake Moultrie, redirection canal, and diversion canal. Specific occupied areas proposed for designation as critical habitat for the South Atlantic DPS of Atlantic sturgeon contain approximately 2,911 km (1,809 miles) of aquatic habitat within the Edisto, Combahee-Salkehatchie, Savannah, Ogeechee, Altamaha, Ocmulgee, Oconee, Satilla, and St. Marys Rivers. In addition, we propose to designate an unoccupied area within the Savannah River for the South Atlantic DPS that contains 33 km (21 miles) of aquatic habitat. We have considered positive and negative economic, national security, and other relevant impacts of the proposed critical habitat. We do not propose to exclude any particular area from the proposed critical habitat.

We are soliciting comments from the public on all aspects of the proposal, including our identification and consideration of impacts of the proposed action.

DATES: Comments on this proposal must be received by September 1, 2016.

Public hearing meetings: We will hold three public hearings on this proposed rule from 7 to 9 p.m. in the following locations: Brunswick, Georgia on Monday, June 20; Charleston, South Carolina on Tuesday, June 21; and, Morehead City, North Carolina, Thursday, June 23 (see **ADDRESSES**).

ADDRESSES: You may submit comments, identified by the docket number NOAA-NMFS-2015-0157, by any of the following methods:

- **Electronic Submissions:** Submit all electronic public comments via the Federal eRulemaking Portal. Go to www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2015-0157 click the "Comment Now" icon, complete the required fields, and enter or attach your comments.

- **Mail:** Assistant Regional Administrator, Protected Resources Division, NMFS, Southeast Regional Office, 263 13th Avenue South, St. Petersburg, FL 33701.

Instructions: You must submit comments by one of the above methods to ensure that we receive, document, and consider them. Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered. All comments received are a part of the public record and will generally be posted to <http://www.regulations.gov> without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

NMFS will accept anonymous comments (enter "N/A" in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only.

Public hearings: The June 20, 2016, public hearing will be held at the Georgia Department of Natural Resources, Coastal Regional Headquarters, 1 Conservation Way, Brunswick, Georgia 31520. The June 21, 2016, public hearing will be held at the South Carolina Department of Natural Resources, Marine Resources Office, 217 Ft. Johnson Road, Charleston, SC 29412. The June 23, 2016, public hearing will

be held at the Crystal Coast Civic Center, 2nd Floor, 3505 Arendell St, Morehead City, NC 28557. People needing reasonable accommodations in order to attend and participate or who have questions about the public hearings should contact Andrew Herndon, NMFS, Southeast Regional Office (SERO), as soon as possible (see **FOR FURTHER INFORMATION CONTACT**).

FOR FURTHER INFORMATION CONTACT: Jason Rueter, NMFS, Southeast Regional Office, 727-824-5312, Jason.Rueter@noaa.gov; Andrew Herndon, Southeast Regional Office, 727-824-5312, Andrew.Herndon@noaa.gov; Lisa Manning, NMFS, Office of Protected Resources, 301-427-8466, Lisa.Manning@noaa.gov.

SUPPLEMENTARY INFORMATION: In accordance with section 4(b)(2) of the ESA and our implementing regulations (50 CFR 424.12), this proposed rule is based on the best scientific information available concerning the range, biology, habitat, threats to the habitat, and conservation objectives for the Carolina and South Atlantic DPSs of Atlantic sturgeon. We have reviewed the information (e.g., provided in reports, peer-reviewed literature, and technical documents) and have used it to identify physical features essential to the conservation of each DPS, the specific areas within the occupied areas that contain the essential physical features that may require special management considerations or protections, unoccupied areas that are essential to the DPSs' conservation, the federal activities that may impact the essential features or areas, and the potential impacts of designating critical habitat for each DPS. The economic, national security, and other relevant impacts of the proposed critical habitat designations for each DPS are described in the draft document titled, Impact Analysis of Critical Habitat Designation for the Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*). This supporting document is available at http://sero.nmfs.noaa.gov/protected_resources/sturgeon/index.html or upon request (see **ADDRESSES**).

Background

In 2012, we listed five DPSs of Atlantic sturgeon under the ESA: four were listed as endangered and one as threatened (77 FR 5880 and 5914; February 6, 2012). Two DPSs of Atlantic sturgeon, both endangered, occur within the southeastern United States (Carolina DPS and the South Atlantic DPS; 77 FR 5914; February 6, 2012); and three DPSs

of Atlantic sturgeon (the endangered New York Bight DPS and Chesapeake Bay DPS, and the threatened Gulf of Maine DPS; 77 FR 5880, February 6, 2012) occur in the northeast United States. On March 18, 2014, two non-governmental organizations filed a lawsuit alleging NMFS had violated the ESA by failing to issue proposed and final rules designating critical habitat for Atlantic sturgeon DPSs. Pursuant to a court-ordered settlement agreement, as modified, NMFS agreed to submit proposed rules designating critical habitat for all distinct population segments of Atlantic sturgeon to the **Federal Register** by May 30, 2016. This rule proposing to designate critical habitat for the Carolina and South Atlantic DPSs of Atlantic sturgeon is complemented by a concurrent rule proposing to designate critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon.

Atlantic Sturgeon Natural History and Status

There are two subspecies of Atlantic sturgeon—the Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). Historically, the Gulf sturgeon occurred from the Mississippi River east to Tampa Bay in Florida. Its present range extends from Lake Pontchartrain and the Pearl River system in Louisiana and Mississippi east to the Suwannee River in Florida. The Gulf sturgeon was listed as threatened under the ESA in 1991. This proposed rule addresses the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), which is distributed along the eastern coast of North America. Historically, sightings of Atlantic sturgeon have been reported from Hamilton Inlet, Labrador, Canada, south to the St. Johns River, Florida. Reported occurrences south of the St. Johns River, Florida, have been rare but have increased recently with the evolution of acoustic telemetry coupled with increased receiver arrays.

Although there is considerable variability among species, all sturgeon species (order *Acipenseriformes*) have some common life history traits. They all: (1) Occur within the Northern Hemisphere; (2) spawn in freshwater over hard bottom substrates; (3) generally do not spawn annually; (4) are benthic foragers; (5) mature relatively late and are relatively long lived; and, (6) are relatively sensitive to low dissolved oxygen levels (Dees, 1961; Sulak and Clugston, 1999; Billard and Lecointre, 2001; Secor and Niklitschek, 2002; Pikitch *et al.*, 2005).

Atlantic sturgeon have all of the above traits. They occur along the eastern coast of North America from Hamilton Inlet, Labrador, Canada to Cape Canaveral, Florida, USA (Bigelow and Welsh, 1924; Dees, 1961; Vladykov and Greeley, 1963; NMFS and USFWS, 2007; T. Savoy, CT DEEP, pers. comm.). Atlantic sturgeon are a long-lived, late-maturing, estuarine-dependent, anadromous species with a maximum lifespan of up to 60 years, although the typical lifespan is probably much shorter (Sulak and Randall, 2002; Balazik *et al.*, 2010). Atlantic sturgeon reach lengths up to 14 feet (ft) (4.27 meters [m]), and weigh over 800 pounds (363 kilograms). Many datasets demonstrate clinal variation in vital parameters of Atlantic sturgeon populations, with faster growth and earlier age at maturation in more southern systems. Atlantic sturgeon mature between the ages of 5 and 19 years in South Carolina (Smith *et al.*, 1982), between 11 and 21 years in the Hudson River (Young *et al.*, 1988), and between 22 and 34 years in the St. Lawrence River (Scott and Crossman, 1973). Atlantic sturgeon likely do not spawn every year. Multiple studies have shown that spawning intervals range from 1 to 5 years for males (Smith, 1985; Collins *et al.*, 2000; Caron *et al.* 2002) and 2 to 5 years for females (Vladykov and Greeley, 1963; Van Eenennaam *et al.*, 1996; Stevenson and Secor, 1999). Fecundity of Atlantic sturgeon has been correlated with age and body size, with egg production ranging from 400,000 to 8 million eggs per year (Smith *et al.*, 1982; Van Eenennaam and Doroshov, 1998; Dadswell, 2006). The average age at which 50 percent of maximum lifetime egg production is achieved is estimated to be 29 years, approximately 3 to 10 times longer than for other bony fish species examined (Boreman, 1997).

Analysis of stomach contents for adults, subadults (*i.e.*, sexually immature Atlantic sturgeon that have emigrated from the natal estuary), and juveniles (*i.e.*, sexually immature Atlantic sturgeon that have not yet emigrated from the natal estuary) confirms that Atlantic sturgeon are benthic foragers (Ryder, 1888; Bigelow and Schroeder, 1953; Johnson *et al.*, 1997; Secor *et al.*, 2000; NMFS and USFWS, 2007; Guilbard *et al.*, 2007; Hatin *et al.*, 2007; Savoy, 2007; Dzaugis, 2013; McLean *et al.*, 2013).

An anadromous species, Atlantic sturgeon spawn in freshwater of rivers that flow into a coastal estuary. Spawning adults migrate upriver in the spring, typically during February and March in southern systems, April and May in mid-Atlantic systems, and May

and July in Canadian systems (Murawski and Pacheco, 1977; Smith, 1985; Bain, 1997; Smith and Clugston, 1997; Caron *et al.*, 2002). A fall spawning migration has been hypothesized for many years (Rogers and Weber, 1995; Weber and Jennings, 1996; Moser *et al.*, 1998) and was recently verified in the Roanoke River, North Carolina, and the Altamaha River, Georgia (Smith *et al.*, 2015; Ingram and Peterson in Post *et al.*, 2014). There is also a growing body of evidence that some Atlantic sturgeon river populations have two spawning seasons comprised of different spawning adults (Darden in Post *et al.*, 2014; Balazik and Musick, 2015).

Spawning typically occurs in flowing water upriver of the salt front of estuaries and below the fall line of large rivers (Borodin, 1925; Leland, 1968; Scott and Crossman, 1973; Crance, 1987; Bain *et al.*, 2000). The fall line is the boundary between an upland region of continental bedrock and an alluvial coastal plain, sometimes characterized by waterfalls or rapids. Spawning sites are well-oxygenated areas with flowing water ranging in temperature from 13 °Celsius (C; 55 °F (F)) to 26 °C (79 °F), and hard bottom substrate such as cobble, coarse sand, hard clay, and bedrock (Ryder, 1888; Dees, 1961; Vladykov and Greeley, 1963; Scott and Crossman, 1973; Gilbert, 1989; Smith and Clugston, 1997; Bain *et al.* 2000; Collins *et al.*, 2000; Balazik *et al.* 2012; Hager *et al.* 2014). Depth at which fish spawn and water depth leading to spawning sites may be highly variable. Atlantic sturgeon in spawning condition have been tracked and captured at depths up to 27m (Borodin 1925; Dees 1961; Hatin *et al.*, 2002; Balazik *et al.*, 2012; Hager *et al.*, 2014).

Within minutes of being fertilized, the eggs become sticky and adhere to the substrate for the relatively short and temperature-dependent period of larval development (Ryder, 1888; Vladykov and Greeley, 1963; Murawski and Pacheco, 1977; Smith *et al.*, 1980; Van den Avyle, 1984; Mohler, 2003). Hatching occurs approximately 94 to 140 hours after egg deposition at temperatures of 68.0 °F to 64.4 °F (20 to 18 °C), respectively. The newly emerged larvae assume a demersal existence (Smith *et al.*, 1980). The yolk sac larval stage is completed in about 8 to 12 days, during which time the larvae move downstream to rearing grounds (Kynard and Horgan, 2002). During the first half of their migration downstream, movement occurs only at night. During the day, larvae use benthic structure (*e.g.*, gravel matrix) as refuge (Kynard and Horgan, 2002). During the latter half

of migration, when larvae are more fully developed, movement to rearing grounds occurs during both the day and night.

Larval Atlantic sturgeon (*i.e.*, less than 4 weeks old, with total lengths (TL) less than 30 mm; Van Eenennaam *et al.*, 1996) are assumed to inhabit the same areas where they were spawned and live at or near the bottom (Ryder, 1888; Smith *et al.*, 1980; Bain *et al.*, 2000; Kynard and Horgan, 2002; Greene *et al.*, 2009). The best available information for behavior of larval Atlantic sturgeon is described from hatchery studies. Upon hatching, larvae are nourished by the yolk sac, are mostly pelagic (*e.g.*, exhibit a “swim-up and drift-down” behavior in hatchery tanks; Mohler, 2003), and move away from light (*i.e.*, negative photo-taxis; Kynard and Horgan, 2002; Mohler, 2003). Within days, larvae exhibit more benthic behavior until the yolk sac is absorbed at about 8 to 10 days post-hatching (Kynard and Horgan, 2002; Mohler, 2003). Post-yolk sac larvae occur in the water column but feed at the bottom of the water column (Mohler, 2003; Richardson *et al.*, 2007).

The next phase of development, referred to as the juvenile stage, lasts months to years in brackish waters of the natal estuary (Holland and Yelverton, 1973; Dovel and Berggen, 1983; Waldman *et al.*, 1996; Shirey *et al.*, 1997; Collins *et al.*, 2000; Secor *et al.*, 2000; Dadswell, 2006; Hatin *et al.*, 2007; NMFS and USFWS, 2007; Calvo *et al.*, 2010; Schueller and Peterson, 2010). Juveniles occur in oligohaline waters (salinity of 0.5 to 5 parts per thousand [ppt]) and mesohaline waters (salinity of 5 to 18 ppt) of the natal estuary during growth and development. They will eventually move into polyhaline waters (salinity of 18–30 ppt) before emigrating to the marine environment. Larger, presumably older, juveniles occur across a broader salinity range than smaller, presumably younger, juveniles (Bain, 1997; Shirey *et al.*, 1997; Haley, 1999; Bain *et al.*, 2000; Collins *et al.*, 2000; Secor *et al.*, 2000; Hatin *et al.*, 2007; McCord *et al.*, 2007; Munro *et al.*, 2007; Sweka *et al.*, 2007; Calvo *et al.*, 2010).

The distribution of Atlantic sturgeon juveniles in the natal estuary is a function of physiological development and habitat selection based on water quality factors of temperature, salinity, and dissolved oxygen (DO), which are inter-related environmental variables. In laboratory studies with salinities of 8 to 15 ppt and temperatures of 12 °C and 20 °C, juveniles less than a year old (also known as young-of-year [YOY]) had reduced growth at 40 percent dissolved oxygen saturation, grew best at 70

percent dissolved oxygen saturation, and selected conditions that supported growth (Niklitschek and Secor, 2009 I; Niklitschek and Secor, 2009 II). Similar results were obtained for age-1 juveniles (*i.e.*, greater than 1 year old and less than 2 years old), which have been shown to tolerate salinities of 33 ppt (*e.g.*, a salinity level associated with seawater), but grow faster in lower salinity waters (Niklitschek and Secor, 2009; Allen *et al.*, 2014). The best growth for both age groups occurred at DO concentrations greater than 6.5 milligrams per liter (mg/L). While specific DO concentrations at temperatures considered stressful for Atlantic sturgeon are not available, instantaneous minimum DO concentrations of 4.3 mg/L protect survival of shortnose sturgeon at temperatures greater than 29 °C (EPA, 2003). However, data from Secor and Niklitschek (2001) show that shortnose sturgeon are more tolerant of higher temperatures than Atlantic sturgeon, and the “high temperature” for Atlantic sturgeon is actually considered 26 °C (Secor and Gunderson, 1998).

Once suitably developed, Atlantic sturgeon leave the natal estuary and enter marine waters (*i.e.*, waters with salinity greater than 30 ppt) which marks the beginning of the subadult life stage. In the marine environment, subadults mix with adults and subadults from other river systems (Bowen and Avise, 1990; Wirgin *et al.*, 2012; Waldman *et al.*, 2013; O’Leary *et al.*, 2014). Atlantic sturgeon travel long distances in marine waters, aggregate in both ocean and estuarine areas at certain times of the year, and exhibit seasonal coastal movements in the spring and fall (Vladykov and Greeley, 1963; Oliver *et al.*, 2013).

The exact spawning locations for Carolina and South Atlantic DPS Atlantic sturgeon are unknown but inferred based on the location of freshwater, hard substrate, water depth, tracking of adults to upriver locations and the behavior of adults at those locations, historical accounts of where the caviar fishery occurred, capture of young-of-year and, in limited cases, capture of larvae and eggs. Spawning sites at multiple locations within the tidal-affected river likely help to ensure successful spawning given annual changes in the location of the salt wedge.

Critical Habitat Identification and Designation

Critical habitat represents the habitat essential for the species’ recovery and provides for the conservation of listed species in several ways (78 FR 53058,

August 28, 2013). For example, specifying the geographic location of critical habitat facilitates implementation of Section 7(a)(1) of the ESA by identifying areas where Federal agencies can focus their conservation programs and use their authorities to further the purposes of the ESA. Designating critical habitat also provides a significant regulatory protection by ensuring that the Federal Government considers the effects of its actions in accordance with Section 7(a)(2) of the ESA and avoids or modifies those actions that are likely to destroy or adversely modify critical habitat. This requirement is in addition to the Section 7 requirement that Federal agencies ensure that their actions are not likely to jeopardize the continued existence of ESA-listed species. Critical habitat requirements do not apply to citizens engaged in activities on private land that do not involve a Federal agency. However, designating critical habitat can help focus the efforts of other conservation partners (*e.g.*, State and local governments, individuals and nongovernmental organizations).

Section 3(5)(A) of the ESA defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of Section 4 of the ESA, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of Section 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species (16 U.S.C. 1532[5][A]). Conservation is defined in Section 3 of the ESA as “to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary” (16 U.S.C. 1532[3]). Therefore, critical habitat is the habitat essential for the species’ recovery. However, Section 3(5)(C) of the ESA clarifies that except in those circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species.

To identify and designate critical habitat, we considered information on the distribution of Atlantic sturgeon, the major life stages, habitat requirements of

those life stages, and conservation objectives that can be supported by identifiable physical or biological features (hereafter also referred to as “PBFs” or “essential features”). In the final rule listing the Carolina and South Atlantic DPSs of Atlantic sturgeon (77 FR 5978, February 6, 2012), habitat curtailment and alteration, bycatch in commercial fisheries, and inadequacy of existing regulatory mechanisms were found to be the threats contributing to the endangered status of both DPSs. The Carolina and South Atlantic DPSs were found to be at 3% and 6% of their historical abundances, respectively, due to these threats. Therefore, we evaluated physical and biological features of the marine, estuarine, and riverine habitats of Atlantic sturgeon to determine what features are essential to the conservation of each DPS.

Accordingly, our step-wise approach for identifying potential critical habitat areas for the Carolina and South Atlantic DPSs was to determine: the geographical area occupied by each DPS at the time of listing; the physical or biological features essential to the conservation of the DPSs; whether those features require special management considerations or protection; the specific areas of the occupied geographical area where these features occur; and, whether any unoccupied areas are essential to the conservation of either DPS.

Geographical Area Occupied by the Species

“Geographical area occupied” in the definition of critical habitat is interpreted to mean the entire range of the species at the time it was listed, inclusive of all areas they use and move through seasonally (81 FR 7413; February 11, 2016). The marine ranges of the Carolina and South Atlantic DPSs of Atlantic sturgeon extend from the Hamilton Inlet, Labrador, Canada, to Cape Canaveral, Florida (77 FR 5880, February 6, 2012). We did not consider geographical areas within Canadian jurisdiction (e.g., Minas Basin, Bay of Fundy), because we cannot designate critical habitat areas outside of U.S. jurisdiction (50 CFR 424.12(g)).

The listing rule identified the known spawning rivers for each of the Atlantic sturgeon DPSs but did not describe the in-river ranges for the DPSs. The river ranges of each DPS consist of all areas downstream of either the fall line or the first obstacle to upstream migration (e.g., the lowest hydropower dam without fish passage for sturgeon) on each river within the range of the DPS. We identified the Carolina DPS freshwater range as occurring in the

watersheds from the Roanoke River southward along North Carolina and South Carolina coastal areas to the Cooper River, South Carolina. The South Atlantic DPS freshwater range occurs from the Ashepoo-Combahee-Edisto (ACE) Basin in South Carolina to the St. Johns River, Florida.

Physical or Biological Features Essential for Conservation That May Require Special Management or Protection

Within the geographical area occupied, critical habitat consists of specific areas on which are found those PBFs essential to the conservation of the species and that may require special management considerations or protection. PBFs are defined as the features that support the life-history needs of the species, including water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. 50 CFR 424.02.

Within the area occupied by Atlantic sturgeon, we considered the various types of habitat utilized by the DPSs for various life functions. Atlantic sturgeon spend the majority of their adult lives in offshore marine waters. They are known to travel extensively up and down the East Coast. As summarized in a number of summary documents including the Atlantic Sturgeon Status Review (NMFS and USFWS, 2007) and the Atlantic States Marine Fisheries Commission’s (ASMFC) review of Atlantic coast diadromous fish habitat (Green *et al.*, 2009), Atlantic sturgeon are benthic foragers and prey upon a variety of species in marine and estuarine environments (Bigelow and Schroeder, 1953; Scott and Crossman, 1973; Johnson *et al.*, 1997; Guilbard *et al.*, 2007; Savoy, 2007; Dzaugis, 2013; McLean *et al.*, 2013). In the ocean, Atlantic sturgeon typically occur in waters less than 50 m deep, travel long distances, exhibit seasonal coastal movements, and aggregate in estuarine and ocean waters at certain times of the year (Vladykov and Greeley, 1963; Holland and Yelverton 1973; Dovel and Berggren, 1983; Dadswell *et al.*, 1984; Gilbert, 1989; Johnson *et al.*, 1997; Rochard *et al.*, 1997; Kynard *et al.*, 2000; Savoy and Pacileo, 2003; Eyler *et al.*, 2004; Stein *et al.*, 2004; Dadswell, 2006;

Eyler, 2006; Laney *et al.*, 2007; NMFS and USFWS, 2007; Dunton *et al.*, 2010; Erickson *et al.*, 2011; Dunton *et al.*, 2012; Oliver *et al.*, 2013; Wirgin *et al.*, 2015). Several winter congregations of Atlantic sturgeon in the marine environment are known to occur, though the exact location and importance of those areas in the southeast is not known, nor whether Atlantic sturgeon are drawn to particular areas based on physical or biological features of the habitat. While we can identify general movement patterns and behavior in the marine environment (e.g., aggregating behavior), due to the paucity of data on the DPSs’ offshore needs and specific habitat utilization, we could not at this time identify PBFs essential to conservation in the marine environment for the Carolina or South Atlantic DPSs.

Atlantic sturgeon utilize estuarine areas for foraging, growth, and movement. Atlantic sturgeon subadults and adults in non-spawning condition use estuarine waters seasonally, presumably for foraging opportunities, although evidence in the form of stomach content collection and analysis is limited (Savoy and Pacileo, 2007; Dzaugis, 2013). We considered all studies that have collected Atlantic sturgeon stomach contents. All of the prey species identified are indicative of benthic foraging, but different types of prey were consumed and different substrates were identified for the areas where Atlantic sturgeon were foraging (Bigelow and Schroeder, 1953; Johnson *et al.*, 1997; NMFS and USFWS, 2007; Guilbard *et al.*, 2007; Savoy, 2007; Dzaugis, 2013; McLean *et al.*, 2013). Adding to our uncertainty of the essential features that support successful foraging for growth and survival of subadults and adults, Atlantic sturgeon move between estuarine environments in the spring through fall and can occur in estuarine environments during the winter as well (Savoy and Pacileo, 2003; Simpson, 2008; Collins *et al.*, 2000; Balazik *et al.*, 2012). Subadult Atlantic sturgeon spawned in one riverine system may utilize multiple estuaries for foraging and growth, including those not directly connected to their natal river. The benthic invertebrates that comprise the diet of Atlantic sturgeon are found in soft substrates that are common and widespread in most estuaries. Limited data are available to differentiate areas of preferred prey items or higher prey abundance within or across estuaries. Due to the paucity of data on specific habitat or resource utilization, we could not at this time identify any specific

PBFs essential for the conservation of the Carolina and South Atlantic DPSs that support adult and subadult foraging in estuarine or marine environments.

Atlantic sturgeon spawning behavior and early life history have been extensively studied and are fairly well understood, though the exact location of spawning sites on many rivers (particularly in the Southeast) is not known, or can change from time to time as water depth and substrate availability changes. However, there is substantial information in the scientific literature indicating the physical characteristics of Atlantic sturgeon spawning and early life history habitat. Therefore, to evaluate potential critical habitat, we focused on identifying the physical or biological features that support Atlantic sturgeon reproduction and survival of early life stages.

The scientific literature indicates that Atlantic sturgeon spawning occurs well upstream, at or near the fall line of rivers, over hard substrate consisting of rock, pebbles, gravel, cobble, limestone, or boulders (Gilbert, 1989; Smith and Clugston, 1997). Hard substrate is required so that highly adhesive Atlantic sturgeon eggs have a surface to adhere to during their initial development and young fry can utilize the interstitial spaces between rocks, pebbles, cobble, etc., to hide from predators during downstream movement and maturation (Gilbert, 1989; Smith and Clugston, 1997).

Very low salinity (*i.e.*, 0.0–0.5 ppt) is another important feature of Atlantic sturgeon spawning habitat. Exposure to even low levels of salinity can kill Atlantic sturgeon during their first few weeks of life, thus their downstream movement is limited until they can endure brackish waters (Bain *et al.*, 2000). Shortnose sturgeon tend to spawn 200–300 km upriver, preventing the youngest life stages from salt exposure too early in their development (Parker and Kynard, 2005; Kynard, 1997). Parker and Kynard (2005) also noted that long larval/early juvenile downstream movement is common in both shortnose sturgeon from the Savannah River and Gulf sturgeon (a sub-species of Atlantic sturgeon), and that this may be a widespread adaptation of sturgeon inhabiting river systems in the southern United States. Due to their similar life history, Atlantic sturgeon most likely adapted a similar spawning strategy. Therefore, it is essential that the spawning area has low salinity, and that the spawning location is far enough upstream to allow newly-spawned Atlantic sturgeon to develop and mature on their downstream movement before encountering saline

water. During their downstream movement, it is important for developing fish to forage in areas of soft substrate and to encounter transitional salinity zones to allow physiological adaptations to higher salinity waters.

Minimum water depths for Atlantic sturgeon spawning are necessary to: (1) Allow adult fish to access spawning substrate, (2) adequately hydrate and aerate newly deposited eggs, and (3) facilitate successful development and downstream movement of newly spawned Atlantic sturgeon. However, water depth at these important spawning areas in the Southeast can be dynamic and portions of rivers may be dry or have little water at times due to natural seasonal river fluctuations, temporary drought conditions, and/or regulation by manmade structures such as dams; thus, these sites require protection to provide consistent services for sturgeon. The scientific literature indicates that Atlantic sturgeon spawn in water depths from 3–27 m (9.8–88.6 ft) (Borodin, 1925; Leland, 1968; Scott and Crossman, 1973; Crance, 1987; Bain *et al.*, 2000). However, much of this information is derived from studies of Atlantic sturgeon in northern United States and Canadian river systems. Atlantic sturgeon in the Southeast are likely spawning in much shallower water depths based on repeated observations by biologists of sturgeon with lacerations on their undersides from moving into extremely shallow water to spawn on hard substrate. In the Southeast, water depths no less than 1.2 m (4 ft) are deep enough to accommodate the body depth and spawning behavior of adult Atlantic sturgeon.

We considered fluid dynamic features as another potential essential feature of Atlantic sturgeon spawning critical habitat. The scientific literature provides information on the importance of appropriate water velocity within Atlantic sturgeon spawning habitat and provides optimal flows for some rivers. Atlantic sturgeon spawn directly on top of gravel in fast flowing sections often containing eddies or other current breaks. Eddies promote position holding between spawning individuals, trap gametes facilitating fertilization, and diminish the probability of egg dislocation by currents—facilitating immediate adhesion of eggs to the gravel substrate (Sulak and Clugston, 1999). However, velocity data are lacking for many rivers, and where data are available, the wide fluctuations in velocity rates on a daily, monthly, seasonal, and annual basis make it difficult to identify a range of water velocity necessary for the conservation

of the species. However, we do know that water flow must be continuous.

Adult Atlantic sturgeon must be able to safely and efficiently move from downstream areas into upstream spawning habitats in order to successfully spawn. In addition, larvae and juvenile Atlantic sturgeon must be able to safely and efficiently travel from the upstream spawning areas downstream to nursery and foraging habitat. Therefore, an essential feature for Atlantic sturgeon spawning is unobstructed migratory pathways for safe movement of adults to and from upstream spawning areas as well as providing safe movement for the larvae and juveniles moving downstream. An unobstructed migratory pathway means an unobstructed river or a dammed river that still allows for passage.

Water quality can be a critically limiting factor to Atlantic sturgeon in the shallow, warm, poorly oxygenated rivers of the southeast United States. Conditions in these river systems can change rapidly, particularly in rivers managed for hydropower production, and conditions can quickly become suboptimal or lethal for sturgeon. We considered essential water quality features that support movement and spawning of adults and growth and development of juvenile Atlantic sturgeon. The distribution of Atlantic sturgeon juveniles in the natal estuary is a function of physiological development and habitat selection based on water quality factors of temperature, salinity, and dissolved oxygen, which are inter-related environmental variables. In laboratory studies with salinities of 8 to 15 parts per thousand and temperatures of 12 °C and 20 °C, juveniles less than a year old (YOY) had reduced growth at 40 percent dissolved oxygen saturation, grew best at 70 percent dissolved oxygen saturation, and selected conditions that supported growth (Niklitschek and Secor, 2009 I; Niklitschek and Secor, 2009 II). Results obtained for age-1 juveniles (*i.e.*, greater than 1 year old and less than 2 years old) indicated that they can tolerate salinities of 33 parts per thousand (*i.e.*, a salinity level associated with seawater), but grow faster in lower salinity waters (Niklitschek and Secor, 2009; Allen *et al.*, 2014). The best growth for both age groups occurred at dissolved oxygen concentrations greater than 6.5 mg/L. While specific dissolved concentrations at temperatures considered stressful for Atlantic sturgeon are not available, instantaneous minimum concentrations of 4.3 mg/L protect survival of shortnose sturgeon at temperatures greater than 29 °C (EPA, 2003). However, data from

Secor and Niklitschek (2001) show that shortnose sturgeon are more tolerant of higher temperatures than Atlantic sturgeon, thus the “stressful temperature” for Atlantic sturgeon is considered 26 °C (Secor and Gunderson, 1998).

In summary, within the area occupied by Atlantic sturgeon, we considered the various types of habitat utilized by the species for various life functions. We determined that Atlantic sturgeon spend the majority of their adult lives in offshore marine waters where they are known to travel extensively up and down the East Coast. However, we could not identify any PBFs in marine waters essential for the conservation of the species. We also determined Atlantic sturgeon utilize estuarine areas for foraging, growth, and movement. The ability of subadults to find and access food is necessary for continued survival, growth, and physiological development to the adult life stage. Likewise, given that Atlantic sturgeon mature late and do not necessarily spawn annually, increased adult survival would improve the chances that adult Atlantic sturgeon spawn more than once. Therefore, we determined a conservation objective for the Carolina and South Atlantic DPSs is to increase the abundance of each DPS by facilitating increased survival of all life stages. After examining the information available on spawning and early life history behavior and habitat, we also concluded that facilitating adult reproduction and juvenile and subadult recruitment into the adult population are other conservation objectives for the Carolina and South Atlantic DPSs of Atlantic sturgeon. We could not identify any specific PBFs essential for the conservation of the species that support adult and subadult foraging in estuarine or marine environments. We determined that protecting spawning areas, juvenile development habitat, the migratory corridors that allow adults to reach the spawning areas and newly spawned sturgeon to make a safe downstream migration, and water quality to support all life stages, will facilitate meeting the conservation objectives discussed above.

Given the biological needs and tolerances, and environmental conditions for Atlantic sturgeon in southeast rivers as summarized above, and the habitat-based conservation objectives, the physical features essential for conservation are:

- Suitable hard bottom substrate (*e.g.*, rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (*i.e.*, 0.0–0.5 ppt range) for settlement of fertilized

eggs and refuge, growth, and development of early life stages;

- Transitional salinity zones inclusive of waters with a gradual downstream gradient of 0.5–30 ppt and soft substrate (*e.g.*, sand, mud) downstream of spawning sites for juvenile foraging and physiological development;

- Water of appropriate depth and absent physical barriers to passage (*e.g.*, locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) Unimpeded movement of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and (3) staging, resting, or holding of subadults and spawning condition adults. Water depths in main river channels must be deep enough to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river. Water depths of at least 1.2 m are generally deep enough to facilitate effective adult migration and spawning behavior.

- Water quality conditions, especially in the bottom meter of the water column, with temperature and oxygen values that support: (1) Spawning; (2) annual and inter-annual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment.

Appropriate temperature and oxygen values will vary interdependently, and depending on salinity in a particular habitat. For example, 6.0 mg/L D.O. for juvenile rearing habitat is considered optimal, whereas D.O. less than 5.0 mg/L for longer than 30 days is considered suboptimal when water temperature is greater than 25 °C. In temperatures greater than 26 °C, D.O. greater than 4.3 mg/L is needed to protect survival and growth. Temperatures of 13 °C to 26 °C for spawning habitat are considered optimal.

Need for Special Management Considerations or Protection

We concluded that each of the essential features defined above may require special management considerations or protection. Barriers (*e.g.*, dams, tidal turbines) to generate power or control water flow in rivers used by Atlantic sturgeon can damage or destroy bottom habitat needed for spawning and rearing of juveniles, restrict movement of adults to and from spawning grounds, prevent juveniles from accessing the full range of salinity exposure in the natal estuary, and alter water quality parameters, including water depth, temperature and dissolved

oxygen, to the detriment of sturgeon reproduction, growth, and survival. Water withdrawals can similarly adversely impact water quality for Atlantic sturgeon spawning, recruitment, and development. Land development and commercial and recreational activities on a river can contribute to sediment deposition that affects water quality necessary for successful spawning and recruitment. A build-up of fine sediments may, for example, reduce the suitability of hard spawning substrate for Atlantic sturgeon egg adherence and reduce the interstitial spaces used by larvae for refuge from predators. Dredging to remove sediment build-up, to deepen harbors and facilitate vessel traffic, or to mine construction materials, may remove or alter hard substrate that is necessary for egg adherence and as refuge for larvae or soft substrate needed for juvenile foraging, and may change the water depth resulting in shifts in the salt wedge within the estuary or change other characteristics of the water quality (*e.g.*, temperature, dissolved oxygen) necessary for the developing eggs, larvae, and juveniles.

The features essential for successful Atlantic sturgeon reproduction and recruitment may also require special management considerations or protection as a result of global climate change. Conditions in Southeast rivers used by sturgeon already threaten the species' survival and recovery due to exceedances of temperature tolerances and the sensitivity of sturgeon to low dissolved oxygen levels; these impacts will worsen as a result of global climate change and predicted warming of the southeast region. Many communities and commercial facilities withdraw water from the rivers containing the features essential to Atlantic sturgeon reproduction. Water withdrawals during drought events can affect flows, depths, and the position of the salt wedge, further impacting the water flow necessary for successful sturgeon reproduction and affect dissolved oxygen levels. Attempts by communities to control water during floods (*e.g.*, spilling water from dams upriver of Atlantic sturgeon spawning and rearing habitat) can similarly alter flows to the point of dislodging fertilized eggs, washing early life stages downstream into more saline habitat before being developmentally ready, and create barriers (*e.g.*, from debris) to upstream and downstream passage of adults and juveniles. We therefore conclude that the physical features essential to the conservation of the Carolina and South Atlantic DPSs may require special

management considerations or protections.

Specific Areas Containing the Essential Features Within the Geographical Area Occupied by the Species

To identify where the essential features occur within areas occupied by Atlantic sturgeon, we reviewed the best available scientific information, including the 2007 Atlantic sturgeon status review (ASSRT, 2007), the ESA listing rules (77 FR 5914; February 6, 2012), scientific research reports, information and data gathered during the peer-review process, and a database developed by the U.S. Geological Survey for mapping environmental parameters within East Coast Rivers to identify sturgeon habitat. We also considered information on the location of sturgeon spawning activity from scientific reports, as active spawning in an area would indicate that the essential features necessary for spawning are likely present. Information on documented spawning in specific areas in the Southeast is rare, but some does exist. For example, large sections of the Altamaha River have been found to support Atlantic sturgeon spawning activities for many years (Peterson *et al.*, 2006; Peterson *et al.*, 2008). We reviewed reports from a NMFS-funded multi-year, multi-state research project on movement and migration of Atlantic sturgeon (Species Recovery Grant number NA10NMF4720036, Post *et al.*, 2014). In these reports, researchers determined which portions of Southeastern rivers support spawning activities by looking at the upriver extent of sturgeon movements during spawning season.

There are large areas of most rivers where data are still lacking. The available data also represent a snapshot in time, while the exact location of a habitat feature may change over time (*e.g.*, water depth fluctuates seasonally, as well as annually, and even hard substrate may shift position). For example, some data indicate a change in substrate type with in a given location from year to year (*e.g.*, from sand to gravel). It is not always clear whether such changes are due to an actual shift in substrate sediments or if the substrate sample was collected in a slightly different location between samplings. Although the habitat features may vary even at the same location, if any of the available data regarding a particular feature fell within the suitable range (*i.e.*, salinity of 0–0.5 ppt, water depths from 1.2–27 m, or hard substrate [gravel, cobble, etc.]), we considered that the essential feature is present in the area.

When data were not available for certain rivers or portions of occupied rivers, we used our general knowledge of Atlantic sturgeon spawning and applied river-specific information to determine the location of features essential to spawning. We considered salinity tolerance during the earliest life stages to determine appropriate habitat for larvae to develop as they mature. Available telemetry data suggest that most Atlantic sturgeon spawning activity in the Savannah and Altamaha start around river kilometer (RKM) 100 (Post *et al.*, 2014). Similar evidence from the Edisto, Neuse, and Tar-Pamlico rivers indicates spawning activity starts around RKM 80. Peer review comments on the Draft Economic and Biological Information to Inform Atlantic Sturgeon Critical Habitat Designation indicated that Atlantic sturgeon spawn below the fall line, unlike shortnose sturgeon that may spawn well above the fall line.

In order to encompass all areas important for Atlantic sturgeon spawning, reproduction, and recruitment within rivers where spawning is believed to occur or may occur, we identified specific areas of critical habitat from the mouth (RKM 0) of each spawning river to the upstream extent of the spawning habitat. Other than an unexplained report of an Atlantic sturgeon carcass upstream of dams in the Santee Cooper system, we have no evidence that Atlantic sturgeon can pass upstream of dams (*i.e.*, through turbines or fishways for shad and herring) and thus we are considering those upstream areas as unoccupied for the purpose of this rulemaking. Manmade barriers currently restrict upstream movement of Atlantic sturgeon in the Cape Fear, Santee-Cooper, and Savannah River systems. In other rivers, either the fall line, or for those rivers that do not reach the fall line, an easily identifiable landmark (*e.g.*, a bridge) near the headwaters is considered the upstream extent of spawning habitat.

To identify specific habitats used by an Atlantic sturgeon DPS in occupied rivers, we considered available information that described: (1) Capture location and/or tracking locations of Atlantic sturgeon identified to its DPS by genetic analysis; (2) capture location and/or tracking locations of adult Atlantic sturgeon identified to its DPS based on the presence of a tag that was applied when the sturgeon was captured as a juvenile in its natal estuary; (3) capture or detection location of adults in spawning condition (*i.e.*, extruding eggs or milt) or post-spawning condition (*e.g.*, concave abdomen for females); (4) capture or detection of YOY and other

juvenile age classes; and, (5) collection of eggs or larvae.

Large Coastal Rivers that Lack Essential Features

Several large coastal rivers within the geographic area occupied by the Carolina and South Atlantic DPSs of Atlantic sturgeon do not appear to support spawning and juvenile recruitment or to contain suitable habitat features to support spawning. These rivers are the Chowan and New Rivers in North Carolina; the Waccamaw (above its confluence with Bull Creek which links it to the Pee Dee River), Sampit, Ashley, Ashepoo, and Broad-Coosawhatchie Rivers in South Carolina; and the St. Johns River, Florida. We have no information, current or historic, of Atlantic sturgeon using the Chowan and New Rivers in North Carolina. Recent telemetry work by Post *et al.* (2014) indicates that Atlantic sturgeon do not utilize the Sampit, Ashley, Ashepoo, and Broad-Coosawhatchie Rivers in South Carolina. These rivers are short, coastal plains rivers that most likely do not contain suitable habitat for Atlantic sturgeon. Post *et al.* (2014) also found Atlantic sturgeon only use the portion of the Waccamaw River downstream of Bull Creek. Due to man-made structures and alterations, spawning areas in the St. Johns River are not accessible and therefore do not support a reproducing population. For these reasons, we are not designating these coastal rivers, or portions of the rivers, as critical habitat. For rivers we are proposing to designate as critical habitat, we have historical or current information that they support spawning and juvenile recruitment as described below.

Roanoke River

The Roanoke River was identified as a spawning river for Atlantic sturgeon based on the capture of juveniles, the collection of eggs, and the tracking location of adults. Further, there was information indicating the historical use of the Roanoke River by Atlantic sturgeon.

Atlantic sturgeon were historically abundant in the Roanoke River and Albemarle Sound, but declined dramatically in response to intense fishing effort in the late 1800's (Armstrong and Hightower, 2002). There is still a population present in the Albemarle Sound and Roanoke River (Armstrong and Hightower, 2002; Smith *et al.*, 2014). DNA analyses of juveniles captured in Albemarle Sound indicate that these fish are genetically distinct from Atlantic sturgeon collected in

other systems (Wirgin *et al.*, 2000; King *et al.*, 2001).

Historical records and recent research provide accounts of Atlantic Sturgeon spawning within the fall zone (RKM 204–242) of the Roanoke River (Yarrow, 1874; Worth, 1904; Armstrong and Hightower, 2002; Smith *et al.*, 2014). Atlantic sturgeon remains from archaeological sites on the Roanoke River have been found as far upstream as RKM 261, approximately 19 miles above the upper end of the fall zone (Armstrong and Hightower, 2002; VanDerwarker, 2001); however, that was prior to the construction of dams now located throughout the river. The farthest downstream dam, the Roanoke Rapids Dam, is located near the fall line at RKM 221. No fish passage exists at this dam, so all Atlantic sturgeon are restricted to the lower 17 RKM of fall zone habitat, which extends from the Roanoke Rapids Dam to Weldon, North Carolina at RKM 204 (Armstrong and Hightower, 2002; Smith *et al.*, 2014).

Historic and current data indicate that spawning occurs in the Roanoke River, where both adults and small juveniles have been captured. Since 1990, the North Carolina Division of Marine Fisheries (NCDMF) has conducted the Albemarle Sound Independent Gill Net Survey (IGNS). From 1990 to 2006, 842 sturgeon were captured ranging from 15.3 to 100 centimeters (cm) fork length (FL), averaging 47.2 cm FL. One hundred and thirty-three (16%) of the 842 sturgeon captured were classified as YOY (41 cm TL, 35 cm FL); the others were subadults (ASSRT, 2007). A recent study by Smith *et al.* (2014), using acoustic telemetry data and egg collection during the fall of 2013, identified a spawning location near Weldon, North Carolina (RKM 204). The location contains the first shoals encountered by Atlantic sturgeon as they move upstream to spawn (Smith *et al.*, 2014). The channel in this area is approximately 100 m wide and the substrate is primarily bedrock, along with fine gravel and coarse sediments in low-flow areas (Smith *et al.*, 2014). During the study, 38 eggs were collected during 21 days that spawning pads were deployed (Smith *et al.*, 2014).

A scientific survey also shows the presence of adult Atlantic sturgeon in the Roanoke River. Using side-scan sonar, Flowers and Hightower (2015) conducted surveys near the freshwater-saltwater interface with repeated surveys performed over 3 days. The surveys detected 4 Atlantic sturgeon greater than 1 m total length. Based on these detections, an abundance estimate for riverine Atlantic sturgeon of 10.9 (95% confidence interval 3–36) fish

greater than 1 m was calculated for the Roanoke River. This estimate does not account for fish less than 1 m total length, occurring in riverine reaches not surveyed, or in marine waters.

Tar-Pamlico River

The Tar-Pamlico River was identified as a spawning river for Atlantic sturgeon based on the evidence of spawning and the capture of juveniles. The Tar-Pamlico River, one of two major tributaries to Pamlico Sound, is dammed. However, all riverine habitat is accessible to Atlantic sturgeon in the Tar-Pamlico River, because the lowermost dam, the Rocky Mount Mill Pond Dam (RKM199), is located at the fall line.

Evidence of spawning was reported by Hoff (1980), after the capture of very young juveniles in the Tar River. Two juveniles were observed dead on the bank of Banjo Creek, a tributary to the Pamlico System (ASSRT, 2007). A sampling program similar to the Albemarle Sound IGNS collected 14 Atlantic sturgeon in 2004. These fish ranged in size from 460 to 802 mm FL and averaged 575 mm FL. The NCDMF Observer Program reported the capture of 12 Atlantic sturgeon in the Pamlico Sound from April 2004 to December 2005; these fish averaged 600 mm TL (ASSRT, 2007).

Neuse River

The Neuse River was identified as a spawning river for Atlantic sturgeon based on the evidence of spawning and the capture of juveniles. Evidence of spawning was reported by Hoff (1980), who noted captures of very young juveniles in the Neuse River. An independent gill net survey was initiated in 2001 following the Albemarle Sound IGNS methodology. Collections were low during the periods of 2001–2003, ranging from zero to one fish/year. However, in 2004, this survey collected 14 Atlantic sturgeon ranging from 460 to 802 mm FL, and averaging 575 mm FL. During the same time period (2002–2003), four Atlantic sturgeon (561–992 mm FL) were captured by North Carolina State University personnel sampling in the Neuse River (Oakley, 2003). Similarly, the NCDMF Observer Program documented the capture of 12 Atlantic sturgeon in the Pamlico Sound from April 2004 to December 2005; none of these were YOY or spawning adults, averaging approximately 600 mm TL (ASSRT, 2007).

Cape Fear River System

The Cape Fear and Northeast Cape Fear Rivers were identified as spawning

river for Atlantic sturgeon based on the capture of juveniles, the capture of adults in spawning condition, and the tracking location of adults, and information indicating the historical use by Atlantic sturgeon. In the late 1800's, the Cape Fear River had the largest landings of sturgeon in the southeastern United States (Moser and Ross, 1995). While species identification (*i.e.*, shortnose or Atlantic sturgeon) is not possible, these landings suggest large populations of both species. The Cape Fear River is tidally influenced by diurnal tides up to at least RKM 96. The River is also dredged extensively to maintain a depth of 12 m up to RKM 49 and then a depth of 4 m up to Lock and Dam 1. There are numerous deep holes (>10 m) throughout this extent.

A gill net survey for adult shortnose and juvenile Atlantic sturgeon was conducted in the Cape Fear River drainage from 1990 to 1992, and replicated from 1997 to 2005. Each sampling period included two overnight sets. The 1990–1992 survey captured 100 Atlantic sturgeon below Lock and Dam #1 (RKM 95). In 1997, 16 Atlantic sturgeon were captured below Lock and Dam #1, an additional 60 Atlantic sturgeon were caught in the Brunswick (a tributary of the Cape Fear River), and 12 were caught in the Northeast Cape Fear River (Moser *et al.* 1998). Additionally, Ross *et al.* (1988 in Moser and Ross, 1995) reported the capture of a gravid female in the Cape Fear River.

Recent telemetry work conducted in the Cape Fear and Northeast Cape Fear River showed that subadult Atlantic sturgeon movement and distribution followed seasonal patterns (Loeffler and Collier in Post *et al.*, 2014). During summer months, Atlantic sturgeon distribution was shifted upriver with limited large-scale movements; during the coldest time of year, subadult fish were absent from the rivers and had migrated to the estuary or ocean (Loeffler and Collier in Post *et al.*, 2014). The high inter-annual return rates of tagged fish to the system demonstrate that Atlantic sturgeon have fidelity to these rivers; this implies that the Cape Fear River system may be the natal system for these fish (Loeffler and Collier in Post *et al.*, 2014).

Further evidence of the importance of this system is demonstrated by the movement patterns of one of five adult Atlantic sturgeon tagged during the study that has shown site fidelity. This individual fish was in ripe and running condition at the time of tagging. This fish subsequently returned to the Cape Fear system each of the following years (2013 and 2014) and has been detected farther upstream in both the Cape Fear

(RKM 95) and Northeast Cape Fear (RKM 132) rivers than any tagged subadult fish during this study. This fish did not use the fish passage rock arch ramp at Lock and Dam #1; however, at the time when it was present at the base of the dam, the rock arch ramp structure was only partially complete. In all years of the study this fish had movement patterns that are consistent with spawning behavior and demonstrate that both the Northeast Cape Fear and Cape Fear Rivers may be important spawning areas. While telemetry data have not indicated Atlantic sturgeon presence above Lock and Dam #1, we believe the fish passage present at the dam is successful or that fish pass through the lock. We base this determination on reports of Atlantic sturgeon above Lock and Dam #1 (J. Hightower, NCSU, pers. comm. To J. Rueter, NMFS, July 21, 2015).

Pee Dee River System

The Pee Dee River System was identified as providing spawning habitat used by Atlantic sturgeon based on the capture of juveniles, the capture of adults in spawning condition, and the tracking location of adults. Captures of age-1 juveniles from the Waccamaw River during the early 1980s suggest that a reproducing population of Atlantic sturgeon existed in that river, although the fish could have been from the nearby Pee Dee River (Collins and Smith 1997). In 2003 and 2004, nine Atlantic sturgeon (48.4–112.2 cm FL) were captured in the Waccamaw River during the South Carolina Department of Natural Resources annual American shad gill net survey. While these fish were not considered YOY, Collins *et al.* (1996) note that unlike northern populations, in South Carolina, YOY are considered to be less than 50 cm TL or 42.5 cm FL, because growth rates are greater in the warmer southern waters compared to cooler northern waters. Therefore, the capture of a 48.4 cm FL sturgeon provides some evidence that YOY may be present in the Waccamaw River. Based on telemetry data, these YOY were thought to have been spawned in the Pee Dee River, and then traveled downstream through Bull Creek, and into the Waccamaw River. (B. Post, SCDNR, pers. comm. to J. Rueter, NMFS, July 9, 2015).

Based on preliminary analyses of sturgeon detections during their study, Post *et al.* (2014) concluded the Pee Dee River system appears to be utilized by Atlantic sturgeon for summer/winter seasonal habitat as well as for spawning. From 2011 to 2014, 41 sturgeon were detected in upstream areas of the Pee Dee River that considered spawning

areas. All 10 Atlantic sturgeon that were originally implanted with transmitters in the Pee Dee System were later detected displaying upstream and downstream movement. Distinct movement patterns were evident for these fish as similar patterns were observed each year of the study period. Two of the 10 fish originally tagged in the Pee Dee System and many tagged fish from other systems made spawning runs in the Pee Dee River (Post *et al.*, 2014).

Black River, South Carolina

The Black River was identified as a spawning river for Atlantic sturgeon based on the capture of juveniles and the tracking location of adults. During a telemetry study from 2011 to 2014, Post *et al.* (2014) detected 10 juveniles and 10 adults utilizing the Black River. An adult male was detected at the last receiver station in the river one year (RKM 70.4) and the next to last receiver station in a subsequent year. While the receiver stations were not at the fall line, they were very far upriver, and it is likely that the only reason this fish traveled so far upriver was to spawn (B. Post, SCDNR, pers. comm. to J. Rueter, NMFS PRD, July 9, 2015). Juveniles were located as far upstream as RKM 42.1, suggesting the Black River is also an important foraging/refuge habitat.

Santee and Cooper Rivers

The Santee-Cooper River system was identified as a spawning river system for Atlantic sturgeon based on the capture of YOY. The Santee River basin is the second largest watershed on the Atlantic Coast of the United States; however with the completion of Wilson Dam in the 1940s, upstream fish migrations were restricted to the lowermost 145 RKMs of the Santee River. Following construction of the Wilson and Pinopolis Dams, the connectivity between the coastal plain and piedmont was lost. In the 1980s, a fish passage facility at the St. Stephen powerhouse, designed to pass American shad and blueback herring, was completed that attempted to restore connectivity throughout the system. (Fish passage and fishway mean any structure on or around artificial barriers to facilitate diadromous fishes' natural migration). The passage facility has not been successful for Atlantic sturgeon (Post *et al.*, 2014). However, in 2007 an Atlantic sturgeon entered the fish passage facility at the fishway to the lift, presumably in an attempt to migrate upstream to spawn, and was subsequently physically removed and then released downstream into the Santee River (A. Crosby, SCDNR, pers. comm.).

Historically, the Cooper River was a small coastal plain river that fed into Charleston Harbor. The completion of the Santee Cooper hydropower project in the 1940s dramatically changed river discharge in the Cooper River. From the 1940s into the 1980s, nearly all river discharge of the Santee River was diverted through the Santee Cooper project, run through the hydroelectric units in Pinopolis Dam, and discharged down the Tailrace Canal and into the Cooper River. In the 1980s, the Rediversion Project redirected part of the system's discharge back to the Santee River; however, a significant discharge of freshwater still flows into the Cooper River. The Cooper River provides the dominant freshwater input for the Charleston Harbor and provides 77 RKM of riverine habitat (Post *et al.*, 2014).

The capture of 151 subadults, including age-1 fish in 1997 indicates a population exists in the Santee River (Collins and Smith, 1997). Four juvenile Atlantic sturgeon, including YOY, were captured in the winter of 2003 in the Santee (N = 1) and Cooper (N = 3) Rivers (McCord, 2004). These data support the existence of a spawning population, but South Carolina Department of Natural Resources biologists working in the Santee-Cooper system believe the smaller fish are pushed into the system from the Pee Dee and/or Waccamaw River during flooding conditions (McCord, 2004). This hypothesis is based on the lack of access to suitable spawning habitat due to the locations of the Wilson Dam and St. Stephen Powerhouse on the Santee River and the Pinopolis Dam on the Cooper River. Nonetheless, the Santee-Cooper River system appears to be important foraging and refuge habitat and could serve as important spawning habitat once access to historical spawning grounds is restored through a fishway prescription under the Federal Power Act (NMFS 2007).

In a recent telemetry study by Post *et al.* (2014), four Atlantic sturgeon were tagged in the Santee River from 2011 to 2014. Of the four Atlantic sturgeon tagged in the Santee River, one was detected in the river, one was detected at the mouth of the river, and the other two have not been detected in the Santee River system since being tagged. There was no detectable spawning run or pattern of movement for the tagged fish that remained in the Santee River (Post *et al.*, 2014). There were no Atlantic sturgeon captured in the Cooper River during the Post *et al.*, 2014 study. There were seven Atlantic sturgeon detected in the Cooper River that had been tagged in other systems.

The Atlantic sturgeon that were detected in the Cooper River were more commonly detected in the saltwater tidal zone, with the exception of one that made a presumed spawning run to Pinopolis Dam in the fall of 2013 (Post *et al.*, 2014).

Edisto River

The Edisto is the largest river in the Ashepoo, Combahee, Edisto (ACE) Basin; begins in the transition zone between piedmont and coastal plain; and is unimpeded for its entire length. It is the longest free flowing blackwater river in South Carolina. During excessive rainy seasons it will inundate lowlands and swamps, and the flow basin increases to a mile wide or more. The Edisto River was identified as a spawning river for Atlantic sturgeon based on the capture of an adult in spawning condition and capture location and tracking of adults.

Spawning adults (39 in 1998) and YOY (1,331 from 1994–2001) have been captured in the ACE basin (Collins and Smith, 1997; ASSRT, 2007). One gravid female was captured in the Edisto River during sampling efforts in 1997 (ASSRT, 2007). Seventy-six Atlantic sturgeon were tagged in the Edisto River during a 2011 to 2014 telemetry study (Post *et al.*, 2014). Fifty-eight of the 76 Atlantic sturgeon tagged were detected in the Edisto River during the study. Distinct movement patterns of Atlantic sturgeon were evident. Fish entered the river between April and June and were detected in the saltwater tidal zone until water temperature decreased below 25° C. They then moved into the freshwater tidal area, and some fish made presumed spawning migrations in the fall around September–October. Spawning migrations were thought to be occurring based on fish movements upstream to the presumed spawning zone between RKM 78 and 210. Fish stayed in these presumed spawning zones for an average of 22 days. The tagged Atlantic sturgeon left the river system by November. A number of tagged individuals were detected making such movements during multiple years of the study. Only those fish that were tagged in the Edisto River were detected upstream near presumed spawning grounds, while fish detected in the Edisto River, but tagged elsewhere, were not detected near the presumed spawning areas. In the winter and spring, Atlantic sturgeon were generally absent from the system except for a few fish that remained in the saltwater tidal zone (Post *et al.*, 2014).

Combahee—Salkehatchie River

The Combahee—Salkehatchie River was identified as a spawning river for Atlantic sturgeon based on capture location and tracking locations of adults and the spawning condition of an adult. Spawning adults (39 in 1998) and YOY (1,331 from 1994–2001) have been captured in the ACE basin (Collins and Smith, 1997; ASSRT, 2007). One running ripe male was captured in the Combahee River during a sampling program in 1997 (ASSRT, 2007). Seven Atlantic sturgeon were captured and five were tagged during a 2010 and 2011 telemetry study (Post *et al.*, 2014). Atlantic sturgeon that were tagged in the Combahee River were absent from the system for the majority of the study period. An Atlantic sturgeon that was tagged in June of 2011 left the system in the fall of 2011, returned in July 2012 and left the system again in the fall of 2012. This fish was detected the farthest upstream of any tagged Atlantic sturgeon in the Combahee River (RKM 56). Another individual was identified as a running ripe male at capture in the Combahee River in March 2011, was relocated exhibiting spawning behavior in the North East Cape Fear River, NC in March, 2012, and in 2014 was detected from February–April in the Pee Dee System.

Savannah River

The Savannah River was identified as a spawning river for Atlantic sturgeon based on capture location and tracking locations of adults and the collection of larvae. Forty three Atlantic sturgeon larvae were collected in upstream locations (RKM 113–283) near presumed spawning locations (Collins and Smith, 1997). Seven Atlantic sturgeon were also tagged from 2011 to 2014 and distinct movement patterns were evident (Post *et al.*, 2014). In 2011, one individual was detected travelling upstream in mid-April and remained at a presumed spawning area (RKM 200 to 301) through mid-September. Two Atlantic sturgeon migrated into the system and upstream to presumed spawning grounds in 2012. The first entered the system in mid-August and returned downriver in mid-September; the other entered the system in mid-September and returned downriver in mid-October. Four Atlantic sturgeon entered the Savannah River and migrated upstream during the late summer and fall months in 2013. Two Atlantic sturgeon previously tagged in the Savannah River made upstream spawning movements; this was the second year (2011) one of these fish was detected making similar upstream

movements. These two fish were also detected immediately upstream of the New Savannah Bluff Lock and Dam (RKM 301). It is unknown if they passed through the lock or swam over the dam during high flows. There is a strong possibility that one fish may have been detected by the receiver directly upstream while still remaining downstream of the dam and while flow control gates were in a full open position. Atlantic sturgeon in the Savannah River were documented displaying similar behavior three years in a row—migrating upstream during the fall and then being absent from the system during spring and summer.

Ogeechee River

The Ogeechee River was identified as a spawning river for Atlantic sturgeon based on tracking of adults and YOY. Seventeen Atlantic sturgeon considered to be YOY (less than 30 cm TL) were collected in 2003 by the Army's Environmental and Natural Resources Division (AENRD) at Fort Stewart, Georgia. An additional 137 fish were captured by the AENRD in 2004. Nine of these fish measured less than 41 cm TL and were considered YOY. During a telemetry study from 2011 to 2014, there were no capture or tagging efforts conducted in the Ogeechee River; however, 40 Atlantic sturgeon were detected in the Ogeechee River (Ingram and Peterson in Post *et al.*, 2014).

Altamaha River

The Altamaha River and its major tributaries the Oconee and Ocmulgee Rivers were identified as spawning rivers for Atlantic sturgeon based on capture location and tracking of adults and the capture of adults in spawning condition. The Altamaha River supports one of the healthiest Atlantic sturgeon subpopulations in the Southeast, with over 2,000 subadults captured in trammel nets, 800 of which were nominally age-1 as indicated by size (ASSRT, 2007). A survey targeting Atlantic sturgeon was initiated in 2003 by the University of Georgia. By October 2005, 1,022 Atlantic sturgeon had been captured using trammel and large gill nets. Two hundred and sixty-seven of these fish were collected during the spring spawning run in 2004 (N = 74 adults) and 2005 (N = 139 adults). From these captures, 308 (2004) and 378 (2005) adults were estimated to have participated in the spring spawning run, representing 1.5% of Georgia's historical spawning stock (females) as estimated from U.S. Fish Commission landing records (Schueller and Peterson 2006, Secor 2002).

In a telemetry study by Peterson *et al.* (2006), most tagged adult Atlantic sturgeon were found between RKM 215 and 420 in October and November when water temperatures were appropriate for spawning. There are swift currents and rocky substrates throughout this stretch of river (Peterson *et al.*, 2006). Two hundred thirteen adults in spawning condition were captured in the Altamaha system in 2004–2005 (Peterson *et al.*, 2006).

Forty-five adult Atlantic sturgeon were captured and tagged from 2011 to 2013 (Ingram and Peterson in Post *et al.*, 2014). Telemetry data from the tagged individuals indicated that the fish were present in the system from April through December. Twenty-six fish made significant (≤ 160 RKM) migrations upstream with eight fish making the migration in at least two of the years and four making the migration in all three years of the study. No site fidelity was apparent based on these data; however, an upriver site near the confluence of the Ocmulgee (RKM 340–350) was visited by multiple fish in multiple years. Fish migrated upstream into both the Ocmulgee and Oconee Rivers, but the majority entered the Ocmulgee River. The maximum extent of these upriver migrations was RKM 408 in the Ocmulgee River and RKM 356 in the Oconee River (Ingram and Peterson in Post *et al.*, 2014).

Two general migration patterns were observed for fish in this system. Early upriver migrations that began in April–May typically occurred in two steps, with fish remaining at mid-river locations during the summer months before continuing upstream in the fall. The late-year migrations, however, were typically initiated in August or September and were generally non-stop. Regardless of which migration pattern was used during upstream migration, all fish exhibited a one-step pattern of migrating downstream in December and early January (Ingram and Peterson in Post *et al.*, 2014).

Satilla River

The Satilla River was identified as a spawning river for Atlantic sturgeon based on the capture of adults in spawning condition. Ong *et al.* (1996) captured four reproductively mature Atlantic sturgeon on spawning grounds during the spawning season in the Satilla River.

St. Marys River

The St. Marys River was identified as a spawning river for Atlantic sturgeon based on the capture of YOY Atlantic sturgeon. Atlantic sturgeon were once thought to be extirpated in the St. Marys

River. However, nine Atlantic sturgeon were captured in sampling efforts between May 19 and June 9, 2014. Captured fish ranged in size from 293 mm (YOY) to 932 mm (subadult). This is a possible indication of a slow and protracted recovery in the St. Marys (D. Peterson, UGA, pers. comm. to J. Rueter, NMFS PRD, July 8, 2015).

Unoccupied Critical Habitat Areas

ESA section 3(5)(A)(ii) defines critical habitat to include specific areas outside the geographical area occupied if the areas are determined by the Secretary to be essential for the conservation of the species. Our regulations at 50 CFR 424.12(g) also state: “The Secretary will not designate critical habitat within foreign countries or in other areas outside of the jurisdiction of the United States.” At the present time, the geographical area occupied by the Carolina and South Atlantic DPS of Atlantic sturgeon which is within the jurisdiction of the United States is limited to waters off the U.S. east coast from Maine through Florida, seaward to the boundary of the U.S. Exclusive Economic Zone, and upstream in freshwater systems to the fall line or the first impediment to fish passage. We have identified three areas outside the geographical area occupied by these species that are essential for their conservation, and therefore are proposing to designate these unoccupied areas as critical habitat for the Carolina and South Atlantic DPS of Atlantic sturgeon. For the Carolina DPS, we have identified the Cape Fear River from Huske Lock and Dam (Lock and Dam #3) downstream to Lock and Dam #2. We also identified the rivers of the Santee-Cooper basin from the Parr Shoals Dam on the Broad River and the Wateree Dam on the Wateree River downstream to the Wilson Dam and St. Stephen Powerhouse on the Santee River and Pinopolis Dam on the Cooper River. For the South Atlantic DPS we have identified the Savannah River from the Augusta Diversion Dam downstream to the New Savannah Bluff Lock and Dam.

As stated previously, the key habitat-based conservation objectives for these DPSs are facilitating adult reproduction and facilitating recruitment into the adult population by protecting spawning areas, juvenile development habitat, and the migratory corridors that allow adults to reach the spawning areas and newly spawned sturgeon to make a safe downstream movement. To successfully fulfill these conservation objectives, the areas above the dams on these three systems need to be protected until it becomes accessible to the

species. Available data suggest that these unoccupied areas did historically, or could, serve as spawning habitat for Atlantic sturgeon should they become accessible in the future.

Telemetry data from the Cape Fear River discussed above (Loeffler and Collier in Post *et al.*, 2014) indicate that Atlantic sturgeon make spawning movements up the Cape Fear River before being stopped at Lock and Dam #1; in one case the fish went downstream and then moved up the Northeast Cape Fear River. However, there have been reports of Atlantic sturgeon above Lock and Dam #1 (J. Hightower, NCSU, pers. comm. To J. Rueter, NMFS, July 21, 2015). It is likely the fish moving up to Lock and Dam #2 are attempting to reach historic upstream spawning areas. Using the fall line as a guide, only 33 percent of the historical habitat is available to Atlantic sturgeon below Lock and Dam #1 (96 km of 292 km). In some years, the salt water interface reaches Lock and Dam #1; so, spawning adults in the Cape Fear River either do not spawn in such years or spawn in the major tributaries of the Cape Fear River (*i.e.*, Black River or Northeast Cape Fear rivers) that are not obstructed by dams. There may be some exposed outcrops that would provide suitable substrate necessary for spawning between Lock and Dam #2 and Huske Lock and Dam (J. Facendola, NCDMF pers. comm. to J. Rueter, NMFS, July 20, 2015). The primary goal of the Cape Fear River Partnership is restoring access to historic migratory fish habitat. Their 2013 action plan identifies passage at Lock and Dam #2 as a priority and includes Atlantic sturgeon as a target species (Cape Fear River Partnership, 2013). In September 2015, the North Carolina General Assembly approved \$250,000 to be used towards the design and engineering of a rock arch weir to help with fish passage at Lock and Dam #2 and matching funds are currently being sought. These efforts indicate to us it is likely a rock arch weir will provide passage at Lock and Dam #2 so that sturgeon can utilize the habitat upstream of Lock and Dam #2 up to the Huske Lock and Dam in the future. We propose to include the area from Huske Lock and Dam (Lock and Dam #3) downstream to Lock and Dam #2 as unoccupied critical habitat on the Cape Fear River because Atlantic sturgeon behavior indicates they are attempting to move upstream to spawning habitat located beyond this barrier, and we consider this historical spawning habitat essential to the conservation of the DPS.

The lowermost dams on the Santee and Cooper Rivers limit, and may

eliminate altogether, viable spawning grounds for Atlantic sturgeon. Using the fall line as the upper region of spawning habitat, it is estimated that only 38 percent of the historical habitat is available to Atlantic sturgeon in the Santee-Cooper River system today. There are a number of anecdotal reports of Atlantic sturgeon making spawning runs to the dams and either returning downstream or attempting to spawn at the dams. These dams may not be far enough upstream for eggs and larvae to develop before entering higher salinity waters where they perish. The Santee Cooper Diversion Dam and Canal Project created two reservoirs: the Wilson Dam on the Santee River created Lake Marion, and the Pinopolis Dam on the Cooper River created Lake Moultrie. Currently, relicensing by the Federal Energy Regulatory Commission (FERC) for the South Carolina Public Service Authority (SCPSA) Hydroelectric Project, located in South Carolina is ongoing. Fish passage past these two dams was prescribed as part of the relicensing. Once this passage is constructed, the first dam Atlantic sturgeon will encounter is the abandoned Granby Lock and Dam on the Congaree River. This dam could represent a hindrance, but likely not a complete obstacle, to upstream movements of Atlantic sturgeon because remnant parts of the dam may deter bottom oriented species. Above the Granby Lock and Dam, Atlantic sturgeon will encounter the Columbia Dam on the Broad River. In 2002 we prescribed a fishway to be constructed at the Columbia Dam for American shad, blueback herring, and American eel. Concurrently we reserved authority to prescribe a fishway for sturgeon, because although such a fishway was warranted, a safe and effective passage mechanism was not yet established. The fishway constructed to pass the target species (American shad, blueback herring, and American eel) incorporated “sturgeon friendly” features as sturgeon are potential future target species. Field work conducted during consultation by NMFS Habitat Conservation Division established that excellent spawning and juvenile rearing habitat exists in the 24 miles of large river shoals between the Columbia Dam and the next upstream dam, the Parr Shoals Dam (DOC, 2002). While sturgeon have not been documented as currently passing through the Columbia Dam fishway, our reservation of authority in the 2002 FERC relicensing provides us the expectation the Columbia Dam will be passable in the future so that sturgeon can utilize the upstream 24-miles of

shoal habitat for spawning and rearing. Additionally, we have information on a population of shortnose sturgeon that has been stranded above Pinopolis and Wilson Dams for decades, and there is a good deal of data on their spawning activity in the Congaree, Broad, and Wateree Rivers. Shortnose sturgeon spawning habitat requirements are similar to Atlantic sturgeon, thus we believe these unoccupied areas contain suitable spawning habitat for Atlantic sturgeon. We conclude that these unoccupied spawning habitats are essential to the conservation of the DPS, and therefore, we are proposing to designate unoccupied critical habitat from the Wateree Dam on the Wateree River and from the Parr Shoals Dam on the Broad River downstream to the Wilson Dam and St. Stephen Powerhouse on the Santee River and the Pinopolis Dam on the Cooper River.

The Savannah River has some fish passage at New Savannah Bluff Lock and Dam, but successful passage of Atlantic sturgeon is not believed to occur. The historical primary spawning habitat for Atlantic sturgeon (and only shoal habitat on the Savannah River), the Augusta Shoals, is not accessible to Atlantic sturgeon because it lies above the New Savannah Bluff Lock and Dam. Sturgeon are currently frequently seen at the base of the New Savannah Bluff Lock and Dam during spawning season, indicating either crowding below the dam or individual motivation to spawn farther upriver, or both. We conclude this unoccupied area is essential to the conservation of the DPS and therefore, we propose to designate the Savannah River from the Augusta Diversion Dam downstream to the New Savannah Bluff Lock and Dam as critical habitat.

Application of ESA Section 4(a)(3)(B)(i) (Military Lands)

Section 4(a)(3)(B) of the ESA prohibits designating as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DOD), or designated for its use, that are subject to an Integrated Natural Resources Management Plan (INRMP) prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation. The legislative history to this provision explains:

The conferees would expect the [Secretary] to assess an INRMP’s potential contribution to species conservation, giving due regard to those habitat protection, maintenance, and improvement projects and other related activities specified in the plan that address the particular conservation and protection

needs of the species for which critical habitat would otherwise be proposed. Consistent with current practice, the Secretary would establish criteria that would be used to determine if an INRMP benefits the listed species for which critical habitat would be proposed (Conference Committee report, 149 Cong. Rec. H. 10563 (November 6, 2003)).

In February 2014 and October 2015, we requested information from the DOD to assist in our analysis. Specifically, we asked for a list of facilities that occur within the potential critical habitat areas for the Carolina and South Atlantic DPSs of Atlantic sturgeon and available INRMPs for those facilities. We received information on two INRMPs for DOD facilities on or near the banks of rivers included in the proposed designation—the Naval Submarine Base Kings Bay (GA), on the St. Marys River and Joint Base Charleston (SC), on the Cooper River. At neither base does the Navy own or control, or have designated for its use, lands or geographic areas being proposed as critical habitat. Thus, there are no areas where the INRMP prohibition is applicable. Notably, the Department of Navy response indicated a desire to review and revise applicable INRMPs to provide appropriate and feasible conservation benefits to the species if possible.

Application of ESA Section 4(b)(2)

Section 4(b)(2) of the ESA requires that we consider the economic impact, impact on national security, and any other relevant impact, of designating any particular area as critical habitat. Additionally, the Secretary has the discretion to consider excluding any area from critical habitat if she determines, based upon the best scientific and commercial data available, the benefits of exclusion (that is, avoiding some or all of the impacts that would result from designation) outweigh the benefits of designation. The Secretary may not exclude an area from designation if exclusion will result in the extinction of the species. Because the authority to exclude is discretionary, exclusion is not required for any particular area under any circumstances.

The ESA provides the USFWS and NMFS (the Services) with broad discretion in how to consider impacts. *See*, H.R. Rep. No. 95–1625, at 17, reprinted in 1978 U.S.C.C.A.N. 9453, 9467 (1978) (“Economics and any other relevant impact shall be considered by the Secretary in setting the limits of critical habitat for such a species. The Secretary is not required to give economics or any other “relevant impact” predominant consideration in

his specification of critical habitat . . . The consideration and weight given to any particular impact is completely within the Secretary's discretion." Courts have noted the ESA does not contain requirements for any particular methods or approaches. *See, e.g., Bldg. Indus. Ass'n of the Bay Area et al. v. U.S. Dep't. of Commerce et al.*, No. 13–15132, 9th Cir., July 7, 2015 (upholding district court's ruling that the ESA does not require the agency to follow a specific methodology when designating critical habitat under section 4(b)(2). For this proposed rule, we followed the same approach to describing and evaluating impacts as we have for recent critical habitat rulemakings in the NMFS Southeast Region.

The following discussion of impacts summarizes the analysis contained in our Draft Impact Analysis of Critical Habitat Designation for the Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) (Draft Impacts Analysis), which identifies the economic, national security, and other relevant impacts that we projected would result from including each of the fourteen occupied and three unoccupied specific areas in the proposed critical habitat designation. We considered these impacts when deciding whether to exercise our discretion to propose excluding particular areas from the designation. Both positive and negative impacts were identified and considered (these terms are used interchangeably with benefits and costs, respectively). Impacts were evaluated in quantitative terms where feasible, but qualitative appraisals were used where that is more appropriate to particular impacts. The Draft Impacts Analysis Report is available on NMFS's Southeast Regional Office Web site at http://sero.nmfs.noaa.gov/protected_resources/sturgeon/index.html.

The primary impacts of a critical habitat designation result from the ESA Section 7(a)(2) requirement that Federal agencies ensure their actions are not likely to result in the destruction or adverse modification of critical habitat, and that they consult with NMFS in fulfilling this requirement. Determining these impacts is complicated by the fact that Section 7(a)(2) also requires that Federal agencies ensure their actions are not likely to jeopardize the species' continued existence. One incremental impact of designation is the extent to which Federal agencies modify their proposed actions to ensure they are not likely to destroy or adversely modify the critical habitat beyond any modifications they would make because

of listing and the jeopardy requirement. When the same modification would be required due to impacts to both the species and critical habitat, the impact of the designation is coextensive with the ESA listing of the species (*i.e.*, attributable to both the listing of the species and the designation critical habitat). Relevant, existing regulatory protections are referred to as the "baseline" and are also discussed in the Draft Impacts Analysis. In this case, notable baseline protections include the ESA listings of not only Atlantic sturgeon, but the co-occurring shortnose sturgeon.

The Draft Impacts Analysis Report describes the projected future federal activities that would trigger Section 7 consultation requirements because they may affect the essential features, and consequently may result in economic costs or negative impacts. The report also identifies the potential national security and other relevant impacts that may arise due to the proposed critical habitat designation, such as positive impacts that may arise from conservation of the species and its habitat, state and local protections that may be triggered as a result of designation, and education of the public to the importance of an area for species conservation.

Economic Impacts

Economic impacts of the critical habitat designation result through implementation of Section 7 of the ESA in consultations with Federal agencies to ensure their proposed actions are not likely to destroy or adversely modify critical habitat. These economic impacts may include both administrative and project modification costs; economic impacts that may be associated with the conservation benefits of the designation are described later.

We examined the ESA Section 7 consultation record over the last 10 years, as compiled in our Public Consultation Tracking System (PCTS) database, to identify the types of Federal activities that may adversely affect proposed Atlantic sturgeon critical habitat. We requested that federal action agencies provide us with information on future consultations if we omitted any future actions likely to affect the proposed critical habitat. No new categories of activities were identified through this process. Of the types of past consultations that "may affect" some or all of the essential features in any unit of proposed critical habitat, we determined that no activities would solely affect the essential features. That is, all categories of the activities identified have potential routes of

adverse effects to both Atlantic or shortnose sturgeon and the critical habitat.

Fourteen categories of activities implemented by ten different federal entities were identified as likely to recur in the future and have the potential to affect the essential features (total number of projected consultations over 10 years indicated in parentheses):

1. U.S. Army Corps of Engineers (USACE)—Navigation maintenance dredging, harbor expansion (14)
2. USACE—Water Resources Development Act (WRDA) flood control, ecosystem restoration studies (6)
3. USACE—WRDA dam operations, repair, fishway construction (3)
4. USACE—Section 404/Rivers and Harbors Act (RHA) section 10 permitting—dredge, fill, construction (20)
5. Federal Highway Administration (FHWA)—Bridge repair, replacement (67)
6. U.S. Coast Guard (USCG)—Bridge repair, replacement permitting (3)
7. FERC—Hydropower licensing (5)
8. FERC—Liquefied Natural Gas (LNG) facilities, pipelines authorization (5)
9. Nuclear Regulatory Commission (NRC)—Nuclear power plant construction/operation licensing (8)
10. NMFS—ESA research and incidental take permitting (section 10) (46)
11. U.S. Fish and Wildlife Service (USFWS)—Fishery management grants (11)
12. Environmental Protection Agency (EPA)—Nationwide pesticide authorizations (9)
13. Federal Emergency Management Agency (FEMA)—Disaster assistance/preparation grants (5)
14. Department of Energy (DOE)—Nuclear fuel management (3)

We estimate that 205 activities will require consultation over the next 10 years and will require analysis of impacts to Atlantic sturgeon critical habitat. As discussed in more detail in our Draft Impacts Analysis, all the activities identified as having the potential to adversely affect one or more of the proposed essential features, also have the potential to take Atlantic sturgeon. For most, if not all, of the projected future activities, if the effects to critical habitat will be adverse and require formal consultation, those effects would also constitute adverse effects to the species, either directly when they are in the project area, or indirectly due to the effects on their habitat. This is due to the conservation functions that the features are being designated to provide. For example,

water quality is being identified as an essential feature to facilitate successful spawning, annual and inter-annual adult, larval, and juvenile survival, and larva, juvenile and subadult growth, development, and recruitment. Effects to the water quality feature that impede that conservation objective could injure or kill individual Atlantic sturgeon, for example by preventing adult reproduction, or rendering reproduction ineffective or resulting in reduced growth or mortality of larvae, juveniles or subadults. In these circumstances, the same project modifications would be required to address effects to both the species and effects to the critical habitat. Thus, projects that adversely affect the proposed essential features are likely to always also adversely affect the species and the project impacts would not be incremental.

For some of the projected activities, it may be feasible to conduct the action when sturgeon are out of the action area. If effects to critical habitat are temporary such that the essential features return to their pre-project condition by the time the sturgeon return and need to use the features, there might not be any adverse effects to either the species or the critical habitat. In these circumstances, consultations would be fully incremental consultations only on critical habitat, and the consultations would be informal (*i.e.*, impacts to critical habitat would not be permanent and would not be significant). This would likely only apply to actions that affect just spawning habitat in the upper parts of the rivers, as sturgeon of various ages are present year-round in the lower reaches of the rivers and the estuaries. The costs of fully incremental, informal consultations are higher than the marginal costs of adding critical habitat analyses to coextensive, formal consultations. Thus, to be conservative and avoid underestimating incremental impacts of this designation, and based on the activities involved, we assumed that two categories of activities could result in incremental, informal consultations. Those activities, both implemented by the USACE, are section Clean Water Act section 404/Rivers and Harbors Act permitting and WRDA dam operations/repair.

Administrative costs include the cost of time spent in meetings, preparing letters, and in some cases, developing a biological assessment and biological opinion, identifying and designing reasonable and prudent measures (RPMs), and so forth. For this impacts report, we estimated per-project administrative costs based on critical habitat economic analyses by Industrial Economics, Inc. (IEC). (2014a, 2014b).

These impacts reports estimate administrative costs for different categories of consultations as follows: (1) New consultations resulting entirely from critical habitat designation; (2) new consultations considering only adverse modification (unoccupied habitat); (3) re-initiation of consultation to address adverse modification; and, (4) additional consultation effort to address adverse modification in a new consultation. Most of the projected future consultations we project to result from this proposed rulemaking will be coextensive formal consultations on new actions that would be evaluating impacts to sturgeon as well as impacts to critical habitat, and the administrative costs for these 182 consultations would be in category 4 above. The remaining 23 actions are projected to involve incremental informal consultation due to impacts to critical habitat alone. Based on IEC (2014a, b), we project that each formal consultation will result in the following additional costs to address critical habitat impacts: \$1,400 in NMFS costs; \$1,600 in action agency costs; \$880 in third party (*e.g.*, permittee) costs, if applicable; and \$1,200 in costs to the action agency or third party to prepare a Biological Assessment (BA). Costs for the incremental informal consultations would be as follows: \$1,900 in NMFS' costs; \$2,300 in action agency costs; \$1,500 in third party (*e.g.*, permittee) costs, if applicable; and \$1,500 in costs to the action agency or third party to prepare a BA. Costs of the 9 EPA nationwide consultations were treated differently. These consultations will involve all listed species and designated critical habitat under NMFS's jurisdiction, and thus costs attributable solely to this proposed rule are expected to be very small. To be conservative, we added 9 consultations to each unit, and 9 to each DPS's total number of consultations. We spread the costs of these consultations (\$5,080 each) evenly across all units included in this proposed rule and the companion proposed rule to designate critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. This resulted in a total cost of \$1,474.84 per unit.

In our impacts analysis, we concluded that none of the projected future activities are likely to require project modifications to avoid adverse effects to critical habitat features that would be different from modifications required to avoid adverse effects to sturgeon. In other words, we projected no incremental costs in proposed critical habitat units other than the

administrative costs of consultations. While there may be serious adverse impacts to critical habitat from projected future projects that require project modifications to avoid destroying or adversely modifying critical habitat, impacts of these magnitudes to the essential features as defined, would also result in adverse effects to Atlantic sturgeon, either directly when they are in the project area, or indirectly as harm, resulting from impacts to their habitat that result in injury or death to sturgeons. The same project modifications would be required to avoid destroying or adversely modifying critical habitat and avoiding jeopardy or minimizing take of Atlantic sturgeon caused by impacts to its habitat.

Based on our draft impacts analysis, we project that the costs that will result from the proposed designation will total \$1,092,793 over the next 10 years. The total incremental cost resulting from the designation for the Carolina DPS is \$503,954, and the total incremental cost resulting from the designation for the South Atlantic DPS is \$588,839, over 10 years. The per-unit costs vary widely. The annual per-unit costs range from \$147 (Unoccupied Cape Fear River unit, Carolina DPS) to \$23,051 (Occupied Savannah River unit, South Atlantic DPS).

National Security Impacts

Previous critical habitat designations have recognized that impacts to national security result if a designation would trigger future ESA Section 7 consultations because a proposed military activity "may affect" the physical or biological feature(s) essential to the listed species' conservation. Anticipated interference with mission-essential training or testing or unit readiness, through the additional commitment of resources to an adverse modification analysis and expected requirements to modify the action to prevent adverse modification of critical habitat, has been identified as a negative impact of critical habitat designations. (See, *e.g.*, Proposed Designation of Critical Habitat for Southern Resident Killer Whales; 69 FR 75608, Dec. 17, 2004, at 75633.)

On February 14, 2014, and again in October 7, 2015, NMFS sent letters to DOD and the Department of Homeland Security requesting information on national security impacts of the proposed critical habitat designation, and we received responses from the Navy, Air Force, Army, and USCG. We discuss the information contained within the responses thoroughly in the

Draft Impacts Analysis and summarize the information below.

The Navy's first submission provided information on its facilities and operations. However, the Navy was not able to make a full assessment whether there would be any national security impacts. The Navy indicated that as we define our essential features and areas more precisely, they would be able to provide a more detailed response to our requests and would update their INRMPs as necessary for the protection of Atlantic sturgeon and its critical habitat. The Navy's second submission noted that Naval Submarine Base Kings Bay was adjacent to the South Atlantic DPS critical habitat unit in the St. Marys River. The Navy stated it did not own or control any land or waters within the St. Marys channel, but that the TRIDENT-class submarines used 4.9 km of the waterway transiting to and from the Atlantic Ocean. The Navy stated that any operational or dredging restrictions that would impede maintenance of the channel from the Intracoastal Waterway and St. Marys channel intersection, downstream, could pose a national security risk. The USACE is typically the lead action agency with us for dredging actions, and the Navy would be the permit applicant. We determined that dredging has the potential to affect critical habitat, but we also concluded that consultations for effects of dredging on critical habitat will be fully-coextensive with consultations to address impacts to sturgeon. The effects of dredging on essential features would also result in injury or death to individual sturgeon, and thus constitute take. Removal or covering of spawning substrate could prevent effective spawning or result in death of eggs or larvae that are spawned. Changing the salinity regime by deepening harbors and parts of rivers could result in permanent decreases if available foraging and developmental habitat for juveniles. These types of adverse effects are not likely to be temporary and limited to periods of sturgeon absence. Thus, adverse effects of dredging activities are likely to be coextensive formal consultations to address impacts to both the species and the essential features, and thus no new requirements or project modifications are anticipated as a result of the proposed critical habitat designation. Therefore, we find there will be no impact on national security as a consequence of the proposed designation for these actions.

The Navy and Air Force expressed concern that designating the Cooper River, including the area of the river on the west side adjacent to the Joint Base Charleston Naval Weapons Station,

could have significant impacts on the Navy's ability to adequately support mission-essential military operations, thereby impacting national security. The Navy and Air Force were concerned designation of critical habitat could affect training facilities and the maintenance of these facilities. Additional concerns were expressed regarding shipping and receiving operations from two waterfront facilities. Because no specifics were given on how designation of critical habitat could affect these activities, and because we determined there are no routes of effects to essential features from these activities based on the information provided, we concluded that designation of critical habitat will have no impact on these activities and thus will not result in impacts to national security.

The Army noted that Military Ocean Terminal-Sunny Point, North Carolina, was located on the Cape Fear River and Fort Stewart, Georgia, was located on the Ogeechee River. However, the Army was not able to make a full assessment whether there would be any national security impacts and concluded that technical assessments between the installations and regional levels of NMFS would identify any specific impacts.

The USCG provided information on its facilities and operations. However, the USCG was not able to make a full assessment whether there would be any national security impacts. The USCG indicated that as we define our essential features and areas more precisely, they would be able to provide a more detailed response to our requests. The USCG consulted with us three times on authorizations for bridge repairs or replacements. If conducted in the future, these activities may affect proposed critical habitat features, but the effects would be fully coextensive with effects to listed sturgeon. Based on this information regarding potential future USCG action in proposed Atlantic sturgeon critical habitat, we do not expect any national security impacts as a consequence of the proposed critical habitat designation.

Based on a review of our consultation database, and the information provided by the Navy, Air Force, Army, and USCG on their activities conducted within the specific areas proposed for designation as Atlantic sturgeon critical habitat, we determined that only one military action identified as a potential area of national security impact has routes of potential adverse effects to proposed critical habitat—river channel dredging. As discussed, this activity will require consultation due to

potential impacts to listed Atlantic and shortnose sturgeon, and any project modifications needed to address impacts to these species would also address impacts to critical habitat. Thus, no incremental project modification impacts are expected due to this designation. On this basis, we conclude there will be no national security impacts associated with the proposed critical habitat for the Carolina and South Atlantic DPSs of Atlantic sturgeon.

Other Relevant Impacts

Other relevant impacts of critical habitat designations can include conservation benefits to the species and to society, and impacts to governmental and private entities. Our Draft Impacts Analysis discusses conservation benefits of designating the 14 occupied and 3 unoccupied areas, and the benefits of conserving the Carolina and South Atlantic sturgeon DPSs to society, in both ecological and economic metrics.

As discussed in the Draft Impacts Analysis and summarized here, Atlantic sturgeon currently provide a range of benefits to society. Given the positive benefits of protecting the physical features essential to the conservation of these DPSs, this protection will in turn contribute to an increase in the benefits of this species to society in the future as the species recovers. While we cannot quantify nor monetize these benefits, we believe they are not negligible and would be an incremental benefit of this designation. However, although the features are essential to the conservation of Atlantic sturgeon DPSs, critical habitat designation alone will not bring about the recovery of the species. The benefits of conserving Atlantic sturgeon are, and will continue to be, the result of several laws and regulations.

We identified in the Draft Impacts Analysis both consumptive (e.g., commercial and recreational fishing) and non-consumptive (e.g., wildlife viewing) activities that occur in the areas proposed as critical habitat. Commercial and recreational fishing are components of the economy related to the ecosystem services provided by the resources within the proposed Atlantic sturgeon critical habitat areas. The essential features provide for abundant fish species diversity.

Education and awareness benefits stem from the critical habitat designation when non-federal government entities or members of the general public responsible for, or interested in, Atlantic sturgeon conservation change their behavior or activities when they become aware of the designation and the importance of

the critical habitat areas and features. Designation of critical habitat raises the public's awareness that there are special considerations that may need to be taken within the area. Similarly, state and local governments may be prompted to carry out programs to complement the critical habitat designation and benefit the Carolina and South Atlantic DPSs of Atlantic sturgeon. Those programs would likely result in additional impacts of the designation. However, it is impossible to quantify the beneficial effects of the awareness gained or the secondary impacts from state and local programs resulting from the critical habitat designation.

Discretionary Exclusions Under Section 4(b)(2)

On the basis of our impacts analysis, we are not proposing to exercise our discretion to propose excluding any particular areas from the proposed critical habitat designation.

Our conservative identification of potential incremental economic impacts indicates that any such impacts would be very small—\$50,395 annually for the Carolina DPS critical habitat and \$58,884 annually for the South Atlantic DPS critical habitat. These costs will result from very few (about 20) Federal ESA section 7 consultations annually. These consultations will be spread over 4 states and over 3,300 river miles (4,900 river kilometers). Incremental economic impacts will consist solely of the administrative costs of consultation; no project modifications are projected to be required to address impacts solely to the proposed critical habitat. Further, the analysis indicates that there is no particular area within the units designated as critical habitat where economic impacts would be particularly high or concentrated. No impacts to national security are expected. Other relevant impacts include conservation benefits of the designation, both to the species and to society. Because the features that form the basis of the critical habitat designation are essential to the conservation of the Carolina and South Atlantic DPSs of Atlantic sturgeon, the protection of critical habitat from destruction or adverse modification may at minimum prevent loss of the benefits currently provided by the species and may contribute to an increase in the benefits of these species to society in the future. While we cannot quantify nor monetize the benefits, we believe they are not negligible and would be an incremental benefit of this designation. Therefore, we have concluded that there is no basis

to exclude any particular area from the proposed critical habitat units.

Proposed Critical Habitat Designation

Critical habitat must be defined by specific limits using reference points and lines as found on standard topographic maps of the area, and cannot use ephemeral reference points (50 CFR 424.12(c)). When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat (50 CFR 424.12(d)).

The habitat containing the physical features that are essential to the conservation of the Carolina and South Atlantic DPSs and that may require special management considerations or protection is aquatic habitat of main stem rivers flowing into a coastal estuary. Atlantic sturgeon typically cannot pass dams or natural features such as waterfalls and rapids found at the fall line of rivers. Therefore, we are defining each critical habitat unit by an upriver GPS position or landmark on the main stem river (e.g., the most downriver dam) and all waters of the main stem downriver of that location to river kilometer zero (RKM 0). Main stem river is the primary segment of a river and any portions thereof that depart from and rejoin the primary segment. Thus, channels and cuts that depart from and rejoin the main channel are included (e.g., Middle and Front Rivers are part of the Savannah River).

In order to include areas of dynamic water depth containing suitable spawning habitat, we are relying on the ordinary high water mark (OHWM) to delineate the lateral boundaries of the specific critical habitat areas. Federal regulations at 33 CFR 328.3(e) define OHWM as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

Occupied Critical Habitat Unit Descriptions

Carolina Unit 1, Roanoke Unit. Roanoke River in Bertie, Halifax, Martin, Northampton, and Washington Counties in North Carolina. Carolina Unit 1 includes the Roanoke River main stem from the Roanoke Rapids Dam downstream to RKM 0.

Carolina Unit 2, Tar-Pamlico Unit. Tar-Pamlico River in Beaufort, Edgecombe, Hyde, Nash, Pamlico, and Pitt Counties in North Carolina. Carolina Unit 2 includes the Tar-Pamlico River main stem from the Rocky Mount Millpond Dam downstream to RKM 0.

Carolina Unit 3, Neuse Unit. Neuse River in Carteret, Craven, Duplin, Johnston, Lenoir, Pamlico, Pitt, Wake, and Wayne Counties in North Carolina.

Carolina Unit 3 includes the Neuse River main stem from the Milburnie Dam downstream to RKM 0. The Neuse River, one of two major tributaries to Pamlico Sound, is dammed. It is likely that Atlantic sturgeon historically utilized habitat in the Neuse River up to the falls at RKM 378 where a dam (Falls Dam) is now located, although this site is above the fall line (ASSRT, 2007). Spawning migration may be impeded to historic habitat above the Milburnie Dam (RKM 349).

Carolina Unit 4, Cape Fear Unit. Cape Fear River in Bladen, Brunswick, Columbus, Cumberland, New Hanover, and Pender Counties in North Carolina and the Northeast Cape Fear River in Duplin, New Hanover, Pender, and Wayne Counties in North Carolina.

Carolina Unit 4 includes the Cape Fear River main stem from Lock and Dam #2 downstream to RKM 0 and the Northeast Cape Fear River from the upstream side of Rones Chapel Road Bridge downstream to the confluence with the Cape Fear River.

Carolina Unit 5, Pee Dee Unit. Pee Dee River in Anson and Richmond Counties in North Carolina and Chesterfield, Darlington, Dillon, Florence, Georgetown, Horry, Marion, Marlboro, and Williamsburg Counties in South Carolina; Waccamaw River in Georgetown County in South Carolina; and Bull Creek in Georgetown County in South Carolina. Carolina Unit 5 includes the Pee Dee River main stem from Blewett Falls Dam downstream to RKM 0, the Waccamaw River from Bull Creek downstream to RKM 0, and Bull Creek from the Pee Dee River to the confluence with the Waccamaw River.

Carolina Unit 6, Black River Unit. Black River in Clarendon, Georgetown, Lee, Sumter, and Williamsburg Counties in South Carolina. Carolina Unit 6 includes the Black River main stem from Interstate Highway 20 downstream to RKM 0.

Carolina Unit 7, Santee-Cooper Unit. Santee River in Berkeley, Georgetown, and Williamsburg Counties in North Carolina; North Santee River in Georgetown County in South Carolina; South Santee River in Charleston County in South Carolina; and the

Cooper River in Berkeley and Charleston Counties in South Carolina. Carolina Unit 7 includes the Santee River main stem from the Wilson and St. Stephen Dams downstream to the fork of the North Santee River and South Santee River distributaries, the Rediversion Canal from the St. Stephen Powerhouse downstream to the confluence with the Santee River, the North Santee River from the fork of the Santee River and South Santee River downstream to RKM 0, the South Santee River from the fork of the Santee River and North Santee River downstream to RKM 0, the Tailrace Canal from Pinopolis Dam downstream to the West Branch Cooper River, the West Branch Cooper River from the Tailrace Canal downstream to the confluence with the East Branch Cooper River, and the Cooper River from confluence of the West Branch Cooper River and East Branch Cooper River tributaries downstream to RKM 0.

South Atlantic Unit 1, Edisto Unit. *The North Fork Edisto in Lexington, and Orangeburg Counties in South Carolina; the South Fork Edisto in Aiken, Bamberg, Barnwell, Edgefield, and Orangeburg Counties in South Carolina; the Edisto River in Bamberg, Charleston, Colleton, Dorchester, and Orangeburg Counties in South Carolina; the North Edisto in Charleston and Colleton Counties in South Carolina; and the South Edisto in Charleston and Colleton Counties in South Carolina.* South Atlantic Unit 1 includes the North Fork Edisto River from Cones Pond downstream to the confluence with the South Fork Edisto River, the South Fork Edisto River from Highway 121 downstream to the confluence with the North Fork Edisto River, the Edisto River main stem from the confluence of the North Fork Edisto River and South Fork Edisto River tributaries downstream to the fork at the North Edisto River and South Edisto River distributaries, the North Edisto River from the Edisto River downstream to RKM 0, and the South Edisto River from the Edisto River downstream to RKM 0.

South Atlantic Unit 2, Combahee-Salkehatchie Unit. *Combahee-Salkehatchie River in Allendale, Bamberg, Barnwell, Beaufort, Colleton, and Hampton Counties in South Carolina.* South Atlantic Unit 2 includes the main stem Combahee—Salkehatchie

River from the confluence of Buck Creek and Rosemary Creek with the Salkehatchie River downstream to the Combahee River, the Combahee River from the Salkehatchie River downstream to RKM 0.

South Atlantic Unit 3, Savannah Unit. *Savannah River in Aiken, Allendale, Barnwell, Edgefield, Hampton, Jasper and McCormick Counties in South Carolina and Burke, Chatham, Columbia, Effingham, Richmond, and Screven Counties in Georgia.* South Atlantic Unit 3 includes the main stem Savannah River from the New Savannah Bluff Lock and Dam downstream to RKM 0.

South Atlantic Unit 4, Ogeechee Unit. *Ogeechee River in Bryan, Bulloch, Burke, Chatham, Effingham, Emanuel, Glascock, Jefferson, Jenkins, Screven, and Washington Counties in Georgia.* South Atlantic Unit 4 includes the main stem Ogeechee River from the confluence of the North Fork and South Fork Ogeechee Rivers downstream to RKM 0.

South Atlantic Unit 5, Altamaha Unit. *Altamaha River in Appling, Jeff Davis, Long, McIntosh, Montgomery, Tattnall, Toombs, and Wheeler Counties in Georgia; the Oconee River in Baldwin, Hancock, Johnson, Laurens, Montgomery, Washington, Wheeler, and Wilkinson Counties in Georgia; and the Ocmulgee River in Ben Hill, Bibb, Bleckley, Dodge, Houston, Jasper, Jeff Davis, Jones, Plaski, Telfair, Twiggs, Wheeler, and Wilcox Counties in Georgia.* South Atlantic Unit 5 includes the main stem Ocmulgee River from Juliette Dam downstream to the confluence with the Oconee River, the Oconee River from Sinclair Dam downstream to the confluence with the Ocmulgee, and the Altamaha River from the confluence of the Ocmulgee and Oconee downstream to RKM 0.

South Atlantic Unit 6, Satilla Unit. *Satilla River in Atkinson, Brantley, Camden, Charlton, Coffee, Glynn, Irwin, Pierce, Ware, and Wayne Counties in Georgia.* South Atlantic Unit 6 includes the main stem Satilla River from the confluence of Satilla Creek and Wiggins Creek downstream to RKM 0.

South Atlantic Unit 7, St. Marys Unit. *St. Marys River in Camden and Charlton Counties in Georgia and Baker and Nassau Counties in Florida.* South

Atlantic Unit 7 includes the main stem St. Marys River from the confluence of Middle Prong St. Marys and the St. Marys Rivers downstream to RKM 0.

Unoccupied Critical Habitat Unit Descriptions

Carolina Unoccupied Unit 1. Cape Fear River in Bladen County in North Carolina. Carolina Unoccupied Unit 1 includes the main stem Cape Fear River from Huske Lock and Dam (Lock and Dam #3) downstream to Lock and Dam #2.

Carolina Unoccupied Unit 2. Wateree River in Kershaw, Richland, and Sumter Counties in South Carolina; Broad River in Lexington and Richland Counties in South Carolina; Congaree River in Calhoun and Richland Counties in South Carolina; Santee River in Calhoun and Sumter Counties in South Carolina; Lake Marion in Berkeley, Calhoun, Clarendon, Orangeburg, and Sumter Counties in South Carolina; Diversion Canal in Orangeburg County in South Carolina; and, Lake Moultrie in Berkeley and Orangeburg Counties in South Carolina. Carolina Unoccupied Unit 2 includes the Wateree River from the Wateree Dam downstream to the confluence with the Congaree River, the Broad River from the Parr Shoals Dam downstream to the confluence with the Saluda River, the Congaree River from the confluence of the Saluda and Broad Rivers downstream to the Santee River, the Santee River from the confluence of the Congaree and Wateree Rivers downstream to Lake Marion, Lake Marion from the Santee River downstream to the Diversion Canal, the Diversion Canal from Lake Marion downstream to Lake Moultrie, Lake Moultrie from the Diversion Canal downstream to the Pinopolis Dam and the Rediversion Canal, the Rediversion Canal from Lake Moultrie downstream to the St. Stephen Powerhouse.

South Atlantic Unoccupied Unit 1. Savannah River in Aiken and Edgefield Counties in South Carolina and Columbia and Richmond Counties in Georgia. South Atlantic Unoccupied Unit 1 includes the Savannah River from the Augusta Diversion Dam downstream to the New Savannah Bluff Lock and Dam.

Table 1. Critical Habitat Units and Extents of the Units.

Critical Habitat Unit Name	DPS Nomenclature	Water Body	State	Upper extent	River kilometers	River miles
Roanoke	Carolina Unit 1 (C1)	Roanoke River	North Carolina	Roanoke Rapids Dam	213	132
Tar - Pamlico	Carolina Unit 2 (C2)	Tar - Pamlico River	North Carolina	Rocky Mount Mill Pond Dam	199	124
Neuse	Carolina Unit 3 (C3)	Neuse River	North Carolina	Milburnie Dam	345	214
Cape Fear	Carolina Unit 4 (C4)	Cape Fear River	North Carolina	Lock and Dam #2	151	94
Cape Fear Unoccupied	Carolina Unoccupied Unit 1 (CU1)	Northeast Cape Fear River	North Carolina	Upstream side of Rones Chapel Road Bridge	218	136
		Cape Fear River	North Carolina	Huske Lock and Dam (a.k.a. Lock and Dam #3)	37	23
Pee Dee	Carolina Unit 5 (C5)	Pee Dee River	North Carolina/South Carolina	Blewett Falls Dam	310	192
		Waccamaw River	South Carolina	Bull Creek (a.k.a. Big Bull Creek)	35	22
		Bull Creek (a.k.a. Big Bull Creek)	South Carolina	Pee Dee River	17	11
Black	Carolina Unit 6 (C6)	Black River	South Carolina	Interstate Highway 20	253	157
Santee - Cooper	Carolina Unit 7 (C7)	Santee River	South Carolina	Wilson Dam	114	71
		Rediversion Canal	South Carolina	St. Stephens Dam	8	5
		North Santee River	South Carolina	Confluence of Santee River	29	18
		South Santee River	South Carolina	Confluence of Santee River	27	17
		Tailrace Canal - West Branch Cooper River	South Carolina	Pinopolis Dam	29	18
		Cooper River	South Carolina	Confluence of the West Branch Cooper and East Branch Cooper Rivers	48	30
Santee - Cooper Unoccupied	Carolina Unoccupied Unit 2 (CU2)	Wateree River	South Carolina	Wateree Dam	124	77
		Broad River	South Carolina	Parr Shoals	43	27
		Congaree River	South Carolina	Confluence of Saluda and Broad Rivers	84	52
		Santee River (up river of Lake Marion)	South Carolina	Confluence of Congaree and Wateree Rivers	13	8
		Lake Marion	South Carolina	Santee River (upstream of Lake Marion)	50	31
		Diversion Canal	South Carolina	Lake Marion	8	5
		Lake Moultrie	South Carolina	Diversion Canal	16	10
Edisto	South Atlantic Unit 1 (SA1)	Rediversion Canal	South Carolina	Lake Moultrie	8	5
		North Fork Edisto River	South Carolina	Cones Pond just north of I-20 (approximately 33.8035 N, 80.4702 W)	155	96
		South Fork Edisto River	South Carolina	State Hwy 121	175	109
		Edisto River	South Carolina	Confluence of the North Fork Edisto and South Fork Edisto Rivers	163	101
		North Edisto River	South Carolina	Edisto River	29	18
		South Edisto River	South Carolina	Edisto River	31	19
Combahee - Salkehatchie	South Atlantic Unit 2 (SA2)	Combahee - Salkehatchie River	South Carolina	Confluence of Buck and Rosemary Creeks with (Approximately 33.2906 N, 81.4326 W)	185	115
Savannah	South Atlantic Unit 3 (SA3)	Savannah River	South Carolina/Georgia	New Savannah Bluff Lock and Dam	338	210
Savannah Unoccupied	South Atlantic Unoccupied Unit 1 (S)	Savannah River	South Carolina/Georgia	Augusta Diversion Dam	33	20
Ogeechee	South Atlantic Unit 4 (SA4)	Ogeechee River	Georgia	Confluence of North Fork and South Fork Ogeechee Rivers (Approximately 33.5200 N, 82.9095 W)	448	278
Altamaha	South Atlantic Unit 5 (SA5)	Oconee River	Georgia	Sinclair Dam	227	141
		Ocmulgee River	Georgia	Juliette Dam	363	226
		Altamaha River	Georgia	Confluence of Oconee and Ocmulgee Rivers	216	134
Satilla	South Atlantic Unit 6 (SA6)	Satilla River	Georgia	Confluence of Satilla and Wiggins Creeks (Approximately 31.5041 N, 83.0818 W)	378	235
St. Marys	South Atlantic Unit 7 (SA7)	St. Marys River	Georgia/Florida	Confluence of Middle Prong St. Marys and St. Marys Rivers (Approximately 30.4233 N, 82.2094 W)	203	126

Effects of Critical Habitat Designations

Section 7(a)(2) of the ESA requires Federal agencies, including NMFS, to insure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify designated critical habitat. Federal agencies are also required to confer with NMFS regarding any actions likely to jeopardize a species proposed for listing under the ESA, or likely to destroy or adversely modify proposed critical habitat, pursuant to Section 7(a)(4). A conference involves informal discussions in which NMFS may recommend conservation measures to minimize or avoid adverse effects. The discussions and conservation recommendations are to be documented in a conference report provided to the Federal agency. If requested by the Federal agency, a formal conference report may be issued, including a biological opinion prepared according to 50 CFR 402.14. A formal conference report may be adopted as the biological opinion when the species is listed or critical habitat designated, if no significant new information or changes to the action alter the content of the opinion. When a species is listed or critical habitat is designated, Federal agencies must consult with NMFS on any agency actions to be conducted in an area where the species is present and that may affect the species or its critical habitat. During the consultation, NMFS would evaluate the agency action to determine whether the action may adversely affect listed species or critical habitat and issue its findings in a biological opinion. If NMFS concludes in the biological opinion that the agency action would likely result in the destruction or adverse modification of critical habitat, NMFS would also recommend any reasonable and prudent alternatives to the action. Reasonable and prudent alternatives are defined in 50 CFR 402.02 as alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that would avoid the destruction or adverse modification of critical habitat. Regulations at 50 CFR 402.16 require federal agencies that have retained discretionary involvement or control over an action, or where such discretionary involvement or control is authorized by law, to reinitiate

consultation on previously reviewed actions in instances where: (1) Critical habitat is subsequently designated; or (2) new information or changes to the action may result in effects to critical habitat not previously considered in the biological opinion. Consequently, some Federal agencies may request reinitiation of consultation or conference with NMFS on actions for which formal consultation has been completed, if those actions may affect designated critical habitat or adversely modify or destroy proposed critical habitat. Activities subject to the ESA Section 7 consultation process include activities on Federal lands and activities on private or state lands requiring a permit from a Federal agency or some other Federal action, including funding. In the marine and aquatic environments, activities subject to the ESA Section 7 consultation process include activities in Federal waters and in state waters that: (1) Have the potential to affect listed species or critical habitat; and (2) are carried out by a Federal agency, need a permit or license from a Federal agency, or receive funding from a Federal agency. ESA Section 7 consultation would not be required for Federal actions that do not affect listed species or critical habitat and for actions that are not Federally funded, authorized, or carried out.

Activities That May be Affected

Section 4(b)(8) of the ESA requires that we describe briefly and evaluate in any proposed or final regulation to designate critical habitat, those activities that may adversely modify such habitat or that may be affected by such designation. As described in our Draft Impacts Analysis, a wide variety of activities may affect critical habitat and, when carried out, funded, or authorized by a Federal agency, will require an ESA Section 7 consultation because they may affect one or more of the essential features of critical habitat. Such activities include in-water construction for a variety of federal actions, dredging for navigation, harbor expansion or sand and gravel mining, flood control projects, bridge repair and replacement, hydropower licensing, natural gas facility and pipeline construction, ESA research and incidental take permits or fishery research grants, and Clean Water Act TMDL program management. Private entities may also be affected by these proposed critical habitat designations if they are a proponent of a project that requires a Federal permit, Federal funding is received, or the entity is involved in or receives benefits from a Federal project. Future activities will need to be evaluated with respect

to their potential to destroy or adversely modify critical habitat. For example, activities may adversely modify the substrate essential feature by removing or altering the substrate. The open passage feature may be adversely modified by the placement of structures such as dams and tidal turbines, research nets, or altering the water depth so that fish cannot swim. The salinity feature may be adversely modified by activities that impact fresh water input such as operation of water control structures and water withdrawals, and impacts to water depth such as dredging. The water quality feature may be adversely modified by land development as well as commercial and recreational activities on rivers that contribute to nutrient loading which could result in decreased dissolved oxygen levels and increased water temperature, and increased sediment deposition that reduces Atlantic sturgeon egg adherence on hard spawning substrate and reduces the interstitial spaces used by larvae for refuge from predators. Dredging to remove sediment build-up or to facilitate vessel traffic may remove or alter hard substrate that is necessary for egg adherence and as refuge for larvae, and may change the water depth resulting in shifts in the salt wedge within the estuary or change other characteristics of the water quality (e.g., temperature, dissolved oxygen) necessary for the developing eggs, larvae, and juveniles. These activities would require ESA Section 7 consultation when they are implemented, funded, or carried out by a federal agency.

Questions regarding whether specific activities will constitute destruction or adverse modification of critical habitat should be directed to us (see **ADDRESSES** and **FOR FURTHER INFORMATION CONTACT**).

Public Comments Solicited

We request that interested persons submit comments, information, and suggestions concerning this proposed rule during the comment period (see **DATES**). We are soliciting comments or suggestions from the public, other concerned governments and agencies, the scientific community, industry, or any other interested party concerning this proposed rule, including any foreseeable economic, national security, or other relevant impact resulting from the proposed designations. You may submit your comments and materials concerning this proposal by any one of several methods (see **ADDRESSES**). Copies of the proposed rule and supporting documentation can be found on the NMFS Southeast Region Web site

at <http://sero.nmfs.noaa.gov/>. We will consider all comments pertaining to this designation received during the comment period in preparing the final rule. Accordingly, the final designation may differ from this proposal.

Information Quality Act and Peer Review

The data and analyses supporting this proposed action have undergone a pre-dissemination review and have been determined to be in compliance with applicable information quality guidelines implementing the Information Quality Act (Section 515 of Public Law 106–554). On July 1, 1994, a joint USFWS/NMFS policy for peer review was issued stating that the Services would solicit independent peer review to ensure the best biological and commercial data is used in the development of rulemaking actions and draft recovery plans under the ESA (59 FR 34270). In addition, on December 16, 2004, the Office of Management and Budget (OMB) issued its Final Information Quality Bulletin for Peer Review (Bulletin). The Bulletin was published in the **Federal Register** on January 14, 2005 (70 FR 2664), and went into effect on June 16, 2005. The primary purpose of the Bulletin is to improve the quality and credibility of scientific information disseminated by the Federal government by requiring peer review of “influential scientific information” and “highly influential scientific information” prior to public dissemination. “Influential scientific information” is defined as “information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions.” The Bulletin provides agencies broad discretion in determining the appropriate process and level of peer review. Stricter standards were established for the peer review of “highly influential scientific assessments,” defined as information whose “dissemination could have a potential impact of more than \$500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest.”

The information in the Draft Impacts Analysis Report supporting this proposed critical habitat rule is considered influential scientific information and subject to peer review. To satisfy our requirements under the OMB Bulletin, we obtained independent peer review of the information used to draft this document, and incorporated the peer review comments into this draft

prior to dissemination of this proposed rulemaking. For this action, compliance with the OMB Peer Review Bulletin satisfies any peer review requirements under the 1994 joint peer review policy. Comments received from peer reviewers are available on our Web site at http://sero.nmfs.noaa.gov/protected_resources/sturgeon/index.html.

Classification

Takings (Executive Order 12630)

Under E.O. 12630, Federal agencies must consider the effects of their actions on constitutionally protected private property rights and avoid unnecessary takings of property. A taking of property includes actions that result in physical invasion or occupancy of private property, and regulations imposed on private property that substantially affect its value or use. In accordance with E.O. 12630, this proposed rule would not have significant takings implications. A takings implication assessment is not required.

Regulatory Planning and Review (Executive Order 12866)

This proposed rule has been determined to be significant for purposes of E.O. 12866 because it may create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. A draft economic impacts report has been prepared to support an impacts analysis under section 4(b)(2) of the ESA.

Federalism (Executive Order 13132)

Pursuant to the Executive Order on Federalism, E.O. 13132, we determined that this proposed rule does not have significant Federalism effects and that a Federalism assessment is not required. However, in keeping with Department of Commerce policies and consistent with ESA regulations at 50 CFR 424.16(c)(1)(ii), we will request information for this proposed rule from state resource agencies in North Carolina, South Carolina, Georgia, and Florida. The proposed designations may have some benefit to state and local resource agencies in that the proposed rule more clearly defines the physical and biological features essential to the conservation of the species and the areas on which those features are found.

Energy Supply, Distribution, and Use (Executive Order 13211)

Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking an action expected to lead to the promulgation of a final rule or regulation that is a significant regulatory action under E.O. 12866 and is likely to

have a significant adverse effect on the supply, distribution, or use of energy. OMB Guidance on Implementing E.O. 13211 (July 13, 2001) states that significant adverse effects could include any of the following outcomes compared to a world without the regulatory action under consideration: (1) Reductions in crude oil supply in excess of 10,000 barrels per day; (2) reductions in fuel production in excess of 4,000 barrels per day; (3) reductions in coal production in excess of 5 million tons per year; (4) reductions in natural gas production in excess of 25 million cubic feet per year; (5) reductions in electricity production in excess of 1 billion kilowatt-hours per year or in excess of 500 megawatts of installed capacity; (6) increases in energy use required by the regulatory action that exceed any of the thresholds above; (7) increases in the cost of energy production in excess of one percent; (8) increases in the cost of energy distribution in excess of one percent; or (9) other similarly adverse outcomes. A regulatory action could also have significant adverse effects if it: (1) Adversely affects in a material way the productivity, competition, or prices in the energy sector; (2) adversely affects in a material way productivity, competition or prices within a region; (3) creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency regarding energy; or (4) raises novel legal or policy issues adversely affecting the supply, distribution or use of energy arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866 and 13211.

This rule, if finalized, will not have a significant adverse effect on the supply, distribution, or use of energy. Therefore, we have not prepared a Statement of Energy Effects.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

We prepared an initial regulatory flexibility analysis (IRFA) pursuant to section 603 of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601, *et seq.*). The IRFA analyzes the impacts to those areas where critical habitat is proposed and is included as Appendix A of the Draft Impacts Analysis Report and is available upon request (see **ADDRESSES** section). The IRFA is summarized below, as required by section 603 of the RFA. The IRFA describes the economic impact this proposed rule, if adopted, would have on small entities.

As discussed previously and in our IRFA, the designation of critical habitat is required under the ESA, and in this particular case, is also required

pursuant to a court-ordered settlement agreement. The purpose of the critical habitat designation, as required by the ESA, is to designate, to the maximum extent prudent and determinable, the specific areas that contain the physical or biological features essential to the conservation of the species and that may require special management considerations or protections. The proposed critical habitat rule does not directly apply to any particular entity, small or large. The rule would operate in conjunction with ESA Section 7(a)(2), which requires that federal agencies insure, in consultation with NMFS, that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Consultations may result in economic impacts to federal agencies and proponents of proposed actions (e.g., permittees, applicants, grantees). Those economic impacts may be in the form of administrative costs of participating in a Section 7 consultation and, if the consultation results in required measures to protect critical habitat, project modification costs.

We evaluated whether predicted future federal actions would affect Atlantic sturgeon, the essential features of the proposed critical habitat, or both, or whether there were other identifiable baseline impacts that might be coextensive with impacts to habitat features, such as impacts to shortnose sturgeon. If a proposed action affects only listed sturgeon or affects both listed sturgeon and essential features, the administrative and project modification costs are not necessarily attributable solely to critical habitat designation. In these circumstances, the added administrative costs associated with addressing critical habitat in a consultation were considered incremental impacts of the proposed designation. There could also be incremental project modification costs for consultations with coextensive impacts, if an action is considered likely to require unique project modifications to specifically address impacts to the features. If a proposed action would only affect the essential features, the administrative and project modification costs would be attributable to the critical habitat designation and thus treated as incremental impacts of the designation.

For most, if not all, of the federal activities predicted to occur in the next 10 years, if the effects to critical habitat will be adverse and require formal consultation, those effects would also constitute adverse effects to Atlantic sturgeon or shortnose sturgeon, either

directly when they are in the project area, or indirectly due to the effects on their habitat. Thus, as discussed previously, projects that adversely affect the proposed essential features are likely to always also adversely affect the species and the project impacts would not be incremental. Therefore, the only costs of this class of actions that are attributable to this rule are the administrative costs of adding critical habitat analyses to a consultation that would occur anyway, due to impacts to sturgeon species.

For some of the predicted future federal activities, it may be feasible to conduct the action when sturgeon are out of the action area. If effects to critical habitat are temporary such that the essential features return to their pre-project condition by the time the sturgeon return and need to use the features, there might not be any adverse effects to either the species or the critical habitat. In these circumstances, consultations would be fully incremental consultations only on critical habitat, and the consultations would be informal. This would likely only apply to actions that affect just spawning habitat in the upper parts of the rivers, as sturgeon of various ages are present year-round in the lower reaches of the rivers and the estuaries. Because the costs of fully incremental informal consultations are higher than the marginal costs of adding critical habitat analyses to coextensive formal consultations, we conservatively assumed future actions will be incremental informal consultations, where applicable. Thus, the costs of these future activities that are attributable to the rule would consist of the full costs of informal consultation, to NMFS, to the action agency, and to any third party proponent of the action (e.g., applicant, permittee).

Ten different federal entities implemented or approved 14 different categories of activities in the areas covered by the proposed critical habitat units that required consultations in the past. All categories of activities implemented by these federal entities were identified as having the potential to affect the essential features. The total number of projected consultations over 10 years is indicated in parentheses below.

1. USACE—Navigation maintenance dredging, harbor expansion (14)
2. USACE—WRDA flood control, ecosystem restoration studies (6)
3. USACE—WRDA dam operations, repair, fishway construction (3)
4. USACE—Section 404/RHA section 10 permitting—dredge, fill, construction (20)

5. FHWA—Bridge repair, replacement (67)
6. USCG—Bridge repair, replacement permitting (3)
7. FERC—Hydropower licensing (5)
8. FERC—LNG facilities, pipelines authorization (5)
9. NRC—Nuclear power plant construction/operation licensing (8)
10. NMFS—ESA research or incidental take permitting (section 10) (46)
11. USFWS—Fishery management grants (11)
12. EPA—Nationwide pesticide authorizations (9)
13. FEMA—Disaster assistance/preparation grants (5)
14. DOE—Nuclear fuel management (3)

We predict that a total of 205 federal actions will require consultation due to impacts to critical habitat over the next 10 years; of these, we project that 179 actions could involve third parties that might be small entities. One hundred fifty-six projected future federal actions that could involve third parties will consist of coextensive formal consultations considering impacts to both sturgeon and critical habitat. The administrative costs of consultation to third parties per consultation from these actions will either be \$880 or \$2,080, depending upon whether they bear the costs of completing a biological assessment. The 23 projected future actions that would be fully incremental and that could involve third parties would result in either \$1,500 or \$3,000 in costs to such third parties per consultation, depending upon whether they bear the costs of completing a biological assessment. Given the EPA consultations will be national in scope and involve all of NMFS's listed species and designated critical habitats, costs to third parties involved in the these consultations that are attributable to this rulemaking are conservatively estimated to be \$25,072 for all units over 10 years.

Businesses in North American Industry Classification System (NAICS) Subsector 325320, Pesticide and Other Agricultural Chemical Manufacturing, could be involved in the 5 nationwide EPA pesticide authorization consultations. A small business in this Subsector is defined by the SBA as having 1,000 employees (https://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf).

Businesses in North American Industry Classification System (NAICS) Sector 22 (Utilities) could be involved in 18 actions projected to occur in federal action categories 7–9. For hydropower power generation and natural gas distribution enterprises, a small business is defined by the SBA as

one having a total of 500 employees. For nuclear power generation, a small business is defined by the SBA as one having a total of 750 employees. Businesses in NAICS Sector 54 could be involved as contractors assisting with the ESA consultation in any of the 179 projected future federal actions that could involve third parties. Relevant subsectors could include 541370, Surveying and Mapping, 541620, Environmental Consulting Services, or 541690, Other Scientific and Technical Consulting Services. A small business in any of these subsectors is defined by the SBA as one having average annual receipts of \$15 million.

Businesses in NAICS Sector 23, Construction, could be involved in a number of categories of projected future actions, where they could incur administrative costs of construction. Businesses in subsector 237120, Oil and Gas Pipeline and Related Structures Construction, could be involved in the 3 FERC LNG pipeline consultations. A small business in this subsector has average annual receipts of \$36.5 million. Businesses in subsector 237310, Highway, Street, and Bridge Construction, could be involved in the 70 FHWA and USCG bridge repair, replacement consultations. A small business in this subsector has average annual receipts of \$36.5 million.

Businesses in subsector 238, Other Specialty Trade Contractors, could be involved as construction contractors in the 20 future USACE section 404/RHA permitting actions and the 5 FEMA disaster assistance actions. Small businesses in this subsector have average annual receipts of \$15 million.

Cities could be involved in many of the 70 FHWA and USCG bridge repair, replacement projects, and some proportion of the 20 USACE section 404/RHA permitting actions. The SBA defines a small governmental jurisdiction as cities, counties, towns, townships, villages, school districts, or special districts with a population of less than 50,000.

Our consultation database does not track the identity of past third parties involved in consultations, or whether the third parties were small entities; therefore we have no basis to determine the percentage of the 179 third parties that may potentially be involved in future consultations due to impacts to proposed critical habitat that may be small businesses, small nonprofits, or small government jurisdictions.

There is no indication in the data evaluated in the Draft Impacts Analysis Report, which serves as the basis for this IRFA, that the designation would place small entities at a competitive

disadvantage compared to large entities. Incremental economic impacts due to the designation proposed for the Carolina and South Atlantic DPSs will be minimal overall. These costs will result from participation in the Section 7 consultation process, and will be spread over 14 river systems totaling over 3,300 river miles in 4 states. Federal agencies will bear the majority of the costs (59% to 83%), which will be limited to administrative costs of consultation for all parties involved. There are no apparent concentrations of costs. Assuming a third party would be involved and incur costs for each of the 179 projects in all of the categories of federal activity that involved third parties in the past, the costs to third parties that could be involved in the projected future consultations, other than the EPA consultations, would be between \$880 and \$2,080 for each action for coextensive formal consultations, and between \$1,500 and \$3,000 for each fully incremental informal consultation. The total costs over the next 10 years to all third parties for these 2 classes of actions would be between \$30,000 and \$60,000 for the incremental informal consultations and between \$136,400 and \$322,400 for the coextensive consultations. The total costs over the next 10 years to third parties involved in the EPA consultations are conservatively estimated to be \$25,072 across all units.

Even though we cannot determine relative numbers of small and large entities that may be affected by the designation of critical habitat, there is no indication that affected project applicants would be limited to, nor disproportionately comprised of, small entities. It is unclear whether small entities would be placed at a competitive disadvantage compared to large entities. However, as described in the Draft Impacts Analysis Report, consultations and project modifications will be required based on the type of permitted action and its associated impacts on the essential critical habitat features.

It is unlikely that the proposed rule will significantly reduce profits or revenue for small businesses, if they are involved in future consultations required by this rulemaking, given costs will be limited to administrative costs of participating in the consultation process and the maximum cost of a single consultation to a third party is projected to be \$3,000.

We encourage all small businesses, small nonprofits and small governmental jurisdictions that may be affected by this rule to provide comment on the potential economic impacts of

the proposed designation, to improve the above analysis.

There are no record-keeping or reporting requirements associated with the proposed rule. Similarly, there are no other compliance requirements in the rule. There are no professional skills necessary for preparation of any report or record, although consultants are frequently involved on behalf of project proponents, for example in preparing biological assessments of the impacts of a proposed action on listed species and critical habitat. Federal laws and regulations that directly and indirectly protect the Carolina and South Atlantic DPSs of Atlantic sturgeon are listed and discussed in the Draft Impacts Analysis Report. No federal laws or regulations duplicate or conflict with the proposed rule. Existing federal laws and regulations overlap with the proposed rule only to the extent that they provide protection to marine natural resources. However, no existing laws or regulations specifically address negative impacts to, or require the avoidance of the destruction or adverse modification of, the essential features of critical habitat for the Carolina and South Atlantic DPSs of Atlantic sturgeon.

We considered a no action (status quo) alternative to the proposed designation under which NMFS would not propose critical habitat for the Carolina and South Atlantic DPSs of Atlantic sturgeon. Under this alternative, conservation and recovery of the listed species would depend upon the protection provided under the "jeopardy" provisions of Section 7 of the ESA. Compared to the status quo, there would be no increase in the number of ESA consultations or project modifications in the future that would not otherwise be required due to the listing of the Carolina and South Atlantic DPSs of Atlantic sturgeon. However, we have determined that the physical features forming the basis for our proposed critical habitat designation are essential to the conservation of the Carolina and South Atlantic DPSs of Atlantic sturgeon. Thus, the lack of protection of the essential features from adverse modification and/or destruction could result in decline in abundance of the Carolina and South Atlantic DPSs of Atlantic sturgeon, and loss of associated economic and other values this species provides to society. Thus, the no action alternative is not necessarily a "no cost" alternative for small entities.

We also considered an alternative of including all large coastal rivers from the North Carolina/Virginia border southward to the St Johns River, Florida, in the designation. Several large coastal rivers within the geographic area

occupied by the Carolina and South Atlantic DPSs of Atlantic sturgeon do not appear to support spawning and juvenile recruitment or to contain suitable habitat features to support spawning. These rivers are the Chowan and New Rivers in North Carolina; the Waccamaw (above its confluence with Bull Creek which links it to the Pee Dee River), Sampit, Ashley, Ashepoo, and Broad-Coosawhatchie Rivers in South Carolina; and the St. Johns River, Florida. We have no information, current or historic, of Atlantic sturgeon utilizing the Chowan and New Rivers in North Carolina. Recent telemetry work by Post *et al.* (2014) indicates that Atlantic sturgeon do not utilize the Sampit, Ashley, Ashepoo, and Broad-Coosawhatchie Rivers in South Carolina. These rivers are short, coastal plains rivers that most likely do not contain suitable habitat for Atlantic sturgeon. Post *et al.* (2014) also found Atlantic sturgeon only utilized the portion of the Waccamaw River downstream of Bull Creek. Due to man-made structures and alterations, spawning areas in the St. Johns are not accessible and therefore do not support a reproducing population. For these reasons, we are not designating these coastal rivers, or portions of the rivers, as critical habitat.

Coastal Zone Management Act

We have determined that this action will have no reasonably foreseeable effects on the enforceable policies of approved Coastal Zone Management Programs of North Carolina, South Carolina, Georgia and Florida. Upon publication of this proposed rule, these determinations will be submitted for review by the responsible state agencies under section 307 of the Coastal Zone Management Act.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This proposed rule does not contain any new or revised collection of information. This rule, if adopted, would not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

This proposed rule will not produce a Federal mandate. The designation of critical habitat does not impose a legally-binding duty on non-Federal government entities or private parties. The only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under Section 7 of the

ESA. Non-Federal entities which receive Federal funding, assistance, permits or otherwise require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, but the Federal agency has the legally binding duty to avoid destruction or adverse modification of critical habitat.

We do not anticipate that this rule, if finalized, will significantly or uniquely affect small governments. Therefore, a Small Government Action Plan is not required.

Consultation and Coordination With Indian Tribal Governments (Executive Order 13175)

The longstanding and distinctive relationship between the Federal and tribal governments is defined by treaties, statutes, executive orders, judicial decisions, and agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the Federal Government.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, outlines the responsibilities of the Federal Government in matters affecting tribal interests. If NMFS issues a regulation with tribal implications (defined as having a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes) we must consult with those governments or the Federal Government must provide funds necessary to pay direct compliance costs incurred by tribal governments. The proposed critical habitat designations for the Carolina and South Atlantic DPSs do not have tribal implications.

References Cited

A complete list of all references cited in this rulemaking can be found on our Web site at http://sero.nmfs.noaa.gov/protected_resources/sturgeon/index.html and is available upon request from the NMFS Southeast Region Fisheries Office in St. Petersburg, Florida (see **ADDRESSES**).

List of Subjects in 50 CFR part 226

Endangered and threatened species.

Dated: May 24, 2016.

Samuel D Rauch, III

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, we propose to amend 50 CFR part 226 as follows:

PART 226—DESIGNATED CRITICAL HABITAT

■ 1. The authority citation for part 226 continues to read as follows:

Authority: 16 U.S.C. 1533.

■ 2. Add § 226.226 to read as follows:

§ 226.226 Critical habitat for the Carolina and South Atlantic distinct population Segments of Atlantic sturgeon.

Critical habitat is designated for the Carolina and South Atlantic DPSs of Atlantic sturgeon as described in paragraphs (a) through (b) of this section. The textual descriptions in paragraphs (c) through (d) of this section are the definitive source for determining the critical habitat boundaries.

(a) The physical features essential for the conservation of Atlantic sturgeon belonging to the Carolina and South Atlantic Distinct Population Segments are those habitat components that support successful reproduction and recruitment. These are:

(1) Suitable hard bottom substrate (*e.g.*, rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (*i.e.*, 0.0–0.5 parts per thousand range) for settlement of fertilized eggs and refuge, growth, and development of early life stages;

(2) Transitional salinity zones inclusive of waters with a gradual downstream gradient of 0.5–30 parts per thousand and soft substrate (*e.g.*, sand, mud) downstream of spawning sites for juvenile foraging and physiological development;

(3) Water of appropriate depth and absent physical barriers to passage (*e.g.*, locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support:

(i) Unimpeded movement of adults to and from spawning sites;

(ii) Seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and

(iii) Staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (at least 1.2 m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river;

(4) Water quality conditions, especially in the bottom meter of the water column, with temperature and oxygen values that support:

(i) Spawning;

(ii) Annual and inter-annual adult, subadult, larval, and juvenile survival; and

(iii) Larval, juvenile, and subadult growth, development, and recruitment.

Appropriate temperature and oxygen values will vary interdependently, and depending on salinity in a particular habitat. For example, 6 mg/L dissolved oxygen (D.O.) for juvenile rearing habitat is considered optimal, whereas

D.O. less than 5.0 mg/L for longer than 30 days is considered suboptimal when water temperature is greater than 25°C. In temperatures greater than 26°C, D.O. greater than 4.3 mg/L is needed to protect survival and growth.

Temperatures of 13° C to 26° C for spawning habitat are considered optimal

(b) Critical habitat is designated for the following DPSs in the following states and counties:

DPS	State—Counties
Carolina	NC—Anson, Bertie, Beaufort, Bladen, Brunswick, Carteret, Craven, Columbus, Duplin, Edgecombe, Halifax, Hyde, Johnston, Lenoir, Martin, Nash, New Hanover, Northampton, Pamlico, Pender, Pitt, Richmond, Wake, Washington, and Wayne
	SC—Berkeley, Calhoun, Charleston, Chesterfield, Clarendon, Darlington, Dillon, Fairfield, Florence, Kershaw, Georgetown, Horry, Lee, Lexington, Marion, Marlboro, Newberry, Orangeburg, Richland, Sumter, and Williamsburg
South Atlantic	SC—Aiken, Allendale, Bamberg, Barnwell, Beaufort, Charleston, Colleton, Dorchester, Edgefield, Hampton, Jasper, Lexington, and Orangeburg
	GA—Appling, Atkinson, Baldwin, Ben Hill, Bibb, Bleckley, Brantley, Bryan, Bulloch, Burke, Camden, Charlton, Chat-ham, Coffee, Columbia, Dodge, Effingham, Emanuel, Glascock, Glynn, Hancock, Houston, Irwin, Jasper, Jeff Davis, Jefferson, Jenkins, Johnson, Jones, Laurens, Long, McIntosh, Montgomery, Pierce, Plaski, Richmond, Screven, Tattall, Telfair, Toombs, Twiggs, Ware, Washington, Wayne, Wheeler, and Wilkinson
	FL—Baker and Nassau

(c) *Critical Habitat Boundaries of the Carolina DPS.* The lateral extent for all critical habitat units for the Carolina DPS of Atlantic sturgeon is the ordinary high water mark on each bank of the river and shorelines. Critical habitat for the Carolina DPS of Atlantic sturgeon is:

- (1) Carolina Unit 1 includes the Roanoke River main stem from the Roanoke Rapids Dam downstream to RKM 0;
- (2) Carolina Unit 2 includes the Tar-Pamlico River main stem from the Rocky Mount Millpond Dam downstream to RKM 0;
- (3) Carolina Unit 3 includes the Neuse River main stem from the Milburnie Dam downstream to RKM 0;
- (4) Carolina Unit 4 includes the Cape Fear River main stem from Lock and Dam #2 downstream to RKM 0 and the Northeast Cape Fear River from the upstream side of Rones Chapel Road Bridge downstream to the confluence with the Cape Fear River;
- (5) Carolina Unit 5 includes the Pee Dee River main stem from Blewett Falls Dam downstream to RKM 0, the Waccamaw River from Bull Creek downstream to RKM 0, and Bull Creek from the Pee Dee River to the confluence with the Waccamaw River;

- (6) Carolina Unit 6 includes the Black River main stem from Interstate Highway 20 downstream to RKM 0;
- (7) Carolina Unit 7 includes the Santee River main stem from the Wilson Dam downstream to the fork of the North Santee River and South Santee River distributaries, the Rediversion Canal from the St. Stephen Powerhouse downstream to the confluence with the Santee River, the North Santee River from the fork of the Santee River and South Santee River downstream to RKM 0, the South Santee River from the fork of the Santee River and North Santee River downstream to RKM 0, the Tailrace Canal from Pinopolis Dam downstream to the West Branch Cooper River, the West Branch Cooper River from the Tailrace Canal downstream to the confluence with the East Branch Cooper River, and the Cooper River from confluence of the West Branch Cooper River and East Branch Cooper River tributaries downstream to RKM 0;
- (8) Carolina Unoccupied Unit 1 includes the Cape Fear River from Huske Lock and Dam (Lock and Dam #3) downstream to Lock and Dam #2; and
- (9) Carolina Unoccupied Unit 2 includes the Wateree River from the

Wateree Dam downstream to the confluence with the Congaree River, the Broad River from the Parr Shoals Dam downstream to the confluence with the Saluda River, the Congaree River from the confluence of the Saluda River and Broad River downstream to the Santee River, the Santee River from the confluence of the Congaree River and Wateree River downstream to Lake Marion, Lake Marion from the Santee River downstream to the Diversion Canal, the Diversion Canal from Lake Marion downstream to Lake Moultrie, Lake Moultrie from the Diversion Canal downstream to the Pinopolis Dam and the Rediversion Canal, the Rediversion Canal from Lake Moultrie downstream to the St. Stephen Powerhouse.

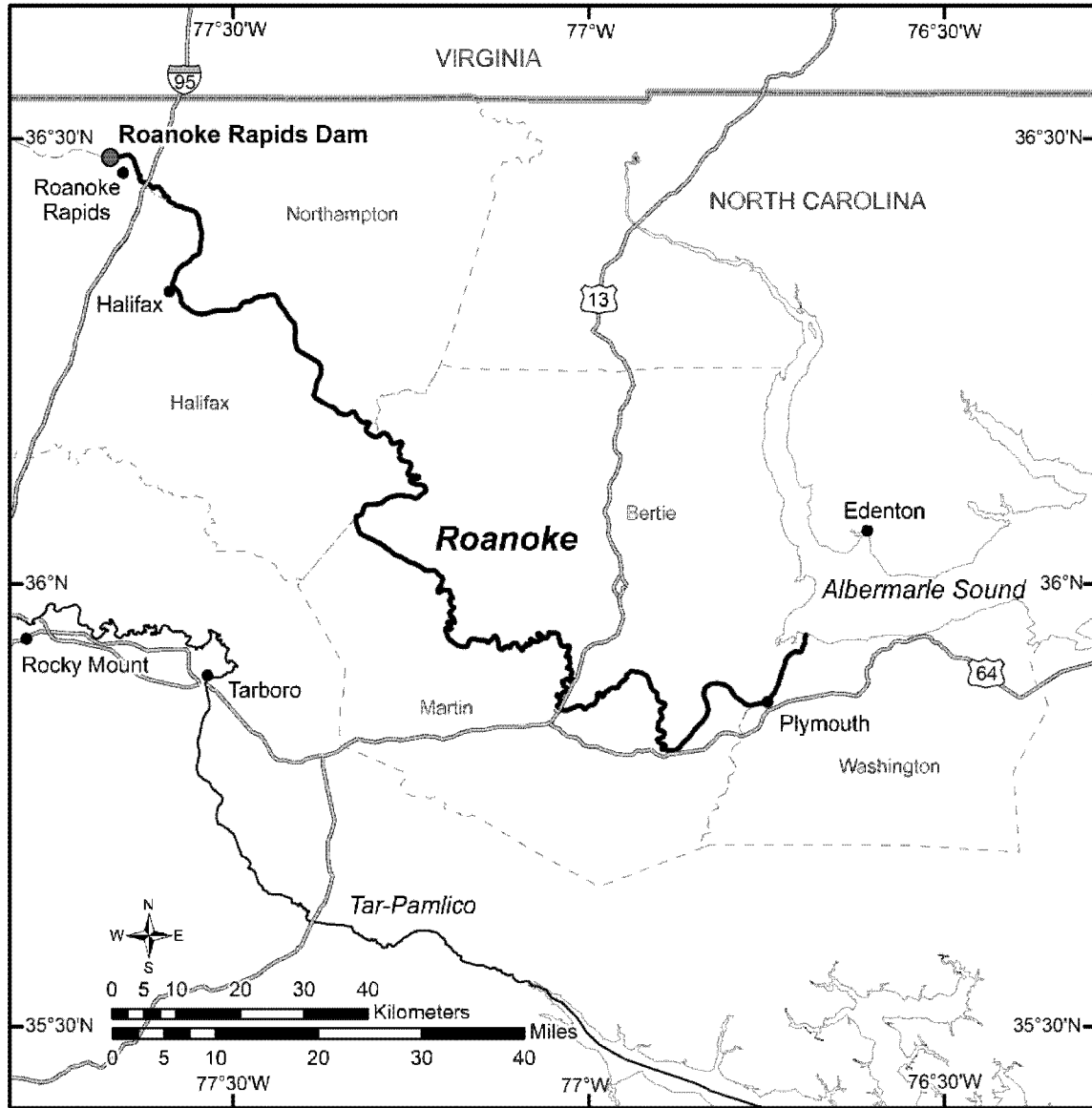
(d) *Areas Not Included in Critical Habitat.* Pursuant to ESA section 3(5)(A)(i), all areas containing existing (already constructed) federally authorized or permitted man-made structures such as aids-to-navigation (ATONs), artificial reefs, boat ramps, docks, pilings, maintained channels, or marinas.

(e) Maps of The Carolina DPS follow:

BILLING CODE 35101-22-P

Carolina Unit 1 Roanoke Unit

Map 1



Legend

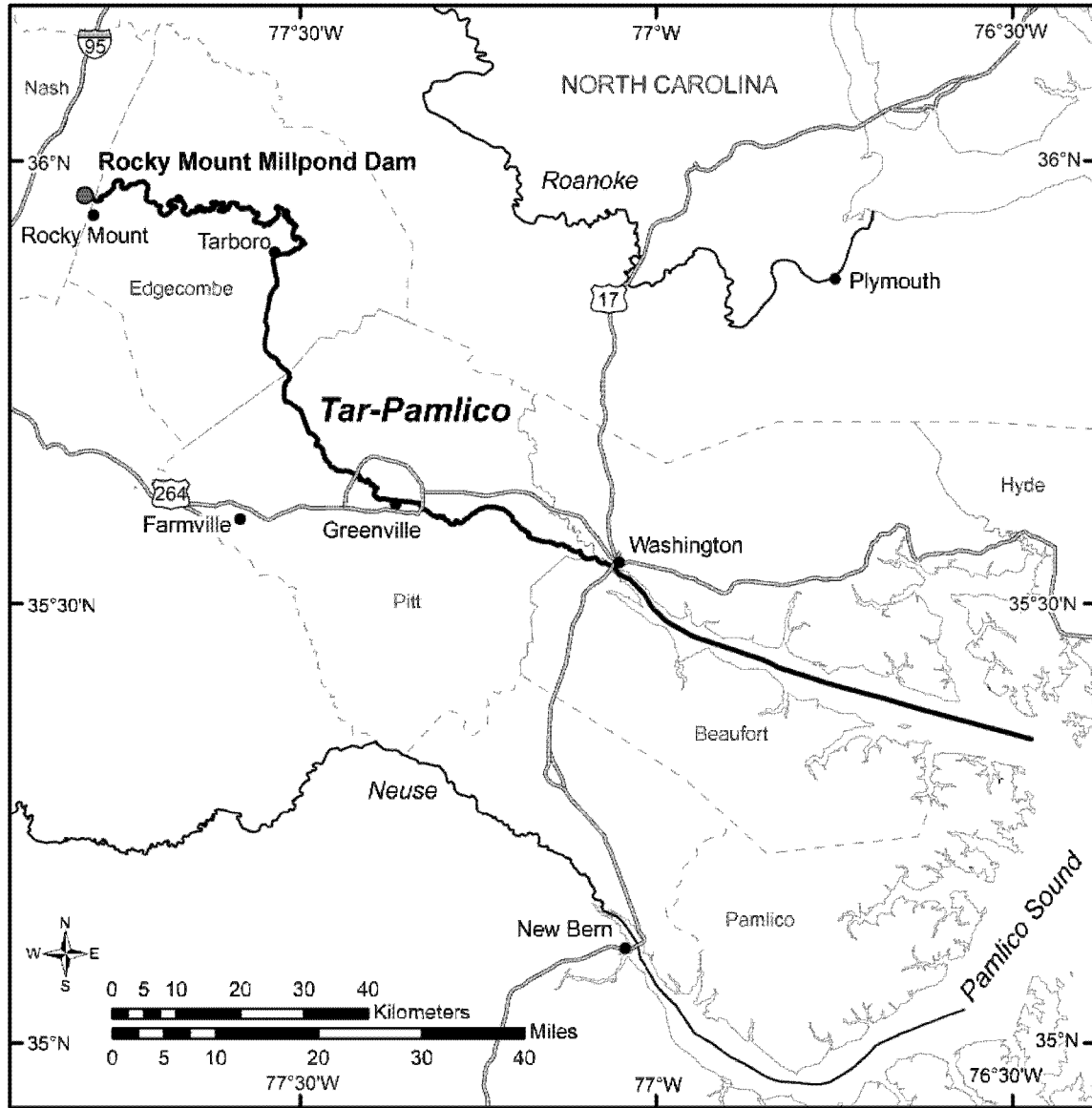
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

Carolina Unit 2 Tar-Pamlico Unit

Map 2



Legend

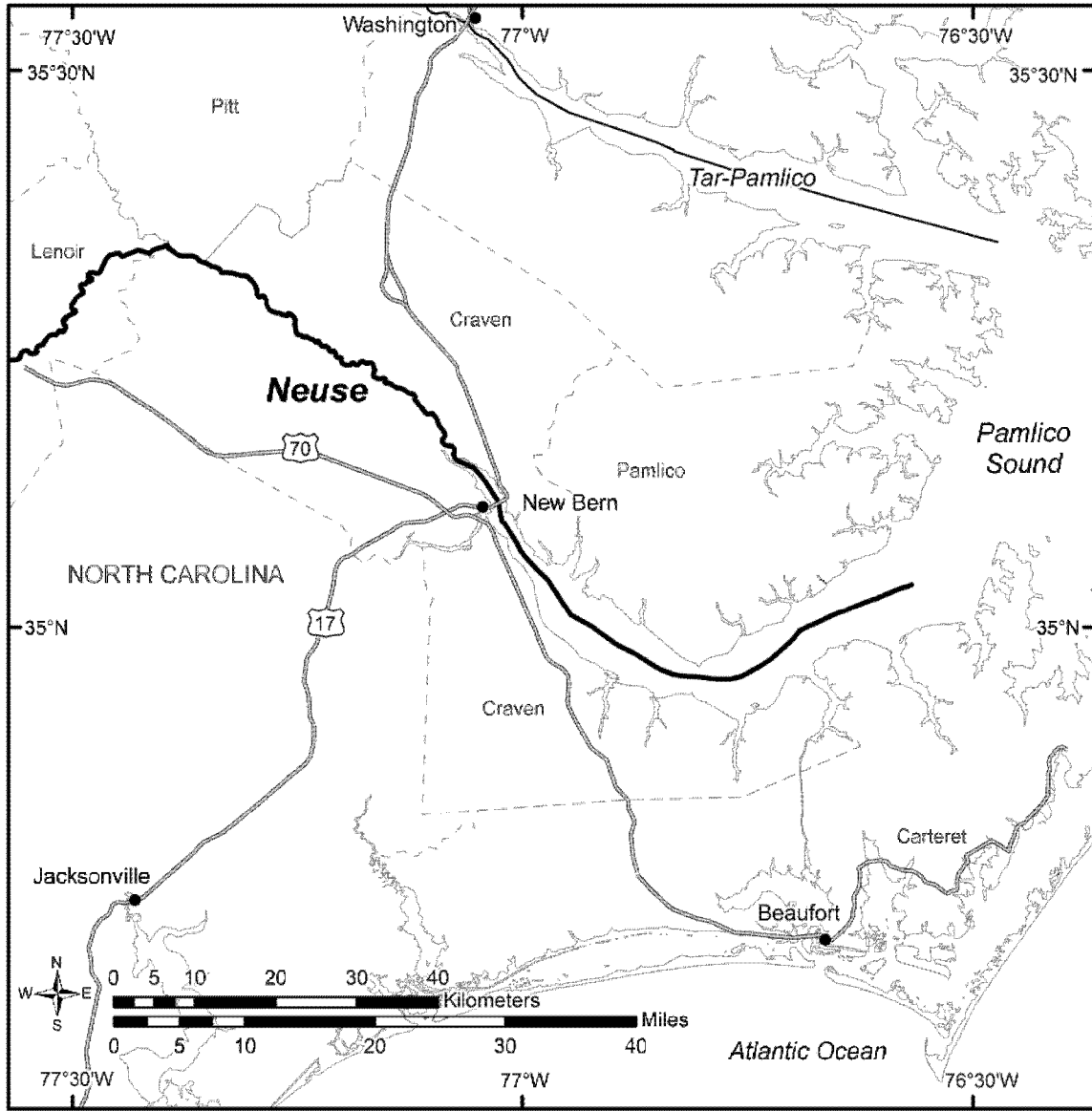
— Critical Habitat



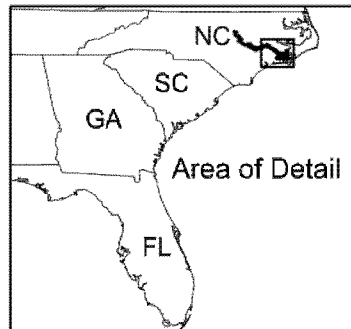
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

Carolina Unit 3 Neuse Unit

Map 3.1



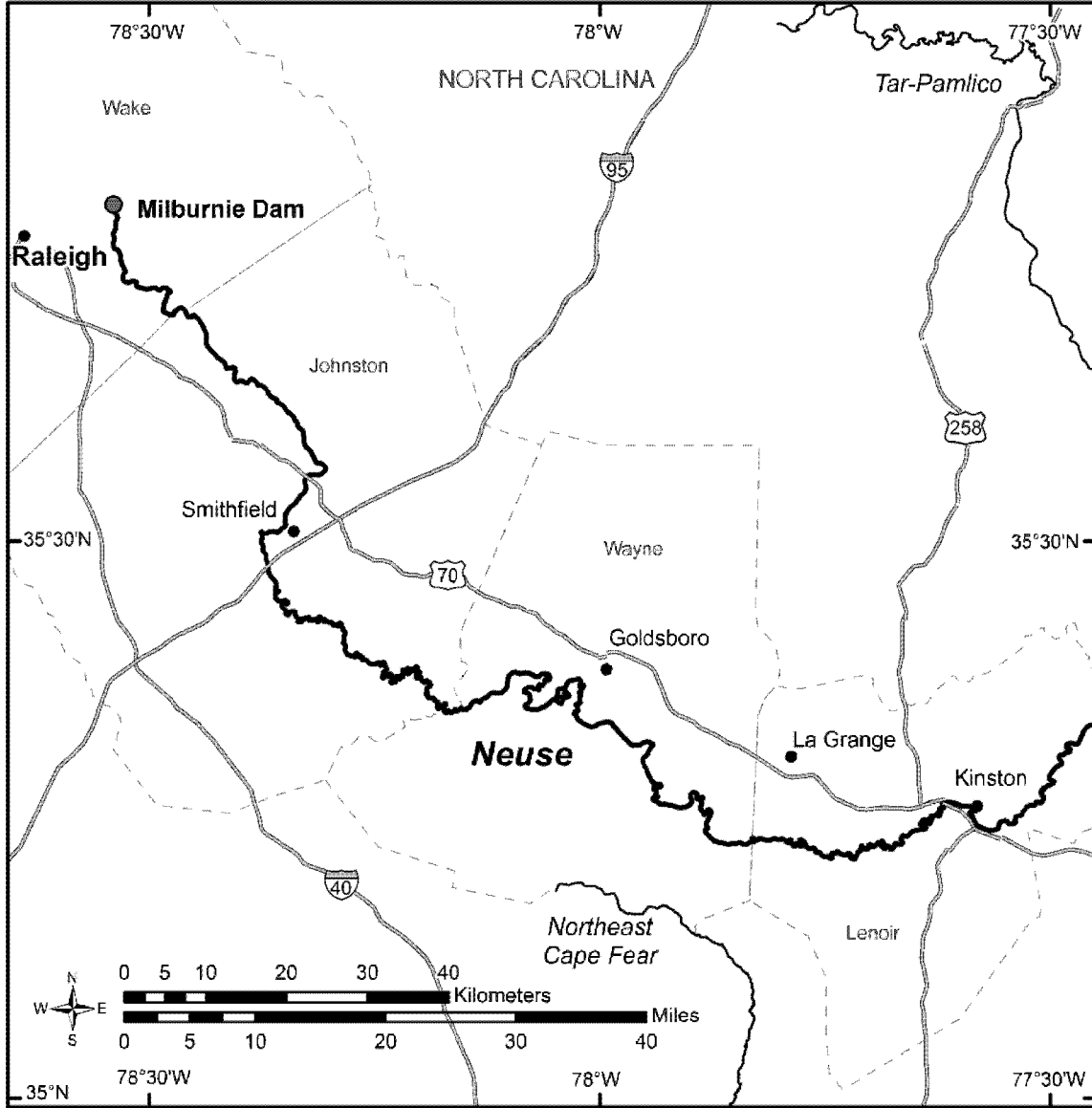
Legend
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

Carolina Unit 3 Neuse Unit

Map 3.2



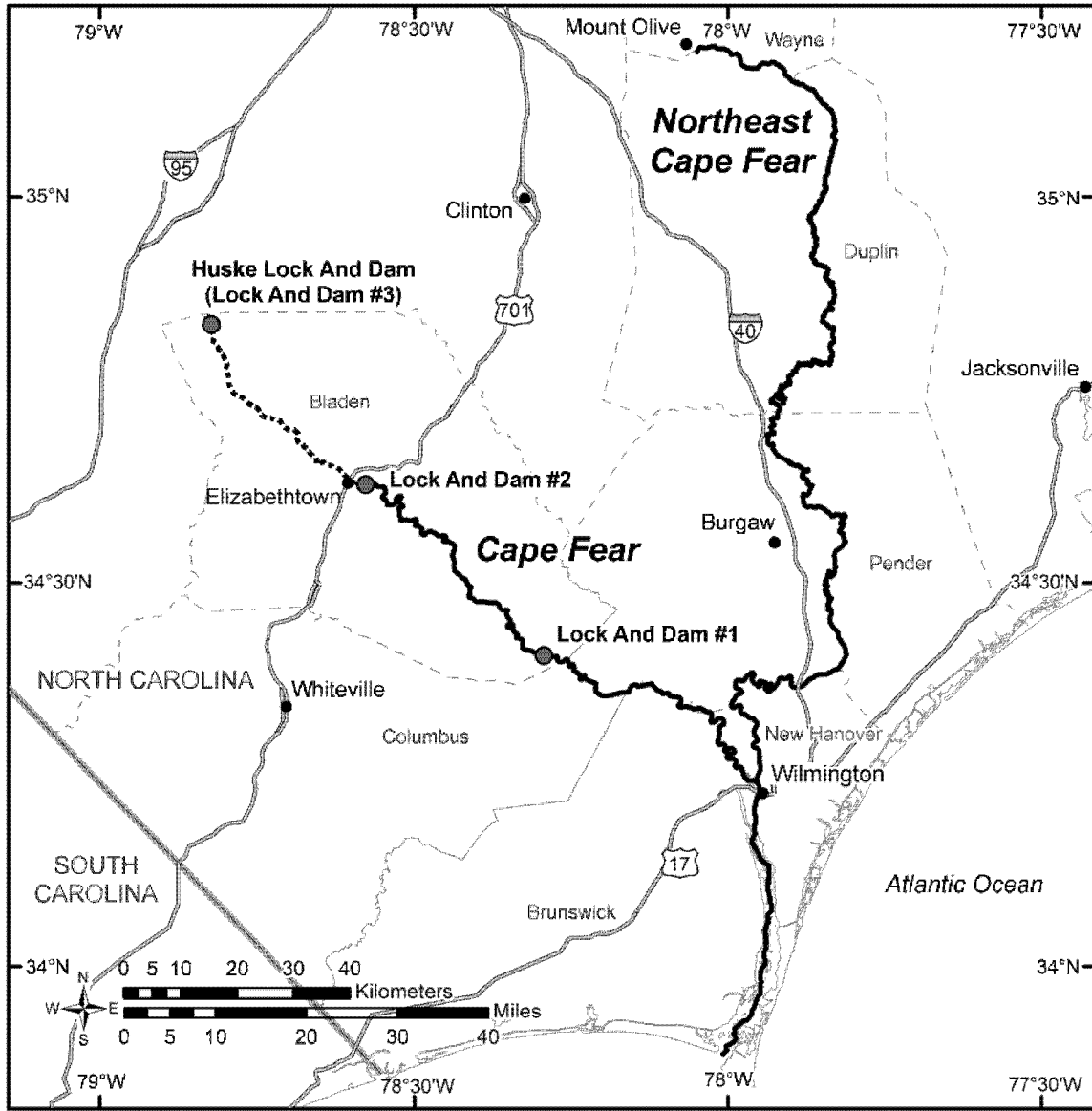
Legend
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

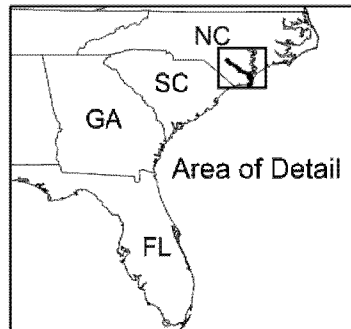
**Carolina Unit 4 and Carolina Unoccupied Unit 1
Cape Fear Unit**

Map 4



Legend

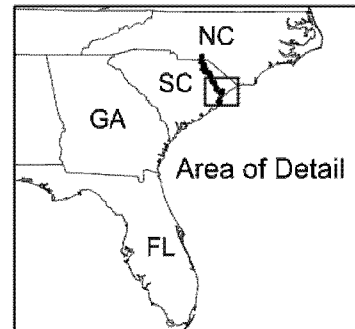
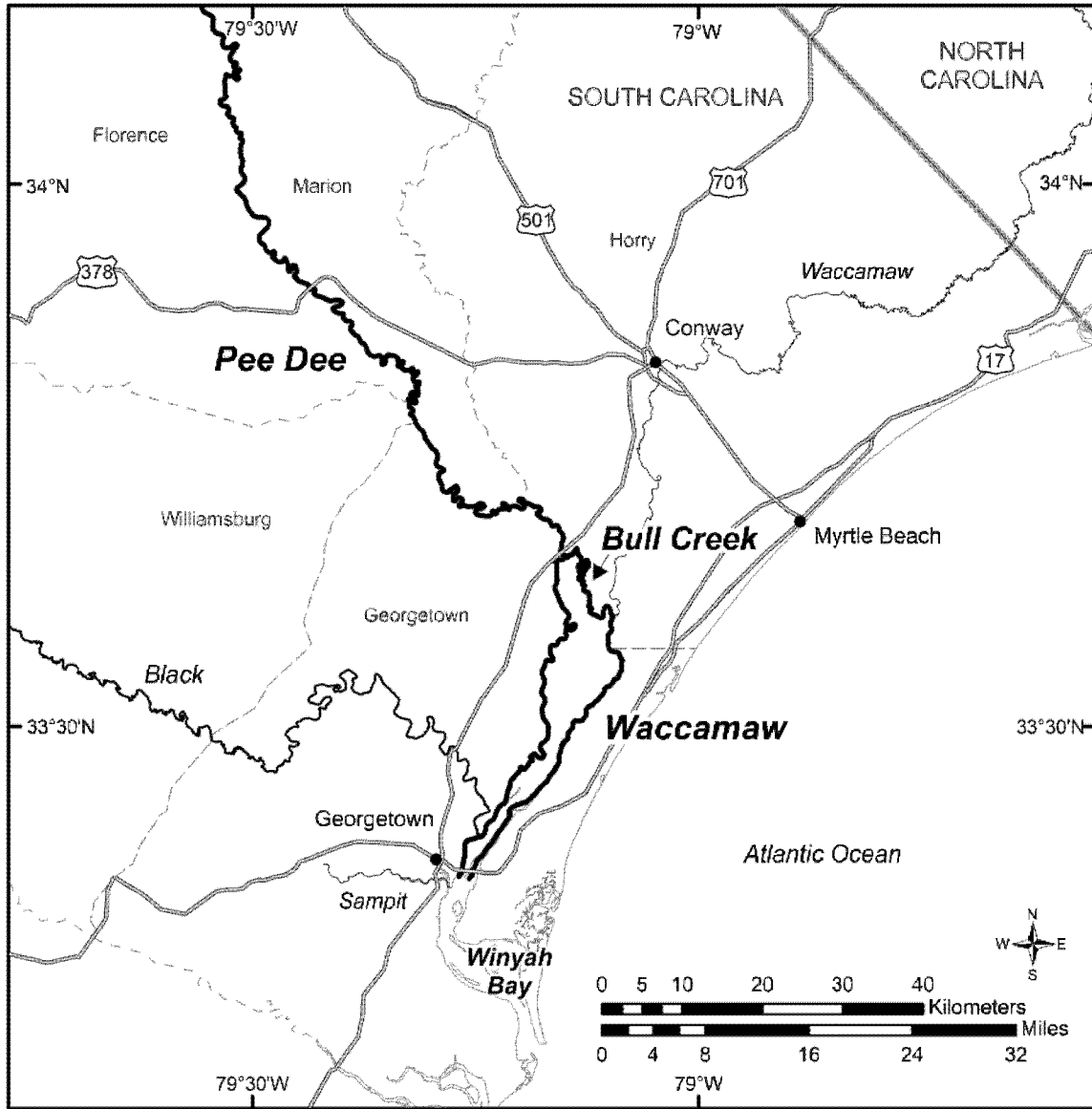
- Occupied Critical Habitat
- Unoccupied Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

**Carolina Unit 5
Pee Dee Unit**

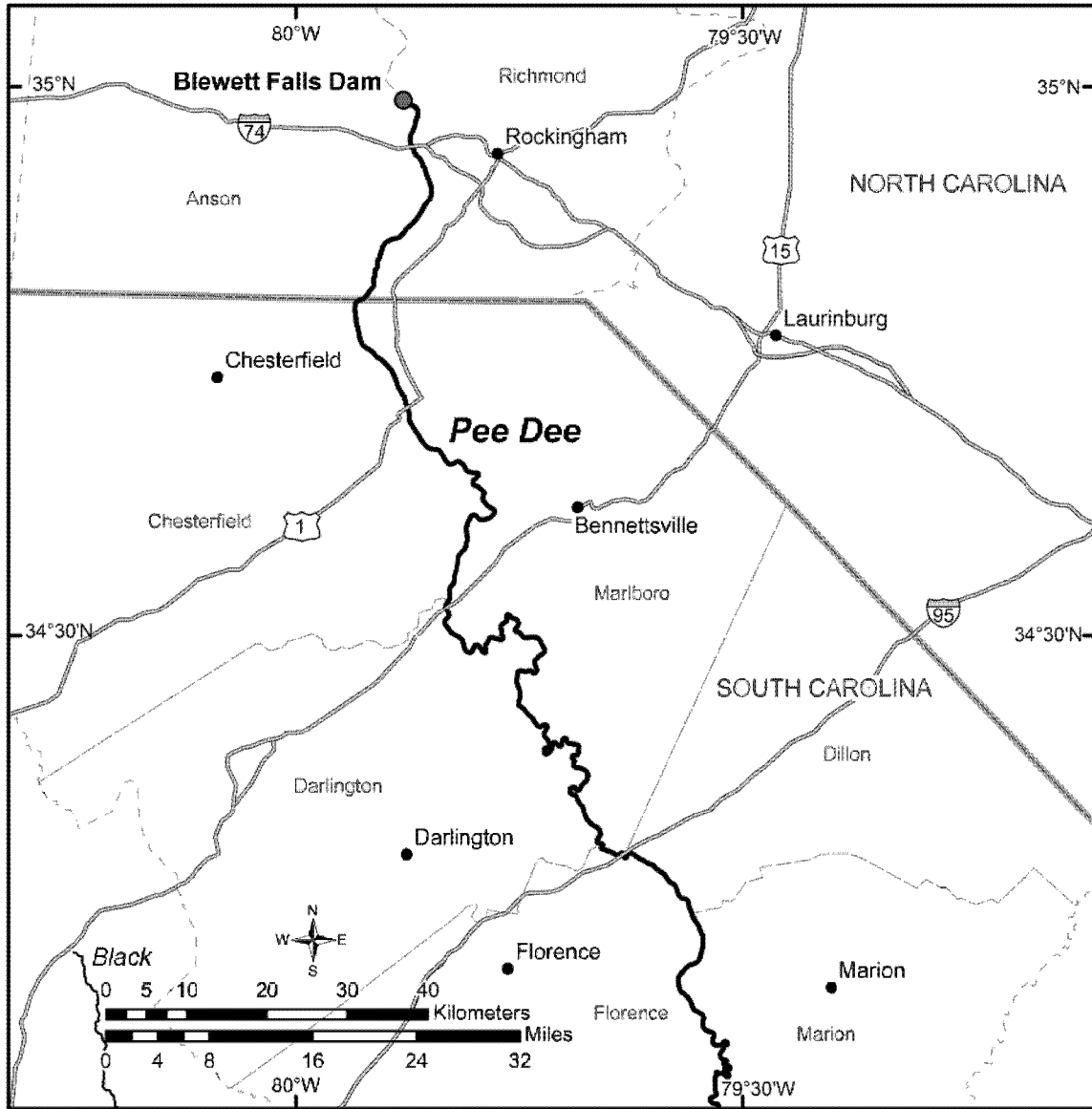
Map 5.1



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

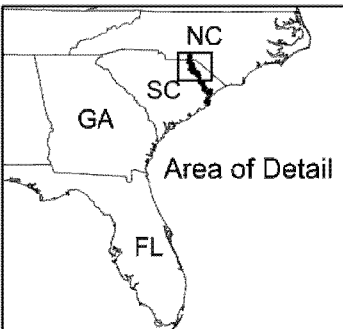
Carolina Unit 5 Pee Dee Unit

Map 5.2



Legend

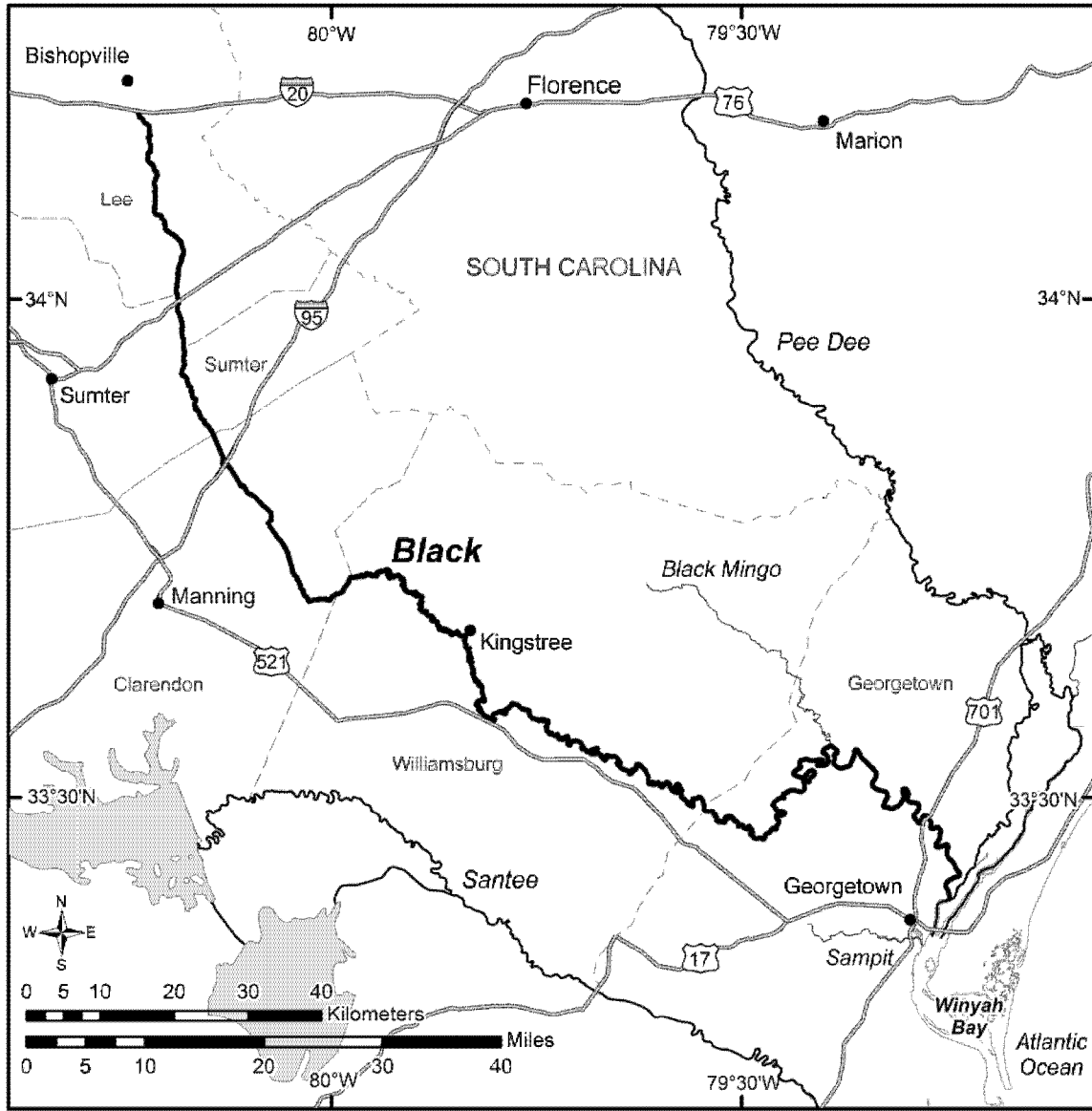
— Critical Habitat



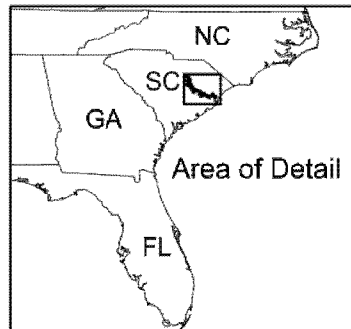
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

Carolina Unit 6 Black Unit

Map 6



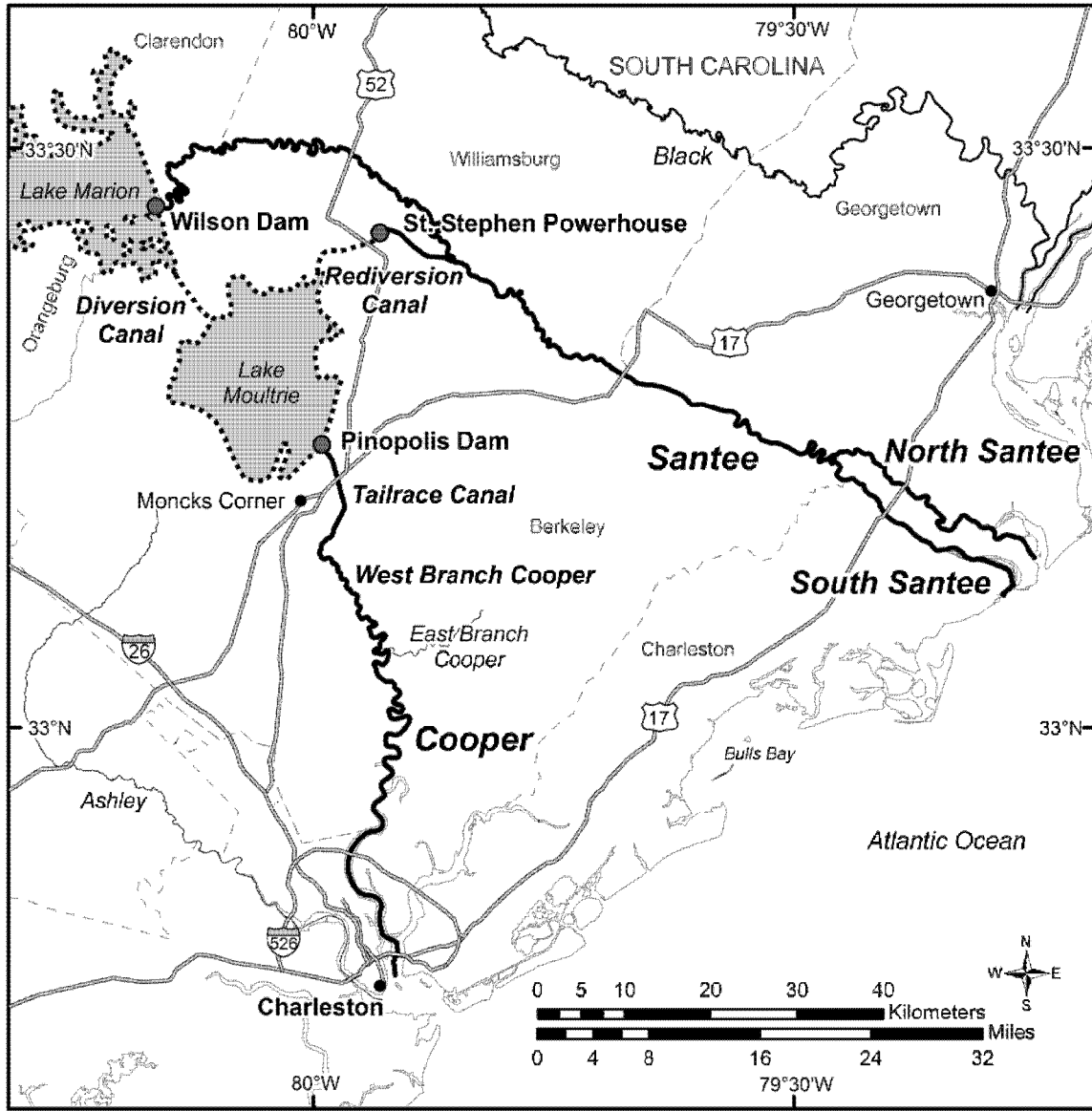
Legend
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

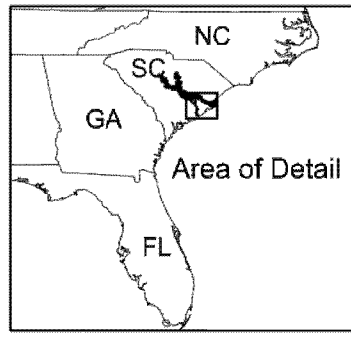
Carolina Unit 7 and Carolina Unoccupied Unit 2 Santee - Cooper Unit

Map 7.1



Legend

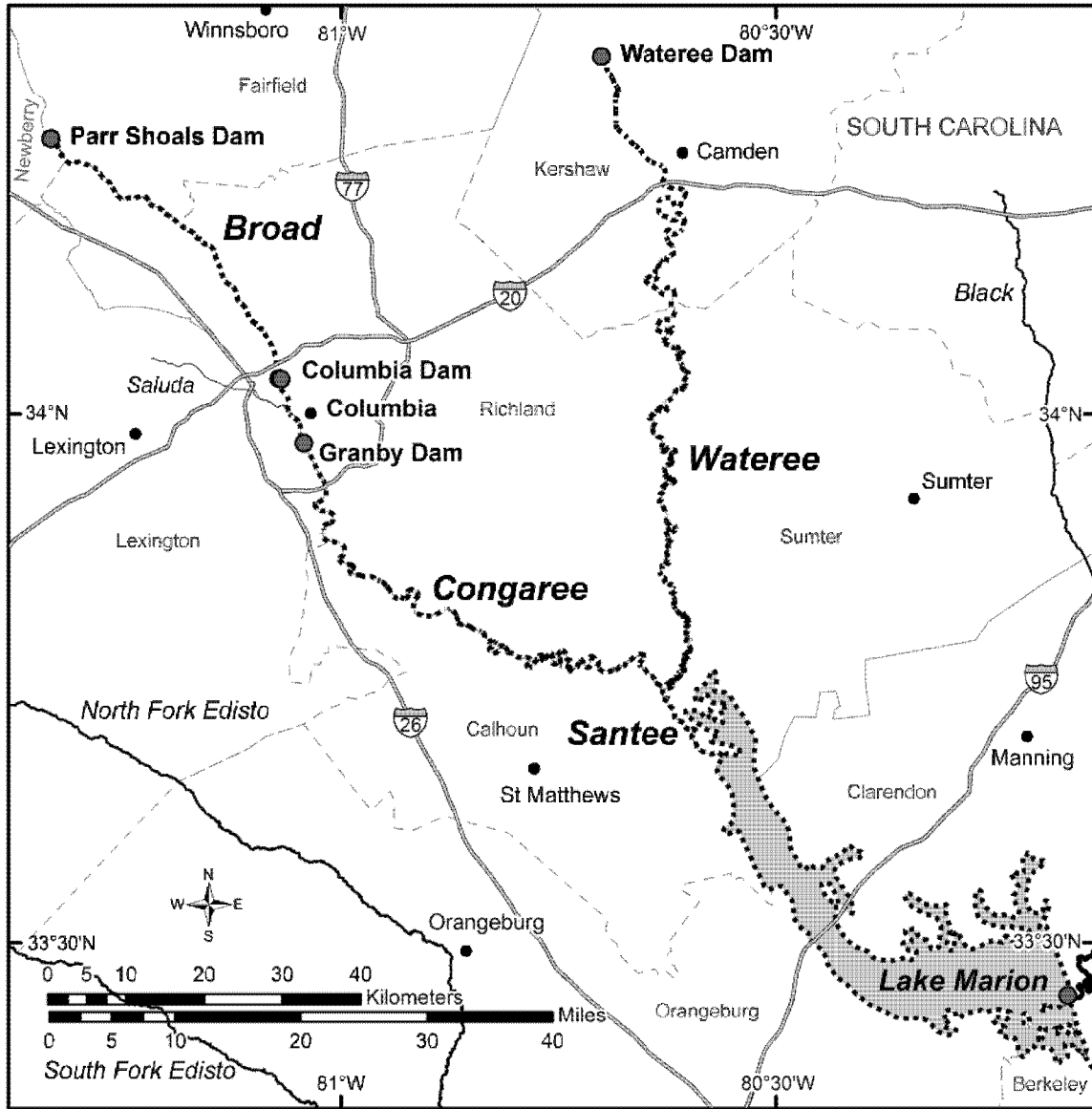
- Occupied Critical Habitat
- Unoccupied Critical Habitat



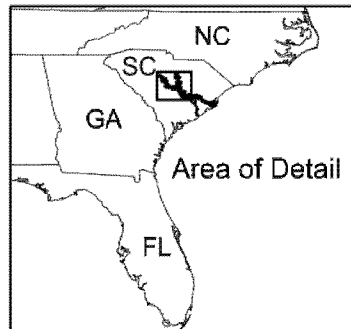
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

Carolina Unoccupied Unit 2 Santee - Cooper Unit

Map 7.2



Legend
 Unoccupied Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

(d) Critical Habitat Boundaries of the South Atlantic DPS. The lateral extent for all critical habitat units for the South Atlantic DPS of Atlantic sturgeon is the ordinary high water mark on each bank of the river and shorelines. Critical

habitat for the South Atlantic DPS of Atlantic sturgeon is:

(1) South Atlantic Unit 1 includes the North Fork Edisto River from Cones Pond downstream to the confluence with the South Fork Edisto River, the South Fork Edisto River from Highway 121 downstream to the confluence with the North Fork Edisto River, the Edisto River main stem from the confluence of the North Fork Edisto River and South Fork Edisto River tributaries downstream to the fork at the North Edisto River and South Edisto River distributaries, the North Edisto River from the Edisto River downstream to RKM 0, and the South Edisto River from the Edisto River downstream to RKM 0;

(2) South Atlantic Unit 2 includes the main stem Combahee—Salkehatchie

River from the confluence of Buck and Rosemary Creeks with the Salkehatchie River downstream to the Combahee River, the Combahee River from the Salkehatchie River downstream to RKM 0;

(3) South Atlantic Unit 3 includes the main stem Savannah River from the New Savannah Bluff Lock and Dam downstream to RKM 0;

(4) South Atlantic Unit 4 includes the main stem Ogeechee River from the confluence of the North Fork Ogeechee River and South Fork Ogeechee River downstream to RKM 0;

(5) South Atlantic Unit 5 includes the main stem Oconee River from Sinclair Dam downstream to the confluence with the Ocmulgee River, the main stem Ocmulgee River from Juliette Dam downstream to the confluence with the

Oconee River, and the main stem Altamaha River from the confluence of the Oconee River and Ocmulgee River downstream to RKM 0;

(6) South Atlantic Unit 6 includes the main stem Satilla River from the confluence of Satilla and Wiggins Creeks downstream to RKM 0;

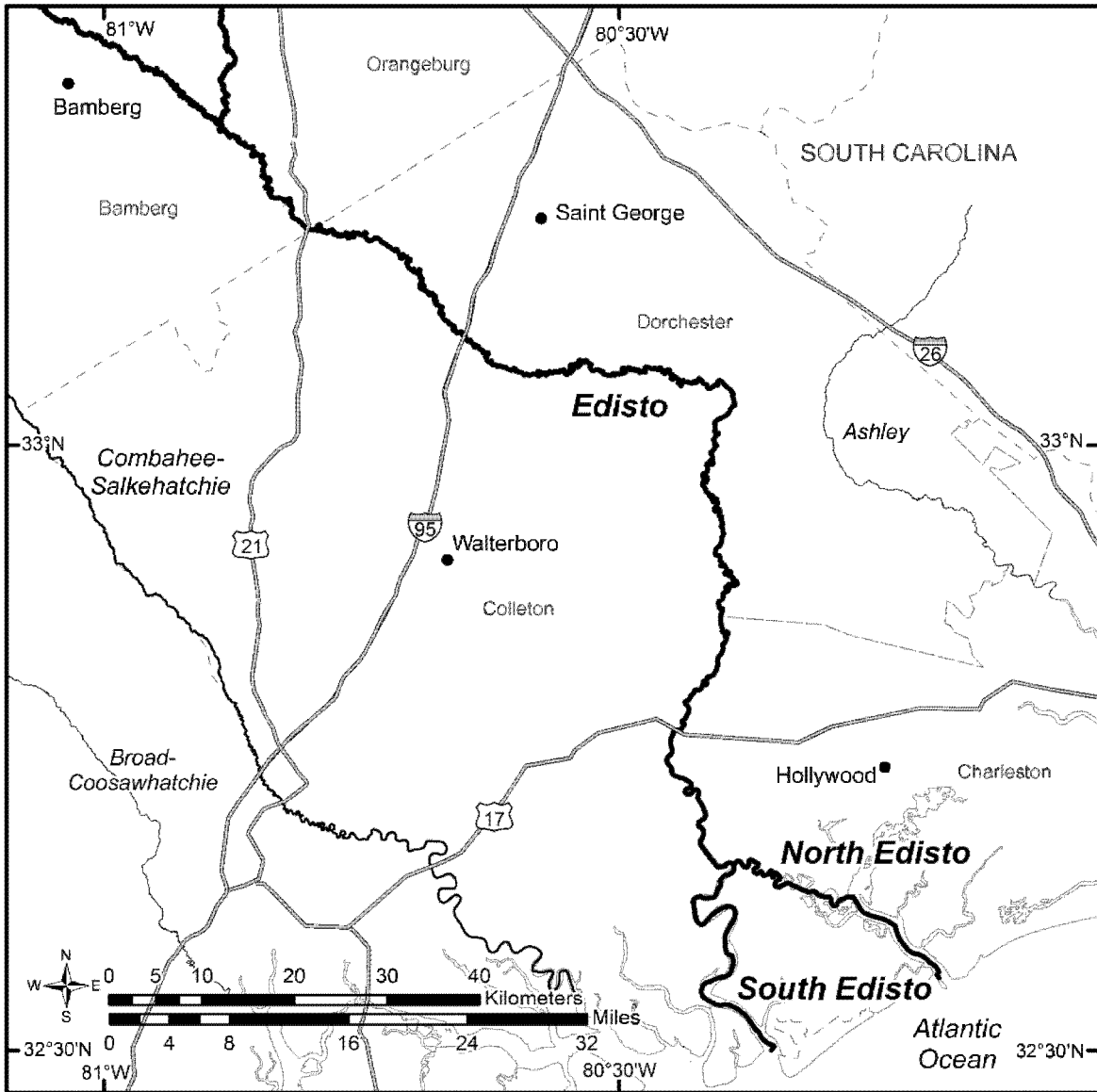
(7) South Atlantic Unit 7 includes the main stem St. Marys River from the confluence of Middle Prong St. Marys and the St. Marys Rivers downstream to RKM 0; and

(8) South Atlantic Unoccupied Unit 1 includes the main stem Savannah River from the Augusta Diversion Dam downstream to the New Savannah Bluff Lock and Dam.

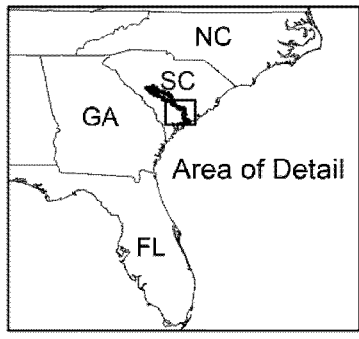
(9) Maps of the South Atlantic DPS follow:

South Atlantic Unit 1 Edisto Unit

Map 8.1



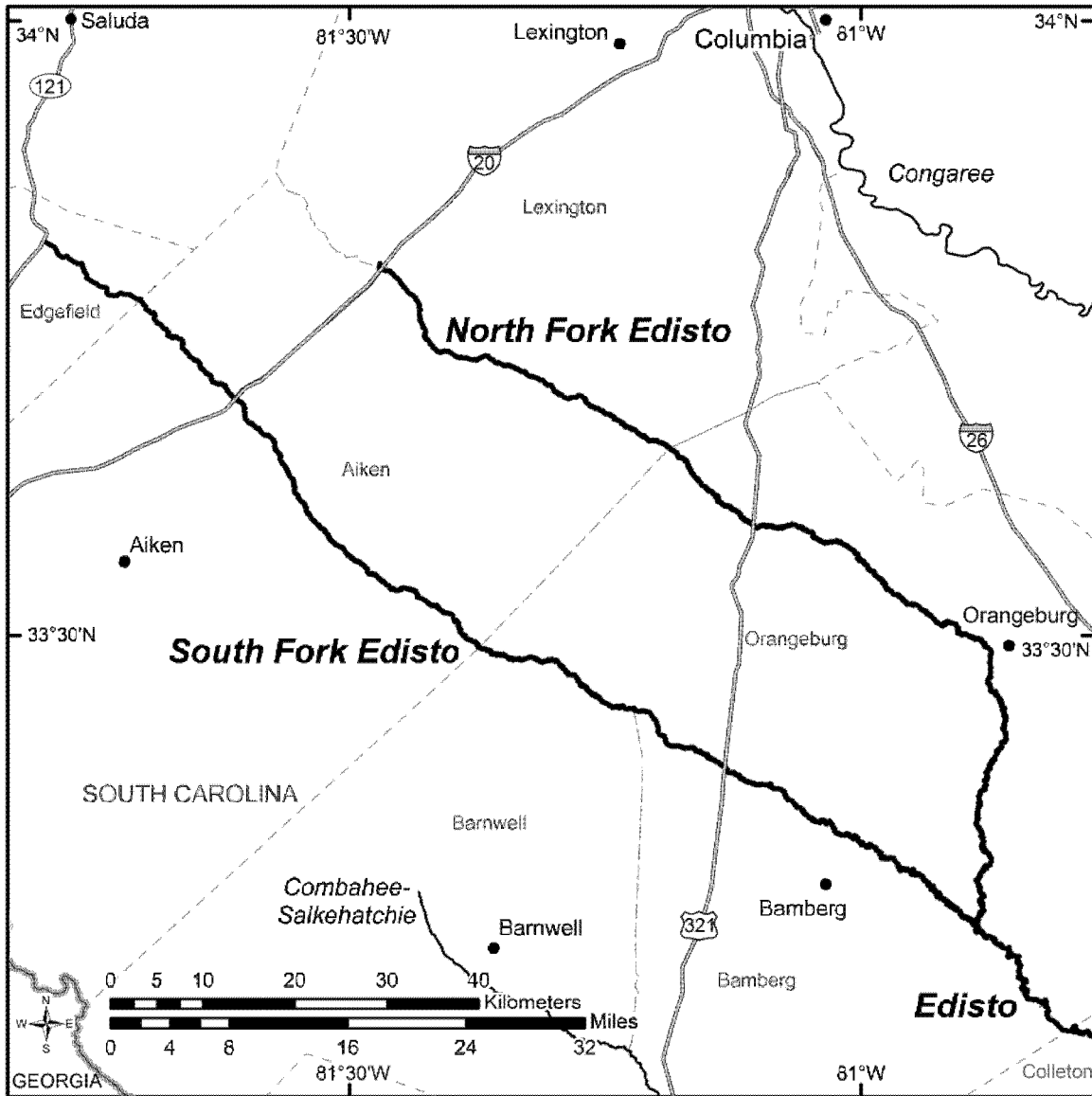
Legend
— Critical Habitat



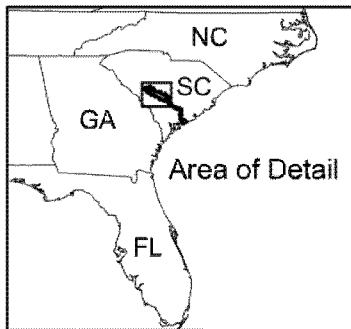
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

South Atlantic Unit 1 Edisto Unit

Map 8.2



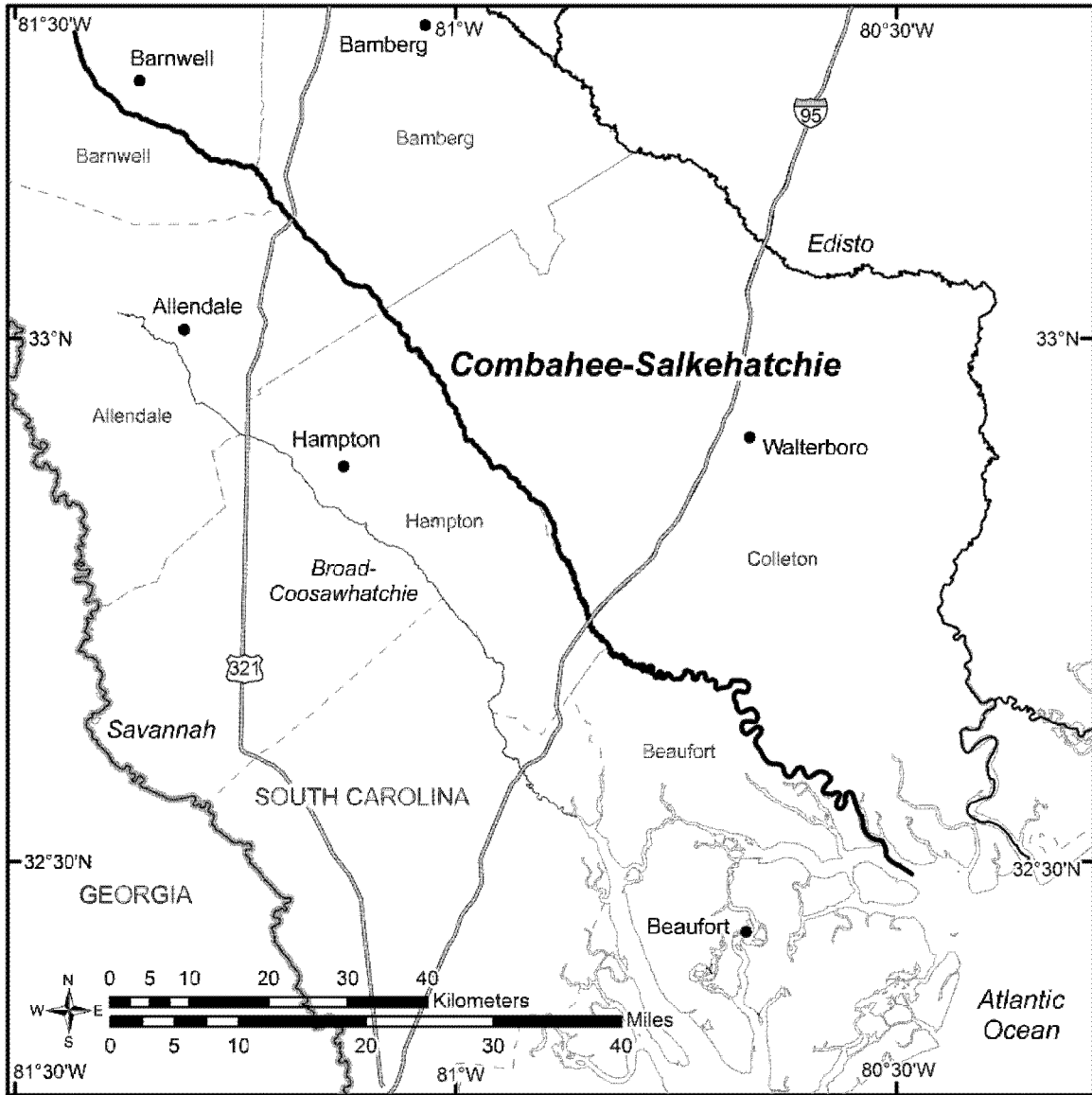
Legend
— Critical Habitat



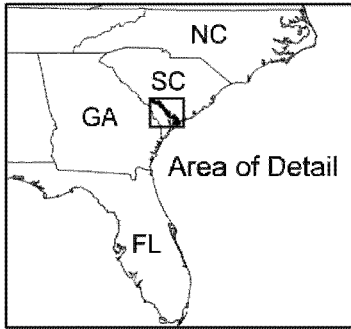
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

South Atlantic Unit 2 Combahee - Salkehatchie Unit

Map 9



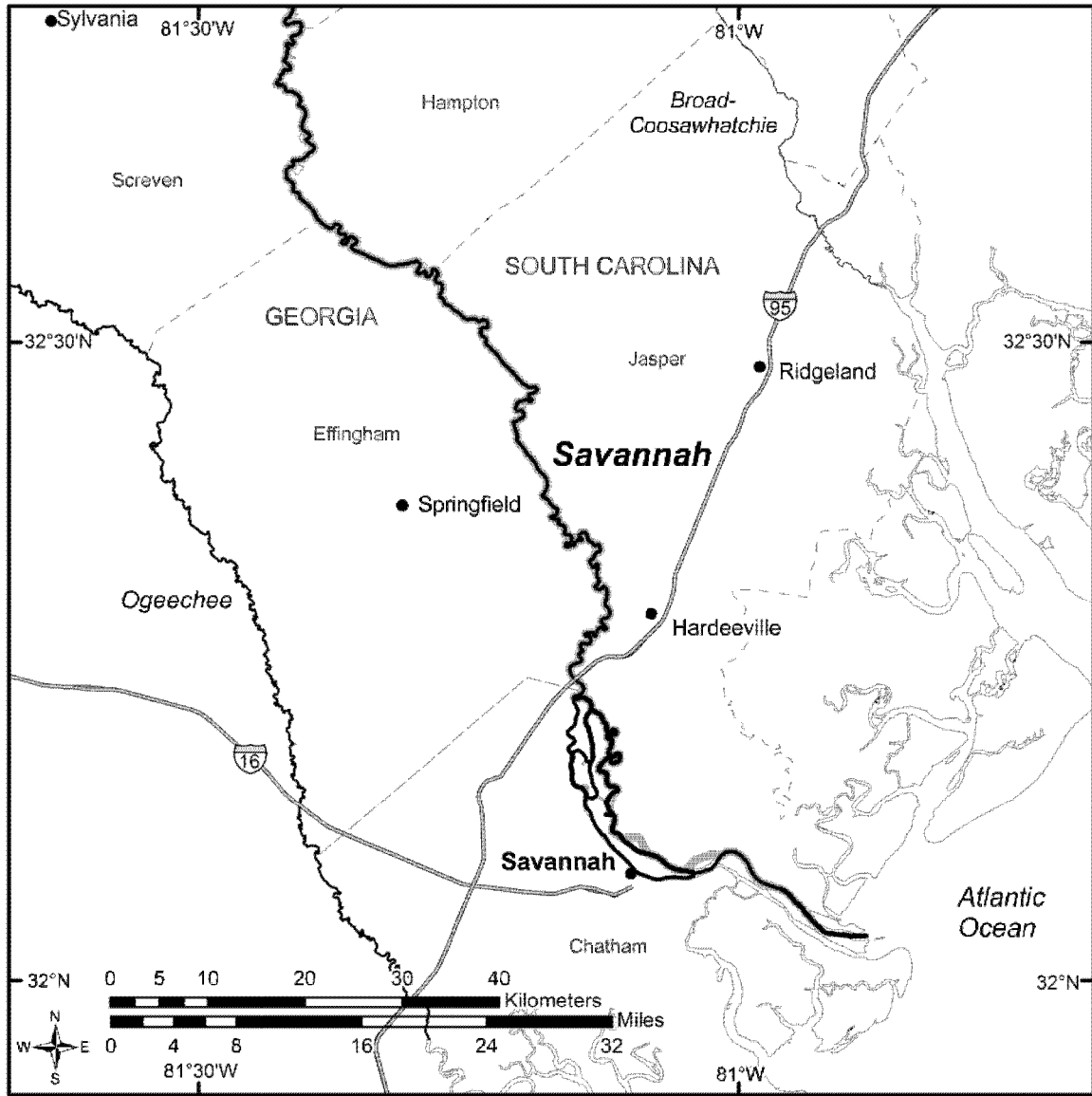
Legend
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

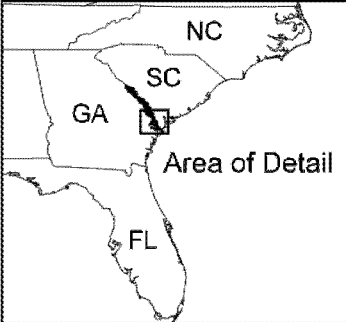
South Atlantic Unit 3 Savannah Unit

Map 10.1



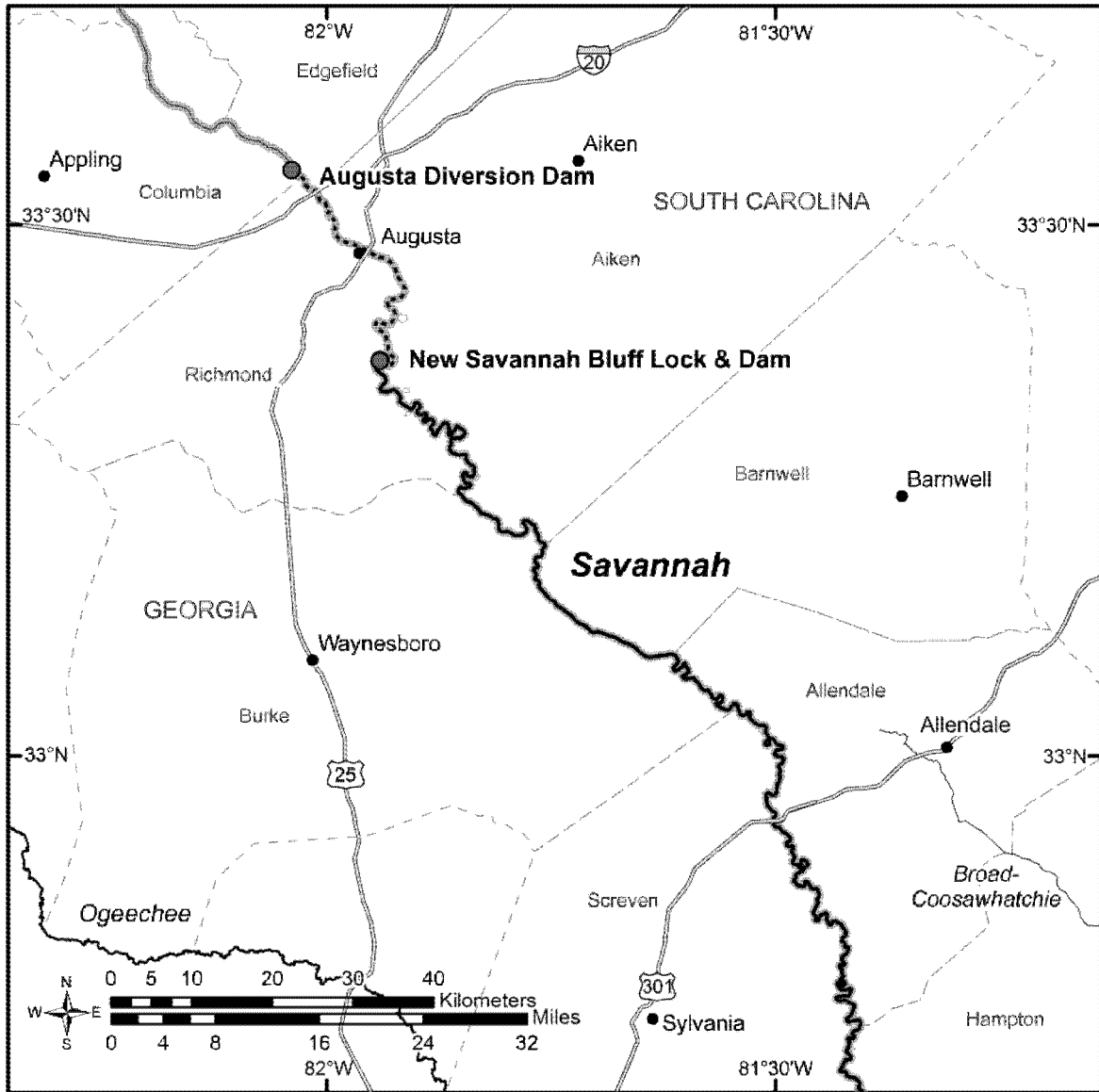
Legend

- Critical Habitat
- ▬▬▬ SC/GA State Line



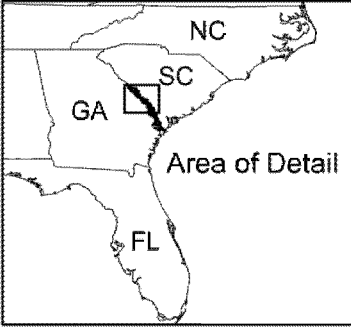
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

South Atlantic Unit 3 and South Atlantic Unoccupied Unit 1 Savannah Unit Map 10.2



Legend

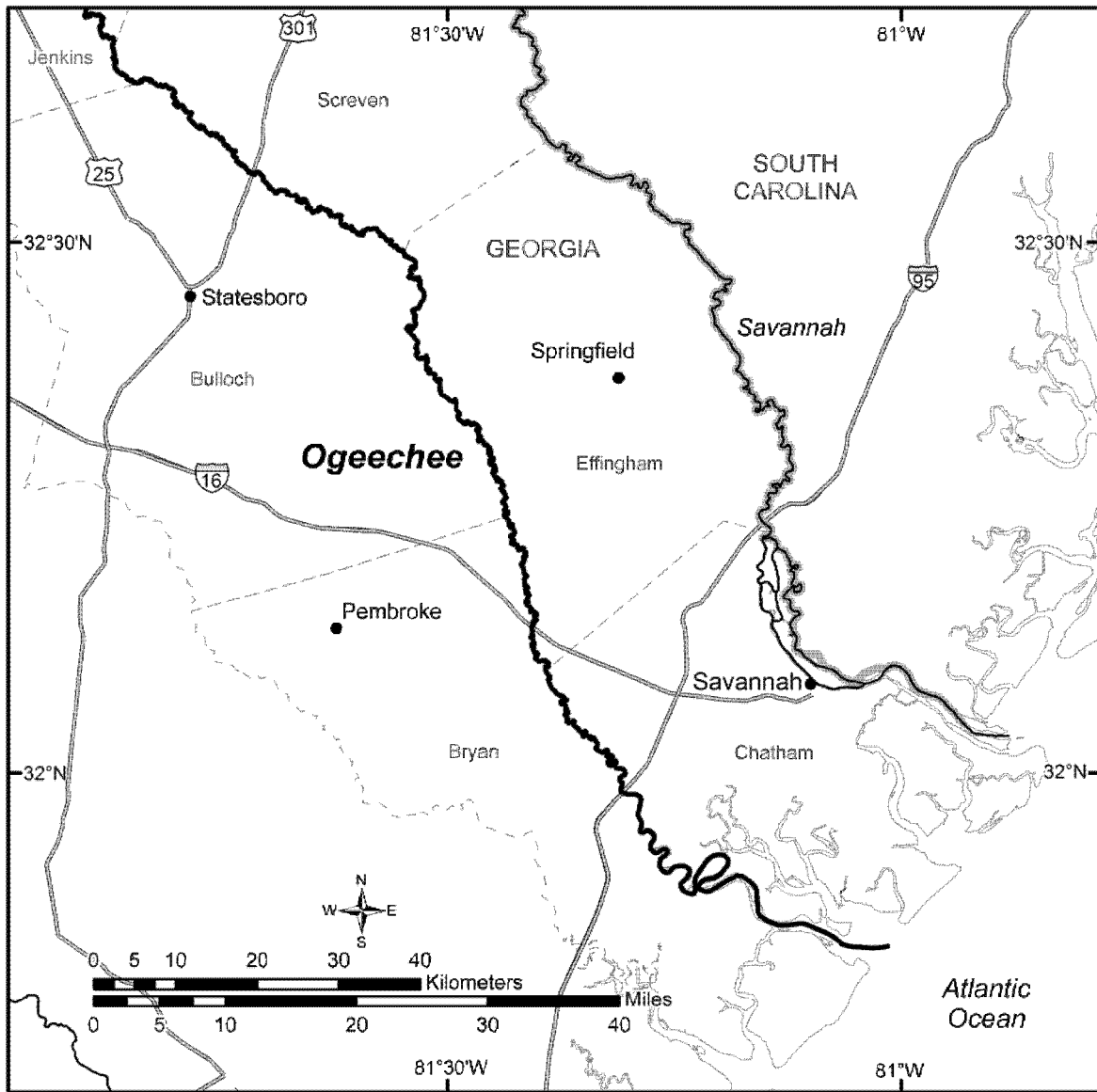
- Occupied Critical Habitat
- Unoccupied Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

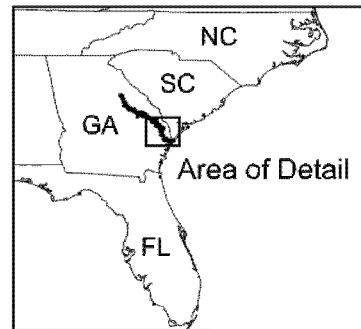
South Atlantic Unit 4 Ogeechee Unit

Map 11.1



Legend

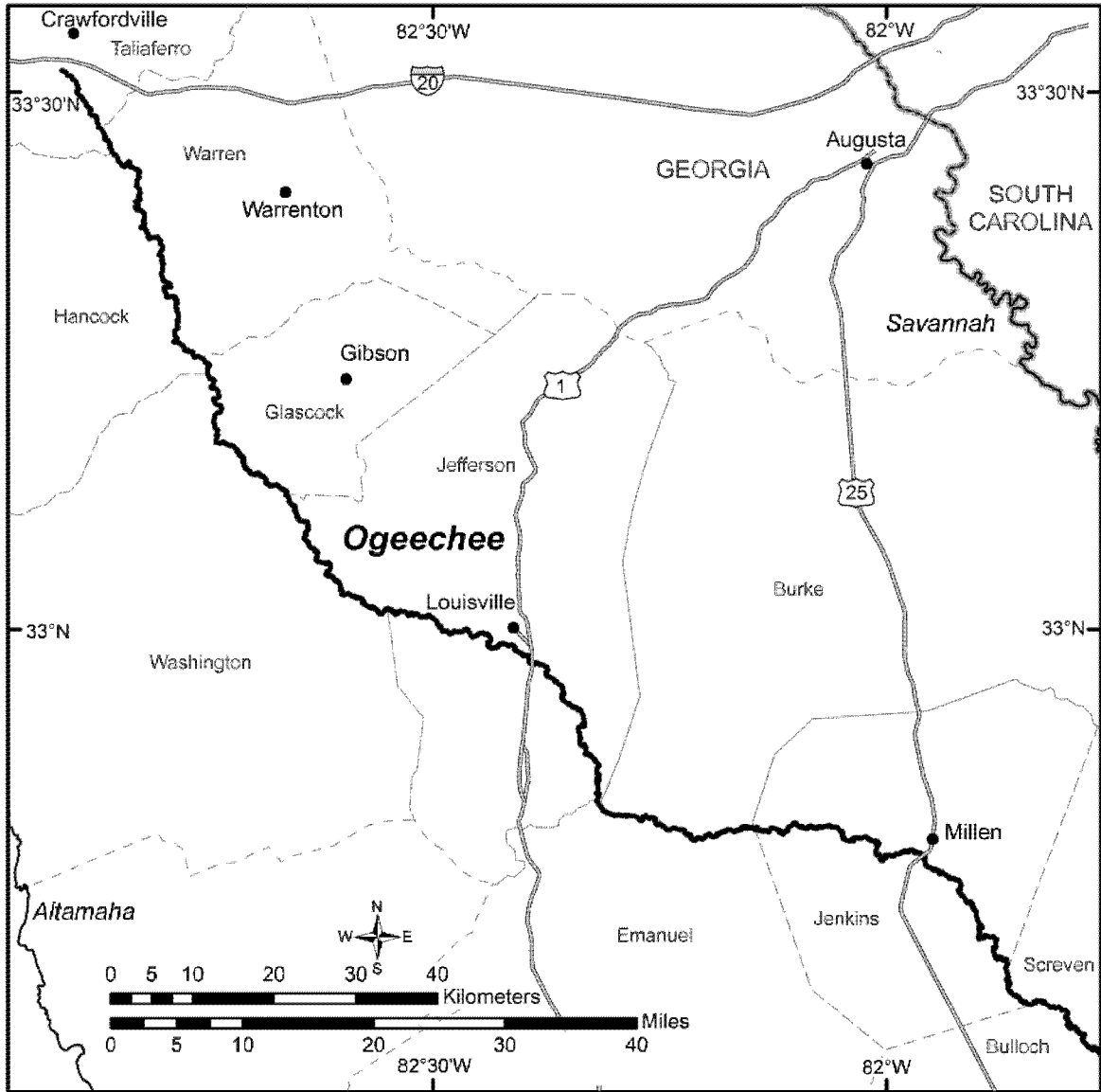
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

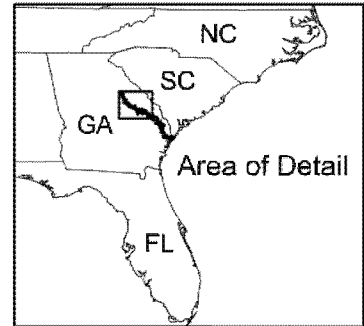
South Atlantic Unit 4 Ogeechee Unit

Map 11.2



Legend

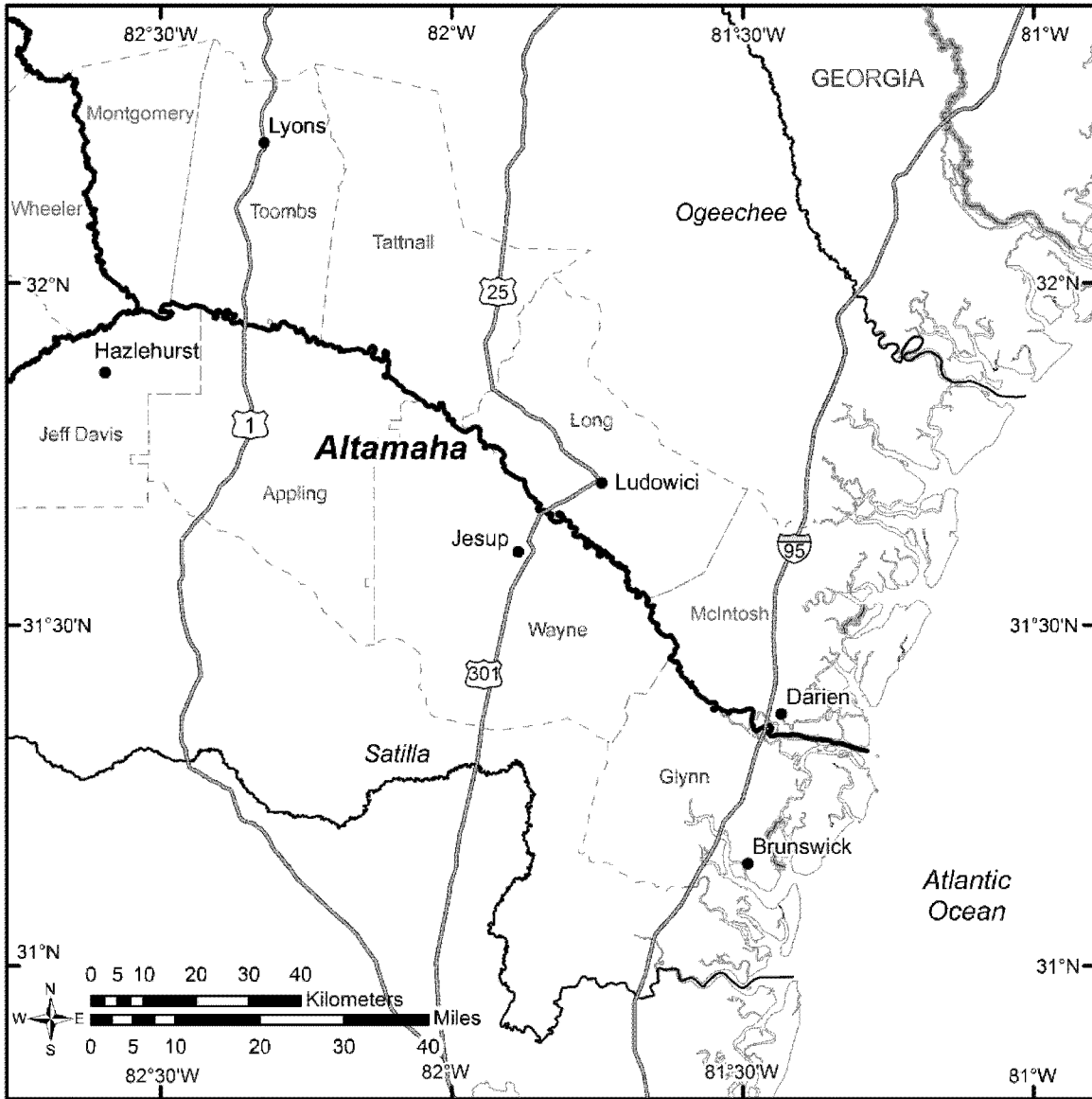
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

South Atlantic Unit 5 Altamaha Unit

Map 12.1



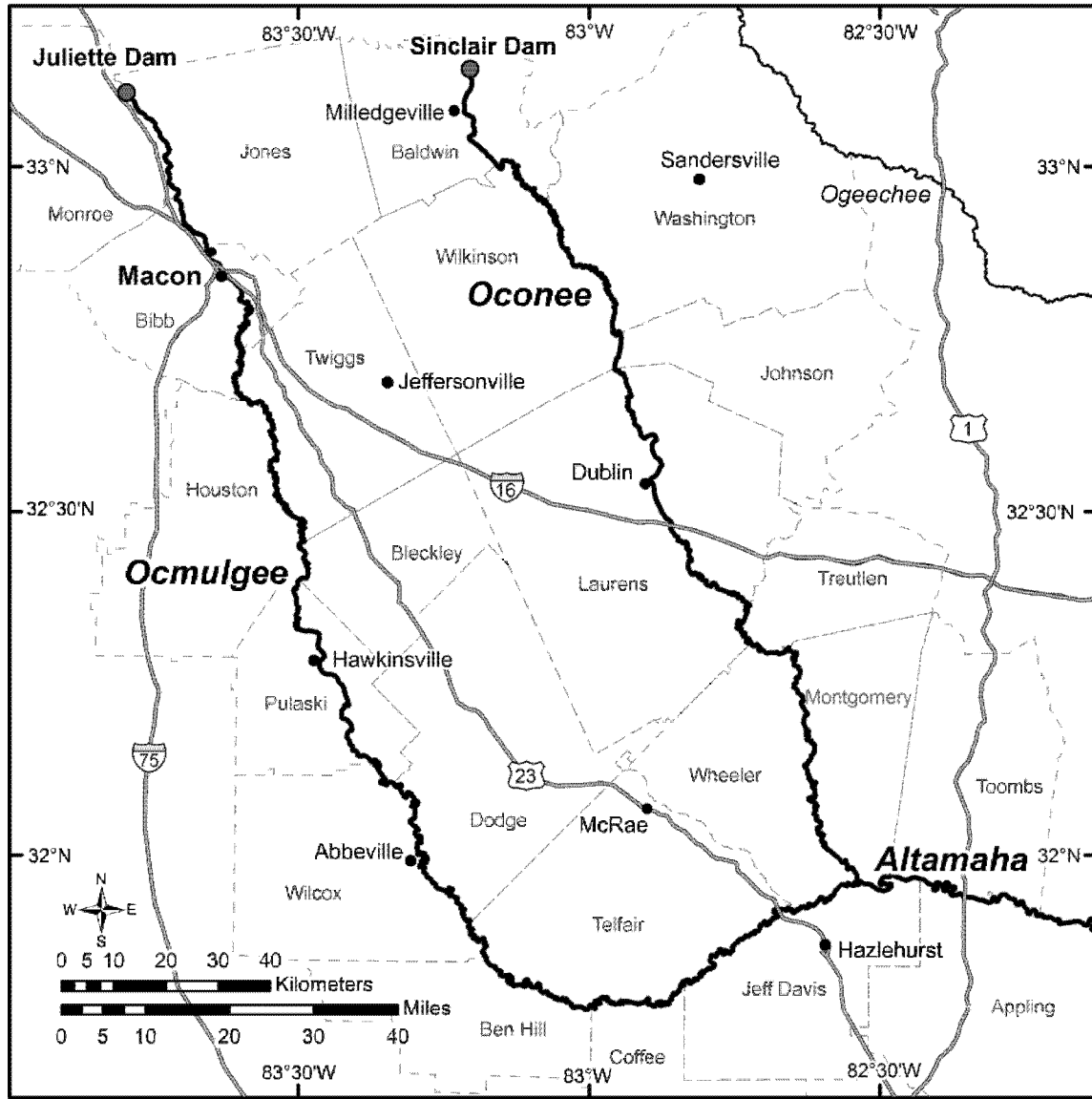
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— Critical Habitat



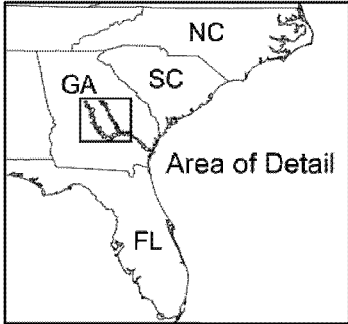
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

**South Atlantic Unit 5
Altamaha Unit**

Map 12.2



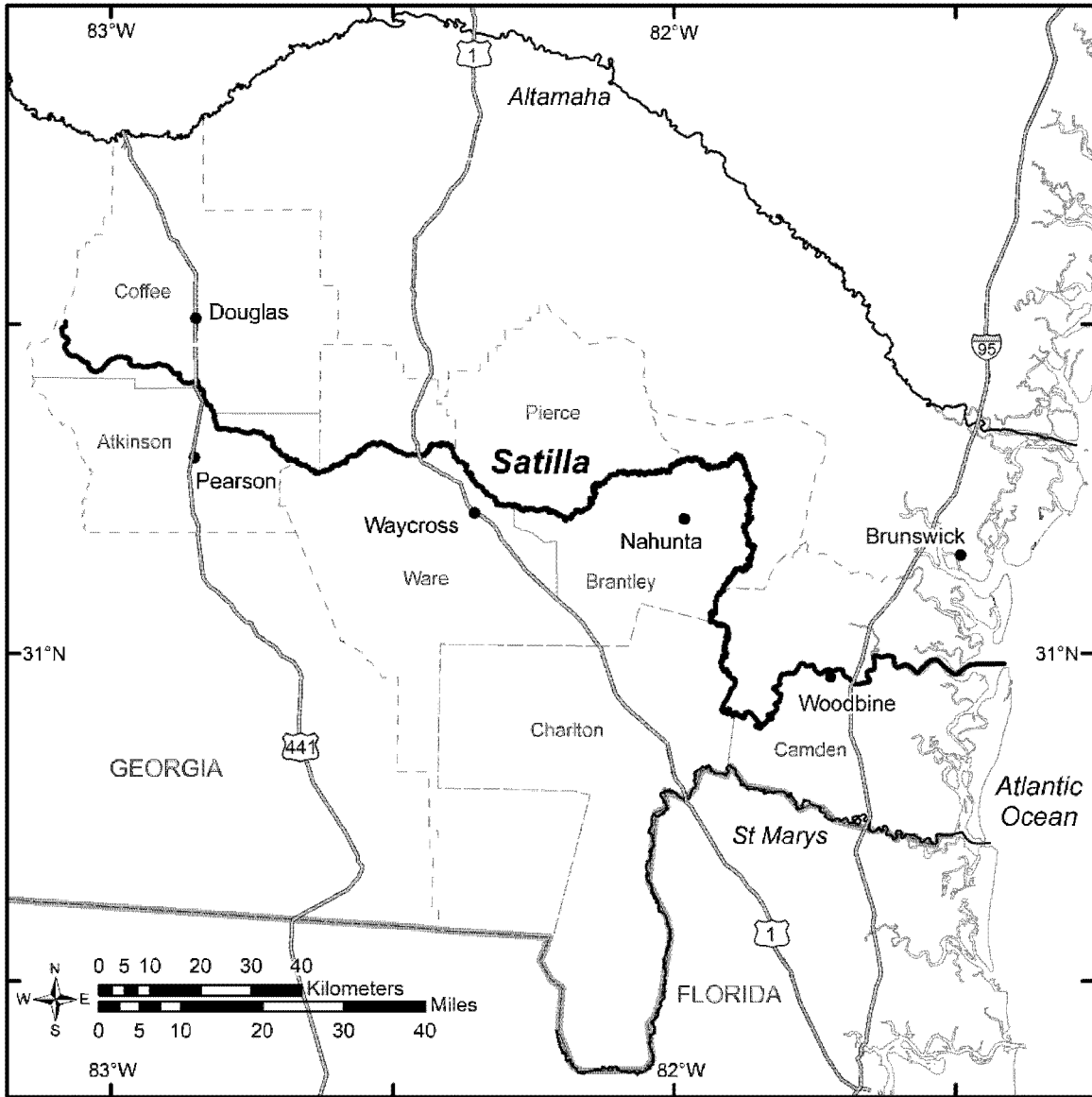
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— Critical Habitat



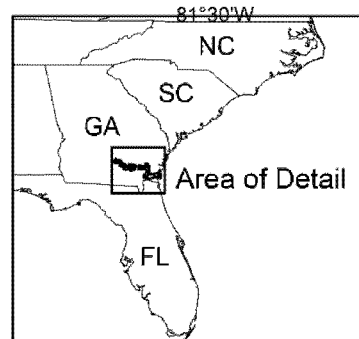
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

South Atlantic Unit 6 Satilla Unit

Map 13



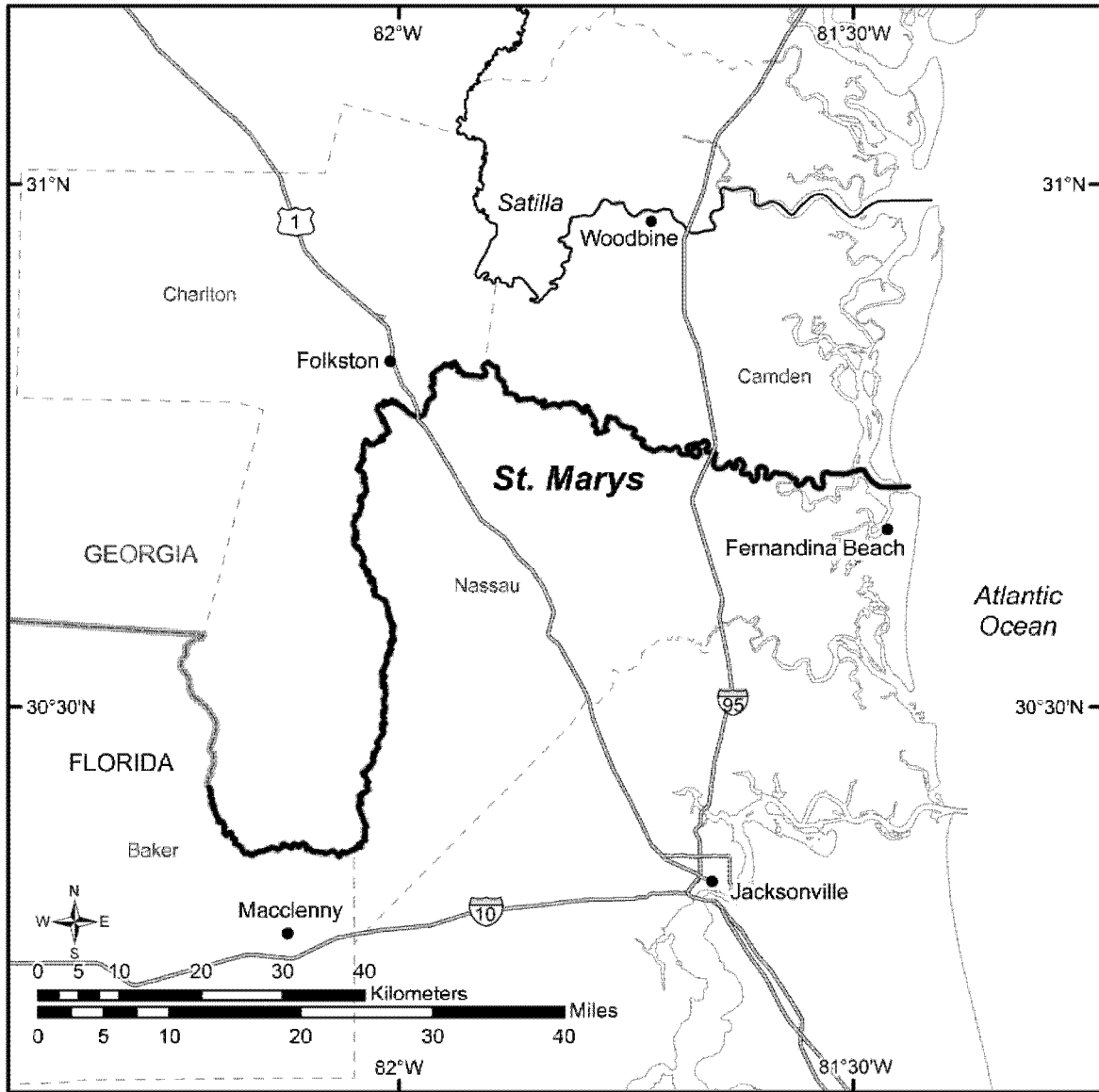
Legend
— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

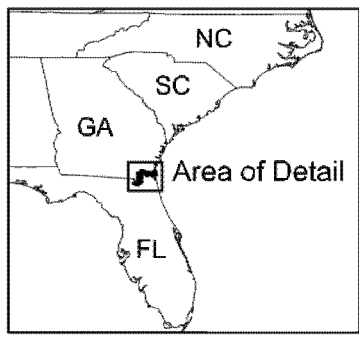
South Atlantic Unit 7 St. Marys Unit

Map 14



Legend

— Critical Habitat



This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

Atlantic States Marine Fisheries Commission

Atlantic Menhaden Management Board

*August 3, 2016
8:00 – 11:00 a.m.
Alexandria, Virginia*

Draft Agenda

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

1. Welcome/Call to Order (*R. Ballou*) 8:00 a.m.
2. Board Consent 8:00 a.m.
 - Approval of Agenda
 - Approval of Proceedings from May 2016
3. Public Comment 8:05 a.m.
4. Draft Addendum I for Final Approval **Final Action** 8:15 a.m.
 - Review Options (*M. Ware*)
 - Public Comment Summary (*M. Ware*)
 - Advisory Panel Report (*J. Kaelin*)
 - Law Enforcement Committee Report (*M. Robson*)
 - Consider Final Approval of Addendum I
5. Set 2017 Atlantic Menhaden Fishery Specifications **Final Action** 9:00 a.m.
 - Overview of Specification Process (*M. Ware*)
 - Technical Committee Report (*J. McNamee*)
 - Advisory Panel Report (*J. Kaelin*)
6. Provide Guidance to Plan Development Team on Draft Amendment 3 Public Information Document (*M. Ware*) 10:00 a.m.
7. Update on the Commercial Fishery Socioeconomic Study (*J. Harrison*) 10:45 a.m.
8. Discuss Advisory Panel Membership (*M. Ware*) 10:55 a.m.
9. Other Business/Adjourn 11:00 a.m.

The meeting will be held at the Westin, 400 Courthouse Square, Alexandria, Virginia; 703.253.8600

MEETING OVERVIEW

Atlantic Menhaden Management Board Meeting
Wednesday – August 3, 2016
8:00 – 11:00 a.m.
Alexandria, Virginia

Chair: Robert Ballou (RI) Assumed Chairmanship: 05/16	Technical Committee Chair: Jason McNamee (RI)	Law Enforcement Committee Representative: Capt. Kersey (MD)
Vice Chair: Russ Allen (NJ)	Advisory Panel Chair: Jeff Kaelin (NJ)	Previous Board Meeting: May 4, 2016
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (18 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2016

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

4. Draft Addendum I (8:15 – 9:00 a.m.) Final Action

Background

- Draft Addendum I considers allowing two permitted individuals fishing from the same vessel, using stationary multi-species gear, to land up to 12,000 lbs of bycatch. It was approved for public comment in May. **(Briefing Materials)**.
- Public comment was gathered in June and July **(Briefing Materials)**.
- The LEC reviewed the draft addendum on July 8 and the AP reviewed the draft addendum on July 14 **(Supplemental Materials)**.

Presentations

- Overview of options and public comment summary by M. Ware
- Advisory Panel Report by J. Kaelin, Chair; Law Enforcement Committee Report by M. Robson.

Board actions for consideration at this meeting

- Select management options and implementation dates.
- Approve final document.

5. Review and Set Atlantic Menhaden Specifications (9:00-10:00 a.m.) Final Action**Background**

- As specified in Amendment 2, the Board will set an annual or multi-year TAC using the best available science.
- The TC completed nine stock projection runs for the 2017 year based on recommendations from the Board (**Briefing Materials**).
- The AP reviewed the TC Report to formulate recommendations to the Board (**Supplemental Materials**).

Presentations

- Overview of specification process by M. Ware
- Technical Committee Report by J. McNamee, Chair; Advisory Panel Report by J. Kaelin, Chair.

Board actions for consideration at this meeting

- Approve fishery specifications for 2017.

6. Provide Guidance on Draft Amendment 3 Public Information Document (10:00-10:45 a.m.)**Background**

- In May 2015, the Board initiated Amendment 3 to the Atlantic Menhaden FMP to review allocation and consider ecological reference points.
- The PID will be presented to the Board for public comment approval in October 2016.
- The PDT is asking for guidance on the issues and options to be included in the PID (**Supplemental Materials**).

Presentations

- Plan Development Team update by M. Ware

7. Update on Commercial Fishery Socioeconomic Study (10:45-10:55 a.m.)**Background**

- A socioeconomic study on the menhaden commercial fishery was initiated in February 2016 by Dr. Jane Harrison and Dr. John Whitehead.
- The goal of the study is to analyze data from participants in the commercial industry in order to inform future management of the stock.

Presentations

- Update on socioeconomic study by J. Harrison

8. Advisory Panel Membership (10:55-11:00 a.m.)**Background**

- AP input is expected to be an important component of the Amendment 3 process.
- Participation on AP calls has declined and, as a result, Commissioners are asked to nominate new members if their AP representative(s) is no longer interested in serving.

Presentations

- Overview of Advisory Panel membership by M. Ware

9. Other Business/Adjourn

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

The Westin Alexandria
Alexandria, Virginia
May 4, 2016

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

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10. **Motion to adjourn** by Consent (Page 37).

ATTENDANCE

Board Members

Terry Stockwell, ME, proxy for P. Keliher (AA)	John Clark, DE, Administrative proxy
Sen. Brian Langley, ME (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Steve Train, ME (GA)	Roy Miller, DE (GA)
Cheri Patterson, NH, proxy for D. Grout (AA)	Lynn Fegley, MD, proxy for D. Blazer (AA)
G. Ritchie White, NH (GA)	Bill Goldsborough, MD (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Ed O'Brien, MD, proxy for Del. Stein (LA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	John Bull, VA (AA)
Nichola Meserve, MA, proxy for D. Pierce (AA)	Rob O'Reilly, VA, Administrative proxy
Bill Adler, MA (GA)	Kyle Schick, VA, proxy for Sen. Stuart (LA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Cathy Davenport, VA (GA)
Robert Ballou, RI, proxy for J. Coit (AA)	Chris Batsavage, NC, proxy for B. Davis (AA)
David Borden, RI (GA)	Rep. Bob Steinburg, NC (LA)
David Simpson, CT (AA)	W. Douglas Brady, NC (GA)
James Gilmore, NY (AA)	Mel Bell, SC, proxy for M. Rhodes (GA)
Emerson Hasbrouck, NY (GA)	Robert Boyles, Jr., SC (AA)
Mike Falk, NY, proxy for Sen. Boyle (LA)	Patrick Geer, GA, proxy for Rep. Nimmer (LA)
Russ Allen, NJ, proxy for D. Chanda (AA)	Spud Woodward, GA (AA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Nancy Addison, GA (GA)
Tom Fote, NJ (GA)	Jim Estes, FL, proxy for J. McCawley (AA)
Loren Lustig, PA (GA)	Martin Gary, PRFC
Andy Shiels, PA, proxy for J. Arway (AA)	Derek Orner, NMFS
David Saveikis, DE (AA)	Mike Millard, USFWS

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

Ex-Officio Members

Jason McNamee, Technical Committee Chair	Rob. Kersey, Law Enforcement Representative
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Staff

Bob Beal	Max Appelman
Toni Kerns	Shanna Madsen
Mike Waine	Megan Ware

Guests

Charles Lynch, NOAA	Jimmy Kellum, Kellum Maritime	Dave Sikorski, CCA MD
Wilson Laney, US FWS	Joseph Gordon, PEW Trusts	Richard Farino, District Angling, DC
Kelly Denit, NMFS	Christine Fletcher, PEW Trusts	A.J. Erskine, Bevans Oyster
Jack Travelstead, CCA	Aaron Kornbluth, PEW Trusts	David Trulla, Kelley Drye
John Bullard, NMFS/GARFO	Kate Wilke, TNC	Chris Moore, CBF
Brandon Muffley, NJ DFW	R. Crocker, Richmond, VA	Jeff Deem, VMRC
Peter Himchak, Omega Protein	Brendan Adams, NC Sea Grant	Johnathan French, Cobia
Shaun Gehan, Omega Protein	Jane Harrison, NC Sea Grant	Monty Diehl, Omega Protein
Ben Landry, Omega Protein	Arnold Leo, E. Hampton, NY	Jeff Kaelin, Lund's Fisheries

The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 4, 2016, and was called to order at 8:00 o'clock a.m. by Chairman Robert Ballou.

CALL TO ORDER

CHAIRMAN ROBERT BALLOU: Okay it is 8:00 o'clock; I am going to call this meeting of the Menhaden Board to order. My name is Bob Ballou from Rhode Island; I have the honor of being the new Chair of the board. I have rather huge shoes to fill, given the tremendous leadership of my recent predecessors; Robert Boyles from South Carolina, and Dr. Louis Daniel from North Carolina.

CHAIRMAN BALLOU: I thank Robert and Louis for ably guiding this board over the past several years, and pledge to do my very best to follow suit. Before we begin, I just want to note that we have a full agenda and just about two hours to get through it all. I ask for the board's and the public's assistance in being as concise as possible with your comments and questions.

By way of introduction I wanted to introduce a new member up here at the head of the table, and that is Rob Kersey from Maryland; he is the new LEC representative to the Menhaden Board; welcome, Rob.

APPROVAL OF AGENDA

CHAIRMAN BALLOU: Let's get right to the agenda. Item 1 is the agenda itself. I would like to add one item at the end under other business; that being Board Consideration of a Resolution Regarding Exemplary Service.

Are there any other additions to the agenda? Seeing none, are there any objections to approving the agenda as advised? Seeing none; the agenda as revised stands approved by consent.

APPROVAL OF PROCEEDINGS

CHAIRMAN BALLOU: We are on to Item 2, which is the approval of the proceedings from the February, 2016 board meeting. Are there any recommended changes to those meeting minutes? Seeing none; is there any objection to adopting those minutes? Seeing none; those minutes stand approved by consent.

PUBLIC COMMENT

CHAIRMAN BALLOU: The next item is public comment. This is an opportunity for anyone from the public who wishes to comment on any issue that is not on today's agenda to do so. To accommodate that opportunity we have a signup sheet, and I'll be going to it. But before doing so, I want to call upon Dr. Jane Henderson from North Carolina Sea Grant, and as I'm introducing Dr. Harrison, I'm sorry, Henderson, please come to the public speaking portion of the platform; thank you.

Dr. Harrison is the; oh I did get it. Is it Harrison or Henderson? Harrison, you can go either way, but we're going to stay with Harrison for today. She is the co-PI on the socioeconomic study of the menhaden fishery that is being conducted for the board. She is here this morning to introduce herself. Good morning, doctor.

DR. JANE HARRISON: Thanks so much. I am here today mostly just to introduce myself; Dr. Jane Harrison. If you all would like to talk after the meeting, please do so. Myself and my research assistant Brendan Adams from NC State University, NC Sea Grant are here. I am sure as many of you know; we are doing a study on the socioeconomics of the menhaden fishery.

I'm working with Dr. John Whitehead at Appalachian State University. He has done some previous work on this topic. Our interests are really to provide useful information for your decision making. We're going to be doing some interviews after the board meeting with some of the stakeholder groups; to better understand

how the information might be used for this group.

It is very much my interest that it is useful; that it is not must a long paper that I write that sits on a shelf somewhere. The RFP for this project, it was quite expansive; in terms of what types of socioeconomic information the board is looking for. We could certainly use a little more clarity on exactly what would be useful for you all.

We will be doing some work on both the reduction oil fishery and the bait fishery doing some case studies, some interviews with the fishermen themselves; looking at some of the summary economic data for all of the states. But again, just introduce yourself; let us know if you would like to talk more. We would love to do a short interview with anyone who is available, either in person today or we can talk on the phone later. Just so that we better understand how our data can be useful for your work here. Thanks so much.

MR. BALLOU: Thank you very much, and we very much look forward to your work and your report back to the board. No one else has signed up to comment. Is there anyone else who wishes to comment at this point from the public?

CONSIDER THE EXTENSION OF AND REVISION TO THE EPISODIC EVENT SET ASIDE PROGRAM

Seeing no hands; we'll move on to the next agenda item, which is Item 4; and that is to consider the Extension of and Revision to the Episodic Even Set Aside Program. I am going to turn to Mike Waine for a brief presentation; drawing upon his memo to the board, which is in your meeting materials.

As I do so I just want to give the board a heads up that we have a total of 20 minutes set aside for this agenda item in its entirety. The board is going to really need to be sharp and focused in its consideration. I also want to note that the

item is an action item; it involves two issues; one being whether the board wishes to extend the episodic event set aside program, the other being consideration of New York's request to participate in that program. I do plan to take up those issues separately in sequence. With that I'll turn it over to Mike.

MR. MIKE WAINE: As Bob mentioned I am going to basically review the episodic event set aside program, and talk a little bit about the performance over the last three years. Then in addition to that we received a proposal from New York to consider revising to include them in the program. We will talk about that as well.

Just a quick reminder about how this program works. Through Amendment II, back in 2012, the board set aside 1 percent of the TAC for episodic events. Following up on that; the Amendment II gave flexibility for the board to actually specify how that 1 percent of the quota set aside would be administered.

As a follow up the board tasked the Subcommittee of New England States to further develop that program; they did so, and this board approved a pilot program back in May of 2013. At the annual meeting of that year the board extended that program through 2015 and included a provision to rollover a new set aside on November 1. I am just going to talk a little bit about what that actual program was. The current eligibility is the New England states, from Maine through Connecticut.

The states must implement the following mandatory provisions to be eligible for this set aside. This includes good reporting. Harvest has to be restricted to state waters and be put in a maximum daily trip limit no greater than 120,000 pounds per vessel. Then how the state actually declares that they met that criteria, which they submitted to us and the Plan Review Team signed off on it; and the board looked at that.

If they met those criteria they would monitor the landings to determine if an episodic event occurs. The way we define that was instances when a qualifying state has reached its individual state quota prior to September 1. It also has information indicating the presence of unusually large amounts of menhaden in its state waters, so that is how we're defining episodic events in this program.

They have to let the commission know by September 1 that they plan to begin harvesting from that set aside, and there is also this provision that they are not eligible for de minimis status if they opt into this program. We also have in the program a mechanism to deal with both underages and overages that occurred through the performance.

If an episodic event is not triggered by September 1, so no states declare that they are going to harvest from the set aside; then the quota gets immediately rolled into the overall quota and gets redistributed back to the states. If an episodic event is triggered by September 1, and all the states that participate do not harvest all of that set aside; then as of October 31st we do a rollover of what is left to all the states using the same allocation in Amendment II.

On the flip side, if there is an overage, so the state opts into the set aside, they end up landing more than the set aside or state or states; there is a payback the following year. It would ultimately be accounted for in the following year. Just a quick table to show you the performance of this set aside. Remember this is 1 percent of the TAC; we're talking 3.7 to 4.2 million pounds depending on the year.

You can see that one state has utilized this set aside program. Their harvest has ranged a little bit, last year being the highest as they've seen a lot of menhaden in Narragansett Bay. Rhode Island is unique; in that it has a biological monitoring program in Narragansett Bay that allows them to more scientifically assess when

that biomass fluctuates to somewhat of an episodic level.

As I mentioned, the set aside was previously extended through board action through 2015; and so the board may consider another extension of the program through board action at this meeting. The board may also adjust any provisions of the set aside through board action. I just wanted to pause on that slide to just remind the board that setting aside the 1 percent was done through Amendment II.

Then subsequent to that the board has made changes to this program on several occasions, as I outlined through board action. The plan actually allows for that flexibility to occur. Bob, I think I'll stop there as the next topic is New York's request. I would be happy to answer any questions.

CHAIRMAN BALLOU: Are there any questions for Mike? Yes, David Borden.

MR. DAVID V. BORDEN: Mike, could you refresh my memory as to the requirements? Do states have to submit proposals to the Plan Review Team? What actually is the process that is followed by a state in order to do this? They obviously have to declare, but what I'm trying to get at is there a written document that every state has to submit that outlines all the steps they are going to take to be in compliance with it?

MR. WAINE: Yes, we wrote this up in a document and called it Technical Addendum I. It outlines everything that I just went through in the slides of what the mandatory criteria is, and what the steps are that the states go through to declare that they're going to harvest, et cetera, so yes that is all as summarized on the slide; and it is also written up in a document.

CHAIRMAN BALLOU: Other questions for Mike?

MR. RITCHIE WHITE: Mike, to change the 1 percent amount. Is that addendum/amendment board action?

MR. WAINE: To change an actual amount of the set aside, that 1 percent, would require an addendum or an amendment to the plan.

CHAIRMAN BALLOU: Other questions? Seeing none; at this time I would entertain a motion on this issue.

MR. BORDEN: Yes, I would like to make a motion, Mr. Chairman. Move to extend the episodic program until Amendment III, which is the Allocation Amendment is implemented. If I get a second I would like to speak to it for just as second.

CHAIRMAN BALLOU: We have a second by Nichola. I think we're going to work to get that up on the board. As we're getting that up on the board why don't we go back to you, David?

MR. BORDEN: I think that next step in menhaden management is really a critical step; where we're going to go back and look at all the state quota allocations. It's my full expectation that the state allocations are going to change significantly, as part of that mechanism. When I say that what I mean specifically is I think that there are probably nine states around the table that have very small allocations.

It is very difficult for those states to attempt to manage those fisheries; because of the small amount, particularly with a strong year class that seems to be manifesting itself. I think the appropriate step at this point is to extend that. But all of those types of discussions may supersede this. We may not have a need to do this when we go through that process.

CHAIRMAN BALLOU: We have the motion up on the board. David, is that consistent with your wording? Okay, so we have a motion up made and seconded; discussion on the motion, yes, Terry Stockwell.

MR. TERRY STOCKWELL: I'm partially comforted by this motion. I'm a little concerned with the language "until Amendment III has been implemented." There is no way to predict what this board is going to finally vote upon when Amendment III and the allocations come along. I would not be comfortable about perhaps even removing the episodic program at that point. A little bit more discussion, I might make a motion to do a little word smithing.

CHAIRMAN BALLOU: Well, is there more discussion on the motion? Seeing none; this is your opportunity, Terry. I'm sorry, Kyle.

MR. KYLE SCHICK: We're putting Band-Aids on a program that was founded in principals that weren't in science, they were a mistake. We did a knee-jerk reaction, and here we are talking about episodic events, and New York has an issue, and nine states around the room don't have enough quotas to manage.

Whether we're dip nets here or pound nets there, you know in the Chesapeake Bay. Yesterday we were talking about raising the quota for a species that was almost on the endangered species list. Here we have a species that has never been overfished, overfishing has never occurred; and we're doling them out like we've only got five of them left, five fish. We've got more fish than that. We've got all the fish that we need on these.

Let's just raise the TAC. Give these nine states what they need. Get rid of all these stupid rules about, well two people want to fish together; will they need more fish? This state throws out a net, we're talking about pittance of fish, and we're spending all this time on nothing. Raise the TAC, give these states the fish they need.

Let's move on to more pressing issues, some real issues on fish that are really in trouble; not this oily fish that we have plenty of. We just got another report, another banner year coming up. Let's do the right thing. Let's get to an issue that matters more; than trying to conserve a

fish that is not overfished and overfishing has not occurred.

CHAIRMAN BALLOU: Let me go back to Terry.

MR. STOCKWELL: I just had a brief sidebar. I think my issue can be resolved by asking Mike a question that would confirm. There is every reason the board can consider episodic event in Amendment III. Is that correct, Mike?

MR. WAINE: Yes, absolutely. The way I interpret this motion is, this takes you through Amendment III, and in Amendment III the board can consider any aspect of menhaden management; including this episodic even set aside program. Therefore, whatever gets decided in Amendment III could either carry this forward, or however the board ends up choosing to move forward with this. I think this just gets you through until the board decides to make any changes in Amendment III.

MR. STOCKWELL: Thanks for the clarification, and thank you David for the motion.

CHAIRMAN BALLOU: Kyle, one more shot.

MR. SCHICK: Yes, I am sorry. But we don't have to wait for Amendment III. We can raise the TAC without Amendment III. You know we don't have to go through all this motion to solve the problem, am I correct?

CHAIRMAN BALLOU: Well, we certainly can't do what you're asking to do today; it is not on the agenda and it is not before the board today. We could talk about what we could potentially do down the road, but right now we're looking at the issue that is before us today. Mike wants to add something.

MR. WAINE: Yes we're a little bit ahead. One of the agenda items is to provide guidance for the Technical Committee on stock projections, and the intent of that is so that the board can come back in August and set the 2017 TAC. At

that point the board would consider whether to keep the TAC the same, or make a change to it.

That is coming, Kyle; but it is not part of the agenda today. But the board will give guidance, so when we get to that agenda item I would suggest that you consider what kind of stock projections and what constant harvest TACs you would like to see, come August.

CHAIRMAN BALLOU: Thank you for that discussion. David.

MR. BORDEN: I think this is just a sequencing issue. I think almost everybody around the table wants to get on with the broader discussion of allocations and TACs. But we're confronted with a situation where this program needs to be extended in the near term; and between now and this summer, when I fully expect the situation with menhaden to significantly change if this year class manifests itself in some of the state waters. I think we've got to have a program that addresses the issue in the short term; and that is the reason I made the motion.

CHAIRMAN BALLOU: I don't see any other hands. I think we've had good discussion. Let's have a 15 second caucus; and then I'll call the vote. **Okay on the motion to extend the episodic event program until Amendment III has been implemented. All in favor please raise your hand; opposed same sign, null votes, and abstentions. It passes unanimously, thank you.** I'll now go back to Mike for a brief presentation on New York's request.

MR. WAINE: New York submitted a proposal that was in your briefing materials. The request is to be included as part of the Episodic Event Set Aside Program; the one that the board just extended. New York is experiencing episodic fish kills in Peconic Bay on the very east end of Long Island.

This happened last year and it is basically happening right now this year. The fish kills

result in enormous cleanup and socioeconomic impacts; a lot of dead menhaden on the beach. I'm sure Jim would love to talk more about that. New York is requesting to land under the set aside and remember that this program originally was restricted to the New England states; and eastern Long Island sticks out pretty far and is relatively close to that New England region.

In terms of PRT review, so David this gets back to your question about the process that all the states went through to be eligible, and how we determine that eligibility. Preemptively we had New York submit how they intend to administer this harvesting under this set aside if the board agrees to it. The PRT got together pretty quickly over the last few days to review that. Our recommendations after looking at the proposal were that the daily reporting is critical; especially given New York's quota overages that have occurred in the last couple years. Then that the commission may want to consider requesting more frequent than weekly reporting to us; considering that there is a possibility then that there might be multiple states harvesting from this set aside.

Just to make sure that we're adequately monitoring that set aside as it progresses, so that we can avoid an overage if that is a situation that we would be in. That is a quick and brief review of their proposal. Jim is probably best to answer any questions that the board should have.

CHAIRMAN BALLOU: Yes, let me go to Jim and then we'll take questions for either Mike or Jim.

MR. JAMES J. GILMORE, JR.: I'll just be brief and add a couple of updates that we've gotten. First off to really emphasize this. This is all about preventing a fish kill and a public health issue, public nuisance issue. Just to add on, when I was talking to Mike, not many people realize the political boundary of New England is very different than the biological boundary.

If anybody knows where Fishers Island is, it is a hell of a lot closer to Connecticut than it is to New York, I mean Long Island. Just the one big update is last evening. We got the water quality data back. In the briefing package there was a report from last year to document the event that is happening again this year.

We have a lot more menhaden, but the algal bloom that exacerbated this thing started this week. For all of you microbiologists, the prorocentrus cells are up to 146,000 cells per milliliter. Alexandrium, which is an appropriate species for where we are right now, is in a tributary called Meeting House Creek; they are 350 cells per liter right now. Alexandrium is red tide. We didn't have that last year, so this could even be worse.

Again, this is really not about taking advantage of the fishery or anything. In fact we may have to subsidize the fishermen. They are going to be doing this with beach seines, because we don't have a reduction fishery. We don't have a commercial fleet any longer, so the best we're probably going to do is maybe reduce the size of the kill; as opposed to actually eliminate it, but we're really going to try to do that. Anyway with those notes, I'll answer any questions and when you're ready, Mr. Chairman, I have a motion.

CHAIRMAN BALLOU: All right, Jim, why don't we do this? Why don't we get your motion up on the board? It is inevitable that it is going to be happening, so why don't we do that; and then take questions and comments on the motion and wrap those together. At this point I would entertain a motion.

MR. GILMORE: Move to add New York as an eligible state to the episodic even set aside program.

CHAIRMAN BALLOU: Is there a second to that; moved by Jim Gilmore, seconded by Dave Simpson. We'll get the motion up on the board.

As that motion is going up comments and/or questions on the motion; beginning with Cheri.

MS. CHERI PATTERSON: This really doesn't pertain to the motion that is up on the board, but I do have a question for Jim. In regards to, part of this problem appears to be water quality concerns about what's coming out of Peconic River. Is there any movement forward to improve these water quality conditions to help negate this sort of kill?

MR. GILMORE: Yes, the town of Riverhead is actually looking for both state and federal funding to upgrade their sewage plants; and there is also Suffolk County is working on a nitrogen reduction. I think the report, and what was difficult last year was that everybody was blaming it on nitrogen; and these kills occurred over history.

We essentially had said that the nitrogen maybe exacerbated the kill. If you had pure water out there the physics of all the menhaden and when the bluefish show up, you're going to have these kills anyway; maybe not as large. There is a separate effort going on to do nitrogen reduction to hopefully eliminate or reduce the blooms that occur with these things.

CHAIRMAN BALLOU: So far I've got indications that Terry Stockwell and Dave Simpson want to comment. I also have Bill Adler's hand up. Others, who wish to comment, keep your hands up. I'm going to have Mike write down the names and then we'll go down the list and I'll try to go back and forth between pro and con. Keep your hands up, if you could, for just one more minute. At this point I'll go to Dave Simpson.

MR. DAVID G. SIMPSON: Yes, I just want to sort of reinforce Jim's comments about the kills that occurred last year especially, really tremendous abundance of menhaden last year, and numbers beginning early in the year that I haven't seen in my lifetime. We were experiencing kills at the same time, pretty much

from one end of the state to the other; where water quality wasn't an issue.

Both states were doing work to try to identify the source of the kill, the responsible critter, so to speak. The Cornell University identified a virus as the cause. I think that is what was happening on our end, because there were so many fish around. I think New York's problems were more complicated.

Certainly the number one cause is just the tremendous abundance of menhaden that we've seen. We're not seeing as many this year, but the young-of-year, maybe the year class that Dave Borden is referring to, is tremendously abundant this year in our waters. The bigger fish just came in. I expect this is going to be a more regular occurrence.

Some of these smaller fish were dying, March/April timeframe. The one other thing I'll add, and Jim answered the question for me. But as we consider more fishing in areas that didn't previously support a menhaden fishery, we'll want to pay attention to the types of gear so you use them in the potential for bycatch. I think that will be my worry, not such a big concern with seines, but if we start talking about miles of gillnet I'm going to be nervous for other species and interactions. But I fully support the motion.

CHAIRMAN BALLOU: I do have a list, but I want to go to of those who already raised their hand, those wishing to speak in opposition; could you raise your hand again?

MR. STOCKWELL: Well, I am maybe partial opposition, because I have a great deal of sympathy for Jim and the residents of eastern New York, because the very same thing happened in the cove next to my house about 15 years ago and two plus feet of pogies right up on the beach. It took us months and months to vacuum them out and clean up the mess it left behind.

In principal I'm not opposed to adding New York, but the question I have, how much of this 1 percent of episodic fish do you anticipate you would need to harvest if this year class does come around the corner? Maine fishermen have been waiting for a long time to have access to them. I would be hesitant to support something that diverted some of that fish away; particularly if Maine had no access to them when the fish do come at the latter part of the summer.

MR. GILMORE: That is actually a good question, Terry, because first off I don't think we're getting anyway near the 4 million pounds. If you do the math on this, a handful of fishermen with beach seines with, I think we put in a 30,000 pound trip limit, are not going to be able to really take more. Last year the kill was in the 500,000 to million pound range. I think if we were able to get all of those fish maybe we would get a million pounds. But I don't think we're going to get more than a few hundred thousand.

MR. STOCKWELL: Would you be willing to put a cap on the amount of the episodic event that is available?

MR. GILMORE: Well that is a bigger discussion, because we thought about doing that. But then it is going to be, well that puts a cap then on every other state and we don't have a ceiling on it; which was I think the difficulty when I first looked at it. It says, well, I left a 1 percent for the entire episodic event.

But it never really identified what each state limit would be. I mean it would be completely arbitrary. Maybe we could report out, and I think if we do get to maybe a million pounds, at that point I think this thing is going to take so long that the kill would have happened and we're going to stop at that point anyway.

MR. STOCKWELL: I mean I would like to help you out, but I'm having a hard time without throwing my own guys under the bus here. If

there was some way you would cap at a million pounds or something so some portion would be available to those who are waiting further down the line for the fish to come, I could support it. But as it stands I can't support the motion on the board.

CHAIRMAN BALLOU: Let me continue with the names, I'll go to Rob O'Reilly next.

MR. ROB O'REILLY: Listening a little bit, this is symptomatic of a situation where you have a very strong population abundance-wise, and in every other aspect. New York has to be added on as the episodic, and later on it is going to have to be something a little bit different; because I read the report and the Suffolk health department really did an in depth report.

If you looked at the report these problems were prevalent in 2008 and 2009, and if you look at some of the other parts of the tables, it is amazing that 2010 wasn't a big problem as well. Maybe it wasn't a good match between the movements of the menhaden and the low D.O. conditions, which were sort of tagged as the main problem. I certainly support the motion, I just think as we go forward there has to be something in place to assist with these events. It brought back some very bad memories, and I'm sure it did the same for Maryland; back to 1997 and 1998, when we had menhaden fish kills and we watched within a matter of a couple of months our seafood businesses react very quickly to the negative. I think one of the positives is for everyone to know that it is a temporary situation no matter where it occurs, and it can be addressed. With those words I do support the motion.

CHAIRMAN BALLOU: I'll go to Bill Adler next.

MR. WILLIAM A. ADLER: First of all in the document that the New York put out, it says he is requesting a onetime harvest in 2016. Apparently according to this particular motion, it would be added to the rest of the states that

already have the episodic event area program. I am a little confused.

I am not against the motion, but requesting one time and that is apparently not what is up on the board. My second concern is similar to Terry's, because I can't remember the number. What do we have available as the 1 percent for all of us that are in it? Is that 4 million, 3 million? What is the number?

CHAIRMAN BALLOU: Mike, do you have that?

MR. WAINE: Yes, it is about 4.2 million pounds is that 1 percent of the TAC in this year. It obviously changes if the TAC changes, so that is why it is at 4.2 now.

MR. ADLER: Okay, but right now it is like 4.2 and we're going into this year. I am in favor actually of the motion, but I am concerned as Terry is that I wouldn't want New York to take so much that when it happens up in Massachusetts or New Hampshire or Maine there is nothing left for further north.

I am a little concerned. I am not against it. I understand what New York wants to do. I did want an answer about New York is requesting a one-time harvest, and how that differs from putting them into the program; apparently forever or as long as it's there. What is New York's position on that?

CHAIRMAN BALLOU: Why don't we get through the comments first and then we'll circle back to the issues that have been raised. Next I'll go to Lynn Fegley.

MS. LYNN FEGLEY: I am not opposed to the motion. I do have a question for Jim. Is there a reason why you can't shut the fishery down and harvest this under a bycatch? Is that because it is too much for a trip limit? Is that why?

MR. GILMORE: Yes, it is at 6,000 pounds a day. There is just no way they could do a dent in the size of the population. I mean there are all wild

estimates, but it is like what David said. It is like when we were back to a reduction fishery, you know 100 years ago. That is the size of this thing that no one has seen in many, many years.

MR. ERIC REID: Rhode Island has used episodic event for the last couple years and it's been a great help to the state of Rhode Island. I'm very sympathetic to the pending disaster that is going to happen in New York. I am pretty sure it will. We all know that's coming. But at 120,000 pounds a day, which is what the episodic event allows that is three days fishing for 12 boats. To have that entire episodic event wiped out, potentially in three days, I understand the 30,000 pound trip limit; but funny things happen when there is fish up to here. My question is, is there any other way to solve New York's problem other than potentially giving them a hundred percent of the episodic event?

I mean for example, could Virginia transfer 500 tons to New York, and have somebody that really knows how to catch a lot of menhaden at one time go up there and do it? I mean New York is talking about subsidizing the fishermen and not being able to do anything with the fish. To me, let Virginia give New York 500 tons, and send one of the big boys up in there and clean them up. You can clean them up in a couple of days and be done with it.

CHAIRMAN BALLOU: I'll just say, transfers are allowed under the program. Jim, let me just if I could, I am just going to run through the comments. I know you're taking notes as I am on some of the issues that are being raised. Then I'll come back to you and maybe you could address them in full. Next I have Ritchie White.

MR. WHITE: I guess I support Terry's concern. I think it would be totally appropriate for us to put a cap on the amount, because we're bringing New York in as a new state into this. The existing states don't have a cap, but I think it would be fine for us to set a cap for New York;

where we're making an exception and bringing New York in. Then secondly I guess I would have a question for Mike to refresh my memory of why New York wasn't part of the program originally. I just can't remember the discussion on that.

MR. WAINE: It came down to that the episodic events of menhaden showing up in larger abundances was more historical to the New England region. Jim is obviously documenting that these menhaden in the eastern Long Island Peconic Bay is episodic; they don't see it every year, but they've seen it the last two years.

MR. BORDEN: I've got a question for Jim, and then a couple of points I want to make; and I'll do it quickly. Jim, in terms of the size of the fish that you are encountering, what is the size of the fish, and this related question is is this a problem in the spring and potentially in the fall again, or is it just a spring related event?

CHAIRMAN BALLOU: Jim, do you want to jump on that one question?

MR. GILMORE: Let me tell you, obviously we've got a potential in the fall, because traditionally our fish kills, we haven't seen them in the spring. This is kind of the new thing; so yes there is a potential in the fall. Steve has got all of that. The size of the fish, I think they were anywhere, it's a mix from peanut bunker all the up to large adult fish. We've got the whole gamut.

MR. BORDEN: Thank you for that. I share Terry Stockwell's concerns. I would just offer the suggestion that I think we've got to think in a broader context here than just this. If we look at the actual performance and Mike put the data up of performance. In 2014 under this program, under the existing regulations without New York as part of it, we harvested all but 8 percent. Then what was it, 45 percent, Mike. You've got that slide on it.

MR. WAINE: Last year you only harvested 8 percent on this other side, and then this past year in 2015 you harvested 45 percent.

MR. BORDEN: I've got my numbers garbled. I mean the point is still the same. If you're harvesting 45 percent of the allocation and we have this problem in New York. Let's say it manifests itself in Connecticut and Maine. It is going to be a fairly short period of time before you're going to use the allocation up. What I would suggest is that I support adding New York to the program. I am not sure a cap is a good idea, although I fully support the concerns that have been voiced by Terry and others about using up all the allocation.

What I would suggest is that we either add this to the summer agenda item, the cap itself, so that we could regulate it or think about some mechanism where if the population manifests itself in a whole group of different states and we bump up against a cap, then we have some ability to do a facts poll increase or consider a facts poll increase in the cap to simply raise the cap. I am not willing to simply trade a problem in one state for creating a problem in another state. I think we've got to think in a broader context.

CHAIRMAN BALLOU: I'm going to go to Roy Miller and then I have Adam Nowalsky, and then I am going to go back to Jim for a response to several of the comments.

MR. ROY W. MILLER: Let me just state right up front that I feel Jim Gilmore's pain. One of my jobs was to head up fish kill coordination for the state of Delaware. I did that for 25 to 30 years. My point in raising this issue is that these are not all that unusual. It wasn't a matter of whether menhaden were going to die in our state; it was a matter of when they were going to die in our state.

It was an event that occurred with no degree of regularity. But the only regularity was that yes, there were going to be fish kill events. Now

most of our menhaden kills took place in restricted tributaries, boat lagoons, and that kind of thing where commercial level harvesting would be impractical or illegal.

But I think Rob O'Reilly touched on this. It is not unusual. Most of the states in the Mid-Atlantic areas have experienced these fish kill events, if not frequently then fairly regularly. We're setting a precedent by adding one state. Which states do you exclude from the ability to participate in an episodic event; in order to head off menhaden fish kills, which are distressingly common?

MR. ADAM NOWALSKY: I certainly appreciate New York bringing this to the table, and I think as we've heard around the table the episodic events was meant for something that doesn't occur normally; and as Roy just alluded to, fish kills do happen more often, quite frankly, then we would like to admit.

I am struck by some of the words that I've heard here. Most recently this board and the commission as a whole took an action with significant economic impacts just a couple years ago, and I am struck by what the public might take away. We are now using the terms "a nuisance fish" and that we have to "subsidize harvest" because if these fishermen go out and take the fish, they can't make money off of them anyway at this time. The message that sends is very troubling to me, and it definitely tells me that we've got to find some better solution to this issue. With regards to the motion here, I'm having trouble supporting it as is. I think I would have to see some type of number put on it. I'm not prepared to say what that number is, both in deference to the northern states, knowing what the impact might be, as well as the number that New York needs to address this situation. I certainly think we should not do this until Amendment III; this should be for one year and encourage this board to find some other way to take action on this issue moving forward.

CHAIRMAN BALLOU: Jim, let me go back to you now. I know there have been a lot of comments raised and you are free to respond to some or all of them at this point.

MR. GILMORE: Let me go from the bottom up. That might be a little easier. First off, and just to echo Adam's comments. The real thing we're trying to do is to get maybe some of these fish to market for a use because they have value. If we let this go down and we have this fish kill, they will all go into a landfill.

I think the commission is going to look pretty silly saying, oh wow, you had an opportunity actually to have a beneficial use of these fish. But we let them go to a landfill because of whatever. I think we can't wait on this. I mean I think we're all going to have a black eye if we don't do something at least to try to fix this.

The precedent by adding New York, again if you look at the map in the back of the briefing book, Roy, tell me where biological New England ends versus political New England and the Peconics, Fishers Island on the east end of Long Island Sound and all of Long Island Sound is part of New England, so it gets to be a little bit – but that is splitting hairs again – I still think that being part of that New England part of it makes a little bit of sense from a biological standpoint.

I did the size of the fish. I'll come back to the cap, because I don't have any problem trying to put an upper cap on this. But again, to Terry's comment, if we limit it to say a million pounds; well Rhode Island could take the other 3.2, Terry and you're still screwed. I mean that doesn't really fix that problem. But again we can talk about that.

Why we weren't in the program previously is we don't have a reduction fishery, we haven't seen menhaden. A few years ago when we were talking about this there were very few menhaden around except for our bait fishery, so we really didn't see the need. We hadn't had fish kills like this for many, many years. It really

didn't seem like we were going to have to deal with this, and hopefully when we get to the next amendment we would really think about it at that point.

We did think about having a commercial fishery, Eric, and actually I was going to maybe become friends with Omega to have them come up and bring a big trawler. First off that is, remember, the reduction fishery is most an ocean fishery with purse seines. This is a very shallow inner bay area, hard to get to.

You wouldn't be able to get commercial quantities of what would make it economically viable for anybody to do that. We thought about that it just wasn't going to work. The one time only, Bill, as this was unfolding we were trying to do this very quickly and get something in the briefing book. We were trying to tweak this as a modified episodic event with different limits, and it got very complicated. After I talked to Bob or whatever, he said it's very simple, if we just include us in the episodic event then all the limits are there and we have to meet the requirements of that; not customize an episodic event for New York That one time only thing was an earlier version, probably should have taken it out, but it is just cleaner if we just put New York and the episodic event under the current rules that were debated under the addendum; not as a new episodic event program for New York. I think that got all of them.

CHAIRMAN BALLOU: I think you did cover them all as well. I see two hands up. I am going to go to Tom and then Terry, and then I am going to look to the board to either move the question or amend the question.

MR. THOMAS P. FOTE: I am sitting here listening to this. This is not an unusual occurrence. In the last four years we've had fish kills in New Jersey up and down the coast because of warm water and low oxygen, and it happens, or the bluefish chase them into areas

and they get caught in those oxygenated areas and they basically die.

It is not an episodic event, it is a normal occurrence. It has been occurring. When I lived in Brooklyn I used to see it all the time. When I lived in New Jersey I saw it all the time. Yes, it is a shame to waste those fish; but basically you have quotas, you have set up a plan to do this. It is not an episodic event.

I am having a problem handling it this way. Since we have probably have had about ten fish kills in the last four years in New Jersey. It is not because of overabundance, it is because a lot of times they get chased into areas that have low oxygen by schools of other fish penning them. That is part of nature, I'm sorry.

MR. STOCKWELL: Thank you, Jim for your comments and thoughts. No doubt we have a big problem. Listening to all the comments around the table, everyone wants to help New York out, including me. **But I can't help out New York without a cap, so I'm going to make a motion to amend. The motion to amend is going to be what the northern states are going to do to help New York, and perhaps you'll be able to get some help from some of the southern states too. My motion to amend is; to cap New York to 1 million pounds of the episodic set aside for 2016.**

CHAIRMAN BALLOU: Is there a second to that. Moved by Terry Stockwell and seconded by Ritchie White. We'll get the motion up on the board. There has been, I think enough discussion on this issue that what I would like to do is once the motion is up and the maker is comfortable with it, I'm going to call for a vote on the motion to amend.

Then we're going to try to quickly move to the final vote; based on how that first vote comes out. Let's make sure we've got the motion correct. Terry, do I understand that this motion does two things; it would cap New York at one million pounds, it would also limit New York's

participation to one year, 2016. Do I read that correctly?

MR. STOCKWELL: No, my intention would be to add New York as an eligible state, but this cap would be specific to this year only; with anticipation that there be further board action to address a broader issue.

CHAIRMAN BALLOU: Thank you for that clarification. Is everyone comfortable with the motion, at least understanding what its intent is? If so, I am going to call for a one minute caucus and then a vote on the motion to amend. Okay, I'm going to call the question. **All in favor of the motion to amend please raise your hand; opposed like sign, null votes, abstentions – 2 abstentions. The motion to amend passes 15 in favor, 0 in opposition, and 2 abstentions. The amended motion becomes the main motion.** Are there any further burning comments or questions regarding what is now the main motion? I see three hands; I'll go to Bill Adler and Nichola and then Dave Borden, or Nichola in lieu of Bill.

MS. NICHOLA MESERVE: Just a question about the intent of this motion, whether it captures the other elements of New York's proposal that it is limited to the Peconic River harvest and a 30,000 pound trip limit.

CHAIRMAN BALLOU: Jim, what is your take on that?

MR. GILMORE: Again, we had the same thing. I mean we could limit it geographically, but then I'm starting to draw lines on a map and then we're probably going to be here for another hour if we start doing that. This is intended just for the Peconics, we have no reason to expand that. But I don't know where to draw the line, because you've got the north shore of Long Island and so on and so forth. We had a lot of small kills last year, which we were not going to harvest under. It was really these things where we have solely in the Peconics right now.

CHAIRMAN BALLOU: Dave Borden, did you have your hand up?

MR. BORDEN: Just a quick point. I can support the motion, but I still have reservations about the whole TAC and the potential impacts for all the other states up and down the coast. I will vote for the motion, but afterwards I am going to suggest that we add this item to the agenda for the summer meeting; and that the staff report on the status, and we include on the agenda consideration of increasing the allocation for this program.

CHAIRMAN BALLOU: Okay, I'll come back to you after the vote and we'll make sure we've got those points in the meeting minutes. At this point I would like to call the question. **This is now the main motion. It is a final action. Well let me ask this. Is there any opposition to the motion?** Seeing none; otherwise there would be a roll call vote.

MR. ROBERT H. BOYLES, JR.: Point of order.

CHAIRMAN BALLOU: Yes.

MR. BOYLES: I think because of final action, is it not required that we have a roll call vote?

CHAIRMAN BALLOU: It is required unless there is no opposition, and that is why I just asked the question. Again I'll ask, is there any opposition to this motion? There is. We will now have a roll call vote, thank you. I'll call for Mike Waine to call the roll.

MR. WAINE: Maine.

MR. STOCKWELL: Yes.

MR. WAINE: New Hampshire.

MR. GROUT: Yes.

MR. WAINE: Commonwealth of Massachusetts.

MR. ADLER: Yes.

MR. WAINE: Rhode Island.

MR. WAINE: Florida.

MR. REID: Yes.

MR. JIM ESTES: Yes.

MR. WAINE: Connecticut.

MR. WAINE: NOAA Fisheries.

MR. SIMPSON: Yes.

MR. DEREK ORNER: Abstain.

MR. WAINE: New York.

MR. WAINE: U.S. Fish and Wildlife Service.

MR. GILMORE: Yes.

MR. (?) DAVE HERR: Abstain.

MR. WAINE: New Jersey.

CHAIRMAN BALLOU: The motion passes 15 in favor, 1 opposed, and 2 abstentions. Thank you for that. Dave Borden, do you want to just once again so the record is clear, repeat your request for what you would like to be on the agenda for the summer meeting.

MR. ALLEN: Yes.

MR. WAINE: Pennsylvania.

MR. LEROY YOUNG: No.

MR. BORDEN: My request is that this item be added to the agenda for the summer meeting; that we get a report on the status of the program, including landings to date and that we specifically add to the agenda, consideration of a possible increase in the allocation for the program if needed.

MR. WAINE: Delaware.

MR. MILLER: Yes.

MR. WAINE: Maryland.

MS. FEGLEY: Yes.

CONSIDERATION OF DRAFT ADDENDUM I FOR PUBLIC COMMENT

MR. WAINE: Potomac River Fisheries Commission.

CHAIRMAN BALLOU: With that we're on to the next agenda item, which is the Consideration of Draft Addendum I for public comment. This is an action item that being board approval of Draft Addendum I for public comment. We have 45 minutes, which now has been truncated considerably for this item; but I think we might be able to get through it. Well, we'll see how we do. But be advised that we probably now have about a half hour or less on this item. We'll begin with a presentation on the issue by Mike Waine.

MR. SCHICK: Yes.

MR. WAINE: The Commonwealth of Virginia.

MR. O'REILLY: Yes.

MR. WAINE: North Carolina.

MR. CHRIS BATSAVAGE: Yes.

MR. WAINE: South Carolina.

MR. BOYLES: Yes.

MR. WAINE: I will do my best to move through this as quickly as possible. Let's talk about the timeline first. In February the board initiated this addendum to consider revision to the Amendment II bycatch allowance. We are

MR. WAINE: Georgia.

MS. NANCY ADDISON: Yes.

currently at the May board meeting, where the board is reviewing a draft for public comment.

If approved it would go out for public comment period from May through July, and at the August board meeting the board would review public comment on this document; and select final options, and implementation is obviously contingent on that schedule. In terms of the menhaden bycatch provision, let's talk a little bit about how that works.

A state gets an allocation, they open their fishery. All landings prior to a state reaching its quota count towards that quota, so regardless of whether it's directed or bycatch targeted whatever, all those landing occur until the quota is reached count towards the quota. Once the state reaches its quota it closes its menhaden fishery; and then can land 6,000 pounds per vessel per day under a bycatch allowance provision that was included in Amendment II. However, that bycatch provision doesn't allow two individuals to fish from the same vessel, because it is a vessel limit, and land up to 12,000 pounds of bycatch together. Instead they have to fish separately and land 6,000 pounds from separate vessels. This creates an efficiency; because in the Chesapeake Bay for example, it is common during that open season for pound netters to pool resources and fish together. These are family members that work each other's pounds.

Then the PDT examined that all stationary multispecies gear may benefit from the pooling their resources. Even though this is common to the Chesapeake Bay pound netting, the PDT also explored other multispecies stationary gears that may want to take advantage of this as well. Let's talk a little bit about the performance of the fishery.

From 2013 through 2015, remember Amendment II went in starting in '13, so we have three years of that quota management program. The bycatch allowance landings have averaged about 5.5 million pounds, ranging

from 4 to almost 7. This represents a small percentage of coastwide landings; about 1 to 2 percent.

By location the Chesapeake Bay jurisdiction, so that's Maryland, Virginia and the Potomac River Fisheries Commission, account for 81 percent of that average bycatch from those years. Then New York, New Jersey, Florida, Delaware and Rhode Island account for the remainder. By gear this is predominantly pound nets at 61 percent, and also anchored and staked gillnets that make up a larger portion of that 24 percent.

I admit this table is a little bit difficult to read, however it is very clearly in the addendum, it is Table 1. I'll just try to orient you to it and you can look at it in the draft addendum that was in your materials. The Plan Development Team, the columns represent states and the rows represent gear types; making distinction between stationary gears while fishing, which is the top portion and mobile gears while fishing, which is the bottom.

Within all the cells, is the average landings that occurred under the bycatch allowance within all those jurisdictions, the highlighted gray cells are supposed to give you a quick glance at what gear type is representing the most landings under that bycatch. That first row is pound nets; you see that very large percentage at 61 percent.

Then there are gillnets actually coming mainly from Virginia are what make up that other large component of the stationary gear types. I'll just point out that there are mobile gears while fishing using the set aside. Those percentages shown all the way to the right are much lower than those stationary gears.

Moving on to trips as opposed to landings, so from 2013 through '15 a total of 12,750 trips were landed under the bycatch allowance; that is a slight correction from what was in your document. I caught an error since the

document was released in your materials; but it is pretty insignificant. Almost 9,000 of those trips were from those stationary gears that we just talked about.

Again, the Chesapeake Bay is accounting for 88 percent of all stationary gear trips. Of those trips in the Chesapeake Bay, approximately 40 percent are from Maryland and PRFC from the pound net fishery, and approximately 59 percent are from the anchored stake gillnets in Virginia. When we looked at the trips by landing bin, so we separated the 6,000 pounds into thousand pound landings bins and looked at the distribution of the trips across those landing bins and across all the states. What we saw was 60 percent are landing under 1,000 pounds; these are smaller scale that is landing less than 1,000 pounds. The one gear type that rose to the surface where notable landings were exceeding 3,000 pounds was from pound nets. Ultimately this is again admittedly a little hard to read, but this is Table 2, very clearly documented in your addendum; and it splits up, once again the rows are the states.

These are total trips across the bottom, and then the percentages show the breakdown of those total trips within that state in the different thousand pound landing bins. You can see the largest category there being trips landing under a thousand pounds, and if you go to the next slide I just wanted to highlight that these are those trips that are landing those larger poundage's; being from Maryland and the Potomac River Fisheries Commission, and being attributed to mainly pound nets.

In summary, bycatch landings are largely from pound net fisheries in Maryland and PRFC, as well as anchored gillnet fishery in Virginia, pound net trips are landing menhaden amounts that would lend to cooperative fishing behavior, meaning landing those larger landing bins. However, we did explore this for more than just pound nets in the bay, and so there are stationary multispecies gear types that land menhaden as bycatch.

A little bit about stationary gears and landings composition. There was a request in this addendum to look at what the percent composition of menhaden was on these trips that were harvesting under this bycatch allowance. We did that but we're a little bit concerned with the figure, and I'll tell you why.

On average 71 percent of the catch and weight for all gear types combined were menhaden on these trips. But the PDT expected that because the trips that we evaluated were only the trips that actually landed menhaden. In essence this figure is biased, because we only consider the trips that landed menhaden.

We actually tried to consider including all trips, not just the ones that landed menhaden. But that task was too difficult to complete due to all the different fisheries that are harvesting menhaden under this allowance; and basically accounting for all those trips that those individuals would have taken.

There is another section in the addendum that just basically sort of tries to identify these gears a little further, stating that pound nets are fixed staked or anchored nets that possibly catch menhaden in large schools, so they are not actively targeting any species specifically. Staked gillnets are similar, in which they usually are fished in the same location, whereas anchored gillnets are stationary while set but can be moved daily. Gillnet catches depend on area being fished, and pots are not a multispecies gear and are usually targeting specific species.

We try to characterize some of those stationary gear types while fishing that we had identified in Table 1. We also threw in a section about the stock status. As a reminder the stock is not overfished and overfishing is not occurring. That is based on the 2015 benchmark assessment. The TC previously reviewed conservation equivalency from Maryland and PRFC, where they originally proposed a modification to allow this fishing together. The

TC reviewed those proposals and agreed that they would not adversely impact the biological status of menhaden, because one, the current healthy-stock status, two, there is that limited 1 to 2 percent that these bycatch landings represent coastwide, and that Maryland and PRFC pound net fisheries are limited entry; meaning they have actively put in some cap on the effort, and so there isn't a great opportunity for these bycatch fisheries to expand in these two locations for the gear types identified.

Now I'm going to move into the management options that the Plan Development Team included in this document after looking at all the data and considering the initiative by the board. This revises Section 4.2.1.7 of Amendment II. That is that bycatch allowance provision section that allows for this program to occur.

The status quo is that the bycatch allowance would stay at 6,000 pounds per day per vessel; so not allowing fishing together. Option B is working together permitted for all stationary and multispecies gears. We've just included language that would address that. Then we define stationary and multispecies gears as pound nets anchored/staked gillnets and fyke nets.

The PDT excluded pots because it is not a multispecies gear, and it is usually specifically targeting species. Option C is working together permitted for all stationary and multispecies gears operating in a limited entry fishery. Remember, this gets back to the TCs approval; which they liked that the programs from Maryland and PRFC were for pound net fisheries that had limited entry in place, though that was an effort cap.

We included in here an option that would basically only allow this fishing together to happen for stationary multispecies gears that were operating in the limited entry fishery. Here is a table. I don't expect you to be able to see this, but once again it is in your addendum;

it is Appendix 1. I would just like for all the commissioners, if we end up finalizing this, to confirm that that last column which identifies the gear types that are limited entry is correct; before this goes out for comment if it does.

I just wanted to mention that table as I will be looking for the board to make any corrections. We might be missing a little information, so please check out Appendix 1 to make sure that information is correct for your state. Then Option D is the last option; and that is that working together would be permitted for pound nets only.

This gets back to the original request in that two individuals fishing together reaching that bycatch limit is most commonly documented for pound nets; and that is supported by the data. Those are the four options that were included in the document to address this. Then in terms of compliance statement, implement any applicable changes whenever that occurs upon final addendum approval.

Whatever the board decides on this the states could implement that relatively quickly, or the board could determine when an implementation date would be appropriate. The PDT just felt that appropriate to note, which I think is something that everyone is probably thinking about that we have initiated Amendment III.

We will definitely be revisiting state-by-state allocations, and just allocation in general; and so keeping that in mind wanted to inform everybody that that is slated for sort of a next step here. Anything selected finally in this addendum may ultimately be changed through the Amendment III process, depending on whatever happens with that management document. I would be happy to entertain any questions at this time.

CHAIRMAN BALLOU: We'll take questions from Mike, and then we'll take suggestions for any changes to the draft document.

MS. FEGLEY: My question is just Option D, and I think it is clear in the draft addendum; so pound nets in this case, does that include the floating fish traps? What is included in pound net?

MR. WAINE: Yes good question, Lynn. To make it easier we did call pound nets and consider, the footnote is on Page 4, it says pound nets include floating fish traps and fishing weirs. This classification applies throughout the document; including the management options. You are right; there are regional differences in what are referred to as pound nets. The PDT interpreted that as even though it is called something different they are still considered pound nets. That is all the data shows under that same designation as pound nets.

MR. STEPHEN TRAIN: Mike, I want to make sure I understand this right; because we just spent about 25 minutes arguing about where 1 percent of the fishery was going. We have almost 2 percent of the fishery that is caught and not counted at all in the quota?

MR. WAINE: Correct. At the time that Amendment II was finalized not a lot was known about the magnitude of these bycatch fisheries. You are right that the landings under this bycatch allowance do not count towards the TAC, which was a decision that the board made through finalizing Amendment II. It also represents approximately 1 to 2 percent of the landings coastwide.

CHAIRMAN BALLOU: Additional questions for Mike.

MR. EMERSON C. HASBROUCK: Mike, I know there is a table in the document that you had on one of your slides that shows the percentage of trips by thousand pound bin classes for stationary gear. Did you look at the mobile gear in that capacity as well at all, you know in terms of trips in the different bins? The reason I'm asking that is in New York, actually most of our harvest is with beach seines rather than pound nets.

MR. WAINE: Yes, so we did. But because the options are limited to stationary gears while fishing, and they don't apply to the mobile gear types, we didn't include that information in the addendum; because the PDT progressed to moving on to specifically the stationary and multispecies gears, which was the original intent of this adjustment to begin with.

But we did look at it; we actually looked at it overall combined. I don't have the data in front of me, but given that the stationary gears accounted for a large percentage of the trips and the landings anyways, the smaller percentage of trips and landings coming from mobile gear types. I would anticipate seeing similar patterns in the mobile gear data as we saw in the stationary gears; in that a lot of those trips, or at least a vast majority of the mobile gear trips, would be landing less than a thousand pounds.

MR. ADLER: First of all, if something like this goes through is this only for the Chesapeake Bay or is it for all of our states that may run into this particular problem with like nets? Does this apply to us all?

MR. WAIN: I realize that I highlighted a lot of examples from the Chesapeake Bay, Bill. But the options even though this was commonly documented in the Bay, the use of multiple people on one vessel fishing together; the PDT took a broader look at it. It is not just limited to the Chesapeake Bay jurisdictions. All the options depending on the different gear types that they identify, would apply to any state that had that gear type fishery for menhaden within their state. The short answer is no, it is not just limited to the Chesapeake Bay jurisdictions.

CHAIRMAN BALLOU: Additional questions for Mike?

MR. ESTES: I really hate to bring this up. We made a decision earlier to allow the bycatch for cast nets, for the 2016 year. Does this change affect how we are doing that?

MR. WAINE: No, the only thing that this addendum considers changing is this allowance of two individuals to fish together from one vessel; for stationary, multispecies gears. Depending on which option is selected by the board, it would depend upon which gears are eligible or not. It does not deal with mobile gear types. We simply included that data in here to provide more perspective to the board about what gear types in totality are landing under the bycatch allowance.

MR. HASBROUCK: Relative to that question and the answer from Mike, my question is in terms of process. Is it inappropriate or too late at this time to include an option that speaks to specific mobile gear and doubling up on the trip limit?

CHAIRMAN BALLOU: It is not too late. I will get to that in a second. That would be an addition to the addendum that the board would need to consider; if you wanted to make that recommendation. I just want to make sure we've exhausted questions first, and then we'll get to potential changes to the document. Are there any further questions for Mike? Seeing none; Emerson, did you want to make that suggestion?

The way I would like to proceed with regard to any suggested modifications is that we'll entertain the suggestion, we'll see if there is consensus on the part of the board to include it. If there is we will certainly make note of it, and make sure it's included. If there is opposition or concern, we'll probably set it aside and then come back and vote on it. First I just want to get the issues on the table, and so Emerson, if you have one that you would like to offer now is the time to do it.

MR. HASBROUCK: I don't have a motion prepared, I'm just thinking of this on the fly here. But I would like to include an option to allow haul seines/beach seines to participate in this program.

CHAIRMAN BALLOU: I'm going to just let that marinate. I am going to come back to the board once we get our sort of laundry list of suggested changes, and we'll see how the board feels about them. Are there any other suggested changes?

MR. TRAIN: I am looking at this and I'm just wondering if there is anybody else around this table that thinks we've made a mess of this, since we thought we were overfished. I mean this is a species that is not overfished, overfishing is not occurring. We've got an uncounted bycatch that is twice what six states are fighting over to get a piece of.

It is not counted in anybody's quota. It is driving me crazy. I think we're trying a slight of hand to try to make everybody happy; and we're supposed to be managing a fishery. I think we should add an Option E that counts this in every states quota, and if we have to move the quota up to accommodate it, we do it. But this hide this behind my back and don't tell them that we did it stuff that is not the way we should manage fisheries.

CHAIRMAN BALLOU: Okay so again I will come back to this, but I understand your suggestion to be that you would want an additional option that would modify the addendum by changing bycatch to landings that are subject to individual state quotas. Do I understand that correctly? Okay thank you and I'll come back to that. I just want to first get the issues on the table. Other issues that members of the board want to offer regarding this draft addendum; changes to it.

MR. W. DOUGLAS BRADY: I'm just curious; do you anticipate this increasing the bycatch amount? I'm trying to get my head around what this might do to the bycatch amount that we presently or historically get?

CHAIRMAN BALLOU: Mike, do you want to take that?

MR. WAINE: Sure. I'll say that that is part of the reason that the Technical Committee liked that this was for limited entry fisheries; meaning there is a cap on effort, and that is one of the options in the document is that this only be allowed for gear types that have limited entry in place.

Just to remind the board of a little bit of history. I didn't want to get bogged down on this, but I think it is relative to the question. Maryland and PRFC tried to pursue this through conservation equivalency saying the plan currently allows two individuals to land 6,000 pounds separately, can we allow them to land 12,000 pounds together is essentially the same; conservationally equivalent.

The concern was, okay will that increase the amount of landings now that we're allowing people to work together? That is the reason the Technical Committee liked that that was limited entry, because it limited the ability for those landings to really exceed or really increase substantially. We haven't fully evaluated this for some of the other options, Doug.

But ultimately I am not sure, and this is something that the board members should think about. If some of their gear types were afforded this provision, would it really change how their fisheries operate? I think you all know that probably better than we do; because we just don't have a lot of information to draw that conclusion.

MS. FEGLEY: I think I am going to start to sound a little bit like a broken record, but I feel compelled to go back to the genesis of this a little bit. When we initiated Amendment 2, in that very long discussion, we talked for a very long time about the impact of this on these non-selective stationary gears that are licensed to a site; so they can't move around and they get these big slugs of fish through. In many cases when you discard these fish from a pound net they are dead. It is a little bit like Jim's

problem in New York, you've got dead fish washing up on a beach. In the Chesapeake Bay we have about 10 to 12 people who catch the majority of our menhaden harvest.

They work in families, so traditionally what they do is they go out in their boat in the morning, they are a father and a son or a husband and a wife, and they go to one net and then the other. They fish together. What happens is, in our case and the reason we brought this forward was that during the open menhaden season they are fishing communally, so they are fishing from the same vessel.

Then when the fishery closes they still want to get to both those nets. What they're doing is they're commissioning another vessel; and in some cases these are not particularly safe vessels, or if they are they are doubling their fuel and their crew costs, because you don't really fish a pound net by yourself. It takes more than one person to work that gear; unless you're superman or superwoman.

In Maryland the bottom line is that these fish are going to be caught. They are going to do it, they are going to catch them, and if they catch them more efficiently for fuel and crew, we think that is our responsibility to help them do that. I could not agree more with my colleague down the table that it is absurd that we're in this situation now with this bycatch allowance that doesn't count toward a TAC.

I think we all realize the issues with that. I think Amendment III; we need to keep our eye on the Amendment III bar. We have a lot of real logistical management problems with the menhaden right now. I think we all have a really good sense of what they are now. We've learned a lot in the last few years, and I think it is going to really empower us to go forward with Amendment III.

Again, this addendum we were hoping to do this through a conservation equivalency; because we are going to catch the fish. We

couldn't do that so we requested to initiate this addendum. I would really, really appeal to the board not to make this issue more complicated by adding gears and everything else. I understand, I will say it is a real problem for these big, stationary gears that don't move. Thank you for listening.

MR. O'REILLY: Just a couple of quick points to Mike's question about the states knowing more how they would handle sort of a system of bycatch and what it would detail. It would detail a lot of extra effort. Although there are limited entry systems there certainly are ways that we don't know about all the states, and what they do, and who is going to be participating; who's going to be motivated to take care of what has happened with a truncated supply. That is one thing; the other thing is Steve Train is absolutely right.

As we move forward with Amendment III, we should look for quotas. I mean we have built a house and added all these different parts to it, and it is becoming that when one part sags then we're going to go and fix that part, and then the other part sags. It really is cumbersome. It doesn't make a whole lot of sense. The other part here is just to respond to capacity we had about seven, maybe eight calls that Robert Boyles led on allocation. They were good calls. But very early on my recognition was when people were talking about capacity; they were talking about what existed then, several months ago. I was always thinking about capacity, what really is it that everyone needs for their capacity? One of the big challenges, and it shouldn't be a real burden is for this board to address that through Amendment III.

What is the capacity? What is the growth that is expected; because as soon as we clamped down on the supply, problems just started erupting everywhere? If the assessment had such a glowing picture, and by the time we get down the road to 2018 we have an update and it's the same. By the time we get to Amendment III, we ought to meld that in.

What we're doing now today is symptomatic of a system where the main emphasis was to reduce quota, you know establish a TAC, reduce quotas. Everyone even knew back in December of 2012 that the bycatch was squirrely. It was sort of a problem even then, and it is a bigger problem now.

The last think I'll say is practical about pound nets. In Virginia we didn't ask for this to be included in this addendum. In our system we have licensees; one licensee might have 15 pound nets. But he is the licensee or she's the licensee and they're responsible for the bycatch, regardless of how many nets they fish.

That is the way we operate. We are less volume than Maryland, but at the same time there are differences, and that is why we're not in the addendum. It is just the way the fishery operates. It has, as Lynn indicates, a crew and they do help out with the harvesting obviously. It is a challenge to fish a pound net. I mean there are differences even regionally within the Chesapeake Bay.

MR. RUSS ALLEN: I'll echo some of the things that Lynn had to say regarding the pound netters that also we do for the anchored gill netters, they are families, they are father, sons, brothers whatever that are trying to pick up a few extra menhaden when they can certain times of the year.

I'm sympathetic to what Emerson is talking about with seines; but if you open up this to mobile gear, I think you're also going to add in drift gill netters, and that just sends us down a path that I don't think we want to get to. Like I said, I'm sympathetic to what New York has to say there. I would rather we stick with just this fixed gear thought process for this addendum, and move on.

There has been enough comment about we really need to get our act together, so somewhere down the line we need to do that. But we have something in front of us that we

spent a lot of time on at the last meeting discussing, and making sure that everything was going to be in this that we needed in there. Now we're talking about adding more gears in there that I don't think we would want to go down.

MR. SCHICK: Rob basically said most of what I wanted to say, but also I think these additional gears can be addressed in August when we raise, I think that is what we need to do. I mean we're all talking about again 1 percent, 2 percent. If we raise the TAC all these problems go away. Now this is the situation we probably need to do. I have no problem with it. It is calling something, something that it is not. It is not bycatch. This is catch. It should be included and we need to raise the TAC, and we need to do what is right with all of this type of stuff, and that way mobile gears get what they need, states get what they need. Everybody gets what they need and problem is gone. Let's just get through this and go forward and then really think about what the real prize is, and that is getting it right; and think about raising the TAC and getting Amendment III nailed down so everybody has the fish that they need.

CHAIRMAN BALLOU: Seeing no hands, I do want to try and wrap this up. Are there any other suggested changes to the document that anyone on the board wishes to make? I'm going to go back to the two that were suggested, but first I just want to make sure we've got the issues covered. I don't see any indication of any further suggestions.

Let me go back first to Emerson, your suggestion. There has been some good discussion on the issue. I think you've heard some of the board's thoughts and comments on it. Do you wish to advance that as a proposed change to the addendum? If so, I'm going to need it in the form of a motion.

MR. HASBROUCK: Yes, I'm prepared to make a motion to that affect. I would move to add an option that allows working together permitted

for all stationary gear, as well as haul/beach seines.

CHAIRMAN BALLOU: Is there a second to that motion? Seeing no second; the motion fails for lack of a second. Steve, let me go to your issue. Do you wish to advance that in the form of a motion?

MR. TRAIN: After listening, I think we can wait for Amendment III to get to that. I would be happy to not move that forward at this point.

CHAIRMAN BALLOU: Thank you, that makes me happy as well. We now need a motion to approve Addendum II for comment. There have been no modifications made today, so it would be as presented to the board today. But we don't really need to say that. **Well, we can say that. I would be looking for a motion that moves approval of Addendum I for public comment as presented to the board at its May, 2016 meeting.**

MR. ADLER: I'll make that motion; what you said.

CHAIRMAN BALLOU: Thank you and we'll look to staff to make sure they get it right. I see Dave Simpson as a second. Move by Bill Adler, seconded by Dave Simpson; let's wait for the motion to get up on the board. Bill, are you comfortable with that wording? I believe it is consistent with what I had suggested. I believe we've had a very healthy discussion on the issue. Is there any further discussion on the motion? This does require a vote. I will give you 15 seconds to caucus.

Okay, ready. I'm going to call the question and Mike will make note of the tally. **All in favor please raise your hand; opposed like sign, null votes, abstentions, the motion carries unanimously.** I am going to go back to Mike for one quick clarification. He wants to make sure that the information in the document is accurate.

MR. WAINE: I mentioned this during my presentation, but I just wanted to highlight it again and point out that Appendix 1 is a table from all the states and jurisdictions about what the bycatch limit is, whether a state further defines non-directed fisheries, and the most important column in there as I mentioned is the stationary gear types that are limited entry. Because one of the options specifically says that it would only be for stationary gear types that have limited entry, it is important that the states correctly identify which gear type in that table are limited entry; so that when the public comments on this they can adequately know which gear types have limited entry in place.

Please see me by; let's say the end of today if that table is not correct, as we will look to publish this document very quickly to get it out for public comment. Then also if you would be interested in conducting a public hearing on this document, please let Megan and Tina know so that we can schedule that and get it announced to the public.

CHAIRMAN BALLOU: I think the last issue here is the issue of whether states wish to conduct public hearings on this addendum. I think Mike would benefit by knowing either now, well let's say now. Mike do you want to just with a show of hands, is that how you would like to proceed on this?

MR. WAINE: I think it's just best if you e-mail us on that same timeframe, if you know you're going to want a hearing e-mail us by the end of today or tomorrow; so that we know sort of how to plan and we can try to schedule them appropriately. I don't need a show of hands right now, but just let us know quickly so that we can start working on the logistics.

PROVIDE GUIDANCE TO THE TECHNICAL COMMITTEE REGARDING STOCK PROJECTIONS

CHAIRMAN BALLOU: We are now on to the next agenda item. We're running a little bit behind, so I just want to urge us to try to move

through these last few agenda items as quickly as possible. The next item is providing guidance to the Technical Committee regarding stock projections. This was mentioned earlier and now we're at that point. I believe Jason McNamee has a presentation, so at this point I'll turn it over to Jason.

MR. JASON McNAMEE: I am going to get into brutal, gory detail on assessment stock projections here. Just kidding, Mr. Chairman, I know I will go very quickly. It came to our attention that there may be a need to update our projections. We did some a couple years ago after the benchmark, but we became aware that there may be a need to update those.

I am just going to quickly go through what's behind the projections, very quickly, and just give you a sense of the feedback that we need from you all to move forward in the most expedient manner possible. The easiest thing for the technical folks to do would be to use the output from the BAM model, this is the Beaufort Assessment Model, the peer review approved model we use for menhaden; and to also use the projection methodology that was detailed in that last peer review.

I'll hit a couple of the assumptions. We used some functional forms to describe some of the population dynamic; I'm talking about things like selectivity and recruitment. This would be a curve like a dome-shaped selectivity curve. Those things are already built into there and we would not be inclined to change them unless somebody wanted us to.

Median recruitment is another big assumption that we used in our projections. Another big one is that the allocation remains the same moving forward; this is the allocation that occurs between bait and reduction. Then finally the main point here is does the board want us to revisit all these things, you can see them itemized up there, or are you comfortable? We kind of hashed this out the last go around. Do you want us to hash that out again or are you

comfortable with our original decisions, and would you like us to move forward with those? Keep that question in the back of your mind as I tick through these next slides.

The one thing that we can change and update is the catch input. We know what happened in 2014 and 2015, so we can use the actual catch information rather than the assumptions that we made the first time before those years occurred. We also for the timeframe of the projections, we used a pretty short timeframe.

We used 2015 through 2017. The reason for that is menhaden are not a very long-lived species, in particular in current times. We wanted to keep at least one observed data point in the projections, so that is why we only ran it through 2017. We can go beyond that if you would like, but what you lose at that point is an observed data point; one of those cohorts kind of moving through.

This is some of the projection runs that we ran last time, and so the very first one status quo that was the reduction from the historical time period; that is the TAC that we were operating under back in 2015. We ran then a series of runs relative to that historical time period; the reduction from that historical time period.

You can see in the table there the first set of rows is the percent risk of exceeding the F target; and you can see depending on which of those TACs we ran, there are varying degrees of risk. Then the last one was a constant TAC to achieve an F target in 2017; so you kind of look out into the future and say at that year certain we want to be at some assumed risk percentage, at the time it was chosen at 50 percent, and I'll come back to that in a moment.

How about projection runs for 2017? We can update projections to show different catch scenarios. However, the quickest most expedient, the most efficient thing we could do, is if the board picks some TACs that they want to see, rather than have us run 5,000 different

iterations of TACs that run the gambit; that you will then have to struggle to think about.

You can offer us some very specific advice and we can move forward with that advice. That is the most efficient thing for your technical folks; so I just offer that editorial, I guess. You can offer a status quo; that is what we had in 2016. That was that 10 percent increase from the 20 percent reduction from the historical catch.

You can also again provide us specific advice for a TAC, or you could give us the advice that you would like to see a TAC that will achieve an F target in 2017. What we need, and again this is another one to kind of stash in the back of your head as you make your decisions on this. We need a risk level. We chose 50 percent last time; we being the Technical Committee. We did that because we did not have any advice otherwise, and it is sort of a standard that is used for a lot of different species.

If you don't like that we would need that guidance to alter that. Just a couple slides here on caveats, and these are caveats, this is the fine print at the bottom of a commercial here; and these are for all projections for all species ever. Projections are highly uncertain. They do not include structural model uncertainties, so the only thing it propagates forward is some of the uncertainties that are specified in the model; but not the underlying structural uncertainty. They are conditional on a set of functional forms; so for selectivity and recruitment you just have a functional form that you plug into your projections and run forward with. The fisheries were assumed and will be assumed to continue at current proportions of allocation between bait and reduction. This is important because it interacts with the selectivity for each of those different fishing sectors, I guess.

New management regulations that alter the proportions, they would have impacts on the projections. If future recruitment is characterized by runs of large or small year

classes kind of in a row; that would affect the performance of the projections. Again, we're assuming median recruitment, so if things don't happen at that kind of normal level that will affect the performance of the projections.

Then the final point here is that the projections apply the Baranov Catch Equation, so that basically assumes some mortality occurs all year long. If you put in something like a seasonal closure or something like that; that will alter the performance of the projection, because that is not one of the assumptions that we've made.

Also, if the fishery is occurring at specific times during the year that would also impact that; but we're using the Baranov Catch Equation; assumes mortality is occurring all year. That is my whirlwind tour of the projection methodology. Before we get into questions from you, we need to confirm that we are okay moving forward with the assumptions that we used the last go round. If people want that to be different, we would need that specific advice that would create a delay; just so you are aware, because we would need to rehash that out.

If you specify a TAC, you specify specific numbers you want us to see that will save us running additional unneeded or unwanted runs. The more specific you are there the more efficient we can be. If a constant catch or a constant F approach is desired, we would prefer that you give us a specific level of risk; so we want that F target to be at 50 percent or some other value. We used 50 percent last time, So Mr. Chairman that is it for me.

CHAIRMAN BALLOU: Excellent presentation, and thank you very much for sort of wrapping it together at the end there with the three key issues; and that is the assumptions, whether the board is comfortable maintaining the same assumptions as were used previously, whether the board wishes to specify TAC levels and if so what those levels should be; and if the board

wants to utilize a constant F, what level of risk the board wants to use.

I believe 50 percent was used previously. What we're looking for is board consensus here. This won't be an issue subject to vote, but it is important for the board to provide guidance as specific as possible; to ensure that we do return in August with the information that the board wants and needs in order to take up the issue of specification setting for 2017, which is the issue that this underlies, or overlies I guess you would say. With that I look to the board for comments and suggestions.

MR. BORDEN: I make two suggestions. I would like to see the level of risk analyzed at the 50 percent level, and then some higher level just so we know how sensitive the assumptions are to that. If for instance they do 50 percent and 55 or 60 percent, I'm just picking numbers; I think there would be benefit in doing that. The other suggestion would be for us to look at a range of different options on the bait reduction allocation. I can envision as we move forward with menhaden management there is going to be an extensive discussion on that relationship. I think we should understand what the impacts are.

CHAIRMAN BALLOU: Additional comments, suggestion? Rob O'Reilly. I'm sorry, Rob, can you hold for a second? I should have given Jason the opportunity to respond. I'll probably do that on each issue.

MR. McNAMEE: I just want to clarify. Dave, you said 50 percent and then you offered 55 and 60 percent. It is the inverse, so to be less risky by an additional 5 percent and 10 percent is what you meant.

MR. BORDEN: You are correct; it is cold medication.

CHAIRMAN BALLOU: Now to you, Rob.

MR. O'REILLY: I think I'll respond to a couple of things, one the 50 percent is something that was recently used in a manner with striped bass; where the expectation was there would be a 50 percent probability of achieving the target F. It also has a basis in the courts going back to 1993, where the 50 percent standard was looked for with summer flounder.

I think that's a reasonable approach. The situation with the median, Jason sounded a little bit foreboding about that; but I guess that is something that you wait and see how things react. I think he described it well that if you have unusual recruitment in either direction compared to the median, then that is going to be problematic.

But I guess that was what the Technical Committee and the Stock Assessment Subcommittee lighted on back a while ago. I am going to say that Jason said their job would be easier if they knew what a TAC would be, and I think as a boundary, when we look at this and I listen to what happened today and some of the comments since 2012.

One thing to look at is what the TAC was or should have been if there was no reduction back in 2012, plus anything that has happened with this bycatch allowance. Some may not think that is even an upward boundary. But at least if we're going to look at this we should look at different parts of this, including where we stand now, where the capacity might take us.

I was really sort of bent out of shape I guess back in February of 2015; when we never really had a chance as a board to go over the various scenarios that the Technical Committee presented. I mean I know we could read about them, but there really was no discussion. The board jumped out with an option pretty quickly, and that evaporated any discussion about risk.

We had information about risk back then; risk to the population from various increases; that I

think went from 10 to 40 percent back at that time of where we were after the reduction in 2012. I hope that is clear that we should look for that situation prior to the reduction plus what we have done with other aspects we've talked about. We're moving into an area of Amendment III where even the episodic might need to be revamped, the bycatch, everything else. I think we can at least look at an upper bound. Someone else again might not think that is an upper bound for a TAC.

MR. SIMPSON: Maybe Jay can help me. I thought the projection, you asked for advice on what TAC we may want to see. But I thought that would come out of the risk probability or probability of not exceeding the target F; that if you do that run what TAC can we take with a 50 percent chance of exceeding the quota. Could you respond to that? I was thinking the upper bound would be and then 75 percent certainty that we would achieve the TAC, would not exceed the TAC.

MR. McNAMEE: I think you're right. That is very specific advice. If you said we want you to not exceed the F target by some risk level in 2017. That is a single run, so that is what I was getting at. Even more direct is if you said we want a 10 percent increase from today or whatever the board's desire was. Anything that is that specific is helpful to us.

CHAIRMAN BALLOU: Do you want to follow, Dave.

MR. SIMPSON: Yes, so I think that would make sense, to see what the TAC would be if we used the 50 percent probability and then maybe others have other amounts to offer.

MS. FEGLEY: Jason, I hate to bring this up. I'm going to feel like a little bit of an idiot. But when we talk about a TAC that would achieve the target with some probability; are we talking about the target that came out of the 2014 assessment, or are we talking about the target

before that? They were different, right? I don't know that we adopted officially the target.

CHAIRMAN BALLOU: I think Mike is going to take that.

MR. WAINE: Yes it is the reference points that came out of the 2015 benchmark stock assessment that we finished at the end of '14. The board has accepted those for management use, and those are the ones that we're using when we talk about the targets and threshold in Jay's presentation.

CHAIRMAN BALLOU: Lynn, do you have a follow or are you okay?

MS. FEGLEY: No thank you that was my question.

MR. WHITE: I think I saw on a slide that you said that the run would be subject to the same percentage bait and reduction. If that was going to change then you would need to know that. I guess I would ask that the run include a change in that; being an increase in bait. I guess I would look for help around the table to come up with the amount of change.

MR. McNAMEE: I understand, Ritchie, what you're getting at. Just to clarify, it is using the catch that we have realized. That is what the model then kind of runs forward with existing, so what you would be asking for is a simulation of some sort that increases that on some trajectory. Now we're getting into a realm where we would have to have discussion, and I don't know, we could do that.

But I'm suggesting, I don't know if that would be a long discussion. The more advice that you could provide us would make it quicker. You want it to go up by 5 percent or something like that. I just want to clarify that. It does use the existing what's happening now, but then it makes the assumption that carries forward.

MR. WHITE: I guess I would add 5 percent, but I would also look for some advice around the

table what other percentages states might think would be appropriate.

MR. WAINE: I'm thinking on the fly, and Jay, correct me if I'm wrong. If you run a projection that changes the distribution of harvest between bait and reduction, you are essentially changing the allocation of the fishery. In order for that projection to make sense in reality, you have to also change the allocation in the fishery to match that projection.

Ultimately what I'm trying to get at is I think what you're talking about is a projection that looks at a change in allocation; which I'm not saying that we couldn't show the board. I'm just saying that that doesn't match where we currently are at with managing the menhaden fishery, because we already have allocation in place that determines what that breakdown between bait and reduction is. Jay, can you jump in if I misstep there.

MR. McNAMEE: No, you didn't misstep, Mike. I don't know that. The importance of it in the projection methodology is the selectivities are different between the two fisheries, the two fleets. When you shift some of the catch into a different selectivity, it impacts the outcome. It has unintended consequences as well; and so it is kind of a heady decision, I guess is what I'm getting at. It is not necessarily; oh I'll just check it out and see what it looks like. It is that; but it is changing because of these underlying specifications that we've made to the projection methodology.

CHAIRMAN BALLOU: Ritchie a follow up, or are you good?

MR. WHITE: I guess I don't have my arms totally around this, so I guess I would look, see if there is support from other states to do this.

MS. FEGLEY: I wonder given the conversations that we've had with eels and menhaden, where we know we've got states that have been underreported. If I understand the allocation is

between bait and reduction is based on what's been reported. I think we would all agree that the reduction fleet has potentially been better reported than the bait.

I guess my question is to Ritchie's point. Is there a way, if we do the projections based on this allocation that is based on underreported bait landings; are we setting ourselves up to be in the same spot that we've been in and we are in with other fisheries? Now, knowing what we know with better reporting is there a way to estimate what the magnitude of that underreporting might have been in the bait fishery and scale it up; and see what the impacts are. I would be curious to hear other people's thoughts on that.

MR. SIMPSON: My thought is that is something we definitely want to look at through Amendment III, but maybe this is a little bit early for doing that. But come Amendment III, I think we could develop some specificity on what we would like to look at. I think better to hold off on that for this go around, this particular exercise.

CHAIRMAN BALLOU: I was thinking the same thing. I want to make sure the board is cognizant of the fact that what we're going to be doing in August is setting specifications for the 2017 fishery, pursuant to the existing Amendment II program; and then taking up potential changes to the program next year through the Amendment III process. I mean some of what I'm hearing today seems to be, as I think Dave was indicating, knocking on the door of changes to allocation; which are going to be ripe for discussion next year, but not necessarily, in fact probably not at all this year. Keep that in mind as you're thinking through this issue of advice.

MR. O'REILLY: I know I already had a chance. But I think what Dave had to say gives me a better situation of what Jay is really after, but I'm still in the hopes that there will be something similar to what we had in February

of 2015. In other words, back then it was risk involved; but also with a 10 percent, 20 percent, 30 percent and 40 percent increase in the TAC. Is that something that's still reproducible through the projections? I guess that's a question for Jay, maybe.

MR. McNAMEE: Yes. Just so it's clear. That isn't what we did last time. It's a nuance difference, because you saw 5, 10, 15, it was up there right. But they were all relative to the historical time period. What you would be asking for is something different. But it is very specific, and we could certainly do that.

You should tell us where you want to increase from, now perhaps by 10 percent, 15 percent whatever that is. We can do that. While I have the floor still, Mr. Chair, one thing from the comment that Dave Simpson made earlier. I appreciated the specification of the risk level by the date at which – so one of the questions we had is, is 2017 okay or do you want us to go out further? I think we would suggest 2017 is probably where you want to be at. But specifying a date is also important.

CHAIRMAN BALLOU: Okay I want to try to pull this together. It's been a very good discussion. I think the key though is clarity and specificity with regard to what the board wants the TC to do regarding its work on stock projections for 2017, to be brought back to the board at its August meeting.

I really think now is the time to try to pull together some firm recommendations that speak to perhaps the comments that have already been made; but give Jason the guidance that he's seeking from the board. I'm really looking for a wrap up right now, but I'm looking for it in the form of sort of final recommendations.

We're trying to do this on a consensus basis, so I don't want to get into voting on these issues. But I do want to make sure that those who have strong feelings about the issues offer their

suggestions as clearly as possible, and then I'll look to the board for a consensus. I'll go to Dave and then Rob O'Reilly.

MR. SIMPSON: The other I think that would make sense, would be do the status quo quota, 187 tons. What would the probability of exceeding the F be? I think that would be a good bound for me.

MR. O'REILLY: I think it is solidified, but that plus a 10, 20, 30 and 40 percent increase; because I think we need to see that. We didn't really get a chance to see that before. I thank Jay for educating me a little bit. That is my recommendation.

CHAIRMAN BALLOU: Rob, those increases are from where?

MR. O'REILLY: From now, current TAC.

CHAIRMAN BALLOU: I think that is important to clarify.

MR. WHITE: Trying to still come to grips with what I'm trying to accomplish. What if there was an increase in the overall quota in August that was by state, such that that then changed the allocation between reduction and bait? From that standpoint is it worth looking at what I originally asked?

MR. WAINE: Ritchie, I'm equally having trouble wrapping my head around how that is not a management change from the allocations that we've already included in Amendment II. There is an allocation percentage that is assigned to every state based off their landings history from 2009 through 2011.

That percent is how we take the TAC, which is the numbers we're talking about, and then just multiply those state percentages; and that's what determines what each state gets. What I'm thinking or suggesting actually ends up being a change to allocation, which would require a management document to achieve.

CHAIRMAN BALLOU: Rob, I'm wondering if I could suggest. I think you had offered a 10, 20, 30, 40 sequencing of increases. I'm wondering if I could add in a 5 percent to that. Well, I'm going to suggest to the board that we add in 5, and I say that because I think 5 represents essentially something that I think I heard you offering, Rob initially; and that is capturing bycatch plus episodic, and that's being generous to be honest with you, 5 percent.

But it at least knocks on that door, if you will, of sort of where we are currently plus bycatch, plus potentially an increase in episodic. That would be a 5 percent increase, and then to your suggestion we would go up from there. But I would like to suggest that as an additional target, if you will, to ask the TC to report back on. That's my suggestion. Additional suggestions, and then I'm going to look to Jason to see if he has enough, or whether he needs to prod us for more; and if so then I'm going to join him in prodding.

MR. McNAMEE: Mike is jotting stuff down here, it looks pretty specific. We've got status quo, and then we have these incremental increases 5 to 40. That is now six runs, and then the seventh run would be having a 50 percent probability, the TAC that would have a 50 percent probability of not achieving that; it is the same at 50 percent, in 2017. I think that feels pretty specific and actionable for me.

CHAIRMAN BALLOU: Awesome, thank you very much for that discussion. Is there anything more on this issue? I think we definitely got the job done. Thank you for that. Roll up your sleeves and get ready for our August meeting at which this will be coming back and we'll be taking it up in the form of specification setting for 2017.

MR. WAINE: Early in the discussion Dave Borden had suggested a couple of different risk levels. Will we try those as well? He suggested 50, 45, and 40.

CHAIRMAN BALLOU: Without objection we'll add those to the list. It sounds like Jason is comfortable with now a more fully rounded list of scenarios to be run. Does that cover it? Is there anything more to be discussed on this issue? Seeing no indication I'll move on to the next agenda item, which is I believe a brief report on the progress being made by the Biological Ecological Working Group, aka BERP. I believe Shanna Madsen has a presentation on that. Shanna.

BIOLOGICAL ECOLOGICAL WORKING GROUP REPORT

MS. SHANNA L. MADSEN: I've got five minutes; I'm going to try to take three. If you guys remember, our last BERP work group update was at the annual meeting; and at that time we reported out on the outcome of the Ecosystem Management Objectives Workshop. Then the subsequent BERP meeting where we kind of identified the intersection of those goals with the modeling approaches that the workgroup was considering.

The board did recommend that the BERP move forward with these ERP modeling approaches, so the workgroup subsequently met in March to put together a general timeline. We also heard some updates on a few of our outside modeling approaches. If you'll recall, our last single species assessment was completed at the end of 2014.

The five year trigger for the next benchmark would be 2019. Working backwards the group kind of recommended that we put the multispecies modeling assessment at the end of 2019, which would put us on the same timeline as a typical single species assessment. We also recommended that throughout this time period we would update the board on our progress when appropriate, during our spring meetings, and our annual meetings.

I just want to give everyone a quick reminder that this is kind of the first time that we're

attempting to do this level of multispecies modeling. We're looking at a total of four models currently, to generate ERPs. This five year timeframe is a very ambitious timeline. We typically complete only one model for a single species in that timeframe.

We're definitely going to be working hard to stick to this timeline, but I think flexibility is going to be crucial as we run into any hiccups. I am forever optimistic, so I am cautiously confident in our ability to however get that completed in 2019. I am going to go ahead and dig a little bit deeper here as to what we'll be doing during this timeframe.

Essentially in 2016 and 2017, we're holding this new thing that we're calling modeling workshops. What we want to do is have all of our modeling leads come in, and kind of present on what the back end of their model looks like. This should really help to increase our committee understanding of these modeling approaches.

We hope that it also kind of increase our efficiency so we can work together to divide and conquer tasks among those modeling approaches. Also at that time, I think it will be the place for the committee to really dig in and make a final decision on if that model should move forward and be evaluated in 2019 at that benchmark.

We also hope that we can kind of sit down, hash out potential data sources, and that will really help to populate our future data workshops. Essentially as we're moving through these modeling workshops, we'll really be able to populate our timeline further out and get some greater detail there. In 2018 we're anticipating two data workshops. Again, remember that is kind of due to the number of modeling approaches and the fact that we're going to have so many data sources. We're not just looking at data sources for one species, we're going to be looking at data sources for multiple predator species, for multiple prey

species; so we're really going to need those two data workshops to compile all that data and hash it out and get it together. Then in 2019, we will start holding our assessment workshops. Again, I've got two scheduled in that timeframe as well as the benchmark. At those assessment workshops we'll start to look at base runs and really nail down all of those final details. What we'll be doing coming up, we've got a July modeling workshop; this will be our first modeling workshop.

Currently we have a subcommittee who is working to convert one of our modeling approaches into a format that is a little bit more easily accessible to the workgroup. Then in July we'll hold that modeling workshop looking at Jim Uphoff's Steele-Henderson model. We hope to hear some progress updates from our three other modeling approaches during that timeframe. Then we should have some updates for you guys again at the annual meeting. With that I would be happy to take any questions.

CHAIRMAN BALLOU: Questions for Shanna?

MR. O'REILLY: The item about the external model preparation. What exactly is involved there and is that something where recruitment from outside has already taken place? I wasn't sure. Yes, okay.

MS. MADSEN: Essentially we have two external models that are being developed right now. One is actually by Jenny Nessler and one is by Andre Buchheister, well he was with CBL. Those were already being externally developed prior to when we started, you know working, and we've been working with the two of them closely to kind of monitor their progress and have them come in and give us reports and updates as well.

CHAIRMAN BALLOU: Additional questions?

MR. HASBROUCK: Thank you Shanna for your presentation. What's the difference between the four models? Is it the number of species

that they can look at? Are there differences in how they model the interaction between species; if you can provide some oversight on the difference that would be helpful?

MS. MADSEN: I think the answer to that question would be yes. There are a lot of differences between all four of the models. One is actually Jay's model; he is working on a multispecies statistical catch at age. That is a framework that we're a little bit more used to. But that kind of ranges out to like an ecopath with ecosim model, which is just a very large model that can incorporate way more species than we would be incorporating into the multispecies statistical catch at age model.

Really there are a wide range of differences between those modeling approaches, so we really hope to kind of hone in on what those differences are, what they're producing, and kind of what that gives us in the form of ERPs, and hopefully kind of find some sort of common ground.

CHAIRMAN BALLOU: Follow up?

MR. HASBROUCK: Yes follow up, thank you. I noticed in your schedule that the data workshop or workshops are going to follow the decision of which model is going to be used; but I'm guessing that these different models are going to need different levels and different intensities of data. What happens if you choose a model and then find out you don't have enough data to really inform that model to be productive?

MS. MADSEN: The models are already developed to the point that we pretty much understand what those data sources are going to be. I think that we'll be able to kind of make that determination during those modeling workshops, since we will be discussing the potential data sources and the draws, and how long it will take to actually make sure that we've covered all ground that we need for those approaches.

I hope that we're really able to make that determination during those modeling workshops, but should the committee feel uncomfortable and kind of want to wait until a later date during the data workshop, I don't really see a problem with that either.

CHAIRMAN BALLOU: Further questions for Shanna?

**BOARD CONSIDERATION OF APPROVAL OF
2016 FMP REVIEW AND STATE COMPLIANCE**

Seeing none; thank you Shanna for that report, and we'll move on to Item 8, and that is Board Consideration of Approval of 2016 FMP Review and State Compliance. States were required to submit their compliance plans by April 1; the PDT reviewed those plans and reported out via the FMP Review, which is in the meeting materials. I will now call upon Mike to summarize that report.

MR. WAINE: I'll jump right into this. We are operating under Amendment II, surprise! It was implemented in 2013 and established a TAC that was increased for 2015 from '13 and '14. That TAC is 414.2 million pounds. We have that 1 percent set aside for episodic events. The allocation is based off the three year timeframe.

We have transfer of quotas. We have this bycatch allowance that we talked about. We carried forward the reduction fishery harvest cap in the Bay. It does timely reporting to minimize overages; and it has an improved biological component part. This slide just summarizes some of the things that have occurred since Amendment II.

I went through all of that and this is actually action we took today, all in the episodic event stuff, so I won't go through that again; but just letting the board know that the board through board action had made continuous changes to that program. Moving on to status of the stock, Amendment II were interim reference points

that were put in, based on maximum spawning potential.

I have grayed those out because there were new recommended reference points that came out of the benchmark stock assessment that the Peer Review Panel approved, and also the Technical Committee recommended. The board accepted those for management use, and so as shown as our screen, those are our threshold and targets.

Using the new recommended reference points the stock is not overfished and overfishing is not occurring. Those are still interim reference points while ERPs are being developed, and you know that Amendment III will consider those reference points along with ERPs that are available; so 2015 status of the fishery.

Our TAC is there. Our total harvest, excluding the bycatch was just underneath the TAC. It is a 10 point, 5 percent increase from 2014 but that should come as no surprise, because the board increased the TAC by about that amount in the year the bycatch harvest was 5.9 million pounds. That represents 1.4 of the coastwide that doesn't count towards the TAC as we talked about. Combining it all, total harvest including the bycatch is just over 416 million pounds. We have a reduction fishery and a bait fishery; so for reduction purposes there were 316.2 million pounds landed. That is a 9.5 percent increase from 2014, and about a 2 percent decrease from the previous five-year average.

Then the bait harvest was 92.5 million pounds, and that is about a 10 percent increase from 2014 and a 10.4 percent decrease from the previous five-year average; once again those increases no surprise because the TAC went up by that amount. This is just a landings figure that shows what I just talked about, bait landings is in red, reduction in blue. Notice the different of the scales.

Then I went through this bycatch analysis table in the addendum, so it is the same table so I won't do that again. What is driving these patterns as we talked about, pound nets in Maryland and PRFC, and gillnets in Virginia make up a bulk of that and then in terms of the trips, a lot of these trips landing under a thousand pounds for bycatch.

Episodic events, we have three states that are qualified. They have to implement all those mandatory provisions that we talked about. Only Rhode Island declared participation. They harvested less than 1.9 million pounds, and the unused set aside that was left over was reallocated on November 1 to the rest of the states.

This slide is a table in your FMP review that really sort of is the accounting of everything that happened in 2015. It shows the quota transfers that occurred. It shows what the total 2015 quota was after the set aside got reallocated and all that. It shows the 2015 landings, and it shows what overages remained at the end of the year.

There is no requirement, in terms of timing of transfers, so there are these states that have overages are actually in a process of transfers as we speak. This may change, depending on the transfers that occur. But I'll tell you about the ones that have already occurred. Massachusetts transferred quota to both New York and Rhode Island to cover their overages.

But overages occurred in four states, so Florida and Rhode Island were over because high daily landings rates relative to their small quotas made it difficult for them to close the quota and not go over a little. New Jersey had some delinquent dealer reports, which was the reason for their overage; and New York's reporting timeframe is on a monthly basis, so it was challenging for them to close once again a timing issue.

The PRT just wanted to bring to the board's attention New York has monthly reporting but has capability of requiring weekly reporting if needed, and just mentioning that New York had a quota overage in '14 and '15; all other states implemented timely reporting. This table just shows 2015 bias samples.

As part of our requirement in Amendment II to get more data flowing into the stock assessment, we have a bio-sampling requirement based on the amount of landings that a state has. This table outlines what that looked like for 2015, and the take-home note is that all the states have collected the required samples that they needed to, based off the landings. That's great, we're getting good length and age information from that data that goes directly into the stock assessment; so that is really helpful and useful.

There is an index requirement, no compliance issues with that so we'll skip that slide. The Chesapeake Bay reduction harvest cap, as I remember this was already in place when we were considering all those changes in Amendment II, and so Amendment II would just reduce that harvest cap by 20 percent.

The reduction fishery consistently underperforms that harvest cap, meaning their harvest is below the cap in the Chesapeake Bay; and in 2015 they reported approximately less than 50,000 metric tons, so there is a rollover provision as part of this and you say what their TAC is for 2016. Then we had de minimis requests from the states of New York, Pennsylvania, South Carolina, Georgia and Florida.

They qualify because their bait landings don't exceed 1 percent of the total coastwide bait landings. As a result the PRT recommends that the board approve de minimis requests by those states. There are a couple of recommendations that I'll wrap up with. One ,we're looking for the board to accept the 2015 FMP review for menhaden, and that the board

just consider the reporting timeframe of New York to minimize future quota overages, and that they also consider those de minimis requests. I would be happy to answer any questions.

CHAIRMAN BALLOU: I guess on behalf of the board I'll ask Jim regarding this recommendation. Is New York considering your reporting timeframe issue?

MR. GILMORE: Mr. Chairman, I can change the reporting timeframe, but it is the allocation that is the problem. Yes, I can report sooner that I'm going to be over my allocation, so yes we can report; especially if we're getting the episodic event, we're going to daily reporting. Yes, we'll see if we can improve that.

CHAIRMAN BALLOU: Additional questions for Mike regarding his presentation?

MR. HASBROUCK: Not directly related to the report, but related to the issue. I heard a little bit of discussion around the table earlier today about another extremely strong year class for menhaden. Do we have any information on that that you can share with us?

MR. WAINE: Admittedly we do not annually update the indices that we use in the stock assessment, so we didn't pull that information together for the FMP review. We usually pull that information during assessment years, 2017 will actually be an update assessment for menhaden, and so we will be pulling that information for next year.

It is simply because of the timing right, so remember that the compliance reporting date for menhaden is pretty early in the year, because we need it to set specifications et cetera. Reporting out on those indices can be a challenge at time on that short reporting timeframe, but I will tell you that we update them for the assessments; but if you wanted them sooner we could try to find a time to

make that affective with when the data become available.

CHAIRMAN BALLOU: Any further questions? Dave Simpson.

MR. SIMPSON: Not on this but just in terms of the projections and setting quotas. The review reminded me of this. There is nothing that would prevent us in setting the quota for 2017 from considering what the landings are, if they exceeded the TAC by a couple thousand tons or something, to adopt a quota that anticipated a similar overage next year.

CHAIRMAN BALLOU: Fair comment I think; additional comments or questions? **If not, I would entertain a motion to accept the FMP review and approve de minimis status for New Hampshire, Pennsylvania, South Carolina, Georgia, and Florida.**

MR. ADLER: Moved.

CHAIRMAN BALLOU: moved by Bill Adler, is there a second? Seconded by Steve Train, miraculously we have the motion up exactly as indicated. Is there any further discussion on the motion? **Is there any objection to the motion? Seeing no objection; the motion is approved by consent,** and we're on to Item 9, the Election of a Vice Chair.

ELECTION OF VICE-CHAIR

CHAIRMAN BALLOU: Do we have any nominations for Vice-Chair? Cheri.

MS. PATTERSON: Yes, I would like to nominate Russ Allen for Vice-Chair of the Menhaden Management Board.

CHAIRMAN BALLOU: Is there a second to that? Seconded by Jim Gilmore.

MR. GILMORE: I'm going to pretend I'm Pat Augustine, I second the motion and close all

future nominations and approve the appointment of our new Vice-Chairman.

CHAIRMAN BALLOU: Russ, I just have to ask, do you have enough delegates or did you run as an independent?

MR. ALLEN: I'll leave you up in the air on that one.

CHAIRMAN BALLOU: Is there any objection to the motion to appoint Russ Allen as Vice Chair for the menhaden board? **Seeing none; the motion stands approved.** Congratulations, Russ! We look forward to working with you.

OTHER BUSINESS

CHAIRMAN BALLOU: Under other business, which I believe is the last item on the agenda. I would like to ask Robert Boyles to come up and join me at the front, as we take up this issue, which is consideration of a resolution regarding exemplary service.

RECOGNITION OF MIKE WAINE

CHAIRMAN BALLOU: As the board knows, this is Mike Waine's final meeting as FMP Coordinator. While we are thrilled for him and his new job opportunity; we are less than thrilled about losing our guiding force. Over the past several years Mike has done a tremendous job guiding the board through the Amendment II process, and positioning us well; as we prepare to embark on the Amendment III process.

We want to take a moment to extend our appreciation via a gift, and a resolution. First the gift, Mike, on behalf of the board we present you with this beautifully framed lithograph of *brevoortia tyrannus*; I would say menhaden, but that word makes Jim Estes head spin. I'll stick with the scientific name.

Done by famed scientist and artist, Sherman Denton; it is an original print from 1902. We present it with the hope and expectation that it

will forever remind you of the fine work you've done on behalf of this fish and all who depend on it. (Applause) Next I have a resolution, it is signed by all members of the board and it reads as follows: Resolution, in recognition and profound appreciation of distinguished service by Michael Waine, duly adopted on May 4, 2016. Whereas Michael Waine in his capacity as Senior FMP Coordinator for the Atlantic States Marine Fisheries Commission's Atlantic Menhaden Board, has thoughtfully, conscientiously, and professionally guided the board, resulting in the sound conservation and management of our most important fish.

Now therefore, we the members of the Menhaden Board, representing 18 states and jurisdictions, extend our profound appreciation to Michael Waine and wish him the very best in all of his future endeavors. This is a final action; it requires a roll call vote. Mike, would you please call the roll. Mike, please call the roll; seriously.

MR. WAINE: I feel like the jokes on me. Just before I do that I am obviously shocked. It has been incredible working here. I love this commission. I love working with all the commissioners, the Technical Committee members that do so much for this board, the Advisory Panel and their input in PDTs, PRTs, the list is endless, the public's involvement.

It has truly made this experience something that I could have never imagined. It has prepared me for whatever comes next in my career, and I am ready to take that step, but I will never forget how amazing this opportunity was. I wish all of you to do great things on Amendment III. Thank you so much, and are we really doing a roll call right now?

CHAIRMAN BALLOU: It is a final action, it is required, yes.

MR. WAINE: So be it.

MR. BRADY: Are we going to have time to caucus on this?

CHAIRMAN BALLOU: **No caucus, this is a roll call vote on the motion to improve and formally adopt the resolution and recognition and profound appreciation of distinguished service by Michael Waine.** Mike, please call the roll.

MR. WAINE: Maine.

MR. STOCKWELL: Yes.

MR. WAINE: New Hampshire.

MR. GROUT: Smooth sailing, Mike, thanks.

MR. WAINE: The Commonwealth of Massachusetts.

MR. ADLER: Yes.

MR. WAINE: Rhode Island.

MR. REID: Yes.

MR. WAINE: Connecticut.

MR. SIMPSON: Absolutely.

MR. WAINE: New York.

MR. GILMORE: Yes and good luck, Mike, you are the best!

MR. WAINE: New Jersey.

MR. ALLEN: Yes.

MR. WAINE: Pennsylvania.

MR. LUSTIG: Yes.

MR. WAINE: Delaware.

MR. CLARK: Yes.

MR. WAINE: Maryland.

MS. FEGLEY: Yes and thank you for all you have done.

MR. WAINE: The Potomac River Fisheries Commission.

MR. SCHICK: Congratulations, yes.

MR. WAINE: Commonwealth of Virginia.

MR. O'REILLY: Yes.

MR. WAINE: North Carolina.

MR. BATSAVAGE: Yes.

MR. WAINE: South Carolina.

MR. BOYLES: Enthusiastically, yes.

MR. WAINE: Georgia.

MR. WOODWARD: Yes.

MR. WAINE: Florida.

MR. ESTES: Yes.

MR. WAINE: NOAA Fisheries.

MR. ORNER: Yes, and welcome aboard.

MR. WAINE: U.S. Fish & Wildlife Service.

MR. (?)HERR: Yes, and thank you, Mike.

MR. WAINE: And thank you.

CHAIRMAN BALLOU: The motion carries unanimously. Thank you, Mike, and thank you to everyone for your contribution. Without objection I would move adjournment. I'm sorry; we have a couple hands raised in the back. Yes, please.

MS. CATHERINE W. DAVENPORT: Thank you, Mr. Chairman. I know it is a long day so I will be

very brief. I had the opportunity to read Pete Himchak's report on the fisheries, 2004 to 2013 dates Age 0 to 1 where the takes were very low. The small component of the population was 5.3 percent for reduction and 1.1 percent for bait; with natural mortality being quite high. This leaves a lot of fish in the water, and I would like to recommend to the Technical Committee to review the information.

ADJOURNMENT

CHAIRMAN BALLOU: Thank you, I'm sure the TC will take that under advisement. Is there any other matter to be brought before the board under other business? Seeing none, is there any objection to adjourning? Seeing none; we are adjourned.

(Whereupon the meeting was adjourned at
10:43 o'clock a.m. on May 4, 2016)

Atlantic States Marine Fisheries Commission

**DRAFT ADDENDUM I TO AMENDMENT 2
OF THE ATLANTIC MENHADEN
INTERSTATE FISHERY MANAGEMENT PLAN
FOR PUBLIC COMMENT**

Bycatch Provisions



This draft document was approved by the Management Board for public comment to solicit input on the issues contained in the document.

May 2016

***ASMFC Vision:
Sustainably Managing Atlantic Coastal Fisheries***

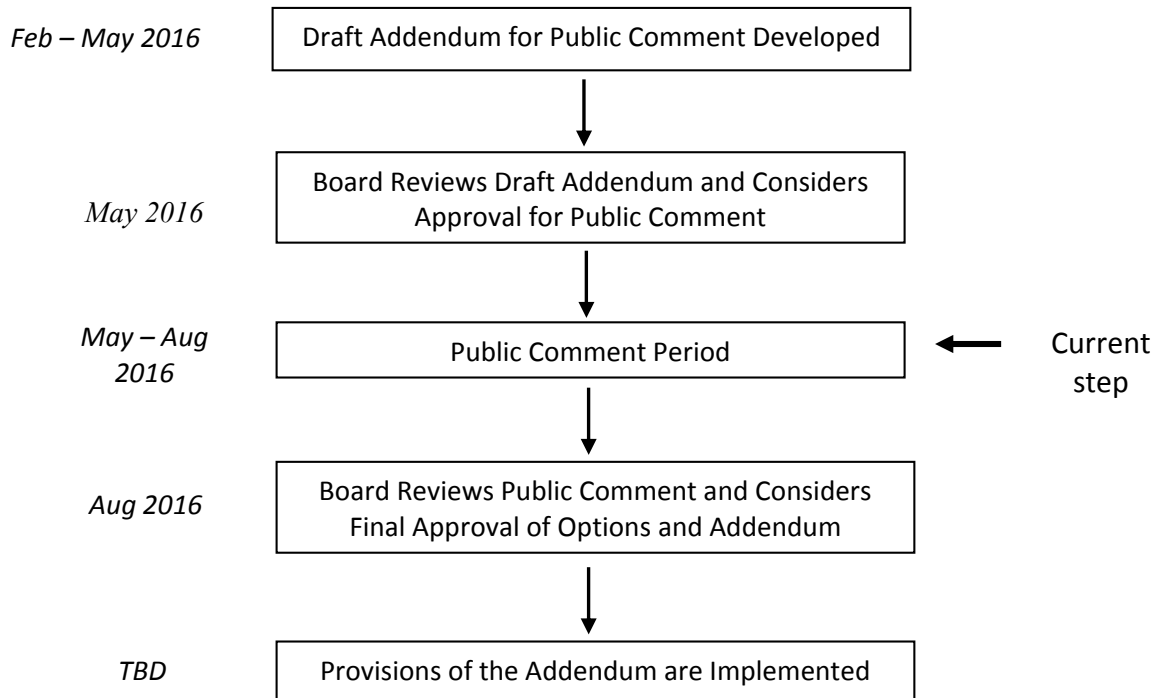
Public Comment Process and Proposed Timeline

In February 2016, the Atlantic Menhaden Management Board initiated an addendum to Amendment 2 to the Interstate Fishery Management Plan for Atlantic Menhaden. This addendum considers a revision to the bycatch allowance provision and contains background on the Atlantic States Marine Fisheries Commission's management of Atlantic menhaden, the addendum process and timeline, a statement of the problem, and proposed management options.

The public is encouraged to submit comments regarding this document at any time during the addendum process. **The final date comments will be accepted is July 11, 2016 at 5:00 p.m. EST.** Comments may be submitted by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below.

Mail: Megan Ware, FMP Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200
Arlington, VA 22201

Email: mware@asmfc.org
(Subject: Draft Addendum I)
Phone: (703) 842-0740
Fax: (703) 842-0741



1.0 Introduction

The Atlantic States Marine Fisheries Commission (ASMFC) coordinates the interstate management of Atlantic menhaden (*Brevoortia tyrannus*) in state waters (from 0-3 miles offshore). ASMFC manages Atlantic menhaden through Amendment 2 to the Interstate Fishery Management Plan (FMP), which was approved in 2012 under the authority of the Atlantic Coastal Fisheries Cooperative Management Act (1993). Management authority in the Exclusive Economic Zone (EEZ), which extends from 3-200 miles offshore, lies with NOAA fisheries. The management unit for menhaden includes the Atlantic states from Maine through Florida.

Amendment 2 implemented a coastwide commercial total allowable catch (TAC) for the first time in 2013. The TAC is allocated into state-specific quotas based on the average landings from 2009–2011. States are responsible for managing their quotas through the implementation of state-specific management measures and are also required to have timely reporting with accountability for quota overages.

Amendment 2 also includes a bycatch allowance provision to provide flexibility for the harvest of Atlantic menhaden by non-directed fisheries after a state has reached its quota and closed its directed fishery. Although the bycatch allowance is intended for non-directed fisheries, Amendment 2 does not require a certain percent catch composition of menhaden per trip as is commonly used to define bycatch trips in other fisheries. Additionally, all landings under the bycatch allowance do not count towards the overall TAC. The Board included this flexibility because, at the time Amendment 2 was implemented, little was known about the magnitude and timing of bycatch fisheries for Atlantic menhaden. Since implementation, states have improved their monitoring programs in order to stay within their allocated quota and better defined gear types utilizing the bycatch allowance. Refer to Appendix 1 for a summary of state bycatch management approaches.

The purpose of this Draft Addendum is to consider further modification of the bycatch provision for Atlantic menhaden. Currently, Amendment 2 (*Section 4.2.1.7*) provides for a 6,000 pound per vessel per day bycatch limit. This addendum considers allowing two licensed individuals, who are allowed to separately harvest up to 6,000 pounds of menhaden on different vessels, to harvest up to 12,000 pounds of menhaden bycatch when working together from the same fishing vessel.

2.0 Overview

2.1 Statement of the problem

Under Amendment 2, all landings that occur until a state's quota is reached are defined as directed landings regardless of whether they are targeted or caught as bycatch. After a state has achieved its quota, Amendment 2 allows individuals to land up to 6,000 pounds of Atlantic menhaden as bycatch per vessel per day. Since the bycatch allowance is allotted to vessels, Amendment 2 does not allow multiple individuals to fish from the same vessel and each land up to 6,000 pounds of menhaden. Instead, two

individuals each landing up to 6,000 pounds of menhaden must fish separately from different vessels. This creates inefficiencies because, during the open directed fishery, it is common for harvesters in the Chesapeake Bay to pool resources and fish together from the same vessel.

2.2 Background

The history of multiple individuals working together from the same vessel to harvest Atlantic menhaden traditionally exists in the Chesapeake Bay. More specifically, many Chesapeake Bay pound netters work in groups of two, fishing nets owned by each permit holder from the same vessel. These groups are typically composed of family members. Fishing in this way enables them to pool resources for fuel and crew.

Considering this may be a technique used in other states/jurisdictions within the management unit, the Plan Development Team (PDT) evaluated the performance of the fishery from 2013 through 2015 to identify other stationary multi-species gears that may also benefit from the ability to work together to pool resources.

Fishery Performance

From 2013 through 2015, the Atlantic menhaden commercial directed fishery landed 98–99% of its coastwide commercial TAC¹. Atlantic menhaden landings under the bycatch allowance averaged approximately 5.63 million pounds annually and ranged from 4.38 to 6.58 million pounds. For reference, bycatch landings represent approximately 1–2% of the total coastwide landings, but do not count towards the TAC.

Stationary Bycatch Gear

Pound nets, the predominant gear in bycatch landings, are large staked or anchored multispecies fish traps that are very rarely moved within season. Pound nets are not selective for a particular species, and therefore, undesirable or controlled species trapped in pound nets must be either discarded or harvested as bycatch. Because menhaden travel in schools, when a pound net traps menhaden, the numbers are generally large. Examination of other species landed from pound nets during Atlantic menhaden bycatch trips indicated striped bass, Atlantic croaker, spot, bluefish, channel catfish and gizzard shad are most commonly encountered. Other than gizzard shad, these species have a much higher ex-vessel value than Atlantic menhaden.

Anchored and staked gill nets also account for a significant portion of stationary gear bycatch landings. Staked gill nets constitute a net attached to fixed stakes, whereby the stakes remain in the same location each time the gill net is fished, and capture any variety of species that may be occupying the area being fished. Anchored gill nets are stationary while set, but can be (and usually are) moved on a daily basis. These nets are

¹ The coastwide commercial TAC was 376.5 million pounds for 2013 and 2014, and 414.2 million pounds for 2015.

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sometimes set to catch multiple species and at other times to target individual species, depending on the areas being fished.

Most fish and crustacean pots are targeting specific species, and Atlantic menhaden are a very small incidental bycatch. Most pots are not multispecies gear (e.g., crab pots).

Bycatch Landings Composition

Average bycatch landings from 2013 through 2015 were highest in the Chesapeake Bay region with Maryland, the Potomac River Fisheries Commission (PRFC), and Virginia harvesting approximately 81% of the total bycatch. The states of New York, New Jersey, Florida, Delaware, and Rhode Island accounted for the remaining 19% (Table 1). The predominant stationary gear types² landing under the bycatch allowance were pound nets (61%) and anchored/staked gill nets (24%), with pots and fyke nets accounting for less than 1% of the total (Table 1). For the purposes of this addendum, pound nets include floating fish traps and fishing weirs. The landings data also identified several mobile gear types harvesting menhaden under the bycatch allowance. The predominant mobile gears were cast nets (6%) and drift gill nets (5%) with haul/beach seines, trawls, and hook and line accounting for the remaining 4% of the total (Table 1).

Table 1. Average landings under the bycatch allowance from 2013–2015 by gear type (stationary and mobile) and jurisdiction. Highlighted cells represent the gear type with the highest landings within a jurisdiction. (C) = confidential landings, and (-) = no landings. Total confidential landings were 209,277 pounds (i.e., the sum of all C's in the table below). Note that sum of pounds and percent of total columns do not include confidential data.

State/Jurisdiction	MD	VA	PRFC	NY	NJ**	FL	DE	RI*	Sum lbs (NonConf)	% of Total
Stationary Gears While Fishing										
Pound net	2,306,552	122,913	884,843	128,854	C	-	-	57,231	3,500,393	60.9%
Anchored/stake gill net	5,131	1,242,512	-	-	100,202	C	28,998	C	1,376,843	24.0%
Pots	10,001	-	-	C	-	C	C	-	10,001	0.2%
Fyke nets	C	C	-	-	C	-	-	-	918	0.0%
Mobile Gears While Fishing										
Cast Net	C	-	-	183,137	C	163,776	-	C	346,913	6.0%
Drift Gill net	16,082	57,794	-	18,175	129,620	-	66,117	-	287,788	5.0%
Seines Haul/Beach	C	5,119	-	206,587	-	-	-	-	211,706	3.7%
Trawl	-	-	-	9,733	C	-	-	C	9,733	0.2%
Hook & Line	C	-	-	-	-	C	-	C	278	0.0%
Sum lbs (NonConf)	2,337,766	1,428,339	884,843	546,485	229,822	163,776	95,116	57,231	5,744,572	
% of Total	40.7%	24.9%	15.4%	9.5%	4.0%	2.9%	1.7%	1.0%		

NJ** an ad hoc method was used to split gill net data between stationary and mobile gears
 RI* trips do not include those landed under the episodic event set aside because those landings are counted as part of the directed fishery.

² For the purpose of this draft addendum, the PDT defined “stationary” gear types as those that are stationary *while fishing*. Further distinction could be made between gears set on the same (often licensed) site for the entire fishing season (e.g., pound nets, staked gill nets) and gears that can be moved throughout the fishing season to follow resource distribution (e.g., pots, anchored gill nets, fyke nets).

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From 2013 through 2015, a total of 12,750 trips landed Atlantic menhaden under the bycatch allowance. Of those trips, 8,979 trips (70%) were from stationary gears. The Chesapeake Bay jurisdictions accounted for 88% of all stationary gear bycatch trips from 2013–2015 (Table 2). Of those trips in the Bay, approximately 40% were from pound nets in Maryland and PRFC, and approximately 59% were from anchored/staked gill nets in Virginia. These two main gear types in the Bay also emerge when looking at the amount of bycatch landed between 2013 and 2015. More specifically, 60% of all stationary gear trips landed less than 1,000 pounds. This was predominantly driven by anchored gill nets in Virginia. Additionally, pound nets were the only notable gear type that accounted for trips exceeding 3,000 pounds with 44% of trips in Maryland and 33% of trips in PRFC exceeding that level (Table 2).

Table 2. Total number of bycatch allowance trips landing menhaden by stationary gears only from 2013–2015 by jurisdiction and percent of total trips by 1,000 pound landing bins. (C) = confidential landings

Bins (LBS)	VA	MD	PRFC	NJ	NY	DE	RI*	FL	Total Trips	Total Bin%
1-1000	71%	35%	31%	85%	88%	91%	53%	100%	5,350	59.6%
1001-2000	13%	12%	21%	10%	9%	4%	14%	0%	1,176	13.1%
2001-3000	7%	8%	15%	3%	C	4%	18%	0%	716	8.0%
3001-4000	3%	7%	10%	1%	3%	1%	4%	0%	426	4.7%
4001-5000	3%	7%	13%	C	C	1%	3%	0%	441	4.9%
5001-6000	2%	14%	10%	C	C	0%	6%	0%	519	5.8%
6000+	0%	16%	0%	C	C	0%	3%	0%	351	3.9%
Total Trips	4672	2057	1138	477	345	165	102	23	8,979	
Total Trips %	52.0%	22.9%	12.7%	5.3%	3.8%	1.8%	1.1%	0.3%		

RI* trips do not include those landed under the episodic event set aside because those landings are counted as part of the directed fishery.

In summary, landings under the bycatch allowance from 2013 through 2015 are largely attributed to the stationary multi-species pound net fisheries in Maryland, PRFC and anchored gill net fishery in Virginia. Pound net trips are landing menhaden in amounts that would lend to the cooperative fishing behavior considered in this addendum; however, there are other stationary multi-species gears in other jurisdictions which may also benefit from the ability to cooperatively harvest menhaden bycatch.

Stock Status

Based on the 2015 benchmark stock assessment, Atlantic menhaden are not overfished and are not experiencing overfishing. The 2015 assessment includes data through 2013. The estimated fishing mortality rate for 2013 (0.22) is below both the threshold (1.26) and target (0.38), whereas fecundity in 2013 (170 trillion maturing or ripe eggs) is well above the threshold (86.8 trillion) but below the target (189 trillion). The 187,880 metric ton (414.2 million pound) TAC set by the Board for 2015 and 2016 has less than a 2% risk of overfishing.

The Atlantic Menhaden Technical Committee previously reviewed a conservation equivalency proposal from the State of Maryland and Potomac River Fisheries Commission to allow two licensed pound net fishermen aboard the same vessel to each land 6,000 pounds of menhaden as bycatch (Appendix 2). The Technical Committee agreed that the proposal, limited to pound nets in Maryland and PRFC, would not adversely impact the biological status of menhaden given: 1) current stock status; 2) the limited amount of landings occurring under the bycatch allowance (1-2% of total coastwide landings); and 3) Maryland and PRFC pound net bycatch landings of menhaden would be unlikely to significantly increase due to these fisheries being subject to limited entry (Appendix 3). The Technical Committee recommended continued monitoring of bycatch so that if an unexpected expansion of harvest occurs, it can be addressed (Amendment 2 stipulates an annual Board review of bycatch landings.)

The conservation equivalency proposal reviewed by the Technical Committee was deferred by the Board to be considered in this Draft Addendum because conservation equivalency cannot be used to adjust the bycatch allowance provision as written in Amendment 2.

3.0 Management Options

The following section considers modifying Section 4.2.1.7 of Amendment 2 (Bycatch Allowance). Section 4.2.1.7 of Amendment 2 reads as follows:

4.2.1.7 Bycatch Allowance

An incidental bycatch allowance is strictly for non-directed fisheries. States are not eligible to submit alternative state management regimes (Section 4.5) in lieu of the bycatch allowance as written.

No directed fisheries for Atlantic menhaden shall be allowed when the fishing season is closed. An incidental bycatch allowance of up to 6,000 pounds of Atlantic menhaden per trip for non-directed fisheries shall be in place during a season closure. The amount of Atlantic menhaden landed by one vessel in a day, as a bycatch allowance, shall not exceed 6,000 pounds (this prohibits a vessel from making multiple trips in one day to land more than the bycatch allowance). The use of multiple carrier vessels per trip to offload any bycatch exceeding 6,000 pounds of Atlantic menhaden is prohibited. A trip shall be based on a calendar day basis.

Bycatch Reporting

Bycatch landings by non-directed fisheries are required to be reported through the timely reporting system approved by the Board in Section 3.6.1.2. All bycatch from non-directed fisheries during a closed season must be reported separately from directed harvest in annual compliance reports. Bycatch landings that occur during a state designated open season will

count towards a state's quota. Bycatch landings will be reviewed on an annual basis by the Board to monitor the appropriateness of the bycatch allowance.

Option A: Status Quo

The amount of Atlantic menhaden landed by one vessel in a day, as a bycatch allowance, shall not exceed 6,000 pounds.

Option B: Working together permitted for all stationary multi-species gears.

The bycatch allowance provision would be adjusted to include the following exception to the 6,000 pounds per vessel limit:

Two authorized individuals, working from the same vessel fishing stationary multi-species gear, are permitted to work together and land up to 12,000 pounds from a single vessel –limited to one vessel trip per day. Stationary multi-species gears are defined as pound nets, anchored/staked gill nets, and fyke nets.

This option is included based on the Board motion to include all stationary, multi-species gears. The PDT defined “stationary” as gears that are stationary while fishing. The PDT removed pots from this option because it was determined not to be a multi-species gear as described earlier and current bycatch landings from pots are very small (Table 1).

Option C: Working together permitted for all stationary multi-species gears, operating in limited-entry fisheries.

The bycatch allowance provision would be adjusted to include the following exception to the 6,000 pounds per vessel limit:

Two authorized individuals, working from the same vessel fishing stationary multi-species gear in a limited entry fishery, are permitted to work together and land up to 12,000 pounds from a single vessel –limited to one vessel trip per day. Stationary multi-species gears are defined as pound nets, anchored/staked gill nets, and fyke nets.

This option is included based on the Board motion to include all stationary, multi-species gears and the Technical Committee’s review of Maryland and PRFC proposals, where they acknowledged the importance of a limited entry management in restricting an expansion of harvest. Refer to Appendix 1 for a listing of current limited entry, stationary gear fisheries, by jurisdiction. The PDT removed pots from this option because it was determined not to be a multi-species gear as described earlier and current bycatch landings from pots are very small (Table 1).

Option D: Working together permitted for pound nets only.

The bycatch allowance provision would be adjusted to include the following exception to the 6,000 pounds per vessel limit:

Two authorized individuals, working from the same vessel fishing pound nets, are permitted to work together and land up to 12,000 pounds from a single vessel –limited to one vessel trip per day.

This option is included because two individuals fishing together and reaching the current bycatch limit is most commonly documented for pound net trips and supported by the 2013–2015 bycatch landings data. Pound nets include floating fish traps and fishing weirs.

4.0 Compliance

States may implement any applicable changes to their bycatch allowance management programs immediately upon final Board approval of this addendum.

Of note, the Management Board has also initiated the development of Amendment 3 to consider ecosystem-based reference points and revisit the state-by-state allocations of the TAC. Bycatch management may also be addressed, meaning that any option selected as part of this addendum, has the potential to be replaced as part of Amendment 3, currently scheduled for implementation in 2018 if all components remain on schedule.

5.0 Literature Cited

Atlantic States Marine Fisheries Commission. 2012. Amendment 2 to the Atlantic Menhaden Fishery Management Plan. ASMFC, Arlington, VA 114 pp.

SEDAR. 2015. SEDAR 40 – Atlantic Menhaden Stock Assessment Report. SEDAR, North Charleston, SC. 643 pp.

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Appendix 1: Menhaden bycatch limits and participating gear types by state. As a reminder, Amendment 2 sets a 6,000 lbs bycatch limit per trip; however, states can choose to be more restrictive than the plan requires. This table may not be all inclusive and is subject to change.

State/Jurisdiction	Bycatch Trip Allowance (lbs)	Gears Allowed to Land Bycatch	Limited Entry Stationary Multi-Species Gears In Use
ME	6,000	All gears	None that catch menhaden
NH	6,000	All gears	NH has one remaining fish weir
MA	1,000 and menhaden harvest may not exceed 5% of trip's entire harvest by weight	All gears	Anchored gill nets
RI	6,000	Non-direct gear which includes cast nets, floating fish traps, anchored gill nets, trawls, and rod and reel	Floating fish traps and anchored gill nets
CT	6,000	All gears	Anchored gillnets
NY	6,000	All gears except purse seine and hook and line	Pound nets, anchored gill nets, and fyke nets limited entry indirectly through licensing
NJ	6,000; 100 for non-license holders	All gears	Pound nets, staked/anchored gill nets, and fyke nets
DE	6,000	All gears (bycatch fishery only)	Anchored/staked gill nets
MD	6,000 for pound nets; 1,500 for all others	Pound nets, but 1,500 limit for other gears	Pound nets, fyke nets, and anchored gill nets except no anchor gillnets are allowed in MD portion of Chesapeake Bay
PRFC	6,000	Pound nets	Pound nets
VA	6,000	All non-purse seine bait gears	Pound nets and staked gill nets
NC	6,000	Through proclamation when needed	None that catch menhaden
SC	N/A	No notable landings history	None that catch menhaden
GA	N/A	No notable landings history	None that catch menhaden
FL	1,000 for all gears allowed to land bycatch	Trap, hook & line, gill net, cast nets	None that catch menhaden

Appendix 2: Maryland and PRFC Conservation Equivalency Proposals



Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Mark Belton, Secretary
Joanne Throwe, Deputy Secretary

November 23, 2015

Under the Management Program Equivalency section (4.5.2) of Amendment 2 of the Interstate Fishery Management Plan for Atlantic Menhaden, the state of Maryland is requesting to implement a conservationally equivalent management program to the 6,000 pound bycatch allowance beginning in 2016. Maryland is requesting that two appropriately permitted individuals aboard a single vessel fishing pound net gear may each land 6,000 pounds of menhaden after the fishery is closed. Under this provision the vessel could carry up to 12,000 pounds of menhaden bycatch.

Under Amendment 2, individuals may land 6,000 pounds of menhaden per vessel per day after the state has achieved its quota and closed the 'directed' fishery. In Maryland this bycatch provision applies only to pound net fishermen who lack the ability to control the composition of fish within their stationary nets, and who possess a Maryland menhaden bycatch permit. Bycatch permits are only available to individuals who had a registered pound net site before February 18, 2013. Permits are non-transferable and must be on board the vessel with the fisherman.

Most of Maryland's menhaden harvest is taken by a small number (10) of pound netters who traditionally work in family groups: fishing nets owned by family members (father and son) from the same vessel. Fishing in this way, they can pool resources for fuel and crew. Maryland provided for these individuals to continue working together in its implementation plan submitted to ASMFC in April of 2013. The plan was accepted by the Atlantic Menhaden Management Board. However, the ability for two fishermen working together to each land the 6,000 pounds of bycatch was removed for all states in 2014. This has caused undue hardship for Maryland pound netters.

Data are indicating that Maryland harvest remains consistent despite the removal of dual bycatch allowance (Table 1). However, the fishery is operating in a less efficient manner. In 2013, the fishery closed on June 29th resulting in 181 days of bycatch and the possibility to have 12K pounds on the vessel. In 2014, the fishery closed on August 23rd resulting in 131 days of bycatch. Despite having 29% fewer days of bycatch and the 6,000 pound allowance, the total bycatch amount decreased by only 500,000 pounds and total harvest declined by 256,000 pounds. In Maryland, harvest reports are tied to an individual, not a vessel so we cannot quantify the change in the number of vessels. However, watermen have informed us that they are putting additional boats on the water. In some cases, this is a safety threat and in all cases it reduces the efficiency of this fishery in terms of cost for fuel and crew.

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This proposal will not result in an increase in the number of menhaden harvested in Maryland. It will simply allow harvesting in a more efficient manner.

Maryland has authority to alter the bycatch allowance within 48 hours by public notice. Hence Maryland stands committed to monitoring harvest occurring under the bycatch provision and adjusting the provision downward if necessary. The intent would be allow this provision for 2016 and leave it in place until the implementation of Amendment 3.

Table 1. Menhaden harvest in Maryland 2013, 2014 and 2015. In 2013 a vessel could land 12,000 pounds of menhaden after the fishery closed in the case where two permitted individuals were working together. This provision was removed in 2014 and 2015. Note 2015 landings are preliminary as the fishery is still ongoing.

Year	Total Harvest (lbs)	Pre-closure Harvest (lbs)	Bycatch (lbs)	Closure Date
2013	6,908,913	4,122,830	2,786,083	6/29
2014	6,653,297	4,413,360	2,270,810	8/23
2015*	6,973,028*	5,604,855*	1,368,143*	8/29

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January 8, 2016

Under the Management Program Equivalency section (4.5.2) of Amendment 2 of the Interstate Fishery Management Plan for Atlantic Menhaden, the Potomac River Fisheries Commission (PRFC) is requesting to implement a conservationally equivalent management program to the 6,000 pound bycatch allowance beginning in 2016. The PRFC is requesting that two PRFC pound net licensees aboard a single vessel fishing pound net gear may each land 6,000 pounds of menhaden per day after the fishery is closed. Under this provision, a single vessel could land up to 12,000 pounds of menhaden bycatch per day when there are two PRFC pound net licensees on board who each have at least one of their pound nets set and fishing (prior to the fishery being closed and the bycatch provisions being implemented) and no more than 6,000 pounds of Atlantic menhaden are harvested from either of the licensees nets.

Under Amendment 2, individuals may land 6,000 pounds of menhaden per vessel per day after the PRFC has achieved its quota and closed the 'directed' fishery. On the Potomac, this bycatch provision applies only to PRFC licensed pound net fishermen who lack the ability to control the composition of fish within their stationary nets. The Potomac River pound net fishery is a limited entry fishery, with a low number of licensed nets actually set and fished.

Most of the Potomac's menhaden harvest is taken by a small number (less than 15) of pound netters who traditionally work in family groups: fishing nets owned by family members (father and son) from the same vessel. Fishing in this way, they can pool resources for fuel and crew. The PRFC provided for these individuals to continue working together in its implementation plan submitted to ASMFC in April of 2013. The plan was accepted by the Atlantic Menhaden Management Board. However, the ability for two fishermen working together to each land the 6,000 pounds of bycatch was removed for all states and jurisdictions in 2014. This has caused undue hardship for Potomac River pound netters.

Data from 2013 and 2014 are indicating that Potomac River harvest remains consistent despite the removal of dual bycatch allowance (Table 1). However, the fishery is operating in a less efficient manner. In 2013, the fishery closed on August 22 resulting in 115 days of bycatch and the possibility to have 12K pounds on the vessel. In 2014, the fishery closed on August 27 resulting in 110 days of bycatch. In some cases, this is a safety threat and in all cases it reduces the efficiency of this fishery in terms of cost for fuel and crew.

This proposal will not result in an increase in the number of menhaden harvested in the Potomac River. It will simply allow harvesting in a more efficient manner. The PRFC has authority to alter the bycatch allowance by Order of the Commission, effective ten days after its

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adoption, or immediately by Emergency Order. Hence the PRFC stands committed to monitoring harvest occurring under the bycatch provision and adjusting the provision downward if necessary. With our weekly commercial reports we have tighter temporal resolution on our harvest tracking and projections for quota attainment than MD (or VA) with their monthly reports. The intent would be allow this provision for 2016 and leave it in place until the implementation of Amendment 3.

Table 1. Atlantic menhaden harvest in the Potomac River 2013, 2014, and 2015. In 2013, a vessel could land 12,000 pounds of menhaden after the fishery closed, in the case where two licensed pound netters were working together. This provision was removed in 2014 and not in effect in 2015. *Note 2015 landings are preliminary.

Year	Total Harvest (lbs.)	Pre-closure Harvest (lbs.)	Bycatch (lbs.)	Closure Date	Revised Quota (lbs.)
2013	3,295,295	2,207,895	1,087,400	8/22/2013	2,337,508
2014	3,175,893	2,063,550	1,112,343	8/27/2014	2,335,719
2015*	2,694,055*	2,263,465	430,590*	9/26/2015	2,559,617



Atlantic States Marine Fisheries Commission

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MEMORANDUM

Appendix 3

January 19, 2016

To: Atlantic Menhaden Management Board
From: Atlantic Menhaden Technical Committee
RE: TC Review of Maryland and PRFC's Conservation Equivalent Management Proposals

The Technical Committee (TC) met via conference call to review an alternative management proposal submitted by the State of Maryland and the Potomac River Fisheries Commission (PRFC) regarding the 6,000 pound bycatch allowance. In brief, the proposals are requesting to allow two permitted/licensed pound net fishermen aboard the same vessel to each land 6,000 pounds of menhaden as bycatch (i.e., 12,000 pounds total from one vessel). Currently, two permitted/licensed individuals can land 6,000 pound each of menhaden bycatch on separate vessels, but not 12,000 pounds if they are fishing from the same vessel. This proposed management alternative only applies to pound net fishermen who must possess a menhaden bycatch permit or menhaden license. Both Maryland, and PRFC have a limited entry pound net fishery for menhaden, thus limiting the opportunity for expansion of the bycatch fishery. Maryland and PRFC conclude that this proposal will not result in an increase in the number of menhaden harvested, and it will allow harvesting in a more efficient manner.

TC Recommendation

The TC agreed by consensus that Maryland and PRFC's alternative management proposals will not adversely impact the biological status of Atlantic menhaden. The TC acknowledges that the proposed alternative would most likely not significantly change the amount of harvest occurring in Maryland or PRFC. Furthermore, the established limited entry program for the pound net fisheries is expected to limit the expansion of landings under these proposed management alternatives.

Given the current stock status of Atlantic menhaden (not overfished or experiencing overfishing), and the limited amount of landings occurring under the bycatch allowance (approximately 1% coastwide), the TC does not have biological concern with the proposed conservation equivalent proposals. The TC recommends continued monitoring of bycatch landings coastwide to ensure an expansion of harvest can be addressed if it occurs.

The TC also recommends the Board consider further evaluation of the bycatch landings on a coastal scale as it develops draft Amendment 3 to the FMP for Atlantic menhaden. The TC discussed that the bycatch portion of the harvest is currently able to expand. Assessing the upper bound of this expansion and its potential impacts to the fishery should be undertaken during the development of Amendment 3 as the Board considers the bycatch allowance provision.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Atlantic Menhaden Management Board
FROM: Megan Ware, FMP Coordinator
DATE: July 12, 2016
SUBJECT: Public Comment on Draft Addendum I

The following pages represent a summary of all public comment received by ASMFC as of July 11, 2016 at 5:00 p.m. (closing deadline) on Draft Addendum I to Amendment 2 to the Atlantic Menhaden Fishery Management Plan.

A total of 2 written comments were received during the public comment period. One of these comments was from the group Virginia Saltwater Sportfishing Association, Inc. A summary of the written comments is provided on page 2 and individual comment letters follow this memo. In the heading of the summary tables, the following abbreviations are used:

- "I" stands for individuals in favor
- "G" stands for groups in favor

Six public hearings were held in the following states: Rhode Island, Connecticut, New York, New Jersey, Delaware, and Maryland. In total, approximately 20 individuals attended the public hearings. A brief summary of the comments received at the public hearings is provided (page 2), followed by detailed summaries for each hearing (pages 3-4).

Written Comment Summary

ISSUE 1: BYCATCH ALLOWANCE

Option	Description	I	G	Total
A	Status Quo	1		1
B	Working together permitted for all stationary multi-species gears		1	1
C	Working together permitted for all stationary multi-species gears, operating in a limited-entry fishery			0
D	Working together permitted for pound nets only			0

Comments were split between status quo (Option A) and allowing two permitted individuals on the same vessel fishing stationary multi-species gears to land up to 12,000 pounds of bycatch (Option B). Those in favor of the status quo felt that a 12,000 pound bycatch allowance resembled a targeted fishery rather than an incidental catch.

GENERAL COMMENTS:

- The Virginia Saltwater Sportfishing Association does not support any increase in the coastwide TAC.
- Menhaden and other forage fish are becoming harder to find in our estuaries and bays.

Public Hearing Summary

All comments were in favor adding flexibility to the bycatch allowance when two permitted individuals are onboard; however, comments differed as to which gear types this flexibility should be extended. A participant at the Rhode Island public hearing supported Option B, which allows two fishermen, using stationary multi-species gears, to land up to 12,000 pounds per day when fishing from the same vessel. In contrast, participants at the Maryland public hearing supported Option D, which extends the flexibility to pound net fishermen. Maryland participants supported Option D because menhaden bycatch in Maryland is primarily landed by pound nets and drift gill nets, which are not a stationary gear and therefore not included in the Addendum. Several participants noted that the 12,000 pound bycatch provision when two permitted individuals are onboard will improve economic gains and safety in the fishery. No comments were received at the Connecticut, New York, New Jersey, or Delaware public hearings.

GENEARL COMMENTS:

- Several fishermen noted the 2009-2011 reference years for allocation are not appropriate, especially since MD landed high amounts of menhaden in 2012.
- Fishermen remarked that following the implementation of the quota, they lost a large portion of the market and have not been able to get it back, even as the TAC has increased.
- Participants commented that the state quota only takes them part-way through the year which means the quota is too low and there was a greater than 20% reduction in harvest when the quota system was implemented in 2013.

Atlantic Menhaden Draft Addendum I Public Hearing

Narragansett, Rhode Island

6:00 PM

5 Participants

Attendees: Jerry Corallis

Staff: Megan Ware (ASFMC), Jason McNamee (RI DEM), Nicole Lengyel (RI DEM), Robert Ballou (RI Commissioner)

Issue 1: Bycatch Provision

- The participant supported Option B as this allows for more flexibility for the fishermen.

Atlantic Menhaden Draft Addendum I Public Hearing

Easton, Maryland

June 23, 2016

15 Participants

Attendees: Larry Powley, Tommy Powley, Joe Jr., Bu Lewis, CR Willis, Robert Wilson, Johnny Mautz (MD Delegate), George O'Donnell (DNR Fisheries), Jason Wilson, Adelaide Eckardt (MD Senate)

Staff: Megan Ware (ASFMC), Lynn Fegley (MD DNR), Harry Rickabaugh (MD DNR)

Issue 1: Bycatch Provision

- 8 attendees were in favor of allowing two authorized individuals fishing pound nets to work together and land up to 12,000 pounds of menhaden bycatch per day (Option D). Participants supported this option because they pool crews when fishing to save on fuel and costs.
- Given menhaden bycatch in Maryland is primarily landed by pound nets and drift gill nets, the group supported Option D because drift gill nets are not a stationary gear type and are therefore not included in the addendum.
- One participant noted that allowing 12,000 pounds of bycatch per vessel when two people are onboard will improve safety as fishermen will not have to tow a smaller boat behind their primary vessel in order to harvest menhaden under the current 6,000 pound allowance.
- Several fishermen noted that the 6,000 pound allowance is barely enough to cover costs. The group discussed increasing the limit to 12,000 pounds per vessel regardless of how many people are onboard but expressed concerns that bycatch landings in other

states may drastically increase. Overall, the group felt that 12,000 pounds is a good limit because it pay expenses without forcing fishermen out on the water each day to make a living.

- One participant asked if a bycatch limit is needed given the capacity of the pound net fleet is limited.

Other Comments

- Participants noted several frustrations with the current allocation, mainly that the state only gets 1.37% of the quota. They felt that the reference years of 2009-2011 were not appropriate given that MD landed high amounts of menhaden in 2012 and these landings are not considered in the allocation scheme.
- Others commented that the current MD allocation takes them to August 1st each year. When there was a 10% increase in the TAC, this added two more weeks to the directed fishery. As a result, even if another 10% is added to the TAC, this will likely only take the directed fishery to September. This means that the MD quota is too low and there was a greater than 20% reduction in harvest in the state when the quota system was implemented. This is in comparison to Virginia which is able to keep its directed fishery open most of the year.
- Many of the fishermen remarked that following the implementation of the quota, they lost a large portion of the market and have not been able to get it back, even as the TAC has increased.

Virginia Saltwater Sportfishing Association, Inc (VSSA)

PO Box 28898

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Mike Avery
President

July 5, 2016

Curtis Tomlin
Vice President

Megan Ware
FMP Coordinator

Kevin Smith
Treasurer

Atlantic States Marine Fisheries Commission
1050 North Highland Street,
Suite 200

Brent Boshier
Secretary

Arlington, VA 22201

RE: Draft Addendum I

VSSA supports Addendum 1 pertaining to allowing 2 licensed individuals fishing from a single vessel the ability to harvest 12,000 lbs. of menhaden by catch in a single day when fishing on fixed multi-species gear.

VSSA does not support any increase in the coast-wide Total Allowable Catch (TAC) for Atlantic Menhaden. We believe a complete peer reviewed stock assessment is necessary prior to any changes in the TAC.

Respectfully,

A handwritten signature in blue ink, appearing to read 'John Bello', is written over the typed name 'John Bello'.

Chairman

Board of Directors

John Bello,
Chairman

Dr. Robert Allen

Mike Avery

Jerry Aycock

Brent Boshier

Jerry Hughes

Doug Ochsenknecht

Bob Reed

Mike Ruggles

Kevin Smith

Murphy Sprinkle

Curtis Tomlin

From: James Riggs <jr5743@gmail.com>

Sent: Tuesday, May 24, 2016 9:35 AM

To: Megan Ware

Subject: Draft Addendum 1

Sir, I am strongly opposed to this menhaden addendum 1 this (by-catch) is a critically important forage fish and a foundation block in a strong fishery overall. not a bycatch money issue....In my opinion 12 thousand pounds of a 1 pound fish is not a by catch by any stretch of the imagination it is the targeted catch.....Menhaden and other forage fish should be abundant in our estuaries and bays now they are harder and harder to find for the recreational fisherman, but if we had a purse seine and a spotter plane things would be different....Give nature a chance to heal.....

Thank You

JR



Atlantic States Marine Fisheries Commission

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MEMORANDUM

July 11, 2016

To: Atlantic Menhaden Management Board
From: Law Enforcement Committee
RE: Enforcement Review of Draft Addendum I to Amendment 2

The Law Enforcement Committee (LEC) of the Atlantic States Marine Fisheries Commission (ASMFC) met via conference call on July 8, 2016 to review and provide comments on proposed management options in Draft Addendum I of the Atlantic menhaden Fishery Management Plan. The following members were in attendance:

LEC: Capt. Steve Anthony (NC); Capt. Grant Burton (FL); Deputy Chief Jon Cornish (ME); Lt. Mike Eastman (NH); Asst. Director Larry Furlong (PA); Special Agent-in-Charge Honora Gordon (USFWS); Capt. Jamie Green (VA); Capt. Tim Huss (NY); Capt. Rob Kersey (MD); Capt. Bob Lynn (GA); Capt. Doug Messeck (DE); Maj. Pat Moran (MA); Director Kyle Overturf (CT); Lt. Colby Schlaht (USCG); Lt. Jason Snellbaker (NJ);

LEC ALTERNATES: Eric Provencher (NOAA OLE)

OTHER ATTENDEES: David Borden (RI)

STAFF: Ashton Harp; Toni Kerns; Kirby Rootes-Murdy; Mark Robson; Megan Ware

The LEC reviewed management options presented in Draft Addendum I that would allow up to 12,000 pounds of menhaden bycatch per day to be landed by two permitted individuals aboard a single vessel. The LEC also reviewed its previous written comments regarding an earlier, similar conservation equivalency proposal. That memorandum, dated January 15, 2016, was presented to the Atlantic Menhaden Management Board.

The LEC noted that its previous recommendation endorsing the proposed bycatch allowance increase was predicated on the restriction to pound net gear only. At that time the LEC did not have specific concerns about enforcement issues associated with the proposal. Experience with a similar provision for dual bycatch limits in 2013 in Maryland did not result in issues or problems for enforcement.

Upon reviewing the additional management options in Addendum I, the LEC affirmed that it continues to recommend Option D, whereby two authorized individuals, working from the same vessel fishing pound nets, are permitted to work together and land up to 12,000 pounds from a single vessel—limited to one vessel trip per day. The LEC does not support allowing other types of stationary multi-species gear to be included, as this would introduce problems with identifying which gear are being legally fished, in situations where individual fishermen may have multiple gear licenses. The LEC reaffirmed its previous recommendation to revisit the regulations after they have been in place for at least one year to see if any unforeseen problems have arisen and make recommendations for change or improvement as appropriate.

The LEC appreciates the opportunity to review and provide advice concerning this proposal.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

June 22, 2016

To: Atlantic Menhaden Management Board
From: Atlantic Menhaden Technical Committee
RE: Projection Runs for 2017 Fishery Specifications

Projections

Monte Carlo Bootstrap (MCB) runs of the base run of the Beaufort Assessment Model (BAM) were used as the basis for the projections (see Appendix D of 2015 assessment for projection methodology). Projections were run for four years (2014-2017). The duration of projections was short-term in order to maintain at least one age class present in the terminal year of the assessment within the projections.

Actual landings for the four fleets, north and south reduction and bait, for 2014 and 2015 were the same in all runs and were 171,900 mt in 2014 and 188,800 in 2015. Constant landings for 2016 to 2017 were allocated to the bait and reduction fishery in the northern and southern regions using the proportions established in Amendment 2 and used by the state of Virginia. Landings for 2016 were assumed to be the same as landings from 2015 as the TAC will not change, and landings for 2017 were explored via the scenarios described below.

The TC explored nine separate projection runs as requested by the Board. The projections explored a range of TAC levels from status quo to catch levels up to 40% higher than the current TAC, as well as runs looking at several probability levels of the fishing mortality rate being below F target. Specifically, projections were run using the following TAC scenarios:

- 1) 187,880 mt = current TAC (status quo)
- 2) 197,274 mt = if Board implemented a 5% increase to the current TAC
- 3) 206,668 mt = if Board implemented a 10% increase to the current TAC
- 4) 225,456 mt = if Board implemented a 20% increase to the current TAC
- 5) 244,244 mt = if Board implemented a 30% increase to the current TAC
- 6) 263,032 mt = if Board implemented a 40% increase to the current TAC
- 7) TAC that has a 50% probability of being below F target in 2017
- 8) TAC that has a 55% probability of being below F target in 2017
- 9) TAC that has a 60% probability of being below F target in 2017

Projections 1-6

Results in the table below indicate a percent risk of exceeding the F_{target} (Table 2) or the $F_{\text{threshold}}$ (Table 3) under the various projected TAC levels for 2017.

Table 2. Percent risk of exceeding the F_{target} for a given TAC scenario.

	TAC (mt)	2017
Percent Risk of exceeding F_{target}	187,880	13%
	197,274	17.5%
	206,668	20.5%
	225,456	27.5%
	244,244	38%
	263,032	48.5%

Table 3. Percent risk of exceeding the $F_{threshold}$ for a given TAC scenario.

	TAC (mt)	2017
Percent Risk of exceeding $F_{threshold}$ (Overfishing)	187,880	0%
	197,274	0%
	206,668	0%
	225,456	0%
	244,244	0%
	263,032	0%

Projection 7

The TAC that resulted in a 50% probability of being below the F_{target} in 2017 was 267,500 mt (Table 4).

Table 4. Percent risk of a 267,500 mt TAC exceeding F_{target} or $F_{threshold}$ in 2017.

	2017
Percent risk of exceeding F_{target}	50%
Percent Risk of exceeding $F_{threshold}$	0%

Projection 8

The TAC that resulted in a 55% probability of being below the F_{target} in 2017 was 259,500 mt (Table 5).

Table 5. Percent risk of a 259,500 mt TAC exceeding F_{target} or $F_{threshold}$ in 2017.

	2017
Percent risk of exceeding F_{target}	45%
Percent Risk of exceeding $F_{threshold}$	0%

Projection 9

The TAC that resulted in a 60% probability of being below the F_{target} in 2017 was 250,100 mt (Table 6).

Table 6. Percent risk of a 250,100 mt TAC exceeding F_{target} or $F_{\text{threshold}}$ in 2017.

	2017
Percent risk of exceeding F_{target}	40%
Percent Risk of exceeding $F_{\text{threshold}}$	0%

Figures 3-11 show panels of fecundity, recruits, fishing mortality, and landings for each TAC scenario explored.

Tables 7 and 8 show the allocation of the different projection run TACs by state/jurisdiction using Amendment 2 allocation.

Uncertainty in Projections

Projections should be interpreted in light of the model assumptions and key aspects of the data. Some major considerations are the following:

- In general, projections of fish stocks are highly uncertain, particularly over the long-term (e.g., beyond three years). The projection for any year should be considered a range of values rather than a single point.
- Although the projections include many major sources of uncertainty, they do not include structural (model) uncertainty. That is, projection results are conditional on one set of functional forms used to describe population dynamics, selectivity, recruitment, etc.
- Fisheries were assumed to continue fishing at their estimated current proportions of total effort (for bait and reduction fisheries), using the estimated current selectivity patterns. New management regulations that alter those proportions or selectivities would likely affect projection results.
- All of the projections assume that the probability of the size of a recruitment event in any projection year is equivalent to the probability of such recruitment being observed during the years modeled in the 2014 benchmark assessment. If future recruitment is characterized by runs of large or small year classes, possibly due to environmental or ecological conditions, stock trajectories may be affected. At this juncture, the Board may wish to consider this as an important factor by way of their risk tolerance when deciding on which of the projection runs to base their 2017 TAC, as the recruitment stream has important impacts to future population size. Figures 3 – 11 show the potential range in the various outputs including recruitment, so the Board can visualize how different assumptions might impact performance of the projections under different levels of risk tolerance.
- Projections apply the Baranov catch equation to relate F and landings using a one-year time step, as in the assessment. The catch equation implicitly assumes that mortality occurs throughout the year. This assumption is violated when seasonal closures are in effect, introducing additional and unquantified uncertainty into the projection results.

Table 7. Allocation (in pounds) to states/jurisdiction under the different potential TAC scenarios using Amendment 2 allocation after 1% of the TAC has been set aside for Episodic Events. This table contains potential TACs associated with the constant harvest projection runs 1 through 6.

Metric Tons	187,880	197,274	206,668	225,456	244,244	263,032
Pounds	414,204,498	434,914,723	455,624,948	497,045,397	538,465,847	579,886,297
After Set Aside	410,062,453	430,565,576	451,068,698	492,074,943	533,081,189	574,087,434
ME	161,466	169,540	177,613	193,760	209,906	226,053
NH	123	129	135	148	160	172
MA	3,438,630	3,610,562	3,782,493	4,126,356	4,470,219	4,814,082
RI	73,457	77,129	80,802	88,148	95,494	102,839
CT	71,537	75,114	78,691	85,845	92,999	100,152
NY	227,365	238,733	250,102	272,838	295,575	318,311
NJ	45,893,335	48,188,001	50,482,668	55,072,002	59,661,335	64,250,669
DE	54,153	56,861	59,568	64,983	70,399	75,814
MD	5,628,568	5,909,996	6,191,424	6,754,281	7,317,138	7,879,995
PRFC	2,545,595	2,672,875	2,800,154	3,054,714	3,309,273	3,563,833
VA	349,873,884	367,367,579	384,861,273	419,848,661	454,836,050	489,823,438
NC	2,020,645	2,121,677	2,222,709	2,424,774	2,626,838	2,828,903
SC	-	-	-	-	-	-
GA	-	-	-	-	-	-
FL	73,695	77,380	81,064	88,434	95,803	103,173

Table 8. Allocation (in pounds) to states/jurisdiction using Amendment 2 allocation after 1% of the TAC has been set aside for Episodic Events for the scenarios with 50, 55, and 60% probabilities of being below F target in 2017.

Percentage	50%	55%	60%
Metric Tons	267,500	259,500	250,100
Pounds	589,736,551	572,099,570	551,376,117
After Set Aside	583,839,185	566,378,574	545,862,356
ME	229,893	223,017	214,939
NH	175	170	164
MA	4,895,857	4,749,438	4,577,397
RI	104,586	101,458	97,783
CT	101,854	98,808	95,228
NY	323,718	314,037	302,661
NJ	65,342,064	63,387,909	61,091,777
DE	77,102	74,796	72,087
MD	8,013,849	7,774,182	7,492,574
PRFC	3,624,370	3,515,978	3,388,617
VA	498,143,837	483,246,077	465,741,210
NC	2,876,956	2,790,916	2,689,819
SC	-	-	-
GA	-	-	-
FL	104,925	101,787	98,100

Figures

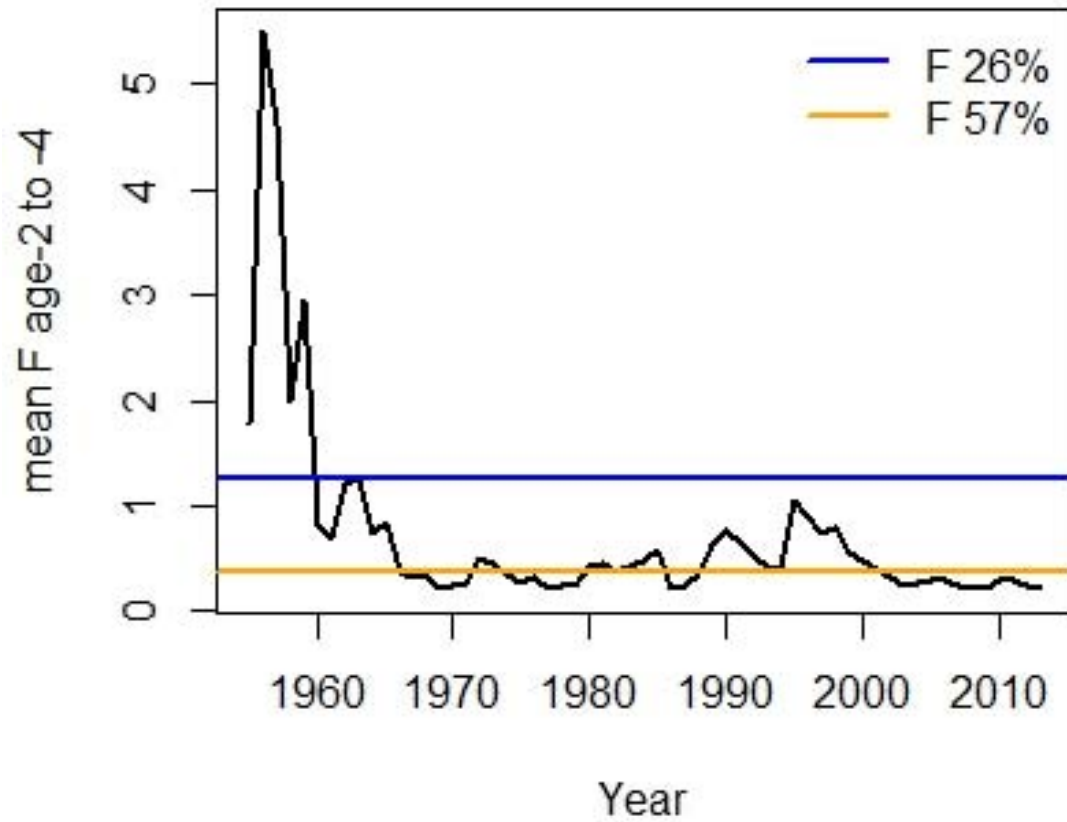


Figure 1. The geometric mean fishing mortality rate of ages-2 to -4 versus the recommended fishing mortality reference points with the blue line as the threshold and the orange line as target.

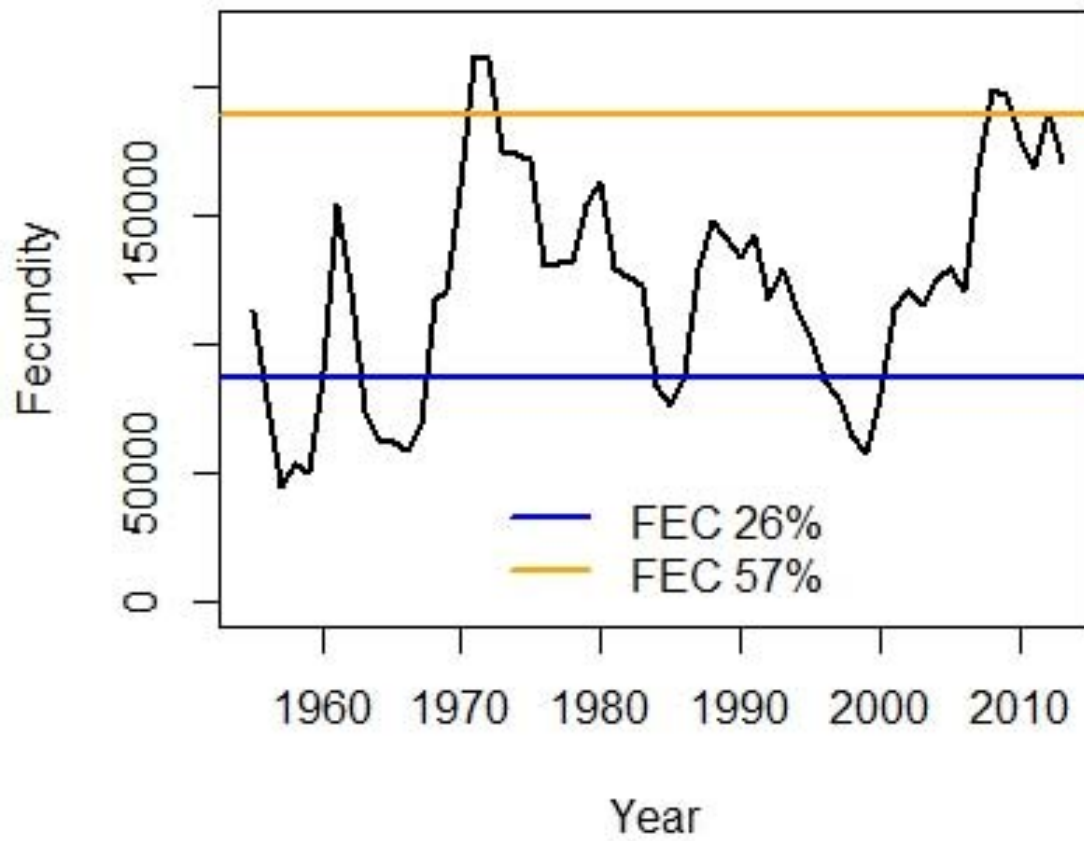


Figure 2. The fecundity versus the recommended fecundity based reference points with the blue line as the threshold and the orange line as the target.

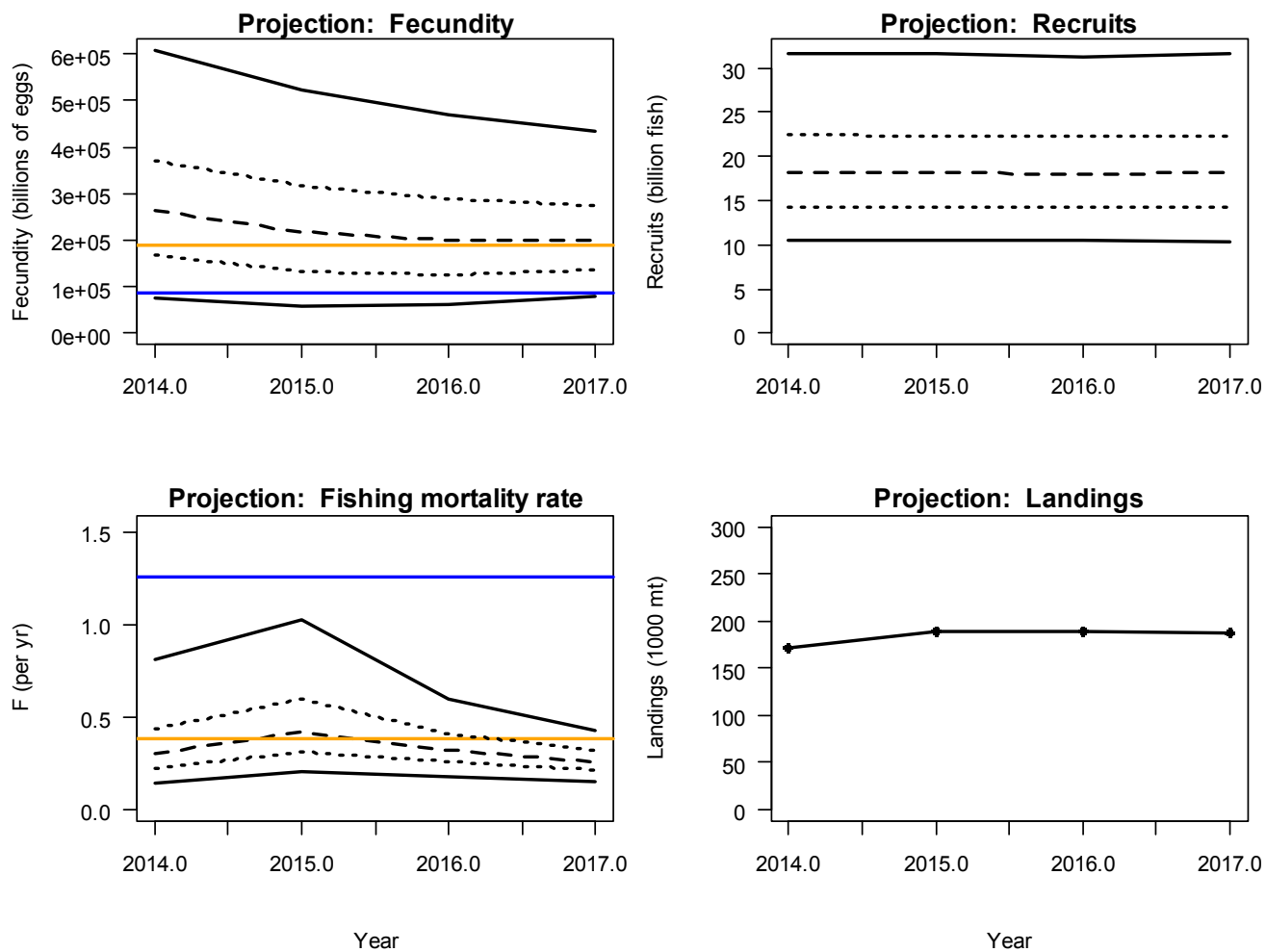


Figure 3. Projection panels for a 187,880 mt TAC in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid, flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

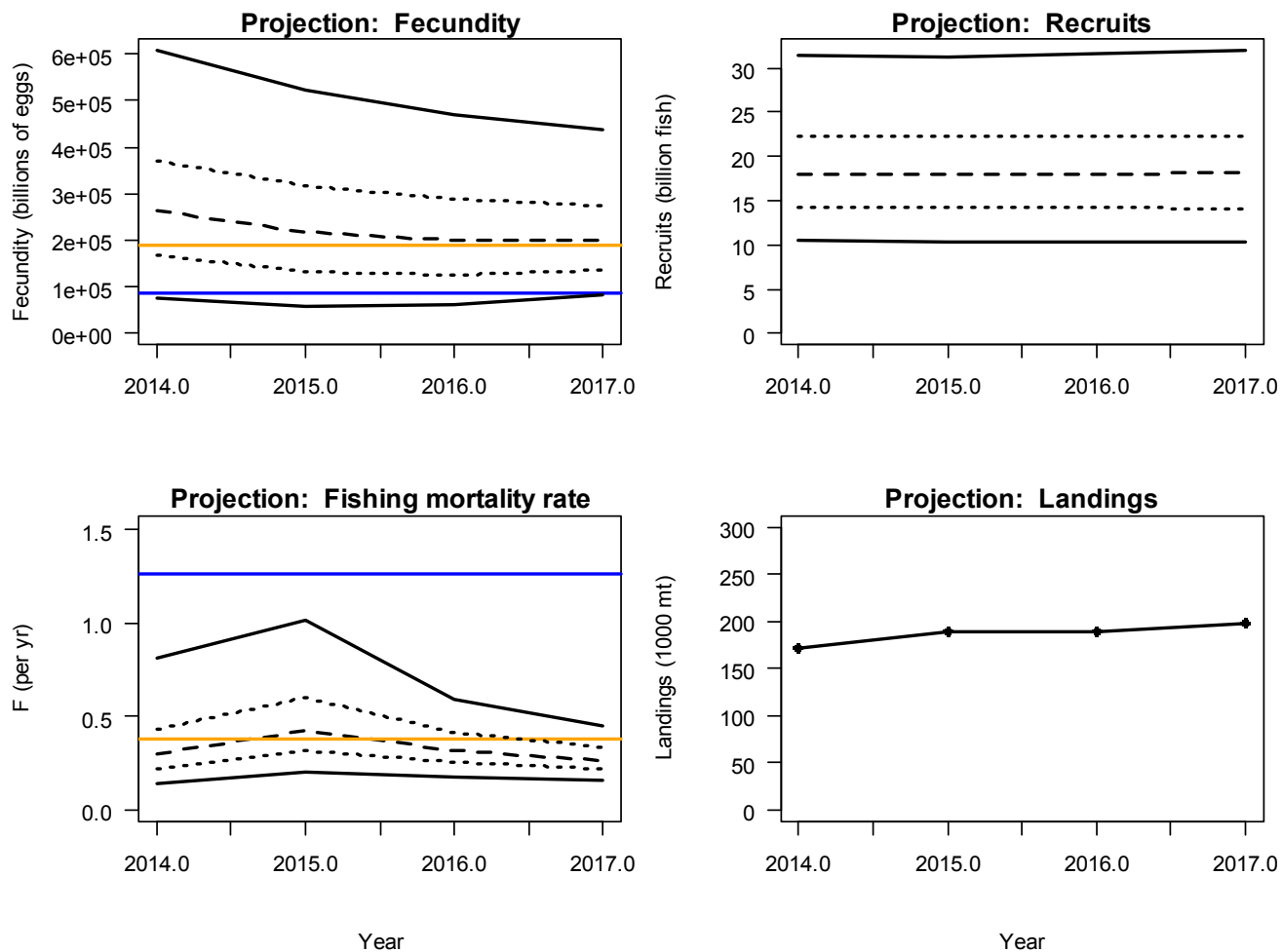


Figure 4. Projection panels for a 197,274 mt TAC in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid, flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

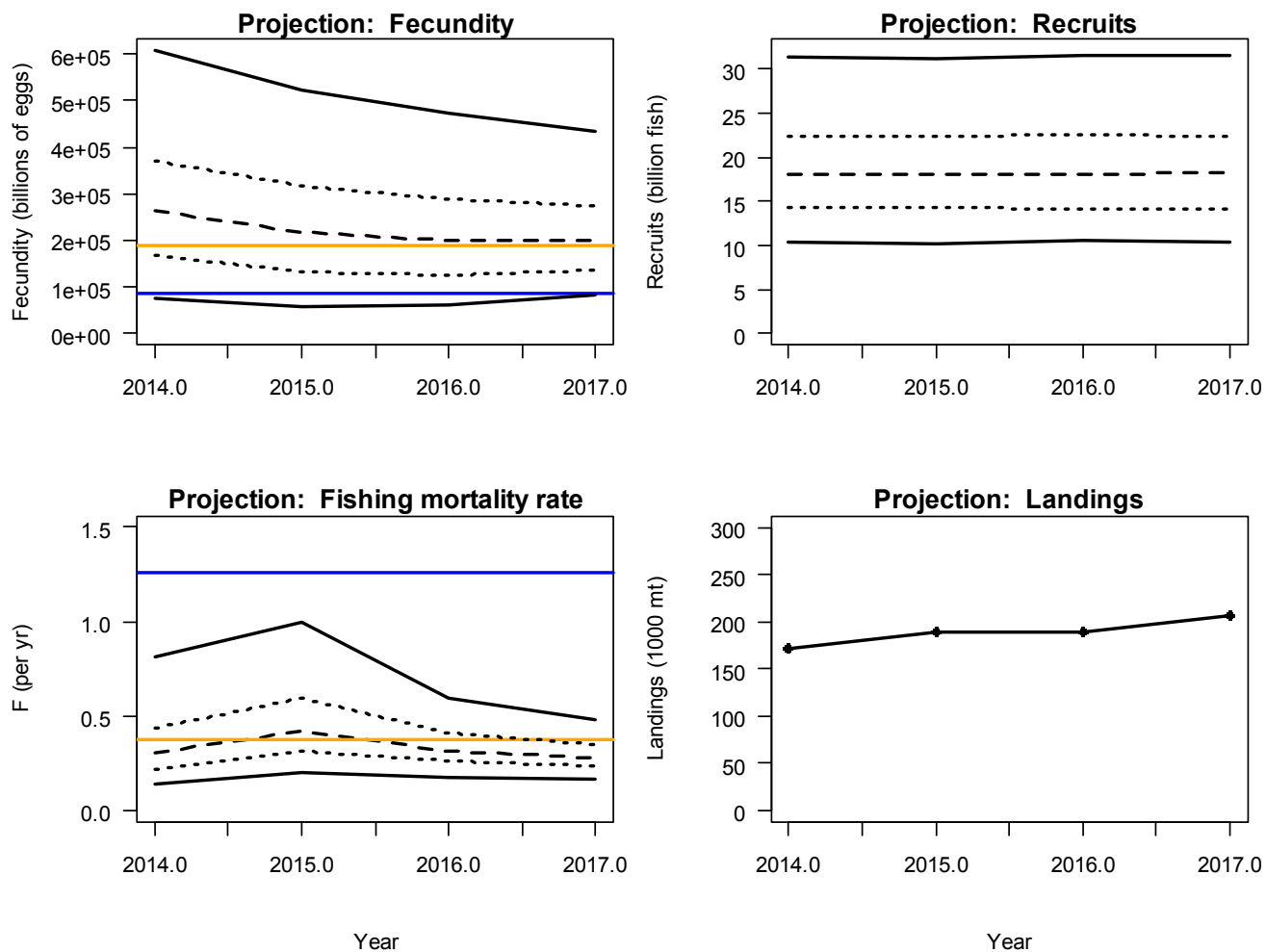


Figure 5. Projection panels for a 206,668 mt TAC in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid, flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

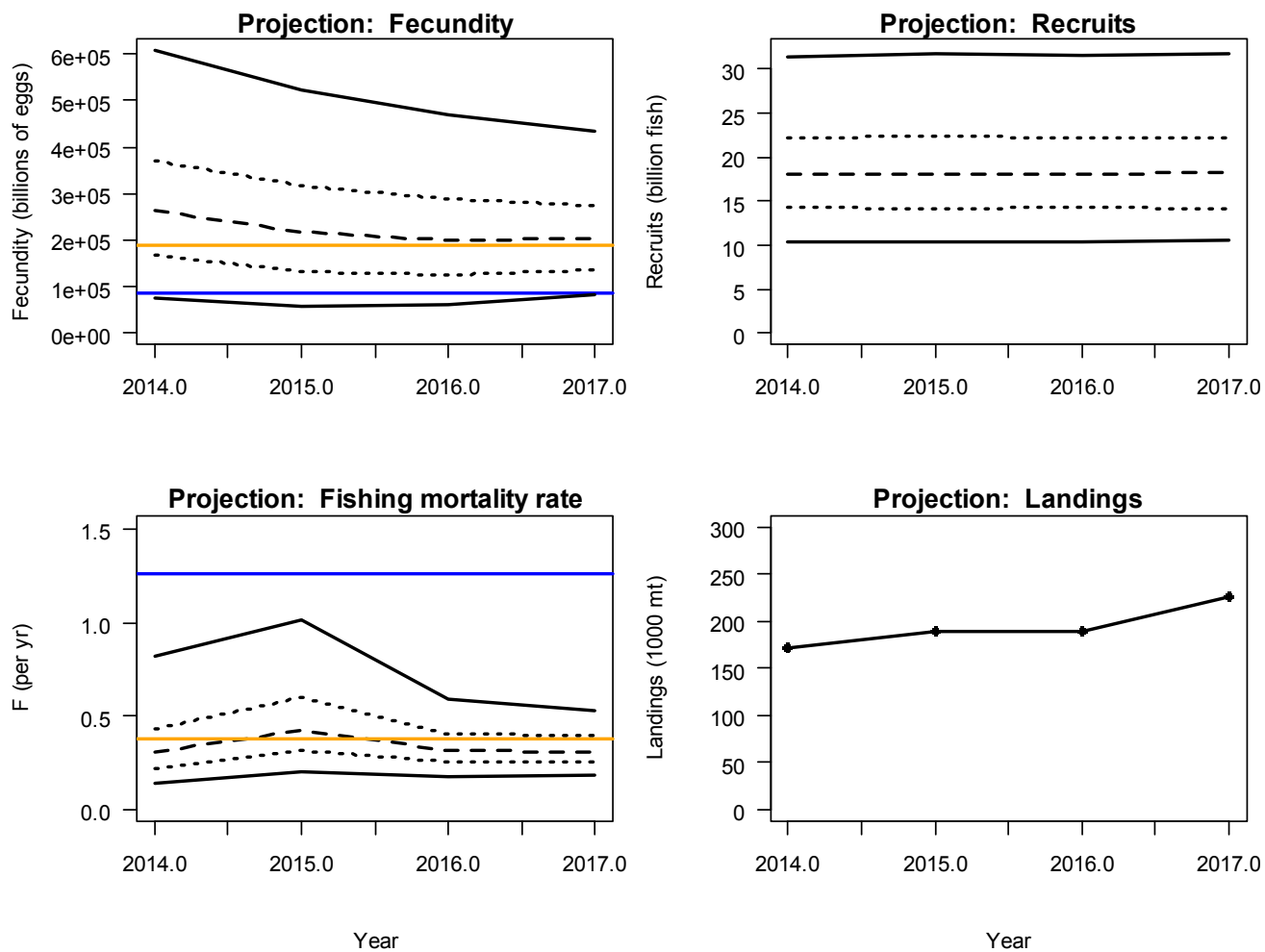


Figure 6. Projection panels for a 225,456 mt TAC in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid, flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

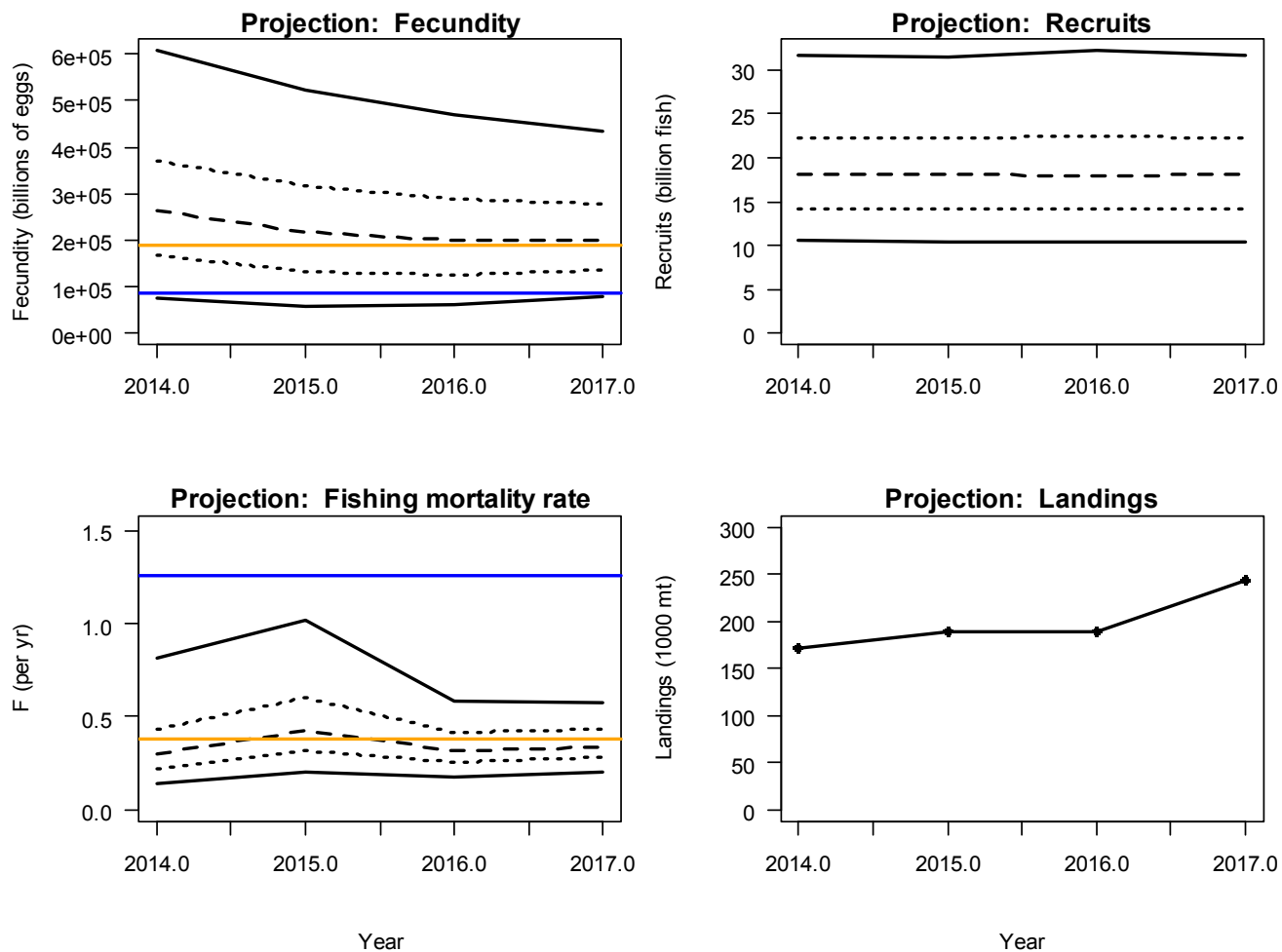


Figure 7. Projection panels for a 244,244 mt TAC in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid, flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

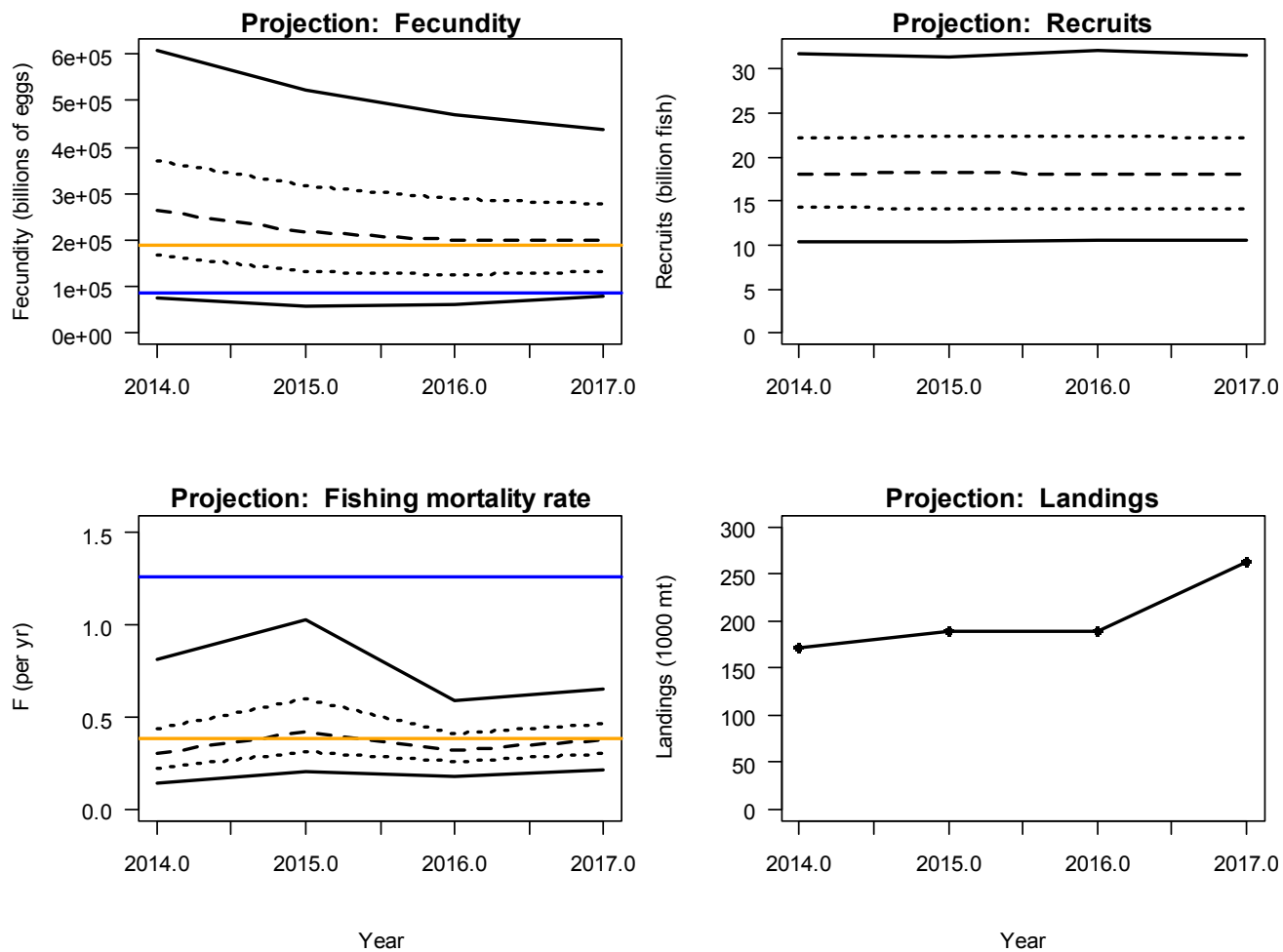


Figure 8. Projection panels for a 263,032 mt TAC in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid, flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

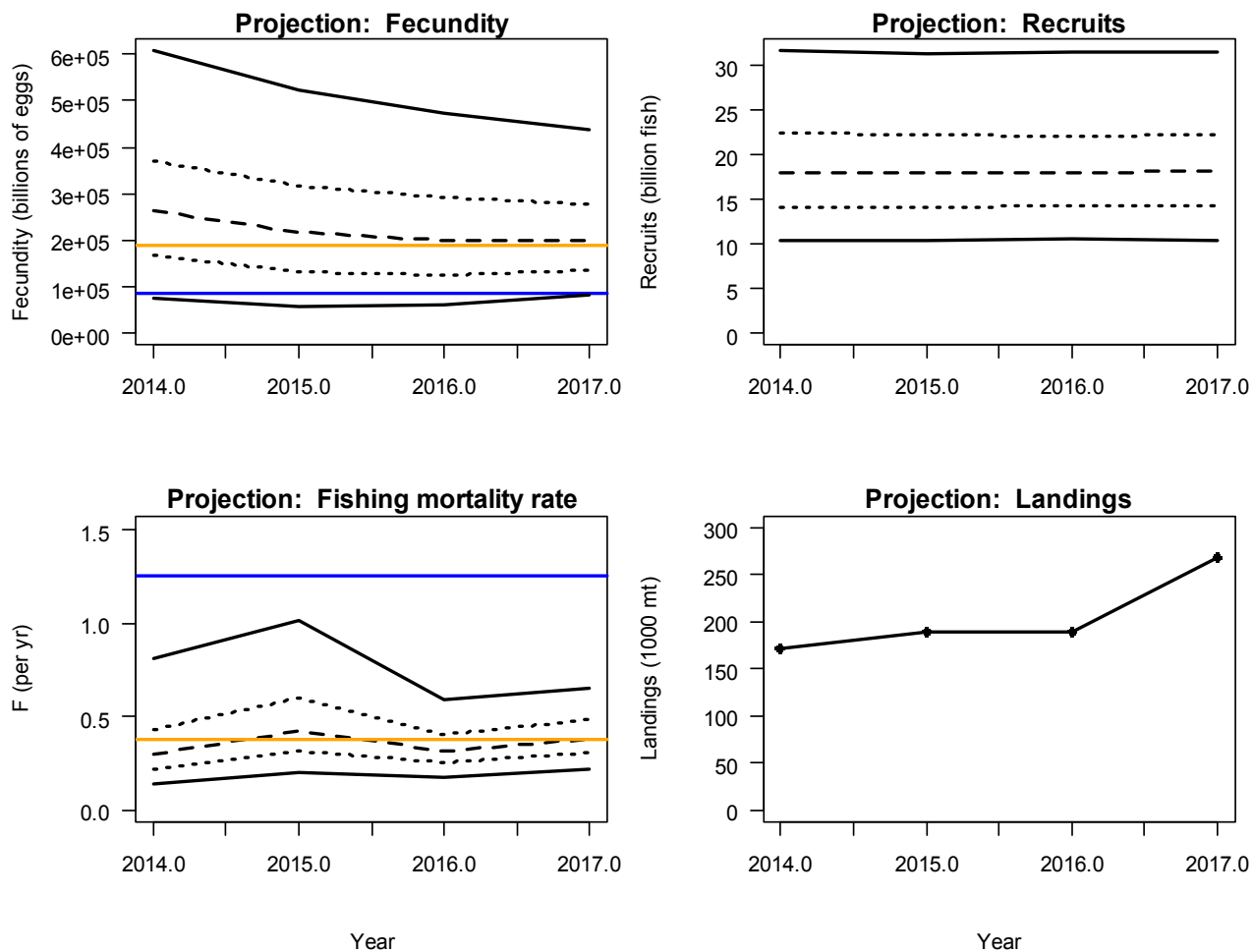


Figure 9. Projection panels for a 267,500 mt TAC in 2017, which results in a 50% probability of being below the F target in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid, flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

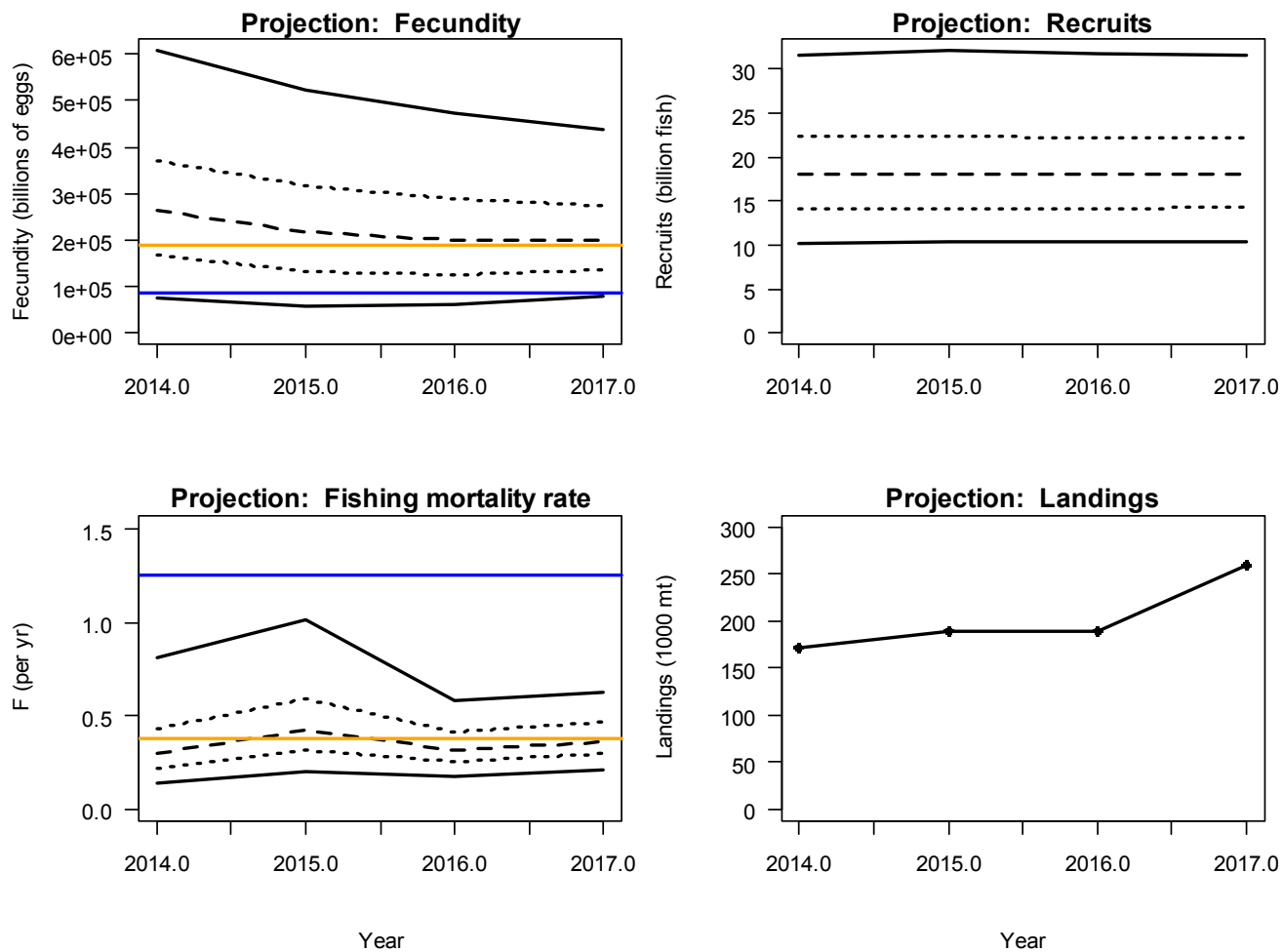


Figure 10. Projection panels for a 259,900 mt TAC in 2017, which results in a 55% probability of being below the F target in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.

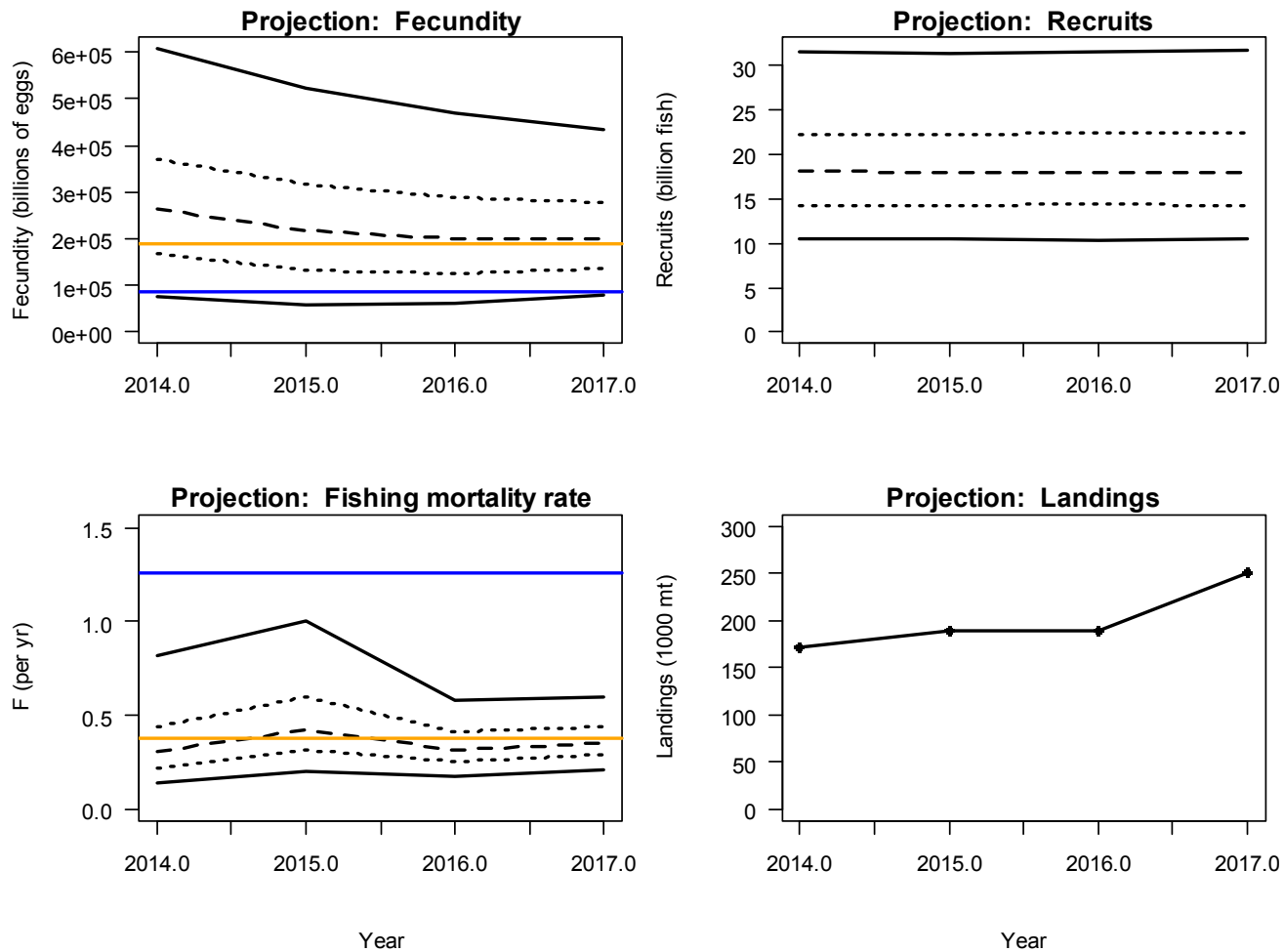


Figure 11. Projection panels for a 250,100 mt TAC in 2017, which results in a 60% probability of being below the F target in 2017. Fecundity, recruits, geometric mean fishing mortality (F) over ages-2 to -4, and landings over time based on actual 2014 and 2015 landings, assumed 2016 landings, the 2017 TAC, and median recruitment with variability based on estimated deviations for each MCB run. The solid flat lines in the fishing mortality rate and fecundity panels are the threshold (blue) and target (orange) benchmark values recommended by the TC from the base run. Solid black lines indicate the 5th and 95th percentiles, the dashed line indicates the 50th percentile, and the dotted lines indicate the 25th and 75th percentiles.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Atlantic Menhaden Management Board
FROM: Atlantic Menhaden Technical Committee
DATE: June 30, 2016
SUBJECT: Comments on “The Fate of an Atlantic Menhaden Year Class”

Per the Board’s request, the Atlantic Menhaden Technical Committee (TC) reviewed the paper “The Fate of an Atlantic Menhaden Year Class” by Peter Himchak on their June 17th conference call. The TC applauded Mr. Himchak’s efforts to provide perspective on the impact that the reduction and bait fisheries have on the Atlantic menhaden stock; however, the TC did note several concerns with the methods and provided recommendations on ways to potentially improve the analysis.

1. The TC did not feel it was appropriate to include age 0 fish in the analysis since the reduction and bait fisheries do not harvest from this age class. By including age 0 fish, the paper fails to compare removals from the fishery to the harvestable population. As a result, the total exploitation on a year class is underestimated. The TC recommended that the analysis start with age 1 or age 2 fish, and also consider the fishery selectivity on each age group when calculating the harvestable population. This change would mirror the current ages used for establishing thresholds and targets in the menhaden stock assessment.
2. The TC noted that the analysis does not include calculations of natural mortality at age, and as a result, it is unclear what portion of the population is being removed due to natural causes. Furthermore, since natural mortality is constantly acting on the population, the impact of fishing mortality should be compared to a continuously diminishing stock. The TC recommended the paper clearly outline losses due to fishing mortality, natural mortality, and fish that survive in a more explicit manner.
3. The TC recommended that, to fully understand the impact of the Atlantic menhaden fishery, the paper should include a comparison to an unfished stock. This is necessary because fish which are not removed, and thus remain in the stock, contribute to higher populations in subsequent years. Conversely, the impacts of fishing removals are perpetual in that they reduce the available population in following years.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Atlantic Menhaden Management Board
FROM: Megan Ware, FMP Coordinator
DATE: July 14, 2016
SUBJECT: Harvest under the Episodic Events Set Aside

The intent of this memo is provide an update to the Atlantic Menhaden Management Board (Board) on annual harvest to date under the Episodic Events Set Aside Program. The set aside quota for the 2016 fishing year is 4,142,040 pounds. As of July 14th, the states of Rhode Island and New York have declared participation in the episodic events program.

To date, 593,929 pounds of menhaden have been landed under the episodic events set aside. This represents 14.34% of the set aside quota. Rhode Island has harvested 156,145 pounds, equaling 3.77% of the set aside quota. New York, who was permitted to harvest under the episodic events set aside program at the May Board meeting and was capped at 1 million pounds, has harvested 437,784 pounds under the set aside. This represents 10.57% of the set aside quota.

Given the landings of both Rhode Island and New York under the set aside program, 3,548,111 pounds remain in the episodic events set aside. Any unused set aside as of October 31st will be re-allocated to the coastwide jurisdictions on November 1st based on the allocation percentages outlined in Amendment 2.

Table 1: Harvest under the episodic events program as of July 14, 2016.

	Pounds	Percent of Total
2016 Episodic Set Aside Quota	4,142,040	
Rhode Island Harvest	156,145	3.77%
New York Harvest	437,784	10.57%
Remaining Set Aside Quota	3,548,111	85.66%

From: Eric Dammeyer <ericjrickd@aol.com>

Sent: Saturday, June 25, 2016 8:57 AM

To: Megan Ware

Subject: Please save Menhaden

As a recreational fisherman I think it's important to restore our forage fish to greater populations. Why not establish restoration targets for 25-50% of original populations? Let's give enough food to Stripers and other big game fish so there are enough big fish for both recreation and commercial catch. Feeding fish meal to pigs and poultry at the expense of our ocean fish doesn't make sense to me.

Eric Dammeyer

213 Samantha Dr

Lewes, DE 19958

9737137590

Sent from my iPhone



Atlantic States Marine Fisheries Commission

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MEMORANDUM

July 19, 2016

To: Atlantic Menhaden Management Board
From: Tina Berger, Director of Communications
RE: Request for Review of Current Advisory Panel Membership; Call for New Nominations

With the development of Draft Amendment 3 gearing up over the next year, it's important that we have a fully populated and engaged advisory panel. Some advisors have dropped out over the last couple of years, leaving some states with vacancies. The last advisory panel conference call had only 5 representatives in attendance.

Attached for your review is the AP membership list and attendance records. Also attached is a form for new nominations. Thank you.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Megan Ware

M16-61

ATLANTIC MENHADEN ADVISORY PANEL

Bolded names await approval by the Atlantic Menhaden Management Board

July 19, 2016

Maine

Brian Tarbox (comm bait)
620 Walnut Hill Road
North Yarmouth, ME 04097
Phone: 207.829.5567

btarbox@me.rr.com

btarbox@smtc.net

Appt. Confirmed 7/17/01
Appt. Reconfirmed 11/30/05
Appt Reconfirmed 5/10

Jennifer S. Bichrest (processor/dealer)

21 Sandy Acres Drive
Topsham, ME 04086
Phone (day): 207.389.9155
Phone (cell): (207) 841.1454

jenniebplb@yahoo.com

Appt. Confirmed 10/21/08

Duncan Barnes (rec)
113 Hill Island Road
Arrowsic, ME 04530
Phone: 207.443.8746
bardunc@gmail.com
Appt Confirmed 11/8/10

New Hampshire

Donald L. Swanson (rec)
84 Franklin Street
Derry, NH 03038-1914

Phone: 603.434.4593

salty4fly2@comcast.net

Appt Confirmed 8/3/10

Massachusetts

2 Vacancies (comm bait and for hire)

Rhode Island

Donald A. Smith (rec)
40 Web Avenue, #215
North Kingstown, RI 02852
Phone (day): 401.351.0600
Phone (eve): 401.295.4205
FAX: 401.351.6755

dasmith4444@aol.com

Appt. Confirmed 7/17/01
Appt. Reconfirmed 2/9/06
Appt Reconfirmed 5/10

Louis Lachance (comm/purse seine)

71 Clancy Street
Swansea, MA 02777
Phone: 508.678.4210
Appt Confirmed 12/17/03
Appt. Reconfirmed 2/9/06
Appt Reconfirmed 5/10

Connecticut

Vacancy (rec)

New York

Melissa Dearborn (processor)
Regal Marine Products, Inc.
198 West 9th Street
Huntington Station, NY 11746
Phone (day): 631.385.8284
Phone (eve): 631.385.7753
FAX: 631.271.5294

regalmar@optonline.net

Appt. Confirmed 7/17/01
Appt. Reconfirmed 1/23/06
Appt Reconfirmed 5/10

New Jersey

Jeff Kaelin (comm. trawl and purse seine)
Lund's Fisheries, Inc.
PO Box 830
997 Ocean Drive
Cape May, NJ 08204-0830
Phone: 207.266.0440
jkaelin@lundsfish.com
Appt. Confirmed 9/19/09

Vacancy (rec)

ATLANTIC MENHADEN ADVISORY PANEL

Bolded names await approval by the Atlantic Menhaden Management Board

July 19, 2016

Delaware

William R. Wilson (rec)
18483 Cedar Drive
Lewes, DE 19958
Phone (day): 302.644.3454
Phone (eve): 302.344.5853
FAX:(302.644.3454
birdcarver@aol.com
Appt Confirmed 12/17/03
Appt. Confirmed 12/07

Maryland

David Sikorski (rec)
4637 Willowgrove Drive
Ellicott City, MD 21042
Phone: 443.621.9186
davidsikorski@mac.com
Appt Confirmed 2/3/15

John W. Dean (comm/pound net)
49925 Hays Beach Road
Scotland, MD 20687
Phone: 301.904.8078
Selbysuzi1121@aol.com
Appt Confirmed 2/3/15

Virginia

Jimmy Kellum (commercial purse seine)
144 Kellum Drive
Weems, VA 22576
Phone (day): 804.761.0673
Phone (eve): 804.438.5618
FAX: 804.438.5306
Kellum.maritime@gmail.com
Appt Confirmed 11/3/09

Vacancy

North Carolina

2 Vacancies – conservation & commercial

South Carolina

Vacancy (rec)

Georgia

Vacancy

Florida

Charles W. Hamaker (rec)
5648 Floral Avenue
Jacksonville, FL 32211
Phone (day): 904.630.3025
Phone (eve): 904.725.3775
FAX: 904.630.3007
charlesh@cou.net
Appt. Confirmed 7/17/01
Appt. Reconfirmed 1/2/06
Appt Reconfirmed 4/22/10

PRFC

Richard H. Daiger (comm/rec gillnet)
173 Oyster House Road
Montross, VA 22520
Phone: 804.472.2184
Appt. Confirmed 7/17/01
Appt. Reconfirmed 1/2/06
Appt Reconfirmed 5/10

Non-traditional Stakeholder

Ken Hinman (conservation)
National Coalition for Marine Conservation
4 Royal Street SE
Leesburg, VA 20175
Phone: 703.777.0037
Fax: 703.777.1107
hinmank@mindspring.com
Appt. Confirmed 2/19/02
Appt. Confirmed 2/06
Appt Reconfirmed 5/10

Atlantic Menhaden Advisory Panel Attendance

Name	State	Confirmed	1/9/02	7/10/02	10/29/03	10/28/04	7/28/05	10/11/06 (call)	9/29/09	10/28/2011	1/30/2012	4/25/2012	7/31/2012	11/19/2012	4/22/2015	7/14/2016
Jennifer Bichrest	ME	10/21/08							X	X	X			X	X	
Brian Tarbox	ME	7/17/01	X	X	X	X	X	X	X	X				X		
Duncan Barnes	ME	11/8/10														
Donald Swanson	NH	8/3/10								X	X	X	X	X		X
Donald Smith	RI	7/17/01	X	X			X			X						
Vacancy	RI															
Louis Lachance	MA	12/17/03			X	X										
Vacancy	MA															
Vacancy	CT															
Melissa Dearborn	NY	7/17/01			X			X			X	X	X		X	
Jeff Kaelin	NJ	9/19/09							X	X	X		X	X	X	X
Vacancy	NJ															
William Wilson	DE	12/17/03														
David Sikorski	MD	2/3/15													X	X
John W. Dean	MD	2/3/15														X
Jimmy Kellum	VA	11/3/09							X	X	X			X	X	
Vacancy	NC															
Vacancy	NC															
Vacancy	SC															
Ken Hinman	GA	2/19/02	X	X	X	X	X		X	X	X	X	X	X		X
Charles Hamaker	FL	7/17/01														
Richard Daiger	PRFC	7/17/01	X	X	X	X	X									
Past members																
Gerald Souza	MA	7/17/01	X	X	alternate	alternate										
Chuck Casella	MA	12/17/03														
Bill Hubbard	NH	7/17/01	X	X												
Richard Weisberg	CT	2/19/02	X	X	X	X	X	X	Retired							
Edward Cherry	NJ	12/17/03			X	X	X	X	X	X	X	X	X			
Wayne Reichle	NJ	7/17/01		X												
Tom Fote	NJ		X	resigned												
Bill Windley	MD	7/17/01	X	X	X	X	X	X	X	X	X		X	X		
Ron Lukens	VA	2/5/09							X	X	X	X	X	X	X	Retired
Steve Jones	VA		X	Resigned												
G. Lyell Jett	VA	8/27/02		X	X	X	X									
William Crowther	VA	7/17/01														
Jeff Smith	NC		X	X	resigned											
Jeff DeBlieu	NC	7/17/01			X											
Jule Wheatly	NC	7/17/01	X	X	X	X										
Thomas Ogle	SC	2/19/02				X		X	X		X		X	X		



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

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

Form submitted by: _____ State: _____
(your name)

Name of Nominee: _____

Address: _____

City, State, Zip: _____

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

Phone (day): _____ Phone (evening): _____

FAX: _____ Email: _____

.....
FOR ALL NOMINEES:

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

1. _____

2. _____

3. _____

4. _____

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

yes _____ no _____

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

yes _____ no _____

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

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

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

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? _____ years
2. Is the nominee employed only in commercial fishing? yes_____ no_____
3. What is the predominant gear type used by the nominee? _____
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? _____

FOR CHARTER/HEADBOAT CAPTAINS:

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

FOR RECREATIONAL FISHERMEN:

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

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____ years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes _____ no _____

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

FOR ALL NOMINEES:

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

Nominee Signature: _____

Date:

Name: _____
(please print)

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

State Director

State Legislator

Governor's Appointee



Atlantic Coastal Cooperative Statistics Program

1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201

703.842.0780 | 703.842.0779 (fax) | www.accsp.org

Atlantic Coastal Cooperative Statistics Program Executive Committee Meeting

In-person Meeting

August 3rd, 2016 | 11:15 am

Westin Alexandria, 400 Courthouse Square, Alexandria, VA

https://safis.accsp.org:8443/accsp_prod/f?p=550:15:15787198825561::NO:15:P15_CAL_ID_1:1733

1. Welcome and Introductions (R. Boyles, Jr., Chair)
2. Review and Approve Agenda – Attachment I
3. Public Comment*
4. Review and Approve April Meeting Minutes – Attachment II
5. Review and Approve May Meeting Minutes – Attachment III
6. ACCSP Status Report (M. Cahall)
 - a. For-Hire Workshop
 - b. Bluefin Tuna Dealer Reporting
 - c. GARFO VTR Transition
7. Governance Transition Update (R. Boyles)
8. Other Business in Open Session
9. Closed Session
10. Adjourn (R. Boyles)

*See Public Comment Guidelines:

http://www.accsp.org/sites/all/themes/aqua/File/ACCSP_PublicCommentPolicyOct2013.pdf

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



Atlantic Coastal Cooperative Statistics Program

1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201

703.842.0780 | 703.842.0779 (fax) | www.accsp.org

Atlantic Coastal Cooperative Statistics Program Executive Committee

April 28th, 2016

https://safis.accsp.org:8443/accsp_prod/f?p=550:15:9947828312642::NO:15:P15_CAL_ID_1:1

729

MEETING MINUTES

COMMITTEE MEMBERS IN ATTENDANCE:

Name	Partner	Phone	Email
Robert Beal	ASMFC	(703) 842-0740	rbeal@asmfc.org
Robert Boyles (Chair)	SC DNR	(843) 953-9304	boylesr@dnr.sc.gov
Patrick Campfield	ASMFC	(703) 842-0740	pcampfield@asmfc.org
John Carmichael	SAFMC	(843) 571-4366	john.carmichael@safmc.net
Lynn Fegley (Vice-chair)	MD DNR	(410) 260-8285	lynn.fegley@maryland.gov
Hannah Goodale	GARFO	(978) 281-9101	hannah.f.goodale@noaa.gov
Wilson Laney	US FWS	(919) 515-5019	wilson_laney@fws.gov
Cheri Patterson	NH FGD	(603) 868-1095	cheri.patterson@wildlife.nh.gov

Committee Members Not in Attendance: G. Colvin (NOAA), D. Detlor (NOAA)

Others in Attendance:

Name	Title	Partner	Phone	Email
Gregg Waugh	SAFMC Executive Director	SAFMC	(843) 571-4366	gregg.waugh@safmc.net

Staff Members in Attendance: M. Cahall (Program Director), E. Wyatt (Program Coordinator)

Welcome/Introductions – R. Boyles

R. Boyles welcomed the group. E. Wyatt took attendance.

Public Comment – R. Boyles

No public comment

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

Committee Consent – R. Boyles

- **Approval of Agenda (Attachment I)**
 - The agenda is approved by consent

Governance Decision (Attachment II) – C. Patterson

- **Review White Paper**

C. Patterson was thanked for all of her hard work in preparing this document. It clearly explains how this decision was made and why the decision was considered in the first place. The steps of how the White Paper came to be are as follows:

 - Initially, the Governance Decision came from an Independent Program Review (IPR) Recommendation
 - R. Boyles drafted a terms of reference to begin this whole process
 - A survey monkey was created to poll all ACCSP program partners, staff and advisors
 - M. Cahall and B. Beal worked on a document to discuss how ACCSP and ASMFC are currently integrated
 - The Ad-hoc Workgroup developed questions on future considerations of how changes would be made to ACCSP
- **Discuss Ad-hoc Governance Workgroup Recommendation**
 - The Ad-Hoc Group's Recommendation is Alternative 3 – Fold ACCSP into ASMFC as a Program
 - W. Laney's concern is the perception that the ACCSP is collecting data and will now be part of the same group that is managing species. However, there is not much difference between the Ad-hoc recommendation and status quo.
 - Initially, in the 1990's there was concern with the ACCSP and ASMFC being housed together when ASMFC gained regulatory power. However, as time has passed the concerned have subsided. Currently, a similar potential issue occurs within ASMFC with the Interstate Fisheries Management Plan (ISFMP) and the Science departments under one umbrella. ISFMP manages species and the Science department conducts stock assessments however, this relationship has always been perceived well.
 - There are still details that will need to be figured out but a workgroup will be formed to discuss and decide on those details if action is taken on this recommendation.
 - As long as ACCSP continues to be governed from a bottom up approach that will continue to give advisors a say within committees. **C. Patterson will draft a paragraph to incorporate more information about the consideration taken from the Advisors.**
 - In the future the Memorandum of Understanding (MOU) will need to be addressed.

- **Possible Approval of Ad-hoc Governance Workgroup Recommendation**
 - **Motion to accept the Ad-hoc Governance Workgroup Recommendation by J. Carmichael. Seconded by L. Fegley. Motion passes by consent.**
 - The future steps include:
 - If the Coordinating Council accepts the recommendation, then this would go to the ASMFC Executive Committee.
 - If approved by ASMFC Executive Committee then the action will be to discuss the details of how this merger will occur.
 - The Governance Decision Workgroup would likely turn into the Governance Transition Workgroup to help with this action.
 - **J. Carmichael volunteered to be on the workgroup so there is council representation.**
 - The workgroup will meet after the May meeting and M. Cahall and B. Beal think this could go to the Coordinating Council in August for final implementation.

Other Business

None.

Adjourn – R. Boyles

R. Boyles adjourned the meeting.

Action Items

1. C. Patterson will draft a paragraph to incorporate more information about the consideration taken from the Advisors.
2. Motion to accept the Ad-hoc Governance Workgroup Recommendation by J. Carmichael. Seconded by L. Fegley. Motion passes by consent. This recommendation will be forwarded to the Coordinating Council.
3. J. Carmichael volunteered to be on the workgroup so there is council representation.



Atlantic Coastal Cooperative Statistics Program

1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201

703.842.0780 | 703.842.0779 (fax) | www.accsp.org

Atlantic Coastal Cooperative Statistics Program Executive Committee

May 2nd, 2016

Westin, Alexandria, 400 Courthouse Square, Alexandria, VA

https://safis.accsp.org:8443/accsp_prod/f?p=550:15:9947828312642::NO:15:P15_CAL_ID_1:1730

DRAFT MEETING MINUTES

COMMITTEE MEMBERS IN ATTENDANCE:

Name	Partner	Phone	Email
Robert Beal	ASMFC	(703) 842-0740	rbeal@asmfc.org
Mel Bell (Proxy)	SC DNR	(843) 953-9007	bellm@dnr.sc.gov
Patrick Campfield	ASMFC	(703) 842-0726	pcampfield@asmfc.org
Gordon Colvin	NOAA	(301) 427-8101	gordon.colvin@noaa.gov
Lynn Fegley (Vice-chair)	MD DNR	(410) 260-8285	lynn.fegley@maryland.gov
Wilson Laney	US FWS	(919) 515-5019	wilson_laney@fws.gov
Cheri Patterson	NH FGD	(603) 868-1095	cheri.patterson@wildlife.nh.gov
Gregg Waugh (Proxy)	SAFMC	(843) 571-4366	gregg.waugh@safmc.net

Committee Members Not in Attendance: D. Detlor (NOAA), H. Goodale (GARFO)

Others in Attendance:

Name	Title	Partner	Phone	Email
Mark Alexander	Supervisory Fisheries Biologist	CT DEEP	(860) 434-6043	mark.alexander@ct.gov

Staff Members in Attendance: M. Cahall (Program Director), J. Defilippi (Data Team Leader), Ali Schwaab (Outreach Coordinator), G. White (Recreational Program Manager), E. Wyatt (Program Coordinator)

Welcome/Introductions – Coordinating Council Chair R. Boyles

Vice-chair L. Fegley welcomed the committee. Attendance was taken.

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

Public Comment – R. Boyles

No public comment.

Committee Consent – R. Boyles

- **Approval of Agenda (Attachment I)**
 - Approved by consent.
- **Approval of Minutes from April 2016 (Attachment II)**
 - Approved by consent.

ACCSP Status Report – M. Cahall

- **Program Status**
 - Electronic Reporting:
 - eDR/M went into production in Massachusetts on Monday. Maine will go into production in the summer.
 - NOAA has created a \$7.5 million fund for electronic reporting. ACCSP is hoping to be able to apply for some of this funding.
 - Data feeds to GARFO are up and running allowing the transmission of Vessel Trip Reports (VTR) from eTrips/M to GARFO.
 - HMS permit reporting will be integrated into Standard Atlantic Fisheries Information System (SAFIS).
- **Committee Updates**
 - The Commercial Technical Committee and Information Systems Committee met on April 19th and 20th, respectively. Both committees had very full agendas. The major highlights from those meetings was electronic monitoring and seafood traceability standards will be developed.
 - **APAIS Update**
 - Overall, APAIS is running smoothly with only very minor issues that have been solved easily. North Carolina provided great feedback to the APAIS team as they were the only state participating in Wave 1. One improvement made this year over years past is pre-validation is being completed in a timely manner.
 - Work on the Cooperative Agreements are beginning for a July approval.
 - G. Colvin added at last week's Marine Recreational Information Program (MRIP) review in Charleston, all three southeastern states reported in depth about how well the APAIS is going in their respective states.
 - **One issue was raised about the maintenance of the site registry because all states rely on this. G. Colvin will look into this and get back with M. Alexander since he raised the issue.**

- If any other states have issues like this it should be brought up in the Recreational Technical Committee meetings.
- G. Waugh asked how the head boat information from the Beaufort lab was being incorporated into ACCSP's system. ACCSP is working on this so the two systems can communicate with one another.
- G. Waugh commented that this is his first meeting in a while and the SAFMC is very proud of where ACCSP has gone in the past years.

SOP Approval (Attachment III & IV) – C. Patterson

- **PM – 02-06 ACCSP's Value to Congressional Delegations**
 - Two wording edits were made to the document. The document was finalized within the meeting and approved by consent.
- **PM – 13 Collaboration ASMFC**
 - A bullet was added about the orientation of ASMFC technical employees conducted by the ACCSP data team staff. The document was finalized within the meeting and approved by consent.

Independent Program Review (IPR) Update

- **Governance discussion (if needed)**
 - The Executive Committee reviewed the PowerPoint that will be presented to the Coordinating Council later in the afternoon.

Other Business

None.

Adjourn – R. Boyles

L. Fegley adjourned the meeting.

Action Items

1. G. Colvin will look into the maintenance of the site registry and report back to M. Alexander.

Atlantic States Marine Fisheries Commission

Atlantic Striped Bass Management Board

*August 3, 2016
11:15 a.m. – 12:15 p.m.
Alexandria, Virginia*

Draft Agenda

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

1. Welcome/Call to Order (*J. Gilmore*) 11:15 a.m.
2. Board Consent 11:15 a.m.
 - Approval of Agenda
 - Approval of Proceedings from February 2016
3. Public Comment 11:20 a.m.
4. Review Striped Bass Advisory Panel Meeting Summary (*M. Appelman*) 11:30 a.m.
5. Consider Approval of the 2016 Atlantic Striped Bass FMP Review and State Compliance (*M. Appelman*) **Action** 11:40 a.m.
 - Review Performance of Addendum IV Measures in 2015
6. Other Business/Adjourn 12:15 p.m.

The meeting will be held at the Westin Alexandria; 400 Courthouse Square; Alexandria, VA; 703-253-8600

MEETING OVERVIEW

Atlantic Striped Bass Management Board Meeting

August 3, 2016

11:15 a.m. – 12:15 p.m.

Alexandria, Virginia

Chair: Jim Gilmore (NY) Assumed Chairmanship: 02/16	Technical Committee Chair: Nicole Lengyel (RI)	Law Enforcement Committee Rep: Kurt Blanchard (RI)
Vice Chair: Russ Allen (NJ)	Advisory Panel Chair: Louis Bassano (NJ)	Previous Board Meeting: February 4, 2016
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, NMFS, USFWS (16 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 2016

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

4. Review Striped Bass Advisory Panel Meeting Summary (11:30 – 11:40 a.m.)

Background

- The Atlantic Striped Bass Advisory Panel met via conference call to receive an update from staff on two striped bass management issues currently not being discussed at the Board level; (1) the EEZ Transit Zone Clarification and Access Act (H.R. 3070), and (2) the above average harvest of squid from Nantucket Sound, and potential impacts on the availability of striped bass in that area (**Briefing Materials**).

Presentations

- Overview of Advisory Panel Meeting Summary by M. Appelman

5. Consider Approval of the 2016 Atlantic Striped Bass FMP Review and State Compliance (11:40 a.m. – 12:15 p.m.) Action

Background

- State Compliance Reports are due annually on June 15 (**Briefing Materials**)
- The Plan Review Team reviewed each state report and drafted the 2016 FMP Review (**Supplemental Materials**), including an evaluation on the performance of Addendum IV regulatory measures.

Presentations

- Overview of the 2016 FMP Review by M. Appelman

Board Actions for Consideration

- Consider approval of the 2016 FMP Review and State Compliance

6. Other Business/Adjourn

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC STRIPED BASS MANAGEMENT**

The Westin Alexandria
Alexandria, Virginia
February 4, 2016

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

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Adjournment..... 10

INDEX OF MOTIONS

1. **Approval of agenda** by consent (Page 1).
2. **Approval of proceedings of November 2015** by consent (Page 1).

TABLED MOTIONS FROM NOVEMBER 2015

3. **Move to initiate an Addendum to reconsider management options in the Chesapeake Bay from Addendum IV for 2016 based on the stock assessment update in 2015 and retrospective projections**
Motion by Mike Luisi; second by Rob O'Reilly.
4. **Motion to amend: Move to amend to remove the words "in the Chesapeake Bay"**. Motion by John Clark; second by Pat Augustine.
5. **Move to postpone indefinitely the two motions on the board, one from Mike Luisi (Maryland), one from John Clark (Delaware)** (Page 4). Motion by Mike Luisi; second by John Clark. Motion carried (Page 4).
6. **Move to approve conservation equivalency proposal options from Maryland and PRFC that meet the required reduction in Addendum IV as recommended by the TC and presented today** (Page 7). Motion by Mike Luisi; second by Rob O'Reilly. Motion carried (Page 7).
7. **Move to nominate Russ Allen as vice chairman of the Atlantic Striped Bass Board** (Page 9). Motion made by Martin Gary; second by Pat Augustine. Motion carried (Page 9)
8. **Move to adjourn** by consent (Page 10).

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)
Terry Stockwell, ME, Administrative proxy	Leroy Young, PA, proxy for J. Arway (AA)
Steve Train, ME (GA)	Loren Lustig, PA (GA)
G. Ritchie White, NH (GA)	Roy Miller, DE (GA)
Doug Grout, NH (AA)	John Clark, DE, proxy for David Saveikis (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Jocelyn Cary, MA, proxy for Rep. Peake (LA)	Ed O'Brien, MD, proxy for Del. Stein (LA)
Bill Adler, MA (GA)	Mike Luisi, MD, proxy for D. Blazer (AA)
Mike Armstrong, MA, proxy for David Pierce (AA)	Bill Goldsborough, MD (GA)
David Borden, RI (GA)	Kyle Schick, VA, proxy for Sen. Stuart (LA)
Mark Gibson, RI, proxy for J. Coit (AA)	Rob O'Reilly, VA, proxy for John Bull (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Louis Daniel, NC (AA)
David Simpson, CT (AA)	Michelle Duval, NC, Administrative proxy
Lance Stewart, CT (GA)	Martin Gary, PRFC
James Gilmore, NY (AA)	Derek Orner, NMFS
Emerson Hasbrouck, NY (GA)	Sherry White, USFWS
Pat Augustine, NY, proxy for Sen. Boyle (LA)	Dan Ryan, DC
Russ Allen, NJ, proxy for D. Chanda (AA)	
Tom Fote, NJ (GA)	

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

Ex-Officio Members

Mark Robson, Law Enforcement Representative

Staff

Robert Beal	Katie Drew
Toni Kerns	Max Appelman
Mike Waine	

Guests

The Atlantic Striped Bass Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, February 4, 2016, and was called to order at 8:00 o'clock a.m. by Chairman James J. Gilmore.

CALL TO ORDER

CHAIRMAN JAMES J. GILMORE: Good morning everyone and welcome to the Atlantic Striped Bass Board meeting this fine, beautiful morning. My name is Jim Gilmore; I am the Administrative Commissioner from New York, and I'll be chairing the board meeting today. I am taking over from the last two years from Doug Grout; who did a fine job of leading us through some difficult waters on striped bass.

But we still have more work to do. Thank you, Doug.

APPROVAL OF AGENDA

CHAIRMAN GILMORE: First order of business is to approve the agenda. The agenda is in the briefing packages that you received. Are there any changes to the agenda from the board? Seeing none; we adopt those as approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN GILMORE: The second order of business is to approve the proceedings from the November, 2015 meeting.

Are there any changes to those proceedings? Seeing none; we will adopt those as approved.

PUBLIC COMMENT

CHAIRMAN GILMORE: Before each one of our meetings we have a session for public comment, and I understand we have quite a few folks in the room. I've got a couple of names that wanted to make some comments; and this would be public comments on issues not on the agenda. We're going to be discussing several topics later on, particularly with the Chesapeake, so this is an opportunity to make some comments on issues that aren't on the agenda yet.

I would like to acknowledge that we have a group of folks from the Maryland Charterboat Association today. Welcome, Gentlemen. You'll get to see the process in motion. I do have two names that would like to make some public comment, so we'll go to those right now; first Phil Langley from the Maryland Charterboat Association, Phil, if you would go up to the public microphone.

MR. PHIL LANGLEY: Good morning. My name is Phil Langley; I'm president of the Maryland Charterboat Association. I set on the Potomac River Fisheries Commission and also the Maryland Sportfish Advisory Commission. On behalf of myself and a group of charterboat captains that came up this morning, many of them traveled four hours to be here this morning. These guys are pretty dedicated to make this meeting this morning.

I would like to thank you, Mr. Chair and the board for the opportunity to speak this morning. I would also like to thank all of you for your dedication in protecting our resource to ensure that we have a sustainable fishery now and well into the future. Like you, we have a passion for preserving the resource. We realize without it our professions would not exist. I appreciate that there are very tough decisions being made that affect the fisheries, and ultimately the livelihoods of many in all of our states. With that being said, the species affected by those decisions impact our states differently. The striped bass is a fish that has an enormous impact on the fishery in the Chesapeake Bay. Unlike most coastal states, we don't have a large variety of alternative species to target.

By having a larger selection of fish to target it is good, especially during times of reduction; as it provides options for the for-hire fleet to focus on and provide to their customers therefore, lessening the economic burden caused by reductions. To put this in perspective, MRIP data shows roughly 50 percent of the Chesapeake Bay's for-hire fleet focuses primarily on striped bass as a primary target compared to roughly half that from a lot of the coastal states.

The slot option elected last year in our spring coastal fishery, combined with the large 2011 year class,

growing slower than anticipated resulted in reductions much greater than the mandate at 25 percent in the spring harvest and a 20.5 percent mandated in the fall/summer season. This resulted in fewer trips being run by the charter fleet, causing a huge economic impact for the for-hire fleet. The impacts to the 2016 season are unknown at this time.

However, there is great concern over how 2016 reductions will impact the livelihood of the Bay's for-hire fleet, as well as many small businesses; hotels, restaurants, shops, that are dependent on this fishery. As the board moves forward, I ask that you please consider the affects to the states that may feel the greatest economic impact to these reductions in the future, and provide flexibility to permit these states to achieve the required reductions while minimizing the economic impacts. Thank you very much for your time.

CHAIRMAN GILMORE: Thanks, Phil. Next I have Robert T. I'm sorry I can't make out the last name Brown, Robert T. Brown, thank you.

MR. ROBERT T. BROWN: Robert T. Brown; President of the Maryland Waterman's Association; thank you for letting me speak today. In our association we not only have netters, but we have hook and liners and we've got a big commercial fleet of charterboats that do it. The slot limit was very disastrous to us last year.

However, I would like to thank the Striped Bass Management Board and any of the members who are present for the Policy Board for the consideration and approval of Maryland's request for the assessment update in 2016. We do have the very important striped bass fishery in the state of Maryland, and want to thank you for all your efforts and giving us a chance to help get back on track.

Also, we have in our fishery; our watermen's average age is probably about close to 60 years old. A lot of the things we do, it takes three years to get back on track. That is just how long it takes for this process to go through. Our watermen don't have many three year segments left. Once you get to 60 then you're

63. I'm 66; I don't have too many three year or ten years left.

Hopefully we can get this turned around some. We also hear a phrase all the time that it is not being overfished and overfishing has not occurred. It seems like the sword only has one edge but it is supposed to have two. It can be cut off real quick, but it seems like it takes a long time to get it back. I know it is a hard job for you all to do, because you have a lot of information you have to take in. Also, we've been fortunate enough that in 2013 we had a young of the year index of 11, and then last year it was double the normal, it was 24.2. With these young of the year indexes coming in at such a high rate that shows that we do have a good spawning stock out there. You know it is conditions into the rivers that make this spawning stock fertilize and come into the young of the year index.

The water quality is really one of the main problems that we have. Right now Virginia Dominion Power has been granted a permit to drain some fly ash ponds off of Quantico Creek, right where our breeding ground is or where they spawn at the rock fish and many other fish. They'll be dumping possibly 215 million gallons of water out of these ash ponds, and they contain selenium, cadmium, arsenic and a host of other metals.

For the past 30 years they have discovered that there has been a toe drain in one of these ponds, and that has been filtering in. That has to do with the water quality we have in the Potomac River, and we are very concerned about that. It has been appealed at this time. We don't know what the status will be.

But that was just more or less an update on, it is more than just management, it is water quality and when the water quality and conditions are right our stocks come back. Look at 1982 how low our spawning stock was, and that jump-started us back. Thank you very much for your time.

CHAIRMAN GILMORE: Thank you, Mr. Brown

**RECONSIDER TABLED MOTIONS
FROM NOVEMBER MEETING**

CHAIRMAN GILMORE: Any other comments before we move on to the next agenda from the public? Seeing none; we're going to get into our next agenda item, which are we need to reconsider the tabled motions from our November meeting. We're going to put those up on the board. They are also in your briefing packages. First we'll just open us up to any comments we may have on this. Mike Luisi.

MR. MICHAEL LUISI: I know that we need to take action today on the two motions that are on the board. When I think back to November when we all convened at our annual meeting in Florida, these motions were heavily debated. There was a lot to it. We had just received information regarding an update to the striped bass stock assessment, for which terms like retrospective bias and others were presented.

I believe that the board at that time started to look at, I truly believe that there was a feeling around the board that maybe what we did as a result of Addendum 4, maybe we would know a little bit more now than we did when we made those decisions; and that this update to the stock assessment was a first sign at a recovery. Maybe I should say it as it was a showing that the stock was not in the condition that we once thought, and that they were beginning to turn around.

There were a lot of board members around the table that agreed with the motion to reconsider and to go back and revisit Addendum 4, to look at whether or not the 25 percent reduction along the coast and the 20.5 percent reduction in the Chesapeake Bay were reasonable at the time; given that what we understood at the time back in November, and I'm not going to deviate from that. But the impact especially to the fishermen in Maryland was tremendous last year.

Charterboat captains, commercial fishermen and recreational anglers all felt the impacts of the rules that were set forth in Addendum 4. While I feel that we made really good progress at that time, when

these motions were tabled, I personally lost sight of any type of relief or any type of change in 2016. I just thought I would take a moment to remind the board that once the motions were tabled we began thinking about, okay how can we now use this information that has been brought to light and consider that information for a future year or a future time? We discussed an assessment update. The assessment update in 2016, there will be some reflection there we hope; showing that the changes that we made as a result of Addendum 4 had impact on fishing mortality and spawning stock biomass. The 2016 assessment update was not planned.

There was no plan to have an update, and the board chair at the time spoke of the next update being in 2018 or even 2019, depending on timing. I do want to thank the board. I do want to thank the policy committee as well as Mr. Brown stated, for approving an assessment update for the future and for this year. I think that that information will again, as it did last year, it will provide us information that we can use the best available science to use for management for 2017 or beyond.

I would like to make a motion regarding these two tabled motions that we're looking at on the board today. That motion is going to reflect the commitment that the state of Maryland made, and other Chesapeake Bay jurisdictions made at the time to, let's use the word to postpone the effort that we were putting into asking this board to consider changes to the regulations that were in place of Addendum 4 in 2016. We committed back in November to holding off on that pursuit, in the event that the board approved the assessment update.

The board did approve the assessment update, so I feel committed at this time in thanking the board and moving forward, to making a motion which reflects that commitment of the jurisdictions in the Chesapeake Bay, which will postpone any action on these motions. However, I don't want that postponement to be viewed by the board or by the members of the audience here today or anyone listening on the webinar that this is some way of just saying, we're no longer interested.

I think it is absolutely clear in just looking at the room today and given the testimony by Phil Langley about the interest and the passion of the fishermen of Maryland; and the interest that they have in doing what is right and managing the Chesapeake Bay population of striped bass in a responsible way. It is clear today just looking in the crowd; and this is just a fraction of the membership and a fraction of those who are interested that could make it in here today.

With all of that said, I think that we have a lot to look forward to. There is a 2016 assessment update that we will receive, hopefully by late summer, early fall; which will provide us the guidance as managers, the most up-to-date and the best available science at the time to consider changes for 2017 and beyond. **With that said today, Mr. Chairman, I would like to make a motion to postpone indefinitely the two options on the board.**

CHAIRMAN GILMORE: Do I have a second to that motion? John Clark.

MR. LUISI: Mr. Chairman just a quick follow up with that. I want to make sure that it is clear what my understanding of a postponement indefinitely means that we will essentially raise these motions up into what a colleague yesterday referred to as "the cloud" and it will hang there. It could be drawn down at any time, or it could stay there forever. We also could consider the same question or a similar question yet differently worded at a future meeting. That would be my intention, would be to just hold off on taking any official action here today so that we could consider these same types of options for the future.

CHAIRMAN GILMORE: Understood Mike, and we agree with that. Remind the board that this is a non-debatable motion. It is to just essentially postpone so we will not have any discussion on this. I will give everybody 30 seconds to caucus. Is this a question of order?

MR. DENNIS ABBOTT: Yes Mr. Chairman. Do we have to do each motion separately, I believe as we did when we made them?

CHAIRMAN GILMORE: Mike that was your intent to cover both motions. Do you want to perfect that somewhat and add in for both Maryland and Delaware, because it was two motions. One that we were talking about was put up for the Chesapeake Bay from Maryland and there was a second one put up, the Chesapeake Bay from Delaware.

MR. LUISI: Yes, I mentioned that the two motions on the board. We could perfect that to say one from Mr. Luisi, parentheses Maryland, one from Mr. Clark, parentheses Delaware; something to that effect.

CHAIRMAN GILMORE: Is that good, Dennis? I'll give 30 seconds to caucus and then we'll take the vote. Okay I think we're ready. All those in favor of the motion please raise your hand; 15, all those opposed, 1. Rhode Island is voting no?

MR. ERIC REID: Voted in favor.

CHAIRMAN GILMORE: **Those against, any null votes, any abstentions? Seeing none; the motion is approved 16-0-0-0.** Thanks for that.

CONSIDER CONSERVATION EQUIVALENCY MANAGEMENT PROPOSALS FROM MARYLAND

CHAIRMAN GILMORE: Let's move on to our next agenda item, which is to Consider Conservation Equivalency Management Proposals from Maryland. We're going to start off; Max Appelman is going to do a presentation on Maryland's proposals. Technical Committee Report

TECHNICAL COMMITTEE REPORT

MR. MAX APPELMAN: I am going to sort of tag team this PowerPoint with Mark Robson, Chair of the LEC or commission staff with LEC. Two proposals were submitted. The first one did receive full TC review and LEC review, and that was included in your meeting materials. The second one was handed out just before this meeting. That received TC review, but did not get formal comment from the LEC.

I'll give a brief overview of the conservation equivalency process, and then touch on the first

proposal from Maryland and PRFC, cover TC comment and LEC comment; well, Mark will cover the LEC comment for that proposal and then we'll loop back around to the second proposal. I think that is easiest to follow this in chronological order.

In Addendum 4 it essentially states that states can submit alternative regulations that are conservationally-equivalent to regulations approved in Addendum 4 for board review and approval. Those proposals must demonstrate through quantitative analysis that they are conservationally-equivalent and achieve the required reduction in harvest.

That is a 25 percent reduction for coastal fisheries and a 20.5 percent reduction for Chesapeake Bay fisheries. Those proposals are subject to TC and LEC review for board consideration. To that point the TC did develop criteria for Addendum 4 Conservational Equivalency Proposals detailed in Memo 14-110, and the LEC does have a document out detailing their guidelines for enforceability. From the first proposal, these options have all been taken either directly from Draft Addendum 4 that went out for public comment, or were previously approved by the TC and the management board prior to implementation in 2015. All these options up on the board have been reviewed, and none of them are new options to Maryland or PRFC. There was one option that was new to Maryland in the first proposal, and that is a two fish bag limit at 28 to 38 inch slot size or 44 inch minimum size.

That is for their coastal fishery recreational fishery. This option was adopted from Delaware's regulations. I believe this is the current regulation for Delaware. I think the main purpose for proposing this option was that Maryland coastal anglers kind of requested that regulations be consistent between these jurisdictions; noting that Maryland's coastal area is relatively small and as we know it is adjoining Delaware's coastal region.

This has been approved for use in Delaware. It has been adopted in this proposal for use in Maryland, but it has not yet been approved for use in Maryland. PRFC's proposal is rather straightforward and it is

simply to implement whatever regulations that Maryland implements in the Bay for their summer, fall and trophy fisheries.

PRFC requested the TCs approval to match those regulations implemented by Maryland. On behalf of the TC I'll cover their comments. As I stated, all but one of the options had been previously reviewed and approved by the Technical Committee, and the Technical Committee was very comfortable with Maryland's justification and analysis for adopting Delaware's regulations for their coastal fishery. With that the TC approved both Maryland's and PRFCs proposals with consensus. I'll hand over the microphone to Mark for LEC comment.

LAW ENFORCEMENT COMMITTEE REPORT

MR. MARK ROBSON: It has pretty much been covered already so I'll be very brief, but basically in looking at this additional proposal, the Law Enforcement Committee was meeting in teleconference on January 7, and was able to provide good input on this. We support this particular conservation equivalency proposal particularly, because it is providing for a better consistency in regulations among some very close jurisdictional areas.

That is a concept that we fully support. It meets with our guidelines for enforceability and it just makes good sense. There was just a related discussion. I'll just very briefly point out that in thinking about having these consistent regulations particularly a slot limit; questions were asked among the Law Enforcement Committee members about their specific language on how fish are measured.

It was just some general thought and guidance that states may want to review with their law enforcement personnel, and if necessary even clarify fish measurement procedures for consistency among these jurisdictions. If the language describes whether pinching the tail is allowed or not, and just specifically how that fish is measured.

It is important with slot measurements, because you can have a little bit of slop either at the lower end or

the upper end, depending on how those fish are handled, and so some tightening of any language or regulations is certainly worth looking at if it is necessary. That was really the gist of the comments from the Law Enforcement Committee, Mr. Chairman.

MR. APPELMAN: Just to finish up with this presentation, there was a second round of a proposal submitted by Maryland, and that had two new options to consider. These are in addition to the options that we just showed you that we just covered. The first option, and let me back up a second. The TC was able to review these in time. The LEC was not. Mark might fill in a little bit to that point. The TC reviewed both these options. For the first option for the spring trophy fishery, it was a one fish bag limit at 35 inch minimum size; and the TC had no concerns with this option and they approved that option with consensus.

When it came to the second option they were unable to make any recommendations based on the information that was brought to them at that time, and requested that Maryland conduct further analysis with those options. Following that analysis the option did not meet the requirements for harvest reduction and was removed from the proposal, and so it is no longer being considered.

If Mark has anything to add about the LECs comment on the first option, please feel free. I didn't think so, okay. Just to wrap it all up, these are all the options that are being proposed. Only two of them are new, one for the coastal one for the spring trophy; and I'm just going to leave these up on the board for you guys to consider.

CHAIRMAN GILMORE: Do we have any questions for either Max or Mark on the presentations? Wow, you guys did a great job. Oh, sorry, Loren.

MR. LOREN W. LUSTIG: For the Law Enforcement Committee, a question please. You mentioned the compression or the handling of the tail as being an issue that needs to be clarified, whether we're going to be consistent with that or not. Are there any other issues in the measurement that are currently

confusing to the public or complicating for our team of people?

MR. ROBSON: Well, just to be clear. This was not an issue that was raised as a concern regarding these proposals. It was just kind of an additional amount of comment from law enforcement experts that states may want to look at their specific language. The example came from Florida, where there was formerly language that indicated you measure the fish with natural eye. This apparently created lots of problems for how that fish is exactly measured.

As long as it is clear how the fish is to be measured, whether the tail is pinched or not, it is just something to look at. It is not really an issue that was pointed out as a concern or a problem for this particular fishery. But if you are looking at slot limits, it is just something to look at. Perhaps the Law Enforcement Committee can just take a look at the comparative state languages at the next meeting and bring back any issues if there are any, but it is not a major concern.

CHAIRMAN GILMORE: Other questions? Roy Miller.

MR. ROY W. MILLER: I am a little confused about what I'm seeing on the boards. The 36 inches has been changed to 35; that is the new proposal. I see that. But down at the bottom it has 18 inches and it has two fish. That is the previous regulation rather than what is enforced now or should it be one fish? Can I get some clarification on what that should be, because our document that was handed out for the meeting lists 18 inches and one fish?

MR. APPELMAN: Thanks for pointing that out. That is a typo on my end. That should be one fish bag limit at 18 inch minimum.

CHAIRMAN GILMORE: We'll flog Max later. Any other questions for Max or Mark, all right seeing none; if we're going to adopt these we're going to need a motion. Mike Luisi.

MR. LUISI: Before I make my motion I do want to say thank you to the Technical Committee and staff that worked very quickly on the turnaround on what we

have been calling the second proposal that we submitted. This proposal was a result of collaboration with the Department of Natural Resources and the charterboat industry.

It was an attempt to look at some ways to be a little more creative in our approach to provide some flexibility, so that the businesses that have really felt the impact of the reductions that we've taken could find their path through 2016, given that there was no relief coming in the form of board action to provide that relief.

Thanks again, just for board members just to understand that the option that provided the choice that we've been referring to as the Captain's Choice Option that did not meet Technical Committee standards was the information just became available due to the timing of how this all came through. But it did not meet the 20.5 percent reduction, and therefore that is why we have removed it from our proposal for board consideration. Again thank you, and if you are ready I do have a motion. I believe somebody has helped me craft one and I will read it if I can see it on the board, Mr. Chairman.

CHAIRMAN GILMORE: Let's get that up. Go ahead, Mike.

MR. LUISI: Okay I would like to move to approve conservation equivalency proposal options for Maryland and PRFC that meet the required reduction in Addendum IV as recommended by the TC and presented today.

CHAIRMAN GILMORE: Second from Rob O'Reilly. Is there any discussion on the motion? John Clark.

MR. JOHN CLARK: I just have a comment that on the coastal regulations that in Maryland it could be a case of the grass is always greener. Delaware anglers made it clear they wanted a two fish option, so we did the calculations and came up with that slot. But we've had quite a few complaints that all that anglers are catching are fish that they can't keep. They are in that slot, and almost as though we had a fiendish plot in mind when we came up with these regulations; just a little warning.

MR. LUISI: Thanks, John. Our plan is to take whatever is approved today back to our stakeholders and have that discussion before we were to implement anything.

CHAIRMAN GILMORE: Other discussion on the motion? Seeing none; is there any public comment that anyone would like to make on the motion, just simply on the motion itself from the audience? Seeing none; I will bring it back to the board. Any last comments before we go to a vote? Do we need a caucus on this? It doesn't look like it. Is there any objection to the motion? **Seeing none; we will adopt this as unanimously approved.**

2016 COOPERATIVE WINTER TAGGING PROGRAM UPDATE

CHAIRMAN GILMORE: That brings us up to our next agenda item, which is the update of the 2016 Cooperative Winter Tagging Program. Dr. Laney is going to give us an update on that. Wilson.

DR. WILSON LANEY: First let me be sure I thank our funding sources that are funding both the trawling cruise as well as the hook and line cruises this year, and those are matching grants from the Saltonstall-Kennedy Program from the National Marine Fisheries Service and from a North Carolina Coastal Recreational Fishing License Grant.

If it weren't for those two grants we wouldn't be doing this work. I also want to thank all of our partners who supplied scientists for the scientific party aboard the research vessel Savannah this year. There were three of us from the Fish and Wildlife Service. We had one from the National Marine Fisheries Service Pascagoula Lab; we had two folks from the North Carolina Division of Marine Fisheries.

We had Ryan Hastings from the Maryland DNR Fishery Service and Matt Balazik from Virginia Commonwealth, Chuck Bangley from East Carolina, and I'm sure I'm leaving somebody out. There were 12 of us in total. But thanks for all those folks and for their agencies that approved them attending and participating.

The trawling component of the operation took place between January 6th and 19th. Weather was a big factor. We wound up sitting at the dock for three days at Duke Marine Lab, and then anchored up off Wallops Island, Virginia for a while, because sea conditions and wind conditions just made things too challenging for us to work on the back deck.

We also had a few ship issues that cost us some lost time. We did however complete 104 sample sites; we collected data on multiple ASMFC species. We filled a lot of link bins for biological samples for king fishes, weakfish, spot, croaker, sheepshead, a number of other species as well as taking data on everything that we caught this year; down to the last bay anchovy.

We had a difficult time finding striped bass this year, because as most of you are aware, I think the water temperatures are extremely warm. We had to go all the way north into Maryland waters for the first time ever, and thanks to Harry Hornick and all the Maryland folks. Thankfully we had Ryan onboard, so we were able to get authorization to go ahead and sample in Maryland waters.

We did manage to find striped bass. We tagged and released 110, which is I think the lowest number in the time series. But again it is a function of the fact that the RV Savannah doesn't travel as fast as some other vessels, and we did lose a lot of time due to the weather. That is the short summary on the trawling component of the cruise.

Now the hook and line component, and I have to give credit here to Charlton Godwin from the North Carolina Division of Marine Fisheries. Charlton has been running that program for us for a number of years now, does a great job coordinating that and implementing it. Those trips are being run aboard the fishing vessel midnight sun out of Rudy Inlet, Virginia once again this year.

We are able to be more flexible with that contract. We cover a broader period of time, and so we're able to have a lot of weather days built into that and schedule 10 trips sometimes during the interval, all the way through February 29th this year, but I think

we're going to complete those trips earlier than that. I am very pleased to report that on those trips thus far, and I believe we made six. We have managed to tag, or Charlton and the crew have managed to tag 670 total striped bass. We're up to a total of 780, and we're hoping to break 1,000. Dr. Duval may want to say something about the fact that I understand she participated in one of the 200 plus day trips and tagged 225 striped bass with Charlton's assistance on that particular trip.

We are really appreciative for her efforts in that regard. She tagged almost a third of the total striped bass that we tagged on the hook and line trips so far. I know some of you have had a chance to get out on some of those trips. I would encourage you if you haven't made one, to get out there and do it. I made some last year.

I haven't been on one this year, but I like to go out and take the data. They did make me reel in a couple of stripers. They used parachute rigs with double lures on them. Sometimes you're reeling in two 30 pound fish, and I understand on the last trip I guess, where we got 64, they got into 50 and 60 pound fish, so that was really an experience.

You will notice I haven't said where exactly we found the fish, and I'm not going to. The U.S. Coast Guard and NOAA Law Enforcement folks want us to downplay the location of these fish, but I will tell you they are in the EEZ, so from an enforcement perspective, from a protection of your spawning stock winter aggregation, the fish are relatively protected now, because they are spending a lot of time in the EEZ.

It seems like for the last four or five years they've gone progressively further north and progressively further offshore.

That is my report, Mr. Chairman. There will be a detailed analysis coming later. I will just say one other thing, and that is as of the moment we don't have funding for future operations.

There are some options under discussion for the hook and line. I am very optimistic that that program

will get funded. I've talked to Pat Campfield, and I think with regard to the trawling program, we'll have some further discussion of that at the Joint Assessment Science and Management and Science Committee's meeting, which is coming up in April. We'll keep you posted on where those discussions go. I would be happy to answer any questions.

CHAIRMAN GILMORE: Great report. If you every need any help, give me a call, it has been many years since I've tagged fish, but I would love to do it again. Michelle, do you want to add anything to your date with the striped bass?

DR. MICHELLE DUVAL: I would definitely encourage any board members who haven't had the opportunity to get out, to go. I know this year was a little bit tough. I was scheduled to go on the first couple of trips that had to be postponed. It is very interesting, well – interesting – challenging when you are searching for the fish and are having to go further than you think you might need to, to get there.

I mean the one thing I will add to what Wilson said is that on the trip that I was on we actually had a lot of big fish, but we also had a surprising number of small males that came through as well, so it was interesting to see those guys out there. But for the most part it was just the ladies receiving their new jewelry. It was fun! Get out there!

CHAIRMAN GILMORE: Great thanks. Questions for Wilson okay seeing none; thanks a lot Wilson and keep up the good work.

ELECTION OF VICE-CHAIR

CHAIRMAN GILMORE: Our last agenda item is we are going to need to elect a Vice-Chair, because I'm all alone up here. If someone has a nomination the floor is open; Marty Gary.

MR. MARTY GARY: **I would like to move to nominate as Vice-Chairman for the Atlantic Striped Bass Management Board, Mr. Russ Allen from the state of New Jersey.**

CHAIRMAN GILMORE: Do we have a second? Pat Augustine. Go ahead, Pat.

MR. PATRICK AUGUSTINE: **I move that we move forward with this nomination. This is wonderful. Close nominations and cast one vote for Mr. Russ Allen as Vice-President of the Atlantic Striped Bass Management Board.** Russ, congratulations!

CHAIRMAN GILMORE: Thanks, Pat. Was that Vice-President or Vice-Chairman?

MR. AUGUSTINE: Vice-President, no Vice-Chairman thank you.

MR. RUSS ALLEN: I appreciate the promotion there.

CHAIRMAN GILMORE: Congratulations, Russ. Welcome aboard.

OTHER BUSINESS

CHAIRMAN GILMORE: We are just down to other business now. Is there any other business to come before the striped bass board? Bill Goldsborough?

MR. WILLIAM J. GOLDSBOROUGH: I was just wondering if staff could give us any indication on the time table we can expect for the update assessment this year.

MR. APPELMAN: Sure, compliance reports are submitted in mid-June, June 15, I believe to be exact. As soon as that information is in the Stock Assessment Subcommittee can go to work on putting all that information together. Generally on a schedule for a stock assessment update that is available for board review at the November meeting. I think that is the earliest that we could get that done.

MR. LUISI: Thanks Max. As we all know, timing is critical to things that we do and given that this is a turn of the crank. It is not a benchmark assessment. I would urge my counterparts in the other states who are providing information for this update to do everything you could possibly do to get that information in, so that the staff can work on turning this crank and generating that update.

I think as far as timing, if there is some possibility of achieving an August meeting report, it would be beneficial, just considering that the updated report may begin the discussion again that we had last year about considerations for 2017, and given the timing of meetings it would just be helpful. I just want to put that on the record, thank you.

ADJOURNMENT

CHAIRMAN GILMORE: Good comments, Mike. Any other business before the board? Do I have a motion to adjourn; so moved, second, okay I would just like to make a final thanks to the Maryland fishermen for coming out and I hope to see you at future meetings. Thank you, we are adjourned.

(Whereupon the meeting was adjourned at 8:45 o'clock a.m. on February 4, 2016.)



Atlantic States Marine Fisheries Commission

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Striped Bass Advisory Panel Meeting Summary

Conference Call
April 21, 2016

Advisory Panel Members: Louis Bassano (Chair, NJ), Arnold Leo (NY), David Sikorski (MD), John Pedrick (PA), John McMurray (NY), William Hall, Jr. (VA), Kelly Place (VA), Pete Whelan (NH), Edwin Cook (RI), Ed O'Brien (MD)

ASMFC Staff: Max Appelman, Deke Tompkins

The Striped Bass Advisory Panel (AP) met via conference call to receive an update from staff on two striped bass management issues that are currently not being discussed at the Management Board-level: 1) the EEZ Transit Zone Clarification and Access Act (H.R. 3070), and 2) the western North Atlantic squid resource. Also, the AP elected a Chairman and Vice-chairman.

"EEZ Transit Zone Clarification and Access Act" (H.R. 3070)

Although the current draft of the bill does not convert the Block Island Sound Transit Zone to state waters or permit striped bass fishing within the zone, nor does it change the current process to permit striped bass fishing in any part of the EEZ in the future, the consensus of the AP is that the passing of H.R. 3070 would set unfavorable precedence for the use of legislative procedures to override the current fishery management and conservation framework. AP members noted that, regardless of the final language, this is not the proper avenue for addressing issues related to prohibited fishing for striped bass in uniquely located federal waters. The AP is in support of fishery management processes that are scientifically sound, are based on technical expertise, and provide ample opportunity for public participation. Additionally, in light of a declining spawning stock, AP members expressed concern regarding insufficient data to support the implementation of a recreational striped bass fishery in currently prohibited waters. It was noted that considerable action was taken prior to the 2015 fishing season in order to reduce fishing mortality back to target levels, and stabilize (or reverse) the downward trend in spawning stock biomass. Management has not yet had the opportunity to respond to the performance of those measures, thus it is the consensus of the AP that the precedence of this bill is not only unwarranted, but is also ill-timed.

Western North Atlantic Squid Resource

Longfin squid (squid) fishing and harvest have increased recently in Nantucket Sound and the surrounding areas. Squid are a well-known food source for striped bass, and the Nantucket Sound uniquely supports large concentrations of both prey and predator during the summer

months. Some AP members (and other fishermen) in the region have reported a decline of migratory striped bass during that time. It is believed that the above average harvest of squid may be a contributing factor to the decreased availability of striped bass during summer/fall fishing seasons. The Mid-Atlantic Fishery Management Council (Council) is currently drafting a Squid Capacity Amendment which considers options for a squid buffer zone beyond state waters in the area south of Nantucket, as well as addressing the potential for increased effort in the squid fishery. Staff will track the progress of the amendment and provide updates to the AP as necessary. Since squid are of great importance to the striped bass resource, the AP noted that it would appreciate the opportunity to submit comment on the draft amendment, collectively, in support of a squid buffer zone surrounding Nantucket Sound.

Elect Chair and Vice Chair

The AP elected Captain Louis Bassano to the position of AP Chair, and Kelly Place to the position of AP Vice-Chair.

Other Business

The AP would like to meet more frequently and become more proactive regarding conservation and management of Atlantic striped bass. The AP Chair and staff, in consultation with the Board Chair, will discuss the AP's options moving forward.

Atlantic States Marine Fisheries Commission

ISFMP Policy Board

*August 3, 2016
1:30-3:30 p.m.
Alexandria, Virginia*

Draft Agenda

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

1. Welcome/Call to Order (*D. Grout*) 1:30 p.m.
2. Board Consent (*D. Grout*) 1:30 p.m.
 - Approval of Agenda
 - Approval of Proceedings from May 2016
3. Public Comment 1:35 p.m.
4. State Directors Meeting Report (*D. Grout*) 1:45 p.m.
5. Executive Committee Report (*D. Grout*) 1:50 p.m.
6. Review of Stock Rebuilding Performance (*T. Kerns*) 2:00 p.m.
7. Discuss Recommendation from South Atlantic State Federal Management Board regarding Commission involvement in Cobia Management (*J. Estes*) **Action** 2:15 p.m.
8. Discuss Revisions to Conservation Equivalency Guidance Documents (*T. Kerns*) 2:45 p.m.
9. Risk and Uncertainty Policy Workgroup Progress Report (*S. Madsen*) **Action** 2:55 p.m.
10. Habitat Committee Report (*L. Havel*) 3:05 p.m.
11. Artificial Reef Committee Report (*L. Havel*) 3:15 p.m.
12. Atlantic Coastal Fish Habitat Partnership Report (*L. Havel*) 3:20 p.m.
13. Review Non-Compliance Findings, If Necessary **Possible Action** 3:25 p.m.
14. Other Business/Adjourn 3:30 p.m.

The meeting will be held at the Westin, 400 Courthouse Square, Alexandria, Virginia; 703.253.8600

MEETING OVERVIEW

ISFMP Policy Board Meeting
Thursday, August 3, 2016
1:30-3:30 p.m.
Alexandria, Virginia

Chair: Doug Grout (NH) Assumed Chairmanship: 10/15	Vice Chair: Jim Gilmore (NY)	Previous Board Meeting: May 4, 2016
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 4, 2016

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

4. State Directors Meeting Report (1:45-1:50 p.m.)
Background <ul style="list-style-type: none">• The State Directors will meet on August 1, 2016.
Presentations <ul style="list-style-type: none">• D. Grout will provide an update of the meeting
Board direction for consideration at this meeting <ul style="list-style-type: none">• none

5. Executive Committee Report (1:50-2:00 p.m.)
Background <ul style="list-style-type: none">• The Executive Committee will meet on August 2, 2016.
Presentations <ul style="list-style-type: none">• D. Grout will provide an update of the committees work
Board direction for consideration at this meeting <ul style="list-style-type: none">• none

6. Review of Stock Rebuilding Performance (2:00-2:15 p.m.)
Background

- As part of the ASMFC 2014-2018 Strategic Planning process, the Commission agreed to conduct more frequent reviews of stock status and rebuilding progress.
- The ASMFC's 2016 Action Plan tasks the Policy Board with conducting a review of stock rebuilding performance.
- This will include an update on the Climate Change Work Group

Presentations

- A presentation will be given on the stock rebuilding performance for each species managed by the Commission by T. Kerns (**Supplemental Materials**)

Board actions for consideration at this meeting

- Determine if the rebuilding performance for each species is consistent with the Commission Vision and Goals.
- If the performance is not consistent with Vision and Goals, what action should be taken.

7. Discuss Recommendation from South Atlantic State Federal Management Board regarding Commission involvement in Cobia Management (2:15-2:45 p.m.) Action

Background

- The South Atlantic Council Fishery Management Council (Council) requested the Commission consider joint or complementary management of cobia with the Council (Briefing Materials).
- In 2105, 82% of the cobia harvest occurred in state waters. The ACL was exceeded by approximately 91,000 pounds. The Council is looking for a more flexible management approach to allow for timely adjustments of measures but still provide equitable access across multiple jurisdictions while meeting conservation goals.
- The Policy Board tasked the South Atlantic State/Federal Fisheries Management Board (SASFMB) to look at types of management scenarios and bring a recommendation to the Policy Board in August

Presentations

- J. Estes will present a recommendation on behalf of the SASFMB.

Board guidance for consideration at this meeting

- Does the board want to consider a cobia FMP?

8. Discuss Revisions to Conservation Equivalency Guidance Documents (2:45-2:55 p.m.)

Background

- The Executive Committee tasked staff to update the Conservation Equivalency Guidance Document to reflect the current practices of the Commission.
- The MSC and ASC reviewed proposed revisions and made recommendations to the Executive Committee (**Briefing Materials**).
- The Executive Committee will discuss the proposed revisions at the August 2 meeting.

Presentations

- T. Kerns will review the executive Committee discussion on the Conservation Equivalency Guidance Document

Board guidance for consideration at this meeting

- None

9. Risk and Uncertainty Policy Workgroup Update (2:55-3:05 p.m.) Action**Background**

- Previously, both scientific oversight committees recommended developing a Commission Risk and Uncertainty Policy and advised the formation of a multi-disciplinary workgroup.
- The Risk and Uncertainty Policy Workgroup was formed and met to develop a timeline and create an overarching statement to guide policy development.
(Supplemental Materials)

Presentations

- S. Madsen will review (1) the timeline for the development of the Commission's Risk and Uncertainty Policy and (2) the Risk Policy statement developed by the Workgroup
(Supplemental Materials).

Board actions for consideration at this meeting

- Approve the Risk Policy statement

10. Habitat Committee Report (3:05-3:15 p.m.)**Background**

- The Habitat Committee met in May in Cape May, New Jersey
- The Sciaenid Habitat Source Document is in the final writing stages.
- The Committee provided feedback on NOAA's Atlantic Sturgeon Critical Habitat designations.

Presentations

- L. Havel will present the Habitat Committee updates.

Board direction for consideration at this meeting

- None

11. Artificial Reef Committee Report (3:15-3:20 p.m.)**Background**

- ACFHP's The Artificial Reef Committee met jointly with the GSMFC Artificial Reef Committee in March in San Antonio, Texas.
- ASMFC co-hosted the National Artificial Reef Workshop with NOAA Fisheries in Alexandria, VA in June.

Presentations

- L. Havel will present Artificial Reef Committee updates.

Board direction for consideration at this meeting

- None

12. Atlantic Coastal Fish Habitat Partnership Report (3:20-3:25 p.m.)

Background

- ACFHP's Science and Data and Steering Committees met in May in Cape May, New Jersey to discuss several topics including: updating ACFHP's 5-year conservation strategic plan, the black sea bass habitat contract, and the eel grass conservation project in Narragansett Bay, Rhode Island.
- A funding offer has been made to The Nature Conservancy to remove the Bradford Dam in Westerly, Rhode Island with funds from USFWS NFHAP funds.
- Southeast fish habitat mapping project has begun thanks to funding from NOAA. The goal of the project is to prioritize habitat areas on along the Atlantic coast for restoration and protection.

Presentations

- L. Havel will present ACFHP updates.

Board direction for consideration at this meeting

- None

11. Review Non-Compliance Findings, if Necessary

12. Other Business

13. Adjourn

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ISFMP POLICY BOARD**

**The Westin Alexandria
Alexandria, Virginia
May 4, 2016**

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

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INDEX OF MOTIONS

1. **Approval of Agenda by Consent** (Page 1).
2. **Approval of Proceedings of February 2016 by Consent** (Page 1).
3. **Move for the ISFMP Policy Board to direct the South Atlantic Board to develop the alternatives for a fishery management plan for joint, complementary, and exclusive jurisdiction for the Commission** (Page 8). Motion by Robert Boyles; second by Jim Gilmore. Motion amended.
4. **Motion to amend: Move for the South Atlantic Board to bring a recommendation to the Commission through the ISFMP Policy Board (Page 13)** Motion by Spud Woodward; second by Tom Fote. Motion carried (Page 15).
5. **Main motion as amended: Move the ISFMP Policy Board direct the South Atlantic Board to develop the alternatives for a fishery management plan for joint, complementary, and exclusive jurisdiction for the Commission. The South Atlantic Board will bring a recommendation to the Commission through the ISFMP Policy Board.** Motion carried (Page 15).
6. **Move to approve the assessment schedule as modified today** (Page 20). Motion by Roy Miller; second by Emerson Hasbrouck. Motion carried by consensus (Page 20).
7. **Motion on behalf of the American Lobster Board (Page 24): Move the Commission to send a letter to the President of the United States of America regarding the following: The preference of the Commission would be for the current New England Council Coral Management Process to continue, without presidential use of the Antiquities Act, to protect deep sea corals. Should the President/CEQ decide to designate a New England deep water monument prior to the end of his presidency, the Commission requests that any area so designated, be limited to the smallest area compatible with the proper care and management of the objects to be protected; as required by the Antiquities Act.**

Further, the area be limited to depths greater than approximately 900 meters, and encompass any and all of the regions seaward of this line out to the outer limit of the EEZ. That only bottom tending fishing effort be prohibited in the area, and that all other mid water/surface fishing methods, recreational and commercial be allowed to continue to use the area. That the public and effected user groups be allowed to review and comment on any specific proposal prior to its implementation. Motion carried (Page 26).
8. **Motion to adjourn** by Consent (Page 26).

ATTENDANCE

Board Members

Patrick Keliher, ME (AA)	Tom Moore, PA, proxy for Rep. Vereb (LA)
Terry Stockwell, ME, Administrative proxy	David Saveikis, DE (AA)
Sen. Brian Langley, ME (LA)	John Clark, DE, Administrative proxy
Steve Train, ME (GA)	Roy Miller, DE (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Doug Grout, NH (AA)	David Blazer, MD (AA)
Ritchie White, NH (GA)	Bill Goldsborough, MD (GA)
Rep. Sarah Peake, MA (LA)	Ed O'Brien, MD, proxy for Del. Stein (LA)
Bill Adler, MA (GA)	John Bull, VA (AA)
Dan McKiernan, MA, proxy for D. Pierce (AA)	Rob O'Reilly, VA, Administrative proxy
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Rep. Bob Steinburg, NC (LA)
Jason McNamee, RI, proxy for J. Coit (AA)	Doug Brady, NC (GA)
David Borden, RI (GA)	Chris Batsavage, NC, proxy for B. Davis (AA)
David Simpson, CT (AA)	Mel Bell, SC, proxy for M. Rhodes (GA)
Mike Falk, NY, proxy for Sen. Boyle (LA)	Robert Boyles, SC (AA)
Jim Gilmore, NY (AA)	Pat Geer, GA, proxy for Rep. Nimmer (LA)
Emerson Hasbrouck, NY (GA)	Nancy Addison, GA (GA)
Brandon Muffley, NJ, proxy for D. Chanda (AA)	Spud Woodward, GA (AA)
Tom Fote, NJ (GA)	Jim Estes, FL, proxy for J. McCawley (AA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Martin Gary, PRFC
Andy Shiels, PA, proxy for J. Arway (AA)	Mike Millard, USFWS
Loren Lustig, PA (GA)	Kelly Denit, NMFS

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

Ex-Officio Members

Staff

Bob Beal	Ashton Harp
Toni Kerns	

Guests

Chuck Lynch, NOAA	Bob Ballou, RI DEM
Wilson Laney, USFWS	Brian Hooker, BOEM
Roy Crabtree, NMFS	Bob Vanasse, Saving Seafood
Jack Travelstead, CCA	Jonathan French, Falls Church, VA
Mike Armstrong, MA DMF	Gregg Waugh, SAFMC
Nichola Meserve, MA DMR	Arnold Leo, E. Hampton, NY
Jeff Deem, VMRC	

The ISFMP Policy Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 4, 2016, and was called to order at 11:02 o'clock a.m. by Chairman Douglas E. Grout.

CALL TO ORDER

CHAIRMAN DOUGLAS E. GROUT: Good morning, we would like to convene the policy board here. We have a lot to do on our agenda. Welcome to the policy board. We have quite a number of items on the agenda, but before we start what I would appreciate; we had a couple of members of our ASMFC family pass away this past month.

The first one is former commissioner from Maine, Pat White, and former Heart award. He was the first governor's appointee to ever receive the Heart award. He passed away suddenly while in Florida. Also, our long time meeting minute's recorder and stenographer, Joe Graham, passed away this month. I would like to take just a minute to remember these fine young men; fine men. Yes, they were young, young at heart. Just take a moment of silence here.

Okay thank you very much, we will miss them both.

APPROVAL OF AGENDA

CHAIRMAN GROUT: I have an agenda here. There is one item under other business that I have as a change, and that is there is a request from the Lobster Board for a letter to be written, regarding a position on monuments. We'll take that up under other business. Are there other?

SENATOR BRIAN LANGLEY: Brian Langley from Maine; I wish you would put me on under other business, if you would.

CHAIRMAN GROUT: So done, Brian; thank you. Any other changes to the agenda, seeing none;

is there any objection to approving the agenda as modified? I see that as a unanimous consent.

APPROVAL OF PROCEEDINGS

CHAIRMAN GROUT: Also we have in our binders, under meeting materials, a proceeding from our February Policy Board meeting.

Are there any changes or modifications to those meeting minutes? Seeing none; is there any objection to approving the minutes as written? The minutes are approved by consent.

PUBLIC COMMENT

CHAIRMAN GROUT: Under public comment I have one person, Brian Hooker from BOEM; if you would like to come up to the public microphone there, Brian.

MR. BRIAN HOOKER: I just wanted to take this opportunity to just quickly update the board on activities in BOEMs renewable energy in the Atlantic, Offshore Renewable Energy Program in the Atlantic, and also simultaneously offer if at any future meetings you would like a more full presentation, I am available to do that as well. But just quickly I wanted to give you an update on where we are, kind of working from the north, south. The two lease areas just west of Nantucket Shoals are still in their site assessment phase. They are beginning site characterization surveys. In the vicinity of Cox Ledge, we're still in the early phase. They will likely be deploying a meteorological buoy this summer. Also near that same area, there is the state waters Block Island Wind Facility Project, and the cable to shore, which BOEM has some jurisdiction over, is beginning work this summer. They've already started some of the state waters work, with the transmission cable between Block Island and Scarborough Beach.

Also moving further to the west and New York Byte, we have recently issued area identification for an area in offshore New York, for lease. We hope by the end of this month,

early June, we'll have an environmental assessment that will be available for 30 day public comment. The proposed sale notice will be released simultaneously; which has a public comment period on that as well.

We definitely welcome comments, not only on the proposed sale notice, but on the environmental assessment for site characterization and site assessment activities, and any alternatives that may be appropriate for that environmental assessment. Again that will be released probably by the end of this month, early June.

Moving further down into the Mid-Atlantic Bay, we did have a successful lease sale offshore New Jersey recently. There are two lease areas. There will be an intergovernmental task force meeting on May 19, where I believe we'll have the developers give kind of an idea, present where they are and what their thinking is for what their schedules will be for any activities offshore New Jersey.

Moving on to Virginia, we have issued a research activity plan for one demonstration project involving two turbines, offshore Virginia; that is in partnership with the Virginia Department of Mines, Minerals and Energy, and Dominion Power. Then I accidentally skipped over Maryland. Offshore Maryland we do have an active lease site, where they hope to build a meteorological tower offshore Maryland this summer.

They completed their site assessment site characterization activities, mostly last summer; but they will be continuing just a few additional surveys this summer offshore Maryland, to look at the potential cable route for the commercial facility. Moving down to the South Atlantic Bay, we have decided to defer.

Offshore North Carolina we have three wind energy areas defined. We are deferring the two lease areas south of Cape Hatteras until a further sale notice, but the sites north of

Oregon Inlet, and south of the Virginia, North Carolina border, known as the Kitty Hawk Lease Area, is moving forward with a proposed sale notice. That will likely occur in early 2017.

As I said, the two wind energy areas south of Cape Hatteras are being now evaluated as a part of the areas that are being evaluated as far as the South Carolina area. There is a Grand Strand area, which we are still analyzing that we published in the Federal Register on November 25th, this past year.

Offshore Georgia, they are still in the planning phases for a potential meteorological tower. That particular lease does not have the ability to grow into a commercial scale facility; it is just a site assessment type of lease. That is really it. I don't want to take any more of the Policy Board's time, but I just wanted to take this opportunity to give you an update of where we are, and invite you to e-mail me or check out our website if you would like further information on these areas. Again, I am always open to coming to present more fully to this board at a future meeting.

CHAIRMAN GROUT: Dennis Abbott.

MR. DENNIS ABBOTT: I would like to speak as personal privilege to the commission members here today. Last night we had an awards ceremony. During the awards ceremony I was very embarrassed by the actions of the commission, not just the folks in this room, and probably not most of the folks in this room.

But I'm an old man, and I'm the oldest guy in this room, I know. I grew up knowing that respect was a very important thing. When I go to ceremonies, when the National Anthem is played, I stand at attention and listen. When somebody is being recognized for an award, I listen. I thought that last night showed a lack of common courtesy to the people who were being recognized.

I apologize to the Awards Committee, particularly to Spud Woodward, who under what I consider difficult circumstances; I had trouble hearing him. I apologize to our Chairman, and I apologize to our Executive Director. Mostly I apologize for the staff members, who work hard to put this all together.

I think we're better than we showed last night. I am not just addressing the people in this room, because there are other folks who are meeting in this building too, part of our group, who I thought did not exercise the proper common courtesy, and did not comport themselves in a manner that is reflective of the Atlantic States Marine Fisheries Commission.

I'm sorry if I offend anybody, but anyway I just felt after I left last night's ceremonies, I could not help but keep thinking about what I thought was our lack of comportment. It would be my suggestion that we go back to the old days, where there is no food, no drinks; until we do our award ceremony. I'm sorry, but I felt it was necessary for me to say this. Thank you very much.

EXECUTIVE COMMITTEE REPORT

CHAIRMAN GROUT: Thank you, Dennis, I will move on now to our next agenda item, and that is a report from me of the Executive Committee work yesterday. We received a report from our Chair of the AOC regarding the FY17 budget. We seem to be in fairly good standings here with our budget.

As a result the decision was made to keep our dues at level funding from last year. I'll make a note that this is the second year in a row; that through the fine work of Laura Leach, and our administrative staff that we've been able to hold our dues to level funding, which has been very helpful to many of our states that are facing budget shortfalls.

We also discussed some potential funding opportunities via some Saltonstall-Kennedy funds we'll be putting forward, and developed a motion to fund some shortfalls in fisheries independent survey funding work with that. That would include the Maine/New Hampshire Inshore Trawl Survey, the Horseshoe Crab Survey, SEAMAP, and then also some striped bass research that is being done in the Chesapeake Bay and Delaware Bay area. We also are going to have staff develop a white paper on Plan Development Team membership by commissioners. There has been some concern expressed by some commissioners about having commissioners both on the PDT and serving on the commission at board levels. But we're going to come up with a variety of options. One of the major things brought up is potentially having the Chair and Vice-Chair of a board sit on the PDT as nonvoting members.

We also began discussion on revisions to the Conservation Equivalency document, but had to move those things on to our August meeting, because we didn't have enough time to complete the review of the document that has been put together by staff, and reviewed by the Management and Science Committee, and the ASC. We'll bring that up in August.

Finally, we discussed ACCSP governance and we'll be bringing a motion forward at the full business session immediately after this. Those are the things we talked about at the Executive Committee. Are there any questions? Seeing none; we'll move on, one question oh yes, two questions, Dave Borden.

MR. DAVID V. BORDEN: Ritchie was trying to get your attention. This is just a question; this is on the issue of the funding priorities for those projects that were listed; horseshoe crabs and so forth. It is my understanding since the meeting that there may be an opportunity, and maybe Bob Beal can comment on this, to fund some of those activities through a different source; which would free up some of that money to be used for some of the other

projects that were submitted. I just want to ask Bob if you could confirm that or just state what your understanding is.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Yes there have been a number of discussions following the Executive Committee yesterday morning, and there is an indication that the Maine/New Hampshire portion of the NEMAP survey may have an alternate funding source, and that was listed as one of the priorities that came out of the Executive Committee meeting.

If that source does in fact come through, and we can verify that that money is available, then that will free up some of the funding to move farther down that list and work on some other priorities. I think since the Executive Committee did not prioritize all the other projects on there, if there is additional funding available, now that the NEMAP project has been funded elsewhere.

We'll have to go back to the Executive Committee and seek guidance from them on which are the next priorities down that list that we should use the available money for. I guess all of this goes with the caveat that the S-K funding is not guaranteed in any year anyway. There are a number of variables here, but we'll keep working with the Executive Committee to try to work through those.

CHAIRMAN GROUT: I also will mention that we also on this particular item, we also tasked staff with developing a white paper. Where we would have some criteria that would evaluate the different funding proposals each year, some kind of ranking system that would help us decide which of the many research needs that we have.

Both fisheries dependent and fisheries independent could be funded, if we continue to have access to some of these Saltonstall-Kennedy funds. Are there any other questions?

REQUEST BY SAFMC TO CONSIDER COBIA AS AN INTERSTATE FISHERIES MANAGEMENT SPECIES

CHAIRMAN GROUT: We'll now move on to Item Number 5. We've had a request from the South Atlantic Fisheries Management Council to consider cobia as an interstate fisheries management species. Gregg Waugh, who is the Executive Director of the Council, is here to give a little overview on the request.

MR. GREGG WAUGH: Good morning. I recognize that your time is short, so I'll be as brief as I can be. I'll be available here the rest of today and tomorrow, if anybody wants to talk one-on-one with some of the more details. There have been a few corrections since the version that you received, and I'll point those out as we go through.

I outline a brief history here. I am not going to go through all the details, but the important point is when we started this original management of cobia in 1983, there was one stock from Texas through North Carolina. The MSY was approximately a million pounds, and the size limit we established was a 33 inch fork length.

We made some adjustments over time. In 1990, the MSY was specified as 1 million pounds, the average catch at that time from 1981 through '89 was almost 2 million pounds, and so we implemented a two-person per day bag limit. We made some additional adjustments in Amendment 8, in '96, the range was extended for the coastal migratory pelagics, including cobia, up through the Mid-Atlantic's area; and the MSY was revised to 2.2 million pounds.

We made some SPR adjustments in '98. The real change came about in 2011 in Amendment 18. This is when we had to address the new changes from the Magnuson-Stevens Act. This put in recreational quotas, which was needless to say quite an adjustment. But we had had

previous to this a couple of assessments done by the National Marine Fisheries Service that looked at two migratory groups, treating the Gulf as one group, and the Atlantic as one.

There was stock exchanged, but there were sufficient differences that we could manage those as two migratory groups. We set two migratory groups from Texas through the Florida west coast, and then the Florida east coast through North Carolina. The allocation was 92 percent recreational, 8 percent commercial. That was based on catches at that time; looking at the catches from 2000 to 2008 for historical time period, and then 2006 through 2008 for more recent.

But at that time the assessments were saying we didn't know what MSY was, so we agreed to use the overfishing limit or OFL. We used the annual catch limit. If that was exceeded that would determine overfishing. I'm not going to go into these numbers here, but we set the Atlantic migratory group.

We didn't have a current stock assessment. The advice from the Southeast Fishery Science Center for our SSC was to use landings data to come up with an ABC, and then the council would use that to specify an annual catch limit. We did that looking at the average landings from 2000 to 2009, plus 1.5 times the standard deviations.

That gave us an annual catch limit. We put in accountability measures that are also required. That is something that happens if your ACL is exceeded, and on the commercial side we tracked the landings, closed the fishery. If there is an overage there would be a payback if the stock is overfished, and the total catches exceed the total ACL.

The one that is more important and operative right now is the recreational accountability measure. If the recreational and total annual catch limits are exceeded, then the Regional Administrator is required to shorten the

following season. When we put that in place, you would compare the catch in one year to the previous year using the previous year's catch. One year you would add two, and average them, add three and then a moving average. Unless an adjustment was made to the annual catch limit, and I'll talk about that in a moment; but we didn't change the bag limit.

We tried to encourage the public to consider a reduction down to one, but there just wasn't any support at that time. We got an age-based stock assessment in 2013, with data through 2011. They looked at the genetics that showed a mixing zone along the Florida east coast up into Georgia, parts of South Carolina.

The tagging data showed more a mixing zone on the Florida east coast, and so the assessment was conducted using the Georgia/Florida line as a border. South of that into the Gulf was the Gulf stock, Georgia through New York was the Atlantic stock. It came back not overfished, not overfishing; but the biomass trends were down.

The MSY for this stock was estimated at 808,000 pounds, and we got our overfishing limit and our allowable biological catch in millions of pounds. The ABC is a maximum that the council can set. Indeed that is what the council did set as our annual catch limit. We took those results and implemented those in 2014.

The regulations became effective in 2015. That set two new migratory groups, the Gulf and the Florida east coast, and then Georgia northwards up through New York. We kept the 92 percent recreational, 8 percent commercial. The ACL, the annual catch limit in 2015, was 690,000 pounds, and it was 670,000 pounds in 2016 onwards.

We did not change the accountability measure, and so this is shown towards the bottom in the red. If you change the accountability measure, which we did in 2015, then in 2016 you look at last year's landings. That is why we are taking

action now. We didn't change the management measures at that time.

The recreational annual catch limit decreased from about 1.4 million pounds for the area, from the Florida Keys through New York, down to 630,000 pounds in 2015 for the area, Georgia through New York. The recreational catch in that area in 2015 was 1.54 million pounds, 145 percent over the recreational ACL. It is over the total ACL. It is over the overfishing limit of 760,000 pounds, and it is over the MSY.

We were overfishing last year. That presents a problem, and that's why the accountability measure is triggered, and that requires that the 2016 season be shortened to ensure that the 2016 annual catch limit is not exceeded. To do that when you calculate the length of the season; that is done using the ACT or the annual catch target and that is 500,000 pounds.

The Regional Office worked with the states to see what adjustments they could make to regulations for this year, to factor in what the season would be. That season is projected to close now on June 20th. The council has already begun working on a framework to change that accountability measure, so we don't have the same type of requirement for next year.

However, it is critical that catches remain in 2016 below the annual catch limit. Otherwise, we're going to continue to have overfishing and we're going to have to be more restrictive in what management measures are put in place in this framework action. We are asking ASMFC if you're interested in developing a joint or complementary management plan for state waters. The bulk of the harvest comes from state waters, so we need to have cooperation within state waters. Just briefly on the timing. We are conducting a public question and answer session on May 9th, in Kitty Hawk.

The council will be looking at management options at our June meeting. We can't

implement state-by-state quotas through the framework, but we are looking at adjustments to the fishing year; perhaps having a period of time when there is no retention allowed, perhaps in the month of May to complement what the state of South Carolina has done in the southern portion of their state. That to try and spread that harvest out so that there is ACL remaining when the fishery gets up to northern North Carolina and Virginia waters.

We're conducting public hearings in early August. The Mid-Atlantic will be considering this at their August 8 through 11 meeting. Then our council will review this in September, and approve for formal review. We're on a very tight schedule, and that is necessary in order to get these changes in place prior to next year. I'll leave it there, and I would be glad to answer any questions.

CHAIRMAN GROUT: Any questions from the board for Gregg on this issue?

MR. BORDEN: A quick question, Gregg, if we were to partner with you on some kind of joint plan, what would you envision as far as the staff responsibilities? Would the South Atlantic Council being doing most of the staff work on that type of activity?

MR. WAUGH: I think that depends on what approach you want to take, and how detailed you want to get. If you're talking about bag limits, trip limits, size limits that could extend the season so that there wouldn't be a closure. I think that is some analysis that we could do in conjunction with the Regional Office. If you want to go so far as to look at state-by-state allocation of that ACL, then I think that is perhaps something that would be better done through ASMFC, involving your staff. You all have more experience in doing state-by-state allocations.

MR. ROBERT H. BOYLES, JR.: Gregg, can you tell the board approximately percentages of the catch that comes from state waters?

MR. WAUGH: I think last year was 82 percent. It varies by year, and it also varies by state. In Georgia and South Carolina, the bulk of the harvest is now coming from federal waters. That has been a recent shift due to the status of that inshore population in South Carolina. It varies by year. But certainly on average, the bulk of the harvest is coming from state waters.

CHAIRMAN GROUT: Follow up. Robert.

MR. BOYLES: Given that information, I'm prepared to make a motion when you're ready for it.

CHAIRMAN GROUT: Okay any other, keep that in mind, I have Tom Fote.

MR. THOMAS P. FOTE: When I hear that 82 percent of the harvest comes in state waters. When we had that in the north on species like that; weakfish and other species, it basically was when a majority of the catch came in federal waters the feds would basically handle the plan. When a majority landed in the state waters, it would be handled by the states.

After watching what happened in red snapper, I don't really want to get involved with what is going on down south, and would really appreciate, maybe what the feds should consider. Since the majority is landed in state waters, turning the whole management over to the South Atlantic Board. I think that would be a better way of operating it.

MR. W. DOUGLAS BRADY: Gregg, I'm just trying to get my head around, you had a number up there, 1 million and about 500,000 pounds when it was from the Keys to New York; as far as the catch allowance. Then it changed in 2015 from Georgia line to New York, and that was around 650,000. I'm just curious, what was the catch between the Keys and the Florida line? What did those numbers come out to be?

MR. WAUGH: In terms of what's been landed, I want to think it is on the order of 400,000 pounds; okay, 330,000 pounds.

MR. BRADY: You're not going to revisit this, but I'm trying to get my arms around it to go back to the people of North Carolina. When it was the Keys to New York, again it was about a million and a half. If that range or that designation had not changed, then you would have been around a million pounds in that range for the catch; 380 plus, wait a minute or is it a million and a half that was caught? What was the total catch between the Keys and New York in 2015?

MR. WAUGH: I don't have that figure, because we're managing them now as two separate stocks. I could certainly get that for you. If approximately 330,000 pounds were harvested on the Florida east coast, then you add that to the 1.54 million pounds, so you're getting up around 1.8. There is a mixing zone here, and there is a lot of concern about where that boundary was set.

Certainly that is something that could be looked at in the future. But a point to keep in mind that if you move that boundary from the Florida/Georgia lines south, the annual catch limit will go up. But also then those catches on the northeast Florida coast will count towards that annual catch limit. There may not be any net gain.

MR. ABBOTT: I know it is early in this process, but has any consideration been given to its cost?

EXECUTIVE DIRECTOR BEAL: The short answer is no. We did not budget for any cobia activities in this year's action plan. The longer answer is there is considerable uncertainty on what it would cost, because we don't know exactly what the states want us to do. Is it to initiate a full FMP and establish a tech committee and advisory panel?

Establish all those groups and have all those groups meet, or is it something very simple; that just it's a new FMP but very basic elements, which would require a lot less staff work. The cost depends on what the Policy Board decides they want to and the South Atlantic Board decides they want to do. I guess the other side of this is we do have some contingency funds in the budget. If that is the will of this group that we use some of those funds for cobia management, then that is appropriate as well.

CHAIRMAN GROUT: Follow up, Dennis?

MR. ABBOTT: I pretty much thought that would be your answer and I also thought that you would probably look at using the contingency funds, which I was instrumental in getting put in the budget. But nothing for sure ends up ever being as simple and as cheap as we may think. I think we would probably end up; it would be a full blown activity. I'm not opposed to it, but I just think that we are aware of that.

EXECUTIVE DIRECTOR BEAL: Just a follow up, if I may. The other side of this is staff workload, not just dollars. The ISFMP group is pretty busy right now, and we are going through a transition with one of the coordinators. One option may be to hire someone from outside the commission on a contract to help out with this project, or something along those lines. If that is the will of this board that they want to move forward with cobia, and don't want to slide other priority items to a later date. Just that is another thing to keep in mind.

MR. DAVID G. SIMPSON: I am looking ahead on the agenda to Item 8 and Climate Change. Ordinarily I wouldn't worry too much about what the South Atlantic Board wants to do with a species that stays neatly within your confines. But when I hear mention of partnering with the commission, because they have more experience with state-by-state quotas, I get very nervous.

The fish are already up into New York. Apparently they have regulations on them. We're the next one up. We are seeing the craziest things showing up in Connecticut. About every two months I contact Spud and send him pictures and say, what is this? We just caught half a dozen of them.

I am very reluctant to go down that path at this point. If there is federal management for it, I'm happy to implement whatever the measures are to complement the federal management, but I'm very reluctant to go down the path of creating another problem for us specifically and the commission generally.

CHAIRMAN GROUT: Robert, are you ready for your motion?

MR. BOYLES: Yes I am, Mr. Chairman. I would make the motion that the Policy Board directs the South Atlantic Board to develop alternatives for a fishery management plan for cobia, which would include alternatives for joint management, complementary management, and exclusive jurisdiction for the commission.

PUBLIC COMMENT

CHAIRMAN GROUT: Let's get the motion up on the board, and then we'll see if we get a second; seconded by Jim. We'll get it up there and then once we've got it up there my intent is to see if we have public comment on this. Those who want to comment from the public, raise their hand, please. Two, okay. If you could come to the public microphone, and if you could try and keep your comments directed specifically at that motion up there on the board, whether you're in favor of it and why. Try to keep the comments down to about three minutes here.

MR. JONATHAN FRENCH: My name is Jonathan French; I have been part of an informal collaborative of approximately 50 to 60 stakeholders in Virginia and North Carolina that

are heavily involved in the cobia fishery. Just 15 of those folks reported that they're looking at a potential loss of \$500,000.00 in gross revenue.

Those are not just charter fishermen, those are tackle shops, people who construct site fishing towers, et cetera. I am speaking today to oppose this motion until South Atlantic corrects some other issues. Mr. Waugh did not mention one, if you go back in the slides a couple of slides, Virginia wasn't initially factored in the ACL calculation, yet Virginia is one of the largest fisheries for cobia in the Atlantic region.

Two, I don't believe that east Florida is managed now by South Atlantic, it is part of the Gulf Coast, so the issue of the ACL being abnormally small and not reflecting the catch; that has not been addressed. Perhaps most frustratingly, the comment was made about if Florida was added back in that perhaps that would be a net zero gain, because the Florida fish being caught would no longer count.

My problem is that not only was Florida carved out of the zone, but we saw such a substantial increase in the number of fish caught in Virginia and North Carolina, Virginia preposterous numbers, and those increased catches were reflected on science that essentially says 40,000 additional targeted trips were focused on cobia in one year.

There is no other corresponding data that backs up that claim. Just to imagine for those of you who are familiar with the Chesapeake Bay and Northern North Carolina fishery, that is 400 additional boats per day over 100 day period. As a cobia fisherman, if there were 400 additional boats per day in the limited areas in the bay that carry fish regularly; I probably wouldn't fish for them anymore, because it would be a traffic jam.

This huge increase in the number of catch in Virginia, and North Carolina, again per NOAAs data, when you look at Virginia's citation data as an example; Virginia's catch data went up or

quadrupled according to NOAAs numbers, but the citations only went up 13 percent. Even though NOAAs argument was that the average size fish went up five pounds, and is coming up on what is very close to citation levels for the average fish.

Finally, some of the recommendations that were made in terms of extending the season, the only one that would give a full season for the Atlantic states required North Carolina and Virginia to not only decrease to one fish per person per day, but to go to one fish per boat per day at a 45 inch fork length, which is essentially a citation sized fish. I found that particularly troubling, given that NOAAs original justification arguing that the biomass was decreasing, the breeding stock was decreasing; showed that larger female fish were on the decline.

Their solution is to only target large, female fish. That doesn't make a whole heck of a lot of sense. Until those issues are addressed, having a discussion as to whether or not South Atlantic or the Atlantic Marine Fisheries Commission is going to manage this species, I think need to be put on hold, and these other issues need to be addressed. Thank you for the forum.

MR. DAVID BUSH: David Bush; North Carolina Fisheries Association. In light of the comments I just heard that sort of makes me take pause as well. However, I do want you all to keep in mind that with the ever amounting reductions that we receive on multiple fisheries at all times, many of our folks, especially in northern North Carolina, will commercial fish for a small portion of the year. Then they go back to their charters. These folks have charters already scheduled throughout the year.

I know that we can't change the numbers at the flick of a switch. Apparently some work needs to be done. I understand the work the South Atlantic Council has already been doing, and I appreciate that. But we do need to fill in these gaps of information, because for us to proceed

on this would be something that we would like to support.

But to do so we need to get that information filled in. The guys that are going to be affected by this again, are a very small portion of the overall, I believe 7 percent approximately is charterboats, and when they have a charter of six folks they take out, forgetting the captain or a mate; only one person can bring a fish home on a charter for cobia. Please keep that in mind, and whatever it is that you do, we ask that you be expeditious and try to get this worked out as quickly as possible.

MR. JEFF DEEM: I sort of support the motion. I would really like to see the science get straightened out first. The part that I like about this the most is exclusive, because it is critical that this be controlled on a state-by-state basis with state-by-state schedules. If you end it on June 20th, the nearest state to the south of us, North Carolina sees 75 percent of its season.

Virginia would see only 25 percent of its season. To address some of the other motions or factors that was brought up earlier. For Virginia this is a 90 day season, and it is estimated by the science that we had 92,000 trips in that 90 day season. That is an average of 1,000 trips per day. That is pretty hard to swallow. There is some room for correction here.

If we look at 2013 to 2014, the average weight of a fish went up 5 percent, the effort went up 1 percent, and the landings dropped 39 percent. If we look at 2014 to 2015, the effort went up 25 percent, the weight went up 19 percent, the success went up 2 percent, but the landings supposedly went up to 283 percent of what the previous year was.

There are some real problems with trying to follow through, and I hate to see this, because I've been in fisheries management for a long time, and I've always heard people argue with the science. But when you get a 25 percent increase in effort, and a 283 percent result in

landings increases; there are some real problems here. It needs to be straightened out, and I really think the ASMFC, since this is 82 percent state waters, could do a much better job of handling this fish without any South Atlantic involvement.

CHAIRMAN GROUT: Thank you, Jeff, anybody else from the audience; back to you, Robert?

MR. BOYLES: Just for the board's information, Gregg mentioned some recent actions that had been enacted in South Carolina. For a long time our measures in South Carolina on cobia have been complementary, a two fish bag, a 33 inch minimum size. Several years ago our general assembly enacted a measure to make cobia a game fish.

There is no commercial take in South Carolina. But it is important, I think, for the board to understand and recognize that using data that our staff collected, with looking at a spawning aggregation in the southern sounds; an area that we now have codified in the southern cobia management zone, which are all state waters south of 32 degrees 31 minutes. We have effectively made our South Carolina state waters fishery in the southern part, this spawning aggregation, a catch and release only fishery.

There is no possession during the month of May, which is the height of our fishery in South Carolina. I think it's important to note that our fishermen in South Carolina recognize the importance of this resource, how critical it was and how critical it was that we protect that spawning biomass, have strongly advocated to the degree of more than 70 percent of our respondents to public surveys favored this restriction, which will result in a greater than 50 percent decrease in the take in state waters for South Carolina for cobia.

That is a big hit. I certainly empathize with the folks who have great concern. I appreciate you all being here to talk to the policy board about

your concerns about this fishery. But this is something that we have seen is needed. We think it is appropriate for the commission to explore these different options, and I would urge passage of this motion.

CHAIRMAN GROUT: Further discussion from the board? Jim Gilmore.

MR. JAMES J. GILMORE: Robert, just a clarification on the motion. Is this committing us to a plan or is it just looking at alternatives; and then we would commit to doing a plan later?

MR. BOYLES: Well, I guess I was trying to be deft. I think this commits us to a plan, it's just we don't know what it looks like. Is it a joint plan, is it an exclusive plan? Exclusivity of course means that the South Atlantic Council has to give up jurisdiction, and I certainly don't want to presume what that action would be. But Dr. Crabtree reminded me that South Atlantic Council gave up jurisdiction on species like red drum, which is another very important species for us.

I think there is precedent here, but the way I see this, Jim, moving forward is that this motion would task the South Atlantic Board and with the staff's help, as Bob suggested earlier, would lay out options for how we might move forward in promoting both conservation and access to this fishery.

MR. G. RITCHIE WHITE: That was basically my question, but I guess I'm still not clear on your answer. The way I read this, this would provide us with information to make a decision at a future date, as to how we might begin management or not. Am I correct on that or does this compels us to select one of the options that will come back?

MR. BOYLES: I see now. I apologize for the elliptical nature of my response. I would like to see the commission take over some management responsibility. It would be up to

the board, I think to lay out the options and to develop those options for the fishery management plan. Yes, I think I would say that the intent of this motion is to commit us to get into cobia management, in some form or fashion. I don't know what it looks like.

MR. SIMPSON: As I alluded to before, it puts me in sort of a dilemma. I enjoy sitting in on South Atlantic Board meetings, because you do things differently, and I would like to model that in more places. But it makes me very nervous to think about less or so management board on the commission managing a species that may begin to affect us. It bothers me much, much more to get into another species that is jointly managed by the commission, where we are not represented on the federal side. That has hurt us profoundly for years. I'm concerned about that particular alternative. At this point as it is crafted I really can't support it, reluctantly.

MR. BRANDON MUFFLEY: Dave actually touched upon one of the points that if this does go to the South Atlantic Board that New York has no representation on that board, and maybe even northern states that might want to consider it. I support it conceptually, and I think it has a lot of merit that the commission be involved in the management of this species.

I guess I have somewhat concern as there is this oppressing issue that I think the South Atlantic Council is trying to address, and I don't want to see the commission rush into committing itself to managing another species, without fully thinking about all the implications. There is this immediate need that kind of why we're here talking about it, because of these constraints that are going to be happening; because of fisheries that impact those states on the commission.

I am just trying to understand what the timing may be here, and I don't want to see us rush into something and get us kind of wrapped around an axle that don't address some concerns from northern states and those types

of things. I support it, but I just want us to figure out the timing in terms of how all this will play out, to try to address the immediate needs; but also understand what it is going to mean for us longer term.

CHAIRMAN GORUT: Bob, can you answer that; the timing? I think we had some discussions on this.

EXECUTIVE DIRECTOR BEAL: Well, if the commission were to kick off a full FMP from start to end and implementation, it would be hard to get that done by the end of this calendar year, obviously, since we're almost half way through the year, to implement in 2017. It would likely be implementation and sometime during the course of '17 or beginning of 2018, so it is a little ways down the road.

Actually I had my hand up earlier, because I think the point that Dave Simpson and Brandon just made about what states would be represented on the board, I think is something important to explore. There is kind of the assumption that we all worked on that this would go to the South Atlantic Board, but the policy board is not precluded from forming a new board altogether, The Cobia Management Board.

Have the range go as far up or down the coast as appropriate, whatever the data shows and whatever states have an interest. I am not speaking for or against the motion, but if it were to go to the South Atlantic Board for further exploration, some of that exploration could be, what states should be involved in future management. There are a fair amount of questions, I suppose, as this moves forward.

MR. FOTE: As a long-time member of the South Atlantic Board, sitting through the meetings, always that I would never leave the table, because I get pulled in from the north and pulled in from the south. I enjoyed the way it managed fisheries, and always supported this.

My problem is I dealt with the New England Council on winter flounder, where they have a plan that's different from us and a complementary plan. I've dealt with the Mid-Atlantic for the last couple years on black sea bass, summer flounder, and scup and it makes me very, very concerned about going down that path. My feeling here is that we should sit as a board, with a member of that board, look at the options, discuss it among ourselves, and come back with recommendations to the Policy Board on what we would see would be the best alternative, and let the Policy Board make the decision at that time.

If you had just said exclusive jurisdiction, I would vote for that in a minute. But when you add the other two factors in there, I have real concerns after 25 years of experience dealing with joint plans. The South Atlantic, we never had to deal with them the way we had to deal with the Mid-Atlantic and New England. I'm still thinking about this.

But I think the best way to go is changes to make the board will start considering and talk it over, not this South Atlantic Board meeting, because you've already got a full agenda, at the next board meeting; and come back with recommendations to the Policy Board of how we should move forward.

Then have a full Policy Board discussion, since yes, New York doesn't sit on it. We are catching quite a few cobias in New Jersey now. It just basically, I'm afraid to get into that kind of thing, and we might in the next five or six years catch a lot more cobia in Delaware, New Jersey, and in New York. Let's be careful how we move ahead; and probably Connecticut.

CHAIRMAN GROUT: Further discussion? Dennis Abbott.

MR. ABBOT: Sort of a follow up to my question to Bob. Our meeting weeks are full now. Since I've been here we've added recently Jonah crabs and sharks and smooth dogfish, and we

have an increasing difficulty in getting our work done in three or four days. This will be just another thing. But again, it is not our issue but peripherally New Hampshire will be involved, time wise in this. Again, I'm not opposed to it, but just highlight that.

MR. BOYLES: Perhaps I was too prescriptive, unintentionally in the motion. I think where I'm coming from is that we have a lot more to gain by working together on this fishery than not. I think where I'm coming from is as Gregg mentioned. Last year 80 some odd percent of the catch came from state waters.

Clearly there is a temporal aspect, as you've heard from the public and as our own individual experience as it states. There is a temporal aspect to this that suggests that there is more to be gained by an interstate plan of some sort. Mr. Chairman, the motion is on the floor. I don't know that I can amend it. But I certainly am not intending to exclude or preclude our neighbors to the north, Dave, and in Connecticut and New York.

I'm not sure that the South Atlantic Board maybe is the appropriate mechanism. I think what I'm asking the Policy Board to authorize is to; let's proceed with the development of a fishery management plan. I'm not sure what it looks like, because, Dave, I share your concerns about joint jurisdiction, shared jurisdiction. I mean there is a lot to be considered.

I will confess to you, I am a recent convert to this, because I have been concerned; because we still have a bunch of take, at least off of our coast from federal waters. I still think there is a role for federal jurisdiction here of some form or fashion. Now whether we can weigh, the states can occupy that field exclusively, should the cobia be removed from the federal fishery management unit. I don't know. But those are questions that we don't have answers to now. But I think if we wait to explore the concept or the options of an interstate fishery

management plan. I think we're doing a disservice to the resource.

I think we're doing a disservice to our constituents, and I think there is more to be gained by cooperation. If I could I would withdraw the motion in favor of one that could be perfected that would simply say that we agree to develop an interstate fishery management plan. But again, we don't know what those elements are, so I'm not quite sure how to proceed.

CHAIRMAN GROUT: We can't withdraw the motion; it is the property of the board at this point. Can I get a ruling as to whether the maker of the motion can make an amendment to his own motion?

EXECUTIVE DIRECTOR BEAL: Yes, the maker can amend their own motion. If the will of the board is to sort of make this motion go away and then start with a clean slate, there can be a motion to withdraw. If there is approval by the board then this motion can go away, and you can start with a clean slate. It's up to you, Mr. Chairman.

CHAIRMAN GROUT: Spud; on this issue?

MR. A.G. SPUD WOODWARD: I would offer an amendment to this motion that adds a sentence that says the South Atlantic Board will bring to the Commission through the Interstate Policy Board, a recommended alternative for his consideration. I don't know that we can put a date on it yet, realistically. You can't do it at the next meeting, I wouldn't think. But maybe by the annual meeting this year, is that realistic?

CHAIRMAN GROUT: Why don't you leave a time off, and we'll try and obviously we'll want to do this as quickly as possible. We'll get that amendment up on the board, and then is there a second to that amendment; Tom Fote. John Bull, I had you in the queue before the

amendment came up. Do you want to comment on this and the underlying motion?

MR. JOHN M. R. BULL: I hear the concerns for Connecticut and New Jersey and some others here about what we would be getting ourselves into. But I think that if you clear away a lot of it, it boils down to, in my mind, simply this. Most of the issues with this fishery are in-state water issues.

I believe that the Commission here has the tools in the tool box to help craft a, not necessarily management, but at least a framework here to better manage this species here; and it's a pretty complicated situation. To that end I agree and support both the motion and the amended motion here. I believe that this is the path that we need to take, in order to insure that this fishery is better managed in the future.

CHAIRMAN GROUT: Spud, is that amendment correctly worded? I just want to make sure.

MR. WOODWARD: Yes that captures the essence of it. Also, just to make sure everybody clearly understands the intent of that motion; it is to basically not commit us prematurely to the acceptance of a plan, but to make sure the full Commission has an opportunity to decide whether to promulgate a plan, and of what form.

CHAIRMAN GROUT: Jim Gilmore, you had your hand up, and Dave Simpson.

MR. GILMORE: Actually Spud just clarified that; so essentially we would vote on whether we're doing a plan at a future Policy Board meeting. We're going to explore right now. You guys are mostly sold on this, but I really do want to know what I'm getting myself into.

MR. SIMPSON: Yes, I would just echo what Jim said. I'm much more comfortable. I would like to see them go ahead and do this, but I frankly wouldn't wish joint management on anyone else, so be careful as you proceed.

CHAIRMAN GROUT: Any other discussion from the board on the motion to amend? Seeing none; do we need time to caucus? I'll give you 30 seconds to caucus. Okay, all those in favor of the amendment raise your hand, all states, all those opposed, abstentions, null votes; motion carries 15 to 0 to 2 to 0.

Now just to be clear, since this was an amendment, what I heard Spud say is this is not committing us with this amendment on there at this particular point, to actually developing an FMP. That is what I heard you said it was going to be brought back to the Policy Board and we would make then a decision once that was brought forward. I realize you had indicated, Robert, that you were committing us. But I believe we now have an amendment, where it was clearly on the record that it wasn't with this amendment.

MR. BOYLES: Just a question, Mr. Chairman, maybe for staff. I'm trying to think of the last time that we were engaged in a conversation about taking on a species, I'm thinking Jonah crab. Can staff remind me how we took on Jonah crab?

EXECUTIVE DIRECTOR BEAL: Yes, Jonah crab the industry brought forward a proposal to the commission at that point, and they asked that ASMFC be involved. That issue was brought before the Policy Board and the Policy Board agreed that there was enough need for assistance in Jonah crab management, because there was no other Jonah crab plan at the time; and there still isn't.

The Policy Board signed off on creating or allowing the Lobster Board to develop a Jonah Crab FMP. Very similar pattern, if you look at the charter the Policy Board is the group that decides what species ASMFC manages. It is clearly under the purview of this group.

MR. BOYLES: I'm not trying to belabor this, I was just thinking about the mechanics. This is in effect committing us to exploring the

development of an FMP, which I'm fine. I appreciate everyone's support, and certainly understand the concerns; but just wanted to make sure that I've got the process down straight. Because I do understand that the new motion will explore the development of these various management strategies, but does not commit; and I'm fine with that.

EXECUTIVE DIRECTOR BEAL: One option may be, depending on how much staff work we can get done between now and the August meeting, would be to order the meeting so that the South Atlantic Board meets prior to the Policy Board. If a recommendation came out of the South Atlantic Board in August, the Policy Board could then take that recommendation up and decide if they wanted to move forward in August. That is what we would try to shoot for at the staff level, but we may require a little bit of outside help to get there; which we can talk about offline.

CHAIRMAN GROUT: Okay further discussion now that we have an amended motion?

MR. FOTE: Because Bob was asking about the mechanics, it reminds me when we took over lobsters. The feds said it's an easy fish to manage; we wouldn't have any problems, so that is why we took over the management of lobsters. That is how I remember. Other people might remember a little differently. But they actually gave it to us to take care of. They can do that; and they gave it to us with a bunch of other species, where they said it is mostly in state waters in the northern part of the range, so that is what we took.

CHAIRMAN GROUT: **Okay, further discussion on the amended motion? Do you need time to caucus, or were you able to caucus on both of these the last time? Does anybody need time to caucus right now? I don't see any hands going up, so all those in favor of this motion raise your hand, all those opposed, abstentions, null votes; the motion again**

carries 15 to 0 to 2 to 0. Any other discussion on this item? Ritchie White.

MR. WHITE: Does it make sense for staff to begin working on cost and how an FMP would be handled within the Commission in advance of making this decision, so we might have information on that aspect when this comes back to us for a decision?

CHAIRMAN GROUT: Any problem with that, Toni? We can do that; sounds good. Any other discussion on this agenda item? Okay we'll now move on to a very, very brief discussion of revision of conservation equivalency guidelines; because we didn't get through everything.

MS. TONI KERNS: Basically what I'm going to say is that we're going to do this in August, since the Executive Committee only go to the first issue, so I will not waste the Policy Board's time at this time; and we'll come back in August.

JOINT MANAGEMENT AND SCIENCE AND ASSESSMENT SCIENCE COMMITTEE REPORT

CHAIRMAN GROUT: Okay that was a good quick one. Shanna now has a report on Joint Management and Science and Assessment Science Committee meeting.

MS. SHANNA MADSEN: I have also been indicated to cut some stuff out, so I am going to make this a little bit briefer. Essentially, the Assessment Science Committee and Management Science Committee met in conjunction in April, since we had a number of issues that we wanted to go over together.

I am not going to go into great detail about those, but one of those that I did want to discuss, and just bring to the Policy Board's attention, was that during the meeting we discussed the development of a Commission Risk and Uncertainty Policy. I know this was already talked about at the Executive Committee level, and it had been determined

that Jason McNamee had volunteered as the Chair of this committee. The goal will be to develop a policy that should be able to account for both scientific and management uncertainty within our decision making process; and determine an acceptable level of risk. We're hoping that this policy will be flexible, however still transparent. Now that the work group is kind of formed, I am going to be meeting with that group to develop a timeline, and hopefully plan an in-person meeting, and begin that brainstorming process.

What is this policy going to look like? We actually had a similar multidisciplinary workgroup for the Menhaden Board, and we felt that it was extremely productive to kind of craft something that works for our managers, our stakeholders, and our scientists. We have some volunteers from the Assessment Science Committee and the Management and Science Committee already lined up.

I know that I have a few commissioners that have spoken to me about potentially being a part of this committee; Pat Geer in the South Atlantic, and Lynn Fegley for the Mid-Atlantic. I would be hoping to maybe solicit some help from our northern partners to hopefully get a northern representative on there as well.

I'm looking for three to four people total, so you can come up to me after this meeting, if you would be willing to volunteer. I think we're just going to dive right into the assessment schedule timeline. The ASC sat down to review the schedule, and discuss some of the changes that we've made throughout the previous year.

We revisited the implications of the confidentiality issues that were preventing the horseshoe crab assessment from moving forward. I know that the Horseshoe Crab Management Board discussed this yesterday, and recommended that they move forward with a black box assessment in 2018. Obviously the ASC did not get to hear that recommendation, so we can go back and

discuss that and hopefully get that placed on the schedule.

The American Eel TC reviewed their research recommendations and concluded that there was not enough new data to do a benchmark assessment in 2017, but an update would be warranted, and so the ASC placed that on the schedule. As I discussed in our previous meeting, the Biological and Ecological Reference Points Workgroup recommended that we place an assessment for the multispecies modeling in 2019.

The ASC also placed that onto the schedule. The Striped Bass Management Board requested an assessment update be conducted in 2016, to get everything up to speed with an additional year of data. You'll see that change reflected on the schedule as well. The river herring and shad assessment updates were switched.

What we did is we wanted to make sure that the river herring update would then coincide with NOAA's plan to revisit the ESA listing termination in early 2018. The river herring assessment update is scheduled for 2017, with the shad update in 2018. The Tautaug Management Board also requested an assessment update be conducted this year, since the Long Island Sound regional assessment in New York and New Jersey regional assessments are being completed this summer, and they want the other regions to be brought up to date.

The ASC reviewed that recommendation and went ahead and placed that on the schedule for 2016. Since the weakfish, spoiler alert, I guess. Because the weakfish peer review was passed, they recommended that we have an assessment update in 2017. The ASC reviewed that and also placed that on the schedule. Here is where I would need a little bit of board input. I'm sorry if this is a little confusing and a little hairy, but it is for us too. We've been given, since there have been changes to the MRIP program; we're transferring over from that

coastal household phone survey on to the mail survey.

We anticipate that there should be some impacts in the data that would be used for several of our species. The NRCC has sort of given us a couple of options for adding some assessments to the SARC schedule in 2018. Essentially for the spring of 2018, they suggested striped bass, black sea bass, and summer flounder.

In the fall they suggested bluefish, scup, and spiny dogfish. This is kind of given to us in like a, you pick two, menu. There are three that were being given for the spring, three that were being given for the fall; and then kind of tell us which two of those you would prefer. The ASC discussed these recommendations.

They recommended that we move forward with placing striped bass and summer flounder at kind of the top of that list; considering that would coincide with their five-year trigger time. They also just wanted to suggest that we be a little bit careful to take on more assessments beyond that; kind of due to the workload of those folks.

There is a big number of overlap with those groups that would be doing those stock assessments. They kind of put those two at the top of the list, and recommended that we move forward with placing those on the schedule. From there I would be happy to take any questions. I would be wondering what the board's thoughts were on us moving forward with trying to put striped bass and summer flounder at the top of that list.

CHAIRMAN GROUT: Questions? Are there any thoughts on striped bass and summer flounder being at the top of that list in 2018? Go ahead, Adam.

MR. ADAM NOWALSKY: I guess my only question with summer flounder would be, is the expectation that there is going to be enough

new information to come forward to make that something different, potentially for management use? There is ongoing modeling work that I've talked to the Summer Flounder, Black Sea Bass and Scup Management Board about in the past, and we've had some discussion about here, in terms of getting updates. What advice can you give us about what we might expect out of that if we go that direction?

MS. MADSEN: This would just be a change in the data, but since MRIP is transitioning they are anticipating that that data is going to be affected by the change in the way that they're conducting the MRIP surveys. Since that data is changing that kind of inherently leads to having a benchmark in order to update that data.

MR. NOWALSKY: Just to follow up on this. I would assume we would be relooking at this again next year. While that change in the data is certainly one aspect of it, if the new modeling was to become available in say, 2019, we could reassess at that point; as opposed to having to have to wait five years afterwards.

MS. MADSEN: Yes, definitely. We'll look at this. We look at the schedule yearly. We'll look at it again next year. We just have an NRCC meeting coming up next week, so we wanted to go ahead and provide some recommendations so that they could get us on the schedule, and make sure we kind of reserve our spot ahead of time. But most certainly we can revisit that in the future.

CHAIRMAN GROUT: Shanna, I had a quick question, just so that I understand. When you said that there is a number of species here that are listed for SARC, but you're saying that they only have room for two species the entire year, or two species at both the fall and the spring SARC?

MS. MADSEN: They have space for two spaces at the spring and then two spaces at the fall. But the Assessment Science Committee did

warn against us potentially putting four stock assessments on the schedule, just due to the fact of the workload.

CHAIRMAN GROUT: My concern, particularly with species that are managed under federal management, which are bound by ACLs and AMs; that if we end up with a disconnect in what our new harvest data is going to be, and what the old ACLs are based on, or we have new ACLs that are based on the new MRIP data.

We may have a disconnect between what we're using for catch information as applied to the ACLs, which we're bounded by. My concern from a manager would be that we should be looking at only the federally managed species first, and then starting to work at something like striped bass. Did you all hear that? Okay, sorry. I'll try this again.

MRIP is going to change, potentially change some of our catch estimates for recreational harvest. In the federal management theatre, we are bound to stay within our ACLs and below our ABCs. My concern is if we have not adjusted our ABCs, based on the updated MRIP data, then what is going to be presented as harvest is not going to be matching up.

You could have, and I'll give you an example, from the way I understand this, you know let's say we don't update our ABCs, and the new MRIP data says that; well actually going back ten years, the average catches are actually about twice as high as what we originally thought. Now we're saying that the catches are higher.

But we haven't changed how we calculate our ABCs. You could be going over your ABCs very easily, even with current management measures. At least that is my concern with this. The reason I'm bringing this up is we're not bound by that with striped bass. I would actually be looking at, let's move forward with changing; say black sea bass and fluke.

Have benchmark assessments or black sea bass and fluke, so that we could make those changes to the ABCs, and have them match up with what the new MRIP data is going to be; because they are going to be using that as I understand, in 2018. There won't be any coastal household telephone survey estimates any more after that. Yes, go ahead; I'll go with John and Roy, and then Dave.

MR. JOHN CLARK: Yes I just wanted to point out, Doug, on the striped bass. My understanding of Addendum IV was that those 25 percent reductions were supposed to be in place until the next benchmark assessment, when we reconsider. If we push back the benchmark, are we going to revisit based on this 2015 update, or will the 25 percent reductions then have to stay in place until we do get a benchmark?

CHAIRMAN GROUT: That certainly is an issue, you're right.

MR. SIMPSON: Yes, so we were thinking about the same problem but arriving at different outcomes maybe. I am really concerned about the implications of these new numbers that we're anticipating. As you said, we've been warned that it could be a doubling; the estimate could actually be twice as high as what we're accustomed to looking at.

Taking on a species that is jointly managed, I will warn Robert that the relationship in this union is to love, honor, and obey the federal government, and the Mid-Atlantic Council in this case; not so much the modern commitment that your spouse may have made to you and mine made to me. It is more my mother's commitment, do what Dad says; not that she did, but.

You understand my reluctance that the Mid-Atlantic Council is really, really dragging its feet about allocation. It's a very difficult issue. I guess my preference from the Commission perspective would be let's move on striped

bass, and maybe another commission managed species tautaug or something that we can manage here, internally, where we're all at the table, and we have a little more flexibility.

That would be my preference. I think it would take a little more dialogue with NOAA and the Mid-Atlantic Council about what their intentions are with these species that are under federal management, and we're a joint partner; because you can imagine if you rebuild that time series, and it doesn't just double the numbers for recreational all the way back.

Say it is double the numbers in the last five years, but similar numbers back through time, because they're making a guess at what they might have been back then. Then the argument from the commercial side will be, the allocation of 60/40 is fine, but you guys are way over and you need to cut your recreational harvest by half. That is what I'm afraid of.

CHAIRMAN GROUT: My concern, is there something, we have an NRC meeting coming up soon. Is there something that could help us bring something forward to them? As I understood when we were talking about these MRIP re-estimations, there was a plan in place for how stock assessments were going to be updated to apply this. Let's see how this process moves forward. We would like to see a plan to get all these assessments updated with peer reviewed assessments.

MS. KERNS: I was a member of the Transition Team for MRIP. We did work through the Transition Team. We were split into a Management and the Stock Assessment Group, and the Stock Assessment Group did prioritize species for assessments to occur first, and then following up that all assessments would be updated with these new numbers.

There is priority placed on the species that we thought would be most impacted by the change in numbers, as well as priority is put on for the management side of things of how we manage

those species. Do we have state-by-state quotas? Do we use ACLs that we thought might be impacted?

All of these species for the most part were on that priority list. I don't think dogfish was a priority on there, and scup I think was in the medium priority level, if I am remembering correctly. I think one of the things that might be helpful at the NRCC level, if we can't really come to a consensus of one, is to maybe prioritize these six species. There will be some discussions and negotiations at the NRCC meeting. We do sit down with the New England Council and the Mid-Atlantic Council on priorities there, and so if we could have an idea of what is most important to us down the line.

Then as we talk at the NRCC, then we'll have a better idea of what the commission wants to see. I will remind the board though that we did commit to do a benchmark assessment for striped bass in 2018, and typically we do go through the SARC process for that peer review. If it is not the will of the board to use the SARC process, then we can explore some other avenue for that peer review. But we did commit to doing that.

CHAIRMAN GROUT: I agree that striped bass still should be one of our top priorities here. The question is going to be, given the recommendation from our stock assessment scientists that we can only do one other; which one is going to be that priority? Is that summer flounder, what they were recommending?

But that would leave bluefish and black sea bass and scup off. I'm not worried about spiny dogfish, as far as recreational catch estimates. I don't think that is going to be a huge issue. Are you okay with summer flounder being number two? Do you want to pick a third and a fourth; black sea bass or bluefish or scup? Dave Borden?

MR. BORDEN: Black sea bass.

CHAIRMAN GROUT: How did I know that was going to be third? Anything else, any other recommendations for Number 4, okay those are the top three; striped bass, summer flounder, and black sea bass. Do we need a motion on that? Okay, no. Anything else that you need, Shanna?

MS. MADSEN: No, thank you very much for your input.

CHAIRMAN GROUT: Okay, we need a motion to approve the assessment schedule as modified today. Roy.

MR. ROY MILLER: I move we approve the assessment schedule as modified today.

CHAIRMAN GROUT: Do we have a second? Emerson is the second. Further discussion, seeing none; **is there any objection to the motion? Seeing none; it passes by consensus.** Okay that is it on that item.

FOLLOW UP ON CLIMATE CHANGE WORKSHOP

CHAIRMAN GROUT: We're now down to Agenda Item Number 8. This is a follow up on our Climate Change Workshop.

Something that I would like to put up is a suggestion I have for creating a Climate Change Workgroup. I've also put together a task for the board considerations to this workgroup, as well as a general idea of who would make up. While that is coming up, has anybody had any other thoughts or questions or things they would like to bring forward about our climate change workshop?

MR. WHITE: Not that. But I was just wondering if your intention is to work through all we have left to do before lunch, or are you thinking about breaking here at some point? Because it seems like we have a ways to go.

CHAIRMAN GROUT: I've been informed by staff that the next two things are going to take less

than ten minutes combined. Then the question is do we take a break for lunch before we come back for the business session? Okay, once we get to that point we'll take a poll as to whether people want to push through or eat.

PROPOSAL TO DEVELOP A CLIMATE CHANGE WORKGROUP

CHAIRMAN GROUT We've got that up. As I indicated, what I'm proposing to do is develop a Climate Change Workgroup that would be comprised of commissioners, technical support, staff and federal partners. The working group's tasks will be tasked with developing science, policy and management strategies to assist the commission in adapting its management to changes in species abundance and distribution, resulting from climate change impacts; any discussion on this? Adam.

MR. NOWALSKY: The wording of that I think certainly captures a lot of what we talked about yesterday; and I certainly have no objection to that. But I did just want to make one comment as I thought about the discussions from yesterday, and some of the discussion item bullet points that you had presented to us; and one of those being precautionary management decisions in anticipation of shifting distributions.

One of the things that I think it is important that this group looks at, and gives us advice on, is that the shifting distribution does not necessarily mean decline in overall population. I think that is important when we look at, we heard a lot about when we talked about the Lobster Management Board, and the desire that nobody wanted to see the fishery go away, per se, and that a lot of this is out of our control.

None of us are here; we wouldn't be here if we were in the business of completely ignoring conservation on a resource. But a lot of the climate change items that we deal with are not about a resource not being conserved, it is

simply about it moving; and taking that into account. I just wanted to bring that forward.

As I gave that more thought from the conversation that we had yesterday, I certainly think that the way this is worded here doesn't put us into a sense of, well because stocks are shifting, we have to be more precautionary in what we do to our fishermen, who are feeling those affects immediately already; long before we initiate management action.

CHAIRMAN GROUT: Good points, Adam, any other discussion on this? Steve Train.

MR. STEPHEN TRAIN: I was wondering if we could include any other interested parties to the list of possible participants.

CHAIRMAN GROUT: That sounds fine to me. Do you want me to add that specifically to the wording? We can add it. It will be added, other interested parties; any other thoughts on this and any objections to this task? Are there any commissioners that are interested in volunteering? Bill Adler, thank you, Adam, thank you, Steve Train, John and Ritchie, Brandon, Spud; we're going to have the entire commission here, good, oh and Mike Armstrong has been nominated.

MS. KERNS: I was writing frantically, I had Bill Adler, Adam, Steve Train, Brandon Muffley, Spud Woodward, John Clark, Ritchie White and Mike Armstrong. Did I miss anybody? Doug Brady. Thank you.

CHAIRMAN GROUT: Thank you very much; I appreciate this willingness to serve here. I am sure we'll start off with some conference calls, but we may need to have some face-to-face meetings at some point. We'll try. I know we've got Mike Armstrong from the Management Science Committee volunteered. We'll try and get a few other technical folks to help out. I know our federal partners have also agreed to send a representative. Jay.

MR. JASON McNAMEE: As you were asking the question I quickly e-mailed Mark Gibson, and he would like to be included on the team as well. I think he would be an asset to the team.

ATLANTIC STURGEON STOCK ASSESSMENT UPDATE

CHAIRMAN GROUT: Excellent, thank you very much. Katie Drew, sturgeon assessment.

MS. KATIE DREW: I'll make this brief, because I'm hungry too. The sturgeon stock assessment is proceeding on pace. We're going to have an assessment meeting in July, an in-person meeting with the Stock Assessment Subcommittee. We've recently resolved some of our data sharing issues with data sources who were a little hesitant about being involved in the ASMFC process; so I feel we've made good progress in getting some of the best and most recent up-do-date data for this species.

CHAIRMAN GROUT: Question, sorry about that. Go ahead, Robert.

MR. BOYLES: I'll have it offline, thank you, Mr. Chairman.

CHAIRMAN GROUT: Are you sure? Okay, anybody else have questions for Katie? Okay, Mark.

LAW ENFORCEMENT COMMITTEE REPORT

MR. MARK ROBSON: I just want to go over very quickly a number of the items that the Law Enforcement Committee is working on right now on your behalf for various boards. Starting with lobster, we have established an Offshore Enforcement Subcommittee, and we've had considerable help from Commissioner David Borden on that. We are continuing to develop some ideas about what to look for there to enhance offshore enforcement in the American lobster fishery; as we proceed with some of the trap reduction schedules.

We've already had a teleconference call, we'll be meeting again. We had discussion at our LEC meeting this week, and we'll be having more teleconference calls to work up some specific proposals and ideas. We heard a presentation yesterday regarding Maine's trap tag transferability program that they have implemented as a pilot.

The LEC members were impressed with the way that program has been working for them, and it seems to be something that's effective and relatively free of loopholes; so we think we can get onboard with that type of a trap tag transferability program elsewhere, if needed. We understand that there were questions regarding possible enforcement issues for the lobster size limit differences that we have among the states, and also with interest in trying to make sure that we standardize V-notch enforcement.

The LEC heard a little bit about those issues at the meeting this week, and we're prepared to continue working on them, and provide any advice or input to you as needed. With Jonah crabs we also understand that there is going to be an addendum looking at claw harvest possibility options. We will obviously stand ready to provide comments on that. We have an Enforcement Subcommittee continuing to work on tautaug, particularly the live-fish tagging program. We will continue to work on that with staff and with several of the commissioners here. We think we have some good information coming to us that we can look at with regards to tag-type designs that would be suitable for enforcement purposes as well.

We had a lot of discussion yesterday and this morning about some more or less emerging issues that we are seeing in enforcement, with regard particularly to the summer flounder fishery and safe harbor issues, safe harbor requests and also some dual landings requests. We understand that this is something that is sort of a developing issue that we might need to look at in the future.

Again, the LEC is trying to collect as much information on what those specific issues are, whether they are management or there may not really be any specific enforcement concerns or problems at this time; but we are going to look at that and be prepared to provide input to the Summer Flounder Board on that; as requested.

We had a couple other issues. We were asked to kind of take a look at the eel aquaculture program that North Carolina implemented, and identify some of the enforcement safeguards that were put into effect for that permit; to be able to provide some of that information and some of those strategies back to the board, if there were future requests for aquaculture-type operations.

We've gone through the permit conditions for North Carolina. They had about five pages of permit conditions, a lot of them related to making sure that everything was on the up and up and that the enforcement was able to do their job. We'll put that together in a written format, and we can make that available as well to the board. Right now we're talking about American eel, and I think that is maybe where we would submit that information to.

Just one last thing, we continue to have some discussions about the importance and the unique nature of aerial enforcement work. We have another subcommittee that is formed to look at that; to consider how we've ranked and rated aerial enforcement as a technique, and to see how it works with other types of enforcement platforms, and to tie that in with some of the federal and state coordination of funding and priorities, for equipment and reimbursement for that sort of activity. That completes my report, Mr. Chairman.

CHAIRMAN GROUT: Any questions?

MR. WHITE: When you talk about aerial, does that include drone or is that just fixed wing?

MR. ROBSON: No, this is just discussing fixed wing at this point.

MR. BORDEN: You probably saw me dashing in and out of the room the other day when the Enforcement Committee was going on. I went over and listened to a number of the sessions that are of interest. I would just like to take the time to thank Mark and the members of the LEC For what I think is fine work that they've already initiated on this offshore enforcement effort.

I think they are really doing good work. They deserve credit. They have responded to the board initiation on this, and I look forward to working with them. I think they will bring back a number of alternatives that I think we'll find useful, in terms of improving enforcement. Thank you, Mark, for all your work. Please pass my compliments along to the subcommittee.

CHAIRMAN GROUT: Any other questions for Mark? Okay we have one other agenda item before we'll break for lunch, and then we'll come back for the business session.

COMMISSION POSITION ON THE FEDERAL MONUMENT PROPOSALS

CHAIRMAN GROUT: We have a request from the Lobster Board to take a Commission position on the federal monument proposals up in the northeast. I am going to turn that over to the Lobster Board Chairman, Dave Borden.

MR. BORDEN: I'll try to be brief, but I also recognize that there are a number of people at the table that have not been exposed to this issue, so I am just going to lay out a little bit of background. Then what I would like to do is just take a few questions, and then I'll make the motion.

In terms of coral management there are two almost parallel processes that are going on now. One process is New England Council Coral Amendment, which is very similar to the

process that the Mid-Atlantic Council went through. Under that process, so everybody understands, it is a normal fishery management process.

There is full disclosure, there is full transparency. The council formed subcommittees and solicited public input and there are workshops, and all those types of things. Just as importantly there are impact analyses that are conducted. That is one effort that is going on. The Commission is involved in that.

Chairman Grout appointed a member to the New England Council Committee, so we have input to that; and we'll be revisiting the progress in that aspect of the program. Pretty much every time we have a meeting we'll put it on the agenda. The other process that is going on is a process under an act called the Antiquities Act.

This is an act that was passed in 1906, by Congress. What it does is it provides the President of the United States proclamation authority to protect areas under law. As I just indicated, it is proclamation authority. The President literally can sign a proclamation and take pretty substantial areas and protect them.

Now this activity has been going on since 1906. There have been 132 different sites that have been established, consistent with this authority. These sites include, I would point out, and some of our most famous parks in the United States have been established using this authority. It has been used to good effect in numerous occasions, by both Republicans and Democrats.

In this case a group of environmental organizations have essentially asked that the President use this to establish a marine monument in the New England area, offshore. Because of the nature of the request, and because of the law that was passed. I think this music going on in the next room really highlights this presentation.

Because of the nature of the underlying law, the Antiquities Act is really not required to go through the same process as the Magnuson Act. In other words, it is just a signature on a piece of paper. At this point the President has basically petitions and letters. I think there have been about 160,000 letters that have been submitted to the White House on this. From what I understand through a whole range of political sources, the President is actively considering doing this, and the timing of it unfortunately, may take place before our next meeting. I am sure some of you are saying, how does this apply to us? Well, the way it applies to us is we manage, along with our partners in NOAA, the offshore lobster resource. We're also actively involved in the management of a number of Mid-Atlantic and South Atlantic species that inhabit this area. The area that has been tentatively outlined and I would emphasize the word tentatively, because you cannot pick up a piece of paper.

We can't go anywhere and find a piece of paper that says this is the proposal. There are no specifics that have been offered, just a concept. We're in this situation where this proclamation may take place, I would think, in the next two months. That is basically what I've been informed by a number of Congressional officers.

As a result of that and given the potential for a negative impact on some of the fisheries that we manage, the Lobster Board took up this issue and basically crafted this motion as guidance. Now the other point here is that Chairman Grout and our Executive Director have arranged for a meeting between the leadership of the Commission and the President's office, the Council of Environmental Quality.

The purpose of the meeting is to discuss both the offshore lobster industry, but also these other issues, which involve commercial fisheries and recreational fisheries. It is quite conceivable, given the precedent that has been set in the Hawaiian chain, where they

established I think a 158,000 square mile area reserve.

In that area they prohibit all commercial and all recreational fishing. Doug and Bob have set up a meeting next Monday, where a number of us are going to go and talk about potential impacts on our fisheries. The Lobster Board took this up – and I'm almost finished – and decided that although there isn't a specific proposal that we all could react to, which we would like; that we think that we should provide some guidance and have a Commission position on it.

The Lobster Board took this up, passed this motion, and so this is a motion to this committee. If this committee were to adopt it, then it would provide additional guidance to the leadership as they go forward with the discussions with CEQ. I would like to emphasize one point here. You have these two procedures.

The essence of this motion would draw a line, and basically say if you're going to proceed with this proclamation, please draw the boundary line here; and any sort of coral protection that would ensue landward at the line, would be done through the Magnuson Act. The reason that suggestion is being made, is because that process is fully transparent.

We would be able to look at those proposals, comment on them, look at our fishery impacts, talk to our constituents and so forth. The suggestion here is a process suggestion. I think that is an important point. We are not endorsing the creation of a monument; we're just recommending that they follow a certain process.

I think what I would like to do is to read the motion on behalf of the committee into the record. I am going to suggest a slight word change if the Chair can accomplish this through a perfection, I think that would be useful. **On behalf of the American Lobster Board, move the Commission send a letter to the President**

of the United States of America regarding the following. The preference of the Commission would be for the current New England Council Coral Management Process to continue, without presidential use of the Antiquities Act to protect deep sea corals. Should the President/CEQ decide to designate a New England deepwater monument prior to the end of his presidency, the Commission requests that any area so designated, be limited to the smallest area compatible with the proper care and management of the objects to be protected; as required by the Antiquities Act.

Further, the area be limited to depths greater than approximately 900 meters, and encompass any and all of the regions seaward of this line out to the EEZ. That only bottom tending fishing effort be prohibited in the area, and that all other midwater surface fishing methods, recreational and commercial be allowed to continue to use the area. That the public and effected user groups be allowed to review and comment on any specific proposal prior to its implementation. I would move that on behalf of the Lobster Board.

CHAIRMAN GROUT: Because that is a motion on behalf of the board, it doesn't need a second; any discussion on this motion?

MR. BOYLES: I would just like to offer my support and from my perspective, for the Policy Board to know that the Association of Fish and Wildlife Agencies has an Ocean Resources Policy Committee, which I'm involved. The Policy Committee is exploring implications of the use of the Antiquities Act in the marine realm.

I would like to just reiterate Commissioner Borden's concerns about transparency and accessibility to the decision making process. It is a very mature process in the fisheries management world, and certainly something we're very interested in, and conversely, somewhat concerned with the potential application and the exclusion of constituents

with the designation under the Antiquities Act. I would certainly speak in favor of the motion.

MR. LOREN W. LUSTIG: I find this to be a very fascinating discussion. I'm trying to remember what I learned long ago about the Antiquities Act. I believe it was used by Teddy Roosevelt quite a bit for the national monuments. But my question relates to the role of Congress. I believe that they have the power to review and perhaps overturn by a Congressional Action, the proclamation of the President through legislative action. What I don't know is if that was ever attempted. If anyone has information about that I would be very interested in that.

CHAIRMAN GROUT: Information I've read indicates that yes it has occurred in the past that Congress has overturned presidential proclamations on this. Eric, do you have a follow up on that?

MR. ERIC REID: Congress has amended the size of some of these designations by moving the boundaries around a little bit, and through a full act of Congress they have removed some. I also want to point out that it has been challenged. The Antiquities Act and a presidential authority have been challenged in courts all the way up to the Supreme Court.

The authority of the President has never been questioned in court. It has never lost. Except for a full action by Congress, this is a one-way street for us. Nobody is saying anything about corals not being protected; it is defending a public process. The Antiquities Act doesn't require any NEPA review or guidelines. I could talk as long as it's going to take to convince everybody in this room that this is a necessary action, but I am sure you would all prefer that I didn't, so I will leave it as that. I'll answer any more questions though.

MR. WILLIAM A. ADLER: I was just looking at one of the words here in the, I think it is the third paragraph down, where it says approximately 900 meters and encompass any

or all of the region seaward of this line, out to the EEZ. Is that correct? I thought the EEZ started at three miles. Okay, as long as we've got it right here.

CHAIRMAN GROUT: any other questions or discussions on this motion?

MR. BORDEN: Just this is a very quick point to Bill's point. There is also a chart with a line on it that approximates a 900 meter line that goes with this.

MR. ADLER: But is it out to the EEZ or out to the limit of the EEZ?

MR. BORDEN: I guess if we really wanted to be specific we would say out to the outer limit of the EEZ; because it is all part of the EEZ.

CHAIRMAN GROUT: Do we have any objection to making that editorial change? Seeing none; is there further discussion on this motion?

MR. BORDEN: I apologize, Mr. Chairman. I just point out this motion passed the Lobster Board unanimously.

MR. SIMPSON: With one abstention. No, I stepped out which I apologize for. I am fine with this. If it hasn't already been discussed, I think it is important to give the staff the latitude to craft this with a tone and verbiage that is appropriate for the recipient of the letter.

CHAIRMAN GROUT: So done. Further discussion on this motion, do you need time to caucus, does anybody need time to caucus? I don't see any hands so we'll vote. **All those in favor raise your hand, opposition, abstentions, null votes; the motion carries 15 to 0 to 3 to 0.** Okay thank you very much on this, we will bring this letter forward to CEQ on Monday; any other items for the Policy Board? Adam.

MR. NOWALSKY: Very quickly, just as Chair of the Tautaug Board for those members of that board that were expecting a meeting during this

meeting week. There is a memo under the ISFMP meeting materials giving you an update of where we are in our planned path forward, thank you.

ADJOURNMENT

CHAIRMAN GROUT: Okay I'll take a motion to adjourn. We will reconvene the business session in 45 minutes, because we are running behind schedule and then we will move into our Parliamentary Workshop.

(Whereupon the meeting was adjourned at 1:08 o'clock, p.m. on May 4, 2016.)

Atlantic States Marine Fisheries Commission

Annual Performance of the Stocks: 2016 Review

July 2016

Objective: – Support the ISFMP Policy Board’s review of stock rebuilding performance and management board actions and provide direction to management boards for 2016 Action Plan.

- A. Validate status/rate of progress (acceptable/not acceptable)
- B. If not acceptable, identify appropriate corrective action

Species Groups: – Species are grouped under five major categories (1) rebuilt/sustainable; (2) recovering/rebuilding; (3) concern; (4) depleted; and (5) unknown, as defined below.

Rebuilt/Sustainable – Stock biomass is equal to or above the biomass level established by the FMP to ensure population sustainability. When between benchmark assessments a stock can still be considered rebuilt/sustainable if it drops below the target but remains above the threshold.

Recovering/Rebuilding – Stocks exhibit stable or increasing trends. Stock biomass is between the threshold and the target level established by the FMP.

Concern – Those stocks developing emerging issues, e.g., increased effort, declining landings, or impacts due to environmental conditions.

Depleted – Reflects low levels of abundance though it is unclear whether fishing mortality is the primary cause for reduced stock size

Unknown – There is no accepted stock assessment to estimate stock status.

Status as of 2016

Rebuilt/Sustainable:

American Lobster (GOM/GBK)
Atlantic Herring
Atlantic Menhaden
Black Drum
Bluefish
Scup
Spanish Mackerel
Spiny Dogfish

Recovering/Rebuilding:

Atlantic Striped Bass

Concern:

Atlantic Croaker
Black Sea Bass
Coastal Sharks
Horseshoe Crab
Red Drum
Tautog
Summer Flounder
Winter Flounder (GOM)

Depleted:

American Eel
American Lobster (SNE)
American Shad
Northern Shrimp
River Herring
Weakfish
Winter flounder (SNE/MA)

Unknown:

Atlantic Sturgeon
Jonah Crab
Spot
Spotted Seatrout



Status as of 1998

Rebuilt/Rebuilding

Atlantic Herring
Atlantic Striped Bass
Bluefish
Black Sea Bass
Spanish Mackerel
Summer Flounder

Concern/Depleted

American Lobster (SNE)
Atlantic Menhaden
Northern Shrimp
Red Drum
Scup
Spiny Dogfish
Tautog
Weakfish
Winter Flounder (SNE/MA and GOM)

Unknown

American Eel
American Shad
Atlantic Croaker
Atlantic Sturgeon
Horseshoe Crab
River Herring
Spot
Spotted Seatrout

Summary Table of Rebuilt/Sustainable Species

Species	Biomass % of Target	Assessment Schedule	Caveats/Notes (what actions need to be taken to maintain rebuilt status)
American Lobster (Gulf of Maine/ Georges Bank)	375% of abundance threshold (2015 benchmark assessment)		The stock is not overfished and is not experiencing overfishing. Dramatic stock abundance increase since the late 1980s and at an increasing rate since 2005. Average spawning stock and recruit abundance are above the 75 th percentile while young of year indicators are generally below the median.
Atlantic Herring	>200% of biomass target adjusted for retrospective bias (Operational Assessment 2015)	Benchmark Assessment – June 2018	The stock is not overfished and is not experiencing overfishing. Survey indices in the operational assessment suggest the 2011 year class is the second largest in time series and will contribute significantly to total population abundance and biomass.
Atlantic Menhaden	90% of fecundity target	Assessment Update - 2017	The stock is not overfished and is not experiencing overfishing. Abundance of older fecund fish in the population. Significant changes occurred through the benchmark assessment including the addition of fishery-independent datasets and changes to the model structure to incorporate the spatial resolution of the reduction and bait fisheries.
Black Drum	192% of B_{MSY} (2015 benchmark assessment)		The stock is not overfished and is not experiencing overfishing.
Bluefish	85% of SSB target (2015 benchmark assessment)	Data Update-2018	The stock is not overfished and is not experiencing overfishing. Bluefish are considered less vulnerable to becoming overfished relative to the biological reference points due to their life history characteristics (e.g., pelagic species, opportunistic feeder, multiple spawning events per years).
Scup	209% of SSB target (2015 benchmark assessment)	Assessment Update-2018	The stock is not overfished and is not experiencing overfishing. There is no consistent internal retrospective pattern in fishing mortality (F), spawning stock biomass (SSB), or recruitment evident in the scup assessment model.
Spanish Mackerel	$SSB_{2011}/SSB_{MSY}=1.49$; $SSB_{2011}/M_{SST}=2.29$ (2012 benchmark stock assessment)		The stock is not overfished and is not experiencing overfishing.
Spiny Dogfish	87% of SSB Target (2015 assessment update)	Assessment Update - Fall 2016	In November 2015, due to incomplete survey data in 2014, the Northeast Fisheries Science Center (NEFSC) updated the spiny dogfish assessment using a Kalman filter to smooth across years. The updated estimate of SSB for 2015 is 168,207 mt, about 106% of the SSB target. In updating the assessment, the NEFSC estimated a 96% probability that the stock is not overfished.

Summary Table of Species Undergoing Recovery/Rebuilding

Species	Biomass % of Target	Assessment Schedule	Caveats/Notes (what actions need to be taken to continue rebuilding)
Atlantic Striped Bass	89% of SSB target in 2014 (2015 assessment update)	Assessment Update – Fall 2016 Benchmark Assessment – 2018	The stock is not overfished and is not experiencing overfishing, although F has been above the target and SSB has declined below the target towards the threshold level since 2006. Coastwide harvest reduction measures were implemented prior to the 2015 fishing season in order to reduce fishing mortality to a level at or below the target.

Overview of Species of Concern

Atlantic Croaker: Concern

2010 Stock Assessment Findings

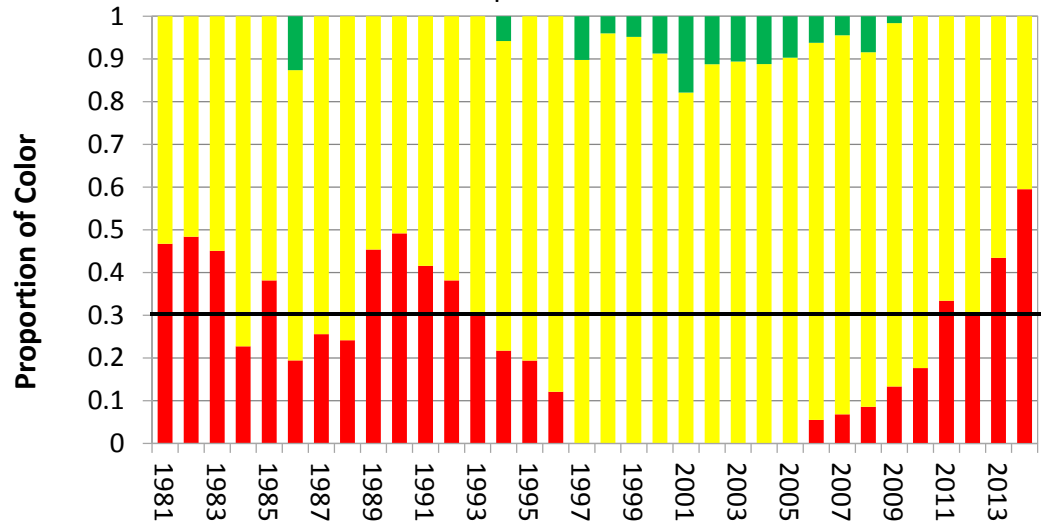
- Atlantic croaker is not experiencing overfishing. The assessment shows increasing biomass and an expanding age structure in the population since the 1980s. Atlantic croaker are considered to be a single stock on the Atlantic coast.
- Due to a high degree of uncertainty in the amount of shrimp trawl discards, the overfished status could not be determined. Similarly, values of spawning stock biomass (SSB) and fishing mortality (F) are not considered reliable; however, estimated trends show increasing biomass and decreasing fishing mortality.

Board Adherence to Scientific Advice

- In July 2015, the PRT completed traffic light analysis for the 2014 fishing year. The results showed declining trends in the fishery independent indices as well as a drop in both commercial and recreational landings. While the harvest index was above the 30% threshold with a red proportion of 44.5%, management measures were not tripped since the abundance index was below the threshold at 14.2%. Per Addendum II, a TLA was not conducted in 2016 due to the on-going benchmark stock assessment.

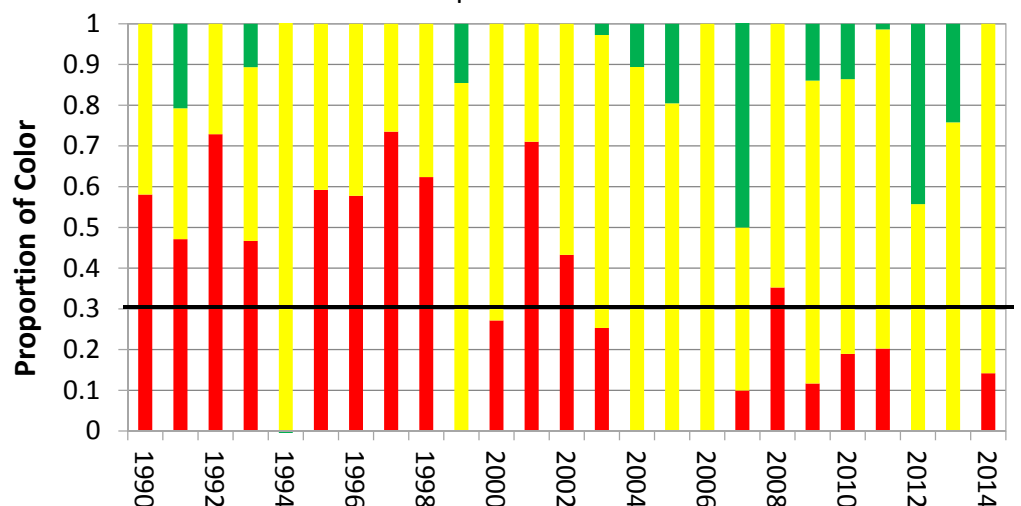
Traffic Light Analysis of Atlantic Croaker (Harvest Metric)

Solid line represents 30% threshold



Traffic Light Analysis of Atlantic Croaker (Abundance Metric)

Solid line represents 30% threshold



Management response is triggered when proportion of red exceeds the 30% threshold level for three consecutive years in both fishery characteristics (harvest and abundance metrics).

Timeline of Management Actions: FMP ('87); Amendment 1 ('05); Addendum I ('11); Addendum II ('14)

Overview of Species of Concern

Scientific Advice Based on Assessment Findings

- The 2010 Review Panel stressed the importance of developing valid estimates of shrimp trawl discards to improve the certainty of future assessment results. The following were also highlighted as needs for data and analysis:
 - Fishery-dependent biological sampling to improve age length keys
 - More information on growth rates, age structures, estimates of fecundity, and maturity
 - Increased focus on collecting subsamples in the species southern range through fishery independent surveys

Monitoring and Management

- Under the TLA management program, if thresholds for both population characteristics (adult abundance and harvest) achieve or exceed the management threshold of 30% for the specified three year period, management action will be taken.

Rebuilding Trajectory: Increasing

Next Assessment: Benchmark stock assessment scheduled for 2016

Overview of Species of Concern

Black Sea Bass: Concern

Assessment Findings

- Although the resource was declared rebuilt in 2009, the species' unique life history characteristics (e.g., the species changes sex from female to male) contributes to some level of uncertainty about the size of the stock, as well as the species' response to exploitation.
- Due to uncertainty, an overfishing limit (OFL) cannot be specified for the fishery, which means a level of catch cannot be derived from model results.
- 2012 assessment indicates resource is not overfished nor experiencing overfishing, with biomass estimated at 102% of the biomass target.

Significant Sources of Uncertainty

- Assessment assumes a completely mixed stock, while tagging information suggests otherwise
- Evidence of changes in the spatial distribution of the species, specifically an expansion of the species into more northern areas.
- Due to the unusual life history strategy (females changing sex to male), the assumptions of a constant natural mortality rate (M) in the model for both sexes may not adequately capture the dynamics in M.
- The unique life history also makes the determination of appropriate reference points difficult

Prioritized Research to Reduce Scientific Uncertainty

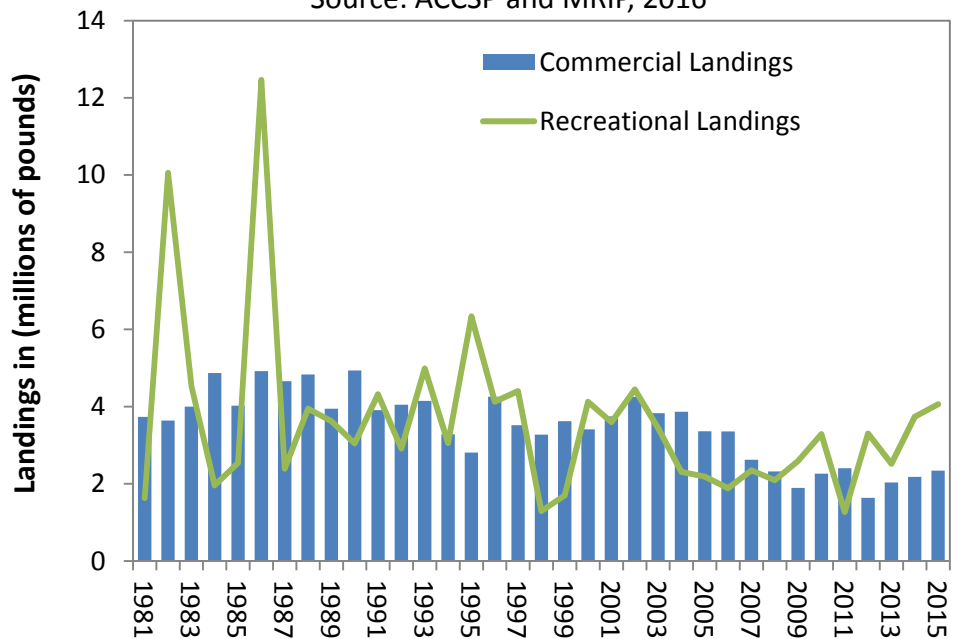
- Develop reference points and assessment methods to account for unique life history.
- Explore the utility of a spatially structured assessment to address the incomplete mixing of the stock
- Evaluate the implication of range expansion to stock and fishery dynamics

Next Assessment: Benchmark assessment in December 2016

Rebuilding Trajectory: Unknown

Black Sea Bass Commercial and Recreational Landings

Source: ACCSP and MRIP, 2016



Timeline of Management Actions: FMP ('96); Amendment 10 ('97); Amendment 11 ('98); Amendment 12 ('99); Amendment 13 ('03); Addenda II & III ('04); Addendum XVI ('05); Addendum XIX ('07); Addendum XX ('09); Addendum XXI ('11); Addendum XXIII ('13); Addendum XXV ('14); Addendum XXVII ('16)

Overview of Species of Concern

Coastal Sharks: Concern

Assessment Findings

Stock Status of Atlantic Coastal Shark Species and Species Groups			
Species/Complex Name	Stock Status		References/Comments
	Overfished	Overfishing	
Pelagic			
Porbeagle	Yes	No	Porbeagle Stock Assessment, ICCAT Standing Committee on Research and Statistics Report (2009); Rebuilding ends in 2108 (HMS Am. 2)
Blue	No	No	ICCAT Standing Committee on Research and Statistics Report (2015)
Shortfin mako	No	No	ICCAT Standing Committee on Research and Statistics Report (2012)
All other pelagic sharks	Unknown	Unknown	
Aggregated Large Coastal Sharks (LCS)			
Atlantic Blacktip	Unknown	Unknown	SEDAR 11 (2006)
Aggregated Large Coastal Sharks - Atlantic Region	Unknown	Unknown	SEDAR 11 (2006); difficult to assess as a species complex due to various life history characteristics/ lack of available data
Non-Blacknose Small Coastal Sharks (SCS)			
Atlantic Sharpnose	No	No	SEDAR 34 (2013)
Bonnethead	Unknown	Unknown	SEDAR 34 (2013)
Finetooth	No	No	SEDAR 13 (2007)
Hammerhead			
Scalloped	Yes	Yes	SEFSC Scientific Review by Hayes et al. (2009)
Blacknose			
Blacknose	Yes	Yes	SEDAR 21 (2010); Rebuilding ends in 2043 (HMS Am. 5a)
Smoothhound			
Atlantic Smooth	No	No	SEDAR 39 (2015)
Research			
Sandbar	Yes	No	SEDAR 21 (2010)
Prohibited			
Dusky	Yes	Yes	SEDAR 21 (2010); Rebuilding ends in 2108 (HMS Am. 2)
All other prohibited	Unknown	Unknown	

Board Adherence to Scientific Advice

- Based on Technical Committee advice, the Board approved FMP regulations that generally complement regulations in federal waters, ensuring F does not exceed F_{MSY} or $F_{REBUILD}$, and protecting shark pupping grounds in state waters.
- The Board manages the commercial fishery via management groups based on biology, fisheries, and stock status of various species.
- To complement the Shark Conservation Act of 2010, the Board implemented a fins naturally attached policy for all sharks, with a limited exception for smooth dogfish. Harvesters can remove the fins of smooth dogfish provided the weight of the fins onboard does not exceed 12% of the total weight of smooth dogfish carcasses. The Board approved a January 1, 2016 opening date for all commercial management groups in the Atlantic shark fishery, in conjunction with federal waters' fisheries.

Overview of Species of Concern

- The 2016 commercial fishery is year-round, therefore, adjustable commercial retention limits for the aggregated large coastal shark and hammerhead shark management groups were implemented, in conjunction with federal waters fisheries, to ensure equitable distribution of the resource throughout the fishing season. The default commercial retention limit is 45 sharks per trip per vessel; it can be adjusted in-season to 0 – 55 sharks per vessel per trip.

Monitoring and Management Measures

- May 15 – July 15 closed season from New Jersey-Virginia to protect pupping females for the following species: sandbar, silky, tiger, blacktip, spinner, bull, lemon, nurse, scalloped hammerhead, great hammerhead, and smooth hammerhead.
- Fins to remain attached to the carcass through landing for all species except smooth dogfish.
- Recreational fishing controlled through possession limits with a 4.5' fork length size limit for all species except for Atlantic sharpnose, finetooth, blacknose, and bonnethead which do not have a size limit, and 6.5' for all hammerhead shark species.
- Recreational anglers can only harvest sharks caught with a handline or rod & reel.

Next Assessment: Variable by species/complex

Rebuilding Trajectory: Variable by species/complex

Overview of Species of Concern

Horseshoe Crab: Concern

2013 Assessment Update Findings

- Abundance has increased in the Southeast and Delaware Bay Region (New Jersey through coastal Virginia), and decreased in New York and New England.
- In the Delaware Bay, increasing trends were most evident for juveniles, followed by adult males. A small increase in adult females was observed in the Virginia Tech Benthic Trawl Survey, but the survey has not been conducted since 2013. These patterns are indicative of population recovery, given that horseshoe crab females take longer to mature than males.
- Declines in the New England population were also apparent in the 2004 and 2008 assessments; however, the 2008 declines in New York represent a downturn from the 2004 assessment. The Technical Committee believes decreased harvest quotas in Delaware Bay encouraged increased harvest in nearby regions.
- The Technical Committee recommends continued precautionary management to address effects of redirected harvest from Delaware Bay to outlying populations.

Regional Trends in Horseshoe Crab Abundance

Region	Time series duration of longest dataset	Conclusion about population change
New England	1978 - 2008	Declined
New York	1987 - 2008	Declined
Delaware Bay	1988 - 2008	Increased
Southeast	1993 - 2009	Increased

Needed Information/Data

- Dedicated funding for a coastwide survey or surveys by broader geographical region
- Biological reference points
- A mechanism to include biomedical data and mortality estimates in regional assessments without compromising data confidentiality

Board Adherence to Scientific Advice

- Addendum VII, approved in 2012, implemented the Adaptive Resource Management (ARM) framework, which was used to set annual specifications for horseshoe crabs of Delaware Bay origin. The ARM framework has been used since 2013.

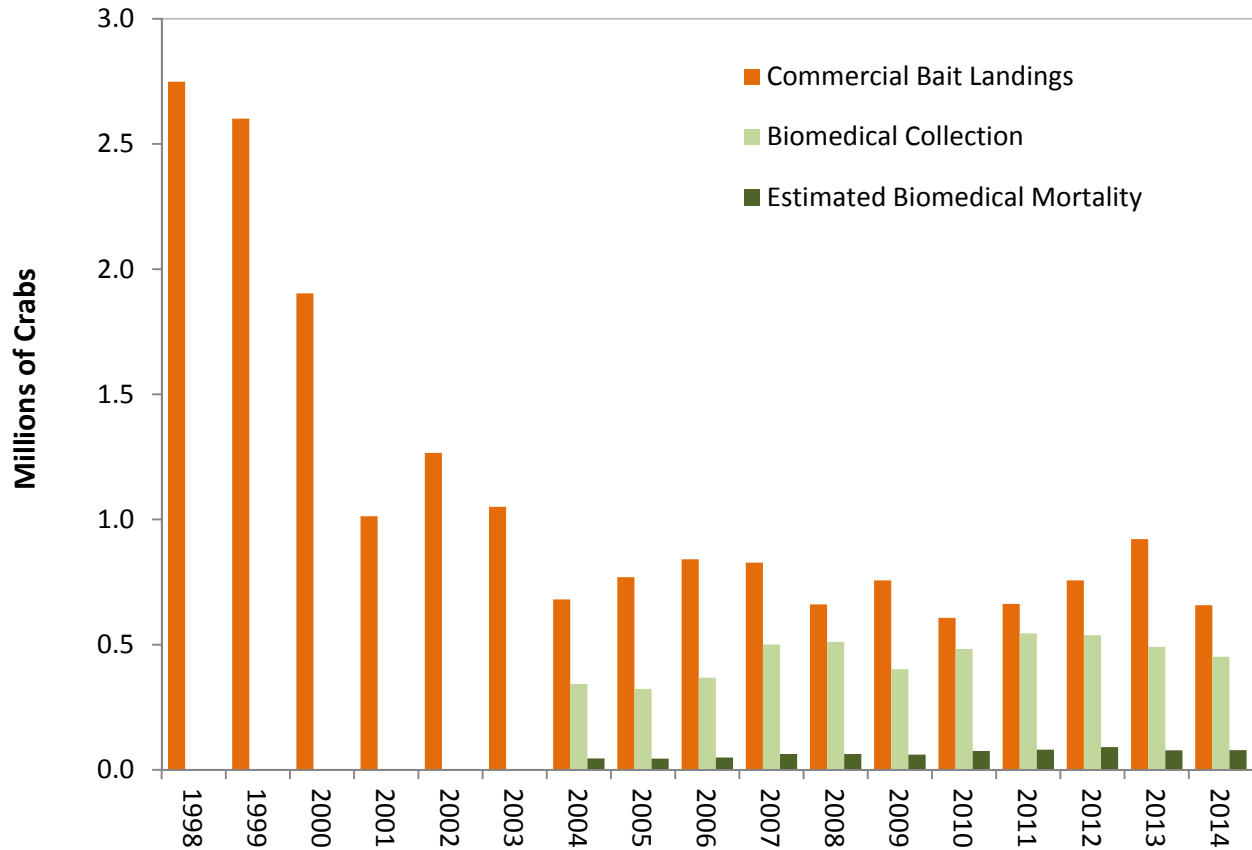
Next Assessment: Benchmark stock assessment scheduled for 2018

Rebuilding Trajectory: Varies by region (see table)

Overview of Species of Concern

Horseshoe Crab Bait Landings & Biomedical Collection

Source: ASMFC State Compliance Reports, 2015



Please note the following details regarding biomedical collection numbers:

* Biomedical collection numbers, which are annually reported to the Commission, include all horseshoe crabs brought to bleeding facilities except those that were harvested as bait and counted against state quotas.

* Most of the biomedical crabs collected are returned to the water after bleeding; a 15% mortality rate is estimated for all bled crabs. This is noted in the above graph as 'Estimated Biomedical Mortality.'

Timeline of Management Actions: FMP ('99); Addendum I ('00); Addendum II ('01); Addendum III ('04); Addendum IV ('06); Addendum V ('08); Addendum VI ('10); Addendum VII ('12)

Overview of Species of Concern

Red Drum: Concern

Assessment Findings

2009 Benchmark Assessment, SEDAR

- Overfishing is not occurring in either the northern or southern stocks as the 3-year average of the SPR is above the overfishing threshold of 30% SPR in both regions.
- The assessment is unable to determine whether the stocks are overfished due to a lack of information on the adult population (age 4 and older).
- The abundance of young fish (ages 1-3) increased in the early 1990s and stabilized throughout the 2000's in both regions.
- Exploitation in the northern stock decreased throughout the 1990s and increased after 2004. Exploitation in the southern stock fluctuated between 1989 and 2007 with a slight increasing trend.

2016 Benchmark Assessment Preliminary Findings (Pending final board action)

- Desk-reviewed models using the stock synthesis framework suggest overfishing is occurring in both the northern and southern regions.
- The northern model predicts low adult abundance (age 6+) since 1989.
- The southern model shows increasing F, resulting in low escapement of juveniles from the fishery.

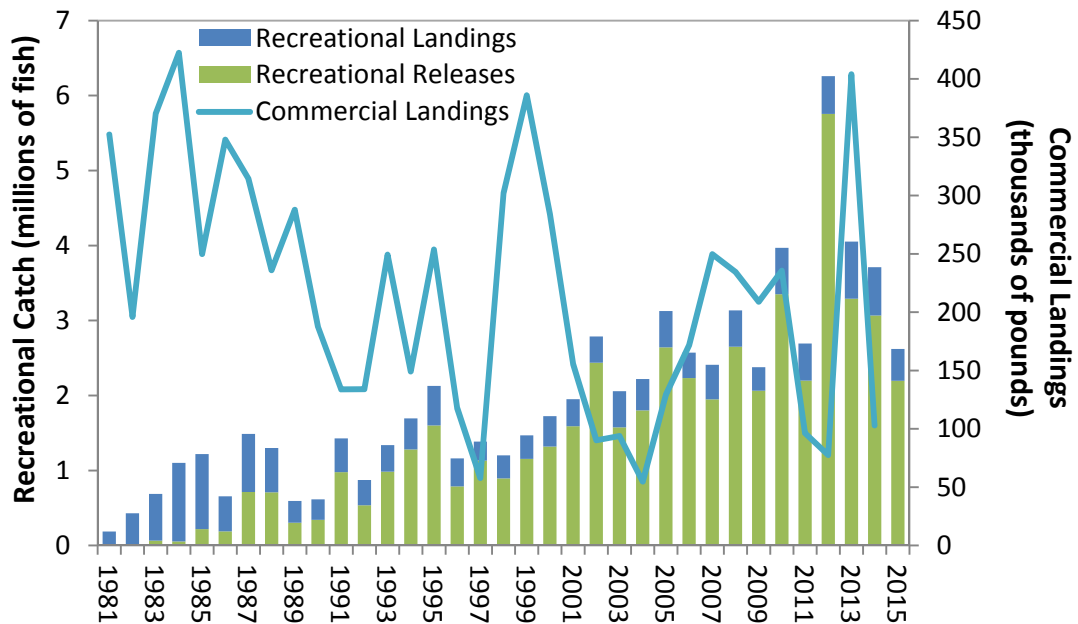
Board Adherence to Scientific Advice

- No management action was recommended or taken by the Board following the 2009 assessment.
- The 2016 assessment was presented to the Board in May. The Board charged the Technical Committee with several tasks to further investigate the assessment results.

Next Assessment: 2016 assessment currently on-going.

Red Drum Recreational Catch and Commercial Landings

Source: NMFS Fisheries Statistics Division, 2016



Timeline of Management Actions: FMP ('84); Amendment 1 ('91); Amendment 12 ('02); Addendum I ('13)

Overview of Species of Concern

Summer Flounder: Concern

Assessment Findings (2015 Assessment Update)

- Not overfished, but overfishing was occurring relative to the biological reference points (BRP) from the 2013 benchmark assessment ($F=0.359$ in 2014, 16% above $F_{MSY}=3.09$).
- Spawning stock biomass was estimated to be 89 million pounds in 2014, 65% of the target (138 million pounds)
- Recruitment over the last four years (2010-2013) were below average.
- 2015 commercial landings were approximately 10.59 million pounds or 96% of the 2015 the commercial quota
- 2015 recreational harvest was approximately 4.87 million pounds or 66% of the recreational harvest limit. Harvest in 2015 decreased by 34% relative to harvest in 2014.

Scientific Advice Based on Assessment Findings

- Retrospective patterns are evident in the assessment and have substantial implications for the reliability of the model projections.
- Projections are made assuming the acceptable biological catch (ABC) will be fully harvested, but not exceeded. However, there are trends in harvest indicating an increased likelihood of catches exceeding the ABC.
- For 2016 and 2017, the probability of overfishing is higher than the Mid-Atlantic Council’s risk policy.

Board Adherence to Scientific Advice

- 2016 acceptable biological catch was decreased by 29% to reflect declines in stock size.
- The Board approved a regional approach for recreational management measures which is a more precise use of the MRIP data. MRIP estimates are best used in aggregate - annually and at the state or regional level.

Next Assessment:

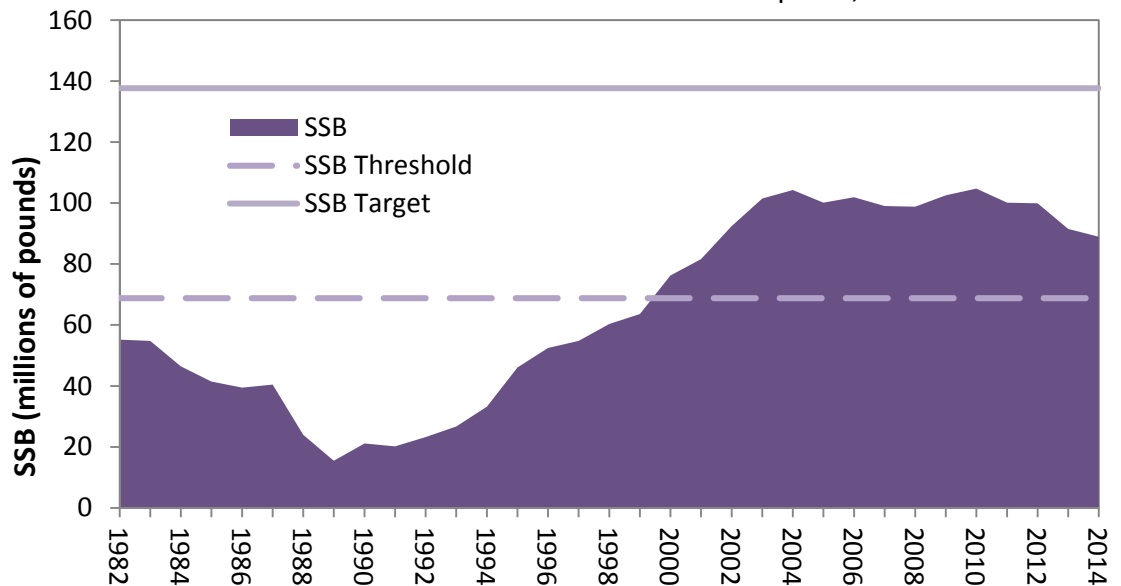
Not currently scheduled

Rebuilding

Trajectory: Stable

Summer Flounder Spawning Stock Biomass (SSB)

Source: NEFSC Stock Assessment Update, 2015



Timeline of Management Actions: FMP ('88); Amendment 1 ('91); Amendments 2-5 ('93); Amendment 6 ('94); Amendment 7 ('95); Amendments 8 & 9 ('96); Amendment 10 ('97); Amendment 11 ('98); Amendment 12 ('99); Amendment 13 ('03); Addendum XVII ('05); Addendum XVIII ('06); Addendum XXV ('14); Addendum XXVI ('15); Addendum XXVII ('16)

Overview of Species of Concern

Tautog: Concern

Assessment Findings

2015 Benchmark Stock Assessment

- The stock is overfished on a coastwide basis and in all proposed regions. Overfishing is occurring on a coastwide basis and in all regions except DelMarVa.
- Assessment recommends a regional approach to assess and manage the resource
- On a coastwide scale, SSB (4,882 mt) is well below its target (15,459 mt). The three-year average fishing mortality (0.30) exceeds the target of 0.15.

Scientific Advice Based on Assessment Findings

- The assessment proposed new reference points for two regional approaches (see table for stock condition and regional stock definition)
- The Technical Committee acknowledges the possibility of a sub-stock within the Long Island Sound and managing this region as a discrete area may be appropriate

Board Adherence to Scientific Advice

- Board initiated Draft Amendment 1 to consider regional stock definitions, reference points and management measures
- Board initiated regional stock assessments for Long Island Sound and New Jersey-New York Bight. This would create a four-region approach for consideration. The Board will review the assessment results in August 2016.

Next Assessment: Additional regions are being presented in August of 2016. As well as, an assessment update to include data from 2015 for all regions will begin in the fall of 2016.

Rebuilding Trajectory: Flat at low levels

Stock Region	Stock Status	SSB Target (in MT)	SSB Threshold (in MT)	F Target	F Threshold
Coastwide (All states)	Overfished Experiencing Overfishing	20,612	15,459	0.10	0.13
REGIONAL OPTION 1					
Massachusetts/Rhode Island/Connecticut	Overfished Experiencing Overfishing	3,883	2,912	0.15	0.20
New York – New Jersey	Overfished Not Experiencing Overfishing	3,570	2,640	0.17	0.26
Delaware/Maryland/ Virginia	Overfished Not Experiencing Overfishing	2,090	1,580	0.16	0.24
REGIONAL OPTION 2					
Massachusetts – Rhode Island	Overfished Experiencing Overfishing	2,633	1,975	0.16	0.38
Connecticut – New Jersey	Overfished Experiencing Overfishing	4,695	3521	0.17	0.24
Delaware/Maryland/ Virginia	Overfished Not Experiencing Overfishing	885	664	0.16	0.24

Overview of Species of Concern

Winter Flounder - GOM: Concern

2015 Groundfish Stock Assessment Update

Overfished Unknown

- Assessment is now based on 30+ cm area-swept biomass estimated directly from the surveys. The update assessment was accepted for management use.
- B_{MSY} and F_{MSY} are unknown, and consequently the F and SSB targets could not be generated.
- The lack of an apparent relationship between a large decrease in catch and little change in indices and age or size structure cause poor fit in models that have been used.

Overfishing not Occurring

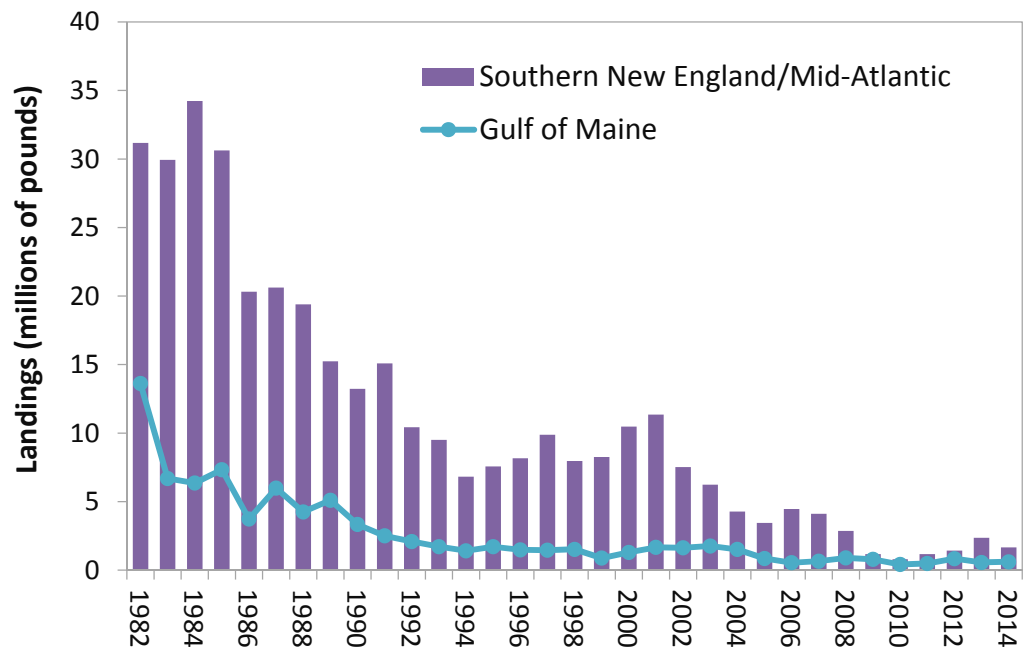
- Updated 2014 fall 30+ cm area-swept biomass (4,655 mt) implies an OFL of 1,080 mt based on the E_{MSY} proxy and a catch of 810 mt for 75% of the E_{MSY} proxy.
- It is unknown why the stock is not responding to low catches and low exploitation rates.

Board Adherence to Scientific Advice

- Addendum I measures, implemented in 2009, reduced recreational and commercial harvest by an estimated 11% and 31%, respectively
- In response to the 2011 stock status, NOAA Fisheries increased the 2012 state water sub-component to 272 mt (a 450% increase of 2010 level) based on the overfishing status.
- Following this federal action, the Commission’s Winter Flounder Board approved Addendum II in October 2012 to increase the maximum possession limit for non-federally permitted commercial vessels to 500 pounds.
- In response to the 2015 assessment update, NOAA Fisheries increased the 2016 state water sub-component to 122 mt (from 87 mt in 2015) and total stock-wide annual catch limit to 776 mt (from 489 mt), roughly three times the harvest in 2014.
- The Commission’s Board maintained the same management measures as 2015 for the 2016 fishing season.

Winter Flounder Commercial Landings by Stock Unit

Northeast Fisheries Science Center, 2015



Next Assessment: N/A

Rebuilding Trajectory: Flat at low levels

Timeline of Management Actions: FMP & Addendum I ('92); Addendum II ('98); Amendment 1 ('05); Addendum I ('09); Addendum II ('12); Addendum III ('13)

Overview of Depleted Species

American Eel: Depleted

2012 Benchmark Assessment

Depleted: Trend analyses and model results indicate the American eel stock has declined in recent decades and the prevalence of significant downward trends in multiple surveys across the coast is cause for concern.

Overfishing Determination: No overfishing determination can be made at this time.

Assessment Findings

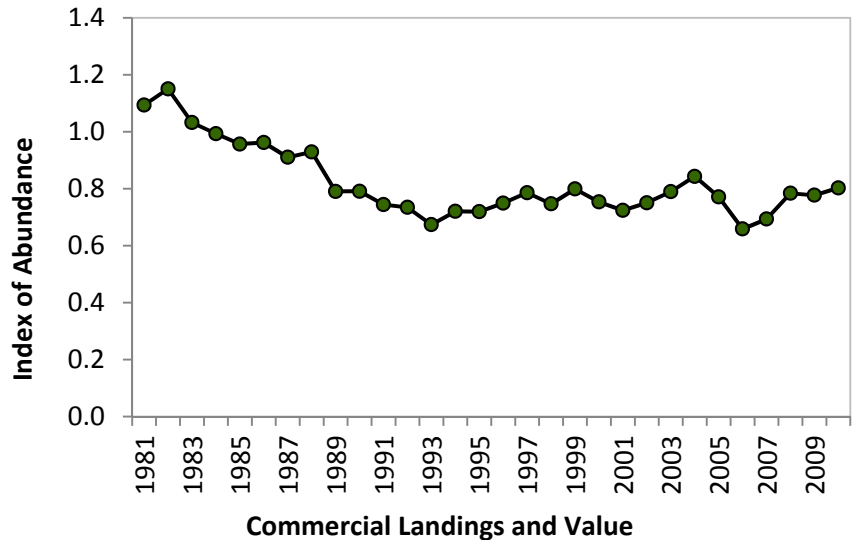
- In recent decades there has been neutral or declining coastwide abundance.
- Decreasing trends in yellow eels were seen in the Hudson River and South Atlantic regions
- Although commercial fishery landings and effort in recent times have declined in most regions, current levels of fishing effort may still be too high given the additional stressors affecting the stock such as habitat loss, passage mortality, and disease as well as potentially shifting oceanographic conditions.
- Management efforts to reduce mortality on American eels in the U.S. are warranted.

Board Adherence to Scientific Advice

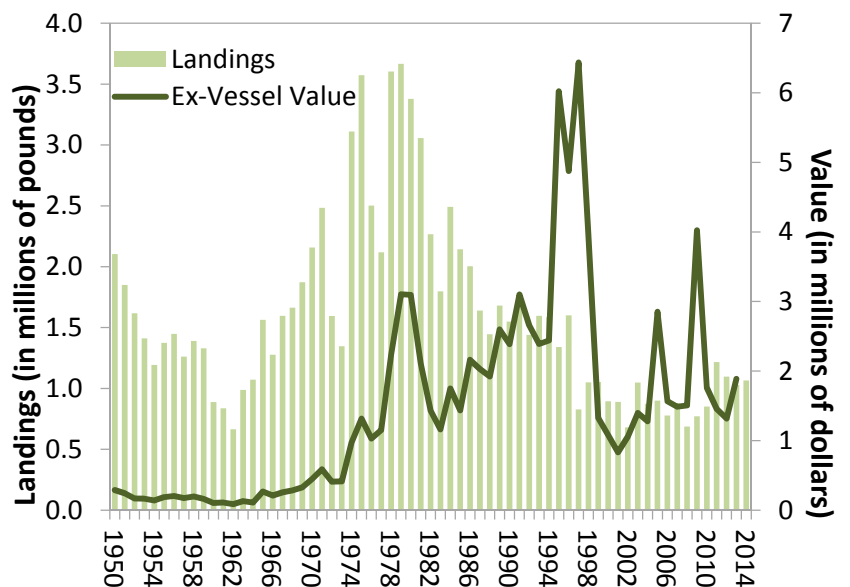
- Based on results of the 2012 benchmark assessment the Board has implemented two Addenda to reduce fishing mortality on American eels.
- Addendum III (2013) increased the commercial and recreational minimum size to 9 inches, reduced the recreational bag limit from 50 fish/day/angler to 25 fish/day/angler, prohibited most silver eel fisheries, and places restrictions on the growth of pigmented eel fisheries.

30-Year Index of Abundance for Yellow-phase American Eels along the Atlantic Coast

Source: 2012 American Eel Benchmark Stock Assessment Report



Source: ASMFC 2012 American Eel Benchmark Stock Assessment Report (2012), ASMFC State Compliance Reports, and NMFS Fisheries Statistics Division (2015)



Overview of Depleted Species

- Addendum IV (2014) established a 907,671 pound coastwide quota for yellow eel fisheries, reduced Maine's glass eel quota to 9,688 pounds based on 2014 landings, and allowed for the continuation of New York's silver eel weir fishery in the DE River. Management triggers exist for yellow eel state quotas if necessary.

Next Assessment: Stock Assessment Update in 2017

Rebuilding Trajectory: Unknown

Overview of Depleted Species

American Lobster - SNE: Depleted

Assessment Findings (2015 Benchmark Stock Assessment)

- Depleted and overfishing not occurring
- Abundance at 42% of threshold
- Current exploitation (0.27) below threshold (0.41)
- Model estimates for recruitment are near zero and the lowest on record
- The inshore portion of the stock shows a dramatic decline in spawning stock abundance
- The stock has not rebuilt and is in recruitment failure
- Little possibility of recovery unless fishing effort is significantly curtailed

Board Adherence to Scientific Advice

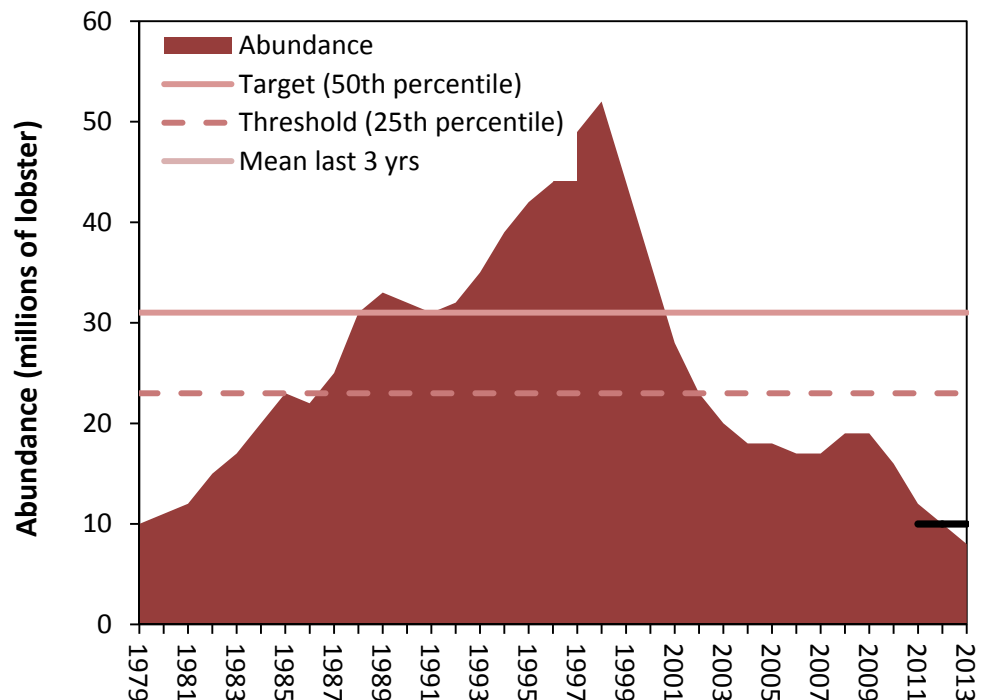
- Technical Committee has advised use of output controls, Board continues to use input measures
- Technical Committee has advised prohibiting conservation equivalency in LCMA 6, Board approved program
- Technical Committee has advised 100% trip level harvester reporting; Board maintained at least 10% active harvester reporting
- Technical Committee has advised 50-75% reductions in SNE LCMAs; Board approved 10% reduction.

Rebuilding Trajectory:

Population continues to decline; Addendum XI (May 07) established a 15-year rebuilding timeline (ending in 2022) with a provision to end overfishing immediately.

Southern New England Lobster Abundance

Source: American Lobster Benchmark Stock Assessment, 2015



Timeline of Management Actions: Amendment 3 ('97); Addendum I ('99); Addendum II ('01); Addendum III ('02); Addenda IV & V ('04); Addenda VI & VII ('05); Addenda X & XI ('07); Addendum XIII ('08); Addendum XIV ('09); Addendum XV ('09); Addendum XVI ('10); Addendum XVII ('11); Addendum XVIII ('12); Addenda XIX – XXIII ('13); Addendum XXIII ('14); Addendum XXIV ('15)

Overview of Depleted Species

American Shad: Depleted

2007 Assessment Findings

- 86 river systems assessed; 64% of which have unknown stock status
- Collectively, stocks are at all-time lows and do not appear to be recovering

Scientific Advice Based on Assessment Findings

- Improved monitoring (fishery independent and dependent) and fish passage
- Management measures based on total mortality (Z), which combines fishing and natural mortality.
- Lower JAI threshold needed to trigger management action
- The next assessment has not been scheduled.

Board Adherence to Scientific Advice

- Management Board approved Amendment 3 in February 2010
- Management actions contained in the Amendment are based on recommendations from the stock assessment.
- Member states/jurisdictions were required to submit sustainable fishery management plans (SFMPs) by August 1, 2012 (for TC review and Board approval). As of January 1, 2013, the Shad and River Herring Management Board approved SFMPs for Massachusetts, Connecticut, the Delaware River, the Potomac River, North Carolina, South Carolina, Georgia, and Florida. States/jurisdictions without approved SFMPs by January 1, 2013 were required to close their American shad fisheries, with the exception of catch and release recreational fisheries.
- By August 1, 2013, states/jurisdictions were required to submit a Habitat Plan, which contains a summary of current and historical spawning and nursery habitat; the most significant threats to those habitats; and a habitat restoration program to improve, enhance and/or restore habitat quality and quantity. In February 2014, the Board approved habitat plans for the majority of states and jurisdictions.

Next Assessment: Assessment update in 2018

Rebuilding Trajectory: Variable by River System (see accompanying table)

Trends in Stock Status of American Shad Populations

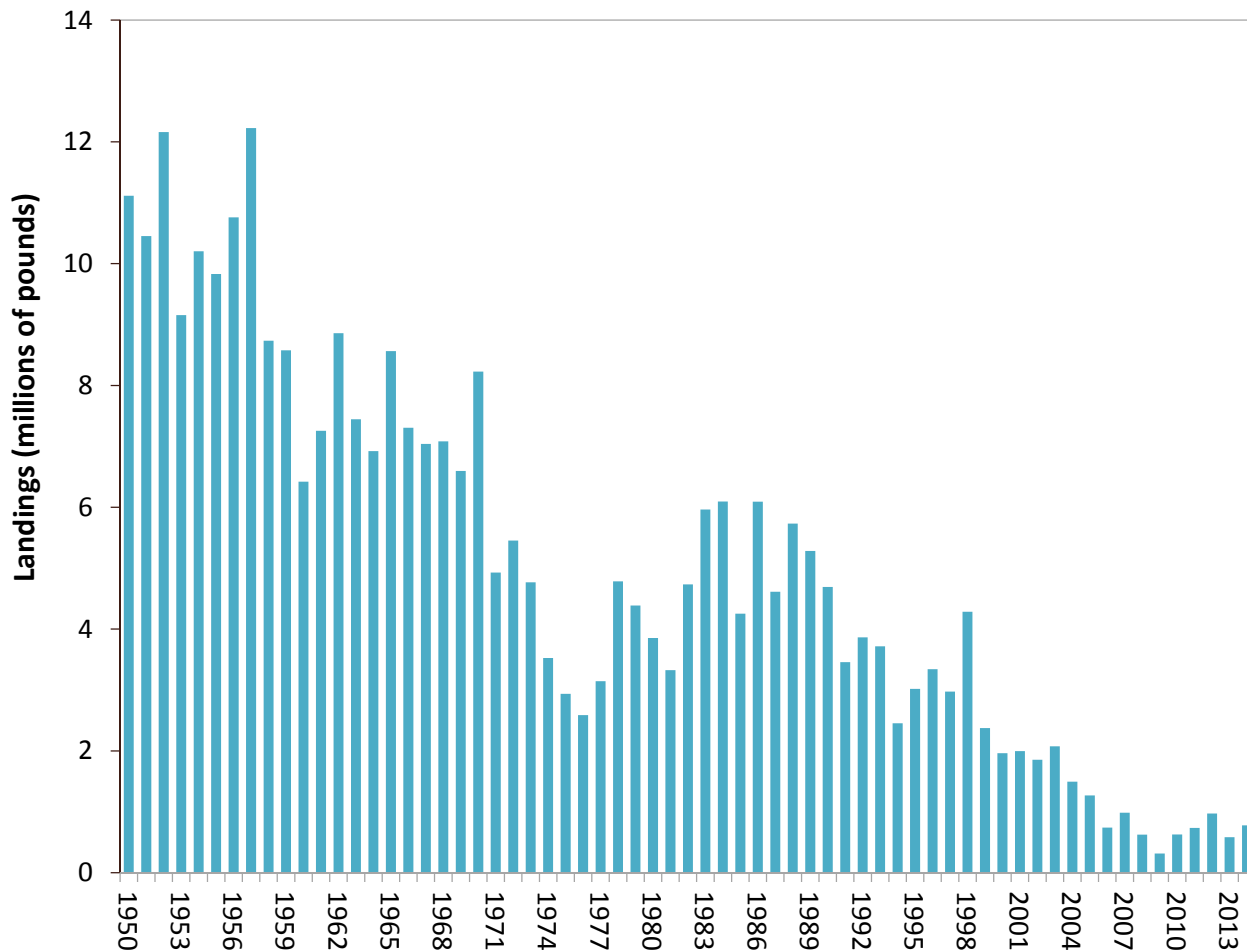
Trends based on a comparison of 2007 assessment results to 1998 assessment results. Sources: ASMFC American Shad Stock Assessment Reports for 2007 and 1998

State	River	Trend
ME	Saco and Kennebec	Declining
NH	Exeter	Declining
MA	Merrimack	Low, Stable
RI	Pawcatuck	Declining
CT/MA	Connecticut	Stable
NY	Hudson	Declining
NY/PA/NJ/DE	Delaware River and Bay	Low, Stable
PA	Susquehanna	Declining
DC/MD/VA	Potomac	Increasing
MD	Nanticoke	Low
VA	York	Increasing
	James	Declining
	Rappahannock	Stable
SC	Santee	Increasing
	Edisto	Declining
GA	Altamaha	Declining
FL	St. Johns	Declining

Overview of Depleted Species

American Shad Commercial Landings

Source: NMFS Fisheries Statistics Division, 2015



Timeline of Management Actions: FMP ('85); Amendment 1 ('99); Amendment 3 ('10)

Overview of Depleted Species

Northern Shrimp: Depleted

Assessment Findings (2015 Stock Assessment Update)

- The Technical Committee evaluated a suite of indicators including fishery performance, survey indices of abundance and biomass, and environmental conditions, to determine the status of the stock.
- Using these indices, the Technical Committee determined that the northern shrimp stock is collapsed and abundance and biomass indices for 2012-2015 were the lowest on record in the 31-year time series.
- The stock has also experienced low or failed recruitment the past five years, reaching a time series low in 2015.
- Long term trends in environmental conditions are not favorable for northern shrimp, suggesting a need to conserve spawning stock biomass to help compensate for what may continue to be an unfavorable environment.

Scientific Advice Based on Assessment Findings

Due to recruitment failure, a collapsed stock, and long-term trends in environmental conditions, the Technical Committee recommended the Section extend the moratorium on fishing through 2016.

Board Adherence to Scientific Advice

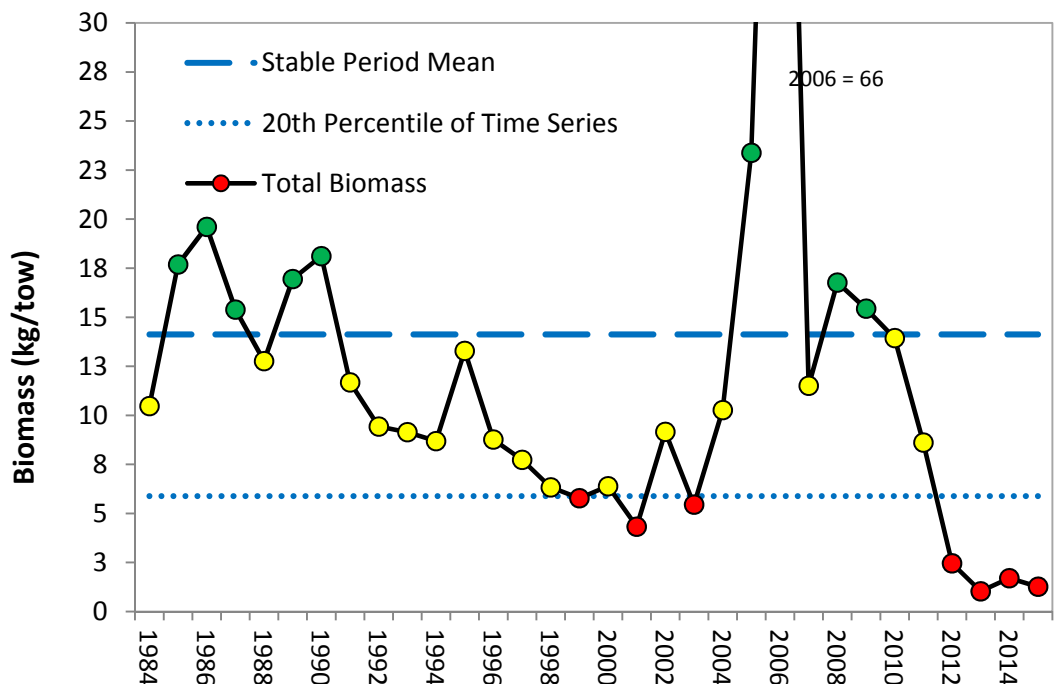
- Adhering to the Technical Committee's recommendations, the Section implemented a fishery moratorium for the 2016 fishing season.
- Prior to closure of the fishery in 2014 due to a collapsed resource, the Section initiated development of Amendment 3 to address overcapacity in the fishery. The amendment explores measures to adequately manage effort in the fishery, control harvest, and to minimize harvest of small shrimp.

Next Assessment: 2016 Stock Status Update; benchmark assessment, 2017

Rebuilding Trajectory: Declining

Total Biomass of Northern Shrimp from the Gulf of Maine Summer Shrimp Survey

Stock Status Report for Gulf of Maine Northern Shrimp, 2015

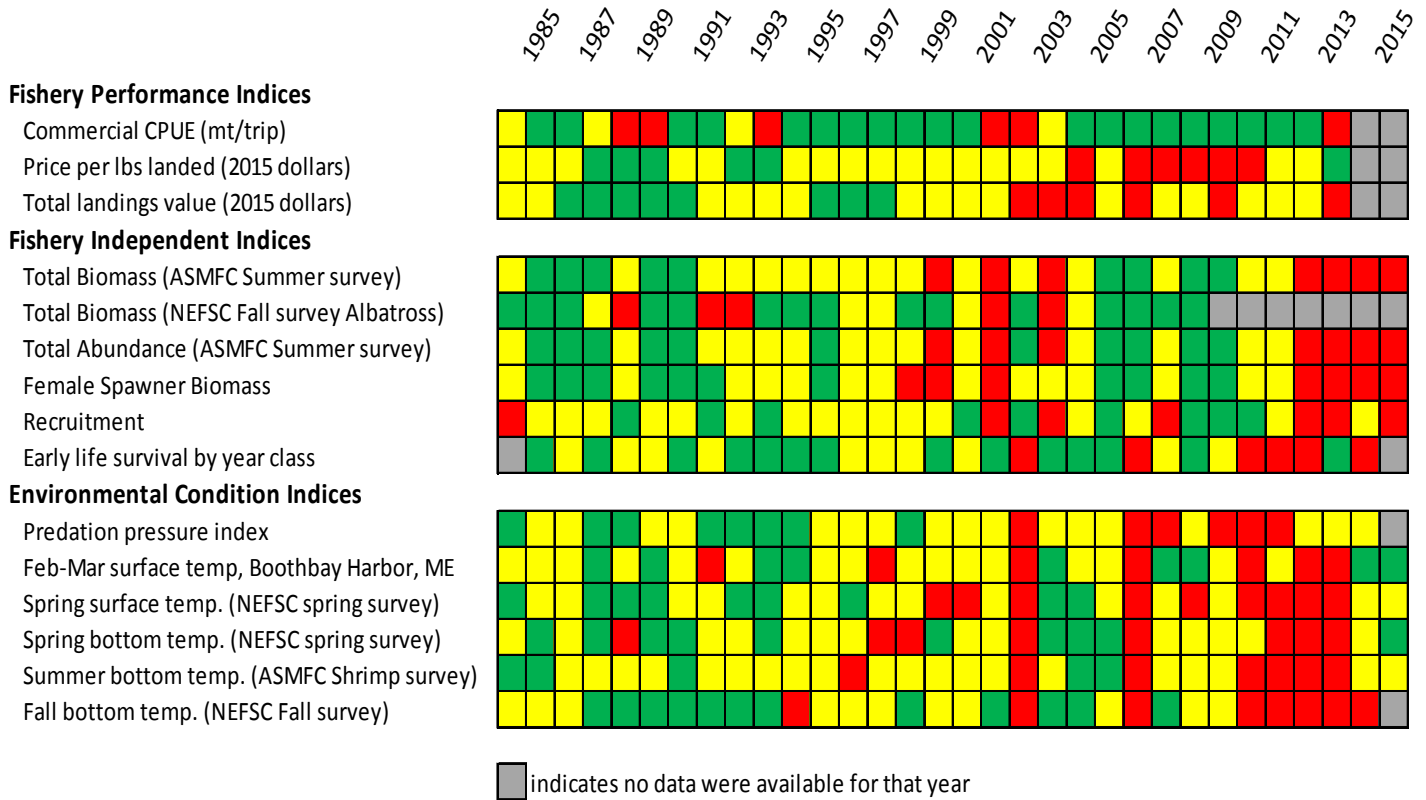


The graph represents the annual biomass index relative to the reference period (dashed line) and to the 20th percentile of the time series (dotted line). The reference period (1985-1994) is the time period during which the fishery experienced stable landings and value. Green dots are values that are equal to or above the stable period mean (SPM); red dots are values that are equal to or below the 20th percentile of the time series; yellow dots are values between the SPM and the 20th percentile.

Overview of Depleted Species

Strict Traffic Light Approach (STLA) Results

Red indicates unfavorable conditions or status, yellow indicates intermediate values, and green indicates favorable conditions or status.



Timeline of Management Actions: FMP ('86); Amendment 1 ('04); Amendment 2 ('11); Addendum I ('12)

Overview of Depleted Species

River Herring: Depleted

Depleted: The coastwide meta-complex of river herring stocks on the US Atlantic coast is depleted to near historic lows (2012 Benchmark Assessment).

Overfishing Determination: No overfishing determination can be made at this time.

Assessment Findings

- Of the 52 stocks of alewife and blueback herring for which data were available, 23 were depleted relative to historic levels, one stock was increasing, and the status of 28 stocks could not be determined because the time-series of available data was too short.
- 14 out of 15 river specific YOY indices showed no (7 rivers) or declining (7 rivers) trends.
- Mean length, maximum age and mean length-at-age for both species have declined.
- Recent domestic landings totaled <2 million pounds in any given year.
- Commercial landings by domestic and foreign fleets peaked at 140 million pounds in 1969.
- The “depleted” determination was used instead of “overfished” and “overfishing” because of the many factors have contributed to the declining abundance of river herring including habitat loss, predation, and climate changes

Board Adherence to Scientific Advice

- In 2009, the Board approved Amendment 2, in response to concern for river herring stocks.
- The Amendment prohibits state waters commercial and recreational fisheries beginning January 1, 2012, unless a state or jurisdiction has a sustainable management plan reviewed by the Technical Committee and approved by the Management Board.
- Amendment 2 required states to implement fisheries-dependent and independent monitoring programs, and contains recommendations to conserve, restore, and protect critical river herring habitat.
- As of January 1, 2012, the Shad and River Herring Management Board approved sustainable fishery management plans for Maine, New Hampshire, New York, North Carolina and South Carolina.

Next Assessment: Assessment update in 2017

Rebuilding Trajectory: Unknown

Status of Select Alewife and Blueback Herring Stocks along the Atlantic Coast

Source: 2012 River Herring Benchmark Stock Assessment Report

State	River**	Status Relative to Historic Levels / Recent Trends*
ME	Damariscotta	Depleted ^A , Stable ^A
	Union	Increasing ^A , Stable ^A
NH	Cochecho	Unknown ^{A,B} , Stable ^{A,B}
	Exeter	Depleted ^A , Unknown ^A
	Lamprey	Depleted ^A , Increasing ^A
	Oyster	Depleted ^B , Stable ^B
	Taylor	Depleted ^B , Decreasing ^B
	Winnicut	Depleted ^{A,B} , Unknown ^{A,B}
MA	Mattapoissett	Depleted ^A , Unknown ^A
	Monument	Depleted ^A , Unknown ^A
	Parker	Depleted ^A , Unknown ^A
	Stony Brook	Depleted ^A , Unknown ^A
RI	Buckeye	Depleted ^A , Unknown ^A
	Gilbert	Depleted ^A , Decreasing ^A
	Nonquit	Depleted ^A , Decreasing ^A
CT	Connecticut	Depleted ^B , Decreasing ^B
NY	Hudson	Depleted ^{A,B} , Stable ^{A,B}
MD, DE	Nanticoke	Depleted ^{A,B} , Decreasing ^{A,B}
VA, MD, DC	Potomac	Depleted ^{A,B} , Unknown ^{A,B}
NC	Chowan	Depleted ^{A,B} , Stable ^{A,B}
SC	Santee-Cooper	Depleted ^B , Increasing ^B

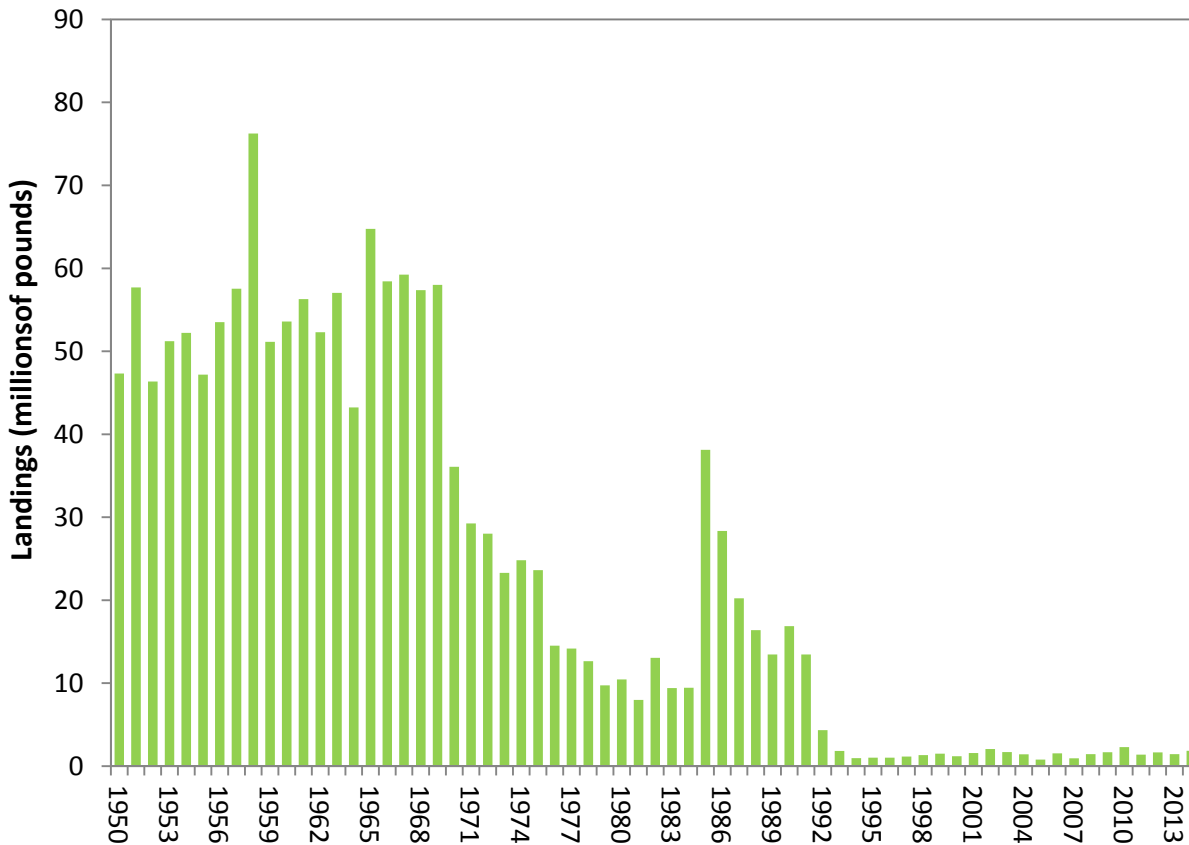
A = Alewife, B = Blueback Herring

Status relative to historic levels is pre-1970. Recent trends reflect last ten years of data.

Overview of Depleted Species

River Herring Commercial Landings

Source: NMFS Fisheries Statistics Division, 2015



Timeline of Management Actions: FMP ('85); Amendment 1 ('95); Amendment 2 – River Herring ('09)

Overview of Depleted Species

Weakfish: Depleted

2016 Benchmark Assessment

Depleted: Spawning stock biomass (SSB) at 37% of threshold in 2014

Overfishing Not Occurring: Total mortality (Z) in 2014 was above the threshold but below the target, indicating that Z is still high but within acceptable limits.

Assessment Findings (2016 Benchmark Assessment)

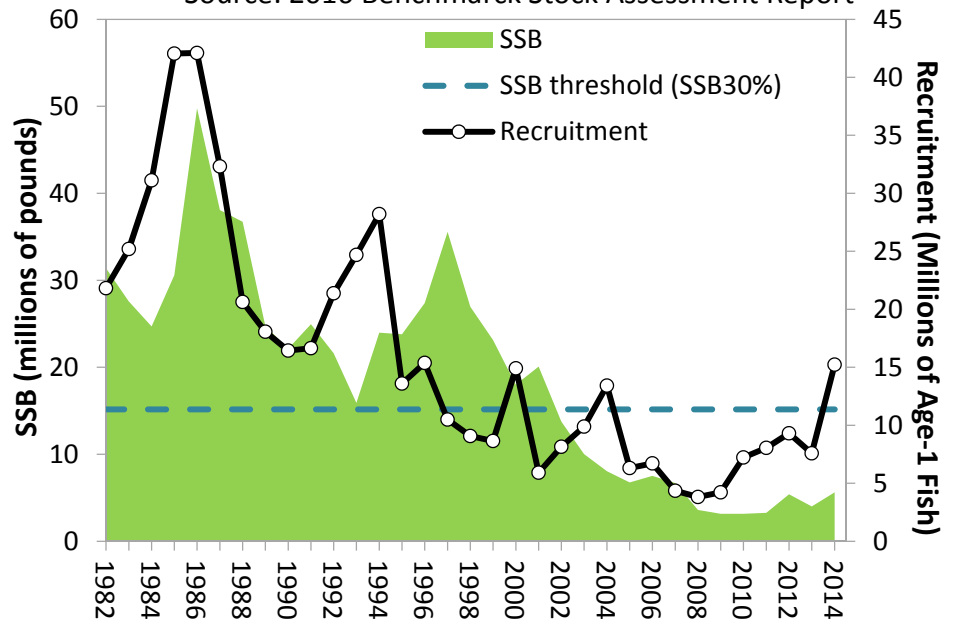
- Natural mortality (M) has increased since the mid-1990s, from approximately 0.16 in the early 1980s to an average of 0.93 from 2007-2014. Potential factors causing high M include predation, competition, and changes in the environment.
- While the assessment indicates some positive signs in the weakfish stock in the most recent years, including a slight increase in SSB and total abundance, the stock is still well below the SSB threshold.
- Weakfish landings have dramatically declined since the early 1980s, dropping from over 19 million pounds in 1982 to roughly 200,000 pounds in 2014.

Board Adherence to Scientific Advice

- Based on results of the 2009 stock assessment and peer review, the Board approved Addendum IV, which 1) revised the biological reference points; 2) implemented a commercial trip limit, and 3) reduced the recreational bag limit, the commercial bycatch limit, and the finfish trawl fishery's allowance for undersized fish.

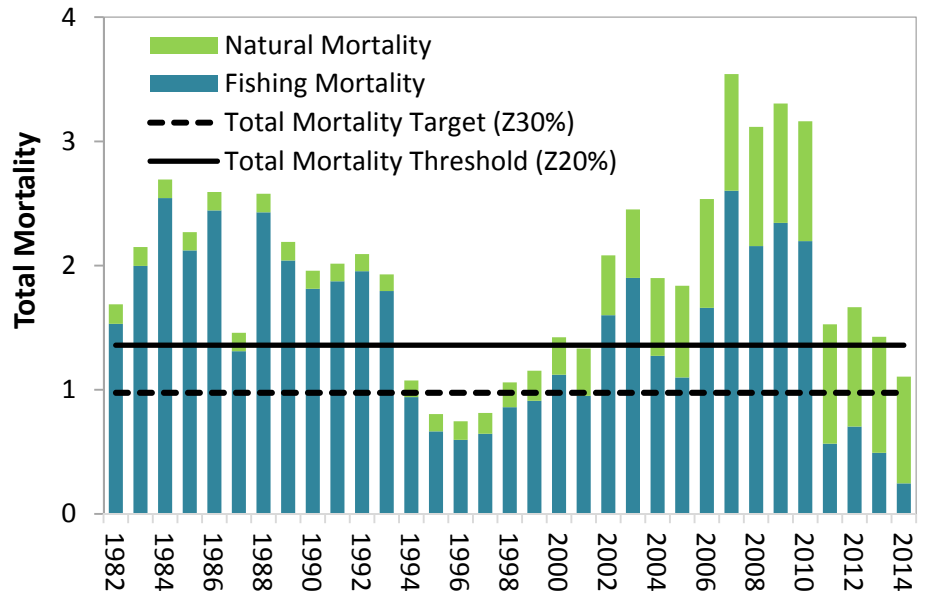
Weakfish Spawning Stock Biomass and Recruitment

Source: 2016 Benchmark Stock Assessment Report



Contributions of Fishing and Natural Mortality to Weakfish Total Mortality

Source: 2016 Benchmark Stock Assessment Report



Timeline of Management Actions: FMP ('85); Amendment 1 ('91); Amendment 2 (1995); Amendment 3 ('96); Amendment 4 ('02); Addendum I ('05); Addenda II & III ('07); Addendum IV ('09)

Overview of Depleted Species

- Following the 2016 stock assessment, the Board maintained strict regulations on the harvest of weakfish in the commercial and recreational fishery. The Board also adopted new reference points based on SSB and Z, per the recommendation of the Technical Committee.

Next Assessment: Assessment Update in 2018

Rebuilding Trajectory: Slight increase in SSB and abundance

Overview of Depleted Species

Winter Flounder - SNE/MA: Depleted

2015 Groundfish Stock Assessment Update

Overfished: Stock is at 23% of SSB target. While there have been some modest increases over the last decade, the stock has remained at approximately a quarter of the target since the early 2000s. Since 1981 recruitment has been declining, 2013 is the lowest in the time series which is approximately 4% of the estimated recruitment in 1981 (the highest in the time series). While the 2014 recruitment estimate increased slightly, the overall stock productivity continues to decline.

Overfishing is Not Occurring: 2014 $F = 0.16$ which is 49% of the overfishing threshold ($F_{MSY} = 0.325$)

Board Adherence to Scientific Advice

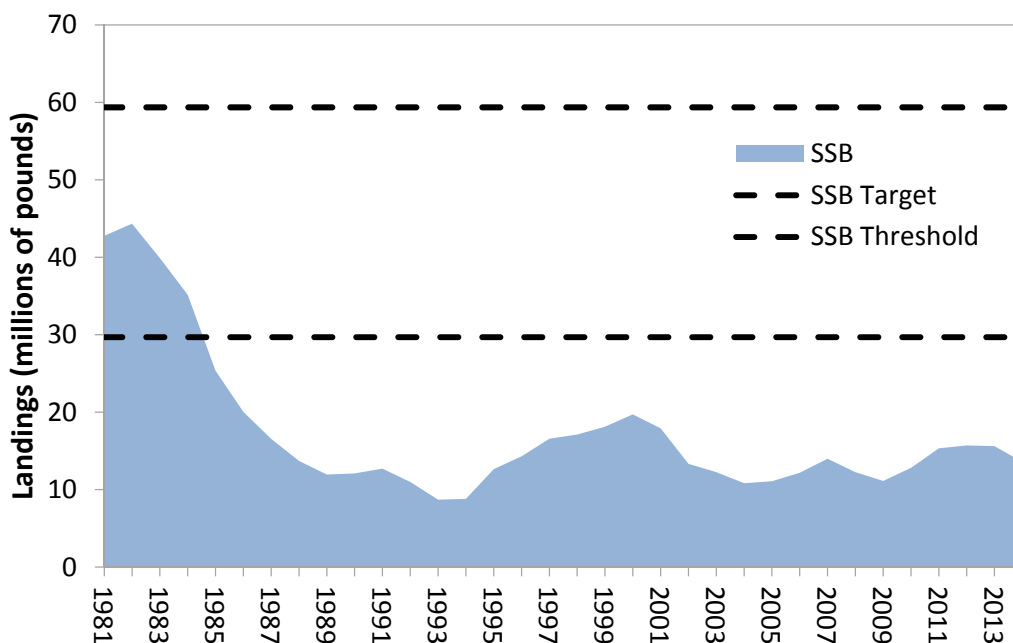
- Stock status remains unchanged since the 2011 benchmark assessment.
- After reviewing the 2015 assessment update, the Board sent a letter to the New England Council and NOAA Fisheries expressing its concern regarding winter flounder stocks, specifically highlighting the SNE/MA stock. The Board requested the Technical Committee further investigate the impacts of the zero possession limit on the SNE/MA stock.
- In 2016, the Technical Committee presented the following report to the Board, *A Review of the SNE/MA Winter Flounder Fishery and Management Program Under Zero Possession Limits*. The Technical Committee believes the length of the moratorium (May 1, 2009-April 30, 2013) may not have been long enough to positively impact the stock.

Most surveys indicate a declining trend in abundance, suggesting the moratorium did not result in increased stock size. While the Technical Committee did not recommend a reduction in the trip limits, currently set at a bycatch limit of 50 pounds, it encouraged the Board to choose management actions that continue to reduce fishing mortality and maintain a bycatch fishery in state waters.

- Following Technical Committee advice, the Board maintained a 50-pound trip limit for non-federally permitted commercial vessels for the 2016 fishing season.

Southern New England/Mid-Atlantic Winter Flounder Spawning Stock Biomass

Source: Groundfish Assessment Review Meeting Update, 2015



Timeline of Management Actions: FMP & Addendum I ('92); Addendum II ('98); Amendment 1 ('05); Addendum I ('09); Addendum II ('12); Addendum III ('13)

Overview of Depleted Species

- For 2016, NOAA Fisheries reduced the state water sub-component to 70 mt (from 117 mt in 2015) and the total stock-wide annual catch limit to 749 mt (from of 1,607 mt), but these levels are still high (in 2016 only 617 mt were harvested).
- In 2014, NOAA Fisheries extended the rebuilding timeline for this stock to 2023 and allowed for increased fishing opportunities. The Board extended the recreational season from March 1 through December 31 to increase fishing opportunities based on species' availability.

Next Assessment: N/A

Rebuilding Trajectory: Flat at low levels

Overview of Species of Unknown Stock Status

Atlantic Sturgeon: Unknown

Available Information

- Commercial landings of Atlantic sturgeon peaked in 1890 at 7.5 million pounds.
- Populations throughout the species' range are at low levels of abundance.
- Data from fishery-independent surveys conducted in New Jersey and North Carolina (along with some rivers in Georgia and South Carolina) suggest that populations may be rebuilding (figures below).
- Effective April 6, 2012, NOAA Fisheries listed five distinct population segments (DPS) of Atlantic sturgeon under the Endangered Species Act (Gulf of Maine DPS as threatened and the New York Bight, Chesapeake Bay, Carolina and South Atlantic DPSs as endangered)
- In response to the ESA listing, the Atlantic Sturgeon Board initiated development of a coastwide benchmark assessment, which is scheduled for peer review in late-2017
- States have been working with NOAA Fisheries on their Section 10 incidental take permits
- In June 2016, in accordance with the ESA, NOAA Fisheries released two proposed rules (one for each regional office) designating critical habitat across all five listed DPS's.

Needed Information/Data

- Conduct assessments of population abundance and age structure in various river systems
- Improve bycatch and annual mortality estimates, including ship strikes.

Monitoring and Management Measures

- Monitoring: States must report annually on Atlantic sturgeon bycatch, fisheries-independent monitoring, habitat status and authorized aquaculture operations.

- Management:

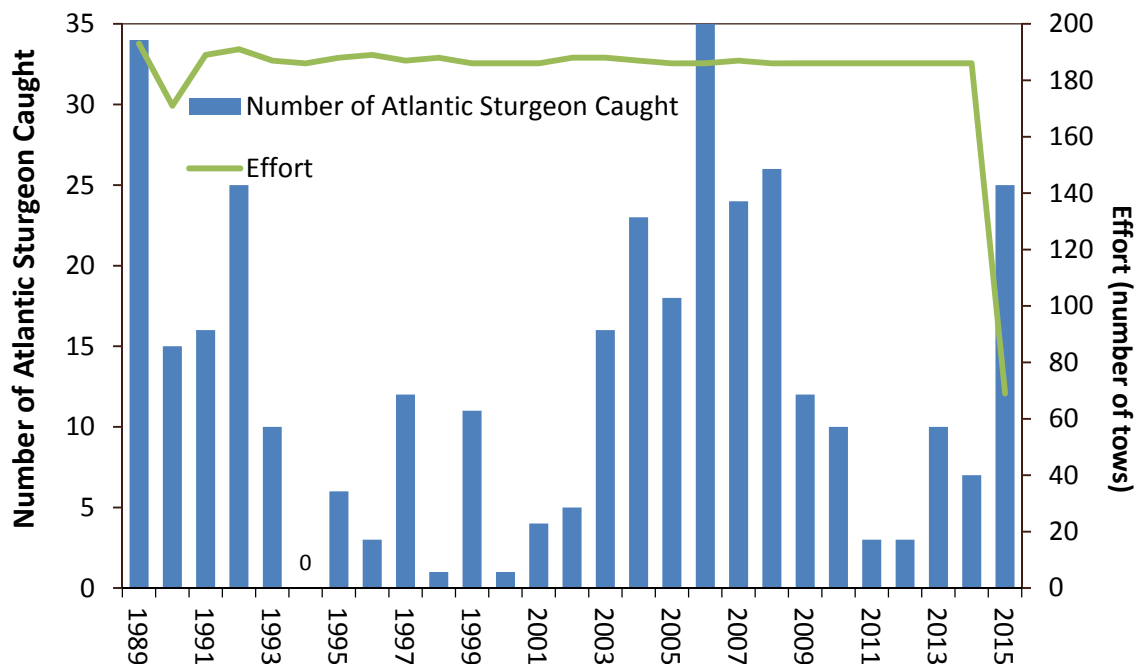
Coastwide moratorium until a minimum of 20 year classes of spawning females is protected.

Next Assessment:

2017 benchmark assessment

Effort and Number of Atlantic Sturgeon Caught During Ocean Trawl Survey Sampling in New Jersey's Coastal Waters

Source: NJ DFW Annual State Compliance Report, 2015

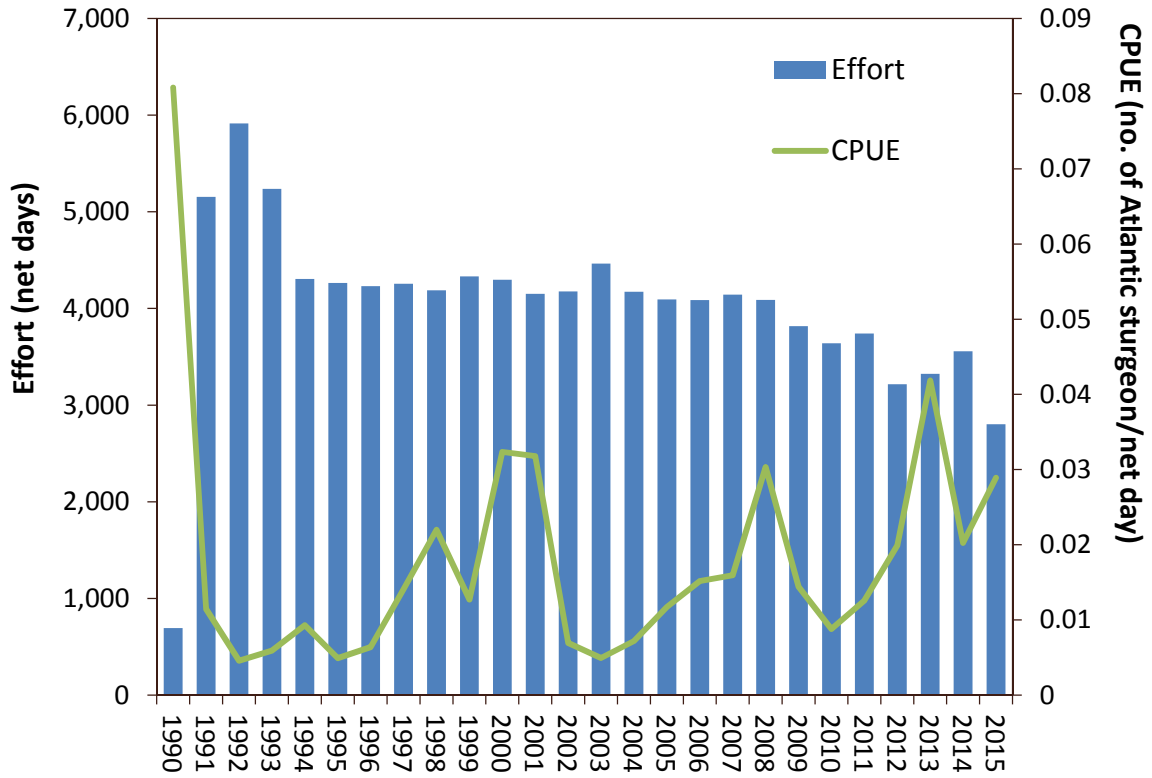


* 2015 data is preliminary

Overview of Species of Unknown Stock Status

Fishery-independent Catch Rates of Juvenile Atlantic Sturgeon in Albemarle Sound

Source: NC Division of Marine Fisheries, 2015



Timeline of Management Actions: FMP ('90); Amendment 1 ('98); Addendum I ('01); Addendum II ('05); Addendum III ('06); Addendum IV ('12)

Overview of Species of Unknown Stock Status

Jonah Crab: Unknown

Available Information

- Jonah crab landings have increased 6.48 fold since the early 2000s, with over 17 million pounds of crab landed in 2014. Roughly 13.5 million pounds of Jonah crab were landed in 2015.
- The status of the Jonah crab resource is relatively unknown and there is currently no data on juvenile recruitment.
- Bottom trawl surveys conducted by the Massachusetts Division of Marine Fisheries found Jonah crab are frequently caught north, rather than south, of Cape Cod.
- The Northeast Fisheries Science Center 2014 surveys showed record high abundance in Georges Bank and Gulf of Maine regions. The spring survey in Southern New England has been fairly stable.

Needed Information/Data

- Conduct age-at-maturity studies in U.S. waters.
- Investigate the extent and motivation of annual migrations patterns.
- Research the recruitment of juvenile Jonah crabs into the fishery.
- Determine the extent of sampling as well as the size distribution, sex composition, and ovigerous condition of Jonah crabs.

Management and Monitoring Measures

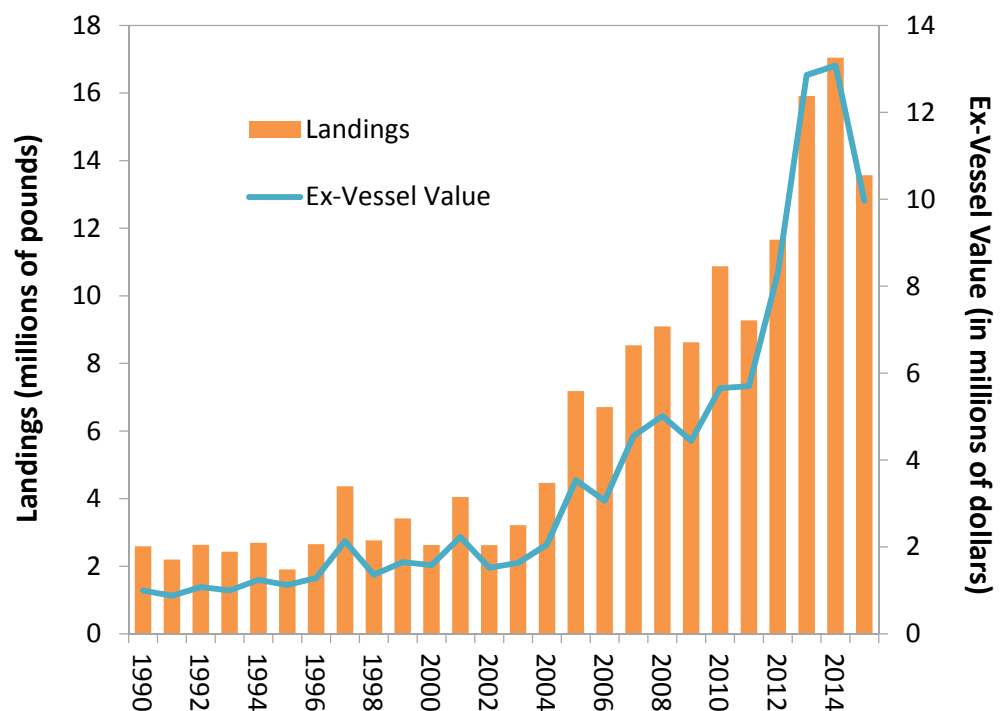
- Following the recommendations of the Jonah Crab Fishery Improvement Project, the Board approved an Interstate Fishery Management Plan for Jonah Crab in August 2015 which included a 4.75" minimum size and a prohibition on the retention of egg-bearing females. To address concerns about bycatch in the fishery, the Board approved Draft Addendum I in May 2016, setting a 1,000 crab limit for non-trap gear and non-lobster traps.
- The Board will consider approving Draft Addendum II for public comment in August 2016. The Draft Addendum proposes establishing a coastwide standard for claw landings.

Next Assessment

No assessment is currently scheduled for Jonah crab due to a lack of data.

Jonah Crab Landings and Value

Source: NMFS Fisheries Statistics Division, 2016



Timeline of Management Actions: FMP ('15); Addendum I ('16)

Overview of Species of Unknown Stock Status

Spot: Unknown

Data Trends

- Coastwide commercial landings have declined since 1950; with a high of 14.52 million pounds landed in 1952 and a low of 1.37 million pounds in 2012.
- Recreational catches between 1981 and 2015 are variable but show a slight decline.
- Traffic Light Analysis of the 2014 fishing year showed a decline in harvest through 2012 and a reversal of this trend in 2013. Adult abundance fell and was above the 30% threshold at 43.5%. Management measures were not tripped since the harvest index was just below the threshold at 26.5%.
- Commercial catch-at-age data, which showed an expansion of the age structure in the early 2000s, has contracted since 2007.
- Recruitment indices show large inter-annual variability as expected, with low abundance observed in 2009 and 2011.
- Most indices of adult spot abundance in the species core area exhibit high inter-annual variability, with noticeable peaks in 2005 and 2012.
- A stock assessment has not been completed; ability to conduct a defensible assessment has been hindered by inadequate discard data, particularly in the South Atlantic shrimp trawl fishery.

Board Adherence to Scientific Advice

- The Management Board followed recommendations from the Plan Review Team to monitor the stock with available data the last four years, evaluate data availability and adequacy for a stock assessment, and conduct a life history workshop.
- In 2014, the Plan Review Team recommended spot for a stock assessment, which was subsequently scheduled for 2016.

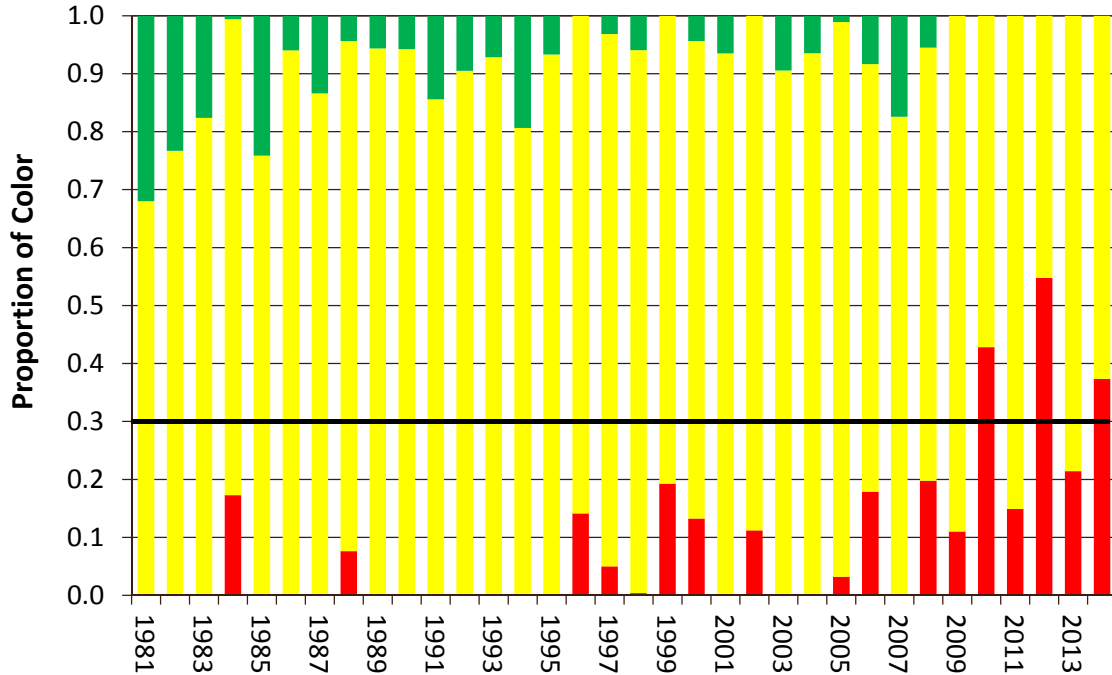
Monitoring and Management Measures

- Omnibus Amendment, approved in 2011, updated the Spot FMP by adding management triggers to annually monitor the stock status of spot until a coastwide stock assessment is completed. The Amendment also sought to increase the level of research and monitoring on spot bycatch.
- Addendum I (2014) established the Traffic Light Analysis as the new management framework to evaluate trends in the fishery. When harvest and abundance thresholds are exceeded for two years, management actions are developed. The Traffic Light Analysis is not updated during years in which a stock assessment is being conducted.

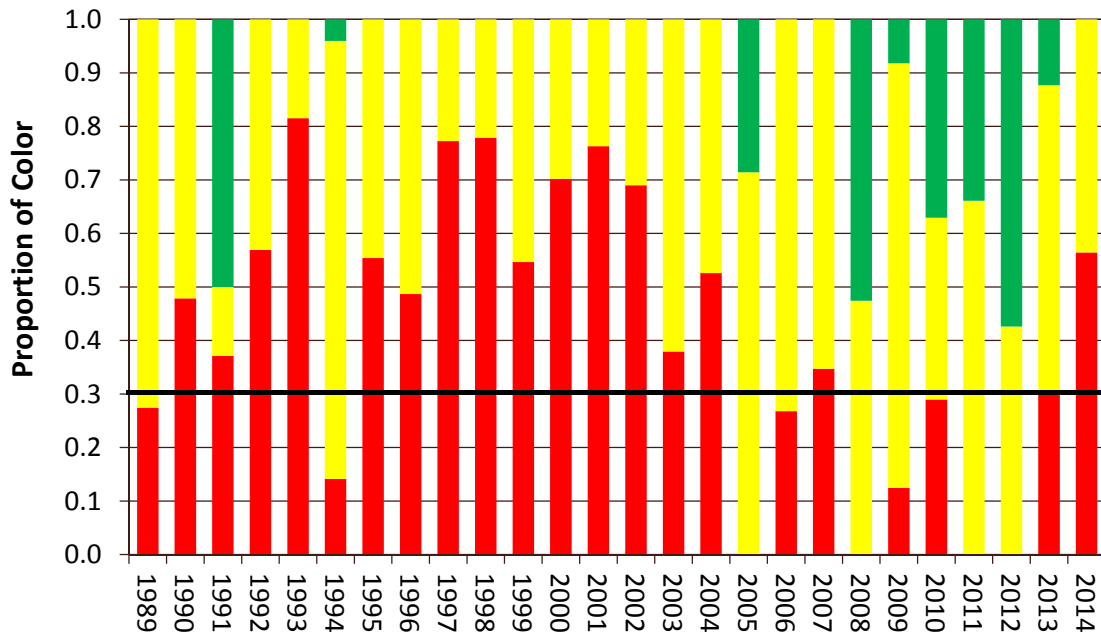
Next Assessment: Benchmark: 2016

Overview of Species of Unknown Stock Status

Traffic Light Analysis of Spot Commercial and Recreational Harvest (Harvest Metric)
Solid line represents 30% threshold



Traffic Light Analysis of Spot Fishery-independent Survey Indices (Abundance Metric)
Solid line represents 30% threshold



Management response is triggered when proportion of red exceeds the 30% threshold level (black line) for two consecutive years in both fishery characteristics (landings and fishery-independent survey indices).

Timeline of Management Actions: FMP ('87); Omnibus Amendment ('11); Addendum I ('14)

Overview of Species of Unknown Stock Status

Spotted Seatrout: Unknown

Available Information

- Commercial landings have generally decreased from the 1970's through 2014.
- Recreational catches have increased since 1981; however, the number of releases has also increased and harvest has remained stable.
- State stock assessments
 - NC and VA: stock assessment covering 1991-2013 indicated SPR above 20% goal; shows expanded age structure but a decline in recruitment after 2010
 - SC: SPR just above 20% goal in 1992; non-peer reviewed assessment through 2004 indicated SPR below 20% goal
 - GA: SPR below 20% goal in 1995
 - FL: SPR = 67% northeast region, 45% southeast regions during 2007-2009; goal of 35% SPR

Needed Information/Data

- Examine the stock structure of spotted seatrout on a regional basis, with an emphasis on tagging techniques
- Collect data on the size or age of spotted seatrout released alive by anglers and the size and age of commercial discards
- Develop state-specific juvenile abundance indices and fecundity estimates

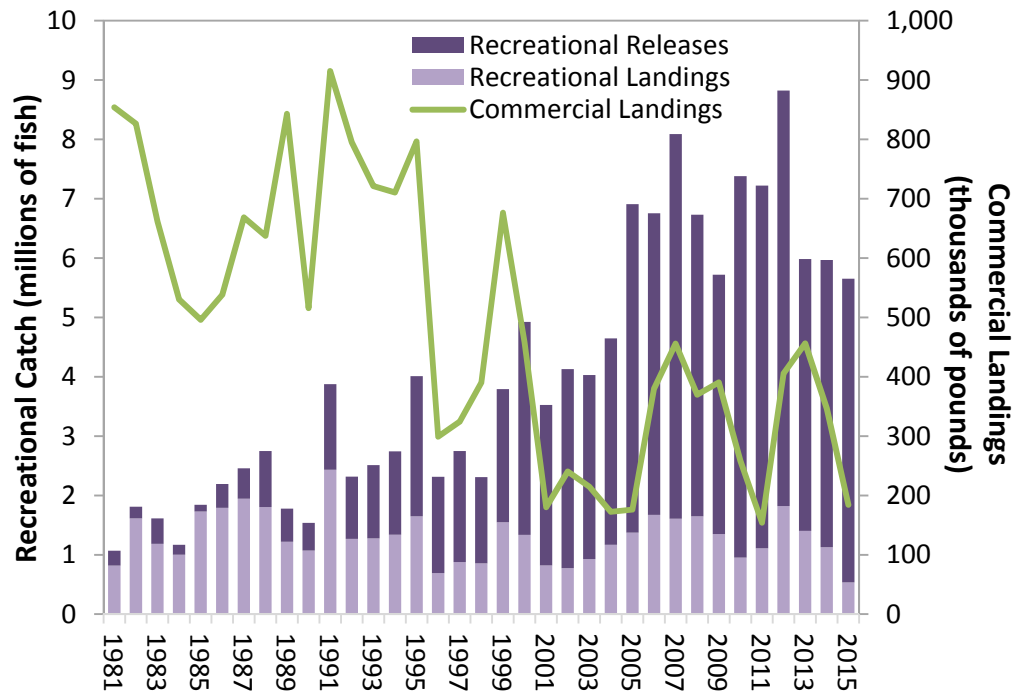
Monitoring and Management

- Amendment I sets the objective of the FMP to achieve 20% spawning potential to minimize the possibility of recruitment failure. Florida has established a 35% SPR.
- The Omnibus Amendment, approved in 2011, updated the Spotted Seatrout FMP to include at 12" TL minimum size and recommended measures to protect the spawning stock.

Next Assessment: No coastwide assessment planned or recommended by PRT due to the non-migratory nature of the species and the lack of available data.

Spotted Seatrout Recreational Catch & Commercial Landings

Source: NMFS Fisheries Statistics Division, 2016



Timeline of Management Actions: FMP (1985); Amendment 1 (1991); Omnibus Amendment (2011)



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Executive Committee

FROM: Management and Science Committee and the Assessment and Science Committee

DATE: April 25, 2016

SUBJECT: Changes to the Conservation Equivalency Guidance Document

ASMFC uses conservation equivalency in a number of interstate fishery management programs. Conservation equivalency (CE) allows states/jurisdictions (hereafter states) flexibility to develop alternative regulations that address specific state or regional differences while still achieving the goals and objectives of Interstate Fishery Management Plans (FMPs). A Conservation Equivalency Guidance Document was approved in 2004 to provide policy and technical guidance on the application of conservation equivalency in interstate fishery management programs developed by the Atlantic States Marine Fisheries Commission (ASMFC). This guidance document received limited implementation since its approval; therefore, current processes to establish conservation equivalency programs varies widely among species FMPs.

The Executive Committee tasked staff to review the guidance document to provide information on where there are inconsistencies with current applications and where additional clarification on process may be warranted. The guidance document is outlined in 5 major sections: General Policy Guidance, Standards for State Conservation Equivalency Proposals, Review Process, Coordination Guidance, and Public Perception. This document presents policy questions on specific sections of the document regarding guidance on development, submission, review, and approval of conservation equivalency proposals that were presented to and then considered by the Management and Science Committee (MSC) and the Assessment and Science Committee (ASC). Recommendations from the MSC and ASC were incorporated into this memo for Executive Committee review and consideration.

Section 1: General Policy Guidance

The general policy guidance section of the 2004 Guidance Document describes how the Plan Development Team (PDT) develops CE within an FMP, gives some direction on the length a program can be in place, and the committees the Plan Review Team (PRT) should see feedback from.

Policy Questions:

1) Charter Guidance: The ISFMP Charter allows for the use of CE in Commission management plans, unless the FMP specifically states it cannot be used. The general guidance section does not clearly describe Charter direction or the two ways in which conservation equivalency programs are utilized by states.

- Should the section be revised to clearly state the Charter guidance? Should it be revised to state through what process CE can be established: (1) FMPs (amendments or addenda) and (2) proposal submitted by the state?

ASC/MSC recommendation: Agreed with suggested change to reflect Charter guidance.

2) More Restrictive Measures: This section does not give direction to states when proposals are put forward for measures that are more conservative than a plan requires.

- Should the section be revised to clearly define when a CE proposal is required and when it is not? (e.g. Conservation equivalency proposals and Board approval are not required when states adopt more restrictive measures than those required in an FMP including but not limited to: higher minimum size, lower bag limit, lower quota, lower trip limit, closed or shorter seasons.)

Possible Language Change:

Conservation equivalency proposals and Board approval are not required when states adopt more restrictive measures than those required in the FMP (e.g., higher minimum size, lower bag limit, lower quota, lower trip limit, closed or shorter seasons). These changes to the management program should be included in a state's annual compliance report or state implementation plan.

ASC/MSC recommendation: Expressed concern over the difficulty in determining whether proposed measures are actually "more restrictive" due to unexpected consequences that may arise (e.g., a larger minimum size limit could increase discards). Recommend all CE proposals, regardless of the measures they propose, must be reviewed and considered by the board.

Section 2: Standards for Conservation Equivalency Proposals

This section of the Guidance Document intends to provide a template for states to follow when developing conservation equivalency proposals. Current practices are not reflected in this section.

1) Technical Committee (TC) Input: The original policy does not address that the TC may need to provide input to states regarding analysis and usable datasets prior to states submitting CE proposals.

- Should the guidance be revised to state the TC should determine a recommended level of precision for all data and analyses used in proposals unless previously determined by the management board or FMP? This information may be requested by the state prior to the submission of their proposal.

Possible Language Change:

The TC should determine a recommended level of precision for all data and analyses, unless previously determined by the board or FMP. States may request this information prior to the submission of their proposal.

ASC/MSC recommendation: Agreed with suggested change, with the clarification that states have the option, but are not required, to ask for TC input.

2) Implementation Timeframe: The Guidance Document states all proposals must include how long the equivalent measures will be in place. It also states the timeframe should be linked to the next assessment or expected collection of additional data. It states plans should sunset after 3 years unless justification is provided for a longer timeframe. Expiration of proposals is intended to provide periodic reviews. This guidance does not reflect current practice. CE timeframes are rarely linked to assessments or data collection in state proposals. Most often they either expire at the end of the fishing year or they do not have a set expiration date.

- Should the guidance be simplified to state all proposals should include the length of time the measures are intended to be in place and the timing of the reviews of the measures? This would remove the linking of the proposal timeframe to assessments and data collection.

Possible Language Change:

The proposal must include the length of time the state is requesting CE and a review schedule. If the state does not intend to have an expiration date for the CE program it should be clearly stated in the proposal with justification.

ASC/MSC recommendation: Agreed with suggested change, and requested the proposals identify the length of time measures are intended to be in place and the timing for reviews.

Section 3: Review Process

This section of the Guidance Document provides direction to states on timelines, the review process, and the approval process. The timeline guidance for proposal submission does not reflect current practice and some of the direction on what committees should review proposals is not clear. It is recommended the section header be revised to: *Review and Approval Process*.

1) Timing: The current guidance requires a state to notify the Board chair three months in advance of a Board meeting that they intend to submit a CE proposal. Completed proposals are then due two months prior to the Board meeting.

- Current practice provides more flexibility for the submission of CE proposals. Should the guidelines be changed to reflect current practice? Current practice allows the submission of proposals by the states at any time. The review of proposals submitted less than two months in advance of a board meeting is at the discretion of the Board Chair, while those submitted less than two weeks in advance are not considered at the upcoming board meeting. This practice is intended to allow a flexible submission schedule but still consider the workload of the committees reviewing the proposal.

Possible Language Change:

If a state is submitting a proposal outside of an implementation plan process, it must provide the proposal two months in advance of the next board meeting to allow committees sufficient time to review the proposal and to allow states to respond to any requests for additional data or analyses. States may submit conservation equivalency proposals less than two months in advance of the next board meeting, but the review and approval at the upcoming board meeting is at the discretion of the Species Management Board Chair. Proposals submitted less than two weeks before a meeting will not be considered for approval at that meeting.

ASC/MSC recommendation: Agreed with suggested change as described in the language above.

2) Committee Guidance: The Guidance Document does not provide clear advice on the distribution of CE proposals to committees. It first states, upon receipt of the proposal the PRT will determine what additional input will be needed from the Technical Committee, Law Enforcement Committee, the Committee on Economics and Social Sciences. This would indicate the PRT determines which committees should complete a review. The next sentence contradicts this advice by stating the PRT will distribute and make the proposal available to all committees for possible comment.

- Should the document be revised to clarify what committees should review the proposals? Under current practice, the PRT reviews the proposal and then determines which committees should review the proposal based on its content. The PRT then distributes the proposal to the necessary committees for review.

Possible Language Change:

Upon receipt of the proposal, the PRT will determine what additional input will be needed from: the Technical Committee (TC), Law Enforcement Committee (LEC), and Committee on Economic and Social Sciences (CESS). The PRT will distribute the proposal to all necessary committees for comment.

ASC/MSC recommendation: Agreed with suggested change to reflect current practice.

3) AP Guidance: Current guidance states committee reviews will occur before the AP reviews and comments on CE proposals, and that the AP will receive the other committees' reports. This is intended to give the Advisory Panel as much information as possible to aid in their recommendation to the Board. However, time constraints may not allow all committees to complete their reviews prior to the meeting of the AP.

- Should the guidance document be revised to account for possible time constraints? In general manner.

Possible Language Change:

The PRT will compile all of the input and forward the proposal and comments to the Advisory Panel when possible. However, when there are time limitations, the AP may be asked for comments on a proposal prior to completion of other committee reviews.

ASC/MSC recommendation: Agreed with suggested change, the AP may have to review the proposal before receiving other committees' reports due to time constraints.

4) PRT Recommendation: The current guidance requires the PRT to make a recommendation to the Board on approval, rejection, or conditional approval of CE proposals. However, in current practice, the PRT determines if the state's proposal is equivalent to the measures contained in the FMP. In addition, the Guidance Document does not require the PRT to evaluate whether the proposal follows this policy document.

- (1) Should the guidance document be revised to reflect current practice? It has been the responsibility of the board to determined approval, rejection, or conditional approval of CE proposals.
- (2) When the PRT reviews CE proposals, should the review indicate whether a state's CE proposal followed the guidance document?

Possible Language Change:

The PRT will forward to the Board the proposal and all committee reviews, including any minority reports. The PRT will provide comment on whether the proposal is or is not equivalent to the standards within the FMP.

The PRT reviews should address whether a state's proposal followed the CE standards outlined in this policy, and any additional specifications included in the FMP.

ASC/MSC recommendation:

- 1) Agreed with suggested change and clarification, the Board determines approval, rejection, or conditional approval.
- 2) Agreed with suggested change. Commented that CE proposals should follow the guidance document and deviation will be highlighted by the PRT.

5) Implementation Timing: Under the current guidance, conservation equivalency programs are encouraged to be implemented at the beginning of the fishing year. Specific guidance on implementation timing may not be necessary.

- Under current practice the Board sets implementation dates for CE programs upon review and approval of CE proposals. Should the document be revised to reflect this practice?

Possible Language Change:

The Board will decide whether to approve the conservation equivalency proposal and will set an implementation date through final action.

ASC/MSC recommendation: Recommended implementation timing should be requested in the original state CE proposal. The Board will then set an implementation date for CE proposals when considering them for final action, taking into account the requested implementation date.

6) Review Timeline: The current Guidance Document establishes a timeline by which the Board will review CE plans. It states the Board designates that all CE plans will be reviewed at one meeting per year. The Board does not need to establish a specific meeting to review conservation equivalency because the timing for review and approval of conservation equivalency proposals is already addressed in this policy and is not consistent with this guidance of one meeting per year.

Should this language be deleted from the guidance document?

Language to be Deleted:

Where applicable, the Board should develop a schedule for each species to designate one meeting per year to address conservation equivalency plans. When a board cannot meet in a timely manner, and at the discretion of the Board and Commission Chair, boards may have the ISFMP Policy Board re-approve conservation equivalency plans.

ASC/MSC recommendation: Agreed with suggested deletion. The Board does not need to designate a meeting to review CE proposals because they already have established a review timeline in Section 3.1 above.

Section 4: Coordination Guidance

This section of the Guidance Document discusses the considerations states should take into account when conservation equivalency proposals impact coordination of management with federal partners. The current document does not include US Fish and Wildlife Service as one of those partners.

- While management changes from US Fish and Wildlife Service are less frequently necessary than other federal partners, they do occur. Should US Fish and Wildlife Service be added to the document?

ASC/MSC recommendation: Agreed with suggested change to add US Fish and Wildlife Service.

DRAFT

Atlantic States Marine Fisheries Commission

**CONSERVATION EQUIVALENCY:
Policy and Technical Guidance Document**



Drafted – April 27, 2004

Introduction

The purpose of this document is to provide policy and technical guidance on the application of conservation equivalency in interstate fisheries management programs developed by the Atlantic States Marine Fisheries Commission. The document provides specific guidance for the states, species management boards, and the technical support groups to follow during the development and implementation of fishery management plans, amendments, or addenda; as well as guidance on development, submission, review, and approval of conservation equivalency proposals.

Background

The Atlantic States Marine Fisheries Commission (ASMFC) employs the concept of conservation equivalency in a number of interstate fishery management programs. Conservation equivalency is used to allow states a degree of flexibility in developing regulations to address specific state or regional differences while still achieving the goals and objectives of ASMFC management programs. Given that the species managed by ASMFC cross many state boundaries, it is often difficult to develop one-size-fits-all management measures, which necessitates the need to use conservation equivalency.

Conservation equivalency is currently defined in the Interstate Fisheries Management Program (ISFMP) Charter as:

“Actions taken by a state which differ from the specific requirements of the FMP, but which achieve the same quantified level of conservation for the resource under management. One example can be, various combinations of size limits, gear restrictions, and season length can be demonstrated to achieve the same targeted level of fishing mortality. The appropriate Management Board/Section will determine conservation equivalency.” The application of conservation equivalency is described in the document Conservation Equivalency Policy and Technical Guidance Document

In practice, the ASMFC frequently uses the term “conservation equivalency” in different ways depending on the language included in the plan (see appendix 1). For example in the Tautog FMP, conservation equivalency is used in the broadest sense, in that all states were required to achieve a 29% reduction in fishing mortality with no specific options listed in the document. In the Summer Flounder FMP, each state is required to achieve a state-specific reduction using the table and methodology developed annually by the Management Board. The Striped Bass FMP establishes a 2 fish bag limit and a 28-inch minimum size standard for the coastal recreational fishery, however states can vary these measures if it can be demonstrated that the potential recreational harvest will be equivalent to harvest that would have occurred under the standard measures in the plan.

Due to concerns over the lack of guidance on the use of conservation equivalency and the lack of consistency between fishery management programs, the ISFMP Policy Board accepted a recommendation from the Management and Science Committee and formed a sub-committee to address conservation equivalency. This sub-committee was charged

with developing a workshop to “develop options and recommendations for improving the use and effectiveness on conservation equivalency in Commission fishery management plans”. This workshop was held on October 17, 2001 and provided definite recommendations for refining the application of this management tool.

Based on the results of the workshop another sub-committee was formed comprised of commissioners and representatives from technical committees, the Law Enforcement Committee, the Management and Science Committee, the National Marine Fisheries Service, and the Committee on Economics and Social Sciences. The recommendations included in this document were developed by this sub-committee during meetings on December 3-4, 2002 and December 3, 2003. These recommendations will be reviewed and approved by the Management and Science Committee and ISFMP Policy Board.

General Policy Guidance

Conservation equivalency is a tool the ASMFC uses frequently to provide the states flexibility in developing and implementing regulations to achieve the goals of interstate fisheries management programs. The use of conservation equivalency will continue to be an integral part of the Commission management process.

During the development of a management document the Plan Development Team (PDT) has the responsibility to recommend if conservation equivalency should be permitted for that species. The board should provide a specific determination if conservation equivalency is an approved option for the fishery management plan, since conservation equivalency may not be appropriate or necessary for all management programs. The PDT should consider stock status, data availability, range of the species, socio-economic information, and the potential for more conservative management when stocks are overfished or overfishing is occurring when making a recommendation on conservation equivalency. During the approval of a management document the Board will make the final decision on the inclusion of conservation equivalency.

If conservation equivalency is determined to be appropriate, the conservation equivalency process should be clearly defined and specific guidance should be supplied in the fishery management documents. Each of the new fishery management plans, amendments, or addenda should include the details of the conservation equivalency program. The guidance should include, at a minimum, a list of management measures that can be modified through conservation equivalency, evaluation criteria, review process, and monitoring requirements. If possible, tables including the alternative management measures should be developed and included in the management documents. The development of the specific guidance is critical to the public understanding and the consistency of conservation equivalency implementation.

The states have the responsibility of developing conservation equivalency proposals for submission to the Plan Review Team (see standards detailed below). Upon receiving a conservation equivalency proposal the PRT will initiate a formal review process as detailed in this guidance document. The state submitting the conservation equivalency

proposal has the obligation to ensure proposed measures are enforceable. If the PRT has a concern regarding the enforceability of a proposed measure it can task the Law Enforcement Committee with reviewing the proposal. Upon approval of a conservation equivalency proposal, the implementation of the program becomes a compliance requirement for the state. Each of the approved programs should be described and evaluated in the annual compliance review and included in annual FMP Reviews.

The management programs should place a limit on the length of time that a conservation equivalency program can remain in place without re-approval by the Board. Some approved management programs may require additional data to evaluate effects of the management measures. The burden of collecting the data falls on the state that has implemented such a conservation equivalency program. Approval of a conservation equivalency program may be terminated if the state is not completing the necessary monitoring to evaluate the effects of the program.

The Plan Review Team (PRT) will serve as the “clearing house” for approval of conservation equivalency proposals. All proposals will be submitted to the PRT for review. The PRT will have the responsibility of collecting all necessary input from the technical committee, Law Enforcement Committee, and Committee on Economics and Social Sciences. The PRT will compile input from all of the groups and forward a recommendation to the management board. Review and input from the Advisory Panel will also be forwarded to the board.

Standards for state conservation equivalency proposals

Each state that is seeking to implement a conservation equivalency program must submit a proposal for review and approval. It is the state’s responsibility to supply the necessary information and analysis for a complete review of the proposal. The following section details the information that needs to be included in each proposal. Proposals that include an excessive number of options may delay timely review by the PRT and other groups and may ultimately delay the report to the Board. The states should limit the number of options included in a proposal or prioritize the options for review.

1. The proposal must include rationale on why or how an alternate management program is needed in the state. Rationale may include, but are not limited to, socio-economic grounds, fish distribution considerations, size of fish in state waters, interactions with other fisheries, protected resource issues, and enforcement efficiency.
2. Each proposal must include a description of how the alternative management program meets all relevant FMP objectives and management measures (FMP standards, targets, and reference points). This description must include necessary analyses to quantify the effects of the alternate management program. The analyses should be based on the most recent Board approved stock assessment. There should be sufficient information included in the proposal for the Plan

Review Team to review the proposal without additional documentation or explanation.

3. Each proposal must include a description of available datasets used in the analysis, description of how the data are collected, detailed description of state level data collection programs, and information on sampling targets/sample distribution/CV/post-stratification/etc. The proposal should also describe limitations of data and any data aggregation. All the landings data used should have a set level of precision as determined by the Technical Committee. The species technical committee should develop data standards for other types of data that may be used in a conservation equivalency proposal. Any states that do not meet the approved precision standards should conduct sensitivity analyses to determine the effects of the uncertainty in the data.
4. The proposal must include the length of time the state is requesting conservation equivalency. The timeline should be linked to the next assessment update or the expected collection of additional data. The timeline should be consistent with plan horizon with a maximum of 3 years (sunset) unless justification is provided for a longer period of time or an indefinite period of time is requested. A state can resubmit an updated proposal following the expiration and the board can re-approve the alternate measures. The expiration of conservation equivalency programs is intended to provide periodic reviews of alternate plans to ensure they are consistent with the relevant plan objectives.
5. Each proposal must justify any deviations from the conservation equivalency procedures detailed in the FMP. The state should conduct analyses to compare new procedures to procedures included in the plan, as appropriate, including corroborative information where available.
6. Each proposal should include a plan for follow-up and monitoring of potential impacts of the conservation equivalency proposal. This plan should include a description of the process that will document the results from a conservation equivalency measure relative to the FMP requirements and the annual reporting requirements. This proposal must provide a monitoring schedule to evaluate the effectiveness of a conservation equivalency program.

Review Process

Implementation of new amendments/FMPs should include timelines and a review process for conservation equivalency proposals. However, the review process and timeline needs to be established for all conservation equivalency proposals that are submitted outside of the implementation of a new management document.

The following is a list of the steps and timelines for review and approval of conservation equivalency proposals. Any deviations from the following process should be included in the plan/amendment.

1. Conservation equivalency should be approved by the Management Board and, where possible implemented at the beginning of the fishing year.
2. A state must declare the intent to submit a conservation equivalency proposal to the species board chair three months prior to the a scheduled ASMFC meeting week. The state will then be required to submit the proposal to the board chair two months prior to the meeting week. The board chair will then submit the proposal to the Plan Review Team (PRT) for review.
3. The PRT should notify the state that the proposal is complete.
4. Upon receipt of the proposal the PRT will determine what additional input will be needed from the Technical Committee, Law Enforcement Committee, the Committee on Economics and Social Sciences. The PRT will distribute and make the proposal available to all committees for possible comment. The review should include a description of the impacts on or from adjoining jurisdictions or other management entities (Councils and/or NMFS). If possible this description should include qualitative descriptions addressing enforcement, socio-economic issues and expectations from other states perspective (shifts in effort). The review should highlight efforts to make regulations consistent across waterbodies. The PRT will compile all of the input and provide a recommendation for approval of the proposal to the management board.
5. The PRT will compile all of the input and forward the proposal and comments to the Advisory Panel. The Chair of the Advisory Panel (AP) will compile the AP Comments and provide to the Management Board.
6. The PRT will provide the following type of recommendations – approval, rejection, or conditional approval. The PRT should provide rationale for the recommendation, including improvements that could be made if the proposal was rejected. The report to the board should include the input provided by all the committees that were consulted by the PRT. Any minority reports that were developed should also be forwarded to the board. If possible the PRT should identify potential cumulative effects of all conservation equivalency plans under individual FMPs (e.g. impacts on stock parameters).
7. The management board will review and take action on the proposal. Board action should be based on the PRT recommendation as well as other factors such as impacts to adjoining states and federal management programs. A schedule should be developed for each species to provide one scheduled meeting per year to address conservation equivalency plans, where applicable. When a board cannot meet in a timely manner and at the discretion of the board and Commission Chair, the boards have the option to have the ISFMP Policy Board approve the conservation equivalency plan.

8. The PRT will evaluate whether the measures implemented under a state conservation equivalency plan are in compliance as part of the annual compliance review. The PRT will also evaluate whether the state conservation plan meets the goals of the species FMP. The board will determine if modification of the state conservation equivalency plan is required.

Coordination Guidance

The Commission's interstate management program has a number of joint or complementary management programs with NOAA Fisheries and the Fishery Management Councils. Conservation equivalency creates additional burden on the Commission to coordinate with our federal fishery management partners.

The Commission's FMPs may include recommendations to NOAA Fisheries for complementary EEZ regulations. Conservation equivalency measures may alter some of the recommendations contained in the FMPs, which would require that the Commission notify NOAA Fisheries of any changes. The Commission needs to consider the length of time that it will take for regulations to be implemented in the EEZ and try to minimize the frequency of requests to the federal government.

The protocol for NOAA fisheries implementing changes varies for the different species managed by the Commission. The varying protocols need to be considered as conservation equivalency proposals are being developed and reviewed.

When necessary for complementary management of the stock, the ASMFC Chair will request federal partners to consider changes to federal regulations may be required.

Public Perception

A lack of public understanding of the conservation equivalency process has led to a perception that some states are allowed to implement regulations that are less restrictive than the standards in the plan. The public has also expressed concern over not fully understanding how conservation equivalency management options are developed.

The development of this document is the first step in helping the public better understand conservation equivalency. Another important step to foster public understanding is the inclusion of management options in Commission FMPs and Amendments. If the public has access to the options that the states can select from, a major source of confusion is eliminated. Also, the public should be informed that conservation equivalency does not change the allocation between jurisdictions included in the plan.

The states need to work with the fishing public to better describe conservation equivalency and provide an explanation of why a state's regulations may differ from their neighbors.

Conservation Equivalency Subcommittee membership:

Stu Kennedy (Chair)
Rob O'Reilly
Harry Mears
Anne Lange
Bill Goldsborough
Pete Jensen
Kathy Hattala
Doug Grout
Ernie Beckwith

Bruce Buckson
Paul Caruso
Joe Fessenden
John Carmichael
Vishwanie Maharaj
Melvin Shepard
Byron Young
Steve Doctor

APPENDIX 1

The following appendix details the management measures for each ASMFC managed species that can be modified through conservation equivalency. This appendix also includes a summary of the management measures that the states have developed and are currently implemented through conservation equivalency.

Note: This document is a summary of the conservation equivalency measures and procedures included in ASMFC fishery management plan. It does not supercede any of the language included in the plans.

American Eel

The American Eel FMP states: "With approval of the American Eel Management Board, a state may vary its regulatory specifications listed in Section 4, so long as that state can show to the Board's satisfaction that the goals and objectives of this FMP will still be met." Section 4 of the FMP includes the Management Program Implementation, therefore a state can modify any provision included in the FMP through conservation equivalency.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

American Lobster

Amendment 3 to the FMP for American Lobster outlines the adaptive management limitations for lobster management. The Amendment states that the following measures cannot be altered through conservation equivalency:

- Prohibition on possession of berried or scrubbed lobsters
- Prohibition on possession of lobster meats, detached tails, claws or other parts of lobster
- Prohibition on spearing lobsters
- Prohibition on possession of V-notched female lobsters
- Requirement for biodegradable "Ghost" panel for Traps
- Minimum Gauge Size
- Limits on Landings by fishermen using gear or methods other than traps

Any lobster management measure that is not listed above may be modified through conservation equivalency.

Current Measures Implemented

New Hampshire: The Lobster Management Board approved a New Hampshire program that allows a portion of their Area 1 fishermen 1,200 traps and the rest

600 traps rather than the 800 trap allocation for everyone as specified in Addendum III.

Massachusetts: The Lobster Management Board approved a Massachusetts program for the Outer Cape Cod which uses 1999 through 2001 as qualifying years to identify potential participants and allocates traps based on fishing performances during 2000 and 2002 with pounds as the qualifying parameter. The Outer Cape Cod plan in Addendum III used 1999 through 2000 as the qualifying years and fishermen reported catch reports as the qualifying parameter.

New Jersey: The Lobster Management Board approved a New Jersey conservation equivalency proposal allowing New Jersey to implement an alternative permitting and trap allocation system then what was outlined in Addendum I.

Atlantic Croaker

There is no mention of Conservation Equivalency in the 1987 FMP for Atlantic croaker.

Current Measures Implemented

Conservation equivalency is not applicable to Atlantic croaker management.

Atlantic Herring

Under Addendum II to the Atlantic Herring FMP the states are permitted to alter any measure for which a compliance criteria is in place provided that approval is obtained prior to implementation. The compliance measures that are included in the plan are:

- Report, annually, the amount harvested by fixed gears in state waters
- Provide a description of the operation and amount of fish mealed in conjunction with herring processing activities
- Enact spawning restrictions
- Prohibit landings when TAC has been attained in an area or sub-area
- Prohibit directed fishing for herring in state waters when the TAC has been attained in an area or sub-area
- Prohibit landing to IWPs when harvested from a closed area or sub-area
- Daily fixed gear landings be reported on a weekly basis
- Provide an annual report on any mealing activity in the state

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Atlantic Menhaden

Amendment 1 provides states the opportunity to request permission to implement an alternative to any mandatory compliance measure. States submitting alternative proposals must demonstrate that the proposed action will not contribute to overfishing of the resource. All changes in state plans must be submitted in writing to the Board and to the Commission either as part of the annual FMP Review process or the Annual Compliance Reports.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Atlantic Striped Bass

Amendment 6 allows for the use of conservation equivalency in the management of striped bass. States/jurisdictions are permitted to modify recreational minimum size limits and bag limits to remain consistent with the 2 fish at 28-inch minimum standard in the plan. The commercial minimum size can also be decreased with a corresponding decrease in commercial quota. The plan states that the minimum size limits cannot be implemented below 18-inches.

Current Measures Implemented

Maine:	Recreational Fishery	1 fish 20”-26” or over 40”; no 2 nd fish
New York:	Hudson Recreational	1 fish 18, 24 or 26 inches w/ or w/out spawning closure
Maryland:	Coastal Comm. Fishery	24 inch min size limit;
	reduced quota	
North Carolina:	Albemarle/Roanoke Rec	18 inch minimum size limit
	Albemarle Commercial	18 inch minimum size limit

Atlantic Sturgeon

Amendment 1 to the Atlantic Sturgeon Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Atlantic sturgeon management.

Black Sea Bass

The Black Sea Bass Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Black sea bass management.

Bluefish

The Bluefish Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Bluefish management.

Horseshoe Crab

The Horseshoe Crab Fishery Management Plan does not provide for conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to Horseshoe crab management.

Northern Shrimp

Amendment 1 to the Northern Shrimp Fishery Management Plan does not provide for conservation equivalency

Current Measures Implemented

Conservation equivalency is not applicable to Northern shrimp management.

Red Drum

Amendment 2 to the Red Drum FMP allows any state to request permission to implement an alternative to any mandatory compliance measure. States submitting alternative proposals must demonstrate that the proposed action will not contribute to overfishing of the resource. All changes in state plans must be submitted in writing to the Board and to the Commission either as part of the annual FMP Review process or the Annual Compliance Reports.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Scup

Addendum XI to the Scup Fishery Management Plan provides the details for conservation equivalency in the 2004 recreational fishery. This Addendum also allows the Board to establish annual conservation equivalency procedures through future Board action. Under Addendum XI, the states from Massachusetts through New York must

develop a combination of size limits, bag limits, and seasonal closures to achieve a state-specific reduction. The states from New Jersey through North Carolina must implement minimum size limits, seasonal closures, and bag limits as described in the Addendum. Conservation equivalency is not permitted in the commercial fishery.

Current Measures Implemented

The states from Massachusetts through New York have implemented measures that achieve the necessary reduction for their recreational fisheries in 2004.

Shad and River Herring

Amendment 1 to the Shad and River Herring FMP allows a state to vary their recreational and commercial management programs so long as that state can show to the Board's satisfaction that the target fishing mortality rate or the overfishing definition will not be exceeded. Also, Amendment 1 states that alternative management regimes may also include other indices of their equivalency (e.g., eggs-per-recruit, yield-per-recruit, etc.), in addition to fishing mortality protection. States shall submit proposals for altering their regulatory program for American shad, hickory shad, or river herring prior to implementing any changes.

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Spanish Mackerel

There is no mention of Conservation Equivalency in the 1990 FMP for Spanish mackerel.

Current Measures Implemented

Conservation equivalency is not applicable to Spanish mackerel management.

Spiny Dogfish

The Interstate FMP for Spiny Dogfish allows the states to submit a proposal and receive Board approval to change any compliance requirement in the FMP. The compliance requirements included in the FMP are:

- Must close state waters when the quota is harvested
- Required to report landings weekly to NMFS
- State permitted dealers must report weekly
- Implement possession limits that comply with the annual specifications
- State issued exempted permits for biomedical harvest, limited to 1,000 fish (must report in annual compliance report)
- State prohibition of finning

Current Measures Implemented

No states have altered the management measures through conservation equivalency.

Spot

There is no mention of Conservation Equivalency in the 1987 FMP for spot.

Current Measures Implemented

Conservation equivalency is not applicable to Spot management.

Spotted Seatrout

There is no mention of Conservation Equivalency in the 1984 FMP for Spotted seatrout

Current Measures Implemented

Conservation equivalency is not applicable to Spotted seatrout management.

Summer Flounder

The Summer Flounder, Scup, and Black Sea Bass Management Board annually establish the process for applying conservation equivalency to the summer flounder recreational fishery. Each year the Board establishes state-specific targets (numbers of fish) that the states must achieve through combinations of minimum size limits, bag limits, and seasonal closures. Conservation equivalency is not permitted in the commercial summer flounder fishery.

Current Measure Implemented

All of the states have developed proposals and are currently implementing regulations that are consistent with the 2004 state-specific targets.

Tautog

Addendum III to the Tautog FMP required each state to make a 29% reduction in fishing mortality (25% reduction in exploitation rate) in the recreational fishery by April 1, 2003. States were required to submit proposals for this reduction and all proposals were reviewed and approved by the TC, the AP, and the Board.

Current Measures Implemented

All of the states have implemented approved measures to achieve the reduction that is required under Addendum III.

Weakfish

Amendment 3 to the Weakfish FMP required states to achieve a 32% reduction in the weakfish exploitation rate (F) from the 1990-1992 reference period. This level of reduction was carried over into Amendment 4. Appendix I of Amendment 4, an updated Evaluation Manual (O'Reilly 2002), provides states guidance in establishing their reduction plans. A state has the ability to adjust its commercial fishery regulations and choose from several creel limit/minimum size combinations for its recreational fishery to achieve the 32% reduction.

To achieve the fishing mortality reduction, states' commercial fisheries are constrained by size limits, gear restrictions, and possibly seasonal and area closures. Amendment 4

established a minimum size in the recreational fishery of 12 inches total length. However, it also provided states with a pre-determined suite of conservation equivalencies for recreational fishery regulations. States may choose a minimum size and creel limit combination of 12 inches/7 fish, 13 inches/8 fish, 14 inches/9 fish, or 15+ inches/10 fish.

Current Measures Implemented

All states regulate their commercial fisheries using combinations of minimum fish and mesh sizes and closed seasons to achieve the required reduction. The states have also implemented a combination of recreational minimum size limit and bag limits that are consistent with Amendment 4.

Winter Flounder

The current plan, states do not have to comply with any specific requirements. Therefore, conservation equivalency is currently not applicable for winter flounder. Amendment 1 is in development and will contain compliance criteria and the Board will decide which of these are available to change through conservation equivalency.

Current Measures Implemented

Conservation equivalency is not applicable to winter flounder management.

APPENDIX 2

Current Plan Review Team Membership

American Eel Plan Review Team

Herb Austin (VA)
Mel Bell (SC)
Dan Kuzmeskus (USFWS)
Lydia Munger (ASMFC)
Vic Vecchio (NY)
Gail Wippelhauser (ME)

American Lobster Plan Review Team

Richard Allen (RI)
Clare McBane (NH)
Dan McKiernan (MA)
Bob Ross (NMFS)
Carrie Selberg (ASFMC)
Carl Wilson (ME)

Atlantic Croaker Plan Review Team

Herb Austin (VA)
Wilson Laney (USFWS)
Tina Moore (NC)
Harley Speir (MD)
Nancy Wallace (ASMFC)

Atlantic Herring Plan Review Team

Megan Gamble (ASMFC)
David Libby (ME)
Clare McBane (NH)
William Overholtz (NMFS)

Atlantic Menhaden Plan Review Team

Matt Cieri (ME)
Ellen Cosby (VA)
Trisha Murphey (NC)
Douglas Vaughn (NMFS)

Atlantic Striped Bass Plan Review Team

Megan Gamble (ASMFC)
Wilson Laney (USFWS)
Gary Shepherd (NMFS)

Atlantic Sturgeon Plan Review Team

Kim McKown (NY)
Tom Meyer (NMFS)

Ted Smith (SC)
Brad Spear (ASMFC)
Dick St. Pierre (USFWS)

Black Sea Bass Plan Review Team

Michael Armstrong (MA)
Beth Burns (NC)
Nancy Butowski (MD)
Toni Kerns (ASMFC)
Chris Moore (MAFMC)

Bluefish Plan Review Team

Elliot Atstupenas (USFWS)
Herb Austin (VA)
Vic Crecco (CT)
Louis Daniel (NC)
Toni Kerns (ASMFC)
Najih Lazar (RI)
Chris Moore (MAFMC)
Roger Pugliese (SAMFC)

Horseshoe Crab Plan Review Team

Tom Meyer (NMFS)
Stewart Michels (DE)
Eric Schrading (USFWS)
Brad Spear (ASMFC)

Northern Shrimp Plan Review Team

Clare McBane (NH)
Dan Schick (ME)
Brad Spear (ASMFC)

Red Drum Plan Review Team

John Merriner (NMFS)
Michael Murphy (FL)
Lee Paramore (NC)
Roger Pugliese (USFWS)
Nancy Wallace (ASMFC)
Charlie Wenner (SC)

Scup Plan Review Team

Michael Armstrong (MA)
Beth Burns (NC)
Bill Figley (NJ)
Mark Gibson (RI)
Toni Kerns (ASMFC)

Chris Moore (MAFMC)
David Simpson (CT)
Byron Young (NY)

Shad and River Herring Plan Review Team

Lydia Munger (ASMFC)
Dick St. Pierre (USFWS)
Sara Winslow (NC)

Spanish Mackerel Plan Review Team

Henry Ansley (GA)
Randy Gregory (NC)
Nancy Wallace (ASMFC)
Gregg Waugh (SAFMC)

Spiny Dogfish Plan Review Team

Megan Gamble (ASMFC)
Tina Moore (NC)
Gregory Skomal (MA)

Spot Plan Review Team

Herb Austin (VA)
John Schoolfield (NC)
Harley Speir (MD)
Nancy Wallace (ASMFC)

Spotted Seatrout Plan Review Team

Beth Burns (NC)
Michael Murphy (FL)
John Pafford (GA)
Nancy Wallace (ASMFC)
Charlie Wenner (SC)

Summer Flounder Plan Review Team

Michael Armstrong (MA)
Toni Kerns (ASMFC)
Wilson Laney (USFWS)
Najih Lazar (RI)
Chris Moore (MAFMC)
Mark Terceiro (NMFS)
Carter Watterson (NC)
Byron Young (NY)

Tautog Plan Review Team

Paul Caruso (MA)
Jason McNamee (RI)

Lydia Munger (ASMFC)
David Simpson (CT)

Weakfish Plan Review Team

Rick Cole (DE)
Toni Kerns (ASMFC)
Rob O'Reilly (VA)

Winter Flounder Plan Review Team

Lydia Munger (ASMFC)
Deb Pacileo (CT)
Sally Sherman (ME)
Alice Weber (NY)



Atlantic Coastal Cooperative Statistics Program

1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201

703.842.0780 | 703.842.0779 (fax) | www.accsp.org

Atlantic Coastal Cooperative Statistics Program Coordinating Council Meeting

In-person Meeting

August 3rd, 2016 | 3:45 pm

Westin Alexandria, 400 Courthouse Square, Alexandria, VA

https://safis.accsp.org:8443/accsp_prod/f?p=550:15:15787198825561::NO:15:P15_CAL_ID_1:1734

1. Welcome and Introductions (R. Boyles, Jr., Chair)
2. Review and Approve Agenda – Attachment I
3. Public Comment*
4. Review and Approve May Meeting Minutes – Attachment II
5. ACCSP Status Report (M. Cahall)
 - a. Program Updates
 - b. Committee Updates
6. Governance Transition Update (R. Boyles, Jr.)
7. Other Business
8. Adjourn

*See Public Comment Guidelines:

http://www.accsp.org/sites/all/themes/aqua/File/ACCSP_PublicCommentPolicyOct2013.pdf



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Atlantic Coastal Cooperative Statistics Program Coordinating Council Meeting

May 2, 2016

Westin Alexandria, 400 Courthouse Square, Alexandria, Virginia

https://safis.accsp.org:8443/accsp_prod/f?p=552:15:::NO:15:P15_CAL_ID_1:1731

DRAFT MEETING MINUTES

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Andrew Shiels	PFBC	(814) 359-5181	ashiels@pa.gov
Gregg Waugh (Proxy)	SAFMC	(843) 571-4366	gregg.waugh@safmc.net

Committee Members Not in Attendance: H. Goodale (GARFO), B. King (DC FWD), C. Moore (MAFMC), T. Nies (NEFMC), B. Ponwith (SEFSC)

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

Others in Attendance:

Name	Title	Partner	Phone	Email
Paul Anninos	REI Systems		(703) 934-3969	panninos@icfconsulting.com
Lt. Michael Eastman	Lieutenant	NH FGD	(603) 868-1095	michael.eastman@wildlife.nh.gov
Terry Stockwell	Director of External Affairs	ME DMR	(207) 624-6553	terry.stockwell@maine.gov
Jack Travelstead	CCA			jgtravel54@gmail.com

Staff Members in Attendance: M. Cahall (Program Director), J. Defilippi (Data Team Leader), A. DiJohnson (Recreational Data Coordinator), H. Konell (Data Coordinator), J. Myers (Data Coordinator), J. Ni (Fisheries Data Analyst), S. Rains (Scan Technician), A. Schwaab (Outreach Coordinator), G. White (Recreational Program Manager), C. Wilt (Recreational Data Coordinator), E. Wyatt (Program Coordinator)

The Atlantic Coastal Cooperative Statistics Program Coordinating Council of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 2, 2016, and was called to order at 4:10 o'clock p.m. by Vice-Chairman Lynn Fegley.

Welcome/Introduction – R. Boyles

VICE-CHAIRMAN LYNN FEGLEY: I want to convene the ACCSP Coordinating Council. I am Lynn Fegley from Maryland DNR; and unfortunately Robert Boyles, I was hoping that he would stumble in my now. He is wrestling with the vagaries of Jet Blue. He is not here, and I am going to do my best as Vice-Chair to cover for him.

Public Comment

With that we have an interesting agenda today, but let's start by seeing is there any public comment in the room? Does anybody have public comment? Hearing none;

Committee Consent

• **Approval of Agenda (Attachment I)**

We will go on to the Approval of the Agenda. Are there any comments, concerns with the agenda? Hearing none;

• **Approval of Minutes from February 2016 (Attachment II)**

We will move right along to approval of the minutes from February, 2016. Does anybody have concerns or comments on the minutes from the last meeting? Okay this is great. Hearing none; we will move right along to ACCSP Status report from Mike Cahall.

ACCSP Status Report

- **Program Status – M. Cahall**

MR. MIKE CAHALL: Good afternoon everyone. I'll go ahead and go through our program update; as soon as we get the slide show started. To start with we have filled our Outreach Coordinator position, and we have hired Ali Schwaab; Ali, would you stand up, please? She's hiding. Most of you will get to know her.

She is the face of the program, and she will be taking care of all of our outreach stuff, and she will be distributing to you shortly, our annual report, which we received this morning. Kudos to Ali for getting that thing done, ordinarily it took Ann about six weeks to finish it, and Ali did it in about three and a half, so kudos to her and we're really thrilled to have her onboard and be fully staffed.

We've been working on some change management policy. This has been an issue for us for a long time, trying to keep track of what's going on; especially in our information systems. As the program has expanded, the need to make sure everybody knows what we're doing, especially for systems that they depend on, has become more important.

The IS Committee reviewed a draft change management policy, which will eventually probably come up to this committee; it is next going over to the operations committee. I've gone ahead and taken it upon myself to put an interim policy in place; to make sure that everyone who needs to know what's happening to the systems they depend on are informed well in advance of us making any changes. That was the single biggest problem, making sure that we had a distribution correctly for things like if we added a new column to the database, or suddenly a data element meant something different, or we were adding new functionalities or whatever. We wanted to make sure everybody knew about that. We had some very good news from NMFS ST, and the folks at headquarters. I am sure I won't have my acronyms right. But essentially, there has been funding made available to NMFS for electronic reporting and electronic monitoring projects.

When they received our spreadsheet that directed funding for the ACCSP projects, they took it upon themselves to directly fund two of our projects from that fund instead of ours, which essentially freed up \$275 K for other projects that were on the ACCSP docket. Following the direction that I had from the Coordinating Council, I touched base with Robert, and we went ahead and funded the Southeast Fisheries Science Center Assessment Accuracy Project.

For those of you who were at the last meeting, as you recall it caused the program a little bit of a conundrum, because this is a project everybody on the Operations Committee liked, but because of the way our ranking process worked, they weren't able to rank it highly enough to get it funded. Then we had additionally enough funding left over to go ahead and fund the next project in priority order, which was the Rhode Island Black Sea Bass Project.

Just to reiterate, NOAA directly funded the South Atlantic Fisheries Management Council Charter boat Electronic Reporting Project, and the Rhode Island Barcode Commercial Fishing

License Project; which is essentially expanding our swipe card reporting into Rhode Island. I am very grateful to Alan Lowther and the folks at NMFS Headquarters that thought of us at that time and were able to free that funding up. They've really have been looking out for us, and I deeply appreciate that.

We've been working very hard on tablet reporting. I'm sure many of you are aware of that. The eTrips mobile tool has been largely completed. Our data feed to the GARFO system has been approved, and we have folks reporting. We don't have a lot of folks yet, because there is no mechanism put in place yet to get them going, but a number of folks who have participated in previous pilots are beginning to report into the system and we are tracking those successful reports.

In addition the eDR swipe card system has essentially been completed. The Massachusetts system went into production on May 1st. We are going back and forth with them now, working through the usual issues that one works through when you put a new system into production. But what I'm getting back is that it is working correctly; that reports are being submitted as they're supposed to be, and it's going pretty well.

The Maine version of the tool has been completed and it's ready for testing. We expect testing to begin in the very near future. They are planning to deploy that tool for the sea urchin reporting. In terms of the Standard Atlantic Fisheries Information System (SAFIS) redesign, we have a visioning document that has been drafted and approved by the IS Committee, which clearly defines the scope of SAFIS to include the fisheries dependent disciplines.

That would be at-sea observer, vessel trip reporting, dealer reporting, and dockside biological sampling; and improves the concept on integrated dealer reporting, so that the individual pieces connect to one another automatically. Your observer trip automatically links to your VTR, automatically links to your dealer report, automatically links to your dockside sampling; as the basis of the design of the reporting system. We're working in close collaboration, especially with the Northeast Fisheries Science Center on this particular piece. They have just designed two new systems that used ACCSP coding standards, and were specifically thought of as being used as integrated reporting pieces.

We look forward to really moving forward with that project. Some of your staff may be hearing from Tom Hoops, who've we've contracted to review the current state of affairs in all of our different program partners; their likes and dislikes for the SAFIS system, looking for additional requirements and lessons learned.

In terms of our data warehouse, biological and bycatch database designs are nearly final; and in fact they are deployed and in the system. We just completed the query system development, with some very minor tweaks left to go. We're going to be rolling that out in the very near future; the non-confidential piece of it is finished.

The confidential piece is still undergoing some minor revisions. Mostly we're doing back and forth with our end users, to make sure that we've covered all the bases. This was a project that was funded by the Fisheries Information System (FIS) program, and we've gotten very positive response. It will also allow us to shut down our older Oracle query tool, which has become very problematic. I don't know if the issues that we've been having that have been filtering up to you all. But we've had a very rough time keeping that thing up and working correctly.

We are almost finished with the 2015 data load. We had some minor problems with one of the data feeds, which I think are largely resolved, Julie? Yes. We should have those data available very shortly. They will be used, of course, in Fisheries of the U.S. Moving on to the APAIS, which I'm sure all of you are very interested in hearing.

I will say overall that the APAIS rollout is going about as well as we could have possibly hoped. There have been some minor snags, the kinds of things that you would expect, especially in states that haven't been doing the survey prior themselves. However, I can say that almost all of the issues have been resolved, that reporting is going ahead as it should.

We are receiving data as we're supposed to and been able to process it and transmit it successfully to NMFS; and in fact we believe that we're being able to process these data more quickly and more accurately than has been done before. I want to give a shout out to my APAIS team. APAIS people, would you stand up, please? This is your APAIS team. Jeff, do you want to introduce everybody?

These four folks are processing all your MRIP data, and I have to say you can see the papers, you can hear the papers chunking their way through the scanners in the morning. It is a good feeling, and I'm really pleased with how it's going. We've completed Wave 1 in its entirety, of course Wave 1 is almost a trial run, because it was only North Carolina and a fairly small set; but it went off pretty much without a hitch.

Wave 2 is running, even as we speak. We are really not having any issues. We're also working in Wave 2 for the first time with the head boat assignments, and that has also been working by and large, again as we expected it to go. Again, as concerned as we might have been with some of the issues that we could have encountered, we really haven't. It has gone really, really well. Right now we're reviewing how things went in each of the individual states and looking at the budgets. NMFS has asked us to submit an update to the budget for the next year, so that they can prepare to grant them to the cooperative agreement, so your staff folks might be getting a few questions here and there; but again, this is exactly what we expected as we move forward. I have to say that it is going about as well as it could. I'll turn it over to Pat.

- **Committee Updates – P. Campfield**

MR. PAT CAMPFIELD: The Operations Committee met about a month ago in April, to approve the FY17 RFP, as well as get an update from RFP Modules Prioritization Workgroup. That

subcommittee met on March 1, with a task of potentially rebalancing the modules or priorities for the different funding areas under the ACCSP RFP.

In the past catch and effort has taken highest priority through this work. We're considering raising bio-sampling bycatch and socioeconomics to at least equal if not higher priority than catch and effort. That is a process that we're going to take slowly and surely; it won't be implemented for the new cycle here.

But we're developing options for possible implementation in the FY18 cycle. The first step of that potential module reprioritization is to flush out two or three different options, whether we hold all these things equal, or put some higher than others; and then take a somewhat quantitative approach to rebalancing.

By looking at the projects that were submitted over the last, say three to five years and rescoring them under these different scenarios or options, where say bio-sampling, bycatch and socioeconomics would be weighted higher than they have in the past. There has been an initial call for that workgroup, and they will continue to work on reprioritization throughout 2016 for possible changes in next year's cycle.

Also during the Operations Committee webinar, we got updates on the new projects from the last funding cycle. Glad to report that those are all going well, with some interesting results early on. The Bycatch Committee is developing a new bycatch sampling program inventory that will be available soon on the website. That is not the bycatch data, but simply a list of the different sampling programs available along the coast.

There has been a ton of work going into that since last August, with a large number of what we're calling fleet calls, where they outline gear codes, identify primary bycatch, primary catch for the stocks range along the Atlantic coast and by statistical area. They are in this process redefining and renaming existing fleets in the matrix.

There will be a final call later here in May, to complete the design of the bycatch prioritization matrix, and then from there the group will populate it and put values into the matrix. The Biological Committee met in early February to complete their matrix. One notable change is the use of a productivity and susceptibility analysis tool that we're borrowing from NMFS tool box.

We're using those values of that information to update resilient scores in the bio-sampling matrix. In the past the values were more qualitative, and from professional judgment from the Biological Committee members. As Mike mentioned, we've developed biological queries for the new data warehouse, which is pretty exciting. Similar to bycatch, there is a new biological sampling program inventory and development, and that will be available soon on the website. ComTech held a meeting a few weeks ago. There has been another big effort to redesign the data warehouse, with beta testing held earlier this spring, and we hope to have a public release very soon; coincident with the spring data log. ComTech also, I think

more as an informational or background discussion is starting to delve into seafood traceability and electronic monitoring; for the traceability part in close coordination with folks in the Gulf, who have been working on that for several years in the past.

ComTech is also completing a conversion factor project up and down the coast, which is out for final comments and review by program partners. Hope to have a final report ready soon. Another significant change is that Standard Codes is to become a full committee at the same level as Commercial Technical, Recreational Technical, and the others, and will consist of representatives from each of those groups; to sort of cross-pollinate on commercial and recreational bio, bycatch and others.

Finally, the Recreational Technical Committee is working on for-hire logbook standards in coordination with some new or current active projects; the South Carolina Validation Project, Massachusetts Electronic Charter boat Logbooks, as well as the South Atlantic Council Charter boat Logbook Project.

Recreational Technical is also working on and contributing to data needs and priorities to build or fold into the MRIP Atlantic Regional Implementation Plan. Those regional plans are being developed throughout the country, so ACCSP is taking a major role in providing input for the Atlantic plan. Also, Recreational Technical is providing continued support for the APAIS transition, including recently completed biologist training; and their next meeting for Recreational Technical will be this summer. I'll pitch it now to Cheri for the governance topic.

VICE-CHAIR FEGLEY: Does anybody have any questions for Mike or for Patrick? No, okay hearing none; that brings us to our next agenda items, which involves an action.

Governance Program Decision (Attachment III) – C. Patterson

As you all know, there was an independent program review, and one of the things that that review asked for was to look at the governance of ACCSP, and as such an Ad Hoc Workgroup was formed. I'll just take a moment to say that I am very new to this process. I'm on a very steep learning curve.

But working with this workgroup was really telling the passion, and the commitment, and the knowledge of the individuals on this workgroup; and their care that we have excellent data coastwide is really compelling. I learned a lot and I very much appreciated the time. I want to absolutely recognize Cheri Patterson for her work on this. The Executive Committee has met and has a recommendation to forward to this body, so with that I will kick it off to Cheri Patterson to brief the group.

MS. CHERI PATTERSON: Considering that the white paper came out, I think on Friday, and I presume not much of us are speed readers, I put together a presentation to try and go through what the white paper addressed. As Lynn indicated, in 2012 there was an independent program review that panel provided recommendations.

One of those was to undergo a governance review. It was primarily based on these bullets that you see below. Again, speed readers this should be easy for you. The workgroup developed some terms of reference, to help provide direction and address questions. There was a survey conducted of the ACCSP committees and ASMFC and ACCSP staff; to learn about the various ACCSPs representative's opinions and basic knowledge of the structure. If you have the white paper, those survey results can be found in Attachment 3. The first term of reference was to review the process and justification for the creation of the current structure, and to answer a question of is there still a significant concern in combining a data collection program and a regulatory agency?

If you look at the results of the survey, which were broken down into three sections, where all respondents is on your left, just the Coordinating Council participants of the survey are in the middle, and the Advisory Committee is at the right. As you could see, it was a little bit diverse. In the all the respondents, about half said no, there is no longer a concern. But yet half of the advisors said yes, there is still a concern.

The second term of reference, again see Attachment 4 for information on this, pertained to reviewing the scope of other fishery information network programs out there or FINS to look at comparison. Listed here are the six regional Fisheries Information Networks (FIN) in the United States, and who they are currently residing under.

The comments from the FIN review itself, pertaining to ACCSP; I pulled out, between actual summary of the review, as well as comments from the individuals on the panel. The model of each FIN having an institutional home outside of NMFS is appropriate. West PacFIN is the one that is within the services Science Center.

This arrangement allows for separation of data provider from the data client. Having the FINs housed under the regional fisheries commission seems to have been working well, generally. However, it may be wise to consider having a clearer separation between a FINs institutional home with convenience in its operations.

The FIN programs are all facing very difficult decisions about cutting back on important elements. They are feeling the constraint of funding. Stronger stakeholder engagement is essential to building the support for funding increases. If they are supported by the stakeholders, then the programs do succeed.

Third party interests need to help raise the profile and appreciation of the value of these critical programs. Again, these came out of the FIN review itself. The terms of reference Number 3, is where we reviewed the current governance and operation environment of the ACCSP, with particular emphasis on seven areas.

The first one being, would incorporation into the ASMFC be likely to enhance ACCSPs ability to achieve a higher profile or recognition? If you notice, pretty much all the respondents were resoundingly indicating yes, from all three groups. The second part of the third terms of

reference is what impact would potential changes have in ACCSPs ability to seek out additional funding?

What you see in front of you is the current funding process of ACCSP, and then a series of footnotes that kind of describe various overhead charges, \$154,000.00 was removed from the original budget process by ASMFC, and it gives that explanation. It just gives you an understanding of what it is currently. If you need to need to know, if you want to see direct comments from the respondents, then I recommend that you see Survey Question Number 4 in the white paper; and there are a couple pages there that give you really direct comments from everybody that participated in the survey. It is pretty interesting. The third aspect of the third terms of reference is does ACCSP and ASMFC staff operate in full coordination. Again, look at Survey Question Number 5.

It was kind of a diverse survey, in regards to this question. In fact the perception of the survey responses really does not reflect the reality of the current collaboration between ACCSP and ASMFC, which is outlined in Pages 7 through 11 in the white paper. There is much more coordination than I believe the survey respondents understood that is occurring.

The fourth TOR, are there opportunities for reorganization and other cost savings by moving ACCSP into ASMFC? Again you have survey questions that you see in front of you, and then Question Number 7 are the direct comments if you want to review those from survey respondents. But here you've got yes; there are probably opportunities for reorganization and other cost savings.

However, you will see further down into this that there really isn't; that the collaboration has really been moved forward between these two organizations very well, and they're operating off both of their strengths, and saving both organizations money. The next one; is there a sufficient level of engagement of state directors and senior level partners in the ACCSP, with special emphasis on funding areas?

In here it is again, kind of a diverse response from everybody. Some are indicating there is not, and then some are indicating yes, there are. Again, the perception here is interesting. The next one, also pertaining to the same question; is integration with the ASMFC likely to improve engagement and support?

Here it seemed a little bit better that yes, if you do integrate that there may have some improvement with partners with engagement and support. What would the pros and cons be to integrate ACCSP with ASMFC? This was a comment survey. If you look at those pages, again you have some interesting perspectives coming from the survey respondents.

Are there other ways to reengage the state directors with the ACCSP without integration; and again, more direct comments and ideas. The fourth term of reference was to provide the Coordinating Council with options for a potential reorganization. There were four alternatives

developed here. Of course Alternative 1 was status quo, where ACCSP would continue to operate as an independent program, governed by the Coordinating Council.

The ASMFC is a project partner and shares administrative coordination with the Coordinating Council. This is funding neutral. The second alternative is enhanced integration of the two organizations, but ASMFC remains independent, which is largely what is happening now. That would also be funding neutral.

The only exception between Alternative 1 and Alternative 2 is supervision and oversight of the ACCSP director and staff. Alternative 3 is looking at folding ACCSP into ASMFC. Here ACCSP would be fully incorporated. It would be congruent with existing ASMFC programs, and the ASMFC Executive Director would supervise the ACCSP director; and all staff would be governed by existing SOPs under ASMFC. That again would be funding neutral. The fourth alternative is creating a standalone organization, specifically called ACCSP. It would be separate and independent; it could be governed by a board of directors similar to how it is now. It would be housed physically and administratively separate from ASMFC. This was determined to be a 50 percent cost increase from the current budget.

The Governance Ad Hoc Workgroup, who developed this white paper, came up with some recommendations. Again, what you see in brown font here should help you kind of speed read better through this. But essentially having Alternative 3 be the preferred option. That if it is going to be developed into an ASMFC program that it be congruent with existing ASMFC programs.

That the Executive Director would supervise the ACCSP Director, and all staff would be governed by ASMFC SOPs. But data collection and management programs should be considered equal. ACCSP may hold a higher priority with state directors, partners and stakeholders under ASMFC under this recommendation. ACCSP should be maintained as its partner-driven committee process, which we feel is its strength. It is one of the strongest FIN programs, we feel, out there; due to this bottom up management approach.

If this Coordinating Council and the ASMFC Executive Committee decide to move this forward as an alternative; that a work group be developed to develop recommendations of restructuring; consisting of the Governance Ad Hoc Workgroup members, other Coordinating Council members that would like to join in on the fray, operations and advisory committee members, and ASMFC and ACCSP staff.

- **Executive Committee Recommendation**

The Executive Committee just met and would like to recommend a motion to be presented to the Coordinating Council to consider. That motion is to adopt the recommendation of the Governance Ad Hoc Workgroup, and expand the workgroup to include all of those four that you saw before; those four bullets, and also include ASMFC Commissioners.

VICE-CHAIR FEGLEY: It is now in the hands of this body to decide. This is the recommendation of the Executive Committee. I think just to recap first, very quickly. The Executive Committee is, and the Governance Workgroup has recommended, and the Executive Committee has accepted the recommendation to, if you will, marry ASMFC and ACCSP together. Is there somebody around the table who would like to make this motion? Robert.

MR. ROBERT H. BOYLES, JR.: Thank you, Madame Chair, I apologize for my tardiness.

VICE-CHAIR FEGLEY: It is so good to see you!

MR. BOYLES: It is nice to be here, thank you. I guess maybe a point of order. I think this is a recommendation of the Executive Committee, and a motion that is from the Executive Committee. It is a committee motion, does not require a second. But for the purposes of the record, I will read it into the record.

The motion from the Executive Committee is to adopt the recommendation of the Governance Ad Hoc Workgroup. I'm buzzing. I am a bass player, its feedback, so much for not making a scene. Madam Chair, on behalf of the Executive Committee I would move to adopt the recommendation of the Governance Ad Hoc Workgroup and the Executive Committee, and expand the workgroup to include ASMFC Commissioners to consummate this marriage.

VICE-CHAIR FEGLEY: Thank you, is there a second? Terry Stockwell.

MR. TERRY STOCKWELL: Second and a question. My question to the Executive Committee is the rationale for including the entire group of commissioners. It's a pretty big workgroup to think through the details. Good luck!

VICE-CHAIR FEGLEY: I'll defer to my colleagues here, but I think the intent was to allow for participation. We would request that people volunteer to participate in the process from the Commission, just to be able to expand the membership there. Is there any discussion on the motion?

MR. BOYLES: Madam Chair, since I didn't have the benefit of the Executive Committee discussion earlier. I want to make sure that maybe for the body to understand and to Mr. Stockwell's question, if we could have Coordinating Council members who may be interested in assisting this to let me know as Coordinating Council Chair and commissioners who may be interested to let Doug know. That would be great if we can proceed that way.

VICE-CHAIR FEGLEY: Is there any other discussion on the motion? Wilson, did you have your hand up?

DR. WILSON LANEY: I did, Madam Chairman, but it was just to explain what you already explained; about the fact that we did not intend to include the entire commission on the workgroup.

VICE-CHAIR FEGLEY: Fine point of clarification. Okay, so I guess we can call the question, and I'm wondering if we can do this by consensus. Is there any opposition to this motion? Okay hearing none; the motion has passed. Yes.

EXECUTIVE DIRECTOR ROBERT E. BEAL: You look very apprehensive. I just want to reiterate what Cheri said earlier, which is that the ASMFC Executive Committee is going to be talking about this tomorrow morning, making sure. In my mind it is kind of a willing donor and willing recipient kind of arrangement.

Clearly this group unanimously passed the motion to merge ACCSP underneath the ASMFC. I think the other half of that is for the commission to make that same decision, so that everyone is all in agreement, all the parts are in agreement that this is the right direction to go. The Executive Committee will be chatting about that tomorrow morning.

VICE-CHAIR FEGLEY: Thank you for that clarification. That makes perfect sense. Okay, so I guess that moves us to our next agenda item, and this is to consider the entire package that came out of the Independent Program Review, and in that package were a series of standard operating procedures.

Consider Acceptance of the Independent Program Review Package (Attachment IV) – R. Boyles

Some of these may wind up being amended, or altered, or even removed if the Executive Committee of the Commission chooses to accept this recommendation and this motion to marry the two organizations together. But nevertheless, this group needs to approve those SOPs. I think if I may, Robert, were you going to go over those? Oh, Mike, so I am going to defer you to Mike to walk you through; just two outstanding that the Executive Committee made a couple of changes to, so Mike.

• **SOP (Attachment V)**

MR. CAHALL: You have in your package the entire bulk of the program response, the Independent Program Review, which includes a number of SOPs, the Governance recommendation, the Outreach Strategic Plan, and the Long-term Funding Strategy. The Outreach Strategic Plan and Long-term Funding Strategy and the governance now, were in and of themselves approved separately by this body.

We didn't expect everyone to go through the entire SOP, as there are many, many, many of them. However, two of them have had minor modifications since they were submitted. The Executive Committee approved them just prior to this meeting, and we wanted to bring them to your attention.

Essentially, the goal of the strategic communication was to work to make sure ACCSPs value could be communicated to Congress and state legislatures. We added a little bit to the very last bullet to make sure that we didn't exclude any of the possibilities of NGOs working with us. It doesn't have to be necessarily our program partners that we might work with to lobby

Congress or state legislatures. That was the purpose of that bullet, and if you could show us the other one.

This is based on a recommendation that Bob Beal made, to add another bullet about the purpose of this was to help integrate ACCSP and Commission staff together, to get more acquainted with working with one another and to get in the habit of working together. Bob suggested that we add; this is things like working with communications and making sure that we actively participate in the policy committees and things like that.

Then in the very last one, Bob suggested that we include in the orientation for new ASMFC Technical Staff, a briefing on ACCSP, what its purpose was and how to go about using its data products. With those two changes, you have in its entirety the programs response to the independent program review and we are asking the Coordinating Council to accept this.

VICE-CHAIR FEGLEY: Great, we have an action before us to approve the Standard Operating Procedures. If I may ask, is there any opposition, concern, or comment on the Standard Operating Procedures that you have been presented with? With that we'll consider them accepted.

Review and Consider Approval of 2016 Request for Proposals (RFP) (Attachment VI)

We will move straight along to Agenda Item Number 7, which is to review and consider approval of the 2016 request for proposals. Mike can speak to this. You all have this in Attachment 6. I don't think the RFP looks much different than it has in the past. I believe it is scheduled to go out in May, is that correct? Mike, I'll defer to you if you want to say a few words about it.

MR. CAHALL: The RFP that we're going to put out this year is very much as in prior years. The workgroup that was looking at doing the reprioritization of the program felt that we weren't quite ready to go full steam ahead with reprioritizing the other models of the program; that we need to spend a little time to do an analysis of the impact on changing our budget priorities. But that next year you will see changes in the priorities coming forward to this group. Essentially, the RFP that you have in your package is very similar to prior years. There are some obvious changes in dates and deadlines, and keeping in mind the fact that we now have a fade-off program in our funding, in the long term funding in the Funding Decision Document. We are requesting along with new proposals, multiyear proposals obviously, a strategy for how they're going to fund a new program over the long term.

One of the concerns has always been ending up having to fund extended programs for an extended length of time, which ACCSP of course was not originally intended to do. Other than that it is very similar to prior years, and that is really the only change to the package that you have.

VICE-CHAIR FEGLEY: Do we have any discussion, concern, or comment on the 2016 RFP? Wow, okay, well with that is there any opposition to the approval? Did I see a hand go up?

MR. BOYLES: I was going to make a motion, but you've got it already.

VICE-CHAIR FEGLEY: Why don't you go ahead and make a motion?

MR. BOYLES: I make a motion to approve the FY17RFP as submitted.

VICE-CHAIR FEGLEY: Do we have a second, all right, Dr. Duval. Okay and is there any opposition to the motion? Okay hearing none; we are moving right along then to other business. Anybody got some? Oh, Robert.

Other Business

MR. BOYLES: We've just taken a big step, and I would like to commend several folks; most notably Mike and the staff, with completing all the work that needed to be done as the result to the Independent Peer Review, so Mike, and staff, congratulations, and thank you. To the Coordinating Council, we've taken a big step to seek and find efficiencies in this new realm and this new dynamic of stable funding being, what is the word I'm looking for?

A flat budget is a win. I think with the governance discussion moving forward, next stop to the Commission's Executive Committee. I think that we are well in place to continue to grow this program to provide good data to support the management decisions that we're all very, very interested in.

Thank you, and particularly to Cheri, who did so much work to shepherd our response to the IPR, as well as the governance discussion; Cheri, a public thank you and a tip of the hat, a tip of a grateful hat to you for your leadership here. Madam Chair, if I may, if you would be so kind. I would make a motion that we adjourn in the memory, the fond memory of Joe Graham; who is no longer with us. Joe certainly taught me a lot about parliamentary procedure and keeping things straight. I'll miss him!

Adjourn

VICE-CHAIR FEGLEY: Thank you, very well said. I think I would second the motion and adjourned.

(Whereupon the meeting was adjourned at 4:57 o'clock p.m. on May 2, 2016)

Atlantic States Marine Fisheries Commission

American Eel Management Board

*August 4, 2016
8:00 – 9:30 a.m.
Alexandria, Virginia*

Draft Agenda

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

1. Welcome/Call to Order (*J. Clark*) 8:00 a.m.
2. Board Consent 8:00 a.m.
 - Approval of Agenda
 - Approval of Proceedings from May 2016
3. Public Comment 8:05 a.m.
4. Discussion to Consider Changes to Addendum IV Yellow Eel Allocations (*K. Rootes-Murdy*) **Possible Action** 8:15 a.m.
 - Technical Committee Report (*T. Wildman*)
5. Consider North Carolina Glass Eel Aquaculture Plan for 2017 (*K. Rootes-Murdy*) **Action** 8:55 a.m.
 - Technical Committee Report (*T. Wildman*)
 - Law Enforcement Committee Report (*M. Robson*)
6. Other Business/Adjourn 9:30 a.m.

The meeting will be held at The Westin Alexandria, 400 Courthouse Square, Alexandria, Virginia; 703.253.8600

MEETING OVERVIEW

American Eel Management Board Meeting

August 4, 2016

8:00 – 9:30 a.m.

Alexandria, Virginia

Chair: John Clark Assumed Chairmanship: 8/15	Technical Committee Chair: Tim Wildman (CT)	Law Enforcement Committee Representative: Cornish
Vice Chair: Martin Gary	Advisory Panel Chair: Mari-Beth Delucia	Previous Board Meeting: May 3, 2016

Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, VA, NC, SC, GA, FL, D.C., PRFC, USFWS, NMFS (19 votes)

2. Board Consent:

- Approval of Agenda
- Approval of Proceedings from May 2016 Board Meeting

3. Public Comment:

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

4. Discussion to Consider Changes to Addendum IV Yellow Eel Allocations (8:15 – 8:55 p.m.) Possible Action

Background

- At its February 2016 meeting, the Board agreed to discuss revisiting Addendum IV yellow eel allocation at the May 2016 Board meeting.
- At the May 2016 meeting, the Board was presented a draft proposal from New York with options to adjust the current commercial yellow eel fishery state by state quotas if enacted by management trigger as well as the timetable for revisiting allocations in the future. The Board agreed to consider a follow-up proposal from New York with more specific information on addressing allocation concerns at the August 2016 Meeting.
- In July 2016, New York submitted a follow-up proposal (**Supplemental Materials**).
- The Technical Committee reviewed the follow-up proposal from New York and provided recommendations. (**Briefing Materials**)

Presentations

- New York Proposal to adjust Commercial Yellow Eel Fishery Quota by K. Rootes-Murdy

<ul style="list-style-type: none"> • Technical Committee Report by T. Wildman
Board actions for consideration at this meeting <ul style="list-style-type: none"> • Consider Revisiting Addendum IV Yellow Eel Allocation

5. Consider North Carolina Glass Eel Aquaculture Plan for 2017 (8:55 – 9:30 a.m.)
Background <ul style="list-style-type: none"> • At its February 2016 meeting, the Board approved an Aquaculture Plan for North Carolina in 2016 that allows harvest of up to 200 pounds of glass eel for domestic aquaculture purposes. • At its May 2016 meeting, the Board was informed by North Carolina that due to delays in the issuance of permits, no glass eels were caught for aquaculture purposes in spring 2016. North Carolina indicated that they would submit a similar Aquaculture Plan for the 2017 season by June 1, 2016. (Briefing Materials) • In July 2016, the Technical Committee and Law Enforcement Committee reviewed the revised Aquaculture Plan and provided recommendations. (Briefing Materials)
Presentation <ul style="list-style-type: none"> • Revised North Carolina Glass Eel Aquaculture Plan for 2017 by K. Rootes-Murdy • Technical Committee Report by T. Wildman • Law Enforcement Committee Report by M. Robson
Board actions for consideration at this meeting <ul style="list-style-type: none"> • Consider approval of North Carolina’s revised Aquaculture Plan for Implementation in 2017

7. Other Business/ Adjourn

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

The Westin Alexandria
Alexandria, Virginia
May 3, 2016

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

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Adjournment..... 17

INDEX OF MOTIONS

1. **Approval of Agenda by Consent** (Page 1).
2. **Approval of Proceedings of February, 2016** by Consent (Page 1).
3. **Main Motion: Move to initiate an addendum to reconsider the coastal cap and the state by state yellow eel allocation** (Page 12). Motion by James Gilmore; second by David Borden. Motion postponed.
4. **Motion to Postpone: Move to postpone until August meeting** (Page 14). Motion by Bill Adler; second by Martin Gary. Motion carried (Page 14).
5. **Move to create a working group to address the inequities of the coastal allocation of yellow eels, as well as revisit the glass eel quota** (Page 14). Motion by Patrick Keliher; second by Dave Borden. Motion failed (Page 16).
6. **Move to adjourn** by consent (Page 17).

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	Loren Lustig, PA (GA)
Sen. Brian Langley, ME (LA)	Andy Shiels, PA, proxy for J. Arway (AA)
Terry Stockwell, ME, Administrative Proxy	David Saveikis, DE (AA)
Steve Train, ME (GA)	John Clark, DE, Administrative proxy (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Roy Miller, DE (GA)
Doug Grout, NH (AA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Cheri Patterson, NH, Administrative proxy	Bill Goldsborough, MD (GA)
G. Ritchie White, NH (GA)	Lynn Fegley, MD, proxy for D. Blazer (AA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Rob O'Reilly, VA, proxy for J. Bull (AA)
Dan McKiernan, MA, proxy for D. Pierce (AA)	Cathy Davenport, VA (GA)
William Adler, MA (GA)	Kyle Schick, VA, proxy for Sen. Stuart (LA)
Robert Ballou, RI, proxy for J. Coit (AA)	Rep. Bob Steinburg, NC (LA)
David Borden, RI (GA)	Michelle Duval, NC, proxy for B. Davis (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Doug Brady, NC (GA)
Dave Simpson, CT (AA)	Robert Boyles, Jr., SC (AA)
Emerson Hasbrouck, NY (GA)	Mel Bell, SC, proxy for M. Rhodes (GA)
James Gilmore, NY (AA)	Pat Geer, GA, proxy for Rep. Nimmer (LA)
Steve Heins, NY, Administrative proxy	Spud Woodward, GA (GA)
Mike Falk, NY, proxy for Sen. Boyle (LA)	Jim Estes, FL, proxy for J. McCawley (AA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)	Mike Millard, USFWS
Russ Allen, NJ, proxy for D. Chanda (AA)	Chris Wright, NMFS
Tom Fote, NJ (GA)	Martin Gary, PRFC
J. Thomas Moore, PA, proxy for Rep. Vereb (LA)	

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

Ex-Officio Members

Jon Cornish, Law Enforcement Representative

Staff

Bob Beal	Ashton Harp
Toni Kerns	Kirby Rootes-Murdy
Mike Waine	

Guests

Derek Orner, NOAA	Gregg Waugh, SAFMC
Charles Lynch, NOAA	Stew Michels, DE DFW
Peter Burns, NMFS	Joe Cimino, VMRC
Mike Ruccio, NMFS	Wilson Laney, US FWS
Kelly Denit, NMFS	Corey Hinton, Passamaquoddy Tribe, ME
Alli Murphy, NMFS	Jack Travelstead, CCA
Nichola Meserve, MD DMF	Arnold Leo, E. Hampton, NY
Jeff Pierce, MEFA	David Bush, NC Fisheries Assn.
Abden Simmons, MEFA	Des Kahn, Fisheries Investigations

The American Eel Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 3, 2016, and was called to order at 4:26 o'clock p.m. by Chairman John Clark.

CALL TO ORDER

CHAIRMAN JOHN CLARK: Okay, will the Eel Board please be seated; we want to get this meeting started. All right the sooner we get started the sooner we move on to whatever it is that is coming next. Thank you all for coming. This is the American Eel Board. I'm John Clark, the Administrator Proxy for the fabulous first state, and let's move right into the agenda.

APPROVAL OF AGENDA

APPROVAL OF PROCEEDINGS

CHAIRMAN CLARK: Does anybody have any additions or changes to make to the agenda? Seeing none; proceedings from the November, 2015 meeting, does anybody have any changes to make to those? Seeing none; the agenda and proceedings are approved by consent.

PUBLIC COMMENT

CHAIRMAN CLARK: Our next item is public comment for issues that are not on the agenda. I've been told that Mr. Corey Hinton would like to address the board, is he here? Oh yes, there he is. The public microphone is in the back there, Corey.

MR. MICHAEL-COREY F. HINTON: Hello, my name is Michael-Corey Hinton I am an attorney here on behalf of the Passamaquoddy Tribe of Maine. I would like to begin by expressing my thanks to Commissioner Keliher for the opportunity to speak here today, and to all of you for listening to my remarks.

This year for the Passamaquoddy tribe with regard to the glass eel fishery was one of what I would say is historical significance. This year the tribe had an allocation of well over 1,000 pounds of quota; which we fulfilled several weeks ago. It was a very active fishery, and for the first year in several years I would say that this season went off largely without hitch.

For the first time in as long as I've participated in this fishery on behalf of the Passamaquoddy Tribe, we managed the fishery as a tribe pursuant to a memorandum of understanding with the state of Maine; something that the tribe had pursued for several years. I would say that this model of co-management worked extremely well this year; not without difficulties, there are issues that we need to address within our own community.

But on the whole, this was a season that went off with very little, if any, friction; as far as large issues go. The Passamaquoddy Tribe looks forward to building its presence with the ASMFC, and I understand that there will be a meeting in Bar Harbor at the end of this year; I believe that will be in November.

As you may or may not be aware, the island Bar Harbor is a place of great spiritual significance to the Wabanaki people includes the Passamaquoddy the Penobscot, the Micmac and the Maliseet. We are the four federally recognized tribal nations in the state of Maine, and Bar Harbor is our home. Bar Harbor is a place that for many years was viewed as a gathering place for Native Americans up and down the East Coast, so I feel it is very fitting that the November meeting will be in Bar Harbor. The Passamaquoddy Tribe looks forward to an opportunity to give a little bit more of a fullsome presentation about the historical significance of the American Eel to our people.

At that time the leadership of the tribe, we have two Chiefs and Vice-Chiefs from our two respective reservations. We'll look forward to an opportunity to address the management board in person. They send their regards for being unable to attend today; but there was a passing in our community. But on the whole I would just like to again say thank you to the board and to Commissioner Keliher. This was a very successful year and we look forward to continuing to build on this into the future. Wilwni. (Algonquin Indian translation: thank you)

CHAIRMAN CLARK: Thank you, Mr. Hinton.

2017 STOCK ASSESSMENT FOR AMERICAN EEL

CHAIRMAN CLARK: Moving on to our next agenda item, Mike Waine will bring us up to date on the timing of the 2017 stock assessment for American eel.

MR. MICHAEL WAINE: Just to remind the board, the last time we conducted a stock assessment was in 2012; that was a benchmark. The five-year trigger is 2017. In preparation of that five-year trigger, we got the American eel Technical Committee together on a conference call to look at all the various research priorities that came out of that 2012 assessment.

As we began to evaluate, basically conducting another assessment in 2017, we wanted to look at what progress had been made on those research recommendations from the last time we conducted the assessment. Ultimately we have identified some data gaps that we would like to try to close, and also identified some action items with the Technical Committee that they would like to work on in the interim.

Through that discussion they decided that it would likely make more sense to do a stock assessment update, as opposed to a full blown benchmark. The distinction there is, keeping the datasets the same and the modeling approach

the same, and just updating everything through a terminal year, which would likely be 2016 for a 2017 update, as opposed to sort of reviewing all different modeling approaches for eels, and reconsidering all available datasets; which would be the benchmark version.

Because of the progress that has been made since 2012, they recommended the update assessment for 2017; and Assessment Science Committee reviewed that recommendation and approved what the Technical Committee had suggested. The policy board will review that later in the week when they consider the stock assessment schedule. But I just wanted to update the management board about that, as I think it had relevance to some of the discussions we were having on today's agenda.

CHAIRMAN CLARK: Are there any questions for Mike about the update?

MR. PATRICK C. KELIHER: Mike, I'm trying to understand what this might mean for future catch advice associated with the assessment. Would you expect catch advice to be different doing an update instead of a full benchmark?

MR. WAINE: With the update it is simply updating the data, and to remind the board, American eel is a very data poor stock. We didn't have useable reference points that came out of the 2012 assessment; and so an update of the assessment would likely not yield useable reference points; therefore, I would expect that the advice that was provided to the board, in terms of management, would be similar for a 2017 update as it was for a 2012 benchmark; because it is the function of an update, and we haven't changed the modeling approaches and haven't sort of reconsidered or closed some of those research data gaps that exist.

CHAIRMAN CLARK: Follow up, Pat.

MR. KELIHER: With the understanding that this is a very data poor fishery, would it not make more sense to look at potentially tasking the TC to try to determine what we should be trying to gather for additional data, and then do a full benchmark at a later date? I am thinking back to the long discussions that this board had regarding catch advice.

Frankly, at the end of the day, the catch advice for both yellow eels and glass eels was not based on the assessment; it was based on some uncertainties associated with a potential listing of American eel. It was based on, for glass eels, Maine's willingness to voluntarily put a 35 percent reduction in glass eel harvest on the board.

The yellow eel allocation, which I know is going to be a topic later in this meeting, was pulled together by a workgroup; but then reworked in a very long meeting in Connecticut, where we finally ended up with something that we hoped would help. What I personally would like to see, Mr. Chairman, is the potential of having an addendum to address some of these quota issues; both for yellow eel and glass eel.

I am not putting that on the table, because I am looking for a major increase in glass eels back to anywhere near our 2011 or '12 years, as far as glass eel quota, but maybe trying to find a way for this board to create stability for harvest for both yellow eel and glass eels; correct some of these issues, and then run them out for six or seven years. Have some stability in management. Have a full assessment done, and then come back with some catch advice to make corrections in the future.

CHAIRMAN CLARK: Mike, is it fair to say that being that this will be another turn of the DBSRA model, which is only working off of landings, and since landings have been fairly steady, it will

probably show that we are still in a depleted state; as far as the eel stock goes?

MR. WAINE: Yes, I mean, it is hard to predict exactly what the results will show. I think a large part of the concern at the TC level was simply that we're just not in a position to conduct a benchmark and really reconsider everything, given the progress that has been made from the 2012 assessment, in terms of what kind of catch assessment approaches and datasets would be needed, to ultimately get to the end goal of providing this management board catch advice.

That is something that I think the Technical Committee should really wrestle with; so they might provide a little bit more expectation, in terms of how far away that is. I will tell you that from the discussions we had at the TC level, at this point it would take considerable advancements to, I think, get to where the board would be getting catch advice out of that assessment.

MR. KELIHER: I know the time is short here, and I don't want to abuse my time at the microphone here, Mr. Chairman. But I think from Maine's perspective, we were looking at a three-year consistent quota, with the hopes of having some additional information to base changes to this glass eel fishery in Maine; but potentially in other states, looking out at 2018 and 2019.

With the information presented by the outgoing Mr. Waine, maybe we should reconsider and look at some small adjustments across the board for yellow eel and glass eels with an addendum that makes the adjustments that have been brought up by Mid-Atlantic States.

CHAIRMAN CLARK: Do we have any other questions for Mike?

MR. ROB O'REILLY: Is this a good time to bring up the data that are going to be used for

allocation? I realize New York is going to have some information for us in a little bit. But in particular, we were sort of all poised for a quota system to be enacted. We really didn't know. I think that might happen at some point.

It is sort of a detail, but I'm not really sure what data are available for allocation; and by that, I mean, I don't know which jurisdictions or states have submitted or been asked for harvest data, and which have been asked for landings data. There is a difference. For example, I think in the past a lot of the states beyond Delaware, perhaps, maybe had landings data.

We need to figure that that should be streamlined for everyone; so I'm requesting that at some point there be a look at the data sources, and make sure they are the same. Most of the ASMFC species are managed by landings. Clearly, there is some harvest data in that table that is ready for allocation purposes that Pat talked about. I think we need to decide what that should be.

If you look at Potomac River Fisheries Commission, that is probably the area where the Maryland landings data and the Virginia landings data could be attributed to Potomac River Fisheries Commission; with the remainder as landings, and all the other states would be landings as well. Again, it is sort of a detail here, but we can't reproduce that information through ACCSP, for example.

I know that when the data work compiled, there were some difficulties, because we were running pell-mell into Addendum III and then Addendum IV; and changes were made to the original dataset that ASMFC had tried to obtain. I just want to see if there are any reservations from anyone around the table to get a composite set of data of landings for yellow eel that are all symmetrical to landings information. If that is all

right with everyone, I think that that will take maybe another look from ASMFC staff.

CHAIRMAN CLARK: Mike would like to respond to that.

MR. WAINE: Yes, thanks Rob, it is a good transition to what we're going to talk about next. Certainly, if this management board considers revisiting allocation, it would be useful for staff to confirm with all the states that the landings data that we are using to do that is in fact, the best available information from all of the states. As we move into the next agenda item, staff has noted that that is likely where the board would like us to end up; in terms of making sure those landings data are correct, if we revisit allocation.
CHAIRMAN CLARK: Yes, Rob.

MR. O'REILLY: Just as a follow up, so you can understand what I'm talking about. The data that we have in there is strictly from Virginia waters. That is what we have in that table that is going to be used for quotas. It doesn't include any harvest from any other area, except for Virginia waters. I have a pretty good hunch that that is not going to be the case for all the other states, so that is why I'm asking this question.

DISCUSSION TO CONSIDER CHANGES TO ADDENDUM IV, YELLOW EEL ALLOCATIONS

CHAIRMAN CLARK: That is a good lead into our next topic, as Mike alluded to. This is one that has come up before, and it is a discussion to consider changes to Addendum IV, yellow eel allocations. As you recall, New York has brought this subject up, I believe, at least the previous meeting, and perhaps another meeting before that. You have something about that, Mike? First, Mike has something to say about it, and then we'll turn it over to Jim.

MR. WAINE: Trying to get my 15 minutes of fame here. I actually put together -- I took New York's

proposal and just put it into a few slides. I told Jim that I would go through it, and if he had anything to add he could do so after I finished. This is a consideration of yellow eel commercial allocation.

On your supplemental materials you received a New York proposal that outlines some of the ideas they had for revisiting allocation. Just a little bit of background. Addendum IV implemented a coastwide cap of 907,671 pounds for the yellow eel commercial fishery starting in 2015. As a reminder, there are two management triggers.

That coastwide cap is currently -- it is not allocated; but there are triggers in the addendum that say if the quota is exceeded by 10 percent in a given year, or if the quota is exceeded by any amount in two consecutive years, then it triggers an automatic state-by-state allocation; and that state-by-state allocation is actually directly in Addendum IV.

To continue with the background, the commercial yellow eel allocation is one of the more confusing allocations that I think the commission has done here; in terms of it takes average landings from 2011 through 2013 and then assigns sort of a filtering procedure in which each state's minimum quota is at least fixed at 2,000 pounds.

Then the quota cannot exceed 2,000 pounds above the 2012 landings, and the minimum quota must be within 15 percent of 2010 landings. After all that procedure there is this leftover amount of quota that got divided equally to states that were negatively impacted by the filtering method. This is ultimately the allocation scenario that came out of the Allocation Working Group that worked many meetings on this, to arrive at this final allocation that made it into Addendum IV.

New York brought forward a proposal saying that they had incomplete landings during those allocation years, and that New York and other states now have several more years of accurate data. Remember that a lot of those calculations were based on landings that ended in 2013 or 2012, so there has been consecutive years since then with new data.

They highlight that ASMFC's operating principal is to use the most accurate data for management, and Addendum IV does not have a revisit allocation provision. They submitted a proposal to basically discuss these two topics, one, reconsider allocation and then two, consider a revisiting timeframe. These are the options that were in New York's proposal. First, reconsidering Addendum IV allocation, the first option is our status quo; what the working group had come up with. Option B is allocation based off most recent three years of data, so that is through 2015. Option C is the most recent five years of data through 2015, and then Option D is an allocation based on the most recent five years as a partial percentage, and some other historical timeframe as the other partial, so basically a combination of timeframes there.

In the proposal, using the landings data that came from Addendum IV, updated through 2015, the state of New York has submitted what these various options would look like in terms of state-by-state quotas. Those were included, not only in the document that New York provided, but also on the slide as shown; so we can come back to those if the board wishes. Then the other topic being considered is the allocation revisit timeframe.

Right now, the status quo is that there is no revisit timeframe in there, so that allocation that we talked about the working group coming up with didn't have a specific provision in the addendum to say, we will revisit this allocation in so many years after it's implemented, or after

the addendum passed. New York is submitting a few options of Option B, revisit the allocation every three years, or Option C, revisit the allocation every five years.

This plays a little bit back to our Climate Change Workshop that we just had prior to this eel board meeting. Ultimately, I'll sort of leave this slide up at the very end, and let Jim add some more info if he would like. Their recommendation was to circulate their proposal to the board for review and discussion, with the potential to initiate an addendum at this meeting to address those issues that were in their proposal.

CHAIRMAN CLARK: Jim, do you want to add something to that before we put it out to the board for discussion?

MR. JAMES J. GILMORE: Just a couple of comments, and Mike, thanks, that was a terrific summary. You did a really great job. We're going to very much miss you when you go on to bigger and better things. Just a couple of comments first off, and I think the most important thing that motivated New York to do this was, remember we go back a couple of meetings ago, and the landings that were coming in last year were looking like we were going to hit the cap.

We hit that cap; New York does not have a fishery any more. We only have a 15,000 pound quota. Again, mea culpa, we didn't have the landings data; but now we pretty much documented that we have a fishery that probably lands in the 40 to 50,000 pound range per year. Again, we hit that cap; New York's fishery is just shut down. There is no savior to that; because essentially, there are not transfers at that point. That is how we've survived, and we've actually gotten more accurate landings under this.

It is I guess fortuitous that we had this right after the climate change, because I actually saw things in there, and trust me, I had nothing to do with the climate change thing, and seeing things like we were going to use percentages of historic landings, whatever. Maybe great minds think alike, I am not sure.

But what we're really looking at doing is, if we follow from that climate change and the allocation part of what we're really going to have to get into; this is sort of a baby step. The bigger allocation issues on things like bluefish and summer flounder and menhaden and so on and so forth, are going to be a very big lift. This is pretty simple in some respects, because all we're looking at is the recent data. We're just going to take that most recent data and try to do just a tweak to that.

We did put down how that would change the individual states. Quite frankly, there is not a lot of flux in that. Most of the states stay pretty close. There is a couple that go down; some of them go up. But again, I think this might be a good first step to just get at maybe talking about allocation; where it is like almost a four letter word, everybody gets crazy about it.

They understand the pain that everyone goes through, especially this, when they went through this, I was not on that work group, but I understand how difficult it was; and probably why everyone is probably reluctant to try to do this. But again, this is a simpler step to that. I think I'll leave it at that and maybe we can get some discussion on this, and then we'll see where we're going to go.

CHAIRMAN CLARK: Before I open it up to discussion, one thing that was not put up in this proposal and Pat Keliher brought up is, we could also think about the coastal cap. It was set very arbitrarily; I don't think Delaware has made any secret about it. We thought the cap was set too

low. I would just, as part of our discussion; I think it is something we can consider also. With that, I will open the floor up for discussion.

MR. RUSS ALLEN: I don't even know where to start. I agree with your thought process on the quota itself. I think if we're going to change the allocation that the quota needs to come into question, also. Just one of Jim's options there, one of our numbers for New Jersey would put us out of compliance every year; so it put us over the quota every year. I don't think that is where we want to be when we do this. That is why we tried to do all the crazy things we did the last time through. It was a very good working group.

Rob made a good suggestion on making sure those landings data are correct, and I know the TC will do that. I think, maybe, we can start an addendum. I don't have a problem with that. But I think we need to have a working group together again to possibly vet out any of the options that come about. We, in New Jersey, have tried to make sure that our landings don't go up.

That is what we've done over the last few years; and our fishermen thought we were kind of crazy last time. If I come back to them now with an addendum, where we actually go lower in quota for no reason, I don't think that will go over very well. I want to make sure everything is vetted out appropriately, to make sure we do this the right way. I'm willing to be a part of whatever we can work on, to do that even though it drove us crazy the last time.

DR. MICHELLE DUVAL: I think one of the differences between this conversation and the one that we just had during the Climate Change Workshop is that this is not something that is being considered due to a shift in distribution of climate change. I mean this is being considered due to data collection.

I feel Jim's pain, but landings of eels were not necessarily being required to be reported during that timeframe, but I feel like this conversation is a little bit different than the one we were engaged in a while ago. Honestly, I am certainly willing to go back and look at allocation; but it is probably not going to surprise anyone that when I look at these tables here, based on the most recent three years or the most recent five years, North Carolina takes a significant hit. I mean that is like a 60 percent reduction in allocation.

I sure can't go back to my constituents and say, oh yes, you know we just did this. To echo the words of Mr. Luisi, I think you know being creative in this process is what we need to do. Quite honestly, when I look at Option B and Option C, I mean we've exceeded that just in the past couple of years, and quite frankly in about 75 percent of the last 18 years.

That is pretty concerning to me. I would rather see something that is more of a combination approach, where you're looking at perhaps a combination of historic, as well as more recent landings. I know that doesn't speak to the problem that New York is trying to address. One of the other things that we've talked about in the South Atlantic is looking at a common pool allocation that would be accessible.

We were talking about commercial and recreational sectors in the South Atlantic, but this could be something that would be accessible to any state, if they start coming up upon an allocation cap. I think those are my initial thoughts, and then I did have one question for Mike. In Addendum IV, we do have a transfer provision, correct; if a quota system goes into place?

MR. WAINE: That is a good question. John is telling me there was. Let me check that while the discussion continues. We obviously haven't triggered allocation, but let me look it up.

DR. DUVAL: Mr. Chairman, I guess, just in looking at it I see, looking at the final version of Addendum IV in evaluating. There are a couple paragraphs on transfers that if a state-by-state quota system is implemented, then any state or jurisdiction may request approval to transfer all or part of its annual quota. I guess I would urge us to consider transfers as a very important piece of any conversation about allocations, because that certainly has helped states and jurisdictions out in the past.

MR. O'REILLY: While you're looking for that, I seem to remember that when we had these discussions before, the 2,000 pounds for certain states that had not had very much landings; that the discussion was, well you will have something to transfer. There must be a transferability built in there somewhere; although I haven't looked for a while.

It does sound sort of painful. I don't want to arm wrestle with Pat again down there, not that we did before. I think it is worthwhile to take a look at this. I'm trying to remember everything that got us to this point, and it seems that we had Technical Committee advice that I thought would keep it about 10 percent below 2010. We didn't do that exactly.

CHAIRMAN CLARK: It was 12 percent below the average for the reference period.

MR. O'REILLY: Thank you. We didn't do that exactly, but I agree with Russ that if we change allocation we change the cap. I still think, despite the fact that there was not a listing; we're still depleted from what I know. I can't imagine that the update is going to tell us anything different. It would be great if it was qualitative and could say, well you're not as depleted as you were through 2010; but that is not going to happen either. I'll support going ahead. I don't think it is going to have a big impact in Virginia. I suspect that when we take

our harvest and make it landings that there is probably about an 8,000 pound difference right there. Hard to think how the final scheme will be, but it is going to take some effort again. I am very aware of Michelle's concern over taking a massive decrease. I'll support it.

MS. LYNN FEGLEY: I guess I agree that I don't have any fundamental problems with supporting and addendum, but the problem is that anytime you -- and we all know that when we consider allocation there are winners and losers. At a certain point you know, it is like best of seven. We're always going to be in this situation where somebody is going to sit in New York's seat and say, well this just is really a bad deal for us.

With the cap, I have to ask the question, and the whole thing sounds remarkably like menhaden to me; where we've gotten ourselves in a situation where we've allocated a quota, when we don't have very good harvest data in many cases. To me, that speaks to the broader question of what do we do?

Is there some kind of broader policy that we, as a board, as a commission should consider when we start to talk about allocations with poor harvest data? As we're talking about the stock assessment update, we know that the current cap was arbitrarily set. For example, if that update was done applying if every state applied a scalar to the degree they think their catch was underestimated, so let's say we all, or New York bumps up by 10 percent.

You bump up your catch and then you do your assessment update. Does it change the stock status? Is it worse? Is it better? If the stock status is insensitive to some magnitude of harvest; then maybe we should just consider changing the cap, and that leads me to my final question, which is, how much do you need, New York? How much do we need? How much would we have to go up to solve this problem in a

painless way? Not that there is a painless way, but just food for thought.

MR. ROY W. MILLER: I debated whether to hold this point for later, but I decided to make it now, so it can be part of the thought process. In any allocation scenario, using three years or five years of the most recent data, one problem with that is our management of other species has impacted our eel harvest.

I'm referring specifically to our management of horseshoe crabs. If we look at the data, for instance for New Jersey and Delaware that we see between, oh, looking at 2006, 2007, and then years since then, the combined landings as shown in Table 2 dropped off appreciably. I suspect a lot of that could be to the non-availability of female horseshoe crabs as the primary bait for American eel.

Also, in the case of New Jersey, a total closure of their horseshoe crab harvest, and that had to impact their eel industry. We should, in my view, take perhaps a longer term view rather than the three or five most recent years. I just wanted to throw that out there for part of the thought process.

CHAIRMAN CLARK: These are some of the problems that came up when, of course, Addendum IV; the working group came up with the scheme that was put forth in Addendum IV. I will once again say, I think the easiest thing, in terms of administrative burden and given the health of the stock and the stability in the landings, I don't see a problem with increasing the cap. But that is my opinion. Any other people want to have an opinion here?

MR. DANIEL MCKIERNAN: I recall in the 1990s, Massachusetts sued in Federal Court about scup allocations of quota; due to an inadequate data collection. I believe we prevailed, but it was such a long time ago I am not quite sure how that was

all resolved. But I know it was resolved at this board.

I guess the question I have, is New York in a unique position or the most obvious position for having a legitimate fishery with clearly a lack of data? In other words, do they really stand out, and if they do, would it be palatable to simply increase their quota by the amount they requested, based on signed affidavits; and we just finish this and go home?

CHAIRMAN CLARK: Are you saying then, increase the cap by the amount that they need?

MR. MCKIERNAN: Yes.

MR. DAVID G. SIMPSON: Yes, really I think that would be the most expeditious thing to do. But to the point of data quality, I could certainly make arguments that ours has been less than perfect on eels. Since Jim is arguing that they've made great improvements in data collection on eels, I am interested in the specifics of what changed in their data collection procedures that led to improved data collection in the last two years.

CHAIRMAN CLARK: Are there any other comments? I'm sorry, Mike was sidebar with me. Do you want to just repeat that Dave?

MR. SIMPSON: Yes, it was a question to Jim.

MR. GILMORE: With your indulgence, Mr. Chairman. We had, it was more a voluntary issue back in 2010. The way we fixed it was twofold. First off, we required mandatory landings starting in 2010. That was essentially a legal way of doing it; but secondly, we did outreach to a lot of the fishermen, because in our state and in other states there was a sense that if they didn't report anything, actually if they reported it would hurt them.

We finally got them to the understanding that if we're going into quota management with allocations, it is the exact opposite. If you don't report it, it would hurt you. I think those two combinations of mandatory reporting and that outreach that we're trying to manage the fishery to what we actually need, not what you guys think that you should be telling us; I think got us to where the numbers we have now seem to be pretty accurate to what we think the fishery is.

MR. BOB BALLOU: Following up on Dave Simpson's line of questioning anyway. Jim, I also have a question regarding your understanding of the percentage of your landings that are silver eels coming from the Delaware weir fishery. Is that a major factor in what you're seeing in your total landings?

MR. GILMORE: We actually, when we did the silver eel fishery, we know part of that is yellow eel and we were doing some monitoring with that and those landings to try to determine how much is yellow versus silver eels. I don't know the answer to that but I can get that, Bob. Again, that is a relatively small amount of the fishery, and more because we reduced that down to nine permits from the 16 or 17 that were traditionally out there. Again, that is a relatively small part for our overall bait landings of yellow eels.

DR. DUVAL: Just looking at the table of states landings from Addendum IV over time, there is quite a bit of fluctuation, I think, from year to year within all of the states. It obviously complicates any reconsideration of allocations. Like Lynn said, someone is going to be sitting in a seat of losing. Right now, it is North Carolina under these proposals.

Those formulas are, like I said not surprisingly not acceptable to me, and I would prefer to see some additional flexibility if we plan to continue to walk down this road. But if there was some scalar that could be applied to New York's past

harvest. If New York is pretty certain that this has been a somewhat stable fishery over the years, and there could be some scalar that was applied to past year's harvest.

Again, Mr. Chairman, this gets to your point about revisiting the catch cap, and then we might find that the problem might be solved. Again, if we choose to go down this road of an addendum and revisiting allocations, I would request that this go back to the Technical Committee as well. I mean certainly it might require a work group of the board, but I would ask that it go back to the Technical Committee as well. I would again also ask that we consider the fact that there are quota transfers as well.

MR. O' REILLY: Virginia is right where Lynn and Michelle have placed us, not personally of course, but where the process placed us. I was on the record last meeting to indicate that somehow through the machinations of the three different pieces of Addendum IV, when it settled out we were at our low point, which was 2010. That is the 78,000 that you see up there, despite the fact in the last couple of years before 2015 we were up to 110/115,000 pounds.

Despite it all, I think we need some way to make sure that if this cap doesn't change and the trigger is pulled, New York is sitting in a precarious position. I think that is probably something that is the biggest issue here today with this particular proposal. How we do that, whether it is the suggestion to just bump New York up and bump the cap up.

That is certainly pretty straightforward. At the same time I have to tell you, Virginia is in a tough slot. We've been in a tough slot since this was adopted. Once we relook at the data I think that will help, at least in Virginia. I don't know who is wary of having landings data, but I suspect a lot of that is already landings data. Then the last thing to mention is, mentioning data gaps. I

don't know what other states are doing, but I know we had to have a permit.

Everyone had to undergo the mandatory buyer reporting, harvester reporting, and then you've got self-marketers out there. These are folks who do the harvest; they find their own way to sell that eel. They have to be captured, as well. That is really taking mandatory reporting and going one step more, to make sure that you don't miss anybody.

CHAIRMAN CLARK: Well, sounds like we're in a bind of our own making here. There have been plenty of suggestions here, but it doesn't sound like we have anything that satisfies everybody. This is a possible action item. Would anybody care to move forward with an action on this item?

MR. GILMORE: Almost, so now we've got two options. I like Dave and Dan's suggestion to do the quick fix on this. But I don't know what number I would even ask for right now. I would have to go back and look at -- it is like Lynn's question; how much do we need? I know it is somewhere between 35 and 50. I don't know what that number is.

Then I don't know how easy or difficult that will be, arguing over what the amount I need is. That is one option. The other option was, and I was doing this a little on the fly or amending this on the fly. The other one would be to initiate an addendum. But after the discussion, do an addendum to do both things; increase the cap and revisit the allocation.

I still like, as much as it's more work, Option B, because it sounds like from the discussion around the table and what Rob had said. Forgive me, Michelle, but I told Louis this. You guys won the lottery. That is why you don't take one year for a number, because you got the biggest harvest in 2010; but besides that outlier. It

seems like maybe doing that would be a more sane way to do this, because I think more people would benefit from it. Just maybe what your opinion is before I offer a motion, Mr. Chairman.

CHAIRMAN CLARK: Well, I think I've been pretty clear that I think that as I said that we've gotten ourselves into a bind on this. Even if we did go to state-by-state allocations, I don't know about other states, but I know it would be a real bear to administer this in our state; and I'm sure that is the case in several others.

I've made no secret of it. When you look at the landings data that is presented in the addendum, if you didn't know anything else about this fishery, you would say wow that looks like a very sustainable fishery there. We're at about the same amount. I'm pretty sure with an assessment update, given the way the assessment worked; it will show the stock is still depleted; we'll still be in this situation.

I think that raising the cap would be the simplest fix to this, but I understand there is resistance to that; any other suggestions here?

MS. FEGLEY: Just looking at the table of landings quickly by eyeball. You look at the total landings between '98 and 2015. The range of landings has been, from what I can see, and if I'm wrong, I think we've gone from about 681,000 pounds to 1.2 million; I mean, that's the breadth. That is the range in all of those years. That is 400,000 pounds, is that about right, 500,000 pounds?

What my question for the Technical Committee would be, given what seems to be a fairly range of fluctuation, I say narrow without really understanding the impact on the stock. This is not a one way trip up or down; I mean, this thing has just been sort of oscillating around a low level. If we're thinking about increasing the cap, you could set it somewhere near that maximum,

a little bit less, and ask the Technical Committee what the implications would be.

CHAIRMAN CLARK: Yes, one of the things that I thought, looking at the same data, Lynn, was instead of going with an average if we went with the 75th percentile for that same reference period, because that would put us closer to what our higher levels were during those years. Just by doing that would bring us up to, if we just use the reference period, I figured about 980,000 pounds; which would probably take care of all these problems we see here, but anyhow, Jim.

MR. GILMORE: Let me try to move this along. Let me put a motion up and we'll see how it goes. **Move to initiate an addendum to reconsider the coastal cap and the commercial yellow eel state-by-state allocation.**

CHAIRMAN CLARK: Dave Borden. Anybody want to address this motion? I had Russ up before. Any other people want to comment on this?

MR. ALLEN: I am not sure where I stand on this at this time, but I can say one thing. The working group spent a lot of time on that cap. The whole goal of that cap was to try to make it so we were close to what the Technical Committee was looking for. I think if we go back to the Technical Committee now with something that we want to raise the cap, they are not going to be real happy with that. Even though we think that is the easiest way to settle what we're trying to do. I mean, that was the whole point behind the machinations of trying to figure that out.

I mean, we're talking about raising the cap so New York can get about 25,000 pounds; yet there is going to be every other state. If you go to an addendum and take it out of every other state, every other state is going to want some more poundage; because we think that we're too low, anyway. Like I said, I am on the fence on this on moving forward as is. I think we can

do better by having some meaningful discussions and coming back in August and maybe moving forward with something. But I don't think I'm ready to move forward at this time.

MR. KELIHER: I think to Russ's earlier point, and following along with that line of thinking, the way to move forward here may be to reconvene a working group to work through the details associated with these allocations. I would include the allocation of glass eels within those conversations.

MR. G. RITCHIE WHITE: Serving on the past working group with Russ, I agree with him to a large degree that I hate opening this can of worms, because it was a very difficult process to come up with what we have; and I hate to open that can of worms for the small amount that we need to fix New York. Having said that, if this passes, I hope that it goes to a working group prior to writing the addendum, but I guess I haven't decided whether I'm going to support it or not.

DR. DUVAL: I am on the fence. Like Russ, I was not part of that working group, obviously. But I also wanted to address Jim's previous comment about 2010 being an anomaly for North Carolina. I would disagree with that. I mean we have during that time series landings of 124,000 pounds, 118,000 pounds, 102,000 pounds, 169,000 pounds, 126,000 pounds. I would not say that 2010 was an anomaly.

I mean, certainly, it was a jackpot; I will definitely give you that. But I would not consider it an anomaly. Again, I'm on the fence. I'm more inclined to agree with Russ that perhaps coming back, having some time to discuss this and coming back in August with a better sense of how we might move forward to address New York's concerns might be my preference.

MR. SIMPSON: Can you remind me when it was that we got the determination on listing? Was it last September? Was it less than a year ago that we kind of went, whoo, we got away with that one? Now, we're going to talk about increasing the quota. I'm concerned about the optics of that. I don't have a lot of faith in the eel data and the landings.

It is a fishery that takes place for us anyway, sort of remote from our mainstream fishery, our data collection system, the characters that are in this fishery, lots of concerns. Boy, we spent a lot of time trying to work through this. I'm really reluctant to revisit so quickly before another assessment, and just after narrowly missing an endangered species listing. I don't think I can support this.

DR. MIKE MILLARD: I'll jump on the back of that comment. The ink is barely dry on the warranted decision for the listing. That shouldn't be seen as a green flag. I know after that came out someone asked me, well so what now? What next? What happens with American eels in terms of the ESA? My answer was, as I was told by the experts, it kind of goes off the radar under the ESA, unless there is a big shift or a significant shift in management.

I just put that on the record to remind folks. Another comment I have, it comes as no surprise I'm sure that the Service would not support an increase in the cap right now. As far as I know, and Mike, correct me if I'm wrong, the current advice from the TC is to reduce mortality on all life stages. To talk about increasing the cap, of course, flies in the face of that.

MR. WAINE: That is what I was side barring with John about earlier when he missed the question from Dave, was that I don't know what more the board expects the Technical Committee to do with this. This went back and forth with the TC

and the working group as multiple board members have mentioned around the table.

They made a recommendation that is below the current cap right now. I don't know what more the TC will be able to give this board on this topic, and I just wanted to reiterate that point so they don't hate us going back and asking them to look at this again without having told the board that they spent a lot of time on this. It is not likely that their recommendation would change, just because the board is reconsidering the cap.

MR. DENNIS ABBOT: Looking at what New York wants that if we put round numbers on it and they're looking maybe for an increase of 30,000 pounds against a total catch of 900,000 pounds; by my quick calculations that is like about 2.7 percent. Then if you look at the catches over the period of time from 2010 to 2015 for each state, you see fluctuations running from 10 to 50 percent.

I don't think it is outrageous to just increase New York's number by some given amount versus going through the agony of an addendum. I go along with the thoughts that were brought up across the table from me. Let's just increase New York's number by a couple of percent and put it away.

MR. O'REILLY: Similar but different. I still think the transferability when we look at the last couple years or 2015 in particular; it is more that New York was about 38,000 pounds more than what the Addendum IV quota would be for New York. But there is obviously quota around. Transferability is the key here. It is not the first species that has been involved in that situation, whether it's summer flounder, bluefish, no matter what it is. I think that is the first step is for New York to avail itself of what's available, as long as that transferability is in there. Wait for the next step, I guess.

MR. McKIERNAN: I do plan to vote against the motion. Just to reiterate, I would support in August a motion to enhance the quota by 30,000 pounds or something close to that; with sound documentation by the state of New York that that fishery has been operating during the critical time period.

MR. GILMORE: Maybe Dennis can help on this. That is fine. I think maybe that's the smartest thing to do right now, we can come back with a number for the August meeting. However, and would it be the easiest thing is just to table this motion until August, and then if we come back with it we can just dispense with the motion.

I don't know if I can table my own motion, but I'm not worried about that. But that would be my suggestion right now. Table it, and then we'll come up with a number and an alternate proposal for August. If that doesn't go, then we'll go back to this.

CHAIRMAN CLARK: Sounds like a good suggestion.

MR. BALLOU: I just want to make sure that if we do follow through in the way that has been suggested that we don't get ourselves caught up in a situation. I need to ask the question, does the addendum allow for the adjustments of state-by-state quota amounts through board action versus through a change to the addendum?

MR. WAINE: I think the suggestion would be to have an addendum to fix it with whatever the poundage amount is that New York comes up with. It would still require an addendum; it just wouldn't be a full reconsider of something that took a lot of work to get to where we are now.

MR. WILLIAM A. ADLER: Would it be appropriate to make a motion to table this to the next meeting?

CHAIRMAN CLARK: Yes, I think that would be a good idea.

MR. ADLER: So moved.

CHAIRMAN CLARK: Do we have a second? Marty Gary. Do we want further discussion? Okay, no discussion at this point. In that case do we need to caucus or should we just vote on this? Are we ready? Any need to caucus? **Seeing none; is there any objection to this motion? Seeing none; then the motion is tabled until the August meeting.**

MR. DAVID BORDEN: I am not arguing about the motion, we supported it. I just want to make the point that I am sympathetic to New York's plight on this. But I would note that we have five states around the table that all have difficulties; that are talking about kind of core flaws in the original conceptual framework.

I think one of the things that we want to avoid doing is revisiting all of these problems multiple times. If we don't figure out a strategy to address these problems, every time we have this on the agenda, I guarantee you one of the states will be in here saying we really need an adjustment. I think there has got to be like a dual strategy. Maybe we reconsider this at the August meeting, but we've got to look at it in a different manner. Thank you.

CHAIRMAN CLARK: That's a great point, Dave, because as happened with the working group, it was really difficult to come up with anything that would make everybody happy, and as we see, that is still the case.

MR. KELIHER: Mr. Chairman I would like to make a motion. Move to create a working group to address the inequities in the coastal allocation of yellow eels, as well as revisit the quota related to the glass eel fishery.

CHAIRMAN CLARK: Do we have a second? Dave Borden second. Is there any discussion of the working group proposal?

MR. MCKIERNAN: I'm not sure you've got the motion correct. You talked about inequities, Pat and I don't see the word inequities up there.

CHAIRMAN CLARK: Just wait until the motion is up on the board. Does that capture your motion, Pat?

MR. KELIHER: Yes, it does, Mr. Chairman.

MR. WHITE: What is the definition of inequities? In other words, are states going to come forward with what they feel is not correct; both in the glass eel and yellow eel fisheries?

CHAIRMAN CLARK: I'll refer that to the maker of the motion.

MR. KELIHER: My intent is to try to address, to open it up with a working group to visit all of the issues that have been brought up around the table here today.

MR. WHITE: States would then have the ability to express their inequities to this working group prior to it being formed. All the states could say what they want to see the working group discuss, yellow eels and glass eels.

CHAIRMAN CLARK: I would assume that the working group will end up looking at yes, the allocations of every state. Again, I don't understand how this can be done without reopening the whole process, but that is just the way I see it. Any other comments on this?

MR. MCKIERNAN: It sounds like Festivus, the Airing of Grievances.

CHAIRMAN CLARK: Eels and Festivus, it's a great combo. Any other comments?

MR. SPENCER: I don't know, we are just emboldened by the lack of action on the endangered species front. I suppose revisiting glass eel quota means that my partner representative Miner will get another opportunity to open a glass eel fishery in Connecticut. I mean that is what I am sure he will have in mind, very lucrative fishery and we certainly have the resource in our state. We'll be contemplating that if this passes.

MR. ADAM NOWALSKY: Clarification on this. Addressing the inequities of the coastal allocation of yellow eels might include increasing the quota as a mechanism of achieving that; or are we talking about purely going back and looking at the allocations?

MR. KELIHER: Again, I've heard many different thoughts about how to address this for even increasing the quota specifically for New York to try to address it for, as Dave Borden said there is potentially five other states that have concerns, and it could include the intent of the options that were presented by Mike on behalf of New York earlier.

I think the idea is to have a working group. The working groups usually try to have as much flexibility to try to look at these issues as possible. We're short on time here today. The idea would be to try to have that conversation and bring back a more focused plan to this board at the next meeting.

MR. THOMAS P. FOTE: I'm having a problem with the word inequities. It is not inequities that basically caused this problem; it was poor record keeping by the states. I am looking at that is not inequities, nobody basically did anything wrong. The states had poor records, and the allocation is off because of poor records, not because inequities were formed by the working group when they put together the quotas. I can't support it with the word inequities in there.

MR. LOREN W. LUSTIG: I don't see the word justification anywhere on the screen, but I would be very concerned that the working group also present a very solid justification for their recommendations from a conservation perspective. If that is inherent to their plan, I can support the working group.

CHAIRMAN CLARK: Any other comments?

MR. ABBOT: Yes, just quickly. I wasn't sleeping, but we just spent the last hour talking about yellow eels and then I look at the board and we're going to revisit essentially Maine's glass eel quota. To me the subject that we've been discussing is yellow eels. If we want to talk about glass eel quota, I think there should be a discussion amongst the board for the need for that; prior to us putting it into a motion to have a working group go to work on it. I cannot support this motion.

CHAIRMAN CLARK: Are there any more comments or is it time to call the question? Seeing no more comments, why don't we take a minute's caucus and then we'll call the question. Okay, are we ready to call the question? **Those in favor of the motion, show so by raising your right hand. Those opposed, same sign; any null votes, any abstentions? Motion fails 2 to 15.**

MR. WHITE: Could we request New York to come back to us with a tighter figure on what they're looking for, and then the justification for that figure; if they could document how their record keeping did not allow them to have the proper quota. If there could be some proof of how that record keeping was inadequate. Then we could look at that in August, and then make a decision whether we want to go forward with a working group or try to solve just that or other quota issues.

CHAIRMAN CLARK: I think that clarifies pretty much. Jim, I think that is pretty much what you

were planning to do, but that stated it very nicely. Are we finished with this issue? As of right now in August, we'll be coming back to this. We have the tabled motion, and Jim will be bringing much more information about New York's landings.

MR. GILMORE: Ritchie, my word and my good looks are not good enough?

MR. WHITE: That's a start.

UPDATE ON NORTH CAROLINA'S GLASS EEL AQUACULTURE PLAN

CHAIRMAN CLARK: Now we'll move on to another item of business. If you all recall, back in the last meeting we approved North Carolina's glass eel aquaculture plan. Michelle has an update on that and I believe a request.

DR. DUVAL: This will be very quick, because I have a plane to catch. As the chairman noted, at the February board meeting you all approved North Carolina's request for an aquaculture plan. That also required our state commission to provide a declaratory ruling to the applicant to allow him to possess undersized eels that were below the nine inch minimum size limit; harvested from within North Carolina.

He had a declaratory ruling to purchase glass eels from either South Carolina or Maine; but he did not have one from our commission. Unfortunately, he did not receive that until March 21st, or March 22nd actually; so he made his first attempts to fish on March 24th, which is mostly after the glass eel season or the glass eel run is over. He did set nets for three weeks of fishing. He did not harvest any glass eels during that time.

He set nets in two major sites in the southern part of the state, and then one set of sites in the central part of the state, creeks on the Neuse

River. Mr. Allen did formally request us to submit another aquaculture plan by June 1st of this year, so this is just a heads up to the board that we do plan on doing that. We'll have lots more exciting discussion in August. We would be asking the board's indulgence that this be considered also a pilot project, just as the existing plan which you all approved in February was.

Given the fact that Mr. Allen really through no fault of his own, but really more through administrative issues, missed the pulse of glass eel harvest. If you recall the discussion around the table was to provide the Technical Committee with information that they could use to help the applicant design a young-of-the-year survey in one of those systems. That is my update, Mr. Chairman and I will be happy to take any questions.

CHAIRMAN CLARK: Do we have any questions for Michelle on this item? Seeing none; Michelle, I assume then in the next meeting you would want an action item from the board to approve this.

DR. DUVAL: Yes, Mr. Chairman, thank you.

ADJOURNMENT

CHAIRMAN CLARK: Is there any other business to come before the board? Seeing none; I will entertain a motion to adjourn, and we have that so we are adjourned. Thank you.

(Whereupon the meeting was adjourned at 5:44 o'clock p.m. on May 3, 2016)



Atlantic States Marine Fisheries Commission

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American Eel Technical Committee Meeting Summary

July 7, 2016

Attendance: Tim Wildman (CT), Troy Tuckey (VIMS), Phil Edwards (RI), Kirby Rootes-Murdy (ASMFC), Jordan Zimmerman (DE), Jason Rock (NC), Kim Bonvechio (FL), Robert Eckert (NH), Carol Hoffman (NY), Keith Whiteford (MD), Derek Orner (NOAA), Lindsey Aubart (GA), Josh Newhard (USFWS), Jen Pyle (NJ), Wilson Laney (USFWS), Brad Chase (MA), Kristen Anstead (ASMFC)

Members of the public: Dick Stone (AEF) and Zoemma Warshafsky (VIMS)

The American eel Technical Committee (TC) met via conference call July 7th, 2016, to review and make recommendations regarding an updated aquaculture plan from North Carolina, review a quota proposal from New York, and discuss agenda items for an upcoming TC meeting in the fall.

1) **NC Update to Eel Aquaculture Plan & Discussion**

Addendum IV to the Interstate Fishery Management Plan for the American Eel includes a provision for states to submit an Aquaculture Plan to allow for the harvest of glass eels. In December 2015, NC submitted an aquaculture plan for 2016 which was reviewed by the TC. After amending the plan to reflect the recommendations of the TC, it was presented to the American Eel Management Board and approved in February 2016. Due to delays in NC permitting, fishing began late in the season and no glass eels were captured. Therefore, NC amended the plan for the TC to consider as a second year pilot program for 2017. Changes in the proposal were outlined by Jason Rock, including a change in harvest dates, an additional primary harvest site, additional reporting of weight and CPUE guidelines, a change in the amount of permit holders and mates, and the removal of warrantless inspections and searches. The TC asked questions and discussed the changes. The addition of the White Oak River as an additional site was received favorably since there has been some previous research in this site that could compliment the data set from the aquaculture plan and could additionally serve as a permanent YOY survey site. The other changes were also accepted by the TC contingent on the following Recommendations:

- 1. A YOY survey should be developed at one of the sites in conjunction with the aquaculture plan (year 3, 2018)**

2. Fyke net mortality should be addressed during the months of January and February when the twenty-four (24) hour soak times are allowed. The use of a live car attached to the fyke net cod end was discussed to alleviate this potential issue.

2) NY Eel Quota proposal

The TC also reviewed a proposal from NY presented by Carol Hoffman to address the quota allocation in Addendum IV. The harvest records that determined NY's quota were based on incomplete data resulting in a potential inequality in allocation to that state. Concerns were expressed from several TC members regarding the reporting of landings from all states and it was reiterated that TC members need to confirm reference period landings in the Addendum IV table. Additionally, there was concern that NY's revised landings could include silver eels from the Delaware River weir fishery, thus overinflating their need for yellow eel allocation. There are no data to address this issue for historical data currently, but NY is working on parsing out the numbers of silver eels for annual landings moving forward. In the meantime, the state-by-state landings data will be updated and revised, if need be, during the 2017 stock assessment update. The TC concluded that a discussion of expanding the coastwide cap, in light of NY situation, should be set aside until the update is performed. The TC made the following Recommendation:

States need to review landings numbers and figures provided in the accompanying document by Hoffman, and communicate any discrepancies by COB Tuesday July 12th

Update on TC tasks from May 2016 and Begin initial planning of September 2016 TC Meeting

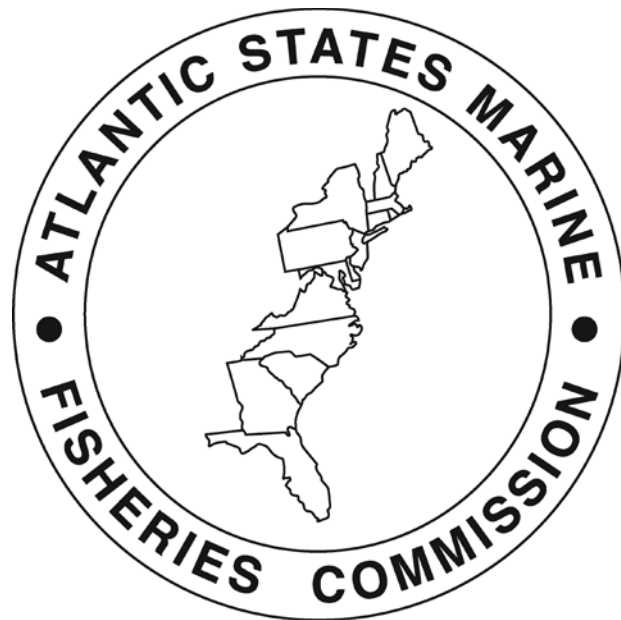
The TC members reviewed the tasks they developed in May 2016, confirming most required data have been provided. Additionally, potential agenda items were discussed for an in-person TC meeting during the week of September 12th 2016. TC members recommended that the goals, changes in gear type, and sampling sites of the YOY surveys be revisited and that a protocol for moving sites should be developed. Reevaluating yellow eel abundance surveys was also suggested as a possible topic. Members requested that during the TC meeting that they get updates from Maine on the life cycle survey if possible, CITIES regarding the listing of American eel, and state representatives who are conducting larval surveys, such as NC's Beaufort Bridge Net Survey. Finally, a timetable needs to be constructed for the 2017 stock assessment update. These topics will be explored by the TC chair, vice-chair, SAS chair, and staff in order to develop a productive agenda for the TC meeting in September. Two follow up tasks from this discussion:

- Kirby will send out the updated list of state surveys filled out from May 2016. Please review to ensure it's fully updated and correct.

- Kirby will follow up with Laura Lee for planning the September 2016 meeting and review of YOY surveys.
- Lastly, it was noted that **Compliance reports are due September 1**. Kirby will send out a compliance reminder memo soon.

Atlantic States Marine Fisheries Commission

ADDENDUM IV TO THE INTERSTATE FISHERY MANAGEMENT PLAN FOR AMERICAN EEL



*ASMFC Vision:
Sustainably Managing Atlantic Coastal Fisheries*

Approved October 2014

EXECUTIVE SUMMARY

The Atlantic States Marine Fisheries Commission's American Eel Management Board (Board) initiated the development of Addendum III in August 2012 in response to the 2012 Benchmark American Eel Stock Assessment, which found the American eel population in U.S. waters is depleted. The assessment found the stock is at or near historically low levels due to a combination of historical overfishing, habitat loss and alteration, productivity and food web alterations, predation, turbine mortality, changing climatic and oceanic conditions, toxins and contaminants, and disease. In August 2013, the Board approved some of the measures from Addendum III (predominately the commercial yellow eel and recreational fishery management measures) and split out the remainder of the management measures for further development in Addendum IV. As the second phase of management response to the stock assessment, this Addendum addresses further addresses the commercial glass, yellow, and silver eel fisheries. Specifically, this Addendum modifies the previous management program as follows:

Commercial Glass Eel Fishery Management Program (Section 3.1.1)

- Maine's quota for the 2015-2017 commercial glass eel fishing seasons will be set at 9,688 pounds annually and will be re-evaluated prior to the start of the 2018 fishing season.
- Any state or jurisdiction can request an allowances for commercial harvest of glass eels based on stock enhancement programs implemented after January 1, 2011, subject to TC review and Board approval.
- For any state or jurisdiction managed with a commercial glass eel quota, if an overages occurs in a fishing year, then that state or jurisdiction will be required to deduct their entire overage from the quota the following year, pound for pound.
- Any state or jurisdiction with a commercial glass eel fishery is required to implement daily trip level reporting with daily electronic accounting to the state for both harvesters and dealers in order to ensure accurate reporting of commercial glass eel harvest.
- Any states or jurisdiction with a commercial glass eel fishery must implement a fishery independent life cycle survey covering glass, yellow, and silver eels within at least one river system.

Commercial Yellow Eel Fishery Management Program (Section 3.1.2)

The commercial yellow eel fishery will be regulated through a coastwide catch cap set at 907,671 pounds. Under this cap, there are two management triggers. Upon reaching either of these triggers, the Board is required to alter the management program as specified below in order to ensure the objectives of the management program are achieved.

Management Triggers

1. The coastwide catch cap is exceeded by more than 10% in a given year (998,438 pounds).
2. The coastwide catch cap is exceeded for two consecutive years, regardless of percent over.

Management Response

If either trigger is tripped, then there would be automatic implementation of a state-by-state commercial yellow eel quota. The annual coastwide quota is set at 907,669 pounds, with allocations as specified in Table 1.

Commercial Silver Eel Fishery Management Measures (Section 3.1.3)

The Delaware River silver eel weir fishery is restricted to nine annual permits. These permits will initially be limited to those permitted participants that fished and reported landings from 2010 to 2013. Permits may be transferred.

Sustainable Fishery Management Plans for American Eel (Section 3.1.4)

Fishing Mortality Based Plan – Under an approved fishing mortality plan, states and jurisdictions may petition the Board for alternative management based on the current level of mortality that is occurring on their population.

Transfer Plan – If states or jurisdictions implement quota management for at least one fishery, then a state may develop a Transfer Plan to request a transfer of quota from one fishery to another (e.g. from yellow to glass) based on the life history characteristic inherent to that area (e.g. state, river, or drainage).

Aquaculture Plan - Under an approved Aquaculture Plan, states and jurisdictions may harvest a maximum of 200 pounds of glass eel annually from within their waters for use in domestic aquaculture facilities provided they can objectively show that the harvest will occur from a watershed that minimally contributes to the spawning stock of American eel.

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1. INTRODUCTION

The Atlantic States Marine Fisheries Commission (Commission) has coordinated interstate management of American eel (*Anguilla rostrata*) from 0-3 miles offshore since 2000. American eel is currently managed under the Interstate Fishery Management Plan (FMP) and Addenda I-III to the FMP. Management authority in the exclusive economic zone (EEZ) from 3-200 miles from shore lies with NOAA Fisheries. The management unit is defined as the portion of the American eel population occurring in the territorial seas and inland waters along the Atlantic coast from Maine to Florida.

2. BACKGROUND

2.1. STATEMENT OF THE PROBLEM

The Commission's American Eel Management Board (Board) initiated the development of Draft Addendum III in August 2012 in response to the 2012 American Eel Benchmark Stock Assessment, which found the American eel population in U.S. waters is depleted. The assessment found the stock is at or near historically low levels due to a combination of historical overfishing, habitat loss and alteration, productivity and food web alterations, predation, turbine mortality, changing climatic and oceanic conditions, toxins and contaminants, and disease. Draft Addendum III for Public Comment included a range of options for the commercial glass, yellow, and silver eel fisheries, as well as the recreational fishery. In August 2013, the Board approved some of the measures from Draft Addendum III for Public Comment (predominately the commercial yellow eel and recreational fishery management measures) and split out the remainder of the management measures (commercial glass and silver eel fisheries) for further development in Addendum IV. As the second phase of management in response to the 2012 stock assessment, the goal of Addendum IV is to continue to reduce overall mortality and increase overall conservation of American eel stocks. This Addendum addresses the commercial glass, yellow, and silver eel fisheries.

2.2. LIFE HISTORY

American eel (*Anguilla rostrata*) inhabit fresh, brackish, and coastal waters along the Atlantic, from the southern tip of Greenland to Brazil. American eel eggs are spawned and hatch in the Sargasso Sea. After hatching, leptocephali—the larval stage—are transported at random to the coasts of North America and the upper portions of South America by ocean currents. Leptocephali are then transformed into glass eels via metamorphosis. In most areas, glass eel enter nearshore waters and begin to migrate up-river, although there have been reports of leptocephali found in freshwater in Florida. Glass eels settle in fresh, brackish, and marine waters; where they undergo pigmentation, subsequently maturing into yellow eels. Yellow eel can metamorphose into a silver eel (termed *silvering*) beginning at age three and up to twenty-four years old, with the mean age of silvering increasing with increasing latitude. Environmental factors (e.g., food availability and temperature) may play a role in the triggering of silvering. Males and females differ in the size at which they begin to silver. Males begin silvering at a size typically greater than 14 inches and females begin at a size greater than 16-20 inches (Goodwin and Angermeier 2003). However, this is thought to vary

by latitudinal dispersal. Actual metamorphosis is a gradual process and eels typically reach the silver eel stage during their migration back to the Sargasso Sea, where they spawn and die.

Eels make extensive use of freshwater systems, but they may migrate to and from or remain in brackish and marine waters. Therefore, a comprehensive eel management plan and set of regulations must consider the various unique life stages and the diverse habitats of American eel, in addition to society's interest and use of this resource.

2.3. STATUS OF MANAGEMENT

American eel occupy a significant and unique niche in the Atlantic coastal reaches and tributaries. Historically, American eels were very abundant in East Coast streams, comprising more than 25 percent of the total fish biomass. Eel abundance had declined from historic levels but remained relatively stable until the 1970s. Fishermen, resource managers, and scientists postulated a further decline in abundance based on harvest information and limited assessment data during the 1980s and 1990s. This resulted in the development of the Commission's Interstate Fishery Management Plan (FMP) for American Eel, which was approved in 1999. The FMP required that all states maintain as conservative or more conservative management measures at the time of implementation for their commercial fisheries and implement a 50 fish per day bag limit for the recreational fishery. The FMP also required mandatory reporting of harvest and effort by commercial fishers and/or dealers and specific fisheries independent surveys to be conducted annually by the states.

Since then the FMP was modified three times. Addendum I (approved in February 2006) established a mandatory catch and effort monitoring program for American eel. Addendum II (approved in October 2008) made recommendations for improving upstream and downstream passage for American eels. Most recently, Addendum III (approved in August 2013) made changes to the commercial fishery, specifically implementing restrictions on pigmented eels, increasing the yellow eel size limit from 6 to 9 inches, and reducing the recreational creel limit from 50 fish to 25 fish per day.

2.3.1. INTERNATIONAL MANAGEMENT

Despite data uncertainties with European eels and American eels in Canada, both the European Union and the Department of Fisheries and Oceans Canada have taken recent management actions to promote the rebuilding of local stocks.

2.3.1.1. EUROPEAN MANAGEMENT

While American and European eels (*Anguilla anguilla*) are two separate species, the spawning grounds and early life history habitats are believed to overlap. Therefore oceanographic changes could influence both stocks. Currently, the European eel stock is considered severely depleted (ICES, 2013). Major fisheries occur in the Netherlands, France, Sweden, and the United Kingdom, with total 2012 commercial harvest in the EU estimated at 5.2 million pounds and recreational harvest estimated at 1.1 million pounds (Figure 1; ICES, 2013). In 2007, the European Union (EU) passed legislation which required EU countries to

develop and implement measures to allow 40% of adult eels to escape from inland waters to the sea for spawning purposes. In addition, beginning in 2008, EU countries that catch glass eel (defined as juvenile eels less than 4.7 inches long) were required to use 35% of their catch for restocking within the EU and increase this to at least 60% by 2013.

To demonstrate how they intend to meet the target, EU countries were required to develop national eel management plans at river-basin level. To date, the European Commission has adopted all plans submitted by 19 EU countries, plus a joint plan for the Minho River (Spain/Portugal). Management measures implemented though these plans vary from country to country, but are similar to most management measures considered or implemented in the U.S. The management measures include:

- Seasonal closures
- Size limits (11 – 21.6 inches)
- Recreational bag limit (2 - 5 fish/angler/day)
- Gear restrictions (banning fyke nets, increasing mesh size)
- Reducing effort (e.g. by at least 50%)
- Prohibiting glass, silver or all commercial fishing
- Commercial quotas
- Implementing catch and release recreational fisheries only
- Reducing illegal harvest and poaching
- Increasing fish passage
- Restocking suitable inland waters with glass eels

In 2013 the International Council on the Exploration of the Seas (ICES) completed an evaluation on the implementation of the national management plans (ICES, 2013a). ICES concluded that, given the short time since implementation, restrictions on commercial and recreational fisheries for silver eel has contributed the most to increases in silver eel escapement. The effectiveness of restocking remains uncertain (ICES, 2013a). ICES advises that data collection, analysis, and reporting should be standardized and coordinated to facilitate the production of stock-wide indicators to assess the status of the stock and to evaluate the effect of management regulations.

In response to the evaluation, European Parliament passed a resolution in September 2013 requesting the European Commission present new legislation to further conserve European eel populations. The new law must close the loopholes allowing the continued overfishing and illegal trade; evaluate current restocking measures and their contribution to eel recovery; require more timely reporting on the impact of eel stock management measures; and require member states that do not comply with the reporting and evaluation requirements to reduce their eel fishing effort by 50%. The European Commission's new legislative proposal, which is expected to be presented in early 2015, must aim to achieve the recovery of the stock "with high probability".

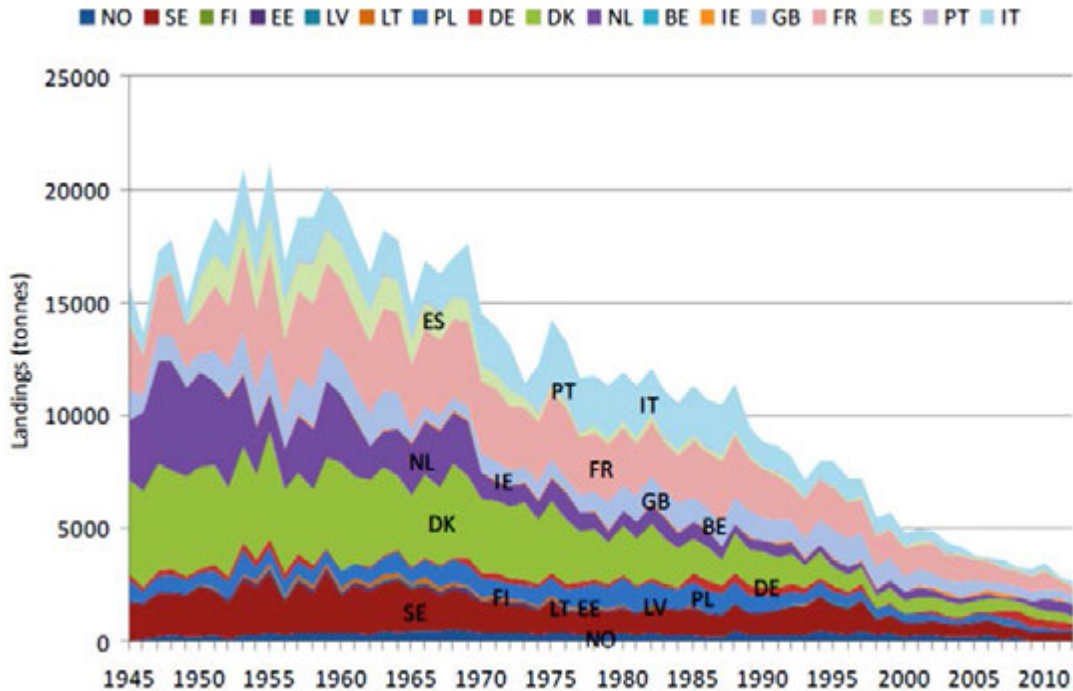


Figure 1. Total landings of European eel (all life stages) from 2013 Country Reports (Note: not all countries reported). NO = Norway, SE = Sweden, FI – Finland, EE = Estonia, LV = Latvia, LT = Lithuania, PL = Poland, DE = Germany, DK = Denmark, NL = Netherlands, BE = Belgium, IE = Ireland, GB = Great Britain, FR = France, ES = Spain, PT = Portugal, IT = Italy. *From ICES, 2013a.*

In November 2013, ICES completed an update on European stock status to provide management advice for the 2014 fishing year (ICES, 2013b). The update found that annual recruitment of glass eel to European waters has increased over the last two years, from less than 1% to 1.5% of the reference level in the “North Sea” series, and from 5% to 10% in the “Elsewhere” series¹, which may or may not be the result of the regulatory changes (Figure 2). However, despite recent increases, production of offspring is very low and there is a risk that the adult stock size is too small to produce sufficient amount of offspring to maintain the stock (ICES, 2013b). The biomass of escaping silver eel is estimated to be well below the target (ICES, 2013b). ICES continues to recommend that all anthropogenic mortality affecting production and escapement of silver eels should be reduced to as close as possible to zero, until there is clear evidence of sustained increase in both recruitment and the adult stock. The stock remains critical and urgent action is needed (ICES, 2013b).

2.3.1.2. CANADIAN MANAGEMENT

American eel are widespread in eastern Canada, but there are dramatic declines throughout its range, including Lake Ontario and the upper St. Lawrence. Although trends in abundance are highly variable, strong declines are apparent in several indices. The American eel was

¹ The North Sea series are from Norway, Sweden, Germany, Denmark, Netherlands, and Belgium. The Elsewhere series are from UK, Ireland, France, Spain, Portugal, and Italy.

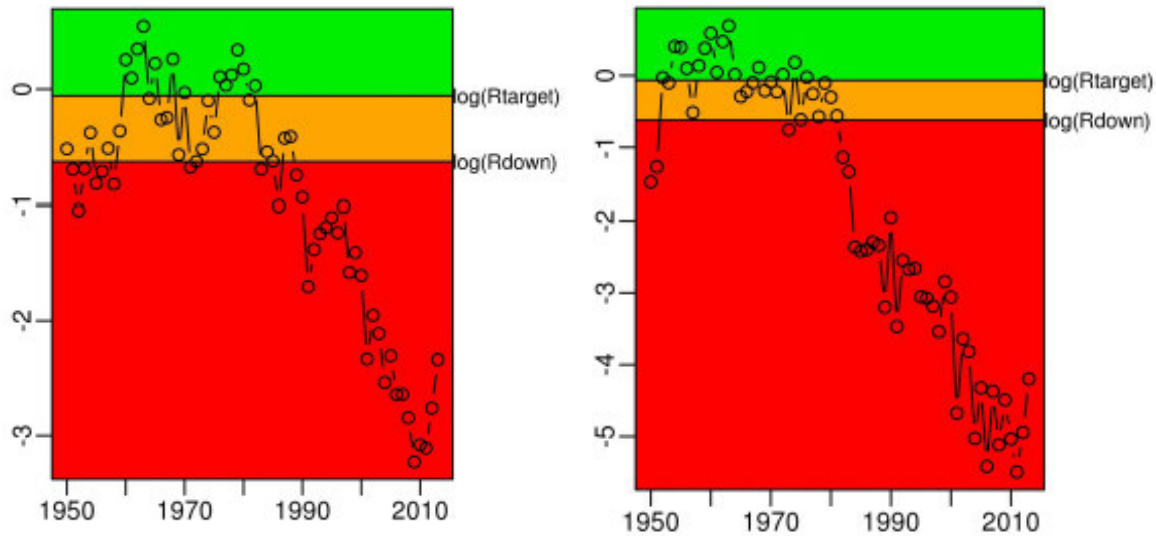


Figure 2. Trends in recruitment (“Elsewhere”, left, and “North-Sea”, right) of European eels with respect to healthy zone (green), cautious zone (orange) and critical zone (red). *From ICES, 2013b.*

first assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2006 and was designated as a species of “Special Concern.” The status was re-examined by COSEWIC in 2012 and it was recommended to list the species as Threatened under the Canadian Species at Risk Act (similar to the U.S. Endangered Species Act). A National Management Plan for American Eel in Canada was developed by the Canadian Eel Working Group which specifies short and long term goals for recovery (DFO, 2010). One of the short-term goals of the plan is to reduce eel mortality from all anthropogenic sources by 50% relative to the 1997-2002 average. Long-term management goals include rebuilding overall abundance of the American eel in Canada to its mid-1980s levels.

Canadian commercial yellow and silver American eel fisheries occur in New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador, and Québec (Figure 3). Fishing occurs in both fresh and marine waters, but many rivers and coastal habitats remain unfished. Elver fisheries in Canada occur only in Scotia-Fundy and the south coast of Newfoundland. Overall total reported American eel landings in Canada declined through the early 1960s, increased to a peak in the late 1970s, and have since declined to the lowest level in recent history (Cairns et al, 2014). Winter recreational spear fisheries of yellow eels also occur in the Southern Gulf of St. Lawrence.

Recent management measures to meet the goals of the National Management Plan have included:

- Minimum size limits raised to 20.8 inches (Gulf region), 13.75 inches (Maritimes region) and 11.8 inches (southwestern New Brunswick, Newfoundland and Labrador)
- Reduction to seasons
- Area closures
- Buyouts of licenses
- Glass eel fisheries are not permitted in areas where fisheries exist for larger eels
- Enforcement of regulatory definitions on fyke nets

- Measures to reduce high grading
- License caps, limited entry, and license reductions
- Gear restrictions, including a 1" x ½" escapement panel
- Quota reductions, including 10% cut in glass eel fisheries

The first large-scale eel stocking experiment occurred in the Richelieu River, a tributary to Lake Champlain, in 2005. Since then, a total of seven million elvers have been stocked in Canadian waters. Stocking initiatives can be considered as a potential threat because their effects are uncertain, manifestation of some effects may only be apparent years after, and because of the documented negative effects of stocking of on other fish, particularly salmon (COSEWIC, 2012). Continuing habitat degradation, especially owing to dams and pollution, and existing fisheries in Canada and elsewhere may constrain recovery (COSEWIC, 2102).

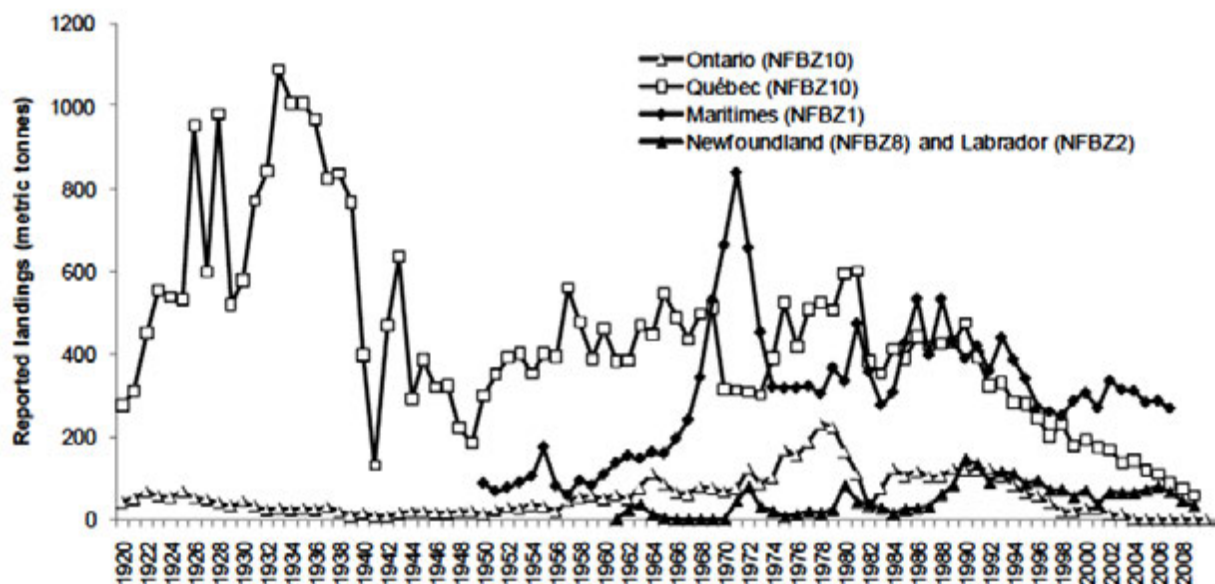


Figure 3. Reported landings of all life stages from Quebec, Ontario, the Maritime Provinces, and Newfoundland and Labrador from 1920 – 2010. *From COSEWIC, 2012.*

2.3.2. ENDANGERED SPECIES ACT CONSIDERATION

American eel were petitioned for listing as threatened under the Endangered Species Act (ESA) in April 2010 by the Center for Environmental Science, Accuracy, and Reliability (CESAR, formally the Council for Endangered Species Act Reliability). The U.S. Fish and Wildlife Service (USFWS) published a positive 90 day finding on the petition in September 2011, stating that the petition may be warranted and a status review will be conducted. CESAR filed a lawsuit in August 2012 against USFWS for failure to comply with the statuses of the ESA, which specifies a proposed rule based on the status review be published within one year of the receipt of the petition. A Settlement Agreement was approved by the court in April 2013 and requires USFWS to publish a 12-month finding by September 30, 2015. The USFWS previously reviewed the status of the American eel in 2007 and found that, at that time, protection under the Endangered Species Act was not warranted.

The five factors on which listing is considered include:

1. Present or threatened destruction, modification, or curtailment of its habitat or range;
2. Over-utilization of the species for commercial, recreational, scientific, or educational purposes;
3. Disease or predation;
4. Inadequacy of existing regulatory mechanisms; and
5. Other natural or manmade factors affecting its continued existence.

2.4. STATUS OF THE STOCK

The Benchmark Stock Assessment was completed and accepted for management use in May 2012. The assessment indicated that the American eel stock has declined in recent decades and the prevalence of significant downward trends in multiple surveys across the coast is cause for concern (ASMFC, 2012). The stock is considered depleted, however no overfishing determination can be made at this time based solely on the trend analyses performed (ASMFC, 2012). The ASMFC American Eel Technical Committee (TC) and Stock Assessment Subcommittee (SAS) caution that although commercial fishery landings and effort have declined from high levels in the 1970s and 1980s (with the recent exception of the glass eel fishery), current levels of fishing effort may still be too high given the additional stressors affecting the stock such as habitat loss, passage mortality, and disease as well as potentially shifting oceanographic conditions. Fishing on all life stages of eels, particularly young-of-the-year and in-river silver eels migrating to the spawning grounds, could be particularly detrimental to the stock, especially if other sources of mortality (e.g., turbine mortality, changing oceanographic conditions) cannot be readily controlled.

In 2014 the TC and Stock Assessment Subcommittee (SAS) completed an update of the young of the year (YOY) indices included in the benchmark stock assessment. The FMP requires states and jurisdictions with a declared interest in the species to conduct an annual YOY survey for the purpose of monitoring annual recruitment of each year's cohort. The benchmark assessment included data only through 2010. Since that time some states have heard anecdotal information about increased recruitment as well as recorded evidence of increased recruitment in their fisheries independent YOY surveys.

Based on the update of the YOY indices, the TC found no change in the YOY status from the benchmark assessment with the exception of one survey in Goose Creek, SC (Table 1). YOY trends are influenced by many local environmental factors, such as rainfall and spring temperatures. While some regions along the coast have experienced high catches in 2011, 2012, and/or 2013, other regions have experienced average or lower catches. For example in 2012, Rhode Island and Florida had below average counts, with Florida having its lowest catch of their time series; New Hampshire, New York, Virginia, and Georgia had average counts; and Maine, Connecticut, New Jersey, Delaware, and Maryland had their highest YOY catches on record. The TC stresses high YOY catches in a few consecutive years do not necessarily correspond to an increasing trend since the YOY surveys can fluctuate greatly. Additionally, due to the limited extent of sampling, trends at the state level may not be reflective of what is actually occurring statewide or coastwide. The YOY indices were only one factor in the determination of the depleted stock status for American eel, so therefore there is no recommended change in the conclusions of the benchmark assessment

and the depleted stock status is still warranted. In November 2014, the International Union for the Conservation of Nature (IUCN) reviewed the status of American eel and listed the species as “endangered” on the IUCN Red List.

Region	State	Site	SA Result	Update
Gulf of Maine	ME	West Harbor Pond	NS	NS
	NH	Lamprey River	NS	NS
	MA	Jones River	NS	NS
	MA	Parker River	NS	NS
Southern New England	RI	Gilbert Stuart Dam	NS	NS
	RI	Hamilton Fish Ladder	NS	NS
	NY	Carmans River	NS	NS
Delaware Bay/ Mid-Atlantic Coastal Bays	NJ	Patcong Creek	NS	NS
	DE	Millsboro Dam	NS	NS
	MD	Turville Creek	NS	NS
Chesapeake Bay	PRFC	Clarks Millpond	NS	NS
	PRFC	Gardys Millpond	NS	NS
	VA	Brackens Pond	NS	NS
	VA	Kamps Millpond	NS	NS
	VA	Warehams Pond	NS	NS
	VA	Wormley Creek	NS	NS
South Atlantic	SC	Goose Creek	NS	↓
	GA	Altamaha Canal	NS	NS
	GA	Hudson Creek	NS	NS
	FL	Guana River Dam	NS	NS

Table 1. Results of the Mann-Kendall trend analysis applied to 2012 Benchmark Stock Assessment (SA) and updated YOY indices developed from the ASMFC-mandated recruitment surveys. Trend indicates the direction of the trend if a statistically significant temporal trend was detected (P-value < α ; $\alpha = 0.05$). NS = not significant.

2.5. STATUS OF THE FISHERY

The American eel fishery primarily targets yellow stage eel. Silver eels are caught during their fall migration as well. Eel pots are the most typical gear used; however, weirs, fyke nets, and other fishing methods are also employed. Yellow eels were harvested for food historically, today’s fishery sells yellow eels primarily as bait for recreational fisheries. From 1950 to 2012, U.S. Atlantic coast landings ranged from a low of approximately 664,000 pounds in 1962 to a high of 3.67 million pounds in 1979 (Figure 4). After an initial decline in the 1950s, landings increased to a peak in the 1970s and early 1980s in response to higher demand from European food markets. In most regions, landings declined sharply by the late 1980s and have fluctuated around one million pounds for the past decade. The value of U.S. commercial yellow eel landings as estimated by NOAA Fisheries has varied from less than a \$100,000 (prior to the 1980s) to a peak of \$6.4 million in 1997.

State reported landings of yellow eels in 2013 totaled 907,671 pounds (Table 2) which represents an 17% decrease (~187,000) in landings from 2012 (1,104,429 pounds). Since 2000, yellow eel landings have increased in the Mid-Atlantic region (NY, NJ, and MD) with the exception of Delaware and the Potomac River. Additionally, yellow eel landings have declined in the New England region (ME, NH, MA, CT) with the exception of Rhode Island. Within the Southern region, since 2000 landings have declined in North Carolina but increase in Florida. In 2013, state reported landings from New Jersey, Delaware, Maryland, and Virginia each totaled over 80,000 pounds of eel, and together accounted for 86% of the coastwide commercial total landings.

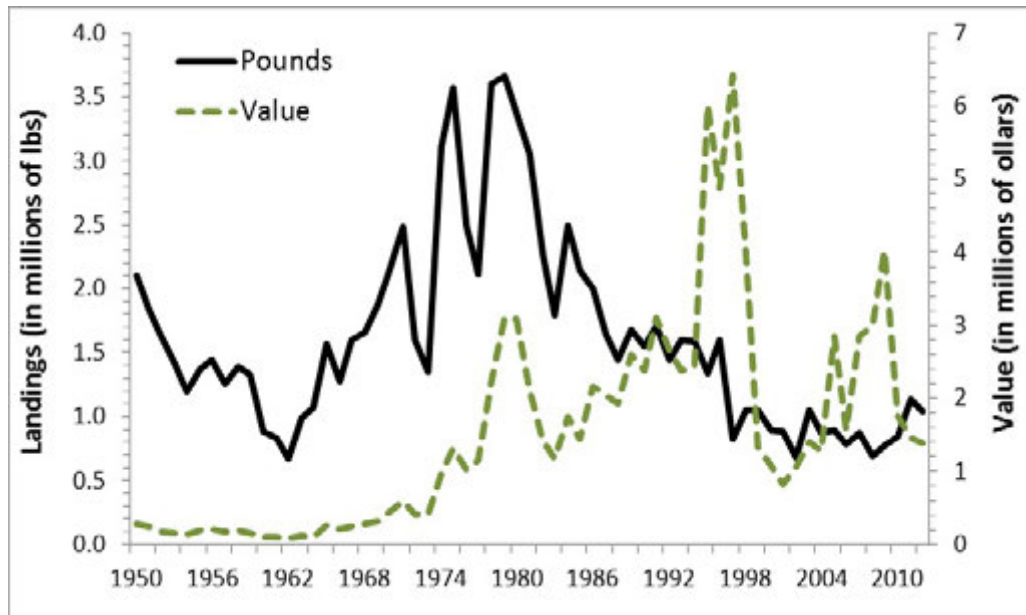


Figure 4. Total commercial landings (in pounds) and value (in millions of dollars) of yellow eels along the U.S. Atlantic Coast, 1950–2012.

Glass eel fisheries along the Atlantic coast are prohibited in all states except Maine and South Carolina. In recent years, Maine is the only state reporting significant harvest (Table 3). Harvest has increased the last few years as the market price has risen to more than \$2,000 per pound, although in 2014 prices were recorded between \$400 and \$650 per pound. Glass eels are exported to Asia to serve as seed stock for aquaculture facilities. Landings of glass eels in 2012 were reported from Maine and South Carolina and totaled 22,215 pounds.

Because eel is managed by the states and is not a target species for the NMFS, landings information for states that rely on the NMFS estimates may be underreported. In addition, at least a portion of commercial eel landings typically come from non-marine water bodies. Even in states with mandatory reporting, these requirements may not extend outside the marine district, resulting in a potential underestimate of total landings. Despite concern about the level of under reporting, reported landings are likely indicative of the trend in total landings over time.

Table 2. Harvest (in pounds) by state of yellow eels from 1998 - 2013. * *Confidential*

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
1998	20,671	459	5,606	967	5,606	16,896	94,327	131,478	301,833	209,008	123,819	91,084		*	13,819	1,015,649
1999	36,087	245	10,281	140	10,281	7,945	90,252	128,978	305,812	163,351	183,255	99,939	*		17,533	1,054,121
2000	14,349	310	5,158	25	5,158	5,852	45,393	119,180	259,552	208,549	114,972	127,099	*		6,054	911,824
2001	9,007	185	3867	329	1,724	19,187	57,700	120,634	271,178	213,440	96,998	107,070	*	*	14,218	915,585
2002	11,616	67	3842	234	3,710	26,824	64,600	90,353	208,659	128,595	75,549	59,940	*	*	7,587	681,609
2003	15,312	36	4,047	246	1,868	3,881	100,701	155,515	346,412	123,450	121,043	172,065		*	8,486	1,053,119
2004	29,651	65	5,328	971	1,374	5,386	120,607	141,725	273,142	116,163	123,314	128,875			7,330	953,931
2005	17,189	120	3,073	0	341	25,515	148,127	110,456	378,659	103,628	66,701	49,278			3,913	907,000
2006	17,259	93	3676	1034	3,443	7,673	158,917	120,462	362,966	83,622	82,738	33,581			1,248	876,712
2007	9,309	70	2853	1230	885	15,077	164,331	131,109	309,215	97,361	56,463	34,486			7,379	829,767
2008	7,992	25	6,046	8866	6,012	15,159	140,418	80,003	381,993	71,655	84,789	24,658	*		15,624	843,762
2009	2,525	83	1217	4855	630	13,115	121,471	59,619	324,773	58,863	119,187	65,481			6,824	778,643
2010	2,624	80	277	4642	164	13,220	107,803	68,666	511,201	57,755	78,076	122,104	*	*	11,287	978,004
2011	2,700	129	368	1,521	20	56,963	129,065	90,631	715,162	29,010	103,856	61,960			25,601	1,216,986
2012	10,785	167	532	1,484	3,560	48,637	111,810	54,304	583,057	90,037	122,058	64,110		*	11,845	1,104,429
2013	1,826	106	2,499	2,244	2,638	32,573	89,300	80,811	539,775	32,290	84,385	33,980		*	17,246	919,953

Table 3. Harvest (in pounds) and value of the glass eel fishery in Maine and South Carolina from 2007 - 2013. **South Carolina landings are confidential.*

Year	Maine		South Carolina	
	Landings	Value	Landings*	Value
2007	3,713	\$1,287,485	No activity reported	
2008	6,951	\$1,486,355	No activity reported	
2009	5,119	\$519,559	No activity reported	
2010	3,158	\$584,850	<500	<\$100,000
2011	8,584	\$7,653,331	<500	<\$500,000
2012	20,764	\$38,760,490	<5,000	<\$2,500,000
2013	18,076	\$32,926,991	<5,000	<\$2,500,000

3. MANAGEMENT MEASURES

It is important to emphasize the 2012 American Eel Stock Assessment was a benchmark or baseline assessment that synthesized all available fishery-dependent and independent data, yet it was not able to construct eel population targets that could be related to sustainable fishery harvests. This is not an uncommon result of baseline stock assessments. The development of sustainable population and fishery thresholds will be a priority of future stock assessment. Despite the absence of fishery targets derived from population models, it is clear that high levels of yellow eel fishing occurred in the 1970s and 1980s in response to high prices offered from the export food market (Figure 4). For all coastal regions, peak catches in this period were followed by declining catches in the 1990s and 2000s, with some regions now at historic low levels of harvest. Given high catches in the past could have contributed to the current depleted status, it is prudent to reduce mortality while enhancing and restoring habitat. This approach is further justified in light of the public interest in eel population conservation demonstrated by two recent petitions to list American eel under the Endangered Species Act and the recent listing by the International Union for the Conservation of Nature (IUCN) as endangered on the IUCN Red List.

The provisions of this Addendum are a compliance requirement and are effective upon adoption of the Addendum as specified by the Board. Management measures include all mandatory monitoring and reporting requirements as described in this Section.

3.1 COMMERCIAL FISHERY MANAGEMENT PROGRAM

The 2012 American Eel Stock Benchmark Stock Assessment recommended mortality should be reduced on all life stages. Therefore, this addendum implements management measures to reduce overall mortality in order to maximize the conservation benefit to American eel stocks. States /jurisdictions shall maintain existing or more conservative American eel commercial fishery regulations, unless otherwise approved by the Board. States may always implement more conservative management measures.

3.1.1 GLASS EEL FISHERY MANAGEMENT PROGRAM

The following apply to the glass eel fisheries operating in Maine and South Carolina, unless otherwise noted.

Quota Management (Maine Only)

Maine's commercial glass eel quota for the 2015-2017 commercial glass eel fishing seasons will be set at 9,688 pounds annually. The quota shall be re-evaluated after three years (prior to the start of the 2018 fishing season), incorporating any information collected through Maine's life cycle monitoring program (see below), as well as other available programs, as feasible. Maine's commercial glass eel quota (9,688 pounds) may be extended through Board action. Any other modification (e.g. increase) to the quota amount will be subject to the Commission's addendum process.

Quota management provides a more reliable method to track mortality, increases accuracy of harvest data, and reduces opportunities for illegal harvest. In 2014 Maine pro-actively implemented new regulations to manage the glass eel fishery through output controls (quota management) instead of input control (gear and licenses restrictions). The state worked with industry and tribal representatives to develop a quota (11,479 pounds) that was a 35% reduction from 2012 landings. In 2014, the state landed 9,688 pounds.

Quota Overages

For any state or jurisdiction with a commercial glass eel quota, if an overage occurs in a fishing year, then that state or jurisdiction will be required to deduct the entire overage from the state's quota the following year, pound for pound.

Glass Eel Harvest Allowance Based on Stock Enhancement Programs

Any state or jurisdiction can request an allowance for commercial harvest of glass eels based on stock enhancement programs implemented after January 1, 2011. Examples of stock enhancement programs include, but are not limited to, habitat restoration projects, fish passage improvements, or fish passage construction. Fish passage projects may focus on upstream or downstream passage or both. Stock enhancement programs must show a measurable increase in glass eel passage and/or glass eel survival. Harvest shall not be restricted to the basin of restoration (i.e. harvest may occur at any approved location within the state or jurisdiction). Harvest requests shall not exceed 25% of the quantified contribution provided by the stock enhancement program.

Requests for harvest must be in writing and include a description of the: stock enhancement program, fishery requested, monitoring program to ensure harvest is not exceeded, monitoring program to ensure stock enhancement program targets are annually met, adequate enforcement capabilities, and adequate penalties for violations. The stock contribution percentage may be based on, for example, the amount of available suitable habitat that will become accessible, passage numbers, or other appropriate metrics.

Requests must be submitted to the Board by September 1st of the preceding fishing year. The Board will review and consider approval of the requests after a TC review.. After the first

year of implementation the TC will evaluate the program and provide recommendations to the Board on the overall impact of and adherence to the plan. If the stock enhancement program cannot be assessed one year post-implementation, then a secondary review must occur within three years post-implementation. If changes to that habitat or fishway occurs in subsequent years, the Commission must be notified through the annual compliance report and a review of the harvest allowance may be initiated.

Reporting Requirements

Any state or jurisdiction with a commercial glass eel fishery is required to implement daily trip level reporting with daily electronic accounting to the state for both harvesters and dealers in order to ensure accurate reporting of commercial glass eel harvest. States or jurisdictions commercially harvesting less than 750 pounds of glass eels are exempt from this requirement.

Monitoring Requirements

Any states or jurisdiction with a commercial glass eel fishery must implement a fishery independent life cycle survey covering glass, yellow, and silver eels within at least one river system. If possible and appropriate, the survey should be implemented in the river system where the glass eel survey (as required under Addendum III) is being conducted to take advantage of the long term glass eel survey data collection. At a minimum the survey must collect the following information: fisheries independent index of abundance, age of entry into the fishery/survey, biomass and mortality of glass and yellow eels, sex composition, age structure, prevalence of *A. crassus*, and average length and weight of eels in the fishery/survey. Survey proposals will be subject to TC review and Board approval. States or jurisdictions commercially harvesting less than 750 pounds of glass eels are exempt from this requirement.

3.1.2 YELLOW EEL FISHERY MANAGEMENT PROGRAM

Currently, commercial yellow eel fisheries operate in all states with the exception of Pennsylvania and the District of Columbia. Management measures selected by the Board in Addendum III went into effect January 1, 2014. These measures included a 9 inch minimum size limit for both the commercial and recreational fishery and a ½ by ½ inch minimum mesh requirement for the commercial fishery.

The American Eel TC recommended commercial harvest be reduced from the 1998 – 2010 average (907,669 pounds), specifically a 12% reduction from the 1998-2010 average was seen as an acceptable precautionary approach (798,750 pounds).

Coastwide Catch Cap

The commercial yellow eel fishery is regulated through an annual coastwide catch cap set at 907,671 pounds (1998 – 2010 harvest level).

The use of a coastwide cap provides a flexible management system that responds to fluctuations in market conditions while providing a quantifiable conservation benefit to

American eels. One of the benefits of a catch cap is that it reduces the administrative and legislative burden of implementing a state specific quota system while still controlling the total amount of fishing mortality that is occurring annually. Additionally, a coastwide catch cap does not require a specific allocation by state or jurisdiction, which can be problematic due to the fluctuations in landings as a result of environmental and market conditions. However, under this system states and jurisdiction still need timely reporting in place to ensure that that the cap was not exceeded. Furthermore, a mortality cap may promote a derby style fishery, which could possibly flood the market and drive down prices.

Under the catch cap, there are two management triggers. Upon reaching either of these triggers, the Board is required to alter the management program as specified below in order to ensure the objectives of the management program are achieved.

Management Triggers

1. The coastwide catch cap is exceeded by more than 10% in a given year (998,438 pounds).
2. The coastwide catch cap is exceeded for two consecutive years, regardless of percent over.

Management Response

If either trigger is tripped, then there would be automatic implementation of a state-by-state commercial yellow eel quota. The annual coastwide quota is set at 907,669 pounds, with allocations as specified in Table 4. See Appendix A for a description on the allocation methodology. States and jurisdictions are required to approve regulations that would allow for implementation of a quota management program and timely monitoring of harvest no later than March 2016. This ensures if a management trigger is activated in the first year of implementation (2015) then the required management action could be taken. The quota management program must include a provision to address quota overages and allow quota transfers, as specified below. It is recommended monitoring and reporting requirements are sufficient to prevent repeated overages.

If the state-by-state quota system is implemented and a state or jurisdiction has an overage in a given fishing year, then the state or jurisdiction is required to reduce their following year's quota by the same amount the quota was exceeded, pound for pound. For states that qualify for the automatic 2,000 pound quota, any overages would be deducted from the 2,000 pound allocation.

If the state-by-state quota system is implemented then any state or jurisdiction may request approval from the Board Chair or Commission Chair to transfer all or part of its annual quota to one or more states, including states that receive the automatic 2,000 pound quota. Requests for transfers must be made by individual or joint letters signed by the principal state official with marine fishery management authority for each state involved. The Chair will notify the requesting states within ten working days of the disposition of the request. In evaluating the request, the Chair will consider: if the transfer would preclude the overall annual quota from being harvested, the transfer addresses an unforeseen variation or contingency in the fishery,

and if the transfer is consistent with the objects of the FMP. Transfer requests for the current fishing year must be submitted by December 31 of that fishing year.

The transfer of quota would be valid for only the calendar year in which the request is made. These transfers do not permanently affect the state-specific shares of the quota, i.e., the state-specific shares remain fixed. Once quota has been transferred to a state, the state receiving quota becomes responsible for any overages of transferred quota.

Under both the catch cap and quota systems all New York American eel landings (i.e. from both the yellow and silver eel fisheries) are included, until otherwise shown to preclude it. The Board has the ability to re-visit quota and allocation through subsequent addenda.

Table 4. Recommended Quota Allocation for the Commercial Yellow Eel Fishery. This quota would ONLY be implemented if wither management trigger is tripped.

	Initial Allocation	Final Quota
Maine	0.48%	3,907
New Hampshire	0.01%	2,000
Massachusetts	0.04%	2,000
Rhode Island	0.16%	4,642
Connecticut	0.19%	2,000
New York	4.26%	15,220
New Jersey	10.19%	94,899
Delaware	6.97%	61,632
Maryland	56.72%	465,968
PRFC	4.67%	52,358
Virginia	9.58%	78,702
North Carolina	4.94%	107,054
South Carolina		2,000
Georgia	0.11%	2,000
Florida	1.69%	13,287
Total	100%	907,669

3.1.3 SILVER EEL FISHERY MANAGEMENT PROGRAM

The following measures apply only to the commercial weir fishery in the New York portion of the Delaware River and its' tributaries. New York was granted a one year extension from the requirements as specified under Section 4.1.3 of Addendum III:

Section 4.1.3: States and jurisdictions are required to implement no take of eels from September 1st through December 31st from any gear type other than baited traps/pots or spears (e.g. fyke nets, pound nets, and weirs). These gears may still be fished, however retention of eels is prohibited. A state or jurisdiction may request an alternative time frame for the closure if it can demonstrate the proposed closure dates

encompass the silver eel outmigration period. Any requests will be reviewed by the TC and submitted to the Board for approval.

The American Eel Benchmark Stock Assessment found “fishing on out-migrating silver eels could be particularly detrimental to the stock, especially if other sources of mortality (e.g., turbine mortality, changing oceanographic conditions) cannot be readily controlled.” Conservation efforts on earlier life stages will only delay mortality and provide limited additional benefit to stock health if harvest occurs at later stages.

License Cap

The Delaware River silver eel weir fishery is restricted to nine annual permits. These permits are initially limited to those permitted participants that fished and reported landings from 2010 to 2013. Permits may be transferred thereafter.

3.1.4 STATE SPECIFIC SUSTAINABLE FISHERY MANAGEMENT PLANS FOR AMERICAN EEL

States or jurisdictions may petition the Board to allow for a state specific Sustainable Fishery Management Plan (Plan) for American Eel.

Currently, states and jurisdictions are allowed to petition the Board for an alternative management program, per Section 4.4 of the FMP. This section is not meant to replace Section 4.4 of the FMP, rather it provides guidance on specific types of alternative management the states can to request.

The objective of these programs is to allow states and jurisdictions the ability to manage their American eel fishery (glass, yellow, or silver) to both meet the needs of their current fishermen while providing conservation benefit for the American eel population. Three types of Plans (Fishing Mortality Based Plan, Transfer Plan, and Aquaculture Plan) are presented below. All plans must be submitted to the Board for their review and approval after TC review.

Fishing Mortality Based Plan

Under this scenario, states and jurisdictions may petition the Board for alternative management based on the current level of mortality that is occurring on their population. This Plan shall:

1. Require states or jurisdictions to assess, with some level of confidence, the status of eel abundance and current level of mortality (e.g. fisheries, natural, and other man-made) that is occurring on the American eel populations within their jurisdiction.
2. Once adequately documented, states or jurisdictions may allocate their fishing mortality to any American eel fishery (glass, yellow, or silver) even if the state does not currently participate in that fishery (i.e. a state would be allowed to open up a glass eel fishery if they did not currently have one due to the restrictions of the FMP). This could be applied for commercial, recreational, aquaculture industries and/or research set-aside purposes.

3. States may increase the fishing mortality rate provided it is offset by decreases in other mortality (e.g. though habitat improvements, increased fish passage, reduced turbine mortality, etc.) and there is an overall net gain to conservation (i.e. overall mortality is reduced, spawner escapement increases, etc...).

The format of the Fishing Mortality Based Plan is as follows:

1. Current regulations
2. Proposed change to regulations (e.g. request for fishery, fish passage restrictions, water quality improvements, etc...)
3. Description of fishing monitoring and enforcement capabilities
4. Description and supporting information on eel abundance and current mortality within state or jurisdiction
 - a. Fishing mortality (including but not limited to commercial, recreational, sustenance, and bycatch)
 - b. Natural mortality (including but not limited to predation and disease),
 - c. Other man-made mortality (including but not limited to fish passage, turbines, habitat degradation, and pollution)
 - d. Indices of abundance, age and size structure, and life cycle population metrics
5. Timeline for implementation of regulations, monitoring programs, or other activities
6. Description of conservation benefits of proposed regulatory changes or habitat improvements
7. Description of adaptive management program to evaluate success of proposed regulatory changes or habitat improvements

Transfer Plan

If states or jurisdictions are unable to assess the current level of mortality and abundance with certainty, and the state or jurisdiction implements quota management for at least one fishery, then a state may develop a Transfer Plan to request a transfer of quota from one fishery to another (e.g. from yellow to glass) based on the life history characteristic inherent to that area (e.g. state, river, or drainage). The request shall include: description of quota allocation by fishery; scientific analysis that the transfer will not increase overall eel fishing mortality, overall mortality, or reduce spawner escapement, with some level of confidence; description of monitoring program to ensure quota is not exceeded; and adequate enforcement capabilities penalties for violations.

Aquaculture Plan

States and jurisdictions may develop a Plan for aquaculture purposes. Under an approved Aquaculture Plan, states and jurisdictions may harvest a maximum of 200 pounds of glass eel annually from within their waters for use in domestic aquaculture facilities provided the state can objectively show the harvest will occur from a watershed that minimally contributes to the spawning stock of American eel. The request shall include: pounds requested; location, method, and dates of harvest; duration of requested harvest; prior approval of any applicable permits; description of the facility, including the capacity of the facility the glass eels will be held, and husbandry methods; description of the markets the eels will be distributed to; monitoring program to ensure harvest is not exceeded; and adequate enforcement capabilities penalties for violations. Approval of a request does not guarantee approval of a request in

future years. Eels harvested under an approved Aquaculture Plan may not be sold until they reach the legal size in the jurisdiction of operations, unless otherwise specified.

All Plans are subject to TC and LEC review and Board approval. The Fishing Mortality Based Plan must be submitted by June 1st of the preceding fishing year in order to provide enough time for review for the upcoming fishing season. Transfer and Aquaculture Plans must be submitted by June 1st of the preceding fishing year and approval will be determined by the Board by September 1st. Plans will initially be valid for only one year. After the first year of implementation the TC will evaluate the program and provide recommendations to the Board on the overall impact of and adherence to the plan. If the proposed regulatory changes, habitat improvements, or harvest impact cannot be assessed one year post-implementation, then a secondary review must occur within three to five years post-implementation if the action is still ongoing.

If states use habitat improvements and changes to that habitat occurs in subsequent years, the Commission must be notified through the annual compliance report and a review of the Plan may be initiated. Any requests that include a stocking provision would have to ensure stocked eels were certified disease free according to standards developed by the TC and approved by the Board.

4. LAW ENFORCEMENT RECOMMENDATIONS

The Commission's Law Enforcement Committee has previously weighted in on the enforceability of proposed American eel management options based on the *Guidelines for Resource Managers on the Enforceability of Fishery Management Measures (July 2009)*. These Guidelines rated management strategies using standard terms as follows, from least to most enforceable: Impossible, Impractical, Difficult and Reasonable.

The LEC concluded that status quo measures for all eel fisheries is impractical for enforcement, specifically for the glass eel fishery given the enforcement challenges associated with the prosecution of the glass eel fishery in those states currently closed to harvest of glass eels. A significant amount of illegal harvest of glass eels continues outside the two states where harvest is currently allowed, and illegally harvested eels are being possessed and shipped via those two states. State and federal enforcement agencies are tasked to thwart the illegal harvest and export with reduced staff and resources. Given the monetary value of glass eels and the ability to move illegally harvested eels via legal shipments, enforcement agencies do not have, and are unlikely to obtain the resources necessary to effectively monitor and control a limited glass eel harvest.

The LEC finds that a quota system would be difficult to enforce because of the variety of management strategies associated with quota implementation, enforceability depends largely on how quota systems are managed. Increased complexity of quota systems will generally reduce enforceability. The enforcement of time/area closures for the silver eel fishery is considered reasonable.

The LEC reports continuing illegal harvest of glass eels or elvers in the two states where some legal harvest is permitted, and in a number of states where any harvest of eels below a minimum size is prohibited. This is not unexpected given the high dollar value associated with the fishery. Enforcement agencies are dedicating resources to monitor and enforce regulations through stepped up patrols, coordination with local enforcement authorities, and by communicating the importance of glass eel cases to judiciary officials. Specific changes to regulations or statutes that would enhance field enforcement and/or penalties are encouraged, and those that have been implemented (in Maine, for example) have improved the outcome of arrests and convictions. Because of the cross-state nature of illegal glass eel harvest, strengthening of extradition or bail provisions for criminal violations would enhance the deterrent effect of enforcement actions.

5. COMPLIANCE

States and jurisdictions are required to approve regulations that would allow for implementation of a state-specific quota management program and timely monitoring of harvest no later than March 2016. To ensure this happens, state implementation plans that outline quota management programs and timely monitoring measures for eel fisheries are due for Board review and approval at the Commission's 2015 Annual Meeting.

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Appendix A

Determining the coastwide quota and state-by-state allocation

The coastwide quota and allocation is determined through a five step process. First, the quota is initially set at the 2010 harvest levels (978,004 pounds). This year (2010) was chosen as the baseline as it represents the last year of data that was included in the benchmark stock assessment and the assessment recommends reducing mortality from this level. Second, a 16% reduction is applied, bringing the quota to 821,523 pounds.

Third, the average landings for each states and jurisdiction from 2011 – 2013 is calculated. This time period was chosen in order to maintain the current distribution on fishing effort along the coast. The averages for each state and jurisdiction are totaled and then the percent contribution by each state is determined.

Fourth, in order to increase equity in the distribution of the quota, the following criteria is then applied to each state or jurisdictions allocation:

1. States or jurisdictions be allocated a minimum allocated quota fixed at 2,000 pounds in order to provide all state's a quota level sufficient to cover any directed or bycatch landings without creating an administrative burden. The 2,000 pounds quota is not expected to promote a notable increase in effort in the fishery.
2. No state or jurisdiction is allocated a quota that is more than 2,000 pounds above its 2010 commercial yellow eel harvest.
3. No state or jurisdiction is allocated a quota that is more than a 15% reduction from its 2010 commercial yellow eel harvest.

Through this filtering method the quota is updated to 893,909 pounds.

Lastly, the difference between this amount (893,909 pounds) and the TC recommendation (907,669 pounds) is 13,762 pounds. This difference is split equally among the states that are negatively impacted by the quota in comparison to their 2010 commercial harvest (Rhode Island, New Jersey, Delaware, PRFC, and North Carolina) with the exception of Maryland given their high allocation. Each of the specified states is allocated an equal portion of the 13,762 pounds, not to exceed their 2010 landings. This results in a final coastwide of 907,669 pounds.

Table 1. Quota and allocation calculation process.

	2010 Landings	2011-2013 Harvest Average	Initial Allocation Based on Harvest Average	Initial Quota	After Filtering Method is Applied	Final Quota
Maine	2,624	5,104	0.48%	3,943	3,907	3,907
New Hampshire	80	134	0.01%	82	2,000	2,000
Massachusetts	277	450	0.04%	329	2,000	2,000
Rhode Island	4,642	1,750	0.16%	1,314	3,946	4,642
Connecticut	164	2,073	0.19%	1,561	2,000	2,000
New York	13,220	46,058	4.26%	34,997	15,220	15,220
New Jersey	107,803	110,058	10.19%	83,713	91,633	94,899
Delaware	68,666	75,249	6.97%	57,260	58,366	61,632
Maryland	511,201	612,665	56.72%	465,968	465,968	465,968
PRFC	57,755	50,446	4.67%	38,365	49,092	52,358
Virginia	78,076	103,433	9.58%	78,702	78,702	78,702
North Carolina	122,104	53,350	4.94%	40,583	103,788	107,054
South Carolina	2			0	2,000	2,000
Georgia	103	1,162	0.11%	904	2,000	2,000
Florida	11,287	18,231	1.68%	13,802	13,287	13,287
Total	978,004	1,080,160	100%	821,523	893,909	907,669



PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

MEMORANDUM

To: ASMFC American Eel Technical Committee

From: Todd Mathes, N.C. Division of Marine Fisheries

Subject: Changes to the May 2016 NC Aquaculture Plan for the 2017 Sampling Season

Date: May 31, 2016

On February 4, the Atlantic States Marine Fisheries Commission's (ASMFC) American Eel Management Board approved North Carolina's Aquaculture Plan for 2016, allowing up to 200 pounds of glass eels to be harvested for aquaculture purposes. The Board reviewed comments provided by the Technical Committee, Advisory Panel, and Law Enforcement Committee on the various merits of the plan prior to its approval. The Board's approval was contingent on two issues (1) export of glass eels will be prohibited, and (2) the first year of the plan will be conducted as a pilot program. During the first year, North Carolina was instructed to work with its industry to identify viable collection sites for glass eels for its use in aquaculture. During the second year, if approved, the state will need to work with the Technical Committee to determine sampling protocols for obtaining glass eel abundance estimates across the identified collection sites.

Prior to being allowed to harvest glass eels under the N.C Aquaculture Plan for American Eel, the American Eel Farm (AEF) was required to petition the N.C. Marine Fisheries Commission for a declaratory ruling that would allow them to possess American eels less than nine inches total length. On February 18, 2016, the N.C. Marine Fisheries Commission approved the declaratory ruling request made by Mr. Rick Allyn on behalf of the AEF allowing the AEF to possess American eels less than 9 inches that are taken from Coastal Fishing Waters in N.C. according to the N.C Eel Aquaculture Plan for American Eel. Once the ruling was granted, the AEF could not begin fishing activities until the official ruling was issued and received by the AEF.

On March 18, 2016, the AEF was notified they would be able to start fishing effective March 21, 2016 and on March 22, 2016 Mr. Allyn received a copy of the official declaratory ruling. Unfortunately, by the time the AEF received permission to harvest, communications from South Carolina commercial fishermen (personal communication, 2016) and fishery-independent data from the NOAA Beaufort Bridgenet Ichthyoplankton Sampling Program (personal communication, Joel Corush, 2016) indicated the run was likely over by mid-March along the N.C. coast. As of April 14, 2016, after three weeks of fishing, AEF had not harvested any glass eels and stopped fishing.



Based on the reasoning that the AEF was unable to start fishing until such a late date in terms of glass eel recruitment along the coast and the AEF did not harvest any glass eels, on May 3, 2016, North Carolina Division of Marine Fisheries (NCDMF) informed the ASMFC American Eel Management Board (Board) at their May 2016 meeting that NCDMF intended to submit a new aquaculture plan as a second year pilot program. Due to late start and zero harvest by the AEF, there is no new information on American eel recruitment to inform the Technical Committee about designing a young-of-year abundance survey. If the Board approves the second year plan, the AEF will be able to deploy nets during the peak recruitment period for glass eels which will provide useful data to the NCDMF and ASMFC as it relates to American eel recruitment along the N.C. coast.

Modifications to the June 2016 NC Aquaculture Plan

1. The number of individuals allowed to harvest glass eels was reduced from three (3) individuals to only one (1) individual or permittee.
2. January 1 through February 28, 2017, fyke and dip nets for glass eel harvest may be fished at all hours during the week. Fyke nets may have their cod end closed during the day, however from 12:01 pm on Friday through 12:01 pm on Sunday, fyke nets may remain in the water but the terminal portion of a fyke net cod end shall contain a rigid device with an opening not less than three (3) inches in diameter and not exceeding six (6) inches in length that is not obstructed by any other portion of the net and dip nets may not be used. This shift in timing preserves the 48-hour rest period.
3. From March 1 through April 30, 2017, fyke and dip nets for glass eel harvest may only be fished and the fyke net cod ends closed from two hours before sunset through two hours after sunrise.
4. Fyke nets shall be fished at least once every twenty-four (24) hours.
5. Require the American Eel Farm (AEF) to record the actual weight of glass eels harvested immediately after fishing each net rather than an estimated weight.
6. Require the AEF to call in to NCDMF Marine Patrol Communications Center before heading back to the departure site with an actual weight of glass eels harvested rather than an estimated weight.
7. Require the AEF to record the weight of elvers captured and released immediately after fishing each net.
8. Require AEF to provide CPUE data from each piece of gear (individual fyke or dip net) by the 10th of the following month instead of at the end of the harvest season.
9. Under General Condition's section in the January 2016 plan, the 2nd bullet was removed at the request of law enforcement personal which stated: Individuals must agree to warrantless inspections and searches of any gear, vessels, equipment, vehicles, and their person.



10. NCDMF has proposed the White Oak River as a primary site which brings the total number from ten (10) to eleven (11). The White Oak River is a data poor area for NCDMF because of its location and has not been previously sampled for American eels. By allowing AEF to sample in this river system, it provides the NCDMF an opportunity to gain valuable knowledge that would enhance our fisheries information in that system. Another reason the NCDMF has proposed the White Oak River is to provide a larger system that has a greater fresh water influence which would potentially increase the likelihood of encountering glass eels. Even though the river system is approximately 40 miles in length, it is still located outside of the Albemarle/Pamlico Sounds and is one of the smaller river systems located along the central North Carolina coast.



North Carolina Aquaculture Plan for American Eel
Pursuant to Addendum IV to the ASMFC Interstate
Fishery Management Plan for American Eel

North Carolina Department of Environmental Quality
Division of Marine Fisheries
PO Box 769
Morehead City, NC 28557

May 2016

BACKGROUND

Globally, the U.S. is a minor producer of aquaculture products, ranking 15th in a United Nations Food and Agriculture Organization report (FAO 2014). It would be beneficial to expand aquaculture in the U.S. as approximately 91% of seafood (by value) consumed in the U.S. originates overseas. Roughly half of this comes from aquaculture and has driven the U.S. seafood trade deficit to over \$11.2 billion annually (NOAA 2016). By passing the National Aquaculture Act of 1980 (and subsequent amendments), Congress put forth that it was in the national interest and the national policy to encourage the development of aquaculture in the U.S.

In the early 1990s North Carolina was one of several states to impose a 6-inch minimum size limit in part to protect elvers/glass eels for local aquaculture while awaiting recommendations on glass eel/elver fishery development that was expected in the Atlantic States Marine Fisheries Commission fishery management plan for American eel (ASMFC 2000). In October 2014 the ASMFC adopted Addendum IV to the Interstate Fishery Management Plan for American Eel (ASMFC 2014;

http://www.asmfc.org/uploads/file//55318062Addendum_IV_American_Eel_oct2014.pdf).

Addendum IV implemented a provision allowing states and jurisdictions to submit an Aquaculture Plan to allow for the limited harvest of American eel glass eels (hereinafter “glass eels”) for use in domestic aquaculture facilities. Specifically, Addendum IV states:

“Under an approved Aquaculture Plan, states and jurisdictions may harvest a maximum of 200 pounds of glass eel annually from within their waters for use in domestic aquaculture facilities provided the state can objectively show the harvest will occur from a watershed that minimally contributes to the spawning stock of American eel. The request shall include: pounds requested; location, method, and dates of harvest; duration of requested harvest; prior approval of any applicable permits; description of the facility, including the capacity of the facility the glass eels will be held, and husbandry methods; description of the markets the eels will be distributed to; monitoring program to ensure harvest is not exceeded; and adequate enforcement capabilities and penalties for violations.”

Pursuant to Addendum IV to the Interstate Fishery Management Plan for American Eel, the North Carolina Division of Marine Fisheries (NCDMF) is submitting the following Aquaculture Plan for approval. The NCDMF has selected tributaries in watersheds where the state can objectively show American eels in these areas minimally contribute to the spawning stock of American eel. Only one aquaculture operation, the American Eel Farm (AEF), has requested to be included in the Aquaculture Plan for consideration.

POUNDS REQUESTED

North Carolina requests to harvest 200 lb. of glass eels, the maximum amount allowed under the Aquaculture Plan provision of Addendum IV to the Interstate Fishery Management Plan for American Eel.

DATES OF HARVEST

Glass eels shall be harvested from January 1, 2017 through April 30, 2017 or until 200 lb. of glass eels are harvested, whichever occurs first.

DURATION OF HARVEST

Since the intent of the NCDMF is for the May 2016 Aquaculture Plan to serve as a second year pilot program the Plan is only valid for one year. The duration of harvest requested is limited to the 2017 glass eel harvest season. A renewal plan will be submitted by June 1, 2017 and at that time additional harvest years will be requested along with any modifications deemed necessary to ensure the success and continued approval of the plan.

METHOD OF HARVEST

NCDMF will limit the number of individuals authorized to harvest under this plan (1 individual or permittee). Glass eels shall be harvested using either fyke nets or dip nets. Fyke nets shall be constructed as follows:

- Shall be thirty (30) feet or less in length from cod end to either wing tip (net length equals the wing length plus the distance from throat to cod end)
- Shall be fitted with netting that measures 1/8-inch bar mesh or less
- Shall contain a ½-inch or less bar mesh excluder panel that covers the entrance of the net
- Shall have no more than two funnels, one cod end, and two wings

Dip nets shall be constructed as follows:

- Shall be no more than 30 inches wide at the widest point of the net mouth
- Shall be fitted with netting that measures 1/8-inch bar mesh or less

To mitigate the harvest of elvers (fully pigmented eels), all captured eels shall be graded upon capture on the water using a 1/8-inch bar mesh non-stretchable grading screen and any eels that fail to pass through the screen will be immediately returned to the water where captured. Any eels that pass through the screen will be harvested and count toward the 200 lb. annual glass eel harvest limit.

MINIMAL CONTRIBUTION JUSTIFICATION

While we have no quantitative data on the abundance of glass eels, it could be argued the harvest of 200 lb. of glass eels in itself is limited enough to have a minimal impact on the spawning stock of American eel (see Appendix 1). Natural mortality is thought to be very high during the early life stages (leptocephalus, glass eel, and elver) due to the high fecundity of American eel (ASMFC 2000, 2012). Assuming a mortality rate of ~97-98%, of the 200 lb. of glass eels proposed to be harvested, approximately 195 lb. would otherwise perish naturally in the wild.

To mitigate the impact to the spawning stock, proposed harvest sites are located in areas that have been impacted by human activity. Development in and along estuaries, rivers, and

streams may have a negative impact on eel health, growth, and survival. Machut et al. (2007) found the condition (weight) of American eels in six tributaries of the Hudson River in New York was significantly lowered with increasing riparian urbanization. Intense urbanization in the watersheds of these creeks and rivers has hardened the natural landscape, limiting their capacity to infiltrate and store rainfall as they did prior to development. Mallin et al. (1998) conducted a four year review of the tidal creeks of New Hanover County, NC where the authors demonstrated a very close parallel between water quality in the creeks and the amount of impervious surfaces in the watershed. Water quality in coastal waters is negatively impacted when the natural landscape is changed by drainage, hardened surfaces, and vegetation removal. Altering the land cover in an area by adding roofs, driveways, parking lots, yards, ditching, cutting down trees and underbrush all drastically change the hydrology of a watershed. Contaminations by heavy metals, dioxins, chlordane, and polychlorinated biphenyls as well as pollutants from nonpoint sources can bioaccumulate within the fat tissues of the eels, causing dangerous toxicity and reduced productivity (Hodson et al. 1994). Unlike discharge from “point sources,” such as water treatment plants, nonpoint source pollution is becoming increasingly difficult to control and regulate as populations in coastal North Carolina continue to increase.

The Shellfish Sanitation and Recreational Water Quality Section of the Division of Marine Fisheries is responsible for monitoring coastal waters as to their suitability for shellfish harvest, and for monitoring and issuing advisories for coastal recreational swimming areas. All of the proposed sites occur in creeks or rivers that are fully or partially closed to shellfish harvest due to unacceptably high levels of fecal bacteria (<http://portal.ncdenr.org/web/mf/shellfish-closure-maps>) and often suffer from chronic, stream-wide oxygen problems. Despite being able to live in a wide range of temperatures and different levels of salinity, American eel are very sensitive to low dissolved oxygen levels (Hill 1969, Sheldon 1974). Shellfish closures and swimming advisories are indicators of poor water quality and some of these waters are classified as “impaired” (Category 4 or 5) under Section 303(d) of the Clean Water Act by the North Carolina Division of Water Resources (NCDWR; <http://portal.ncdenr.org/web/wq/ps/bpu/watershed-plan-map>). These designations were considered when choosing primary and alternate harvest sites as eels in these waters are likely to experience greater physiological stress and potentially higher mortality compared to eels in other areas.

No harvest sites are located within the Albemarle Sound estuarine system. This region's watershed contains the Chowan, Roanoke, and Pasquotank river basins and is approximately 8,000 square miles, encompasses over 5,000 miles of freshwater rivers and streams, and over 930,000 acres of brackish, estuarine waters. The Chowan, Roanoke, and Pasquotank are three major rivers that flow into the Albemarle Sound estuary (APNEP 2016). On average, the Albemarle Sound area has accounted for approximately 96% of yellow eel landings from 2010 – 2014. By directing glass eel harvest away from this area there should be little impact to the existing yellow eel fishery (which presumably occurs in areas of higher yellow eel abundance). In addition, no sites are located within the Tar-Pamlico River Basin. This basin is approximately 6,000 square miles and encompasses over 2,500 miles of freshwater rivers and streams and over 660,000 acres of brackish, estuarine waters.

Glass eels actively migrate toward land and freshwater and ascend rivers during the winter and spring. It has been demonstrated, in European glass eel, that this change in behavior was caused by the detection of the odor of freshwater, as well as temperature gradients (Facey and Van Den Avyle 1987). By limiting the proposed harvest sites to small coastal systems, large areas of freshwater habitat were removed from consideration, thus reducing the potential impact to the overall spawning stock of American eel.

In addition, North Carolina will direct harvest away from protected areas such as National Wildlife Refuges, National Estuarine Reserves, National Forests, National Seashores, North Carolina Coastal Reserves, North Carolina State Parks, North Carolina Preserves, North Carolina Strategic Habitat Areas, and Natural Heritage Natural Areas.

LOCATION OF HARVEST

North Carolina's internal waters are classified as either inland, joint or coastal fishing waters. The North Carolina Marine Fisheries Commission (NCMFC) and NCDMF have jurisdiction of coastal waters while the North Carolina Wildlife Resources Commission (NCWRC) has jurisdiction of inland waters and both agencies (NCWRC and NCMFC/NCDMF) have authority within joint waters. Other than a few specific regulations, none of which pertain to American eel, commercial activities and recreational activities using commercial gear (devices) occurring in joint waters is under the jurisdiction of the NCMFC/NCDMF. For the purposes of this plan, all glass eel harvest will be restricted to either coastal or joint waters (see Table 1 for the downstream boundary coordinates of the proposed harvest sites).

North Carolina will approve eleven (11) primary sites and three (3) alternate sites should there be little or no success harvesting glass eels at the primary sites. Alternate sites will only be used if attempts have been made to harvest from several primary sites and they are found to be unproductive. This will be determined at the discretion of the NCDMF and will take into account the amount of effort put forth at the primary sites, the number of pounds of glass eels harvested, and the timing within the recruitment season.

Primary Sites

North Carolina proposes to direct glass eel harvest to areas likely to minimally contribute to the spawning stock based on criteria such as basin size, waterbody length, habitat condition, and proximity to the Atlantic Ocean (distance from an inlet). Specifically, primary harvest sites will be located in two small coastal river basins, the Lumber and White Oak (Figure 1). These river basins contain smaller watersheds which include; creeks, streams, lakes, reservoirs, and sections of rivers. Proposed primary harvest sites meet one or more of the following conditions: 1) drainage basin includes residential areas, 2) drainage basin includes industrial areas, 3) drainage basin includes agricultural areas 4) small waterbody less than 7 miles in length, 5) proximity to the Atlantic Ocean, or 6) classified as "impaired" by the NCDWR (Table 2).

Directing glass eel harvest to waterbodies in close proximity to the Atlantic Ocean (via inlets) increases the likelihood of harvesting newly recruited glass eels versus elvers compared to more inland areas. In addition, the number of glass eels per pound is higher compared to the number of elvers in a pound. Therefore, if only glass eels are harvested, the aquaculture facility would have a higher yield (in number of eels) available for grow out. Other benefits from directing glass eel harvest to smaller coastal systems include:

- 1) Decrease potential interaction with parasitic swim bladder nematode (Hein et.al., 2015)
- 2) Increased survival in the aquaculture facility if harvested before first feeding event
- 3) Harvested eels coming from impaired areas have not started to feed and bioaccumulate contaminants

Primary Glass Eel Harvest Sites (~ 6.2 miles average length):

- 1.) Bradley Creek, New Hanover County (~2.5 miles; Figure 2, Figure 14)
- 2.) Futch Creek, New Hanover and Pender counties (~2.1 miles; Figure 3, Figure 14)
- 3.) Goose Creek, Carteret County (~1.2 miles; Figure 4, Figure 15)
- 4.) Howe Creek, New Hanover County (~2.8 miles; Figure 5, Figure 14)
- 5.) Mill Creek, Pender County (~0.9 miles; Figure 6, Figure 16)
- 6.) Queen Creek, Onslow County (~6.8 miles; Figure 7, Figure 17)
- 7.) Sanders Creek, Carteret County (~0.9 miles; Figure 8, Figure 15)
- 8.) Saucepan Creek, Brunswick County (~3.2 miles; Figure 9, Figure 18)
- 9.) Shallotte River, Brunswick County (~6.9 miles; Figure 9, Figure 19)
- 10.) Whiskey Creek, New Hanover County (~1.3 miles; Figure 10, Figure 14)
- 11.) White Oak River, Carteret, Craven, Jones, and Onslow Counties (~40 miles, Figure 11, Figure 20)

Alternate Sites

Proposed alternate harvest sites are small creek systems located near the mouth of the Neuse River (Figure 1) and meet one or more of the following conditions: 1) drainage basin includes residential areas, 2) drainage basin includes industrial areas, 3) drainage basin includes agricultural areas, 4) small waterbody less than 7 miles in length or 5) classified as “impaired” by the NCDWR (Table 3).

Alternate Glass Eel Harvest Sites (Neuse River area) (~3.0 miles average length):

- 1.) Dawson Creek, Pamlico County (~5.4 miles; Figure 12, Figure 21)
- 2.) Orchard Creek, Pamlico County (~1.9 miles; Figure 12, Figure 22)
- 3.) Pierce Creek, Pamlico County (~1.7 miles; Figure 13, Figure 23)

MONITORING PROGRAM

In addition to Aquaculture Operations/Collection Permit General Conditions in rule (NCMFC Rule 15A NCAC 03O .0502) and Aquaculture Operations/Collection Permits Specific Permit Conditions (NCMFC Rule 15A NCAC 03O .0503 F), to monitor and regulate the harvest of glass eels, the NCDMF will issue an Aquaculture Collection Permit (ACP) to the AEF with additional permit conditions specific to the N.C. Aquaculture Plan that only apply while engaged in glass eel harvest (ACP) or grow out (AOP) activities authorized under the N.C. Aquaculture Plan for American Eel. To aid in monitoring and enforcement the NCDMF will limit the number of individuals authorized to harvest under the ACP (1 individual or permittee). The permittee listed on the ACP must possess a valid North Carolina Standard Commercial Fishing License (SCFL) or Retired Standard Commercial Fishing License (RSCFL) issued by the NCDMF. Only the permittee listed on the ACP shall participate in the harvest of glass eels. Any vessels used for glass eel harvest under the ACP shall have a valid North Carolina Commercial Fishing Vessel Registration (CFVR) issued by the NCDMF. Restrictions will be placed on the ACP requiring certain conditions and procedures to be followed, such as:

General Conditions

- Glass eels harvested from N.C. coastal fishing waters shall not be exported until they reach the minimum legal size of nine inches total length.
- No more than one (1) permittee shall be authorized to harvest under the ACP
- No more than two (2) mates will be allowed to assist the permittee while fishing for glass eels
- The permittee and vessel participating in the glass eel harvest must be properly licensed by the NCDMF and abide by all fisheries rules and permit conditions
- Fyke nets and dip nets are the only gear authorized to use for glass eel harvest under the ACP
- No more than fifteen (15) fyke nets and/or dip nets in combination may be fished by the permittee under the ACP
- A fyke net may not be placed within fifty (50) feet of any part of another fyke net
- All gear shall be removed from the water from 12:01 pm on Friday through 12:01 pm on Sunday. This creates a 48-hour rest period to allow glass eels to migrate up these smaller systems to help minimize the impact to the spawning stock.
- January 1 through February 28, 2017, fyke and dip nets for glass eel harvest may be fished at all hours during the week. Fyke nets may have their cod ends closed during the day, however from 12:01 pm on Friday through 12:01 pm on Sunday fyke nets may remain in the water but the terminal portion of a fyke net cod end shall contain a rigid device with an opening not less than three (3) inches in diameter and not exceeding six (6) inches in length that is not obstructed by any other portion of the net and dip nets may not be used. This creates a 48-hour rest period to allow glass eels to migrate up these smaller systems to help minimize the impact to the spawning stock.
- Fyke nets shall be fished at least once every twenty-four (24) hours
- March 1 through April 30, 2017, fyke nets and dip nets for glass eel harvest may only be fished and the cod ends closed from two hours before sunset through two hours after sunrise
- During the March 1 through April 30, 2017 period, from two hours after sunrise through two hours before sunset the gear may remain in the water and the terminal portion of a fyke net cod end contain a rigid device with an opening not less than three (3) inches in diameter and not exceeding six (6) inches in length that is not obstructed by any other portion of the net
- Tamper evident tags shall be used to secure the cod ends of the net closed while the gear is fishing
- Tamper evident tags shall be used to secure the cod ends open when the gear is not fishing
- Immediately report to NCDMF if a net is tampered with including the Net_ID and location of the net and the date and time it was noticed
- Report to NCDMF the Net_ID for each fyke net when removed from the water. If a net is moved, the new coordinates must be reported once the net is reset. If multiple nets are moved the same day, coordinates may be provided once all the nets have been reset. If a net(s) is removed and not reset, it must be reported upon returning to the landing site.
- Purchased American eels (glass eels, elvers, or yellow eels) shall be kept separate from eels that were harvested as glass eels within N.C. and grown out to yellow eels
- All gear and harvest restrictions detailed in the Method of Harvest section will be listed as conditions under the ACP

Before Harvest

Fishermen harvesting glass eels under the ACP shall call-in to NCDMF the following information:

- GPS coordinates of each net once they are set, if multiple nets are set the same day, coordinates can be provided once all the nets have been set.
- Daily:
 - Landing site they will be leaving from and returning to once fishing activity is complete
 - Names of individual(s) involved
 - Number of fyke nets (including assigned Net_ID) and dip nets that will be used
 - Description and registration number of the boat(s) to be used for harvest
 - Description and license plate number of the vehicle(s) to be used for transport

During Harvest

- Require the use of a 1/8-inch bar mesh non-stretchable mesh grading screen to cull the glass eels at the harvest site to limit the harvest of elvers
- Record the time the gear began and ended fishing, and the number of pounds of glass eels harvested from each piece of gear (individual fyke or dip net). These data will be used to calculate catch-per-unit-effort (CPUE).
- Record the weight of elvers captured from each piece of gear

After Harvest

- Require fisherman harvesting glass eels under the ACP to call-in to NCDMF the total harvest in pounds prior to leaving the last harvest site and report an estimated time of arrival (within a 15 minute time frame) at the landing site. Zero pounds shall only be reported if no glass eels are harvested.
- Once all gear is fished, the fisherman must travel directly to the designated landing site
- Once at the designated landing site all eels must be offloaded and transported directly to the AEF facility
- Require AEF to hold all glass eels that perish during transport to the facility and all eels that perish in the facility for inspection
- All glass eels that perish during transport will count against the 200 lb. harvest limit
- Require AEF to call-in or email to NCDMF by 12:00 pm (noon) each day the total harvest for the previous day in pounds to the nearest 0.1 lb. of glass eels received (including those days when no glass eel harvest occurred). Zero pounds shall only be reported if no glass eels are harvested and received.
- Require AEF to provide CPUE data from each piece of gear (individual fyke or dip net) by the 10th of the following month.

The above conditions and procedures will allow the NCDMF to limit the effort (amount of gear and number of individuals) involved in glass eel harvest under the Aquaculture Plan. Dual reporting by the fishermen on the water and by the AEF will allow the NCDMF to monitor the 200 lb. glass eel harvest limit. These controls will allow the NCDMF to ensure the glass eel harvest does not exceed what is authorized in the Aquaculture Plan. Any harvest that exceeds the 200 lb. harvest limit shall be immediately returned to the water where captured.

ENFORCEMENT CAPABILITIES AND PENALTIES FOR VIOLATIONS

The North Carolina Marine Patrol has four officers stationed in Brunswick County, three officers in New Hanover County, two officers in Pender County, three officers in Onslow County, six officers in Carteret County, two officers in Craven County, and two officers in Pamlico County.

Violations of the ACP permit conditions will be addressed according to the NCDMF SOP for Permit Violations and suspensions will be carried out in accordance with NCMFC Rule 15A NCAC 03O .0504 (see Appendix II).

All charges for violations will be charged under N.C. General Statute § 113-187 (d) (4): Violating the provisions of a special permit or gear license issued by the Department. All fines will be at the discretion of the court, however, fines may not always be levied for the first offense.

The call-in requirements under the Monitoring Program section will allow enforcement officers to know when and where lawful harvest is occurring. It will also allow for random inspections to take place at the harvest and landing sites to ensure the conditions of the permit and all applicable NCMFC rules and regulations are being followed. Random inspections will also be performed at the aquaculture facility to ensure the proper records are being kept to account for all eels in the facility as required under N.C. General Statute § 113-170.3 and NCMFC Rule 15A NCAC 03O .0502 (8) (see Appendix III).

SIZE LIMIT EXEMPTION

The intent is to raise the eels as close as possible to the legal minimum size of 9 inches total length prior to sale. Given the difficulty in measuring live eels, prior to sale, all eels shall be graded using a ½-inch by ½-inch non-stretchable mesh grading screen. Any eels that do not pass through the grading screen may be sold and any that pass through the grading screen shall remain in the possession of the AEF until such time as the eels are large enough to not pass through the grading screen. On inspection, a 10% tolerance by number will be allowed for eels that pass through the grading screen.

PRIOR APPROVAL OF PERMITS

The AEF has all necessary permit approvals in place with the exception of an Aquaculture Collection Permit from the NCDMF. This permit will be issued upon approval of the Aquaculture Plan by the ASMFC American Eel Management Board. The permits currently held by the AEF are:

- North Carolina Department of Agriculture Aquaculture Operation Permit valid until 2017
- North Carolina Division of Marine Fisheries Aquaculture Operation Permit renewed annually. To be eligible for an ACP, an Aquaculture Operation Permit is required (see Appendix IV: NC Marine Fisheries Commission (NCMFC) Rule 15A NCAC 03O .0501 (e))
- US Fish & Wildlife Import / Export permit renewed annually
- North Carolina Division of Marine Fisheries Standard Commercial Fishing License
- North Carolina Division of Marine Fisheries Dealer License
- North Carolina Farmer Tax Exempt Permit

As noted in NCMFC Rule 15A NCAC 03O .0501 the appropriate licenses from the Division of Marine Fisheries must be held by the permittee. A North Carolina Standard Commercial Fishing license is required to fish commercial gear such as fyke nets, a Commercial Fishing Vessel Registration (CFVR) is required for vessels used to harvest seafood and a Dealer License is required to sell fish taken from the coastal fishing waters.

DESCRIPTION OF THE MARKET

The AEF indicated they have identified clients for food and bait markets domestically as well as overseas. The long-term intent is to develop and expand the US domestic market as much as possible. For proprietary business reasons specific details were not provided.

DESCRIPTION OF THE FACILITY

American Eel Farm

Design, Capacities and Technical Facts

The AEF, located in Trenton, North Carolina, is a state-of-the-art Recirculated Aquaculture System (RAS) which has been operating since 2003 (<https://www.youtube.com/watch?v=4YnQn7aivw4>). It is a proven Danish system designed overseas for eel grow-out and imported to the US. The AEF was initially operated in North Carolina as the North Carolina Eel Farm (corporate filing date May 21, 2002). The facility has a 13-year operation history. There is no other facility specifically designed to grow out glass eels to yellow eels at a commercial level in the US. The facility has the capacity to grow out in excess of 900 pounds of glass eels. There is historical proprietary data on a large scale commercial level that no current fish farm, University, or government agency in the US can match.

The facility has three separate closed recirculating systems. The two main systems are identical RAS units each containing twelve (12) 1,000 gallon tanks and independent water treatment systems for both RAS units. Each RAS contains twelve (12) raceway tanks with 900 US usable gallons. The tanks are not operated at full capacity since eels are capable of escaping the tanks. Each raceway tank is equipped with a fine mesh screen outlet cover with a motorized brush system, to keep the mesh clean. In each tank there are also water level switches that activate an alarm if the water level gets too high. Each tank is outfitted with aeration and back-up emergency oxygen lines which automatically activate in case of a power outage. Each tank also has the ability to be isolated from the system and individually cleaned if necessary without draining entire system.

There are three automatic feeders for the first three tanks that are ideal for the small eels. As they are graded the larger eels can be fed by hand or additional automatic feeders can be installed.

There is a new (1 year old) Pacific Oxyguard water quality monitoring system that monitors pH and oxygen saturation levels. The system has the ability to send alarms remotely and is programmed to call to a farm manager's cell phone if oxygen levels drop or the pH levels

fluctuate. The system can be expanded by adding more test probes and programming if desired.

This system design is based on proven *Anguilla anguilla*, *A. mossambica*, *A. bicolor* and *A. marmorata* aquaculture techniques. The systems are technically sound, energy efficient, and easy to operate. The system has been successful with American eels as proven by recorded growth rates, low food conversions and low incidence of disease and mortality.

Attached to those 24 tanks is a complete water treatment unit equipped with a HydroTech drum filter type 803 / 40 micron mechanical filtration unit. This unit has a max flow of 31,500 gal/hour or 63,000 gal/hour if both sections are in operation. The two drum filters sieve feces and other large particles out of the water. The filters are continuously sprayed (adjustable timing possible) with water to self-clean. The waste water runoff from this event drains into a small channel within the drum filter and then drains into a system pipe which gravity feeds into the main channel in the tank room that runs the full distance from tank #1 to tank #24 where the waste water is then pumped into a small pond on the property by a sump pump through a 12" PVC drain pipe.

After mechanical filtration, water is gravity fed into 2 parallel 18 foot tall silos (four total for both sections) with patented Inter Aqua Advance (IAA) A/S Moving Bed Bio Reactor (MBBR) technology for biological treatment of the water (removal of ammonia and dissolved organic matter). Each silo has a volume of 1,300 gallons and is 55 % filled with IAA bio-curler bio media. This technology is superior to simple trickling filter bioreactors in that the attached blower motors run constantly to keep the media moving. This also acts as a self-cleaning process within the silos and contributes to the CO₂ stripping process.

With an optimum temperature for the growth of the eel at 24 degree C. or 74 degree F. The water treatment unit will be able to handle up to 250 lb. dry feed per day per section (500 lb. per day total). After the MBBR water flows by gravity into a common pump sump.

The water can be circulated with 3 separate pumps (per section, 6 pumps total), one 3 HP Low Head main pump and two 3 HP medium pressure pumps with 20 psi into two oxygen-cones (per section 4 total) for supersaturating of liquid oxygen into the water. In total the 3 pumps give a minimum flow capacity of 31,500 gal/hour (63,000 gal/hour total).

There is a carbon dioxide stripper for tanks #1 - #24 which has counter flow packed tower technology and utilizes structured packing of vacuum formed sheets of PVC. These packing's will provide maximum wettability, thereby maximizing the stripping effort.

The UV system has recently had the bulbs updated. The water passes through the device and the UV lighting assists in disinfecting the water by destabilizing the DNA of germicidal bacteria. However there have been reports that a UV disinfection system is not needed with eels so this system may be reconsidered.

There is a back-up liquid oxygen system tied into the main oxygen source with two air stones per raceway as a safety net. It is serviced simply by attaching the flow meter to a large liquid oxygen tanks. Should there be the need, the main liquid oxygen source would back feed the tanks with 150 PSI automatically.

The system is supported by three deep water wells all of which are operable and are wired with three phase wiring for better conservation as well as on independent breakers so as to always allow for a water source to be actively supplying water. One is about 300' deep and the other

two about 200'. Additionally, there is public water tied into the facility. There is a heating system that can heat the water entering from the wells prior to entering the main water source if needed by passing heated water through several tubes mounted in the well reserve tanks for both sections. These well reserve tanks are equipped with automated on/off valves allowing water to be called automatically from the well when the water level reaches a preset level.

The water is distributed back to the raceway tanks via a common pipe manifold situated on the wall at the end of the tanks, with a separate valve to each tank for maintenance. A flow rate of 31,500 gal/hour (per system or 63,000 gal/hour total) will give an exchange rate of 3 to 5 times/hour to maintain self-cleaning and an adequate oxygen level in the raceway.

There is a third system which has two large 9,000 gallon tanks supported by similar filtration, aeration and small bio-reactors. This system is separate from the other two. Total capacity for AEF is about 50,000 gallons with about 40,000 being usable. Additionally, there is plenty of room to expand on the flat 2 acre site on which the facility is located. With 226 days a year of sun and a mean annual temperature of 70 degrees there is also a great opportunity to develop a medium to large scale aquaponics system on site.

In addition to the main tank room and the state-of-the-art water treatment room there is a main office area, sales office area, a furnished residential area, a full bathroom with laundry, a feed room, packaging room, a mechanical room, an electrical room, storage rooms and two large covered exterior areas one @ 15' X 85' and the other @ 15' X 50'. The grounds are gated and there is a security system with 16 infrared cameras capable of being viewed remotely. The facility has cable connections for internet and TV as well as two satellites for backup. The steel building construction is insulated with pressed foam to help minimize temperature fluctuations on hot or cool days. There is a heating system but it is not necessary to use when system is running due to local climate and the ground water temp of 68 degrees.

With the general geographic location being the Southeast USA along with the well-insulated building the water temperature for maximum growth rate could be efficiently maintained. Trenton, NC has a climate that is very suitable to aquaculture/agriculture in general. The annual average mean temperature is 70 degrees where the ideal temp for grow-out of eels is 74 degrees. There is no snow fall (very rare) and few days below freezing (very rare).

Eel Grow Out

Eels can be stocked in high densities in the raceway tanks. Stocking densities of 300 kg/m³ or 2(+) lb./gal are often seen in eel farms. It is estimated that juvenile eels have an oxygen demand of 300 mg/kg/hour. The liquid oxygen system at the AEF is sufficient to reduce mortality and sustain eels in high densities. Estimated grow out time from the glass eel phase to 9 inches averages around 210 days. Individual eels grow at different rates so total grow out time will be longer. Due to the varying growth rates it is estimated that one-third of the eels will be harvested in 5 - 7 months, another group will be harvested at 8 - 10 months, and the rest will be harvested at 11 - 12 months after harvest.

A large mobile stainless steel grading machine in the main tank room will be used to grade the eels every four to six weeks. A well-managed RAS eel farm can expect a weaning rate of 80 - 90%. Eels feed ratio is greater than 1:1 in most studies depending on the amount of protein in the feed. There are studies in Japan and China that show a faster grow out however this outline is one the AEF is comfortable with.

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TABLES

Table 1. Proposed harvest sites downstream boundaries.

Harvest Site	Point # 1		Point # 2	
	Latitude	Longitude	Latitude	Longitude
Bradley Creek	34° 12.539'N	77° 49.222'W	34° 12.239'N	77° 49.448'W
Futch Creek	34° 18.124'N	77° 44.375'W	34° 17.989'N	77° 44.496'W
Goose Creek	34° 41.564'N	77° 0.326'W	34° 41.361'N	77° 0.966'W
Howe Creek	34° 14.908'N	77° 47.212'W	34° 14.849'N	77° 47.234'W
Mill Creek	34° 20.556'N	77° 42.124'W	34° 20.421'N	77° 42.245'W
Queen Creek	34° 40.202'N	77° 8.442'W	34° 39.850'N	77° 9.110'W
Sanders Creek	34° 42.414'N	76° 57.937'W	34° 42.267'N	76° 58.506'W
Saucepan Creek	33° 54.679'N	78° 22.819'W	33° 54.606'N	78° 22.932'W
Shalotte River	33° 54.612'N	78° 21.777'W	33° 54.828'N	78° 22.365'W
Whiskey Creek	34° 9.462'N	77° 51.201'W	34° 9.280'N	77° 51.424'W
Dawson Creek	34° 59.585'N	76° 45.397'W	34° 59.595'N	76° 45.454'W
Orchard Creek	35° 3.491'N	76° 38.289'W	35° 3.334'N	76° 38.461'W
Pierce Creek	35° 2.447'N	76° 39.734'W	35° 2.371'N	76° 39.785'W
White Oak River	34° 40.929'N	77° 6.737'W	34° 41.241'N	77° 7.028'W

Table 2. Sub Basin and stream characteristics for proposed primary harvest sites.

Sub Basin Unit 14-Digit HUC*	Site Name	Site Type	Sub Basin				Stream							
			Square Acres	Percent Miles	Percent Urban	Percent Agricultural	Percent Developed	Stream Length (approx. miles)	Surface Water Acres	Shellfish Harvest Prohibited - Prohibited Territory Map	Distance to Atlantic Ocean (miles)	Overall Category	Reason Impaired	Coastal/Joint/Inland Waters
03020106020060	Queen Creek (entrance)	Primary	22,549	35.3	18	13	31	6.8	915	small area not prohibited (entrance)	2.9	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg)	coastal (main stem)
	Queen Creek (lower)							6.8		small area not prohibited (entrance)		Impaired (Cat 4)	Shellfish, Fish Tissue (Hg)	
	Queen Creek (mid) Queen Creek (upper)									prohibited		Impaired (Cat 4) Impaired (Cat 4)	Shellfish, Fish Tissue (Hg) Shellfish, Fish Tissue (Hg)	
03020106020040	Sanders Creek (lower)	Primary	8,146	12.8	31	8	39	0.9	73	lower section not prohibited	9.3	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg)	coastal (main stem)
	Sanders Creek (mid) Sanders Creek (upper)									prohibited		Impaired (Cat 5) Impaired (Cat 5)	Shellfish, Fish Tissue (Hg) Shellfish, Fish Tissue (Hg)	
	Goose Creek (lower)	Primary						1.2	233	lower section not prohibited	6.9	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg)	coastal (main stem)
	Goose Creek (upper)									prohibited		Impaired (Cat 5)	Shellfish, Fish Tissue (Hg), Enterrococcus	
03030001040010*	Mill Creek (lower)	Primary	51,667	80.8	18	6	24	0.9	112	prohibited	3.2	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg)	coastal (main stem)
	Mill Creek (upper)									prohibited		Impaired (Cat 5)	Shellfish, Fish Tissue (Hg)	
03030001040020*	Futch Creek (lower) Futch Creek (upper)	Primary	44,860	70.2	43	1	44	2.1	155	prohibited	2.6	Impaired (Cat 5) Impaired (Cat 5)	Shellfish, Fish Tissue (Hg) Shellfish, Fish Tissue (Hg)	
	Howe Creek (Moore Creek)	Primary						2.8	305	prohibited	1.3	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg), Enterrococcus, Dissolved Oxygen, pH, Turbidity, Chlorophyll a	coastal (main stem)
	Bradley Creek (lower)	Primary						2.5	275	prohibited	2.2	no data, Category 4 Hg Only	Fish Tissue (Hg)	coastal (main stem)
	Bradley Creek (upper)									prohibited		Inconclusive Data (Cat 3)	Fish Tissue (Hg)	
	Whiskey Creek	Primary						1.3	72	prohibited	3.5	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg), Enterrococcus	coastal (main stem)
03040207020060	Shallotte River (lower)	Primary	41,271	64.6	17	10	27	6.9	795	lower section not prohibited	1.3	Impaired (Cat 4)	Shellfish, Fecal Coliform, Fish Tissue (Hg), Mercury, Lead, Nickel, Copper, Zinc, Chromium, Cadmium, Arsenic, Dissolved Oxygen, Water Temperature, pH, Turbidity	coastal (main stem)
	Shallotte River (mid)									prohibited			Shellfish, Fecal Coliform, Fish Tissue (Hg)	
	Shallotte River (upper)									prohibited		Impaired (Cat 4)	Shellfish, Fecal Coliform, Fish Tissue (Hg)	
03040207020090	Saucepan Creek	Primary	6,488	10.2	17	3	20	3.2	86	prohibited	0.7	Impaired (Cat 4)	Shellfish, Fecal Coliform, Fish Tissue (Hg)	coastal (main stem)
03020106010010 03020106010020 03020106010040 03020106010031 03020106010030 03020106010060 03020106010050 03020106010070 03020106020020	White Oak River (lower)	Primary	41,270	285.1	5	25	30	40	9,475	lower section not prohibited	3.7	Impaired (Cat 4)	Shellfish, Fish Tissue (Hg)	coastal (main stem)
	White Oak River (mid)									prohibited		Impaired (Cat 5)	Shellfish, Fecal Coliform, Fish Tissue (Hg), Mercury, Lead, Nickel, Copper, Zinc, Chromium, Cadmium, Arsenic, Water Temperature, pH, Turbidity	coastal (main stem)
	White Oak River (upper)									prohibited		Supporting (Cat 2)		inland (upper)

*Indicates the sub-basin contains multiple waterbodies (streams) and the numbers presented are for the sub-basin as whole and not the individual harvest site.

Table 3. Sub Basin and stream characteristics for proposed alternate harvest sites.

Sub Basin Unit 14- Digit HUC*	Site Name	Site Type	Sub Basin				Stream							
			Acres	Square Miles	Percent Urban	Percent Agricultural	Percent Developed	Stream Length (approx. miles)	Surface Water Acres	Shellfish Harvest Prohibited - Territory Map	Distance to Atlantic Ocean (miles)	Overall Category	Reason Impaired	Coastal/Joint/Inland Waters
03020204060020*	Orchard Creek	Alternate	30,685	48.0	1	4	5	1.9	123	prohibited	35.3	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg)	coastal
03020204060010*	Pierce Creek	Alternate	20,349	31.8	4	12	16	1.7	59	prohibited	36.8	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg)	coastal
03020204040010	Dawson Creek (lower)	Alternate	21,288	33.3	5	25	30	5.4	355	prohibited	42.6	Impaired (Cat 5)	Shellfish, Fish Tissue (Hg), Enterococcus, Recreation Advisory	coastal (lower)
	Dawson Creek (mid)											Supporting (Cat 2)		inland (upper)
	Dawson Creek (upper)											Impaired (Cat 5)	Fish Tissue (Hg), Benthos Severe	inland (upper)

*Indicates the sub-basin contains multiple waterbodies (streams) and the numbers presented are for the sub-basin as whole and not the individual harvest site.

FIGURES

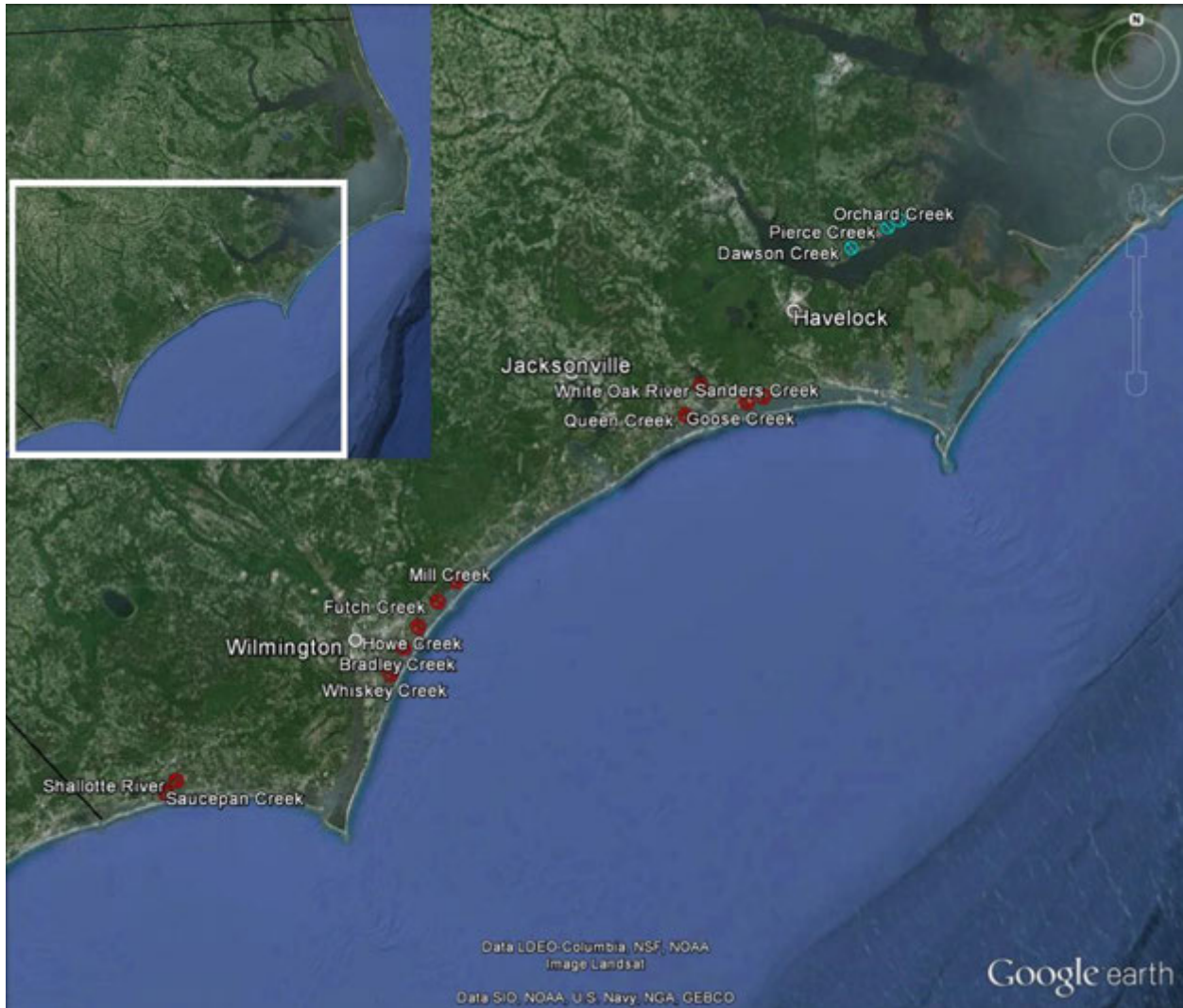


Figure 1. General location of proposed primary (red circles) and alternate (blue circles) harvest sites along the North Carolina coast.

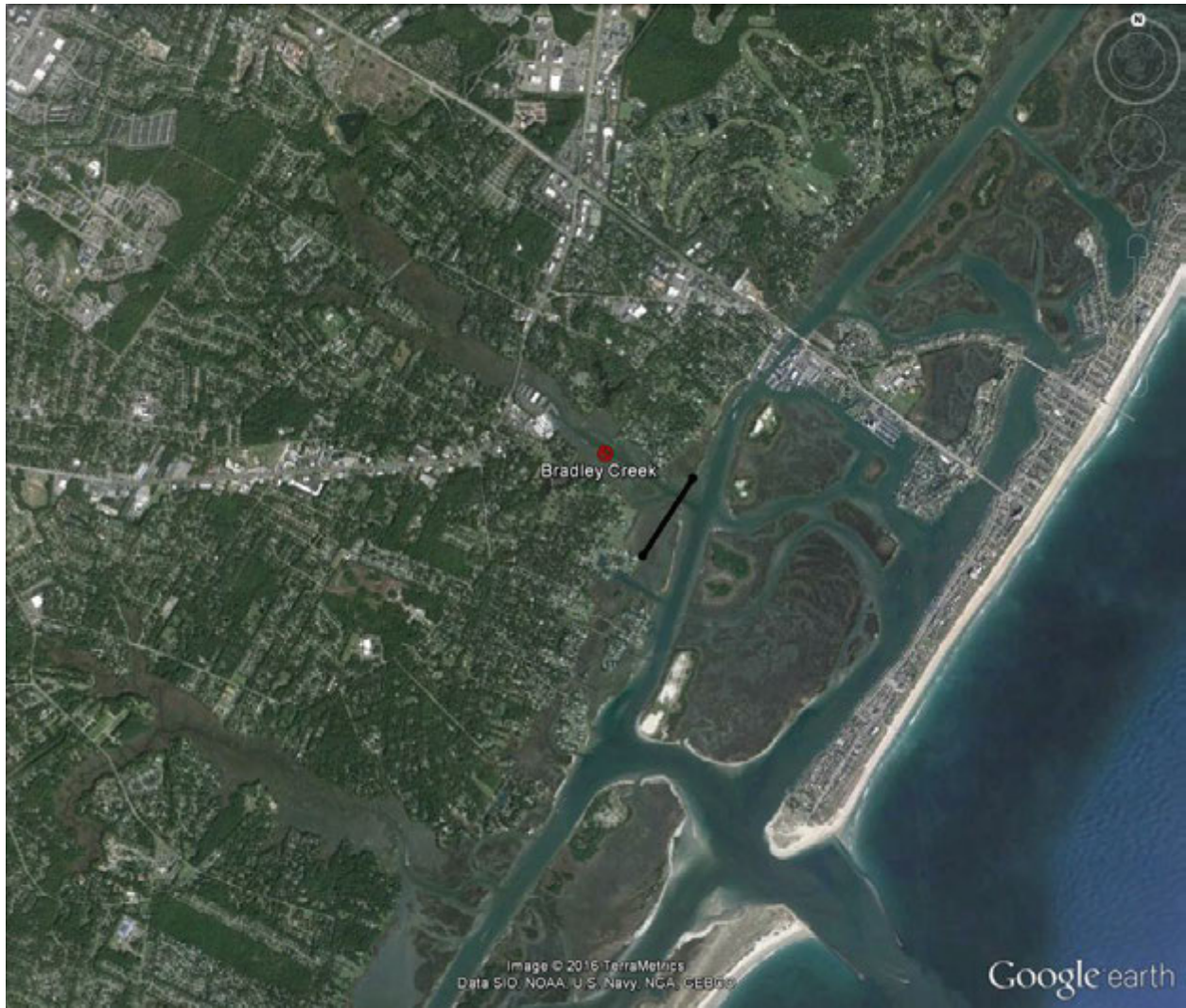


Figure 2. Bradley Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

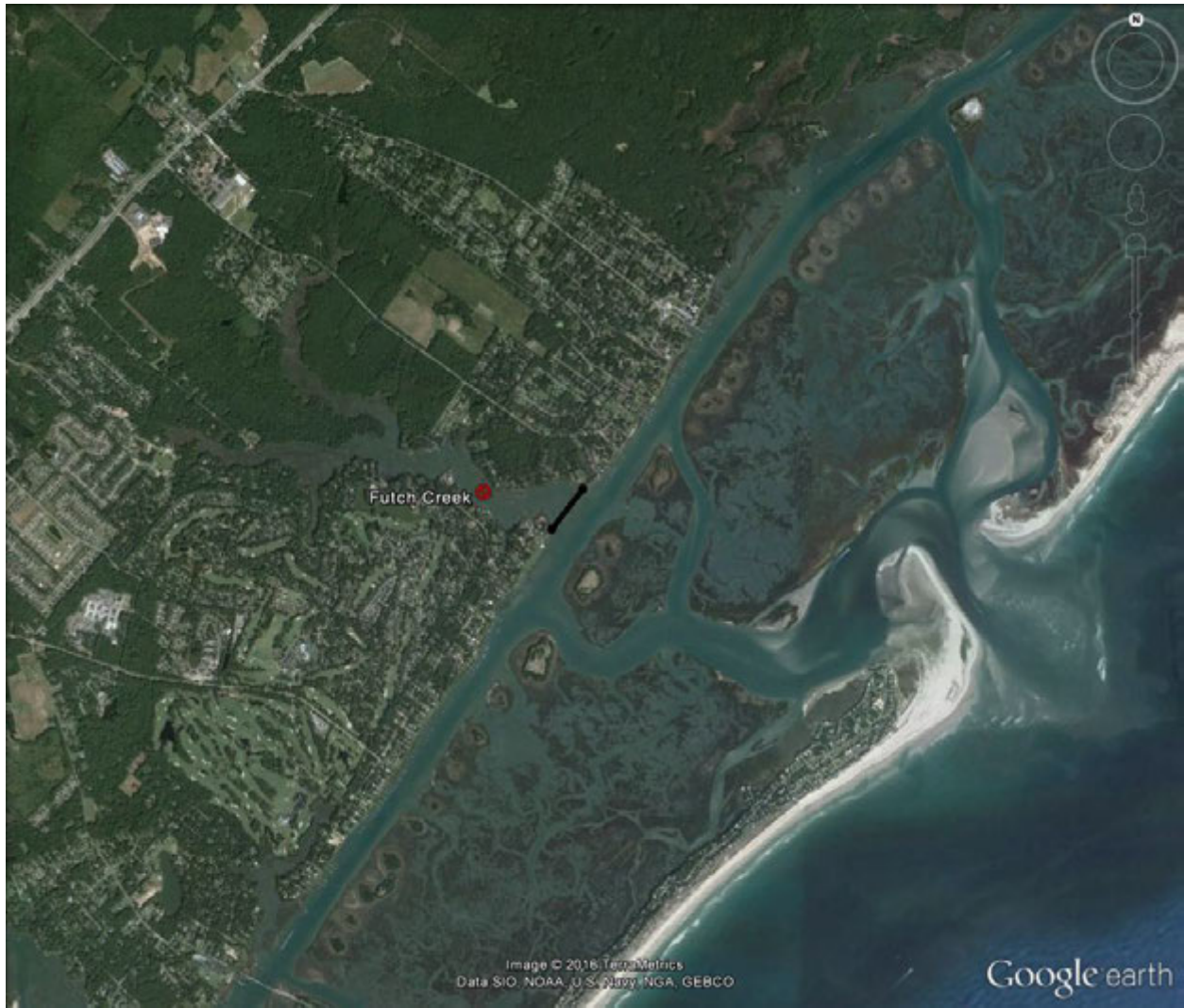


Figure 3. Futch Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

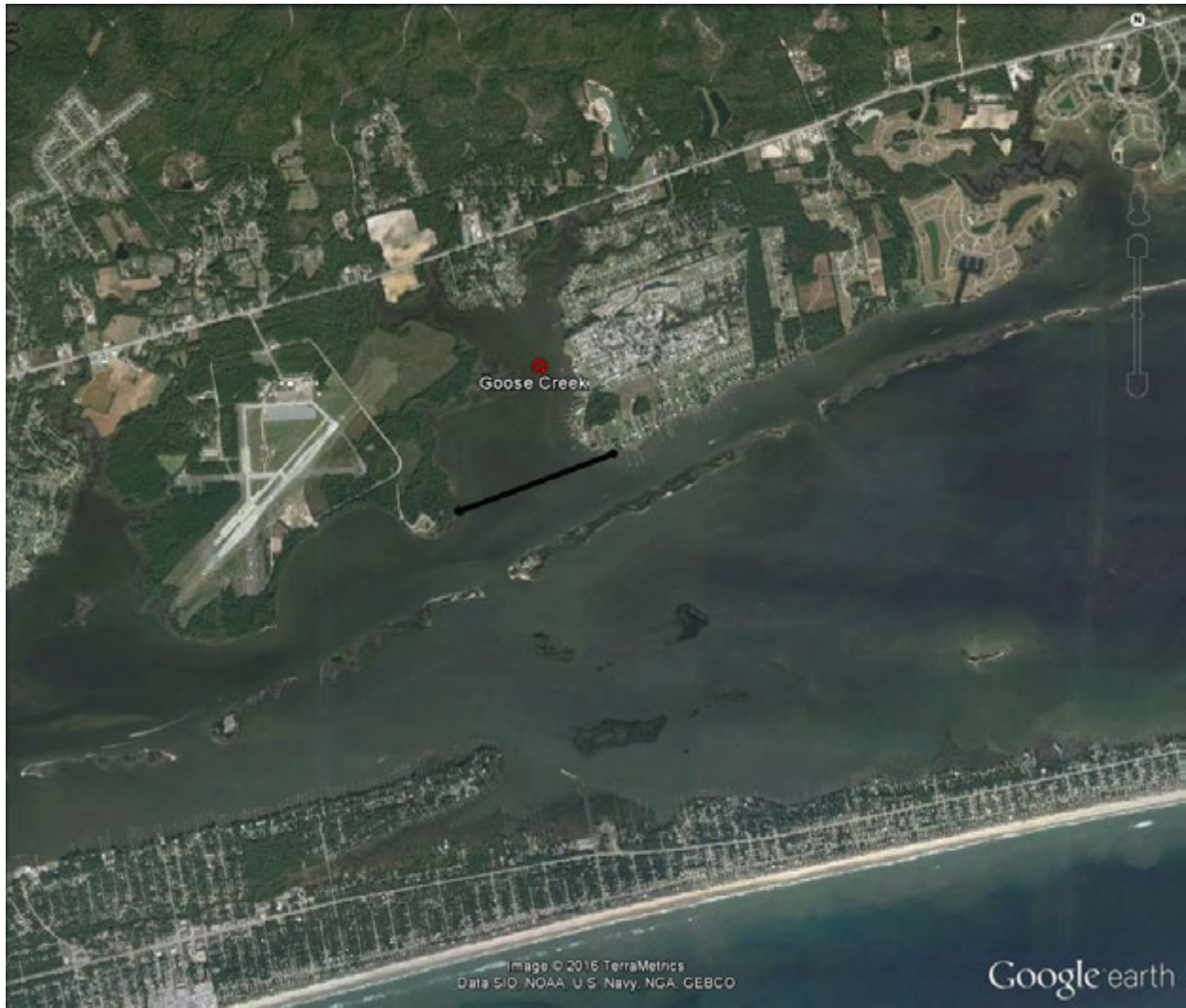


Figure 4. Goose Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

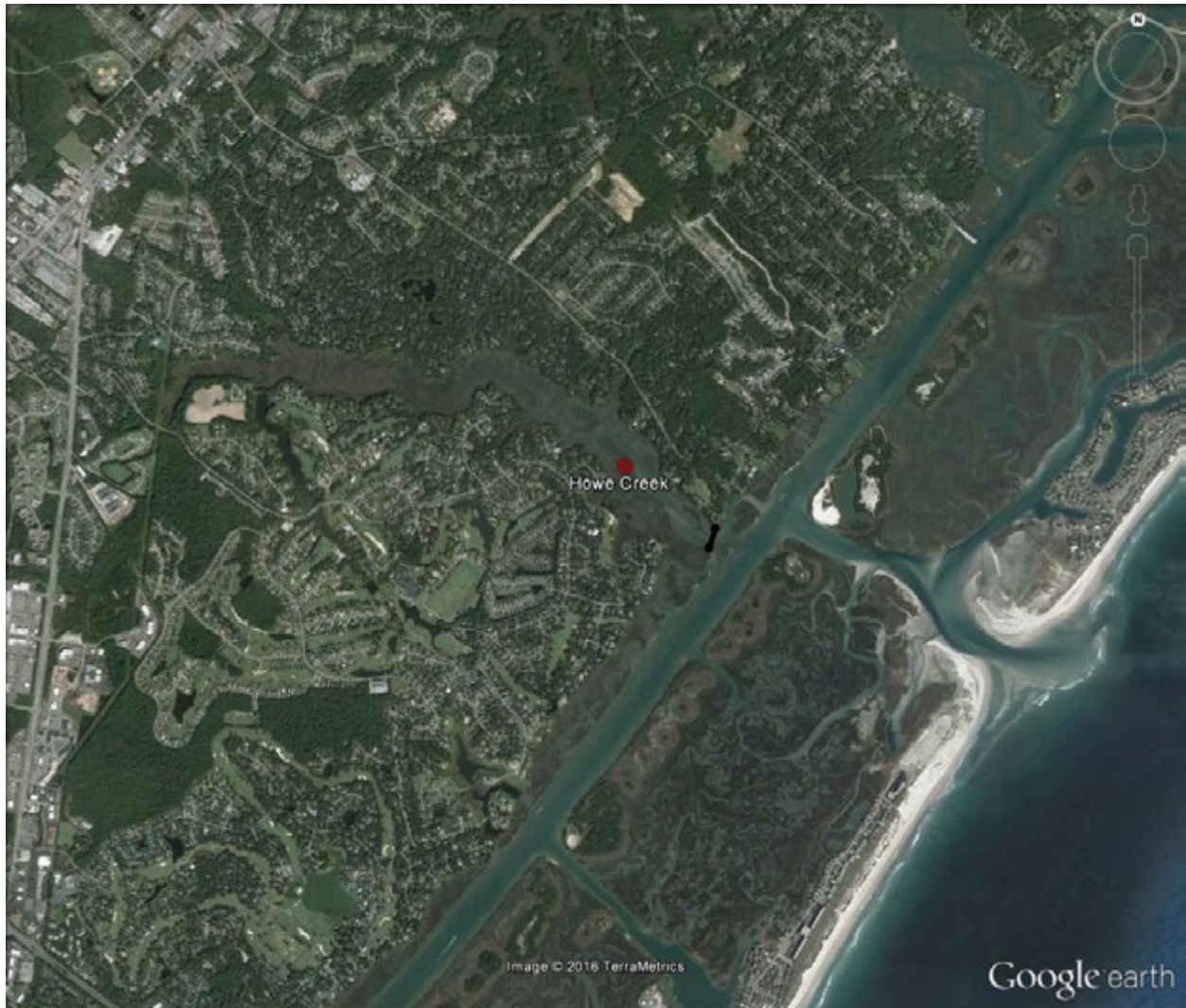


Figure 5. Howe Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

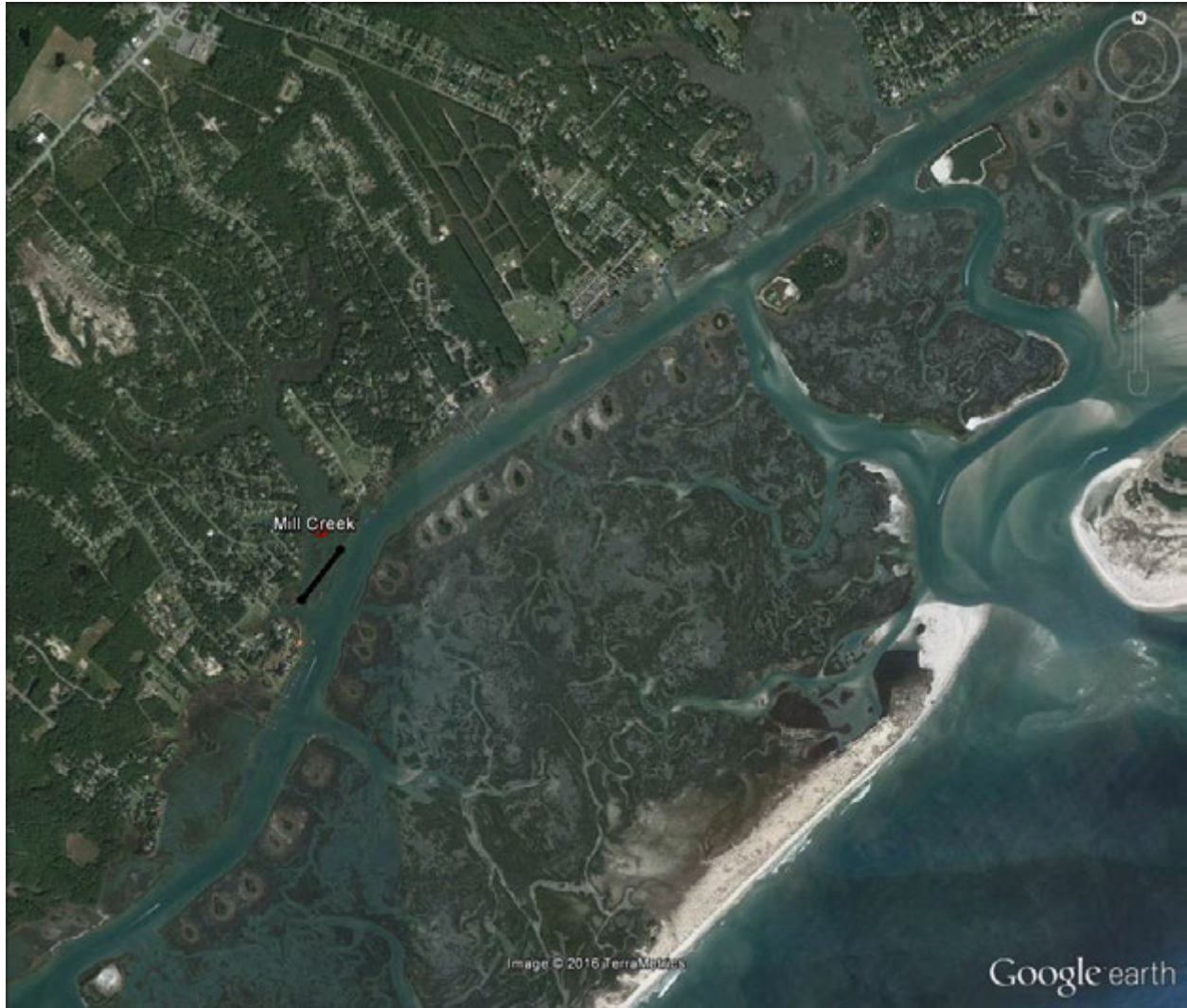


Figure 6. Mill Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

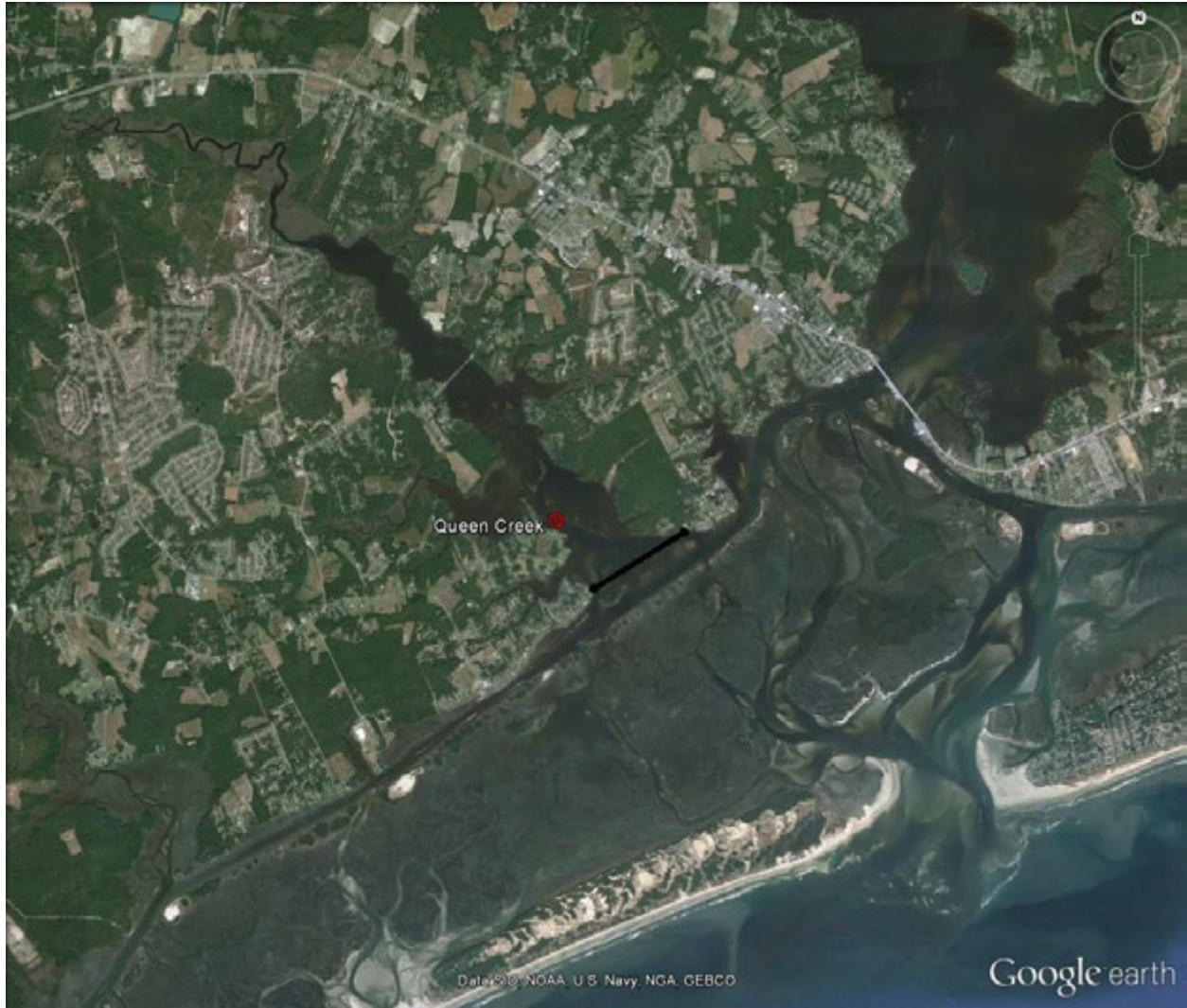


Figure 7. Queen Creek harvest site. The solid line represents the downstream glass eel harvest boundary.



Figure 8. Sanders Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

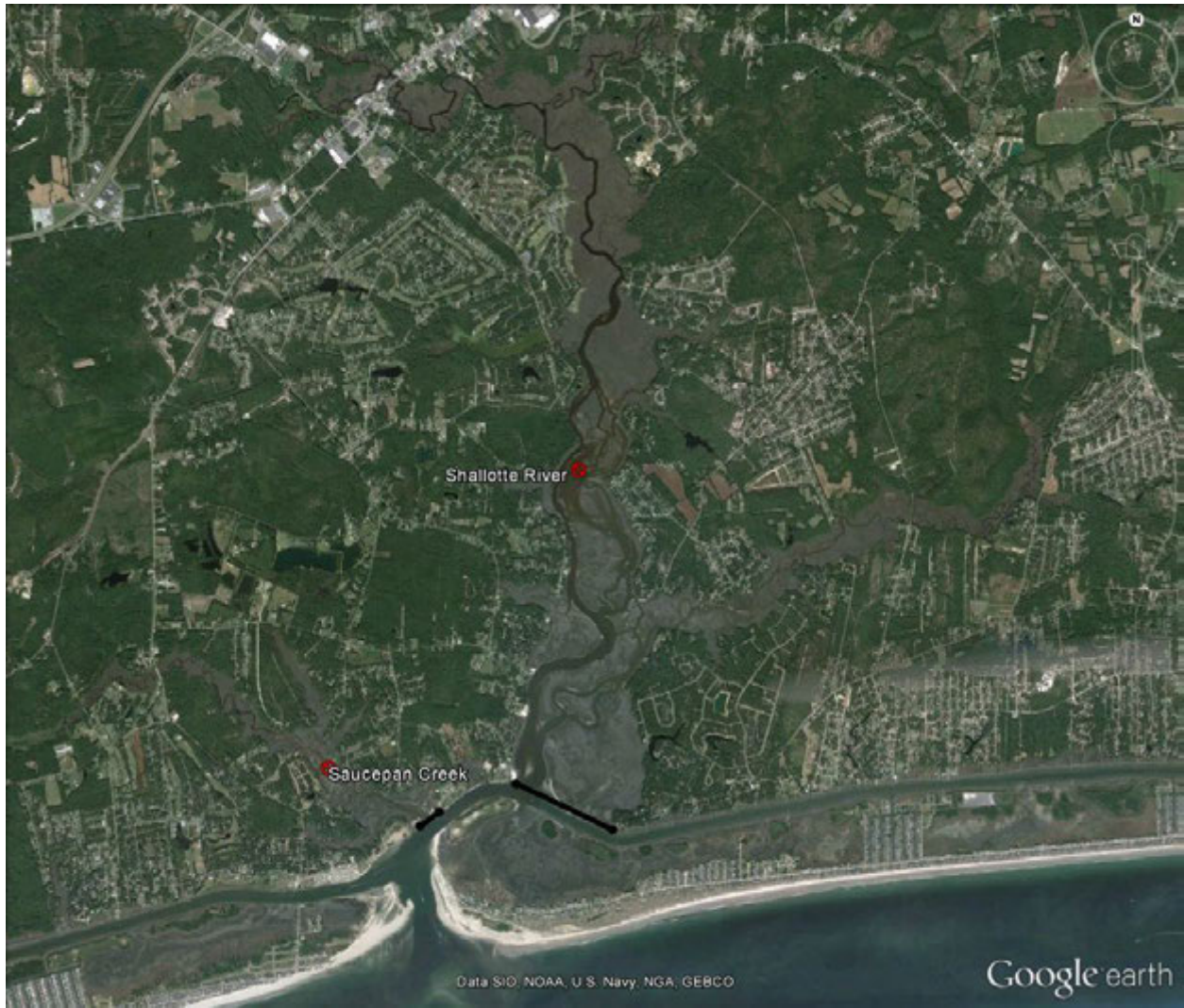


Figure 9. Saucepan Creek and Shallotte River harvest sites. The solid lines represent the downstream glass eel harvest boundaries

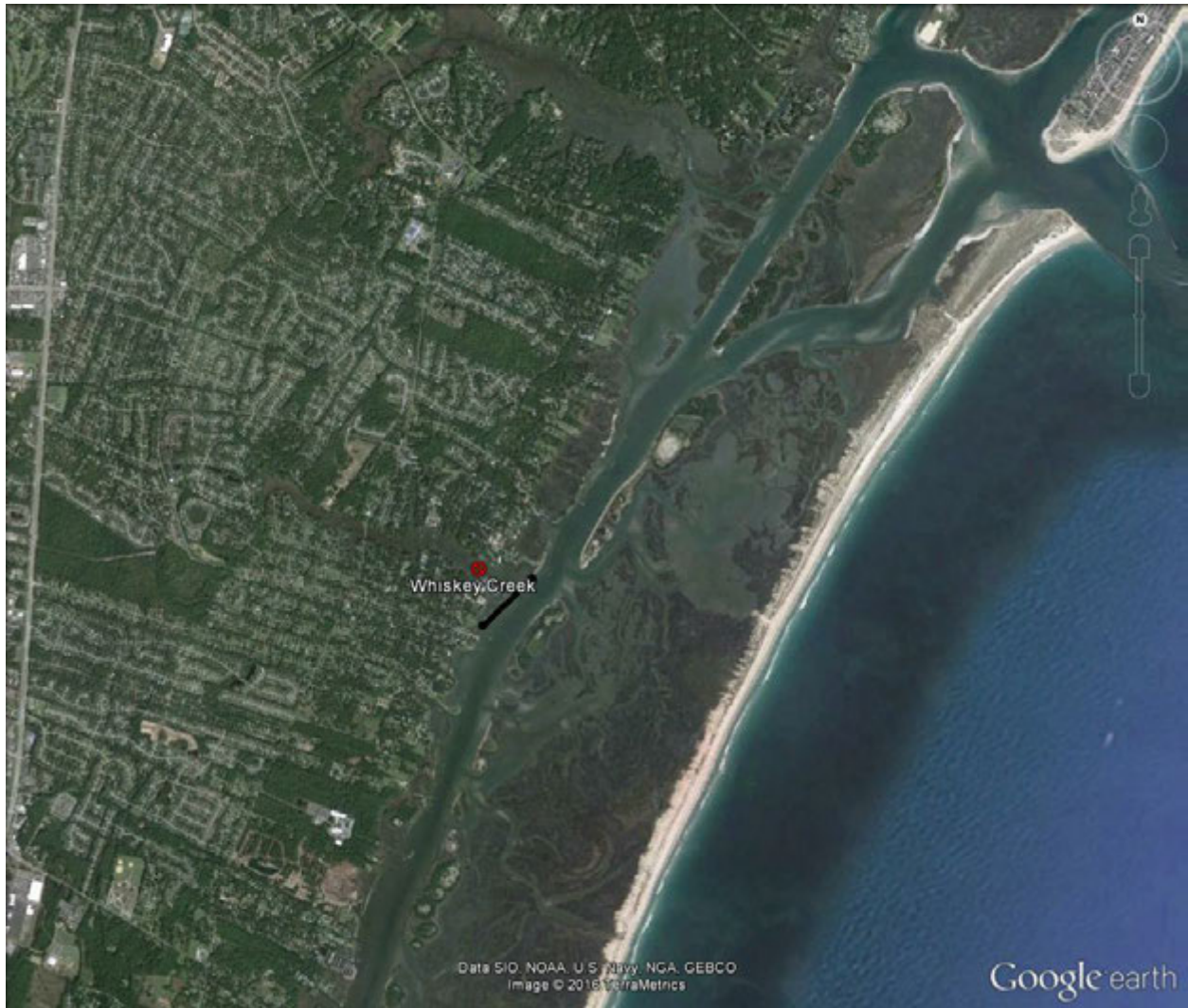


Figure 10. Whiskey Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

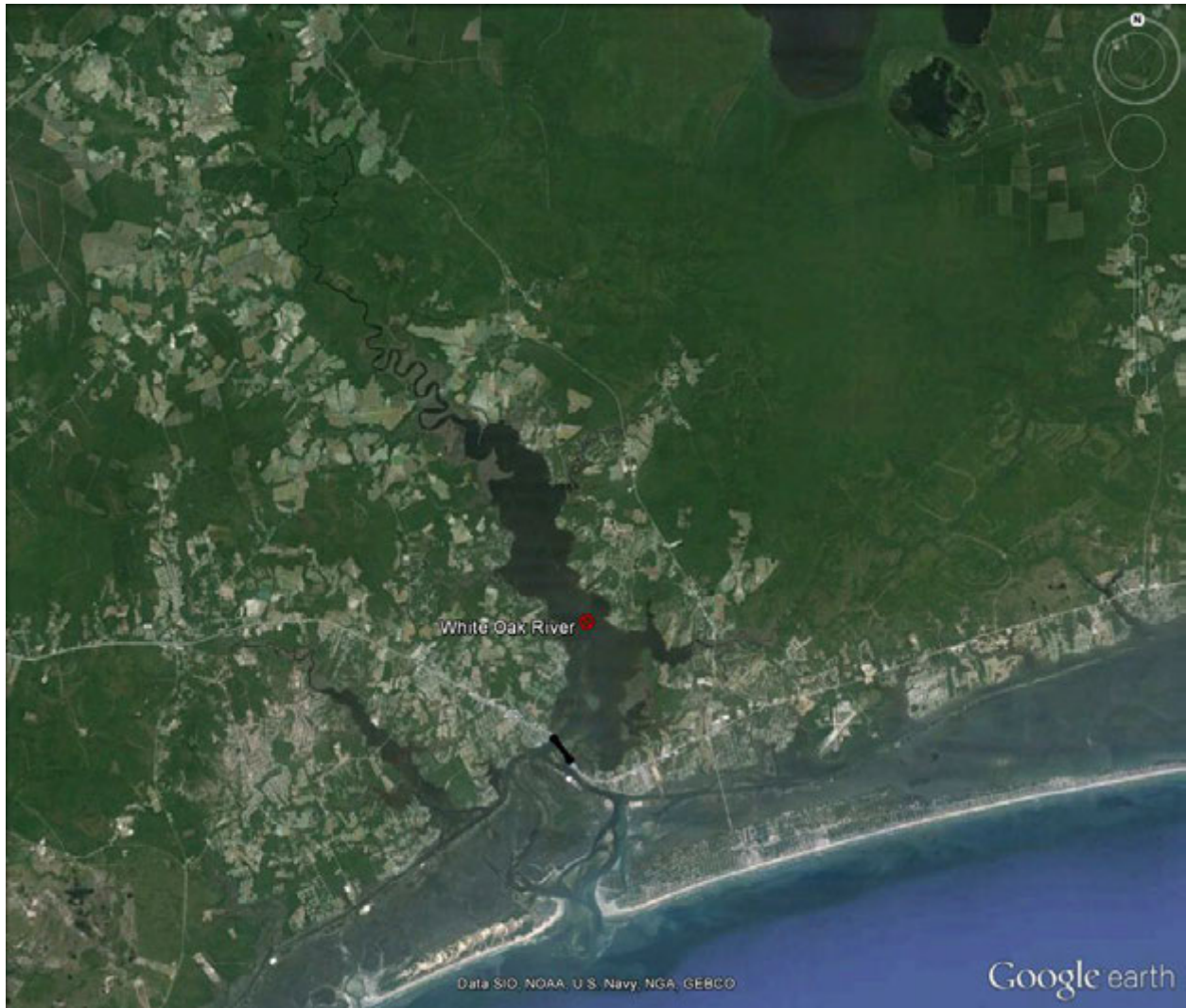


Figure 11. White Oak River harvest site. The solid line represents the downstream glass eel harvest boundary.



Figure 12. Dawson Creek harvest site. The solid line represents the downstream glass eel harvest boundary.

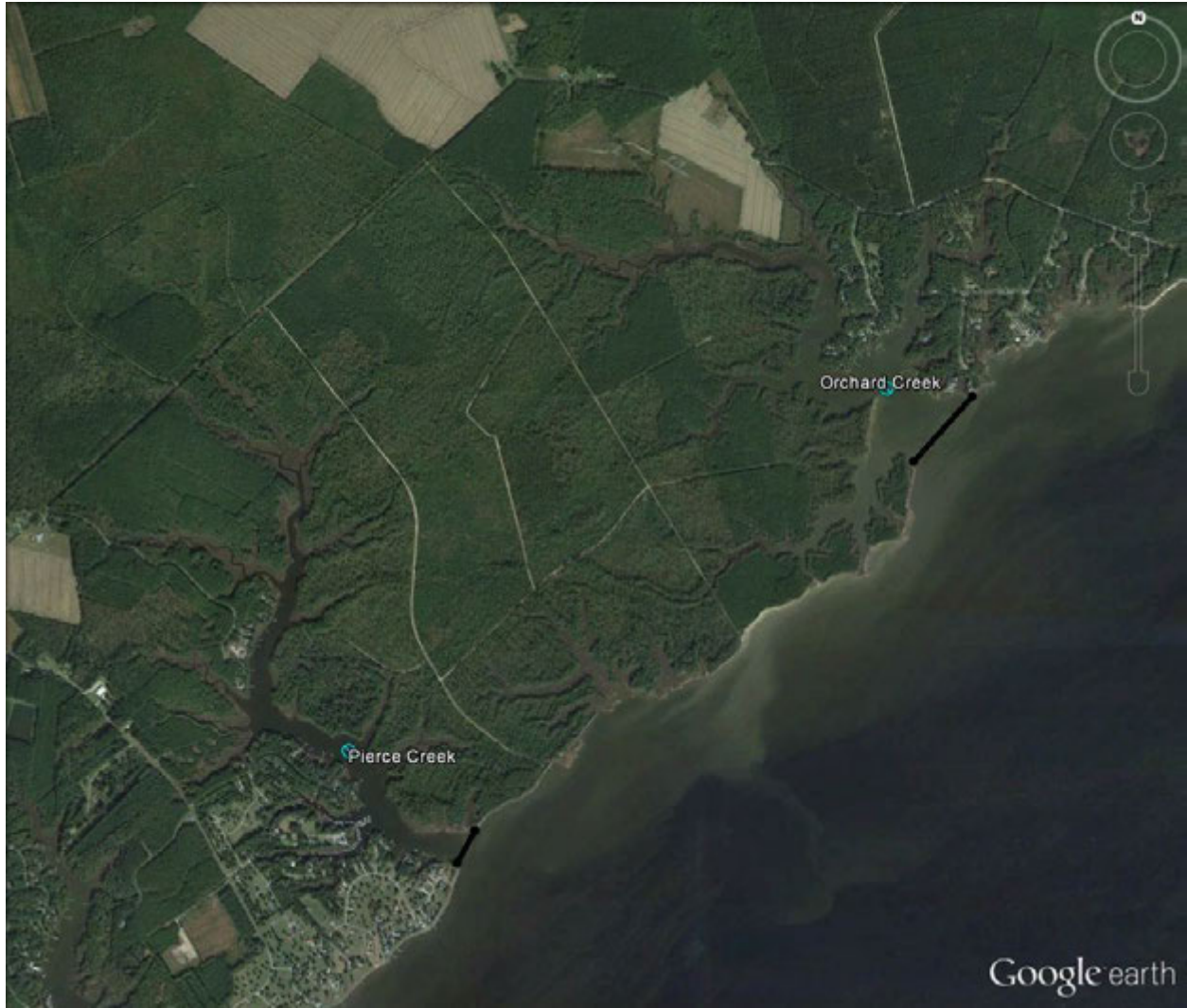


Figure 13. Orchard Creek and Pierce Creek harvest sites. The solid line represents the downstream glass eel harvest boundary.

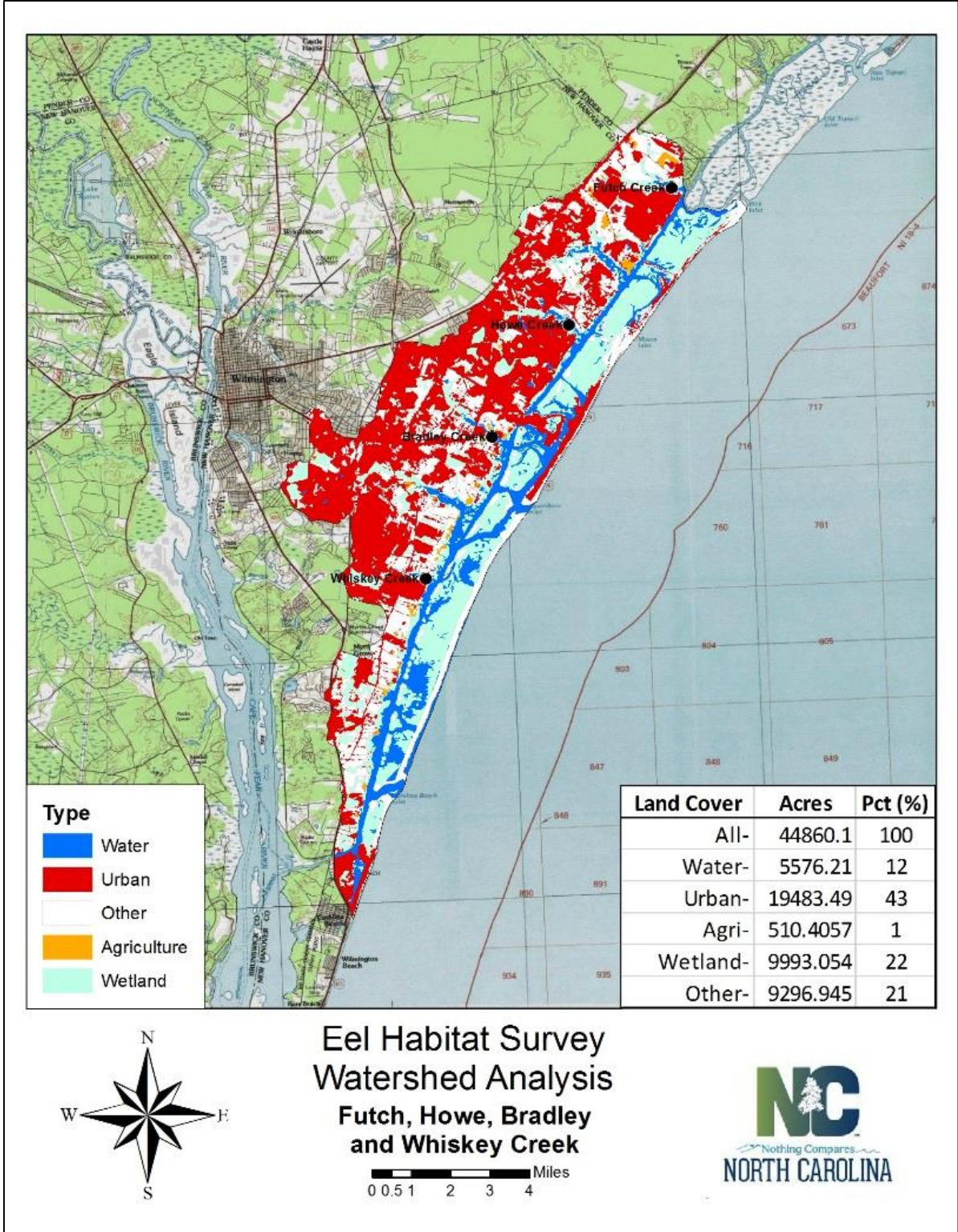


Figure 14. Land use characteristics for the sub-basin containing Bradley, Futch, Howe, and Whiskey creeks.

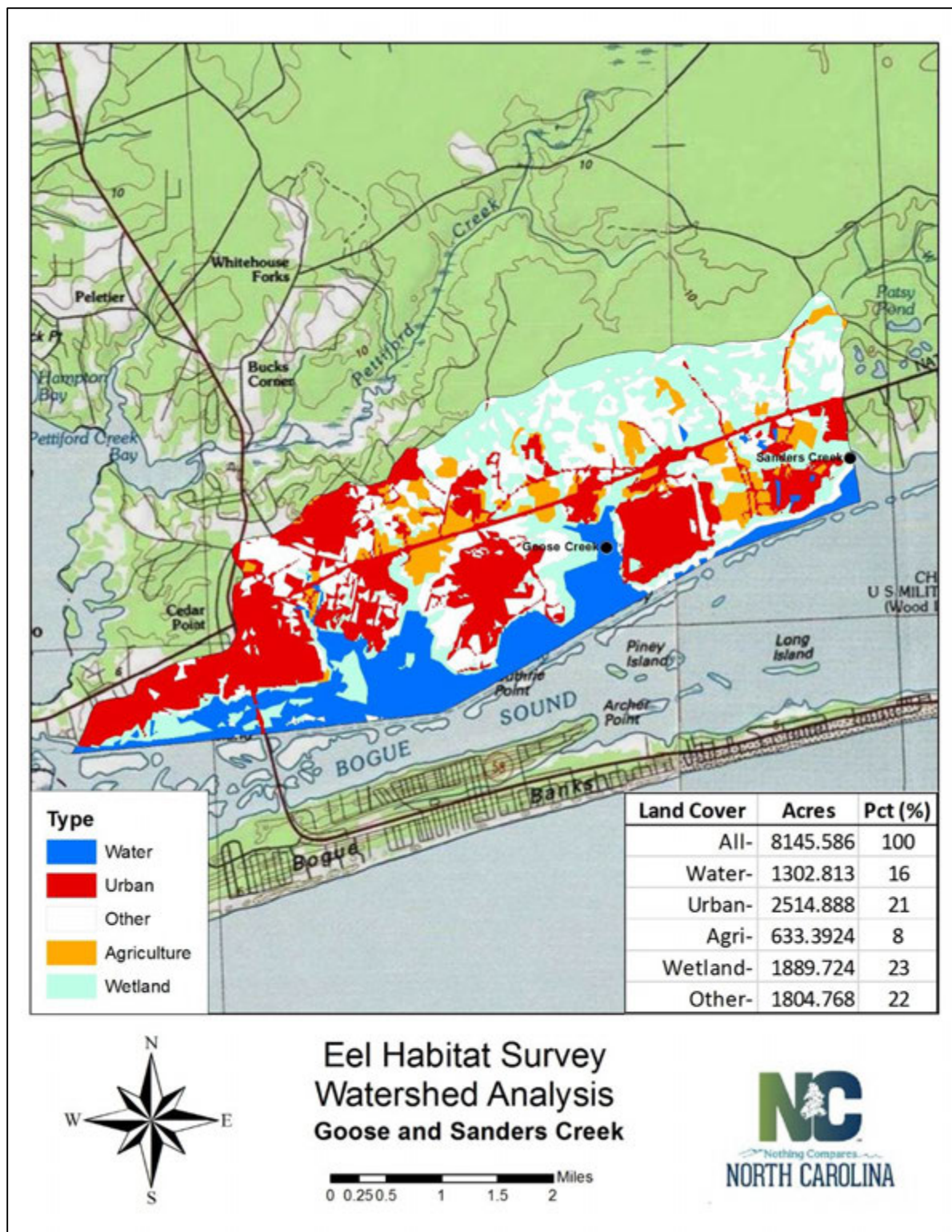


Figure 15. Land use characteristics for the sub-basin containing Goose and Sanders creeks.

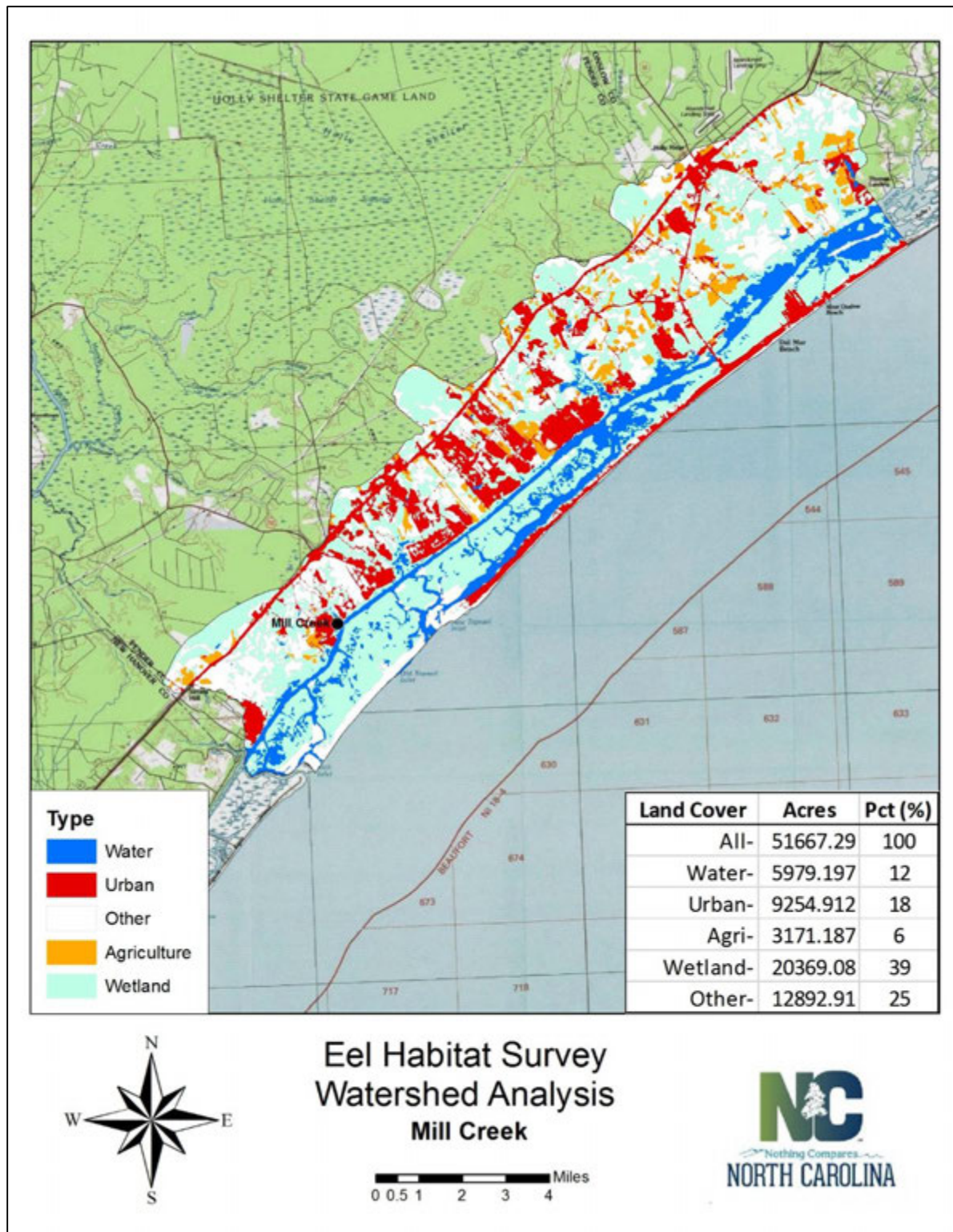


Figure 16. Land use characteristics for the sub-basin containing Mill Creek.

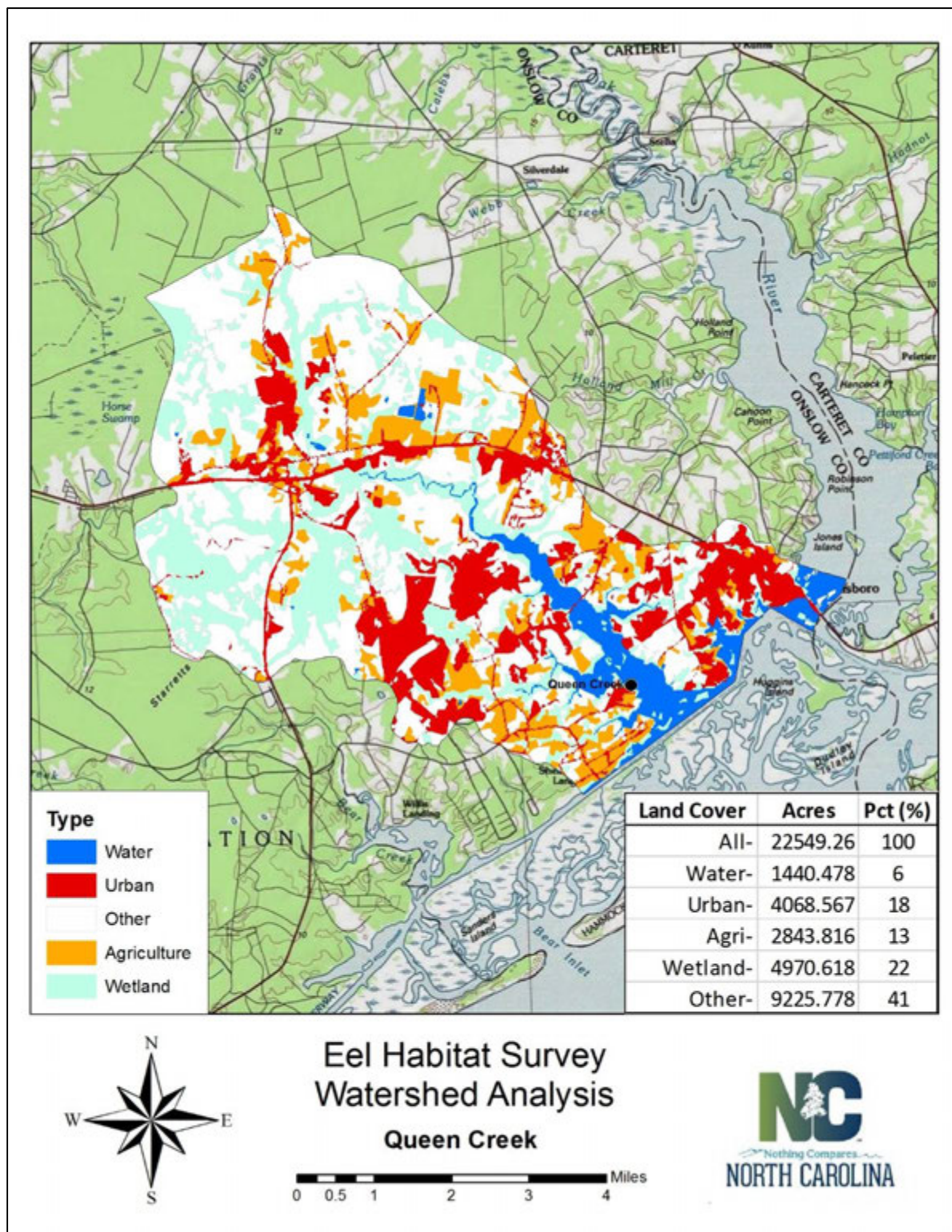


Figure 17. Land use characteristics for the sub-basin containing Queen Creek.

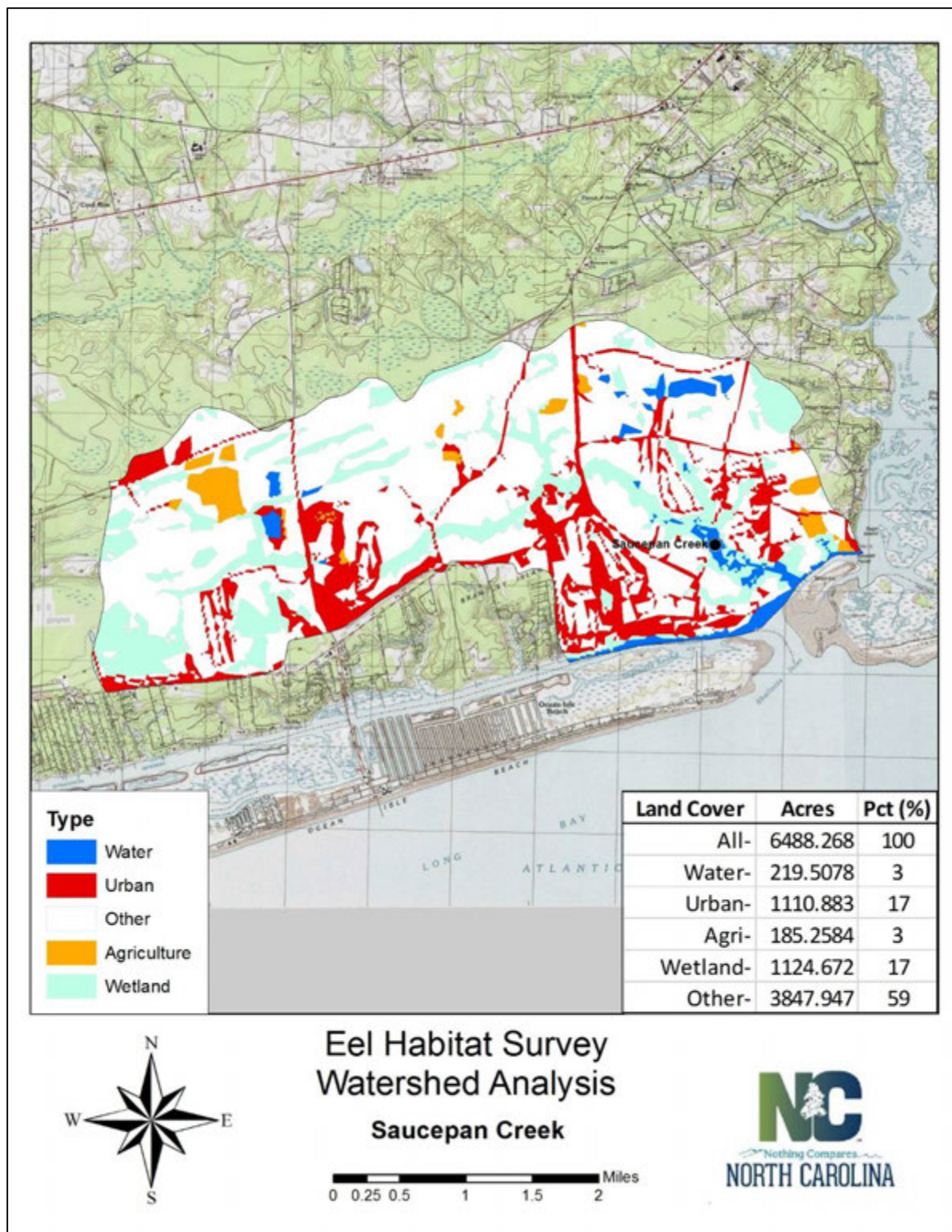


Figure 18. Land use characteristics for the sub-basin containing Saucepan Creek.

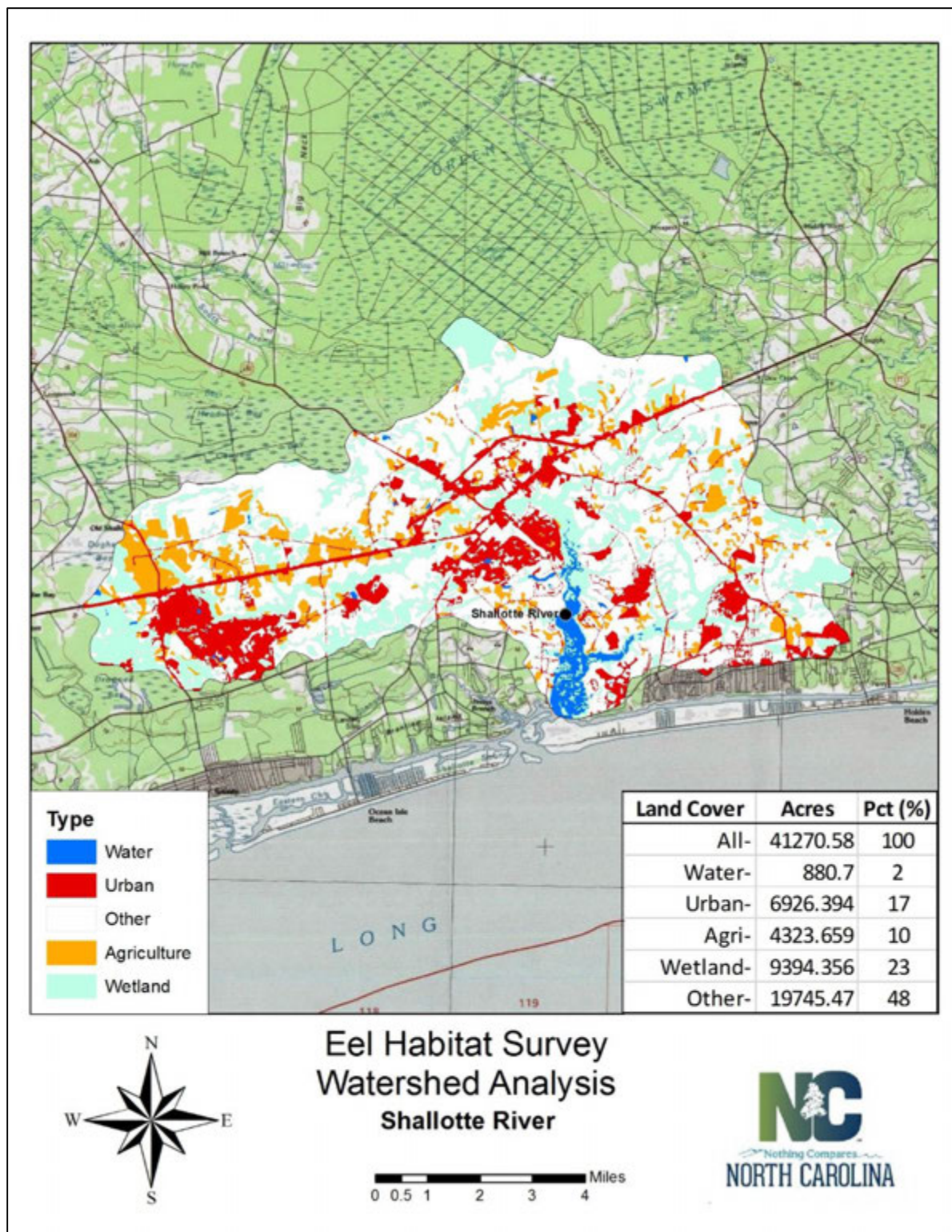


Figure 19. Land use characteristics for the sub-basin containing the Shallotte River.

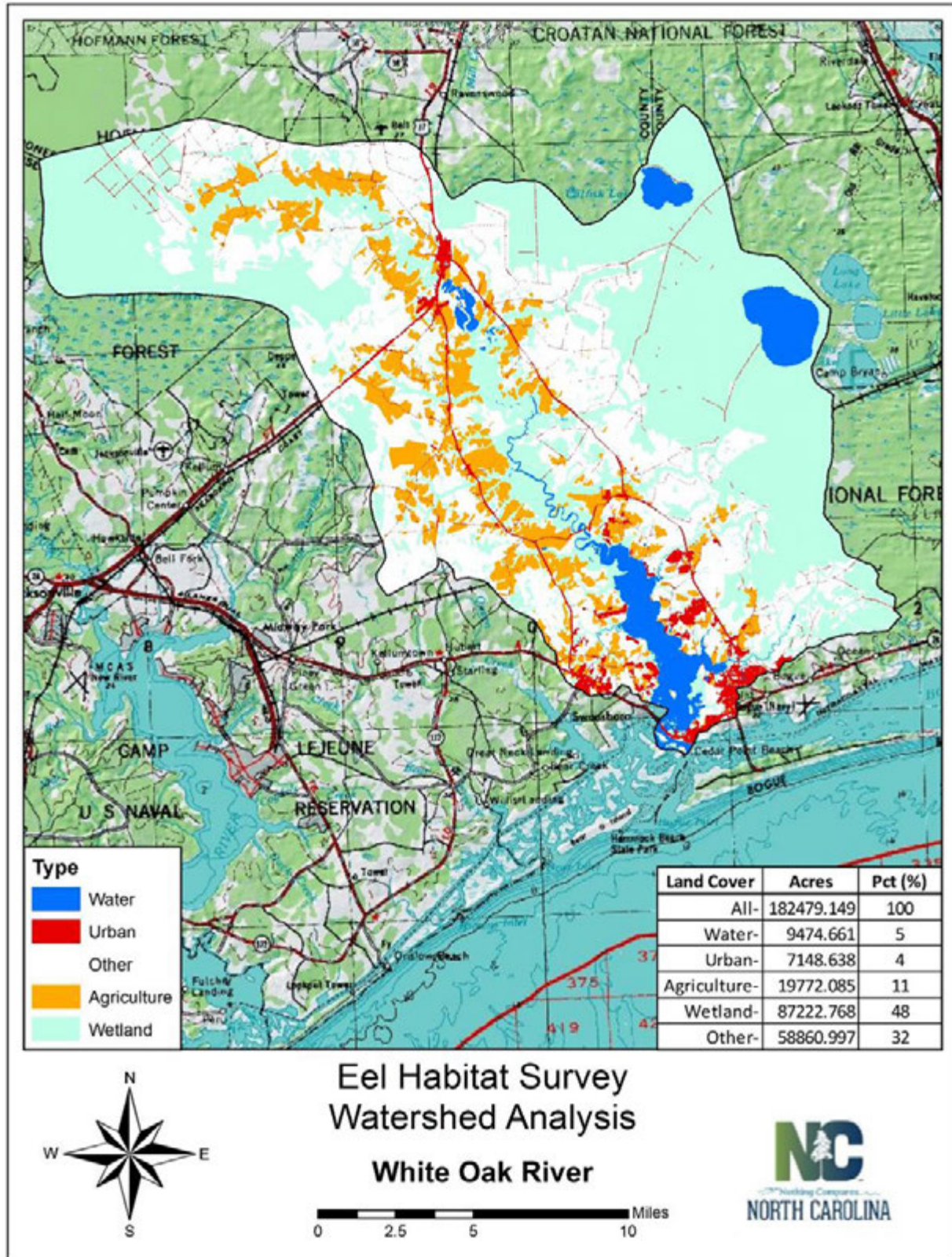


Figure 20. Land use characteristics for the sub-basins containing the White Oak River.

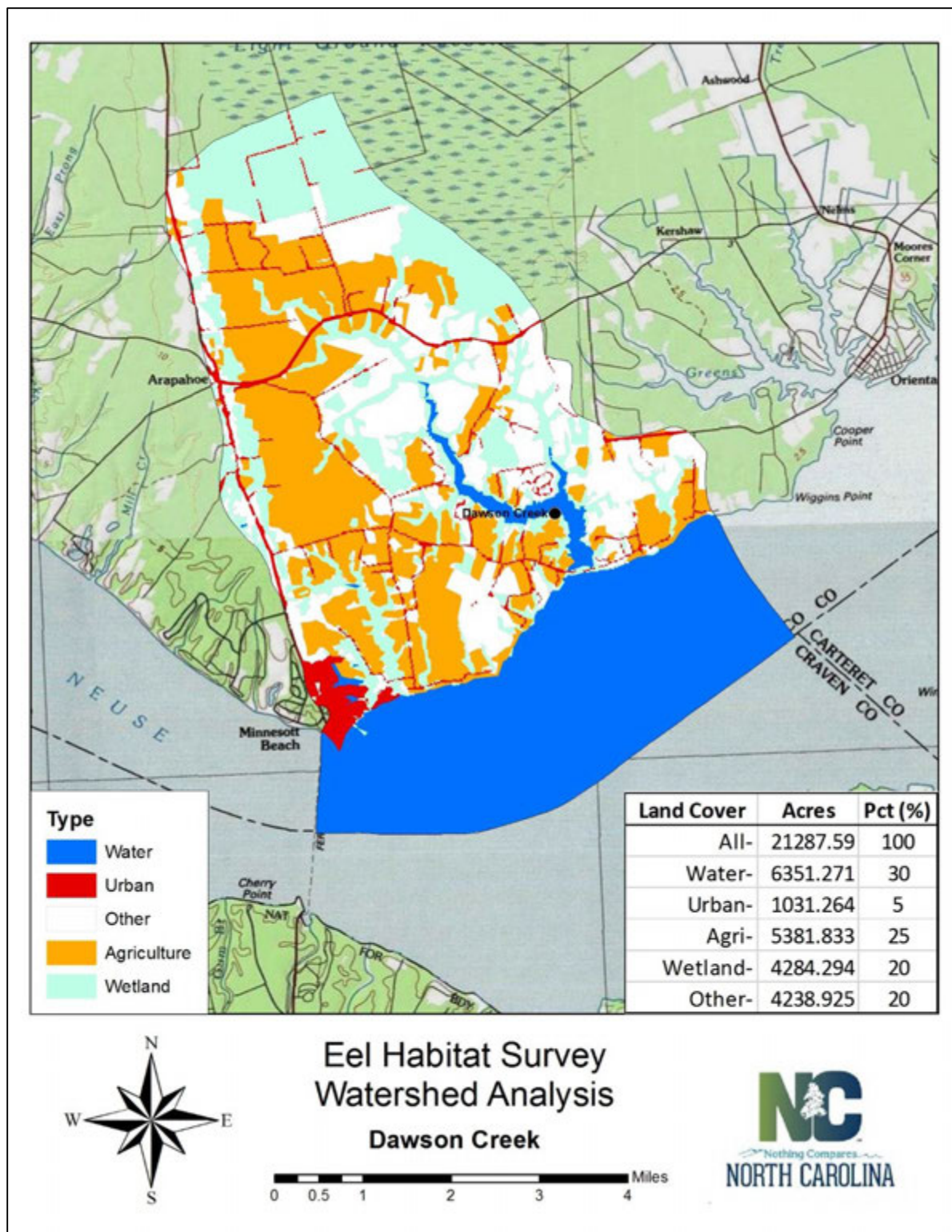


Figure 21. Land use characteristics for the sub-basin containing Dawson Creek.

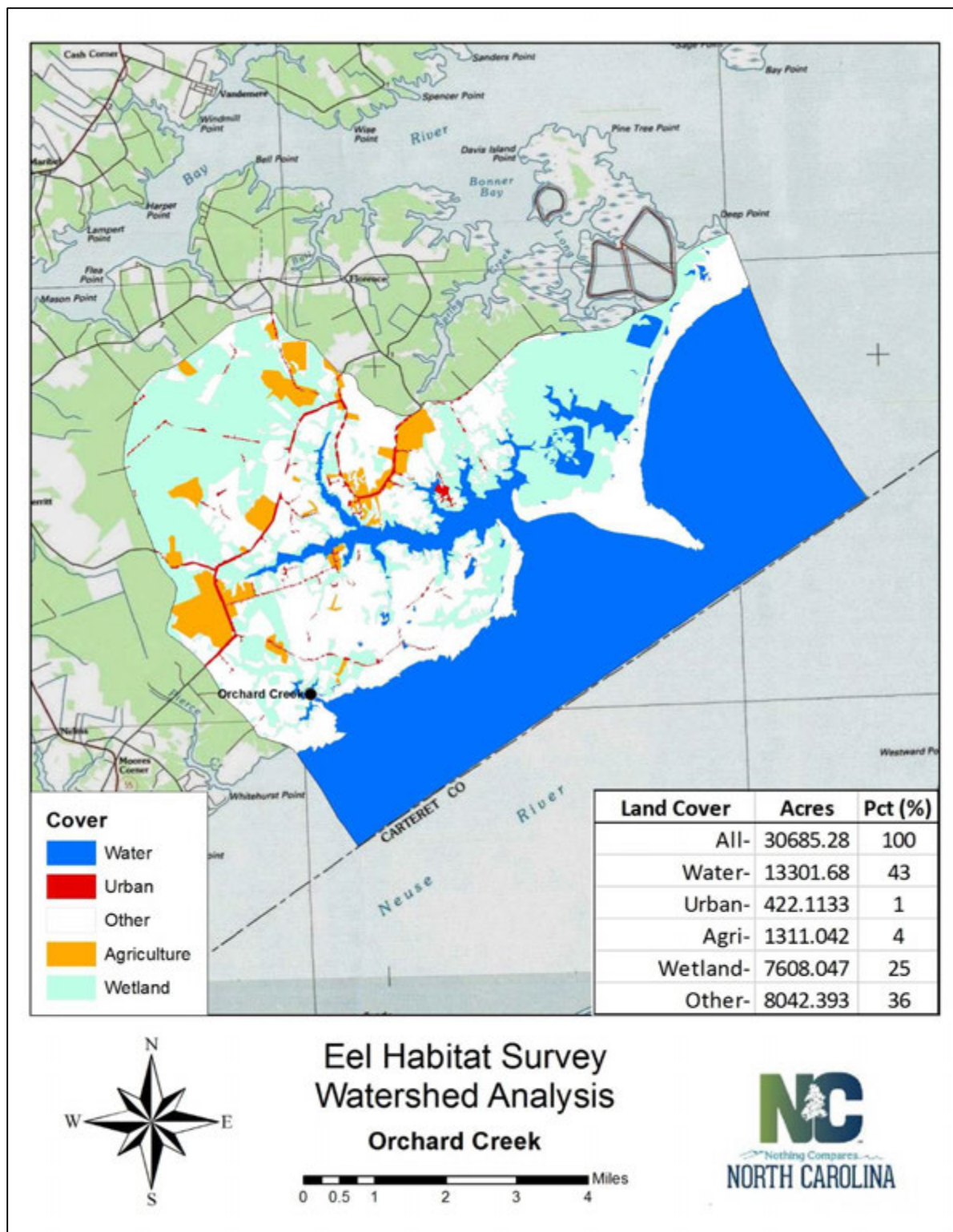


Figure 22. Land use characteristics for the sub-basin containing Orchard Creek

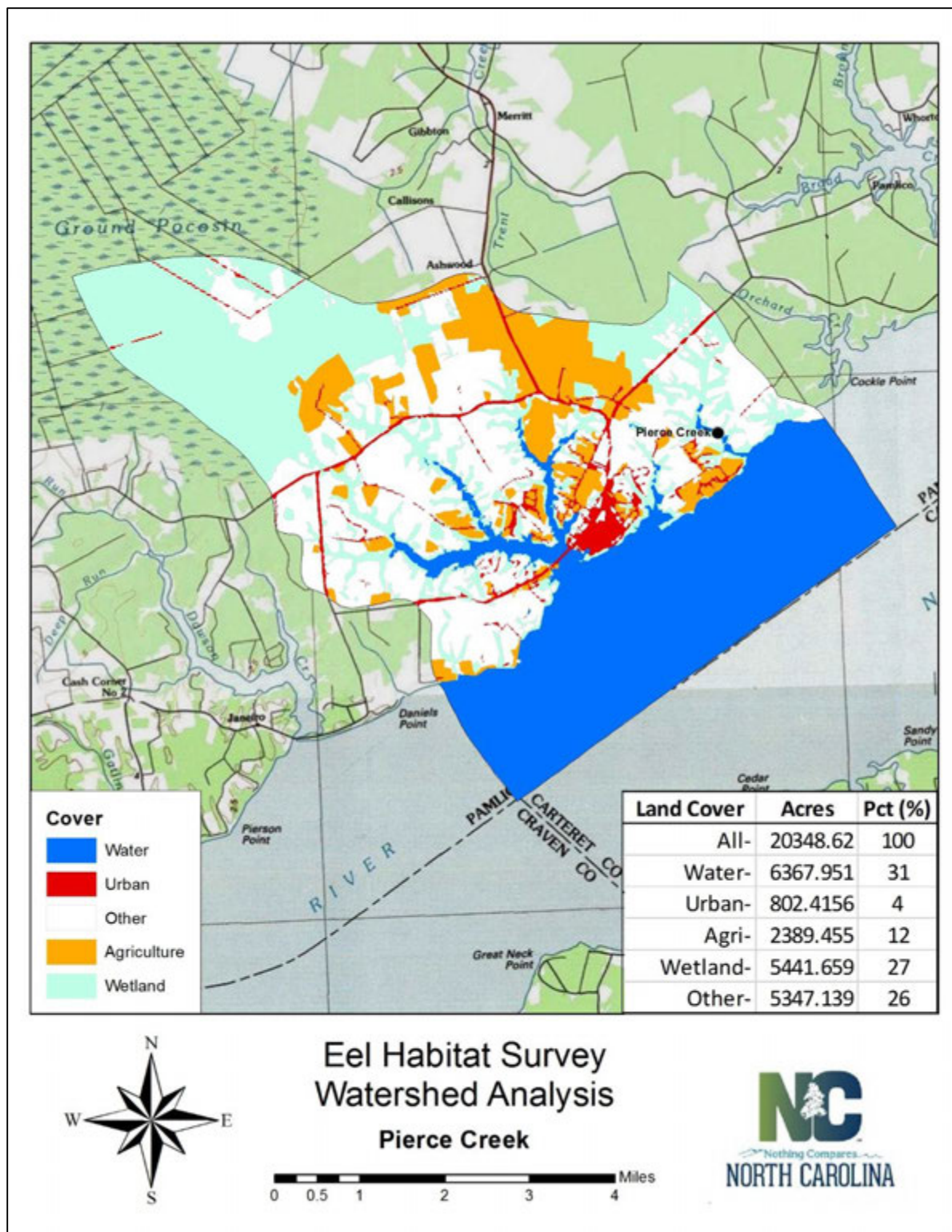


Figure 23. Land use characteristics for the sub-basin containing Pierce Creek.

APPENDIX I

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TESTIMONY PRESENTED TO THE COMMITTEE ON MARINE RESOURCES RE: H.P. 137, AN ACT TO RESTRICT THE TAKING OF EELS LESS THAN 6 INCHES IN LENGTH FROM MAINE COASTAL WATERS (EMERGENCY)

by
James D. McCleave
February 23, 1995

INTRODUCTION

The purpose of my testimony is primarily to educate the members of the committee, other legislators and interested persons about the unique life cycle of a truly fascinating and somewhat mysterious fish, the American eel. The unusual life cycle has some important implications for management and conservation of this species, which are different than for most species of fishes. I will present several of these implications. Finally, I do offer an opinion on the soundness of this particular bill.

I am a Professor of Oceanography and a Cooperating Professor of Zoology at the University of Maine, where I have been since 1968. I have conducted research on the biology of the American eel and the European eel since the early 1970s and have published more than 25 scientific papers on them. I also teach about eels in my classes at the University, and I occasionally have participated in workshops on eels with my European colleagues. A copy of my résumé is appended.

I offer this testimony as a friend of the eel, an awesome fish, and as a friend of eel fishers of all types. It is not my intention to support one group of harvesters over another. My conclusions and opinions are biologically based. The economics of the eel fishing and aquaculture industries and the economic consequences of management decisions are left to the realm of other experts.

LIFE CYCLE OF THE AMERICAN EEL

American eels are highly migratory, with spawning and larval development occurring in the ocean, and feeding and growth occurring in estuaries and fresh waters (rivers, streams, ponds, and lakes) [catadromous life cycle].¹ Spawning occurs near the surface over very deep water in a large area of the Sargasso Sea (Figure 1) and only there, meaning there is a single breeding population for the species. The Sargasso Sea is a large portion of the western North Atlantic Ocean east of the Bahamas and south of Bermuda. Spawning occurs in winter. Eggs hatch in a day or two in the warm water, releasing a long-lived larval stage [leptocephalus], which is flattened from side-to-side and shaped somewhat like a willow leaf. The leptocephali drift and swim in the upper few hundred feet of the

¹My language is intended to be understood by the nonspecialist. However, the appropriate scientific terms are included in brackets for completeness and to allow direct reference later in the document.

ocean for several months, growing slowly to a length of 2-2.5 inches. The leptocephali dramatically alter their shape [metamorphose] to resemble a miniature, transparent eel, called a glass eel, during the subsequent autumn and winter. This metamorphosis occurs at sea, perhaps near the edge of the continental shelf. The glass eels enter estuaries and ascend rivers during winter and spring, earlier at the southern end of their range, later at the northern end. (My research group at the University of Maine has contributed substantially to this knowledge.) It is during the spring ascent that glass eels, sometimes termed elvers, are harvested commercially in Maine.

The glass eels in estuaries and fresh waters rapidly develop rather drab pigmentation in their skin, dark on the back and often yellowish on the belly, leading to the name yellow eel for this stage. Growth is generally slow, and yellow eels spend several years in estuaries and inland waters. Growth and age at maturity are not well known. Males probably remain as yellow eels for 4-6 years or more, and grow to about 12-18 inches or so. Females remain as yellow eels for many more years, probably 6-20 years in New England and the Maritime Provinces. During this growth period, yellow eels are fished commercially in estuarine and fresh waters, using baited traps or pots.

During late summer and early autumn, maturing yellow eels undergo a second metamorphosis in preparation for a migration to sea to spawn. The pigment on the belly frequently becomes an iridescent silvery, leading to the term silver eel. Silver eels migrate from fresh waters and estuaries to sea in late summer and autumn in the northern part of their range, including Maine, and later in the southern part of the range. During this migration in Maine, silver eels are fished commercially in fixed weirs or nets set across streams and rivers.

Silver eels migrate to the Sargasso Sea, *spawn once and die*. Little is known of this migration or actual spawning, but it seems likely that autumn migrants are the spawners of the subsequent winter. Evidence of the timing and location of spawning comes from the distribution in space and time of small leptocephali. (My research group at the University of Maine has contributed substantially to this knowledge.)

The yellow stage of the American eel ranges from the eastern Gulf of Mexico, all along the east coast of the US, through the states and provinces bordering the Gulf of Maine, to the states and provinces bordering the Gulf of St. Lawrence, to Newfoundland and Labrador. Yet all spawning of the resulting silver eels occurs in the Sargasso Sea.

POINTS OF EMPHASIS FROM THE LIFE CYCLE

- There is a single breeding population for the entire species regardless of where the yellow eels resided [panmixis]. All genetic evidence suggests that a female from Maine is as likely to spawn with a male from Georgia as with a male from Nova Scotia.
 - ◊ This means there is no 'homing' of offspring from eels of the Penobscot or Kennebec Rivers to those rivers.

- Glass eels entering the Maine rivers are just the same genetically as those entering elsewhere within the range.
- There is a single spawning by a female in her lifetime [semelparity]. An adult female may have to grow for 15 years before reaching maturity and spawning *once*.
- Females develop large numbers of eggs [high fecundity], probably 400,000-3,000,000 eggs per female increasing with female size.
- Nearly all the eggs produced by a female and fertilized by a male will die before reaching maturity [high mortality]. This is natural in fecund species; otherwise the earth would be covered with eels.
- Females are much larger at sexual maturity than males [sexual dimorphism].
 - Most females are larger than 20 inches (50 cm) at maturity.
 - Most males are less than 18 inches (45 cm) at maturity.
- Determination of whether an eel becomes a male or female is not completely under genetic (chromosomal) control, but the process of sexual determination is not fully understood.

HYPOTHESES RELEVANT TO CONSERVATION

There are two hypotheses, for which there is some scientific evidence, which are important to decisions on conservation of the species. Both hypotheses follow logically from an overriding hypothesis that eels encountering more productive waters have a greater tendency to become males, while those encountering less productive waters have a greater tendency to become females. (There is a body of life history theory that supports this different life history strategy for males and females.)

- There is a gradual increase in the proportion of eels that become females from the estuary toward the headwater streams, i.e. increasing up a given drainage. Within a river drainage, more productive waters are generally found in the lower reaches, especially the estuary.
 - If correct, this means that Merrymeeting Bay has a lower proportion of females than the higher waters of the Kennebec River.
- There is a gradual increase in the proportion of eels that become females from the southern part of the range to the northern part of the range [a cline]. Along the range of the eel, more productive waters are generally found to the south, less productive waters to the north, including Maine.

- If correct, this means that Maine is likely to have a greater proportion of female eels within its population than, say, Georgia.

MY OPINION ON EEL MANAGEMENT-CONSERVATION

Because of the wide range of the species, and because the species is a single breeding population, one political jurisdiction alone cannot conserve the species. However, Maine can act responsibly from an understanding of the eel's life history.

I will now argue against this bill. The first line of reasoning is on the basis of prudent interpretation of the implications of the life cycle. The second line of reasoning is on the basis of a scenario for interpretation of the high fecundity-high mortality consequences in this species.

From both lines of reasoning, I am led to the conclusion that *there is no biological basis underlying the restriction of harvest proposed by this legislation*. For certain, in my mind, there is *no emergency*. This is not to state that development of sound management and conservation practices are not needed.

IMPLICATIONS FROM THE LIFE CYCLE

In a one-time spawning [semelparous], fecund species with a long lifetime before that one reproduction, prudent conservation strategy would increasingly protect females the closer they get to reproduction. Mortality is high in a fecund species, but the rate of mortality declines exponentially with size. Mortality rate in leptocephali must be enormous; mortality rate in glass eels must be enormous as well. However, mortality rate in females larger than, say, 15 inches is probably very low. (Here I refer to natural mortality, not mortality from people's activities of fishing, damming, polluting, etc.)

Maine, acting in prudent fashion, might choose to protect preferentially maturing females. I stress females because only females produce young. One male may mate with many females, but only females bear eggs.

If the cline in increasing proportion of females from south to north is correct, Maine and the Maritime Provinces might give increased thought to protecting females. A greater proportion of the reproductive potential may be in the northern part of the species' range.

If there is an increasing proportion of females farther up a drainage, it may be prudent to harvest differentially fewer eels farther up drainages.

Weir fisheries, pot fisheries with mesh-size limits, and eel-size limits all shift the harvest toward a greater percentage of females. Because of the sexual dimorphism, the larger the mesh or the larger the size limit, the greater the pressure is transferred to prereproductive females. Further, because females are longer lived than males, greater fishing pressure is transferred to prereproductive females. This is exactly opposite from the desirable effect. It is more logical, if anything, to place a maximum size limit on the harvest of eels. Such a measure

is clearly against conventional wisdom for managing fishes, but this is an unconventional species.

States and provinces that do not allow weir fisheries prudently protect females, whether they know it or not. Only Maine and, to a very limited degree, New York allow weir fisheries for eels.

Likewise, states and provinces that restrict commercial fishing in fresh waters prudently protect females, whether they know it or not. Most states have a substantial or complete restriction on such fishing. Not Maine.

On the other hand, most states and provinces have minimum size limits on commercial eel harvest, generally 4 inches, 6 inches or 8 inches. I do not believe these jurisdictions made those regulations on any basis other than transfer of practices from management of other species, such as trout or bass. In the extreme, Prince Edward Island has a minimum size limit of 18 inches for eels. Other Maritime Provinces are considering similar regulations. This practice would ensure that nearly all harvested eels would be females, a completely counterproductive measure.

Just because other jurisdictions have similar regulation, we should not make the assumption that the regulations have biological basis. Maine should strive gain the information necessary to base regulations in accord with the life cycle of the eel.

IMPLICATIONS FROM MORTALITY RATES

Management of commercial and recreational harvest of fishes (or tolerance of dams and pollution) has always been based on the assumption that there are compensatory mechanisms within the biology of the species, i.e. mechanisms that allow increased survival or increased reproduction of the nonharvested individuals, so the population does not decline. This is the concept of sustainable yield. The key to success of this approach is to understand what the compensatory mechanisms are and when they occur in the life cycle with respect to when harvest occurs.

Again, the eel is unique because of its high-fecundity, high-mortality characteristic. It seems unlikely to me that major compensatory mechanisms are to be found in the oceanic stages of the life cycle. The leptocephali probably have the highest mortality. Food limitation and inability to reach the continental shelf may be the critical factors, neither of which is under control of the leptocephali. Silver eels on migration to the Sargasso Sea to spawn probably have the lowest mortality, and they also have little opportunity for compensating mortality earlier in the life cycle.

In the elver-yellow eel stages, there is high mortality, but there is also the greatest likelihood of compensatory mechanisms for added mortality due to human activities. Because this is the growth phase, competition for food may occur among individual eels, causing starvation or at least slowing the growth. Reduced density of eels *may* result in higher survival, greater growth rate, and perhaps higher fecundity. On the other hand, not all outcomes of reduced density are

predictable. Because the mechanisms of gender determination are not known for eels, reduced density could increase the ratio of females to males (a positive compensatory mechanism) or decrease the ratio of females to males (a negative compensatory effect). However, most density-dependent effects are negative and have positive compensatory mechanisms.

I illustrate the subtle effects of compensatory mechanisms with a *hypothetical* numerical example. For the example, assume an average female has a fecundity of 1,000,000 eggs. Only one female and (less than) one male need to survive from those million eggs and reproduce to maintain a stable population. In the first scenario, I assume there is a compensatory mechanism for harvesting that can occur anytime after harvesting, regardless of when the harvesting occurs. In the second scenario, I assume there is a slightly greater compensatory mechanism in the yellow eel stage (likely, as described above).

- Scenario 1. Minor compensatory mechanism any time.
 - ◊ Fecundity 1,000,000 eggs produced by average female.
 - ◊ Assume 99.9% die at sea as leptocephali, leaving 1,000 glass eels.
 - ◊ Assume 99.2% of those die becoming silver eels, leaving 8 to migrate seaward.
 - ◊ Assume a harvest of half the migrating silver eels (4), leaving 4 migrants.
 - ◊ Assume 50% of those die, leaving 2 successful spawners.
 - ◊ Fecundity 1,000,000 eggs.
 - ◊ 99.9% die as leptocephali, leaving 1,000 glass eels.
 - ◊ Harvest half the migrating glass eels, leaving 500.
 - ◊ 99.2% die before becoming silver eels, leaving 4 to migrate.
 - ◊ 50% of those die leaving 2 successful spawners.
 - ◊ Conclusion: In this scenario, it does not matter when in the life cycle eels are harvested as long as the allowed harvest is set by actual mortality rates, rather than the hypothetical ones used in the examples here. Alternatively, harvest of a combination of life stages is possible, again as long as actual mortality rates are applied.
- Scenario 2. Greater compensatory mechanism in yellow eel stage.
 - ◊ Fecundity 1,000,000 eggs.
 - ◊ 99.9% die as leptocephali, leaving 1,000 glass eels.
 - ◊ Harvest half the migrating glass eels, leaving 500.
 - ◊ Now, if there is compensation such that mortality is reduced in the yellow eels stage by only 1%, 98.2% die before becoming silver eels, leaving 9 to migrate seaward.
 - ◊ Harvest half the migrating silver eels (4 or 5), leaving 4 to migrate.

- ◊ 50% of those die leaving 2 successful spawners.
- ◊ Conclusion: In this scenario, harvest of glass eels has no effect on the harvest of silver eels because of a compensatory mechanism in the yellow eel stage. Again harvest size needs to be determined with actual mortality rates.

CONCLUSIONS

I conclude from the two previous sections that there is no biological basis for assuming that harvest of glass eels *per se* is detrimental to the conservation of the American eel. Under certain conditions, the harvest of glass eels could have less detrimental effect on conservation than harvest of silver eels. Under certain conditions, the harvest of glass eels could occur while having little or no detrimental effect on harvest of silver eels.

I also conclude that the current regulatory structure for eels in the States and Provinces in the eel's range is not based upon sound biological principles. However, unregulated or unsoundly regulated commercial fishing in Maine and other jurisdictions is distinctly unwise. By testifying in opposition to this bill, I am not implying that there is not cause for concern and for possible regulations on commercial fishing for eels.

SCIENTIFIC RECOMMENDATIONS FOR CONSERVATION AND MANAGEMENT

In the short term for decision making in Maine, the following steps are important.

- Mortality rates and sources of mortality in the glass eel, yellow eel and early silver eels stages need to be determined to allow estimates of how much harvest could be allowed in what stages of life without deleterious effect on the stock.
 - ◊ Determine sources and rates of natural mortality, and determine whether there is density-dependent mortality, which involves determination of food-webs and predator-prey relations.
 - ◊ Determine sources and rates of anthropogenic mortality at different stages, which includes fishing mortality and nonfishing mortality (fish passage at dams, pollution, hydroelectric turbines, etc.).
- Fishing mortality needs to be determined from the activities of the fishing industry.
 - ◊ A licensing system for fresh waters and tidal waters specific to commercial fishing for eels should be instituted.
 - ◊ A reporting system for commercial catches by life-cycle stage or gear needs to be associated with the licensing system.

- Growth rates of males and females and fecundity of females of various sizes needs to be determined to allow assesment of harvest practices on the reproductive potential of the migrants that do migrate to sea to spawn.
- The distribution of sex ratio throughout selected drainages needs to be determined to allow assessment of harvest practices on abundance of females and males.

In the long term for decision making over the geographic range of the eel, the following steps are important.

- The mechanism of gender determination in eels needs to be understood, so effects of harvest practice on sex ratios can be determined.
- The distribution of sex ratio over the geographic range needs to be determined, so harvest practice could be adjusted over the range as appropriate to the life cycle.

APPENDIX II

NC Marine Fisheries Commission Rule 15A NCAC 03O .0504:

15A NCAC 03O .0504 SUSPENSION/REVOCATION OF PERMITS

(a) For violation of specific permit conditions (as specified on the permit), permits may be suspended or revoked according to the following schedule:

- (1) violation of one specific condition in a three year period, permit shall be suspended for 10 days;
- (2) violation of two specific conditions in a three year period, permits shall be suspended for 30 days;
- (3) violation of three specific conditions in a three year period, permits shall be revoked for a period not less than six months.

If the permit condition violated is the refusal to provide information upon request by Division staff, either by telephone, in writing or in person, the Fisheries Director may suspend the permit. Such permit may be reinstated 10 days after the requested information is provided.

(b) All permits will be suspended or revoked when the permittee's license privilege has been suspended or revoked as set out in G.S. 113-171. The duration of the suspension or revocation shall be the same as the license suspension or revocation. In the event the person makes application for a new permit during any period of license suspension, no new permit will be issued during the suspension period. In case of revocation of license privileges, the minimum waiting period before application for a new permit to be considered will be six months.

(c) Permit designees shall not be permitted to participate in a permit operation during any period they are under license suspension or revocation.

(d) Upon service of a notice of suspension or revocation of a permit, it is unlawful to fail to surrender any permit so suspended or revoked.

Appendix III

NC General Statute 113-170.3:

G.S. 113-170.3. Record-keeping requirements.

- (a) The Commission may require all licensees under this Article to keep and to exhibit upon the request of an authorized agent of the Department records and accounts as may be necessary to the equitable and efficient administration and enforcement of this Article. In addition, licensees may be required to keep additional information of a statistical nature or relating to location of catch as may be needed to determine conservation policy. Records and accounts required to be kept must be preserved for inspection for not less than three years.
- (b) It is unlawful for any licensee to refuse or to neglect without justifiable excuse to keep records and accounts as may be reasonably required. The Department may distribute forms to licensees to aid in securing compliance with its requirements, or it may inform licensees of requirements in other effective ways such as distributing memoranda and sending agents of the Department to consult with licensees who have been remiss. Detailed forms or descriptions of records, accounts, collection and inspection procedures, and the like that reasonably implement the objectives of this Article need not be embodied in rules of the Commission in order to be validly required.
- (c) The following records collected and compiled by the Department shall not be considered public records within the meaning of Chapter 132 of the General Statutes, but shall be confidential and shall be used only for the equitable and efficient administration and enforcement of this Article or for determining conservation policy, and shall not be disclosed except when required by the order of a court of competent jurisdiction: all records, accounts, and reports that licensees are required by the Commission to make, keep, and exhibit pursuant to the provisions of this section, and all records, accounts, and memoranda compiled by the Department from records, accounts, and reports of licensees and from investigations and inspections, containing data and information concerning the business and operations of licensees reflecting their assets, liabilities, inventories, revenues, and profits; the number, capacity, capability, and type of fishing vessels owned and operated; the type and quantity of fishing gear used; the catch of fish or other seafood by species in numbers, size, weight, quality, and value; the areas in which fishing was engaged in; the location of catch; the time of fishing, number of hauls, and the disposition of the fish and other seafood. The Department may compile statistical information in any aggregate or summary form that does not directly or indirectly disclose the identity of any licensee who is a source of the information, and any compilation of statistical information by the Department shall be a public record open to inspection and examination by any person, and may be disseminated to the public by the Department. (1997-400, s.5.1; 2001-213, s. 2.)

NC Marine Fisheries Commission Rule 15A NCAC 03O .0502:

15A NCAC 03O .0502 PERMIT CONDITIONS; GENERAL

The following conditions apply to all permits issued by the Fisheries Director:

- (1) it is unlawful to operate under the permit except in areas, at times, and under conditions specified on the permit;
- (2) it is unlawful to operate under a permit without having the permit or copy thereof in possession of the permittee or his or her designees at all times of operation and the permit or copy thereof shall be ready at hand for inspection, except for Pound Net Permits;
- (3) it is unlawful to operate under a permit without having a current picture identification in possession and ready at hand for inspection;
- (4) it is unlawful to refuse to allow inspection and sampling of a permitted activity by an agent of the Division;
- (5) it is unlawful to fail to provide complete and accurate information requested by the Division in connection with the permitted activity;
- (6) it is unlawful to hold a permit issued by the Fisheries Director when not eligible to hold any license required as a condition for that permit as stated in 15A NCAC 03O .0501;
- (7) it is unlawful to fail to provide reports within the timeframe required by the specific permit conditions;

- (8) it is unlawful to fail to keep such records and accounts as required by the rules in this Chapter for determination of conservation policy, equitable and efficient administration and enforcement, or promotion of commercial or recreational fisheries;
- (9) it is unlawful to assign or transfer permits issued by the Fisheries Director, except for Pound Net Permits as authorized by 15A NCAC 03J .0504;
- (10) the Fisheries Director, or his agent, may, by conditions of the permit, specify any or all of the following for the permitted purposes:
 - (a) species;
 - (b) quantity or size;
 - (c) time period;
 - (e) location;
 - (d) means and methods;
 - (f) disposition of resources;
 - (g) marking requirements; or
 - (h) harvest conditions.
- (11) unless specifically stated as a condition on the permit, all statutes, rules and proclamations shall apply to the permittee and his or her designees; and
- (12) as a condition of accepting the permit from the Fisheries Director, the permittee agrees to abide by all conditions of the permit and agrees that if specific conditions of the permit, as identified on the permit, are violated or if false information was provided in the application for initial issuance, renewal or transfer, the permit may be suspended or revoked by the Fisheries Director.

APPENDIX IV

NC Marine Fisheries Commission Rule 15A NCAC 03O .0501:

15A NCAC 03O .0501 PROCEDURES AND REQUIREMENTS TO OBTAIN PERMITS

- (a) To obtain any Marine Fisheries permit, the following information is required for proper application from the applicant, a responsible party, or person holding a power of attorney:
- (1) Full name, physical address, mailing address, date of birth, and signature of the applicant on the application. If the applicant is not appearing before a license agent or the designated Division contact, the applicant's signature on the application shall be notarized;
 - (2) Current picture identification of applicant, responsible party, or person holding a power of attorney. Acceptable forms of picture identification are driver's license, North Carolina Identification card issued by the North Carolina Division of Motor Vehicles, military identification card, resident alien card (green card), or passport; or if applying by mail, a copy thereof;
 - (3) Full names and dates of birth of designees of the applicant who will be acting under the requested permit where that type permit requires listing of designees;
 - (4) Certification that the applicant and his designees do not have four or more marine or estuarine resource convictions during the previous three years;
 - (5) For permit applications from business entities:
 - (A) Business Name;
 - (B) Type of Business Entity: Corporation, partnership, or sole proprietorship;
 - (C) Name, address, and phone number of responsible party and other identifying information required by this Subchapter or rules related to a specific permit;
 - (D) For a corporation, current articles of incorporation and a current list of corporate officers when applying for a permit in a corporate name;
 - (E) For a partnership, if the partnership is established by a written partnership agreement, a current copy of such agreement shall be provided when applying for a permit; and
 - (F) For business entities, other than corporations, copies of current assumed name statements if filed and copies of current business privilege tax certificates, if applicable; and
 - (6) Additional information as required for specific permits.
- (b) A permittee shall hold a valid Standard or Retired Standard Commercial Fishing License in order to hold a:
- (1) Pound Net Permit;
 - (2) Permit to Waive the Requirement to Use Turtle Excluder Devices in the Atlantic Ocean; or
 - (3) Atlantic Ocean Striped Bass Commercial Gear Permit.
- (c) A permittee and his designees shall hold a valid Standard or Retired Standard Commercial Fishing License with a Shellfish Endorsement or a Shellfish License in order to hold a:
- (1) Permit to Transplant Prohibited (Polluted) Shellfish;
 - (2) Permit to Transplant Oysters from Seed Oyster Management Areas;
 - (3) Permit to Use Mechanical Methods for Shellfish on Shellfish Leases or Franchises;
 - (4) Permit to Harvest Rangia Clams from Prohibited (Polluted) Areas; or
 - (5) Depuration Permit.
- (d) A permittee shall hold a valid:
- (1) Fish Dealer License in the proper category in order to hold Dealer Permits for Monitoring Fisheries Under a Quota/Allocation for that category; and
 - (2) Standard Commercial Fishing License with a Shellfish Endorsement, Retired Standard Commercial Fishing License with a Shellfish Endorsement or a Shellfish License in order to harvest clams or oysters for depuration.
- (e) Aquaculture Operations/Collection Permits:
- (1) A permittee shall hold a valid Aquaculture Operation Permit issued by the Fisheries Director to hold an Aquaculture Collection Permit.
 - (2) The permittee or designees shall hold appropriate licenses from the Division of Marine Fisheries for the species harvested and the gear used under the Aquaculture Collection Permit.
- (f) Atlantic Ocean Striped Bass Commercial Gear Permit:

- (1) Upon application for an Atlantic Ocean Striped Bass Commercial Gear Permit, a person shall declare one of the following gears for an initial permit and at intervals of three consecutive license years thereafter:
 - (A) gill net;
 - (B) trawl; or
 - (C) beach seine.

For the purpose of this Rule, a “beach seine” is defined as a swipe net constructed of multi-filament or multi-fiber webbing fished from the ocean beach that is deployed from a vessel launched from the ocean beach where the fishing operation takes place.

Gear declarations shall be binding on the permittee for three consecutive license years without regard to subsequent annual permit issuance.
 - (2) A person is not eligible for more than one Atlantic Ocean Striped Bass Commercial Gear Permit regardless of the number of Standard Commercial Fishing Licenses, Retired Standard Commercial Fishing Licenses or assignments held by the person.
- (g) Applications submitted without complete and required information shall not be processed until all required information has been submitted. Incomplete applications shall be returned to the applicant with deficiency in the application so noted.
- (h) A permit shall be issued only after the application has been deemed complete by the Division of Marine Fisheries and the applicant certifies to abide by the permit general and specific conditions established under 15A NCAC 03J .0501, .0505, 03K .0103, .0104, .0107, .0111, .0401, 03O .0502, and .0503 as applicable to the requested permit.
- (i) The Fisheries Director, or his agent may evaluate the following in determining whether to issue, modify, or renew a permit:
- (1) Potential threats to public health or marine and estuarine resources regulated by the Marine Fisheries Commission;
 - (2) Applicant’s demonstration of a valid justification for the permit and a showing of responsibility as determined by the Fisheries Director; and
 - (3) Applicant’s history of habitual fisheries violations evidenced by eight or more violations in 10 years.
- (j) The Division of Marine Fisheries shall notify the applicant in writing of the denial or modification of any permit request and the reasons therefor. The applicant may submit further information, or reasons why the permit should not be denied or modified.
- (k) Permits are valid from the date of issuance through the expiration date printed on the permit. Unless otherwise established by rule, the Fisheries Director may establish the issuance timeframe for specific types and categories of permits based on season, calendar year, or other period based upon the nature of the activity permitted, the duration of the activity, compliance with federal or state fishery management plans or implementing rules, conflicts with other fisheries or gear usage, or seasons for the species involved. The expiration date shall be specified on the permit.
- (l) For permit renewals, the permittee’s signature on the application shall certify all information as true and accurate. Notarization of signature on renewal applications shall not be required.
- (m) For initial or renewal permits, processing time for permits may be up to 30 days unless otherwise specified in this Chapter.
- (n) It is unlawful for a permit holder to fail to notify the Division of Marine Fisheries within 30 days of a change of name or address, in accordance with G.S. 113-169.2.
- (o) It is unlawful for a permit holder to fail to notify the Division of Marine Fisheries of a change of designee prior to use of the permit by that designee.
- (p) Permit applications are available at all Division Offices.



Atlantic States Marine Fisheries Commission

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

MEMORANDUM

July 15, 2016

To: American Eel Management Board
From: Law Enforcement Committee
RE: Review of Changes to North Carolina Aquaculture Permit

The Law Enforcement Committee (LEC) of the Atlantic States Marine Fisheries Commission (ASMFC) met via conference call on July 8, 2016 to review and provide comments on proposed changes to the previously approved aquaculture proposal for the State of North Carolina. The following members were in attendance:

LEC: Capt. Steve Anthony (NC); Capt. Grant Burton (FL); Deputy Chief Jon Cornish (ME); Lt. Mike Eastman (NH); Asst. Director Larry Furlong (PA); Special Agent-in-Charge Honora Gordon (USFWS); Capt. Jamie Green (VA); Capt. Tim Huss (NY); Capt. Rob Kersey (MD); Capt. Bob Lynn (GA); Capt. Doug Messeck (DE); Maj. Pat Moran (MA); Director Kyle Overturf (CT); Lt. Colby Schlaht (USCG); Lt. Jason Snellbaker (NJ);

LEC ALTERNATES: Eric Provencher (NOAA OLE)

OTHER ATTENDEES: David Borden (RI)

STAFF: Ashton Harp; Toni Kerns; Kirby Rootes-Murdy; Mark Robson; Megan Ware

The LEC was briefed on the substantive changes to the permit and permit conditions from the first year of implementation. The LEC commented on the original proposal in its memo of January 15, 2016 to the American Eel Management Board. During the above-referenced conference call, the North Carolina representative to the LEC reported on the shared learning experiences of their enforcement officers and the vendor in a new program. There were no significant concerns or questions raised regarding the proposed changes to the aquaculture collection program in North Carolina, and the LEC continues to support the plan as one that has taken reasonable steps to ensure adequate enforcement and monitoring of collection activity.

The LEC appreciates the opportunity to review and provide advice concerning this proposal.

Atlantic States Marine Fisheries Commission

Business Session

August 4, 2016

9:45 – 10:30 a.m.
Alexandria, Virginia

Draft Agenda

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

- | | |
|---|------------|
| 1. Welcome/Introductions (D. Grout) | 9:45 a.m. |
| 2. Board Consent | 9:50 a.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from May 2016 | |
| 3. Public Comment | 9:55 a.m. |
| 4. Review Non-compliance Findings (if necessary) Possible Action | 10:00 a.m. |
| 4. Review ACCSP Transition Plan and Associated Documents Action | 10:05 a.m. |
| 5. Other Business/Adjourn | 10:30 a.m. |

The meeting will be held at the Westin, 400 Courthouse Square, Alexandria, Virginia; 703.253.8600

Vision: Sustainably Managing Atlantic Coastal Fisheries

Atlantic States Marine Fisheries Commission

American Lobster Management Board

August 4, 2016
10:45 a.m. – 4:00 p.m.
Alexandria, Virginia

Draft Agenda

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

1. Welcome/Call to Order (*D. Borden*) 10:45 a.m.
2. Board Consent 10:45 a.m.
 - Approval of Agenda
 - Approval of Proceedings from May 2016
3. Public Comment 10:50 a.m.
4. Update on Status of Federal Rulemaking for Lobster (*P. Burns*) 11:00 a.m.
5. Lobster Technical Committee Report on Southern New England 11:10 a.m.
 - Management Options to Achieve a 20-60% Increase in Egg Production In the Southern New England Lobster Stock (*B. Glenn*)
6. Lunch 11:50 a.m.
7. Discuss Management Options to be Included in Lobster Draft Addendum XXV (*D. Borden*) **Possible Action** 12:15 p.m.
8. Discuss Technical Committee Recommendation for and NOAA Letter on Increased Reporting in the Lobster Fishery (*D. Borden; P. Burns*) **Possible Action** 2:10 p.m.
9. Consider Jonah Crab Draft Addendum II for Public Comment (*M. Ware*) **Action** 2:40 p.m.
10. Consider Maine Conservation Equivalency Proposal for Exchange Trap Tags **Action** 3:15 p.m.
 - Review of Maine proposal (*P. Keliher*)
 - American Lobster Plan Review Team Report (*M. Ware*)
 - American Lobster Advisory Panel Report (*M. Ware*)
 - Law Enforcement Committee Report (*M. Robson*)
 - Consider approval of Maine's Conservation Equivalency Proposal

The meeting will be held at the Westin, 400 Courthouse Square, Alexandria, Virginia; 703.253.8600
Vision: Sustainably Managing Atlantic Coastal Fisheries

- | | |
|--|-----------|
| 11. Update from the Offshore Lobster Law Enforcement Subcommittee
(<i>M. Robson</i>) Possible Action | 3:35 p.m. |
| 12. Update on New England Fishery Management Council Omnibus Deep-Sea
Coral Amendment (<i>M. Ware</i>) | 3:45 p.m. |
| 13. Update on State Implementation of the Jonah Crab FMP (<i>M. Ware</i>) | 3:50 p.m. |
| 14. Other Business/Adjourn | 4:00 p.m. |

MEETING OVERVIEW

American Lobster Management Board Meeting
Thursday, August 4, 2016
10:45 a.m. – 4:00 p.m.
Alexandria, Virginia

Chair: David Borden (RI) Assumed Chairmanship: 02/16	Technical Committee Chair: Bob Glenn (MA)	Law Enforcement Committee Representative: John Cornish (ME)
Vice Chair: Stephen Train (ME)	Advisory Panel Chair: Grant Moore (MA)	Previous Board Meeting: May 2, 2016
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NMFS, NEFMC (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2016

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

4. Update on Status of Federal Rulemaking for Lobster (11:00-11:10 a.m.)

Background

- Addenda XXI and XXII allow fishermen in LCMAs 2 and 3 to accumulate traps over and above the active trap cap. The intention was to allow fishermen to maintain a profitable fishery as trap reductions take place.
- NOAA Fisheries has implemented trap transferability rules but has held off implementing trap banking until there is a clear picture of what action will take place in SNE.

Presentations

- Update on status of federal rulemaking by P. Burns

5. Lobster Technical Committee Report (11:10 a.m.- 11:50 a.m.)

Background

- At the May 2016 meeting, the Board requested the TC investigate management options which achieve a 20%-60% increase in egg production in SNE.
- The TC met via conference call on June 14th and June 30th to review analyses on egg production that may result from trap reductions and changes to the gauge size.

Presentations

- Technical Committee report by B. Glenn (**Briefing Materials**)

6. Lunch (11:50 a.m. -12:15 p.m.)**7. Lobster Draft Addendum XXV (12:15 - 2:10 p.m.) Possible Action****Background**

- The 2015 Benchmark Stock Assessment found the SNE stock to be at record low abundance and experiencing recruitment failure.
- In May, the Board initiated Draft Addendum XXV to address stock declines in SNE by lowering fishing mortality and increasing egg production. The preliminary goal of the Board was to increase egg production by 20%-60%.
- The Board needs to finalize its goal for this addendum and provide guidance to the PDT on what management options should be included in the document.

Board actions for consideration at this meeting

- Finalize a goal for Addendum XXV.
- Identify management options to be included in document.

8. Discuss Potential Reporting Deficiencies in the Lobster Fishery (2:10 – 2:40 p.m.) Possible Action**Background**

- Addendum X requires 100% mandatory dealer reporting and at least 10% active harvester reporting in the lobster fishery.
- In their January 19th memo to the Board, the TC highlighted that catch disposition in the federal SNE lobster fishery is poorly characterized.
- On February 26th, the Board sent a letter to NOAA Fisheries requesting 100% trip level reporting for all federally licensed lobster vessels. NOAA Fisheries responded on May 26th, encouraging the Board to address data gaps in an addendum. (**Briefing Materials**)

Presentations

- Discussion of reporting in the lobster fishery by D. Borden and P. Burns

Board actions for consideration at this meeting

- Consider changes to current reporting requirements.

9. Jonah Crab Draft Addendum II (2:40 p.m. – 3:15 p.m.) Action**Background**

- Following final action on the FMP, Board members expressed concern about the equity of the current claw provision given claw fishermen in NY and ME are required to land whole crabs. NOAA Fisheries also stated it may prove challenging to implement the current claw provision due to National Standard 4.
- The Board initiated Addendum II to consider a coastwide standard for claw harvest in the Jonah crab fishery.
- The Plan Development Team met via conference call on June 21st to draft Addendum II.

Presentations

- Overview of the Draft Addendum II for public comment by M. Ware. **(Briefing Materials)**

Board actions for consideration at this meeting

- Approve Draft Addendum II for public comment.

10. Maine Conservation Equivalency Proposal (3:15 – 3:35 p.m.) Action**Background**

- The Lobster FMP does not allow for the transfer of tags from one trap to another.
- In 2015, Maine conducted a one-year pilot project to examine the effectiveness of its lobster trap tag exchange program. Under the pilot project, harvesters were allowed to attach trap tags with hog rings as they move gear in and out of the water, eliminating the need for exchange tags.
- The elimination of exchange tags improved enforcement in the Maine lobster fishery. As a result, Maine submitted a request for conservation equivalency.

Presentations

- Review conservation equivalency proposal by P. Keliher. **(Briefing Materials)**
- Plan Review Team Report by M. Ware **(Supplemental Materials)**
- Advisory Panel Report by M. Ware **(Supplemental Materials)**
- Law Enforcement Committee Report by M. Robson. **(Briefing Materials)**

Board actions for consideration at this meeting

- Consider approval of Maine’s Conservation Equivalency Proposal

11. Update on Lobster Law Enforcement Subcommittee (3:35-3:45 p.m.) Possible Action**Background**

- The Lobster Law Enforcement Subcommittee met via conference call on July 8th to discuss initial steps to improve enforcement in the fishery.
- The subcommittee drafted a letter to the NOAA Office of Law Enforcement requesting the lobster fishery be considered an enforcement priority. **(Briefing Materials)**

Presentations

- Lobster Law Enforcement Subcommittee Report by M. Robson.

Board actions for consideration at this meeting

- Consider recommendation to Policy Board to send letter to NOAA Office of Law Enforcement

12. Update on NEFMC Omnibus Deep-Sea Coral Amendment (3:45 – 3:50 p.m.)**Background**

- The NEFMC is currently drafting an Omnibus Deep-Sea Coral Amendment that may consider restrictions to lobster gear.
- Results from the offshore lobster and Jonah crab survey were presented to the NEFMC’s Habitat PDT on July 28th. **(Briefing Materials)**

Presentations

- Update on NEFMC Omnibus Deep-Sea Coral Amendment by M. Ware

13. Update on State Implementation of the Interstate FMP for Jonah Crab (3:50 – 3:55 p.m.)

Background

- | |
|---|
| <ul style="list-style-type: none">• States were required to implement provisions of the Jonah Crab FMP by June 1, 2016.• Three states are still working to implement Jonah crab regulations. |
|---|

Presentations

- | |
|--|
| <ul style="list-style-type: none">• Update on state implementation of the Jonah Crab FMP by M. Ware. (Briefing Materials) |
|--|

14. Other Business/Adjourn

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

The Westin Alexandria
Alexandria, Virginia
May 2, 2016

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

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INDEX OF MOTIONS

1. **Approval of Agenda by Consent** (Page 1).
2. **Approval of Proceedings of February, 2016 by Consent** (Page 1).
3. **Move to bring the postponed motion from February 2016 forward for consideration** (Page 34). Motion by Bill Adler; second by Steve Train. The motion carried by consensus (Page 34).
4. **Move to table indefinitely, the February 2016 main motion to initiate an addendum to address declining lobster conditions in SNE/MA** (Page 34). Motion by Ritchie White; second by Emerson Hasbrouck. Motion carried (Page 34).
5. **Move that the Board shall initiate an addendum to minimize stock declines by lowering fishing mortality and increasing egg production by a combination of changes to the minimum size, maximum size, closed seasons, closed areas, trap caps and cuts, standardizing regulations throughout the area, and or combinations of the above. Target egg production increase shall be not less than 40 percent above the level that would otherwise be produced with no additional management. Final regulations for this step shall be fully phased in within three years, no later than June 1, 2019** (Page 35). Motion by Dan McKiernan; second by Mark Gibson. Motion amended (Page 40).
6. **Move to amend; to insert “long term” before stock decline, and remove “increase should not be less than 40 percent above the level that would otherwise be produced with no additional management,” and insert “target increased egg production to be above the level that would be produced without management action”** (Page 40). Motion by Eric Reid; second by Mike Luisi. Motion fails due to a lack of majority (Page 42).
7. **Move to amend to replace “minimize stock declines” with “address stock declines in SNE” and to remove “Target egg production increase shall be not less than 40 percent above the level that would otherwise be produced with no additional management “and replace with “develop a range of long term increases in target egg production between 20-60 percent above the level that would otherwise be produced with no additional management** (Page 42). Motion by Doug Grout; second by Patrick Keliher. Motion carried (Page 49).
8. **Main motion as amended: Motion that the Board shall initiate an addendum to address stock declines in SNE by lowering fishing mortality and increasing egg production by a combination of changes to the minimum size, maximum size, closed season, closed areas, trap caps and cuts, standardizing regulations throughout the areas, and or combinations of the above. Develop a range of long term increases in target egg production between 20-60 percent above the level that would otherwise be produced with no additional management. Final regulations for this step shall be fully phased in within three years, no later than June 1, 2019.** Motion carried (Page 49).

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9. **Move to have the Technical Committee respond to the following tasks (Page 51):**
- **Synthesize current literature and studies which investigate the connectivity between the GOM/GBK stock and Canada**
 - **Plot changes in size distribution of egg-bearing females over time in the GOM/GBK stock**
 - **Describe changes in GOM ocean currents and how this could be affecting larval supply patterns**
 - **Investigate the stock-recruit relationship in the GOM/GBK stock**
 - **Review on-going research on GOM lobster in order to identify research holes and prioritize the importance of these data holes to effective management**
 - **Examine the competing biological management measures between Area 1, 3 and the Outer Cape Cod to look at the benefits of harmonizing these measures**
 - **Investigate and develop a Traffic Light Analysis as a potential control rule using average harvest and abundance values from the last 10 years as baselines. This approach will include using multiple indices such as the settlement and ventless trap surveys, trawl survey data, landing information and other indices as recommended by the TC.**

Motion by Patrick Keliher; second by Ritchie White. Motion carried (Page 52)

10. **Main Motion: Move to adopt for Addendum 1 to the Jonah Crab FMP, Issue 1, Option A, 200 crabs per day, 500 crabs per trip; Issue 2, Option B, 200 crabs per trip (Page 56).** Motion by James Gilmore; second by Bill Adler. Motion substituted (Page 57).
11. **Move to substitute for Addendum 1 to the Jonah Crab FMP, Issue 1, Option B, 1,000 crabs per trip and Issue 2, Option D, 1,000 crabs per trip (Page 57).** Motion by Terry Stockwell; second by Roy Miller. Motion carried (Page 58).
12. **Main motion as substituted: Motion to adopt for Addendum 1 to the Jonah Crab FMP, Issue 1, Option B, 1,000 crabs per trip and Issue 2, Option D, 1,000 crabs per trip.** Motion carried (Page 58).
13. **Move to make the implementation date of January 1, 2017 (Page 58).** Motion by Doug Grout; second by Terry Stockwell. Motion carried (Page 59).
14. **Move to approve Addendum 1 to the Jonah Crab FMP as amended today (Page 59).** Motion by Doug Grout; second by Emerson Hasbrouck. Motion carried (Page 60).
15. **Move to initiate an addendum to create a coastwide standard for claw landings in the Jonah crab fishery with options to: 1.) establish a requirement to allow only whole crabs be landed; 2.) establish a requirement to land only whole crabs, but allow a specified (volumetric) amount of detached claws per vessel per trip, which meet a minimum length of 2.5 inches. Proposed volumetric amounts may include the following: a single 5 gallon container, a bushel, or a standard fish tote; and 3.) allow the unlimited landing of detached claws, which meet a minimum length of 2.5 inches (Page 61).** Motion by Jim Gilmore; second by Mike Luisi. Motion adopted by consensus (Page 61).

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16. **Move that the American Lobster Board recommend the ISFMP Policy Board send a letter to the President of the United States of America regarding the following (Page 72):**
- **The preference of the Commission would be for the current NE Council coral management process to continue without Presidential use of the Antiquities Act to protect deep sea corals.**
 - **Should a President (CEQ) decide to designate a New England waters deep water Monument prior to the end of his Presidency, the Commission requests that any areas so designated be limited to the smallest area compatible with the proper care and management of the objects to be protected; as required by the Antiquities Act.**
 - **The area be limited to depths greater than approximately 900 meters, and encompass any or all of the region seaward of this line out to the EEZ. That only bottom tending fishing effort be prohibited in the area, and that all other mid water/surface fishing methods (recreational and commercial) be allowed to continue to use the area.**
 - **That the public and affected use groups be allowed to review and comment on any specific proposals prior to its implementation.**

Motion by Eric Reid; second by Emerson Hasbrouck. Motion carried (Page 75).

17. **Motion to adjourn by Consent (Page 78).**

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	Rep. Craig Miner, CT (LA)
Terry Stockwell, ME, Administrative proxy	David Simpson, CT (AA)
Stephen Train, ME (GA)	James Gilmore, NY (AA)
Sen. Brian Langley, ME (LA)	Emerson Hasbrouck, NY (GA)
Douglas Grout, NH (AA)	Mike Falk, NY, proxy for Sen. Boyle (LA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)
G. Ritchie White, NH (GA)	Tom Fote, NJ (GA)
William Adler, MA (GA)	Brandon Muffley, NJ, proxy for D. Chanda (AA)
Rep. Sarah Peake, MA (LA)	Roy Miller, DE (GA)
Sarah Ferrara, MA, Legislative proxy	John Clark, DE, proxy for D. Saveikis (AA)
Dan McKiernan, MA, proxy for D. Pierce (AA)	Mike Luisi, MD, proxy for D. Blazer (AA)
Mark Gibson, RI, proxy for J. Coit (AA)	Allison Murphy, NMFS
David Borden, RI (GA)	
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	

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

Ex-Officio Members

Bob Glenn, Technical Committee Chair	Jon Cornish, Law Enforcement Representative
Edwin Gwin, Advisory Panel Chair, Jonah Crab	

Staff

Megan Ware	Max Appelman
Toni Kerns	Mark Robson
Robert Beal	

Guests

Chip Lynch, NOAA	Jeff Deem, VMRC
John Bullard, NOAA	Joe Cimino, VMRC
Kelly Denit, NOAA	Beth Cason, MA Lobstermen's Assn.
Peter Burns, NMFS	John Godwin, Pt. Pleasant Beach, NJ
Mike Ruccio, NMFS	Greg DiDimenico, Garden State Seafood Assn.
Derek Orner, NMFS	Richard Allen, Little Bay Lobster, NH
Jason McNamee, RI DEM	Jeff Pierce, Alewife Harvesters, ME
Mark Alexander, CT DEEP	Abden Simmons, Maine Elver Assn.
Craig Wheedon, MD DNR	Arnold Leo, E. Hampton, NY
Marin Hawk, MSC	

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The Board will review the minutes during its next meeting.

The American Lobster Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, May 2, 2016, and was called to order at 9:02 o'clock a.m. by Chairman David Borden.

CALL TO ORDER

CHAIRMAN DAVID V. BORDEN: If everybody could take a seat we're going to start the Lobster Board meeting. My name is David Borden, and I'm the Lobster Board Chair.

APPROVAL OF AGENDA

CHAIRMAN BORDEN: The first order of business is approval of the agenda. I would just like to note a couple of changes that I've made in the agenda to try to expedite the discussions.

When we get to corals I want to deal with the New England Council coral issue and the monument issue at the same time. Those will both be under Item Number 10. Under Item Number 4, Emerson has asked for a short period of time; like a couple of minutes to show a video on Long Island Sound. I've agreed to do that.

Then once we finish all of the reports under Number 4, I'm going to make some just general comments from the perspective of the Chair on what I think we need to get done today in terms of accomplishing certain tasks. Then we'll move into the tabled motion. Let me ask; Terry Stockwell, you wanted to add an item to the agenda?

MR. TERRY STOCKWELL: Yes, first I want to announce to the board that my seat here at the table today is from the council only. I will be abstaining on all motions not related to the Jonah Crab action, and secondly under other business requests that the agency briefly update the board on 2016 SBRM.

CHAIRMAN BORDEN: Okay, any other items?

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

MR. THOMAS P. FOTE: Mr. Chairman, we lost a member that used to serve on this board for many years; Pat White, and Joe Graham passed away since our last meeting. I would like to get a moment of silence to basically represent two people that strongly were involved in the Commission. Pat White was very diligent and Joe was here forever, so if we could get a moment of silence in remembrance of them.

CHAIRMAN BORDEN: Yes, I fully concur. All right, any other items to add to the agenda? If not we'll take the items in the order in which they appeared.

APPROVAL OF PROCEEDINGS

CHAIRMAN BORDEN: In terms of the proceedings, we had audio problems at the last meeting so I only have partial proceedings. Are there any comments on those proceedings? Seeing no hands up, any objections; excuse me, Bill Adler.

MR. WILLIAM A. ADLER: Yes this is a minor thing, but on one of the motions, Page 8 the motion was tabled and in the other section it was postponed, in the Index of Motions Made. I don't know that that is any big deal at all, whether it is postponed or tabled; but they conflicted.

CHAIRMAN BORDEN: Okay thanks, Bill. Any other comments on the proceedings, if not any objections to adopting the partial proceedings as they were submitted? No objections.

PUBLIC COMMENT

CHAIRMAN BORDEN: In terms of public comments, we have four individuals that have signed up. This is for items which are not on the agenda; and I'll just read off the names and ask you to go up to the microphone down in the corner of the room there and address the board. Try to keep your comments fairly short. John Godwin.

MR. JOHN GODWIN: Thanks for having me. I'm here to submit some comments from Maine, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland and Virginia. We're all seeing the same problem with the varying minimum sizes among states. In New Jersey we have a minimum size, 3 and 3/8s. We are purchasing the majority of our lobsters from Gulf of Maine; from Massachusetts dealers and Maine dealers.

We wind up with a small percentage of lobsters that fall below our gauge size. We're being cited and issued summons and warnings for these lobsters. I'm hoping that by submitting this public comment from dealers, restaurants, supermarkets and various organizations that we can get a little bit of help in solving this problem with the importation of Gulf of Maine lobsters into southern New England states that have a slightly larger size.

CHAIRMAN BORDEN: The next person I have on the agenda is Dick Allen.

MR. DICK ALLEN: My name is Dick Allen; I'm representing the Little Bay Lobster Company. I wanted to speak to you about V-Notch enforcement; it is not on the agenda but it is closely related to the topics you will be talking about in how to improve lobster management. We would suggest that improving the enforcement of the existing V-Notch laws would be a good first step. Before you take a lot of new actions there is one simple thing that you can do.

We understand from people in the industry that there is a wide variation in the degree of enforcement of the V-Notch laws in the different states. We would just think that the first thing you could do is tighten up on that; get all the states onboard enforcing the existing laws. You are trying to leave females in the water; it appears that a lot of them that shouldn't be coming out of the water because they're v-notched actually are. We would suggest that

that would be a good thing for the commission to take a look at and try to solve.

CHAIRMAN BORDEN: The next person on the list is Beth Casoni.

MS. BETH CASONI: Good morning, thank you, Chairman. Regarding southern New England, at the LCMT Area 2 meeting it was discussed at length to have a further look at the entire inshore habitat and why settlement is not happening. We would encourage for that to happen not just in Area 2, but the entire southern New England stock.

Then regarding the dealer possession size, we support the comments given earlier and there are so many varying sizes on possession; and this is from the dealer's perspective. The gentleman that just gave comment sells a million pounds of lobsters, and we don't want to lose that infrastructure and that dealer in southern New England. The southern New England fishermen are already in a hard place; so we ask the commission to look at that further.

CHAIRMAN BORDEN: Then next person I have on the list, Greg DiDomenico.

MR. GREG DiDOMENICO: Greg DiDomenico; Garden State Seafood Association, thank you, Mr. Chairman, thank you board members. I'll be brief. I also would like to lend our association support to this dealer possession issue. It is a broad issue but it is also a specific issue that I understand has to be worked out within our own state; and we're working on that right now.

But it would be extremely helpful for the board to perhaps have some discussion, a broader discussion about this and perhaps take this up at a specific subcommittee or an advisory panel within the Atlantic States Marine Fisheries Commission. The issue from a broader perspective is that the type of importation that has been going on in our state for a very long

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time, many businesses are dependent up it; many restaurants are dependent upon it.

That is why most people within the state that are involved in that business are supporting this effort. I just want to see if there is a way to urge the states to work together more cooperatively on this, and have a much broader conversation about how to make this work without having any conservation impacts to the lobster fishery.

CHAIRMAN BORDEN: John Godwin, you signed up twice. I assume you only want to speak once, is that correct?

MR. GODWIN: That's correct.

CHAIRMAN BORDEN: Just a couple of comments. This minimum size issue I know has come up very extensively in Massachusetts; and I might add Dan just to offer a couple of comments on how they've handled it. But I think the way for the board to handle this; some states have worked out ways of accommodating this type of a practice.

Maybe those states could provide information to New Jersey; in terms of the types of systems that have been set up. Actually, before I recognize Dan, Brandon, do you want to comment on this issue; since you are undoubtedly very involved in it?

MR. BRANDON MUFFLEY: I was actually going to see how you wanted to handle this. I have been speaking to a few other state directors. When we were in New Orleans this issue first kind of started to bubble up in New Jersey as something we wanted to look into addressing. I don't know if it is worth just me talking to some of the other state administrators on how other states, if there is any consistency among states and how we deal with this possession limited issue.

We've met with advisors and our marine fisheries council just actually last week on this issue, to see if we could come up with a

resolution on it. I don't think we are quite there yet, so I would welcome more discussion; either from my state partners or here at the board level to see how best to handle.

MR. JAMES J. GILMORE: One other thing I think we could do, the LEC is meeting this week and there is probably, I know our state was involved; not in this particular one but a similar issue a year or so ago. It might be good to get some feedback from them and have some discussion or put on their agenda that they can give us some guidance on this. One of the complications is, is this is interstate commerce now it is not strictly state management; that does sort of muddy the waters a bit, so it would be good to get some advice from them.

CHAIRMAN BORDEN: Just to follow up on that. I like that suggestion, but to follow up on that. How many states in southern New England have an accommodation for this type of practice? Massachusetts does, but any other states that accommodate this type of thing, so you can ship in 3 and 3/4 inch lobsters into a state where the landing and possession size on the water is 3 and 3/8? Do any of the other states have this?

MR. DAVID G. SIMPSON: Yes, we allow lobsters less than 3 and 3/8 to be handled in the state, shipped, transshipped, but not offered for sale.

CHAIRMAN BORDEN: Okay, thank you. Dan, do you want to comment on this?

MR. DANIEL MCKIERNAN: In Massachusetts we have three different minimum sizes; because we sit at the convergence of the Gulf of Maine, Georges Bank, and southern New England areas. We have 3 and 1/4 inch for Area 1, we have 3 and 3/8 for Outer Cape and Area 2, and we have 3 and 17/32 for our Area 3 fleet.

We've never increased our dealer minimum size or market minimum size above the 3 and 1/4, but we've also been fortunate to have some very, very stiff penalties that I believe it is around

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\$100.00 per undersized lobster. I think any state that might want to consider accommodating the commerce of these undersized lobsters should probably back that up with some stiffer penalties for any harvester that comes into that state with lobsters that may meet the market size, but would be unlawful per their permit requirements.

CHAIRMAN BORDEN: My suggestion here would be for the states that have an interest in this to talk to Brandon. I particularly request Dan to provide input on how you actually handle this issue in Massachusetts. As far as the suggestion to have the Enforcement Committee, I think that is a good suggestion; but I think it will be easier for enforcement to actually review something if you give them a full package of a proposal that they could review on what is entailed.

If New Jersey, for instance, wants to do that; I would suggest that they submit a proposal to Jon and the Enforcement Committee. Is there any objection to doing that? The other issue is, and I'll just touch on these briefly, is the issue of V-Notch enforcement. There are a number of proposals you're going to deal with today in terms of potentially standardizing regulations in some of the areas.

I think this is an issue that the Enforcement Committee can weigh in on and provide some input to that as the process moves along. The habitat suggestion that Beth made, this is an issue that has come up a number of times in Rhode Island, and Massachusetts there is a lot of concern in the inshore lobster industry about the degrading habitat in some of these estuaries. To me this is an issue that the Commission can get involved in, but I really think the states have got to take a predominant lead in it; particularly the water quality. People in the states should look at some of these issues. Is there any other discussion on any of those points?

NEXT STEPS FOR MANAGEMENT OF THE SNE AMERICAN LOBSTER STOCK

CHAIRMAN BORDEN: If not, we'll move along into Item Number 4. This issue just by background, we've had a whole series of technical reports on the status of the southern New England fishery. You're going to get another one today. I think Bob Glenn and the Technical Team have provided us with at least five reports, maybe more; related to that we're also going to get a report from Rhode Island.

We'll get a report from Megan that responds to a board request on Plan Development Team actions. We've got two reports from two lobster conservation management teams that are starting to formulate guidance on if we have to take an action on southern New England lobster. They are trying to prioritize what they think should be done. Then we've got the issue of Emerson's short video.

What I would like to do is to work through those different technical reports. My guess is that when we finish all those we'll probably take a five minute break; so everybody can get a cup of coffee and stretch their legs a little bit. Then we'll move into the main item on this, which is to define whether or not we're going to do an addendum and what the goals and objectives for that addendum are. Let's start off with the first Technical Committee report; Bob Glenn.

TECHNICAL COMMITTEE REPORT

MR. BOB GLENN: One of the primary tasks given to the TC for this report was to look at the impacts of a gauge increase on the southern New England stock. To achieve this we used the simulation model that we used for the projections to analyze the effects of increasing minimum size. One thing to understand is that the impact on the stock from a gauge increase is highly sensitive to both the rate of growth and the rate of natural mortality; specifically on the unfished portion of the stock.

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For this analysis to try to give you some insight as to how growth and natural mortality affects the impacts of a gauge increase, we used a range of growth rates and a range of natural mortality rates to look at that. To understand a little bit about that relationship, and given for a biomass to increase, you basically are looking at the number of animals at size, times their growth rate, less how many die from natural mortality.

That gives you kind of an idea in very simple terms of how the stock has the potential to increase under a gauge increase. An important point is that as M increases, and I'll show this in a little bit more detail in a minute. But as M increases the benefits of a size increase diminish, because increasing proportion of the stock dies before reaching minimum legal size.

Under real high M situations the benefit of a gauge increase is substantially less. Also the benefits of a size increase diminish under slower growth rates, because the longer it takes for a lobster to grow to minimum legal size, the more time M has to work on the stock. It is kind of balancing those two things out when you try to determine the overall impact. For this analysis, all the simulations assume a constant rate of exploitation based on the terminal year of the assessment.

What we're going to show you as how the gauge increase would impact the stock, assume that the exploitation rate does not increase or decrease. Then finally, all the simulations assume a constant rate of recruitment; and I just wanted to point out that this is a fairly tenuous assumption given the empirical trends in young of the year lobster settlement that we've witnessed in recent years. The three growth rates that we looked at were what we called the base case, and that was used in the last assessment. This was the fastest rate of growth used in the simulation, and it is based on historical tagging data. Some of the issues with this that give the TC heartburn is that it has an improbably fast rate of growth for small lobsters,

and an improbably slow rate of growth for large lobsters; large female lobsters specifically.

We wanted to test that growth assumption a little bit and we used kind of an ad hoc best professional judgment method to come up with two additional growth estimates. The second one was what I would refer to as the intermediate growth model. This is based on the female molt probability that is calculated off the proportion of sublegal lobsters that are bearing eggs.

For this growth curve, the lower end of the growth curve was set to a 33 percent molt probability; which means that at a maximum the inter-molt duration for a female lobster was at a maximum three years, whereas in the base case that assumes that the maximum inter-molt duration for large lobsters is up to five years, which the TC just feels is pretty improbable; because we never observe large lobsters that are full of encrusting animals. Their shells don't look like they have been there for five years.

Then finally we used a slow growth model to kind of give some contrast. This assumes that all females reach sexual maturity by 75 millimeters carapace length; and in this case there is a max inter-molt duration of four years at 90 millimeters. This is just from females to the left and males to the right.

As you can see the three different growth trajectories and these are molt probabilities, so this is the annual probability that the lobster will molt. Basically what this shows in the bottom is carapace length. What it shows is that for animals that are small, like say 60 millimeters, your annual probability of molting is anywhere between 80 and 100 percent.

Then as lobsters grow, get bigger and bigger, as they get bigger their growth rate and their inter-molt duration slows. For natural mortality we basically took a broadcast approach and we looked at 11 values ranging from 0.15, which is

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the assumed background rate of natural mortality up to an M of 0.4.

Based on the most recent stock assessment, looking at likelihood profiles, the TCs estimate of where natural mortality currently is is between 0.24 and 0.27. Again, I just wanted to note that as M increases the effectiveness of the gauge size change diminishes. This figure here, the three panels represent the three different growth rates that we use; the less the base case, the middle one the intermediate growth rate and then the one on the far right is the slow growth rate.

The X axis is the carapace length, and then the Y axis is the relative equilibrium biomass under current exploitation from the projection model. The dashed vertical line you can see is the 86 millimeters, which is the current minimum legal size in southern New England. Then you can see incrementally, depending on which rate of natural mortality and which growth you assume what the impact of minimum size increase is.

What we found is that increasing in minimum size resulted in increased stock biomass under all scenarios. Slowing the growth rate or increasing natural mortality resulted in smaller increases in biomass. The largest increase in the spawning stock biomass observed, was in scenarios with fast growth and low M; which is what we would expect. Under slow growth and moderate to high M, only minimal increases in spawning stock biomass were observed; even at very large size increases. In addition to looking at how gauge increase would impact the stock biomass, we also projected how it would affect the catch in the fishery. In this figure this represents for those same three rates of growth and the range of natural mortality values, the relative catch at current exploitation at size.

Again, the vertical line is current minimum legal size and this basically demonstrates, depending on what rate of M you choose and which growth rate you choose that at least for the five

millimeter increase, long term you would not have a substantial or any reduction in catch; depending on the growth rate used.

Then as you get larger and larger, it is obvious that you see the catch decline. This graph goes all the way up to, I believe 108 millimeters. In this case you had a minimum size of 108 millimeters; you see that overall the yield to the fishery is substantially lower. The effect on catch of increasing the minimum size varied across those scenarios.

Under low natural mortality rates when M was less than 0.2 increasing the minimum size can increase total yield under the base case and the intermediate growth scenario. At the current rate of M, which we estimate at 0.275 in the last assessment, yield remains fairly stable with increases in the minimum size up to 90 millimeters.

Then finally, long term loss in yields were observed in all growth scenarios with increases greater than 90 millimeters and M equal to or greater than 0.275. I forgot to mention one thing about what each of those values represent. When we're talking about equilibrium, in the model in this particular case we're allowing the model to basically reach its long term equilibrium point; so that would be a case of about 20 years for it to reach that.

I'm going to show you in a second that there are definitely short term reductions in catch that result from increasing the minimum size. What this last figure represents is the equilibrium, so after 20 years at that size where the eventual yield would end up. We boil all that down and we use, to make it a little clearer to see, just using what we currently assume natural mortality rate to be of 0.275.

You look; the figure on the left is the relative equilibrium biomass for the three different growth scenarios. What you can see based on an M of 0.275 is that in all scenarios changes in

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minimum size would increase stock biomass under all the given assumptions that I indicated at the beginning.

Similarly, if you look over at the equilibrium catch over the long term, is that you don't see much of a loss in total yield up to about 90 millimeters; but once you exceed 90 millimeters loss in yield does start to decline fairly substantially. That is also dependent on which growth rate is used.

For a scenario just to get everyone a sense on, depending on how you go about a gauge increase; whether you did it in small moderate increments, or in one big step. We looked at an analysis where we increased the current minimum size 3 and 3/8 up to 3 and 3/4 inches. One scenario was where we increased up that distance the whole 3/8 of an inch in one year. When we did that we would expect a 50 percent decline in catch in Year 1, but the equilibrium catch in this case would be achieved in Year 4. In this scenario we saw the most rapid increase in spawning stock biomass. The next scenario is increasing the 3/8 of an inch over a course of three years. In this case there was obviously a less severe drop in catch, and equilibrium was achieved in five years. We saw a moderate rate of increase in spawning stock biomass.

Then finally, if we increase the 3/8 of an inch over a longer period, six years, we see a very gradual decline in catch. It takes equilibrium is achieved in 8 years, however in this scenario we see the slowest rate of increasing spawning stock biomass. In conclusion on conclusions for the gauge size analysis, we found that an increase of 5 to 10 millimeters may result in increased spawning stock biomass after 20 years.

Short term changes in catch and biomass will be more dramatic but what will reach equilibrium over time. The benefit of a gauge increases are highly sensitive to growth rate and to natural mortality rate. It is also important to note that

this analysis does not account for spatial variability in the size distribution of the stock.

As you all know, lobsters are not distributed evenly by size. Smaller lobsters tend to settle inshore and as a result the inshore fishery tends to work on a smaller size distribution than the offshore fishery does. We would expect that the effects of the gauge increase are likely to be more dramatic inshore than they would be offshore.

The assumption of constant recruitment we feel is highly optimistic and is not supported by the empirical trends that we see in young of the year settlement. The analysis also assumes that the exploitation rate stays constant, meaning that fishermen would not compensate for the gauge increase by increasing fishing effort.

If that were the case, if the exploitation rate were to increase then those projected benefits of a gauge increase would not be realized. If recruitment continues to decline, projected increases in spawning stock biomass due to increases in minimum size will not be realized. Finally, the TC cautions that large reductions in mortality are still required to stabilize the stock and the increase in the adult population is dependent on favorable environmental conditions.

We feel that changes in the minimum size must be combined with other management measures to realize substantial improvements to the stock. Mr. Chair; that is that portion, I don't know if you want me to continue with the rest of the report, or if you would like me to entertain questions about that analysis. It is your call.

CHAIRMAN BORDEN: I think we'll expedite the discussions if we just take questions on it section by section. I think it will be easier for you too, Bob. Everyone understands this is not the point where we're going to debate some of these. If you've got a question on the analysis ask a

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question on the analysis, so any questions for Bob?

REPRESENTATIVE SARAH PEAKE: Thank you, Bob, for that portion of the report. I'm just curious as I look at the graph there analyzing the decline in catch, more severe if implemented over a shorter period of time. What kind of baseline survey has been done? Are the larger lobsters even there, or have environmental factors or other factors led to a mortality; so that we may see a sharper decline in catch than what is being anticipated? I guess I am curious what went into your analysis of how steep that slope is or not in the catch decline.

MR. GLENN: That analysis is based off taking the starting stock biomass from the last terminal year of the assessment, and then using a projection model including the rates of growth, the rates of natural mortality; and then the changes in the gauge sizes, and letting that run forward for 20 years, and then doing that multiple times.

Then looking at the distribution of that to see what the point estimate would be. Empirically we look at the size distribution of lobsters in southern New England. We do see larger lobsters offshore in the canyons. We do see some larger lobsters in the inshore portion as well, but obviously more offshore.

CHAIRMAN BORDEN: Any other questions? No hands up, go ahead, Bob. Oh, excuse me.

MR. MUFFLEY: I have two questions, one a simple one I guess. Was there any reason behind selecting 3 and 3/4 as the gauge size to go up to?

MR. GLENN: Yes, the 3 and 3/4 was when we looked at the – I'm going to pull up a figure, this figure here – actually I'm sorry we'll go with this one; 3 and 3/4 inches is, I believe it is about a 10 millimeter increase from the current size. What we saw there was that that would have a fairly substantial increase in the spawning stock

biomass, but the equilibrium catch in total yield to the fishery in long term would stay fairly similar.

MR. MUFFLEY: Not specifically related to that but in thinking in terms of the projections that we looked at in February. I see here this shows that if we went up to 3 and 3/4 inches, which equates to about a 50 percent reduction in harvest, shows some pretty sizeable increases in SSB.

Under some of the forward projecting work, like I said presented in February, it showed we need a 70 to 80 percent reduction just to stabilize SSBs. Just wondering what the differences are between what the stock may respond to here versus under the forward projecting stuff from February.

MR. GLENN: Yes, in this analysis it is basically by increasing the minimum size you're changing the fished portion of the stock, so you get that immediate bump right out of the gate.

CHAIRMAN BORDEN: Anyone else? Doug.

MR. DOUGLAS E. GROUT: One of your concluding statements is; if recruitment continues to decline increases in SSB due to minimum size will not be realized. One of the things that struck me in the last assessment is that over the last 10 or 12 years we've seen a continual decline in recruitment to very low levels right now. Is there any indication that the environmental factors may change; that we may be getting more positive recruitment?

MR. GLENN: No, there isn't any evidence that I've seen to suggest that recruitment has improved in southern New England or that the environmental conditions have improved or are likely to improve.

MR. EMERSON C. HASBROUCK: My question was somewhat similar to Doug's, so part of my question has already been answered. But the

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other part of my question is do we know anything about M and the natural mortality? Has that been increasing over the past few years? The reason I'm asking is that you qualified many of your statements with environmental conditions. Again, the question is, do we know if natural mortality has been increasing?

MR. GLENN: Yes, we do know that it has increased. Based on work that the TC did in the last assessment we shifted the natural mortality up to coincide with a large change in oceanographic conditions in southern New England that happened in the late 1990s. We had kind of a step increase where we went from 0.15, which is the assumed background natural mortality rate for lobsters.

Then starting in the late 1990s, based on empirical data on temperature anomalies, as well as looking at other things that occur like die-offs and increase in the rates of shell disease, there was a pretty clear break around 1998; where the conditions changed. Then from there we increased that up to 0.275 and then allowed the model to run at different scenarios, and then based on the maximum likelihood or the best fitting model essentially; we honed in at a rate of 0.275.

MR. WILLIAM A. ADLER: Following up a little bit on what Doug said. We did an awful lot down there to help the situation out by reducing the traps, increasing the gauge, putting a maximum size. Apparently that hasn't helped. Then I start to wonder about, in the computer models it helps if you go up in the gauge and everything else.

But I'm wondering if we're just going to have even more natural mortality. I presume your natural mortality has to do with shell disease and predation, because the warm water doesn't necessarily kill a lobster; they just leave town. They might be out somewhere else. But I just have questions as to ratcheting up the gauge more; we already did, nothing happened. I don't

know how this is going to change, and this is the conundrum we're all in I'm sure.

CHAIRMAN BORDEN: Anyone else have a question on this section? If not, we're going to move on to the next section, Bob.

MR. GLENN: This is actually something that the TC put together that wasn't necessarily something that the board specifically requested, but something that we thought was important to kind of put the southern New England discussion into context. We conducted an analysis where we looked at the relative importance of M; natural mortality and fishing mortality on the southern New England spawning stock biomass.

In a nutshell what we found was that M has had a consistent impact on SSB within the two observed regimes. M was responsible for moving about 9 percent of the SSB between 1980 and 1997. Then after 1998, about 17 percent of the SSB that M removed. But looking at fishing mortality we found that currently fishing mortality is removing between 35 to 39 percent of the SSB, which is roughly twice what is being removed from M right now.

This suggests that even at elevated levels of M, management actions can still have positive effects on SSB. We just essentially wanted to put into context that fishing mortality still is a substantial source of the total mortality in southern New England. While M has increased and is an important factor, we can't underestimate the impact of continuing to fish on the stock.

We wanted to kind of add some. The original stock recruit relation that I showed the board last time around didn't include all the years going back in the time series. We probably should have, because I think looking back to the early 1980s kind of gives some additional context to what is going on in southern New England. What we've seen is that recruitment has plummeted over the past decade while SSB has remained

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fairly constant. This suggests that there is some type of a depensatory mechanism that may be at play; in that recruitment appears to be decoupled from SSB.

The different possible causes of this are reduced mating success, lower survivorship of the early life history stages and increased predation. If we look at this stock recruit history, going back to the early 1980s you can see in the early 1980s we had similar levels of SSB as what we have right now; yet those early years were responsible for producing extreme high spawning stock biomass that occurred in the 1990s.

If you look at the top, the lighter line, the dashed gray line; you kind of see a regime there where there were probably positive environmental conditions where even at low spawning stock biomass, the stock was able to put out some fairly high recruitment levels. Then you see starting after the mid-nineties that relationship starts to change.

What we see there is even with very high spawning stock biomass, after about 1998 we start to produce fairly low levels of recruitment. Then after about 2003, for that given size of spawning stock biomass we see the recruitment level really start to plummet. Are there any questions about the last two parts?

CHAIRMAN BORDEN: Questions for Bob? I just offer a personal comment. This is kind of an amazing slide, I think; because you think about the environmental change that the lobster resource has been subjected to over the period of time. Essentially we've gone full circle through a period of very high abundance and very high recruitment.

Now we're back where you've still got kind of the same SSB in place, but the recruits have just fallen right out of it. One of my questions to you, Bob is that the assumption in most of the models is that natural mortality is estimated to be about

0.275 is that correct? If it goes higher than 0.275, what does that do to the projection?

MR. GLENN: I don't have the exact projections in front of me, but I know from studying them enough that if M goes much higher than 0.275 there is almost not scenarios by which stock biomass can be increased. It will just continue to decline.

CHAIRMAN BORDEN: Other questions? Any other questions, if not let's move on to the next segment please.

MR. GLENN: The board asked the TC to weigh in on the cost and benefits of standardizing regulations in southern New England. The TC came up with the list of benefits being that we felt this would decrease the competitive effects of disparate management measures along LCMAs.

As we all know, southern New England is carved up into four or five different LCMAs. We all know that the lobsters obviously don't know there is a boundary there, so if you have adjacent areas that have different minimum sizes, you have situations where one lobsterman is throwing over an animal and then one fishing adjacent to them in the next zone can then harvest them; and obviously that conservation isn't realized in that case. We also felt that it minimizes the impacts of management related to size selectivity on the population; that ensures lobsters are equally susceptible to fishing pressure regardless of where they are located in southern New England. It simplifies the current regulations leading to enhance enforcement and compliance.

It will certainly improve future analysis on stock conditions as scientists will be better able to estimate the effects of the fishery on the lobster population. But it does come with some cost. It ignores the existing population demographics, including spatial trends and size and sex. What I mentioned before, lobsters are not distributed

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evenly across the inshore and offshore area by size; so if you standardize that you kind of create a situation where you can have haves and have not, because simply as lobsters grow up and get bigger they tend to move offshore.

It can also create inequities between LCMAs, some of which may be long term due to ontogenetic shifts in lobster habitat use, i.e. the movement of lobsters offshore from the coastal nursery areas as they get bigger. Portions of the fleet would have to make gear modifications, especially to their escape vents to standardize.

As the LCMAs are currently defined, standardizing regulations in southern New England would have impacts throughout Area 3, including the Gulf of Maine and Georges Bank. Should the board consider standardizing regulations, it may be necessary to separate the southern New England portion of Area 3 from GOM and Georges Bank.

Then a couple of additional consequences that we came up with was that increasing a minimum gauge size would disproportionately impact inshore fishermen who primarily rely on lobsters which have recently recruited to the fishery and contrast a decrease in the maximum size would primarily impact Area 3 fishermen; whose catch is comprised of larger lobsters.

Then one additional consequence is that standardizing the biological measures would eliminate the need for permit holders with multi LCMA trap allocations to declare which area or areas will be fished. Assuming a fisherman is not limited by his or her trap allocation; uniform regulation including trap caps would remove the necessity of the most restrictive rule.

This would benefit due permit holders, since they would have greater flexibility in where to fish, but it could be at a cost to a single area permit holder who may experience increased effort moving into the fishing grounds. Any

questions on the cost benefit of standardizing regulations in southern New England?

CHAIRMAN BORDEN: Questions, Dan.

MR. MCKIERNAN: Bob, thank you for your description of the problem of seeing six different zones within one stock unit. Did the TC also make note of what I would consider the very large overlap zone as another conundrum in addition to the movement? You've got that overlap zone between two and three. Was that noted at all?

MR. GLENN: I don't believe that we noted it in the report. We did discuss it at the meeting. Again that is even a more complex issue where you have an area that is shared by two areas with different rules; that kind of reinforces all the issues that we brought up.

CHAIRMAN BORDEN: Anyone else? Okay Bob, you're up again.

MR. GLENN: Okay, home stretch. Finally, the board had asked us the attainability of the current reference points. What we came up with is given that none of the projections which use the current natural mortality rate of 0.285 from the last assessment show the stock reaching an abundance of 22.5 million lobsters, which is the reference point. The TC feels it is very unlikely this reference point will be achieved under present environmental conditions.

CHAIRMAN BORDEN: Questions on this point? Okay no hands up.

MR. GLENN: Okay and then finally the board had tasked us with looking into the potential of conducting some inshore/offshore tagging studies; with specifically looking at the inshore and offshore connectivity of lobster stocks in southern New England. The TC felt that previous studies show strong evidence of a migration in which adult lobsters make directed seasonal

migrations offshore in the fall and return inshore in the spring.

Benefit from an additional tagging study may be minimal in increasing our knowledge on stock connectivity. However, the TC does know that there is a lack of information on growth and size specific natural mortality in the lobster fishery and believe that a tagging study would be useful to address these data gaps. It would also give us a more modern update on the connectivity.

I guess there is a potential that given the changing environmental conditions that stock connectivity could have changed, so a tagging study would also give us a chance to update that; because the last tagging data done that looked at that was done in the sixties and seventies. The TC provided information in the report on two additional tagging studies; one was a southern New England inshore/offshore connectivity and study that I put together that had a rough budget of about \$250,000.00.

Then there is also a fair amount of information put in there from New Hampshire. Josh Carloni, as well as representatives from Maine, who are currently working on a tagging study in the Gulf of Maine; looking at Gulf of Maine and Georges Bank connectivity, and their current study I believe is requested, or is it funded for \$107,000.00. But I think there was also a need to do some additional work with that as well; and that is all I have.

CHAIRMAN BORDEN: Any questions? Bill.

MR. ADLER: Bob, could you go back to the slide before, the 22. This was basically saying that the abundance is 22.5 million lobsters, okay. What was that figure back before the boom that came in the nineties? Where was that whole thing back then? Was it near 22 or way above or what?

MR. GLENN: What the 22.5 million lobsters represent is the reference point, the median

level of abundance. At the last board meeting we presented several scenarios of changing the reference point, including taking out those boom years; and because that's a median not a mean, taking out those boom years has fairly small impact on lowering the reference point.

With the median any one given value, median being the middle value of the time series, it doesn't have that much impact. Any one value doesn't have that much impact on the median like a mean would. But in a nutshell what the TC is saying here is that at current rates of natural mortality, we don't feel that it is possible to reach that. There was no scenario that we ran that we were able to reach that under current environmental conditions.

MR. ADLER: Okay, I understand that. I guess where I was going to was back where we say how many lobsters there are there now, whatever that figure is, and forget the boom years and go back to when it was not the boom. I know somewhere in your paperwork you have what the stock size, I guess that's what I meant, the stock size was before the boom and the stock size now as best you can get. Are we back to where we were in the nineties or lower than where we were before the boom? Do you have that figure, roughly?

MR. GLENN: Yes, I do have it in front of me. I just don't have it in this presentation. I had it for the last presentation. But looking at it right here, we're currently below 10 million; we're around 8 million lobsters. That is the lowest point that we've seen in the time series.

MR. ADLER: Even back before the boom?

MR. GLENN: Even back before the boom.

CHAIRMAN BORDEN: Other questions; yes, John.

MR. JOHN CLARK: Thank you for the informative presentation, Bob. I was just curious. I know last

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time you said that the offshore spawning, the eggs and juveniles would come inshore and tend to drift in a southwest direction. For the spawning stock at the southern part of the range, would it be fair given the poor environmental conditions and the poor recruitment to assume that they're really not contributing much at all to this stock right now?

Because their spawn would be likely drifting into really poor conditions as they head southwest, and if so would treating the entire southern New England area as a single unit. I am just curious as to whether way down at the southern end whether this spawning stock is almost like a dead end where juveniles end up there, grow there, but are not contributing to the stock.

MR. GLENN: Well, for that to be the case you would have to assume that those adult lobsters don't make annual spawning migrations into favorable areas. All the tagging studies that we've conducted historically show that egg bearing females in the springtime make migrations into favorable areas to hatch their eggs.

We don't specifically have any tagging studies from the far southern end of the range there to show that. But my assumption would be that it wouldn't make any sense evolutionarily for an animal to put that much energy into producing eggs, to not then migrate to put them somewhere. I think the TC would feel that the life history model would be that those animals make a migration to hatch their eggs in the appropriate place so that the larvae eventually will settle out in a favorable area.

MR. HASBROUCK: Bob, the slide that you have up now where the current natural mortality rate is 0.285. Earlier on in your presentation several minutes ago, and I don't recall if it was a slide that you had or if it was just a statement that you made; essentially that if M goes higher, I'm not sure what value you mentioned. But if M goes higher than a certain value then none of the

scenarios that you ran are going to result in increasing spawning stock biomass. Do you recall what that number was? Was that 0.285? Was it some other number? Then I have a follow up, please.

MR. GLENN: Just to clarify the question. Do you mean at what point does it have to get to before there is nothing you can do to stop the decline, or do you want to know what value that is?

MR. HASBROUCK: Yes, as I said before, you made a statement or it was a statement made in one of your slides that if M increases above some level X; and I don't recall what you said X was, then none of the scenarios that you had are going to result in increasing spawning stock biomass. The first part of my question is what is that number? What is X, in that statement that you made?

MR. GLENN: Okay, I'm pulling up the stock projections that I presented last time, and if you just give me a second I can look at where that falls. Okay so according to the projection that I'm looking at right here, where we assume we're currently at 0.275. That is even more updated from the last assessment, and the last assessment was 0.285.

We did some additional likelihood profiles and we've narrowed it down to 0.275, where we currently are. Then if you look at the stock projections, when M gets to 0.325 the stock, even at the current constant rate of mortality the stock will decline; and then above that it really starts to decline, so 0.325 would be the value.

MR. HASBROUCK: Thank you, you've also answered my follow up as well, so thank you.

CHAIRMAN BORDEN: Any other questions for Bob, if not Bob, are you finished; that's it? Okay so the next presentation is by Jason and Jason, if you wouldn't mind I would like to handle it the same way. Go through each segment, we'll take

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questions and then move on to the next one. Thank you.

MR. JASON McNAMEE: My name is Jason McNamee; I work for Rhode Island Marine Fisheries. Once the last stock assessment came out and there was sort of general understanding that some management would be needed for lobsters. Rhode Island wanted to help out and lend some support to the Technical Committee, so we started to develop what I'll refer to as a set of tools that we thought could be helpful to the Technical Committee.

This following presentation basically outlines the tools that we brought forward to the Technical Committee for their review. Bob already had a lot of things to discuss with you, so since I was going to be at this meeting anyways, talking with Megan, they asked that I at least cover this section for Bob; give him a little bit of a break. Again based on the last stock assessment it became apparent that we were going to need to start talking about management for the southern New England stock area.

What we did was we looked at the information that we had available and began to think about, well what are the areas where we can look at reductions and harvest reductions, and what are the tools that we have available to get at some various management goals? In addition to those very, sort of pragmatic analyses, we also looked at some spawner recruit information. This is some work that Mark Gibson from Rhode Island had been thinking about and working on for a long time, and so we thought this was a good opportunity to investigate that a little bit more. The presentation has basically three main categories. The first thing that we looked at was the relationship between traps fished and realized exploitation rates. Trap reductions is this kind of marquis management effort, in particular in Area 2. We wanted to begin to think about, well what does that mean by way of exploitation? Where might we end up once we get through these trap reductions?

We looked at the information that we had at hand to see if we could develop a relationship that could answer that question. We also looked at some technical measures to reduce F and preserve the remaining spawning stock biomass. Bob in his presentation talked about this a little bit. What we are going to show you is a more parsimonious analysis, a little simpler.

I think these types of simple approaches sometimes can lend some good context to the more complex modeling procedures. Then the final piece is this alternate stock recruit relationship information. I am going to start off with the effort control; this is the trap reduction stuff that is occurring in southern New England, at least in parts of southern New England.

The data used for this analysis was southern New England traps fished. This was taken directly from the stock assessment document. In our first cut at this analysis when we were bringing it forward to the Technical Committee, we didn't want to start to create datasets that hadn't been looked at by them before; so we tried to base all of these analyses off information that we know the Technical Committee was familiar with and had worked with in the past.

The time series of exploitation is taken directly from the stock assessment document for the southern New England area. Based on that information on numbers of traps versus the estimated exploitation rate in southern New England, what we did was we developed a model, basically a curve to fit the information that we had available. This model, it is a really simple model; it is a Michaelis-Menten function. This is something that is commonly used for enzymatic reactions, but it is just a standard model that describes a curve.

We fit this curve to the data using two techniques; we use sort of a standard statistical approach, maximum likelihood. Then just to give us some context as to whether we are getting

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information that was similar, we tried a different approach; and we tried a Bayesian approach as well. Normally for such a simple model with only two parameters you don't need Bayesian techniques to get at that.

But the idea here was, besides the fact that Bayesian statistics are kind of neat, it was just to approach it from a different angle to see if we can come up with the same results. The Michaelis-Menten model has two parameters, and the parameters make sense; that is kind of why we picked this model to work with. Just not to ruin the surprise, but the model was fit; it successfully converged on a solution under both approaches. Here is a look at the result. The graph that you're looking at on the Y axis is exploitation rate.

Along the bottom are thousands of traps. Again, this is traps fished. That is taken directly from the stock assessment document information. I'll get to that discussion when I sum up this portion of the presentation. What you see, the dots are the traps fished in each year and the resulting exploitation rate that was estimated in that year, and the red line, the curve that is the predicted model fit to that data. On the right hand side what you see are the parameter estimates from that analysis. As I mentioned, we tried a different angle on this and we ran it through a Bayesian statistical technique, and the take home from this slide is that it looks exactly the same. The parameter estimates were, for all intents and purposes, exactly the same; small nuance differences, but not enough to impact the way the curve fit or looked.

How might you use this kind of information? What is its value? What you have now is a relationship between the traps that are being fished and a resulting exploitation rate from that number of traps. What you can do is follow your way down that curve, depending on what your goal is. Here what I've offered, you can kind of see it up there, so there are these gray almost like a target on there.

What that target is honing in on is where we believe we will be once the 50 percent trap reduction effort in Area 2 takes place. The numbers are up there under that second bullet, but the take-home point is you can draw a line on this curve and then track your way back to that exploitation rate to figure out where you're going to be.

Now if you have a goal in mind, you can see where on this curve you need to be to get to that goal. I think this is my final slide on this. Both the Technical Committee and the industry raised questions about this data source traps fished, and its usefulness for this analysis. The question came up; can we find alternate data that we think better represents what is going on? We don't necessarily think traps fished are the best data source to use.

That is fine. That is something that we can improve on in this analysis, but the underlying idea here is to develop this tool that we think is useful for, we're doing all of these trap reductions; is there a way to actually quantify what those trap reductions are doing? We've gotten a couple of ideas from the Technical Committee and the industry as to what sources of data we might also try, so we can move forward with that if warranted.

These reduction calculations, once you can kind of hone in on that; you can combine them with other efforts. We don't have to put all of our eggs in one basket and try and go for a single approach to reducing or meeting the goals that we want to meet. We can combine them together. To kind of stick with this strategy, I'll stop here and take any questions you all might have on this part of the analysis.

CHAIRMAN BORDEN: Questions for Jason?

MR. DAVID G. SIMPSON: Thanks, Jay and thanks to your group for doing this work. I said to Dan before we started all of this that what the Technical Committee and you folks have done is

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really helpful. It is really useful and helpful information. Could you put up the curves, one of the curves?

You've got a pretty good range in traps fished, but in the neighborhood of where we are now there is a great deal of variability above and below the predicted line. Is there any pattern over time of the points being above or below the line? In other words, you know we had similar numbers of traps probably today and recent years as we had in the eighties and then out to the right is more like the ramp up into the nineties. Is there a pattern within that period there?

MR. McNAMEE: I'll take a crack at an answer. I'm not sure that I completely understood your question, so re-ask if I don't get to what you were actually asking. Yes, it is interesting as you look at the pattern. I'll say the data is distributed pretty equally above and below the line, which is good for a model.

However, the variability, which is why we couldn't use a sort of standard linear regression or something like that on this data. The variance is not the same through time. I think it is more a matter of, as you look out towards those 800,000 traps; there are just not that many data points out there. It may in fact be that the variability is just as high down there, it is just that there is only a few of those really high years.

However, as you get now towards the 300,000 trap range you can see that variability in the data points on the graph expands a little bit. Then as you get further down it truncates a little bit, but not as much as it does way out at the higher end. There are definitely differences in the variability. One of the nice things about using a model is you can account for that variability; you know you can calculate standard errors or medians or whatever around the predicted value.

MR. SIMPSON: Yes, so the follow up. Between the 200 and 400,000 trap range. I think as I said,

probably some of that data comes from the early eighties when the stock was higher than it is now. Some of it comes from recent years where the stock is lower than it was back then. I'm wondering if there is an influence of stock size on the relationship between exploitation rate and number of traps fished.

On one hand, what we observed is that the remaining traps being fished are placed where the remaining lobsters are. I am expecting that the exploitation rate would remain high until they fish out those areas and not randomly distributed effort. I just wondered if you noticed any kind of pattern in that regard, which would inform us even more than this curve; in terms of how much response we should expect to get from further trap reductions?

MR. McNAMEE: Yes. We didn't look at I guess a time series of information with regard to stock sizes, not something that we looked at, certainly could; so just add an additional column of data. But I think to get at maybe the root of your question. I think it is exactly why we see a curve and not, again a linear relationship between these two metrics. It is in fact because fishermen are good at what they do, and they kind of know where to go.

Attrition is probably occurring in the weaker areas or when the population is really high that kind of expanded area of suitable, but less suitable habitat. That should all be, it is not necessarily an element within this model. It is in fact why you model it with a curve and not with a linear relationship.

Because you know that there is going to be an area of traps that are out there where yes they will kind of shrink down to the most prime habitats where the animals are going to be all the time, but at some point you're going to hit that tipping point, and that is where all the action is in the curve.

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MR. SIMPSON: The point is, the area of the curve that has the greatest shape is where we have no data, and so my concern is that it could be that the slope, the ascending arm coming out of the zero, zero; the point we haven't observed, fortunately but we know is accurate, could be much, much steeper. We could find that very, very few traps can still exert a very substantial amount of fishing mortality. That's my concern. Working within the range of observed data, you understand the variability; but as we start to talk about managing outside the range of our experience there is just a great deal of uncertainty.

MR. McNAMEE: Yes, I don't dispute; in fact this type of thinking is exactly why we ran it under two different approaches to see if we come up with a similar answer. I'll suggest that the data here does provide enough information to the model to tell it where to bend. As you look at this graph, it is pretty steep to the origin.

I think it is fairly conservative, in particular if you look where we start to run out of data. If you just used that kind of information you would have a much shallower curve, but this curve is pretty steep; so I guess my suggestion to you is the model with the data available had enough information under two different statistical techniques to come up with the same solution. Overall I think it is a fairly conservative model.

CHAIRMAN BORDEN: I've got Doug Grout and then Bill Adler.

MR. GROUT: Jason, can you tell us which one of those gray circles is the terminal year of the most recent stock assessments, i.e. where are we right now on this curve? It says the exploitation is at 0.27, but I can't quite figure out how many traps that relates to.

MR. McNAMEE: Yes, it's a good question. I probably should have identified that on here. I didn't. It is one of the, I don't know half dozen

furthest to the left on the graph, so I'm just not sure which point it is.

MR. ADLER: Part of I think what Doug was getting at was what I was going to get at, like okay so at what level are we supposed to be at or could we be at? We've gone down, at least in Massachusetts from roughly 60,000 down to 22,000 roughly in trap reductions. It hasn't helped. The reduction is still going on.

I don't know at what level you would have to be at in trap numbers to maybe, and I just can't see that it is going to do anything. I did notice that in your report you said trap reductions can be used in combination with other measures. It is almost like, well they're doing the trap reductions, they've done the trap reductions, and they've done everything they can on trap reductions. I'm almost thinking that any further trap reductions are futile.

CHAIRMAN BORDEN: Anyone else on this segment? If not, Jason the next one.

MR. McNAMEE: All right, so the next set of analyses I think dovetail nicely with some of the information that Bob showed you in the beginning of his presentation. We also looked at size changes. In addition to the existing effort control plan, we wanted to look at, you know if you did that in combination with these other procedures what would that look like?

Again, what Bob showed was a much more complex modeling procedure. This is a much more parsimonious procedure. What we did was we grabbed bio-sample data, this is that sea sampling and port sampling information that we're collecting. I truncated it to the years of 2010 through 2012.

But the nice thing about using the bio-sample data, and Bob mentioned this in his discussion. They are not able to necessarily tease that apart in the more complex modeling procedure; but we know the stat areas that are inshore and the

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ones that are offshore, so we can split that data out and look at it by inshore and offshore.

The final point here is we used all the information we could get our hands on. This was state collected data, federal data and also the Atlantic Offshore Lobstermen Association information that they've been collecting as well. What we did was we took all of that information and then generated length frequency distributions, which we then examined for different gauge changes; minimum increases, maximum decreases, things like that.

This is just a look at, I promised Megan I would keep it to 15 minutes and so I'll try to stick to my part at least, 15 minutes; meaning the questions add more time, nothing against you, Bob. This is a look at the inshore data. I'm just going to use that as an example. Pretty good sample size for the years that I examined, about 126,000 samples that were taken.

The distribution looks pretty nice; it is kind of what we believe to be the case. During the stock assessment this was kind of the information that was being used as well in a more complicated way. That is what it looks like, all of the data together. What we then did was to first take out everything that was under the minimum legal size for the inshore area. Then we began to more or less chop off the different bars on this chart.

What you can get from that information is the relative decrease, and you're making the assumption that this distribution represents the population that is being fished, and therefore if you take some of those off the table of what can be fished, you've now protected those animals. All of the things that Bob talked about earlier with deprecating them by natural mortality and all of these other things are very important.

This does not consider those things; it simply protects these animals and then calculates what that relative protection is. I've showed two different examples here of 1/32 gauge increase

and then a second 1/32 gauge increase and I know that is probably hard to read; but the first one we calculated gets you about a 13 percent reduction in harvest and the second one gets you about a 25 percent decrease in harvest.

You can do it from the other end as well, again chopping off what is already protected by the existing minimum legal size. You can then begin to chop off things on the maximum size and that is what we've done here. There are three examples. You can see that you have to come in pretty far to get a lot of harvest protection on the maximum side, but the nice thing about the maximum gauge is that those animals are now protected in perpetuity, natural mortality and things of that nature notwithstanding.

Minimum size changes can be effective for harvest reductions and the potential for egg production, but they can be temporary in nature, so minimum sizes; eventually those animals are going to grow back into that fished population. If these are needed they should be done cautiously and in a phased approach.

Maximum size changes could have lasting protections, but you have to set them in a meaningful way. If you set it out so far that there is not even any animals there, it is not doing you any good. Including these measures with the existing trap reductions schedule could have meaningful impact on harvest reductions. Just a final thought here and then I'll pause for questions. I had available to me this, I guess historical dataset of bio-sample data; I would prefer that we use more contemporary data if you were to like this procedure and want it pursued further, and I'll stop there.

CHAIRMAN BORDEN: Questions on this. Anyone? I don't see any hands up, okay Jason you can move along.

MR. McNAMEE: Okay, the next piece of this. We did a little egg production analysis that we presented to the Technical Committee. What

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I'm doing here is just giving you the concept that we originally worked with, but given some of the feedback from the Technical Committee, I've removed any of the numbers from this. But I'll flip through these quickly.

From that gauge change exercise you can examine the potential for egg production. You've protected a portion of the population; presumably some of them are females and presumably those females will produce eggs, so you can sort of do that very simplistic analysis and figure out the egg production from your newly protected animals.

There has been a lot of work done on the carapace length to fecundity relationships. We looked at the Estrella and Cadrin work from 1995, which was also used by the stock assessment. That is what we did our original analysis with, and you can apply this relationship to the females or the newly protected lobsters. Again, our analysis focused on the information in the bio-sample data.

The Technical Committee identified numerous areas where this analysis could be improved, for instance Tracy Pugh from Mass DMF was extremely helpful, gave us some really good feedback, such as adding in the maturity schedule; so all of these animals aren't 100 percent mature at these; depending on the size that you pick, and so she suggested we add that in.

Also to account for the fact that larger females do not produce eggs in each year, Bob gave some information during his presentation on that. We were making the assumption that they all produced eggs in that initial year of protection. They also suggested that it was important to account for the population dynamics of the strategy over time, so what about natural mortality in Year 2, Year 3, and Year 4.

All of these perfections to the original egg production analysis, we've been working on

those since that meeting and have a little bit of information. I'm not going to get into the specifics, because it is not fair to present as the Technical Committee hasn't reviewed, it is certainly based on the feedback of the Technical Committee; but I guess in summation what we would like to do is have you allow us to bring this updated analysis to the Technical Committee for further review.

All three of the main ideas offered by the Technical Committee we've developed those into a more realistic egg production analysis. We have some initial results; again strictly looking at gauge changes. But what we found is that modest changes can result in significant egg production increases, even accounting for all of these things like natural mortality, fishing mortality as well and then running these analyses out for a couple of years. We came up with this value of a 40 percent increase in relative egg production. I'm calling it; I put in quotes "modest" meaning you don't have to do a million gauge increases to get to that number. You can get there with modest changes in the current regulations. What we're trying to do with this analysis is strike a balance between adding realism into this parsimonious analysis that we're doing, but not creating a new stock assessment.

That is for the next benchmark, and so we're not trying to recreate the wheel here; we're trying to use information available, add in needed complexity, but not go so far into the complex realm that we've created some sort of new stock assessment model. If the board wishes, the updated analysis can be brought to the Technical Committee for review. I can stop there or I've got two slides on stock recruit stuff, Dave if you want me just to flip through those real quick.

This stuff we offer, just by way of information, we don't know that it is very relevant to what you all need to discuss through the rest of today; but we thought you would find it interesting and it maybe is something that will pop back in your

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head when we're listening to John Hare, I think that is tomorrow maybe, with some of that discussion.

We also did some spawner recruit relationship work. We ran two sets of analyses; we did a fine scale one based on Rhode Island specific data, Rhode Island trawl survey spawning stock biomass information and our settler index that is specific to Rhode Island. Then we looked at it on a broader scale as well, where we then broadened out to the assessment document and used information from that document.

What we did was we fit Ricker type stock recruit models, Beverton-Holt as well in a couple of instances. Basically standard stock recruit models, but we added in additional parameters for environmental and alternate covariates for the model. We also did an analysis, which I'm not going to talk about here, but it is in the report that you all have in your meeting information, looking at the statistical fit of various data lags.

We think this might be helpful information for the Technical Committee moving forward. Just a quick look at some output, I will orient you to this graph. I just will point out that Mark Gibson produced this graph and it is for me very impressive. He figured out how to do a 3D graph in Excel. I've not figured out how to do that so it is pretty neat stuff. Settler density is your Y axis on the left hand side there. Across the front of the graph on the X axis is the spawning stock biomass.

Again, this is Rhode Island specific data in this case. Then your Z axis, this is the one that is on your right, kind of going into the board there. That is the North Atlantic Oscillation Index. What you can see is the closest number to you is a negative value; it goes towards zero and then gets positive. This is an index of the North Atlantic Oscillation and Oceanographic System of high and low pressure oscillations in the North Atlantic.

Maybe a proxy, maybe a direct influence of stock dynamics; but what you can see here is when the NAO is in a negative phase, so this is the area of the graph closes to us, kind of coming out of the board, it is really flat, not a lot of response as spawning stock gets really high you don't get a lot of response and settlers really flat.

If you go into the board what you see is that curve gets really steep. What that corresponds with is that North Atlantic Oscillation as that gets positive you get a lot of contrast in your spawner recruit relationship. It becomes more of a relationship if you add in the NAO. That was just informational stuff for you. It is not necessary relevant to harvest reductions and egg production and things like that; but it is things that you can think about and ways that we can work with the Technical Committee when doing projections that can offer alternate projection scenarios, maybe something we could add into the next benchmark assessment as well.

It is important though to point out that you don't want to just kind of grab indices that have strong relationships; you want to make sure there is some causative agent there. You don't want to just look at spurious correlations, and so we're very cognizant of that. All right, I've got two discussion slides and then I can stop and take questions.

Just to sum up. There appears to be a reasonable relationship between traps fished and exploitation. I think that bodes well for trying to quantify what we're actually doing with our trap reduction efforts. You could use the model that we developed and projected trap reductions to quantify the effect of these trap reductions; and you can combine this information with anything else that you want to do to get an overall quantification of whatever management goals that you have.

It appears that minimum and maximum size changes can produce reductions in harvest and increase eggs produced significantly. The

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spawner recruit work as I mentioned doesn't have an impact on the immediate work that you have to do today; but again we think it is useful work. It is interesting for sure, but we think it could have directed value and alternate projection information or estimation of biological reference points that are reflective of stock productivity rather than the kind of ad hoc, the medians and things that you're using now.

You use them because you don't have a good defined relationship. As noted, we've already improved the egg production analysis based on the feedback that we got from the Technical Committee. Just a final note, for all of this stuff for the Technical Committee to work as efficiently as possible; it is important to set some goals so they know what the goal is when they are kind of constructing these tools.

They can give you better information as to specific numbers. We've given you some concepts here, some tools. But once we have goals that are defined you can begin to use those tools for the specific purpose that you desire. Just a final note here, Rhode Island DEM is interested in working on this further with the Technical Committee.

We've done this, we have a technical representative on the Technical Committee; but we're in a period of transition with our staff. We think we've kind of ironed that out. We've got a young man working for us now that I think is going to be a really good fit for the Technical Committee. He will certainly be working, but we just wanted you to know that we're certainly interested in moving forward and continuing to work on this with your Technical Committee; and that's it for me.

CHAIRMAN BORDEN: Jason, when is the report going to be finalized? What is your estimate of a timeframe?

MR. McNAMEE: Could you ask that again, Dave?

CHAIRMAN BORDEN: When do you think the final report will be available for the TC to review?

MR. McNAMEE: Oh for the updated egg production analysis. I've got a draft of it from Conor McManus in my inbox right now, so relatively soon.

CHAIRMAN BORDEN: Thank you. Ritchie White.

MR. G. RITCHIE WHITE: Could you go back like five slides to the 40 percent egg production increase? Can you correlate the amount of reduction in fishing mortality it would take to create the 40 percent increase in egg production?

MR. McNAMEE: If the question is, can we do that the answer is yes; based on this analysis. This initial work was looking at differences in gauges, and so in the same way that we calculated just using the bio-sample data we could come up with calculations of harvest reductions, which we could translate based on some assumptions. But the answer is yes. I can't give you that number right now.

CHAIRMAN BORDEN: Any other questions? Steve.

MR. STEPHEN TRAIN: I'm just going around between this and the last presentation and I'm trying to figure out. We want to boost egg production, I get that. But we had fabulous egg production years ago and we still get that circle instead of the graph. Harvest rates, cutting back effort, we had great egg production but we've got no survivability. I guess what are we working towards by increasing the egg production if they're not going to survive anyway; should we be looking at something else here, another way to get these things up to Stage 5 or 6 or something?

MR. McNAMEE: I will answer your question in part. I think the larger question is a question for the board. But to answer your question, I guess

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the underlying assumption, if you're looking at a goal of egg production, some value of egg production. What you are in essence saying is, while we understand that there are environmental drivers and we showed that there are certainly relationships between different environmental drivers and recruitment.

While we understand that we're in a regime right now where the environmental conditions are not conducive to a large recruitment event, the underlying theme of setting an egg production goal is to put eggs up in the water column at such a level that when the environmental conditions, if and when the environmental conditions do become conducive for recruitment; again you have the animals there to allow that recruitment event to take place.

It doesn't mean it is going to happen just because you pump a bunch of eggs up into the water column doesn't mean you are going to get animals on the other side. But you certainly can't if those eggs aren't there and conditions line up. That is kind of the very high level assumption of the goal I think, when you're setting an egg production type of a strategy.

CHAIRMAN BORDEN: Anyone else? Emerson.

MR. HASBROUCK: Thank you, Jason for your report and thank you to you and your team for putting this together. Could you go back to that interesting slide that you said Mark had created; the one with the NAO? Where on this plot are we currently and what direction is the NAO heading? Are we in the negative correlation or positive correlation?

MR. McNAMEE: Yes, great question. We are currently in a negative phase of the NAO; so we would be in that row that is kind of out towards us in that plot. That really flat section of it. One of the nice things about the NAO; while there is high inter annual variability in the NAO, there are predictive chunks of time when it goes into a

negative phase, when it goes into a positive phase.

It doesn't mean that every year once you go into a positive phase is what would be deemed positive. But when you look at these graphs of the NAO over time, you can see there are these kinds of chunks; so it is somewhat predictive, which is the nice thing about it. It is one thing to develop a relationship, but if you can't sort of predict what is going to happen into the future it doesn't have a lot of value for projections and things like that.

The direct answer to your question is we are in a negative phase of the NAO. If it follows the same cycle that it has followed in the past we would suspect that in the next five years, seven years, we would be going into a positive phase. I am not an expert on the NAO; but that is my understanding of it; and so I think that directly answers your question.

REPRESENTATIVE CRAIG A. MINER: I was thinking along, I think the same lines that Steve was. I'm concerned about, I guess not moving in a direction where we leave more eggs in the water; but at the same time I'm concerned that there is such a significant gap between leaving those eggs and seeing positive outcome.

Is there a model that would show what would happen if the settlement improved by 10 percent or 20 percent or 30 percent? Do we begin to move toward a target that we want; because right now it seems like there is a gap between eggs and juvenile increases?

MR. McNAMEE: I am going to give a very brief answer and then pass it to Bob. But I think that is in fact exactly what Bob showed in his presentation are the effects. He showed scenarios where it was a constant recruitment, but that is the model you would use to kind of show different scenarios. What if recruitment improved, settlement improved? You could use

the model that Bob reported on to kind of do that. But I'll pass it over to Bob.

MR. GLENN: I don't really have a lot to add to what Jason said, but he is correct. We could use the stock projection model to look at that.

CHAIRMAN BORDEN: Craig, have you got a follow up?

REPRESENTATIVE MINER: Please. But it doesn't seem, based on what we've been seeing over the last couple years that any effort to maintain eggs in the water has created improvement in juvenile production.

MR. GLENN: Yes, under the current high rates of natural mortality environmental conditions that we have; that recruitment is being lost essentially. That egg production that we currently have isn't being realized. Then I show the stock recruit relationship. You can see where it seemed to have decoupled. There doesn't seem to be a strong relationship right now between the size of the SSB and the amount of recruitment that we're getting from it. That is what you would expect under that kind of a scenario. But as Jay indicated before, the strategy in this case is to, you have to maintain some type of a core biomass; because when or if the environmental conditions do change, if you don't have a sufficient enough stock of lobsters there you can't take advantage of the positive environmental conditions and have a recruitment event. If you continue to fish them down even lower, even if the conditions do get to be positive; you won't have sufficient stock there to take advantage of it.

CHAIRMAN BORDEN: Any other questions here? Bill.

MR. ADLER: Bob, if environmental conditions improve, what does that mean? Does it mean that the water cools down, the predators go away? What are we looking at when we say environmental conditions, if they improve?

What would be the improvement? What would happen; if you have any idea?

MR. GLENN: What is causing current natural mortality is most likely a combination of environmental stress from high water temperatures, increases in predation, increases in disease and probably some changes in the reproductive behavior of lobsters in where they migrate and where they hatch their eggs, and then the overall settlement success.

When we talk about improved environmental conditions, it could be changes of any one of those things. It could mean a switch in the NAO, where we get into a positive phase where we tend to get cooler waters in southern New England. It could mean a reduction in the number of finfish predators would relax some of that natural mortality. It could be any of those things.

MR. ADLER: If I may. Yes that is what I was getting at. In other words, we've got to pull an iceberg down into the Buzzards Bay in cooler water; okay and we have to get the Black Sea Bass board to say yes, you can take more. That type of thing, which I suppose is unlikely. At least we know that we have the environmental conditions, if they improve; and what are they, what you just mentioned. We have to look to see, is there any chance that the environmental conditions will improve? Don't know, just leave it hanging.

CHAIRMAN BORDEN: All right I've got David Simpson and then Dan.

MR. SIMPSON: I apologize if I missed it. The relationship with the NAO is really interesting. Did you and I missed it, or could you speculate as to what about the positive phase might be conducive to better survival of recruits? My quick read online, the positive phase is actually associated with warmer temperatures in the eastern U.S.; but it also affects storm frequency

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and position of the jet stream. I just wondered what you thought might be going on.

MR. GLENN: It's a great question. I could speculate right now, I won't. It could be a number of things. Temperature is not the only thing that the NAO is aliasing. In fact the way that I had been thinking about it is it also is a large driver of wind driven currents as well. There may be something with regard to transport of larvae and things like that. But as we know in biology and in oceanography, it is probably not just one thing that we can point our finger at. It is probably a mixture of these things, which is why our jobs are so hard.

MR. MCKIERNAN: My question is for Bob. Bob, at the February meeting we looked at a rather large matrix of various statistics that describe the performance of the fishery and also of the stock. I think you had mentioned something about very weak year classes that have been detected by the section sample surveys.

I guess I would like if you could comment on what you perceive to be the weak year classes that are in the system now that we haven't even seen yet. When do we see these materialize? What signs should we be looking for over the next few years that this thing is going either off the cliff or maybe fortunately if things get better, for reasons that we have yet to understand?

MR. GLENN: As I mentioned in my presentation for those projections that the assumption was that there was constant recruitment at current levels. But the current recruitment in the model that we're seeing right now was based on moderate year classes that settled out in the early 2000s, and if I look at the longest time series of young-of-the-year settlement index; one that has been a pretty reliable indicator.

Looking at the Rhode Island young-of-the-year index, starting in 2007 and then getting progressively worse, especially around 2009 through current time, we've seen nine extremely

low settlement events. If you lag how long it takes a lobster to reach the fishery from settlement, by say eight years. The first really bad settlement year being 2008 and lag that by eight years. That gets us to this year, 2016.

Then the really low, like it hit zero in 2011 and hovered around that value 2010 through 2012. We would expect to see those between roughly 2017 and 2020. The take-home message is that the assumption of constant recruitment is probably not a good one in that the empirical data that we have suggests that recruitment is likely to decline from the current levels, not to stay constant.

MR. MCKIERNAN: David, to follow up to Bob. Bob, does that mean that if we watch the results this summer and the next couple years of the ventless trap work that we should see a substantial drop off in pre-recruits and recruits?

MR. GLENN: Yes, I would anticipate that in the next several years as these year classes get closer to the fishery, we should start to see the sublegal index for the ventless trap survey to decline pretty substantially.

MR. MCKIERNAN: Your ventless trap surveys are pretty good at what ages, like five to seven? Are those the prime ages that you're detecting?

MR. GLENN: It is good at really detecting animals in the like 60 to 75 millimeter range, which we would say probably four or five years old.

MR. MUFFLEY: This is for Jason. You kind of touch upon it, I think you said it a few times in your presentation, it is at the end of your report which I'm interested in is sort of this interaction term, kind of evaluating different metrics; trap reduction, and a gauge size change and those types of things and calculating those things together to evaluate what they might do.

A couple questions to that. Have you evaluated that analysis yet? Have you done any sort of

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examples in terms of what reductions might look like under different scenarios; and two, could we look at multiple variables within that? A gauge increase, an effort reduction and also a seasonal closure for example, and would we need to apply those then across the entire southern New England stock or do you think there is enough information to do those interaction term at an LMA level?

MR. McNAMEE: I'll unpack a couple of those. I think a couple are more, I think good questions, but more directed to the board. The interaction piece of it goes from my finfish background. I know you've experienced that as well, Brandon. I just wanted to be very clear. One of the things, there was a lot of interest from the industry as we were kind of moving along with our analyses.

I just wanted to be very clear that is not necessarily an additive relationship if you take 20 percent reduction over here and a 10 percent reduction over here; it doesn't equal 30 necessarily. I just wanted to be very clear about that. We've not taken that next step where we're kind of developing actual on-the-ground scenarios yet; because I think there is still a step that needs to be taken as far as setting the goal.

Then we can start to develop the different scenarios of getting to that goal. We've not done that part of it yet. But I just wanted to have that information out there up front that these things are more complex than just adding them together. That was the intent of that section. Sorry if I missed something else that you had asked.

MR. MUFFLEY: Just towards the end. I'm just wondering if you think we could apply something like this. Would it need to apply across the entire southern New England stock, or do you think you could evaluate that at an LMA level or not?

MR. McNAMEE: Okay, yes good question. At this point a lot of the analyses that we have done have been southern New England. Now we were

able to kind of split it inshore and offshore. I think we could probably look at it LMA specifically as well, but every time you parse it the analysis gets weaker; because the sample size decreases.

I guess in a broad answer to your question. We've not looked at it LMA specifically. We looked at southern New England inshore/offshore, but southern New England. I think you could parse it up, but again if you think back to the finfish days, the more you kind of break the stuff down and make it more and more succinct as far as the space; you lose resolution in your data. Whether that means it can't be used, I won't say, but it definitely adds variability into the analysis. In some cases there might not be enough data, I'm not sure.

PLAN DEVELOPMENT TEAM REPORT

CHAIRMAN BORDEN: All right, I'm going to have to move on in the interest of time here. I'm going to take the next report, which is a Plan Development Team report; Megan.

MS. MEGAN WARE: Just to give some context to this presentation, the board asked the PDT in February to come up with some potential objectives and ways to achieve them for southern New England. I'm going to be going through those today. The goal here is really just to provide some ideas to the board, and giving you an idea of what it would take moving forward to achieve these different goals.

The PDT met via conference call March 23rd, and we discussed a range of management options that included increasing the spawning stock biomass through large reductions in harvest; to perpetuating the fishery at the potential expense of the stock. We also looked at the pros and cons of standardizing regulations, and I'll go through the different tools we use and kind of address those one by one.

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One of the things that the PDT discussed really throughout the call was this conflict between increasing spawning stock biomass and perpetuating the fishery. I think that is also what the board has been kind of grappling with here. The first objective is to increase spawning stock biomass.

From the projections at the last board meeting that would require an 80 to 90 percent reduction in F. This would lead to loss of the southern New England lobster industry; including market space, infrastructure. We do have Jonah crab, so that might be able to minimize some of the economic impacts; but we really don't know the magnitude of what that could help with.

Benefits of this objective would include improved recruitment, higher stock abundance; and to achieve this we could use a moratorium, a quota, a very narrow slot limit, or a long targeted season closure. The second potential objective is to stabilize spawning stock biomass. This would require a 75 percent reduction in F; again according to those projections that we saw in February.

We would expect large economic and infrastructure losses similar to those that would be seen with the 80 to 90 percent reduction. The goal here or the benefit would be preventing further declines in abundance. We could achieve this through a quota, a gauge size change, targeted season closures, trip limits, lower trap limits or a combination of all these.

A lot of the tools you'll see are the same for each of the different objectives; it is just going to be the magnitude with which you change those that is going to influence your goal in the end. Our third objective is a 50 percent reduction in F, and this is kind of the in-the-middle objective I'll say that the PDT was striving for.

It would allow a portion of the fishery to remain, but we would still expect slow declines of the southern New England stock. There could be

some biological benefits, such as a few years of improved recruitment or adult survival if environmental conditions are favorable. But we would expect to see continued declines.

Then we're looking at the same tools here; gauge size changes, season closures, area closures, quotas, trap reductions. The fourth objective is to optimize egg production and the PDT discussed, and I think this is in line with what the discussion has been so far today; is that while we can't really control many of the environmental factors that have contributed to the decline of the southern New England stock, it is possible to implement management measures that optimize the number of eggs in the water.

If the board were to choose this objective, the goal would be maximizing the probability of a successful recruitment event when there are favorable environmental conditions. Basically hedging your bets that when the water is cooler or there are less predators, we'll have a good recruitment year.

To do this we want to leave as many spawners and eggs in the water, so this would be both an increase in the minimum gauge size and a decrease in the maximum gauge size. The PDT just cautions, we don't want a male only fishery. That is not something that we're trying to achieve with this objective.

The fifth potential objective is to perpetuate the fishery. This is a socioeconomic objective, and the PDT felt that any reduction in F between 10 and 40 percent would fall under this. We would expect the stock to continue to decline, but we would be able to preserve the fishery until it is no longer economically viable.

Again, we're looking at trap reductions, gauge size changes, area closures and season closures. The sixth objective here is more of an educational objective, I'll say. It seeks to learn about the success or failures of different management measures as they pertain to the

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southern New England stock; and really the lobster stock at large.

It can be combined with any percent reduction that the board might want to choose. How this would work is you would implement different management tools in different areas; and an area could be an LCMA, it could be a state, it could be a smaller sub-region, whatever the board wanted. You would try and measure the impact of that different management tool to see what happens.

For example, if one area were to implement a season closure you could measure the size and abundance of lobsters in that area, the percentage of shell disease, things like that to understand what impact that management measure had on the stock. Then you could apply those learning's to inform future management decisions and also decisions that may come for Gulf of Maine and Georges Bank.

The PDT did have several concerns about the cost, time, coordination, and monitoring that would all be involved in this. But I think in general on the theory level, we all agreed that if this could be implemented it would help improve the knowledge we have on the different tools we use. As I mentioned, we also looked at standardizing regulations in southern New England.

Just to give kind of the overarching view on this, the PDT felt that standard regulations would ease enforcement and reduce uncertainty in stock assessments. We did talk about the fact that LCMA 3 now is coastwide, and so we would have to deal with that either through splitting it, through a line or creating some sort of southern New England designation.

Then a lot of the times you'll see on the slides it says that the management tools should be used in combination with one another. I think the PDT wanted to make sure that the board doesn't hedge your bets on one management tool; that

we use these in combination to try and obtain whatever goal the board has.

First is season closures, we have three different season closures right now in southern New England in LCMA 4, 5, and 6. The PDT felt that season closures are an effective tool to reduce F, and that closures would have the greatest benefit in June/July during the molt, or July/August when eggs are extruded. There is also the potential for staggered closures inshore and offshore, so that we could protect the lobsters as they migrate either inshore or offshore during the year. There is the potential for fishermen to recoup landings, and that would be by increasing their effort when they are allowed to fish. This is just something the PDT wanted to caution on. The next tool is trap reduction, this is the same graph, actually I stole it from Jason's presentation; but I wanted to give an idea of what one of these curves could look like. The PDT was a little concerned that the effectiveness of trap reductions to decrease F is limited and delayed; since the latent effort is removed first.

They highly suggested that this use be in combination with other management tools. They also wanted to highlight that trap reductions could impact the Jonah crab fishery now that we are managing those together. There is really a mixed crustacean fishery. In terms of minimum gauge sizes, we have two different gauge sizes.

The LCMA 3 gauge size is slightly larger. The benefit of increasing the minimum gauge size is that lobsters would be able to contribute to egg production before they are legally susceptible to harvest. But again the PDT did not feel this should be the sole management measure used, because then the fishery becomes dependent on new recruits, and if you have a poor recruitment year that will result in an unstable fishery.

Obviously as you increase the minimum gauge size you are going to increase discards; and this

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will increase the stress that lobsters encounter either through handling, temperature fluctuations and things of that nature; and that the increase in minimum size would have a larger impact on the inshore fishery.

Looking at the other side here we have maximum gauge sizes, so again LCMA 3 has a larger maximum gauge size. The benefit here of decreasing the maximum gauge size is that lobsters are protected in perpetuity. If there was a uniform max size, this would address concerns about diminished conservation values as lobsters move from one jurisdiction to another.

They might be protected inshore and then they move offshore and they're susceptible to harvest. Again, we would see increase in discards and likely increases in stress. We would expect a decrease in maximum gauge size to negatively impact the offshore fishermen, and again this should not be the sole management measure used.

Finally we have V-notching. Right now LCMA 6 and state waters of LCMA 4 do not have a V-notch requirement. We do believe that V-notching protects spawners. But the PDT felt that this might not be the best tool to be using right now, since the effectiveness of V-notching really depends on substantial harvest and high rates of compliance.

If we're not seeing that high level of harvest, we might not see the benefits from V-notching in LCMA 6 and LCMA 4. The PDT also felt that they didn't want to create a de facto male only fishery; and again if the board wants to pursue this, it should be used with other tools. I'll take questions on the PDT report now. I still have LCMT reports to go through.

CHAIRMAN BORDEN: Questions for Megan?

MR. McKIERNAN: Megan, when the PDT talked about closed seasons, did they not link it to what was in the motion from last February's meeting,

where we talked about the need for the closed season to enhance compliance and enforcement with trap tags?

MS. WARE: We didn't specifically talk about season closures in response to that motion. But that is something that we could do. I'm sure the PDT will be meeting.

CHAIRMAN BORDEN: Any other questions? I would just like to make an observation that one of the useful aspects of the PDT report is the fact that they are commenting on the fact that southern New England lobster fishery basically is in this transformation. Historically it was the lobster fishery with a bycatch of Jonah crabs; that's what it always was.

But now what you have, I mean the fishery right now, those two fisheries are worth about \$36 million to all the states up and down the coast; if you combine the values of them. Now what you are seeing is a transition out of the lobster fishery by these same boats, they are all permitted, they use the same gear, they fish in a lot of the same grounds; and they are transitioning into a crab fishery.

And in fact if you look at a lot of the NOAA assessment information out of Woods Hole, what you find is that there is a pretty pronounced increase in the crab population in their database, and in fact the crab population is expanding eastward across Georges Bank to areas that traditionally were not fished.

What we're managing, I think what we're going to talk about managing here soon, is really a multispecies fishery. It is just transformed in the last 20 years is what's happened. But just keep that in mind; any other questions? If not I'll move along to the LCMT reports. We had two LCMTs, one was Area 3, and one was Area 2; both got together with the state staffs and at least initiated a process to try to start to formalize recommendations for the board. I think it is important to review these.

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MS. WARE: I just want to highlight, I was not actually at these meetings; so I am just kind of consolidating from what the meeting minutes said. If board members who were there want to comment that is probably a great idea. But LCMT 2 met on April 6; there were 20 people in attendance, including seven members.

I think the purpose and goal of these meetings was really to allow the LCMTs to review the stock assessment and the TC reports to date; and then also trying to begin the discussion on future management and what they might like to see. The first thing that was discussed at the LCMT 2 meeting was mandatory reporting for all states.

This was tied to the February TC report that highlighted that there are data deficiencies in the lobster fishery, specifically for federal landings; and so they are suggesting mandatory reporting for all states. They submitted a letter on water quality and habitat, and I think Beth spoke to that a little bit earlier today.

That can be found in your supplemental materials. Given that they are currently going through a 50 percent reduction in traps, they are proposing that there be no minimum size increase or season closure in Area 2. I think some of this is tied to the fact that the current stock assessment does not take into account those trap reductions, yet they would like to see how those play out.

They did suggest or propose that there be a decrease to the maximum gauge size to five inches. However, this was not unanimous. They asked that the Lobster Board consider the southern New England stock as a mixed crustacean fishery. As an industry they said they would pursue funds for the tagging studies that Bob mentioned in his TC report. We also had LCMT 3 meet on April 8; there were nine people in attendance, six members. Then I also believe there were three e-mails from members who could not attend. What they're proposing is a six inch maximum gauge size; and this would be

reduced by a fourth of an inch over three years. They are currently at 6 and 3/4 inches.

They felt that this was an appropriate maximum gauge size, given the fact that the lobster resource south of Hudson Canyon is significantly larger. This would be kind of a fair and appropriate maximum size for all of Area 3 in southern New England. Kind of piggy backing off of that there is a need to separate southern New England from Georges Bank, Gulf of Maine in Area 3; and that is something that they want to highlight to the board.

They are currently going through a 25 percent trap reduction, and they are proposing expedited and continued trap reduction schedule. I have it up here what they are proposing. In 2016 they would do the 5 percent that is required. In 2017 they would bump it up to 10 percent; in 2018 it would again be a 10 percent reduction.

Those three years would be their 25 percent reduction. In 2019 they would take a break, there would be no reductions; and then in 2020 and 2021 there would be two more 5 percent reductions. In the parentheses there I have the potential trap caps. They are proposing that the trap caps be reduced in those first three years, but that they not be reduced in the additional two years.

They submitted letters on trap haul validation systems and the need to improve enforcement offshore, especially if we continue with trap reductions; and they also submitted a letter on water quality. Both of those can be found in your meeting materials. Then they wanted to highlight that there is this issue of some fishermen who go crabbing in southern New England, but then lobster fishing in Georges Bank. We need to think about how changes to the minimum gauge size would affect these fishermen. Those are the LCMT reports.

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CHAIRMAN BORDEN: Questions for Megan? Yes, Peter.

MR. PETER BURNS: Thank you, Megan for the report. I was just curious about the trap reductions that the LCMT 3 has offered up. I noticed that they wanted to separate southern New England from Georges Bank and the Gulf of Maine. Now would those extended trap reductions include the Georges Bank as well, or is this just for west of 70?

MS. WARE: I believe it is just for the southern New England portion of Area 3.

MR. BURNS: Okay, thanks.

CHAIRMAN BORDEN: Peter, if I can just follow up on that; since I attended the meeting. I think there is going to be more discussion. Let me rephrase this. If the board decides to move forward with an addendum, which I hope they do, and identifies a clear objective to this addendum; I think that is going to then force a lot more discussion on the part of the LCMTs, in terms of exactly what they want to do, how they want to do it, whether or not there needs to be like a permit endorsement.

So that everyone is clear here, we've got Area 3 boats that are authorized to fish on two different stocks; one is extraordinarily healthy, the other one is overfished. If we end up with differential regulations, we're going to need some mechanism just to keep those two separate. We have two sets of regulations on permit holders that theoretically can move back and forth.

Those types of issues are going to have to be developed. But all of that has to take place after we do what I think we should do; is move forward with an addendum and have some clear goals. Then they can get on with that; anyone else here? We'll move on. Last item under the reports is the video.

This was per the request of Emerson, so we'll do the video. I'll let him speak. Then what we're going to do, as I announced earlier we're going to take about a five or six minute break. Everyone can go get a cup of coffee, and then we're going to start with the major item of business.

DERELICT LOBSTER POT REMOVAL PROGRAM

MR. HASBROUCK: Thank you for accommodating my request. This is a short video on a derelict lobster pot removal program that we've been conducting in New York over the past five years or so. We've heard some discussion this morning about trap reduction. We may have fewer fishermen over the past 15 years fishing a fewer total number of pots; but what has happened with all those reduced numbers of pots?

There are still a lot of them in the water still fishing. These are derelict pots that we're removing. In the assessment information, at one point there were about 588,000 pots in southern New England, and now we're down to about 152,000 pots in 2013. What's happened to the approximately 400,000 pots? Where did they go?

Well, there aren't too many of them stacked up in people's backyards. I know a few were sold up in to New England, but not many. There are still a lot of them in the water. We've had this derelict lobster pot removal program. We've gotten funding through a couple of different sources. We've been funded a couple of times through the NOAA Marine Debris Program, and a couple of times through NFWF, the National Fish and Wildlife Foundation.

So far we've removed 15,000 pots out of Long Island Sound, the New York side of Long Island Sound. There are still an awful lot of pots out there. Those pots are still catching lobsters, and they're still contributing to mortality on the

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resource. We're working with the few current remaining lobsterpot fishermen in New York.

We pay them to take us out, we quantify all of the gear, bring it back to shore. It gets crushed and put in a dumpster and brought to a metal recycler so that it gets recycled. All of the rope and warp and so forth go to another partner called Covanta Energy, and they turn it into energy and they incinerate it. It has been a successful program. We've developed a grappling system to grapple for this gear. We go out and boats can hold about 75 pots safely, so that is what we collect on a trip. We go out and get our 75 pots; usually by mid-afternoon.

This is just some visual about the gear that we're removing as its being removed. Then that is just from a few numbers of trips stockpiled in the parking lot there at a town marina; crushed and put in the dumpster. I just wanted to bring that to everybody's attention that there is still a lot of gear out there and it is still catching lobsters. Thank you.

CHAIRMAN BORDEN: Any questions for Emerson?

MR. MCKIERNAN: Yes Emerson, is data being collected on the status of the ghost panel on each individual trap as it comes up?

MR. HASBROUCK: Yes, yes, and for a lot of the pots we've found that the escape panel is I'm going to say compromised; which means it is not doing what it was intended to do. That can be due to a couple of factors. One is the pots will settle down into the mud. The longer they're there the further they settle into the mud, and we're able to determine when we haul them back if the escape panel has been obstructed by mud. Also the following organisms that grow on them tend to keep those panels from opening up. Then some still have the hog rings intact.

CHAIRMAN BORDEN: Anyone else? No one, okay so let's take a break. We're going to

reconvene at 11:30. Just so everyone knows for planning purposes, we're going to have lunch outside the door; take about a 20 minute break. Everybody can have lunch; we're going to pick up a little bit of time because we're already behind schedule.

(Whereupon a recess was taken.)

CHAIRMAN BORDEN: Everybody have a seat please. As I indicated before, I was going to make a couple of comments. I think where we are at this particular juncture, we've got fairly, I think, clear technical advice. We've had five different technical reports that have really laid out what the facts are on the issue.

I would just like to summarize a couple of things so that the record is clear. These are almost verbatim, so that nobody thinks I'm putting a spin on this. The Technical Committee had basically done projections that have indicated that we need an 80 to 90 percent reduction in F to increase the SSB.

They've also done projections that indicate you need a 75 percent reduction in F to stabilize the stock. The impacts of changes of that magnitude are basically a fishery closure. I don't think that we should necessarily sugarcoat those alternatives; for lack of a better characterization. Then we've had, and Bob Glenn pointed this out, there are certain assumptions about natural mortality that have been built into some of the analyses. If the natural mortality is assumed to be 0.275 and that increases, then basically what Bob said is you are not going to rebuild.

You are certainly not going to rebuild to the thresholds that we've adopted; or if you want to put that in a kinder manner you could say, it is highly unlikely, never say never, but it is highly unlikely you're going to rebuild. Then you look at the way the fishery in southern New England has developed. Historically 2/3, and I just point this out as an example, 2/3 of the fishery in southern New England was derived from Long

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Island Sound. You can go back, David Simpson knows.

You can go back in time and look at the time series of data. New York and Connecticut landed 2/3 of the catch in the entire area. Given that fact and given the fact that the resource in that particular area is just a remnant of what it was; I think David at one of the previous meetings indicated that it was like less than 5 percent of historic rate in the area. It raises all these questions I think; about how much potential is there really to rebuild this stock? As far as the assessment, and this won't go on for real long but I think it is important for us to just be totally frank. As far as the assessment, my personal view is the assessment is the best assessment on lobsters that the commission has ever done. I take my hat off to all the technical people. But that doesn't mean it's perfect.

I would point out; I've gone back, gone through all the technical reports. The Technical Committee has been absolutely candid with us and pointed out that we're in this really awkward situation, where the scientific advice, the best scientific advice is being generated by the states in water depths less than 200 feet.

That is pretty much throughout the range of the resource. The fishery, unfortunately, takes place outside that zone. This isn't a criticism of anybody in the room. I'm just trying to point out we've got superb biological information inshore, and we've got this deficit of information offshore. In one of the Technical Committee reports, they went on to itemize the deficiencies.

There is no larval or settlement surveys in federal waters outside of 200 feet. There is no ventless trap survey; at least comprehensive trap survey outside of 200 feet. There is little information on growth and survival of lobsters in deep water. If you look at the modeling efforts that the Technical Committee have done; and they've really done, I think, superb work.

They are making assumptions about growth and mortality out in deep water. I'm not saying those assumptions are wrong, they may very well be correct. But they haven't been validated is the problem. I think there are, at least my own view, there are major kind of data deficiencies we've had; in terms of the environment we've had really well documented environmental change in the interior inside areas, particularly in Long Island Sound, Narragansett Bay and Buzzard's Bay.

Those are the area with the southern New England stock with the primary juvenile generators. As the TC has pointed out that is where the best habitat is; if you want to raise lobster that is where the best habitat is. Compounding all of this we've got this whole issue of climate change. There had been a whole series of model predictions that have come out here recently, talking about increases in water temperature three to five degrees in some of these areas.

Some of the predictions are most dire up in the Gulf of Maine. That is where the water temperature predictions are most pronounced. In terms of the data, the TC and the PET have identified about eight different data deficiencies that detract from their ability to do stock assessments. These are all easily fixable problems. I'm not going to itemize them in the interest of time.

But we've also had on a related front; the Technical Committee has identified nine different research needs. If we want to manage this resource we've got to get on with figuring out how to fund some of the research needs that they have identified. Bob and the TC put up a couple of examples on tagging studies, but there is a whole host of other studies that really need to be done if we want to fine tune this effort.

My conclusion, it's longwinded, but my conclusion from all of this is there are lots of problems. This is not a single problem. We've

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clearly got an overfished stock, but there is no overfishing taking place in the stock. But we've got multiple problems that we actually need to fix. My view is that if we initiate an addendum, I think everybody should look at this as the first step. I think there are going to be other things that we're going to have to do as a commission to address this. One of the big dilemmas that I talked to Doug Grout about with this, and there are a number of, all the different council members can probably think of individual species here. But this is not a single event, and it is an event that a lot of different councils are starting to wrestle with.

You've got climate change. The environment is changing. Normally what we would do is we would sit in a room like this or at a council meeting, and we would say it is overfished; you get the technical people to do some projections and then we simply say, okay you've got ten years to implement those types of changes.

When we do that there is a cost. Everyone knows there is a cost to the industry; whether it is recreational or commercial. But there is also an expectation that we can generate benefits from it; that there is some benefit in the final analysis. All the technical reports that I have read on this basically indicate that there is no guarantee of a benefit.

I think the dilemma for the commission basically is, are we going to move forward and try to correct some of these deficiencies that have been noted and take steps; they may not go as far as everyone would like, but take steps to try to lay the framework for the lobster resource, should the environment change.

As Jason indicated before, the whole concept of that is to take steps that increase the likelihood that if the environment changes; maybe just maybe we get some decent recruitment out of it. But there is not guarantee with this. I think the first thing that we need to decide, I would like to just ask a question.

**CONSIDER TABLED MOTION
TO INITIATE ADDENDUM TO ADDRESS
DECLINING STOCK CONDITIONS**

CHAIRMAN BORDEN: Is there anyone in the room at the table that thinks that we don't need to do an addendum here? If you think we should just give up on the lobster resource, I think we should be blunt and say it on the record. Anybody just want to not do an addendum here? I just remind you that the subcommittee that included almost all of the states said you have to do something. They also gave the recommendation, don't shut the fishery down.

But there is a big expanse between those two perspectives. There is pretty much unanimous agreement we've got to do an addendum. Does anybody think the appropriate course of action here is to shut the industry down? As I said before, this is a \$38 million industry. It is up and down the coast.

It is a multispecies industry. Does anybody think that is the appropriate course of action? Okay, so we're in the middle ground, gentlemen and ladies. We need to figure out a way forward. It sounds to me like we're committed to doing an addendum; so we don't need to debate that point. I think that the next step is to deal with the postponed motion.

On this, on the postponed motion just so everyone is clear. We postponed it; there were conditions that were built into the postponed motion. A number of those conditions have been met. A number of those conditions have not been met. This is not a typical situation where an issue is postponed. Some of the actions that were requested actually have already been acted on. For instance, sending a letter to NOAA asking for 100 percent VTR reporting; that is in progress. Peter told me before the meeting that we should have a response to that prior to our next meeting. I think the cleanest process here would be to put that motion back on the table and then my own

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view would be, since we've already acted on some aspects of it simply table it; and then have a completely clean slate so that anyone at that point could make a motion on how to proceed.

Comments on that process, does anyone disagree with the process? **If not, could I have a motion to place the postponed motion on the table? Bill Adler and Steve Train; any objections to placing that motion on the table, it is done by consensus.** Is there any discussion on the postponed motion?

MR. ADLER: Yes, I'm in favor of moving it back up on the table; because it is now the commission's motion, it is not the person that made it. I believe that is the way it is. The format would be to bring it back up onto the table.

CHAIRMAN BORDEN: Okay, but I asked whether or not anyone objected to having the motion on the table. If there is no objection and the motion is on the table, you can debate the motion or modify the motion, substitute the motion; do whatever you choose to see fit. Are there any comments on the motion that is on the table?

MS. TONI KERNS: I think we just need to have that motion read so that it can be put up on the screen. Did you do a motion to bring this motion back to the table? **Okay, so moved to bring the postponed motion to the table, motion by Mr. Adler, seconded by.**

CHAIRMAN BORDEN: I was just trying to avoid a vote on it that's all. It was done without objection, put back on the table. This is a debatable motion, okay so that everyone is clear. You can act on it; you can make a motion to amend. You can make a motion to substitute. You can also table this motion if you want to move on to another motion. What is the preference of the committee?

MR. WHITE: I'm not quite sure where you're trying to go, Dave. Would you rather start a

clean slate or would you rather try to work the motion that is now on the table?

CHAIRMAN BORDEN: My personal preference would be to table this motion, just table it not to a time certain, just table it and then we would end up with a completely clear slate; and at that point any member around the table could make a motion to set a goal, okay?

MR. WHITE: I'll make that motion, because I agree with you. I think trying to rework the motion that is there, we'll be here for days; so I think to start fresh. I will make a motion to table.

CHAIRMAN BORDEN: All right so the motion is by Ritchie White, seconded by Emerson Hasbrouck. The motion to table is non-debatable. Are you ready for the question? Do you need a caucus on this, anyone? Okay so are you ready to vote? All in favor raise your right hand, please; 10 yeases, no votes, any no votes? Any nulls, any abstentions? **The motion to table passes.** One abstention; Terry Stockwell for the council. Tom, are you scratching the top of your head or you've got a question? Go ahead, please use your microphone.

MR. FOTE: I wasn't supporting the motion to be tabled personally because I'm saying we probably should have just voted this motion down and started with a new motion altogether. Are we going to bring this up? If you want to start off with a clean slate that would have been the easiest way of doing it. I'm a little confused why we're doing it this way.

CHAIRMAN BORDEN: Well, if I had asked our lead parliamentarian here, he probably would have said that there were a number of different ways that we could have handled it; and that was one of them. We've already taken an action on it; I think we need to move along. Megan is raising the question. Ritchie, was it your intent that this would be a motion to table indefinitely?

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MR. WHITE: Correct.

CHAIRMAN BORDEN: Emerson, is that correct?

MR. HASBROUCK: Yes.

CHAIRMAN BORDEN: Okay so that is the intent, so the motion has been tabled indefinitely. Okay now anyone here has the opportunity to make a motion. Is there anyone around the table that wants to make a motion to define a goal for the addendum?

MR. McKIERNAN: I do have a motion and a lot of it comes out of what I thought was some of the findings that Jay had put up today, you know recognizing that there we are up against a lot in terms of the environmental and the economic factors. But I have a motion.

The board shall initiate an addendum to minimize stock declines by lowering fishing mortality and increasing egg production by a combination of changes to the minimum size, maximum size, closed seasons, closed areas, trap cuts and trap caps, standardizing regulations throughout the area and/or combinations of the above. Target egg production increase shall not be less than 40 percent above the level that would otherwise be produced with no additional management. Final regulations for this step shall be fully phased in within three years, no later than June 1, 2019.

CHAIRMAN BORDEN: All right so that is a motion, do I have a second; Mark Gibson. Discussion on the motion; Ritchie White.

MR. WHITE: My problem with this motion is it doesn't say anything about maintaining the fishery. I think that is the main drive. If we're not going to take the road of moratorium, which we have already by your poll said we were not going to take. Then the main drive of an addendum starts with maintaining some type of fishery at some level.

I think that needs to be said in this addendum. Does a 40 percent increase in egg production allow for a fishery? I guess we don't know that yet. I would like to see, I don't have the wording that I would recommend, but the main drive I think is to have a fishery while still trying to allow an increase in stock abundance if environmental conditions allow.

CHAIRMAN BORDEN: Steve Train.

MR. TRAIN: While I'm going to support this motion, I still have trouble that I don't think we're going after the problem here. If you've got X settlement in X recruitment, they are both zero and you multiply it by 40 percent. Zero times 40 percent is zero. The problem seems to be getting that lobster from egg to Stage 5 or 6 or 7; and this won't do that. It is just like throwing more in on a wing and a prayer and hoping it works. I think we need to look at the problem and the solution, and not just keep crossing our fingers that cutting back the harvest is going to continue to help.

CHAIRMAN BORDEN: We've got Mark and then Tom Fote.

MR. MARK GIBSON: In my view increasing egg production, all else being equal, will give you more settlers. The survivorship between egg deposition and Stage 5 or 6s or whatever they're being called may have been reduced. But under reduced survival, if you're voting regulations in you still get more off the tail pipe. Not as many as we would have gotten when the survivorship was good.

But increasing egg production can't be bad relative to whatever conditions exist out there; unless there is some complicated compensatory mechanism that takes them away at even a faster rate than they're dying now. I think that eggs matter. We found that in our stock recruit analysis. Sometimes you have to peel away the veneer of other things that are hiding the stock recruit relationship, like shell disease or

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oceanographic conditions or whatever the case may be. But eggs matter. I support the motion and that objective.

CHAIRMAN BORDEN: I've got Tom Fote then David Simpson.

MR. FOTE: What I've been looking at is the number of lobstermen that have went out of the fishery. We have less boats than we had ten years ago. I don't have the figures on how many less traps we do. We talk about trap reduction, but we've done a trap reduction the last ten years that is dramatic in this industry.

I know we fish about a third of the boats that we worked ten years ago in New Jersey. I would like to get that as part of the fact that we look at what the states have done, what permits were available ten years ago, what people were fishing ten years ago, and what it was actually fishing now. I think we'll see a huge reduction in the number of traps out there and the number of boats out there and that consequence of that drop in fisheries; most of the species when we look at it, we don't have that affect.

Then we start reducing the boats and the traps; we've done all kinds of things to reduce boats and traps on paper, but I think there has been a dramatic reduction of the boats and traps that are fishing right now than there were even five years ago. We should look into that when we consider any of the moves we've done. That is part of the move that I'm looking at before I even start on this kind of an addendum.

CHAIRMAN BORDEN: I've got David Simpson, Peter Burns; Emerson, did you have your hand up?

MR. SIMPSON: My concern is with the target being egg production, increasing not less than 40 percent. My thought process driven by the information the TC has provided has been in terms of reducing exploitation. I don't know how those two relate necessarily. We have the

projections that if we reduce the exploitation rate by 75 or 80 percent we can stabilize SSB.

I'm wondering why we aren't staying with some sort of SSB target increase. I'm also concerned that the focus exclusively on eggs sort of runs against the argument that we shouldn't promote a male only fishery. I can look ahead to the argument that would take advantage of that difference. It seems to me that has gotten us in trouble in the past with striped bass.

We suddenly, yes we used female SSB as the currency, but I didn't anticipate the conversation going toward males are expendable and females are all that matter. If I could have a little help with that why not let's just say SSB; because again maybe help from the Technical Committee, what is the difference if there is any?

MR. BURNS: This is a complicated problem and just looking at this motion here it makes me ask a lot of questions about where we're going to go. I think when we left in February we were in a conundrum about what the objective was. I think it is important for this board to move forward with some kind of measures that are going to address the stock situation in southern New England.

Amendment 3 sets forth our objectives there to protect the stock moving forward. I'm glad we're here debating this motion and looking at a way forward on this. But I think that we should make it clear that if we do decide to go in this direction that this is only a first step. I think the hard work would come in subsequent meetings when we really have to understand what a 40 percent increase in egg production is actually going to mean.

I think everything should be on the table in that respect, and I don't think that this would necessarily mean that the fishery wouldn't have to go through some significant reductions in fishing mortality to achieve these goals. We've heard it in the Technical Committee reports, and

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all the other reports. The projections that the best way to increase egg production is through protecting your spawning stock biomass; which gets a little bit back to what Mr. Simpson just said.

Again, I think we need to take action here to really protect our stock and to move forward in a way that we can all agree on here. But I think that we should leave everything on the table here and perhaps not limit our options to just the management measures that are listed here on this motion; and expect to have to do some hard work coming forward when we get information from the Technical Committee and the PDT about how we're actually going to achieve these 40 percent egg increases.

MR. HASBROUCK: Well I certainly understand the intent of the motion, and realize that we need to start off some place here on this issue. I think we're setting ourselves up for failure here by saying that we're going to initiate an addendum to minimize stock declines by lower fishing mortality.

I think that no matter what we do here today or as we go forward, we're likely to see stock declines take place; or at least that was some of the message that I got from the presentations this morning. I think the results of the ventless trap surveys, if I recall the information this morning are that over the next six or seven years we're going to be seeing decreased spawning stock biomass or maybe it was decreased catches or both.

I also think that what is going on with the North Atlantic Oscillation is we're in a negative correlation there for at least a few more years. Because of that negative correlation we may not see things improve at all in the lobster biomass. Again, I understand the intent here, but I don't know that we can commit to minimize stock declines; because I think that is going to happen no matter what we do.

MR. McKIERNAN: Yes, to answer David Simpson's question, which I think went unanswered in the discussion. It is my view that decreasing fishing mortality, which is the first part of this, would inevitably leave more lobsters in the water. I'm suggesting that the focus of how many and what size lobsters we want to leave in the water should be dictated by a goal to increase the relative egg production by 40 percent; similar to what Jay showed in his analysis.

CHAIRMAN BORDEN: David I'll come back to you. I've got Mike and then Doug.

MR. MICHAEL LUISI: I'm completely supportive of the concept here and the direction that I think we all know we need to take regarding management of this southern New England stock. Where I'm uncomfortable, and it's been mentioned a couple times already, has to do with the 40 percent.

The reason why I'm uncomfortable about it is because I don't know what that translates to. Fishermen in my state, in talking with them, have told me that they're kind of dabbling on the line of what is economically viable for them to continue operating in this fishery. Having this 40 percent in this motion just makes me uncomfortable; not understanding what that will translate to as far as management action.

I would think that in this addendum there could be a couple different scenarios or a couple different options or alternatives that we can actually look at the analysis to determine what a 10, a 20, a 30, a 40, a 50 percent value would translate to as far as management action. I want to support the motion, but I just have this un-comfortableness with kind of boxing ourselves in at that 40 percent level without understanding what that means.

CHAIRMAN BORDEN: Mike, just a follow up on that thought. Let me just share. I've had like two or three discussions with people about this

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general concept and this came up a couple of times. I think it is important for everybody to keep in mind that if, for instance this motion or some variation of it passes. It becomes a goal. It becomes the marching orders for the mechanisms within the commission to start to flesh out exactly what you want to see. In other words, this is just the first step. It would go to the PET.

Once it goes to the PET they will be analyzing in conjunction with the industry different alternatives to try to reach this objective. You'll get, I mean this is going to be a process that undoubtedly is going to go on for a couple of meetings. Every meeting you would get a report, basically to say we've analyzed this, this is what the impact is, this is what the industry and the LCMTs are recommending.

You would get kind of a combination of responses. One response would be from the industry. If you're going to take action to do this, we want you to use these mechanisms. Then what I would envision is, and then the PDT and the technical people would be analyzing it and presenting it back to the board. Eventually after you go through that type of process, we would be in a position to authorize something for public hearings.

MR. GROUT: In looking at this motion we start off by saying we want to minimize the stock declines by lower fishing mortality and increasing egg production; and it gives a variety of different management measures that we can potentially look at. But our target is 40 percent increase in egg production.

I would like to ask Bob Glenn, what do you think is going to be needed for a reduction in fishing mortality or a reduction in exploitation to attain a 40 percent increase in egg production along with maybe minimum size, and maximum size changes, et cetera? Do you have any kind of concept of what scale we're looking at here?

MR. GLENN: I don't have a great concept of the exact scale right now, but I'm doing a couple of back of the envelop calculations here. If we look at where SSB currently is, the spawning stock biomass is around 900. If you were to use that as a proxy for egg production, which as Dave Simpson pointed out, spawning stock biomass is probably a better metric to look at than egg production.

To get from 900 to increase that by 40 percent, you're looking at getting it to around 1,260. Then if I go to look into the projections to try to see what it would take to get it to a value of about 1,260; just give me a second. We're looking at an F reduction of somewhere on the order of 75 to 80 percent. But the tricky part about the motion, and this is something the TC would need some clarification on; is the 40 percent above the level that would otherwise be produced with no additional management.

If you look at the stock production projections, in the absence of any additional management; so we're at F of a considered 100 percent of what it currently has been, plus the existing natural mortality. We would expect the stock to decline extremely rapidly. It is that 40 percent above that level of doing nothing is kind of an ever decreasing moving target; so it is a little tricky.

MR. GROUT: Follow up, Mr. Chair. Clearly if we're looking at reductions in fishing mortality of that level, there is a question of, at least from my mind as to whether we're going to be as Ritchie White brought forward; are we trying to maintain the fishery here that way? This is clearly a decision that I don't think this commission has ever had to make before.

I commend the commission and the makers of the motion in putting this motion forward to try and do something, to try and help out in the hope that at some point we'll have some favorable recruitment conditions. I think as we already made the decision that we're not going

to do nothing; but we also don't want to put in a complete moratorium.

This gets at the in-between. If this passes we're going to have to have the entire board work on some realistic goals of what we're trying to achieve here; other than just a 40 percent reduction. That is a good starting point, but I mean a 40 percent increase in egg production. But we also have to look at the aspects about what we're looking for in a fishery here.

MR. SIMPSON: I'm going to move to amend, to strike the sentence that begins with target egg production and insert instead target a 40 percent reduction in exploitation rate from the terminal year in the most recent assessment.

CHAIRMAN BORDEN: All right so we have a motion to amend; second on that? Is there a second? No second. Okay, let me just follow that up with a question. Do we have to – and this is to Bob Glenn – Bob, do we have the ability to determine exploitation rates on an LCMT basis?

MR. GLENN: No, we can only really with any reliability determine it for the whole southern New England stock. There are some sub areas where you might be able to do it, but you wouldn't be able to do it equally across all areas.

CHAIRMAN BORDEN: We can determine it for the stock as a whole, but not on the individual. I've got Pat Keliher and then John. The motion to amend died due to a lack of a second. Well, Megan is encouraging me to ask for another second. I asked twice whether or not we had a second and no one raised their hands. I am declaring that the motion dies due to a lack of a second.

MR. PATRICK C. KELIHER: I think based on what Dan said earlier, I think this is starting to go in the right direction. I'm not totally comfortable with it, but my feeling is that the PDT is now going to have a fair amount of flexibility in starting to develop this; and we're going to have many

more options to start massaging this and improving upon the direction of this addendum.

MR. CLARK: I probably just misunderstood something before, but I thought with the 40 percent egg increase from Jay's analysis; that could be done through a modest change in the gauge size. Yet what Bob just said to increase the SSB 40 percent we would need to reduce F by 80 percent, which based on what the PDT said would pretty much end the fishery. I must have misunderstood something there, but I thought the increase in eggs from Jay's analysis would not require such a drastic reduction in F to get there.

CHAIRMAN BORDEN: Jason, do you want to come up to the microphone and respond to that please?

MR. McNAMEE: Sure. I think an important thing to consider when talking about this is; I'll just get right to your question. The updated analyses that we did, keep in mind that they're based on a carapace length to egg relationship; which is not linear, it is a curve. It is not a linear relationship, so what we found, just to cut right to the chase, and again I caution you that it was based on feedback from the Technical Committee; but we've not brought these analyses yet to the Technical Committee, because we just finished them up recently.

With a single 1/32 minimum size increase in the inshore area, we can get that 40 percent if not more increase in egg production; and it has to do with the relationship of what you're protecting, the lengths of those animals, the maturity schedule. There is a bunch of interactions that are occurring; but that is what we found in our updated analysis so far. I'm not disputing what the calculations that Bob just made, I'm just offering these are the analyses that we've conducted and what we found.

CHAIRMAN BORDEN: John, have you got a follow up?

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MR. CLARK: Just to that 1/32 increase in the gauge size would not result in a reduction in F by 75 to 80 percent?

MR. McNAMEE: I can't take it that far, so I can't link it back. From our original analyses we found about a 13 percent reduction in harvest in the inshore area; but there is more math that needs to occur. Again, the only thing that we've looked at thus far is messing around with the gauge. There are other things we could look at and make assumptions and do calculations as well on egg production. It doesn't just have to be the minimum gauge; but that was the idea with this, I put it in quotations "modest" was just it didn't take a lot to get to that 40 percent increase.

CHAIRMAN BORDEN: I've got Mike.

MR. LUISI: Thank you, Mr. Chairman. I'll hold my comment at this point. I do have a question or I want to make a point at some time after we take action on this motion, thanks.

MR. WHITE: A question for Megan. How will the PDT be able to determine how much mortality decline could be accepted by the industry and still be viable; because this gives no direction as far as the amount of mortality decrease?

MS. WARE: I think moving forward what we would do, if this were to pass we would work with the TC, but I would work with the PDT to try and turn that into some sort of different options in terms of management. One thing that we are talking about or considered is meeting with the different LCMTs and they would come forward with their preferred option, I'll say, of how to achieve that. But I'm not sure it is the PDTs position to say what industry thinks is acceptable. I think that that is maybe something for the board to be considering. We would just provide the options.

CHAIRMAN BORDEN: All right, who else needs to speak on this; Mark Gibson?

MR. GIBSON: Since the boards concern and uncertainty about this 40 percent number, and I share some of that concern; because it is not completely clear how that target egg production increased maps back into the fishing mortality rate reductions. It seems to me that it is possible that if we're locked into that measure we could find ourselves in conflict with the other standards we have articulated here through your poll and in earlier meetings; that we weren't going to drive the range of this fishery into oblivion.

We also weren't going to do anything. We're trying to find a middle ground process. I would suggest to get more comfort with this motion, maybe we ought not to be holding ourselves to not less than 40 percent. Target could be 40 percent, but if those analyses, once the Technical Committee have looked at what Rhode Island has done, done their own updated calculations and reconciled the projections under F reduction versus the gauge increase effects.

We might be in a better position to know what that percentage egg production should be. I hear what the board is saying. I share some of those trepidations right now about not knowing how the numbers line up. I don't think I can amend my own motion, no one seconded, but that is what I would suggest that the not less than, so that 40 percent becomes a target that can flow out of the process that we're embarking on.

MR. ERIC REID: **I think I would like to make a motion to change the wording a little bit. In the first sentence where it says to minimize stock decline, I would like to insert long term; minimize long term stock decline. There is a lot of discussion about the dreaded 40 percent; reword that sentence to read, target increased egg production to be above the level that would otherwise be produced with no additional management.**

CHAIRMAN BORDEN: Do I have a second? Bob.

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EXECUTIVE DIRECTOR ROBERT E. BEAL: Eric, we just had trouble hearing your second part of that. If you could repeat it that would be great, thanks.

MR. REID: I was having trouble thinking about it myself as well. **The second part would be to reword the 40 percent target; that sentence to read, target increased egg production to be above the level that would otherwise be produced with no further management action. I realize it generalizes the motion; there is no target for the TC and the PDT to shoot at.** But I think it would capture the intent of this discussion.

CHAIRMAN BORDEN: All right, do we have a second for the motion? Seconded by Mike, discussion on the motion to amend, any discussion on it? Peter.

MR. BURNS: I appreciate the effort to try to make this a little bit more clear, but I'm a little bit more concerned; because this really kind of really says that any slight increase in egg production we would be meeting the goal here. Frankly, I'm not even sure if the 40 percent really even goes far enough.

Because I think we really need to take some effort to protect the stock any way we can. I understand that there are economic implications with this. But I think that we have to be prepared to make some very, very difficult decisions about how fishing mortality needs to be reduced to make sure that the stock doesn't continue to decline at the rate that it is going right now; just food for thought.

MR. FOTE: My concern is when we were talking about moratoriums on winter flounder, when we were talking about moratoriums on weakfish, it left fishermen to fish for other species; to basically harvest other species to make up for the loss. When you look at lobstermen and lobstermen, there really is no other species to go to, maybe Jonah crabs.

Then we start crashing that stock. It is not as cut and dried as it is when you look at whether it is summer flounder or black sea bass when you talk about lobsters. It sets up a whole different class of problems, and that is what I'm looking at, trying to figure out how we're going to do that. I mean it is easy to sit here and look at it and say, we should be doing this and that; but the industry is going down without us doing anything.

There are less people in the fishery, there are less boats functioning, there are less traps in the water; and the response is, like weakfish, the stocks don't increase. The stock assessment is not showing any better no matter what we do. I am hesitant to take actions when we basically five years from now we'll say, no we put everybody out of business and we're not seeing any increase in the stock.

CHAIRMAN BORDEN: Anyone else? Dennis and then Doug.

MR. DENNIS ABBOTT: The time is 12:25. I think we would work better on a full stomach and give people time to think about what we're doing here, and come back after lunch and see where we're going to go with this amended motion.

CHAIRMAN BORDEN: I was going to attempt to get through the motion to amend and then immediately break for lunch, but I'm not averse to that; Dennis.

MR. GROUT: And neither am I. I was going to express a concept here. While I understand some of the boards concern with setting a specific percentage increase target, typically when we do management actions we produce a range of alternatives. I personally am a little bit uncomfortable with something so open ended as above a level that would be produced with no additional management.

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I mean that could be 1 percent. There may be, and it may also help our PDT and Technical Committee if we gave them a range of alternatives. Maybe this is something that we could discuss over lunch, as to what might be the appropriate range of alternatives to go with.

CHAIRMAN BORDEN: The Chairman just winked at me, so I am going to admit defeat and we're going to break for lunch for 15 minutes.

(Whereupon a recess was taken.)

CHAIRMAN BORDEN: (first few words not recorded) ...one would be to limit the amount of debate on the motion to amend. We've had sufficient amount of time to actually discuss the pros and cons of the strategy and the language; so we vote it up or down. Then if we ended up with an amended motion or it fails, then there are some other people around the table that would like to offer additional motions.

That includes kind of minor things like adding the word southern New England to the main motion, so that it doesn't apply to the Gulf of Maine, and a few other things. On the concept, anyone here feel it is really important to add additional comments that have not been made yet on the motion to amend?

I would just as soon deal with that motion to amend, and then if someone else wants to make a motion to amend then they could do that. That way we won't have two motions to amend on the table, or a substitute motion; which is going to confuse things incredibly. Anyone else want to comment on this? Are you read for the question on the motion to amend? Do you need a caucus, anyone need a caucus?

Okay so all those in favor of the motion to amend raise your right hand. Five in favor, opposed, five opposed; we're making rapid progress. Bob, what time did you say the cocktail hour was tonight? We may have to have an attitude adjustment hour before we finish the meeting.

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Are there any abstentions, one abstention, and any null votes?

One null vote, so it is 5 to 5, motion fails. That motion is gone. Now you're back on the motion to amend. Does anyone care to make a motion to amend? Bob, on procedure?

EXECUTIVE DIRECTOR BEAL: Just a procedural question, Dave. I think you need to announce. I think your intent there was that the motion failed due to lack of majority, is that correct? I don't think you directly said that in the record.

CHAIRMAN BORDEN: Motion fails due to lack of majority. I look forward to the Roberts Rules of Order presentation. Okay, so I saw our distinguished chairman had his hand up. Now he's got his hand over his face. Doug, do you want to take a crack, or do you need another minute?

MR. GROUT: Okay I'm going to try this. It isn't completed yet, but I would like to make a motion to amend that in the first sentence we replace minimized stock declines with – I'll let Kirby catch up – replace minimized stock declines with address stock declines in southern New England.

Then after that similar to the original motion to amend, we're going to remove the sentence that says, target egg production increase will not be less than 40 percent above the level that would otherwise be produced with no additional management; and replace it with, develop a range of long term increases in target egg production between 20 and 60 percent above the level that would otherwise be produced with no additional management.

The intention here, Mr. Chairman, is to one, clarify that we're talking about southern New England. Get rid of the word minimize, and use the word address, and then to put in a range of long term increases in egg production that the PDT and the TC could analyze.

CHAIRMAN BORDEN: All right thanks, Doug. Is there a second; Pat Keliher second. Is there discussion on the motion?

MR. FOTE: Did I miss something in the stock assessment saying that New England is suffering poor recruitment for a couple years in a row? Why are we, basically northern range not doing anything or not part of this amendment? If we're looking at basically protecting all the stocks, shouldn't we protect all the stocks? Especially, they could get a jump on the problem we're having in southern New England if it looks like they're going the same way; so we're just kicking that can down the road for a couple of years. That is what it looks like it's doing to me.

MR. GIBSON: I appreciate all the efforts on this. I think this is an improvement. The board has, I think, clearly stated that we want to be centered in terms of the severity of the management response between a moratorium and not doing anything. I think this range now with that additional guidance, allows the PDT and the Technical Committee to see where the percentage ought to be in order for us to stay centered in terms of the management response. I think it's a helpful improvement. I don't know if the range is wide enough, but it is better than locking us in at a 40.

CHAIRMAN BORDEN: Anyone else? Mike.

MR. LUISI: I agree it is an improvement. I still have the same concerns I did earlier with the 40 percent, you know locking us in to a number. You know you asked the question early on, whether or not this board was interested in eliminating the fishery. It was clear that the answer was no, this board isn't interested in eliminating the fishery. But I think one thing that we're going to struggle with through this amendment or at this addendum are determining what is going to eliminate the industry; depending on what state the fishermen are from, what their business operations are. Fishermen in my state have told me that 20

percent cut back in catch; you might as well have a moratorium.

I think we're going to struggle with coming up with alternatives and the impacts of those alternatives are going to be felt differently throughout the range of this southern New England stock. Again, I'm going to support the amendment. I think it is an improvement, but I still have some concerns over the numbers being in there.

CHAIRMAN BORDEN: Anyone else? David.

MR. SIMPSON: Yes, I still have the same confusion that I need some help with; either from Megan or Bob. Is the term egg production in any of our Technical Committee advice; anything that has been peer reviewed and approved to put in front of the board for management decisions? An answer to that and then I have a follow up.

MR. GLENN: No, not in modern times. The last time we used egg production I believe was in the 2000 assessment.

MR. SIMPSON: Right, so we're using terminology here that nobody knows what it means. I can't support the motion, because I don't know what it means. A further concern is the end of that sentence; above the level that would otherwise be produced with no additional management.

Does that mean as we work on this over the next two years and the stock continues to fall, what it would have fallen to, or is it where we are now or at the last assessment? I'm sorry, but this feels like we're trying to say we're doing something without doing anything. I think we need something more clear, based on the stock assessments that the Technical Committee and the Peer Review Panel have put together for us.

CHAIRMAN BORDEN: Other comments on the motion to amend? Are you ready for the question? Need a caucus? Does anyone need a

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caucus? Peter, you want to say something? Caucus, a couple minute caucus. Ritchie.

MR. WHITE: A question on timing, Mr. Chair. If we pass this and it goes to the PDT, when would we see a report back from the PDT? Would that be in August or would it be later than that?

CHAIRMAN BORDEN: August. I mean if, so everyone is clear, and Mike was the one that raised this before. If some variation of this motion passes, it would be our intent to try to conclude some of the egg analyses that are undergoing – Jason said he’s already got a draft of that. Have the TC review some of that paper.

Have the PDT and the TC and the staff work to get comments on what this means. To go back to Mike’s question, about actually what does it mean? What are the options and so forth, and all of that would be reported at the summer meeting. Then at that point I think, the board needs to look at that advice and decide whether or not it is adequate. In my own view this starts the process. Any other points before I call the question? This is on the motion to amend. All those in favor signify by raising your right hand; ten in favor, opposed – one opposed; any abstentions – one abstention, any null votes? The motion carries. We are back on the main motion as amended, any further discussion on this? David Simpson.

MR. SIMPSON: Sorry to be a nuisance, but isn’t it in our rules that any management action we take be based on peer reviewed science, and that we have guidance on the science to support management actions? Because where I sit and based on what Bob Glenn just said, I don’t see that what we’re doing is in any way supported by the scientific advice we’ve been given.

CHAIRMAN BORDEN: I think I would defer to some of my, I mean Bob or Toni could probably answer this better than me. From my perspective, I think most of the time that either a commission or a council deals with that specific

issue, they have a whole ranking of types of documents that they rely on in terms of giving technical advice.

One of the last items on that list is to have like a Technical Committee review the concepts and make sure that it is consistent with the program that it is being advanced for. I don’t, and Bob correct me if I misspeak. There is no requirement to just use peer reviewed science. Is that correct?

EXECUTIVE DIRECTOR BEAL: Now that I’ve spilled everything around me I’ll go ahead and answer. The guidance is really that the reference points and the foundation of the FMPs have to be based on peer reviewed science. But then, how do you achieve those reference points and all the analyses on different management measures and other techniques? Those usually are not peer reviewed.

They are run through the Technical Committee and others. I think this is in that gray area. The peer review clearly said southern New England needs some significant changes. How you achieve those changes I think, there is more latitude in that in the guidance documents from the commission. I’ll go the other way, the guidance documents of the commission don’t clearly say how you have to achieve the reference points, or what analyses you have to use to do that.

CHAIRMAN BORDEN: David, do you want a follow up on that?

MR. SPENCER: I do. The response from Bob Glenn was that the last time we used this terminology egg production was 15 years ago, 16 years ago. I don’t think anyone around this table knows what this means; because it is not in any of the last two peer reviews, not in the last two stock assessments.

It is not in any of the advice or work that the Technical Committee or others have done up

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until now; except for some work that got done to be presented at this meeting that has not been reviewed by the Technical Committee. I still view that this motion is out of order and inconsistent with commission policy.

CHAIRMAN BORDEN: Anyone else? Mark Gibson.

MR. GIBSON: I think I understand what Dave is saying, but I think he's referring to the egg per recruit standards we used to use. Eggs per recruit are very different than egg production. This is population egg production; which is in some way proportional to spawning stock biomass, and I'm sure the Technical Committee can figure that out. But if not, the old standards of production of eggs on a per recruit basis, which has fallen by the wayside – I agree with that. But I don't think that is what we're doing here. I think we're acknowledging that SSB matters, because it is what produces eggs.

CHAIRMAN BORDEN: All right, Bob.

MR. GLENN: To me, that kind of brings up an interesting question, because essentially to me it seems what we're really talking about here is SSB. I'm not really sure what the intent of changing the terminology to egg production is; because you can't achieve a 20 to 60 percent increase in egg production without increasing the SSB.

I think it leaves the TC in a little bit of an awkward spot as to understand. I mean we can do it. We can multiply the spawning stock biomass by the maturity curve and by the fecundity, and come up with total egg production, but it doesn't seem to relate back to any of the reference points or management.

CHAIRMAN BORDEN: Anyone else?

MR. GROUT: Well in response to what Bob said, when I made the motion to amend it was off of the original underlying motion that talked about

egg production. The original maker of that underlying motion, I was wondering if they had that same concern that it should be SSB. The value that we're looking for is actually SSB.

If so, I can't make an amendment to my motion. Maybe the original maker of the motion or some of the people on the other side of the table that have concerns about using this currency of egg production, would you feel more comfortable with SSB? Would you want to make that amendment?

MR. SPENCER: Yes, I think that is where we're sort of misleading ourselves; because I'm just watching how the vote is going. I think the proponents of this motion are looking to take less extreme action on the fishery; yet if you substitute spawning stock biomass where it now says egg production, you're in the realm of 80 plus percent reduction in exploitation. I can't believe that that is what the people supporting this motion intend will happen.

I think we need to find the correct term, one that is in our stock assessments and our peer reviews, in all the technical work we asked the committee to do back in February; and substitute in a target reduction in exploitation rate or spawning stock biomass, but a term that is used in the advice we've been given. None of us know what this means. I think we're all interpreting it the way we want to. But just looking at the votes it is clear to me that people do not mean to increase SSB 20 to 60 percent.

MR. ADAM NOWALSKY: To build on that point. I had supported the last motion, but I've really got to think about that now; hearing the most recent comments that in order to increase, if I heard them correctly, in order to increase egg production we need to increase biomass. That was what I heard most recently, I believe. The PDT memo says that just to stabilize SSB would require a 75 percent reduction in harvest rate. If I put two and two together and I'm coming up with four, then to get any egg production, which

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I think is the point Dave is getting to, egg production increase is required in SSB biomass increase, which requires according to the PDT a 75 percent reduction in harvest rate; if I've heard everything correctly and put it together in my head correctly. If I haven't, please correct me.

CHAIRMAN BORDEN: Anyone else around the table? Jason, I don't want to put you on the spot, but since your staff has been doing the egg production analyses, do you have any comments you want to make at this point?

MR. McNAMEE: I'll make one brief comment. The discussion that is happening right now between – so the comments that to increase egg production you have to increase SSB is absolutely correct – or protect SSB, I think the currency that you're using is just math. They are related to each other, so if you call it egg production or you call it SSB, it is just math that you're talking about.

I will say an attribute of egg production is it recognizes that all lobsters are not equal. Bigger lobsters produce more eggs. Smaller lobsters produce fewer eggs. For instance, in menhaden we use eggs instead of SSB. It is not something that doesn't occur in other fisheries, and the reason for that is bigger animals produce more eggs and you're just trying to recognize that.

The only other thing that changes in this discussion, depending on the currency is you can get a bigger number from egg production. That number that equates to that bigger number for SSB, it is just a smaller number. I guess you're all talking about the same thing and it is literally a currency change that is linked through a relationship; and it's just math.

MR. MUFFLEY: This is the question I had when we were going through the technical reports. If you kept all else equal, from my understanding, you need to take a 75 to 80 percent reduction to stabilize SSB. But I thought some of the technical analysis that the TC had done and that Rhode

Island had done that shows some modest gauge size increases, does influence and increase SSB.

There is a difference, so if we do nothing and the only thing we're going to do is reduce harvest by some sort of scenario, and we do nothing else; no gauge size increase. Then we need a 75 percent reduction to do that. But if you do some management tools, a gauge size increase, a decrease, whatever maximum decrease. There are other avenues that don't require a 75 percent reduction. That is my take in the analysis.

MR. BORDEN: I'm got Ritchie White. Bob, do you want to respond to that?

MR. GLENN: I was just going to point out that that is absolutely correct. Any time you change the minimum or maximum size you're changing the exploitable stock. By increasing that you are going to increase SSB.

MR. WHITE: I still feel we're going about this backwards. We've said that we want to maintain a viable fishery, and then we go to trying to create measures that will help egg production spawning stock biomass, without knowing what a viable fishery is. Why aren't we starting with, what kind of fishing mortality reductions can industry stand and still be a viable fishery? Why aren't we starting there, and then okay that's what we can work with? That is the effort we can reduce; and then see what does that give us? It just feels like that we're doing these things; we have no idea whether any of them will come out with a viable fishery. I guess my question would be, who would we task and how would that unfold, for us to determine what a viable fishery would be. How much mortality reduction could they stand? Would that go to the PDT, go to the AP, Technical Committee? How would we determine that?

CHAIRMAN BORDEN: I'm not sure what the answer to that is. Maybe Megan or somebody else can offer thoughts.

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MS. WARE: My thoughts if I was asked that question would be to go to the LCMTs and ask them what they could sustain as reductions in F; and then that would be your goal, basically. I don't know if that percentage would be equal among all of the LCMTs; so that is something that the board would have to consider. But that is how I would try and answer that question.

CHAIRMAN BORDEN: My suggestion here on a way forward is basically to curtail the discussion on it. We've had a good discussion. I think we should vote on this motion, but do it in the context that if this motion passes, then in fact at the next meeting we will get a whole series of reports.

We can get comments from the TC on it, we can get the analysis that Jason and his staff has been doing. We can get comments from the TC on whether or not they agree with or don't agree with the Rhode Island analysis. Then lay all of that before us, and depending upon the results of that then if there is a necessity to revisit this motion, we go back and revisit it at that point.

But at least we do so; I mean there have been a lot of really good points that have been made around the table about what is known and what is not known. But there is also a lot of speculation that is going on around the table. I think the only way to move forward with this is take a step, but it is under the assumption that if in fact the motion passes, then we're going to revisit the whole issue at the summer meeting. Comments on that; any comments?

MR. ADLER: If this motion passes there is going to be a development of a draft addendum; first of all is that correct?

CHAIRMAN BORDEN: I don't think we're ready for that, Bill. I think we're at the stage where there is sufficient uncertainty here in terms of the terms, what it means and so forth. That we need to get more technical guidance, we need to

see this Rhode Island analysis being completed; and then basically put it on the agenda.

Let everybody actually see what the analysis is at that point, what the actual egg production is that comes out of a few examples. I mean in the Rhode Island analysis, the initial analysis, I don't know whether this applies to the current analysis. But they had looked at a range of different options, not to advocate those options but to just use them as examples. I think that might be helpful in terms of answering some of the questions that have been raised.

MR. ADLER: In other words, if this passes we're not going to start drawing up an addendum yet; is that correct?

CHAIRMAN BORDEN: Correct. That would be my interpretation.

MR. ADLER: Okay, and so is there a charge to the committees you talked about to come back to us with whatever you just decided and then move on maybe? Is that the next step?

CHAIRMAN BORDEN: What I would say is, I'll reiterate what I said; basically that if this passes or some version of it passes, then because of all these uncertainties that have been legitimately raised that we analyze it, do our due diligence on the alternatives and then get reports on it.

Then basically decide, is this what we really want to do; and we do it from a factual basis. What that would mean is, to answer your question directly, Bill; was we're not going to start on the addendum between now and the summer meeting. What it would mean is that you do that after that point. It is going to take a couple more meetings to finalize this.

EXECUTIVE DIRECTOR BEAL: David, the wording of the motion is to initiate an addendum, but your interpretation of that is the initiation is actually the analysis and the work done by the PDT and TC to bring back to this board. It is not

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drafting an addendum between now and August it is initiating the work of an addendum, and that is how you interpret that; is that correct?

CHAIRMAN BORDEN: Correct. Okay any other points? Are you ready for the question or do you need a caucus.

MR. LUISI: I have a quick question for you. Given the concern around the table surrounding this sentence that starts with develop. If someone were to make a motion to strike that sentence from this motion, because the issue had been amended before it is a different motion. It is a motion to strike a sentence rather than to change the wording. But would a two-thirds majority vote be needed in that case, in order to actually make that change? I'm considering that motion and I'm trying to figure out what would be required in order to strike that sentence.

CHAIRMAN BORDEN: Are you trying to reconsider a portion of a motion that has already passed or already been acted on?

MR. LUISI: Yes, I guess the intent would be the same that Eric's motion earlier that I seconded, I guess the intent is the same; so yes, I guess I am asking if we were to reconsider that it would require a two-thirds. I'm just kind of talking through it in my own head.

CHAIRMAN BORDEN: Bob, you want to provide some procedural guidance, please?

EXECUTIVE DIRECTOR BEAL: I'll try. I don't have the wording of the previous motion that failed in front of me, but it sounds like Mike is suggesting another motion to amend; which would be to strike the sentence that begins with, develop a range of long term increases. If I remember right, his previous motion had a few other ideas in it as well.

You get into a gray parliamentary area where you've got a multi-piece motion earlier that failed, and now it sounds like Mike may be

considering a single-piece motion to amend, which is just striking one sentence. It probably would be fine if that is the will of the board just to do that through a regular motion to amend and not require a super majority.

CHAIRMAN BORDEN: Anyone further on this point? Is there any other action, anyone proposing anything different?

MR. NOWALSKY: I like in theory the idea of doing the analysis of what we're contemplating here would mean, and having that come back to us. I am somewhat troubled by the sense that the words on the board are, we are initiating an addendum. Then if the information, the analysis comes back to us and we don't like what we see, then we're going to un-initiate the addendum? I'm not very comfortable with that. I would be a lot more comfortable changing the wording of this from initiating an addendum to doing an analysis.

I would be curious, you know we had the question a couple a minutes ago and I got some nebulous response about how we're initiating an addendum, but only doing an analysis and might not go forward with the addendum. I would like to get some more clarity on that and then in consideration of possibly changing this, to having words to the effect that we're doing an analysis and not actually initiating an addendum at this point; if you could give that to me, please.

CHAIRMAN BORDEN: For the maker of the motion, and the seconder. Do you want to propose something different, given the comments here? What is your reaction? There is also the option to simply go with the way that I characterized it, in other words I think I was clear, I mean earlier in the meeting we agreed we were going to do an addendum. That is what we agreed to. There wasn't a vote on that. But people basically agreed to that.

MR. GROUT: Well the way I see this is we're initiating an addendum to address stock declines

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in southern New England by lowering fishing mortality and increasing egg production. We are giving the PDT suggestions on a range of alternatives to include in there. Now if we come back and we want different range of alternatives to address the underlying problem, which is to address stock declines in southern New England.

We certainly have the ability as a board to ask for different ways to address that problem. But the initial problem is at the top sentence, and then the second sentence is one way of getting at it; and we're going to get the analysis. I don't see the way the Chairman has proposed that we're coming back with some analysis of how to address a problem in the first sentence is going to be locking us in to that way of addressing it.

We're going to take a look at the analysis, see if that is an appropriate way to address it, depending on what the PDT and the Technical Committee provides us. I think we should be initiating an addendum to address that problem. We've had a stock assessment that says there is a problem. We've had three meetings already. We've already asked the Technical Committee and PDT to do a variety of analysis that they've already brought back to us. I think it is time that we initiate an addendum to address the problem that is in the first sentence.

CHAIRMAN BORDEN: Adam, to your point. Would it make you more comfortable with the motion if in fact at the end of it we added some kind of sentence, and don't hang on every word. It is something to the effect of; the first phase of the process will be to analyze these options and report at the next meeting. Would that allay some of your concerns?

MR. NOWALSKY: Well I think the comments on the record here in the last couple minutes probably address it as best we can. If as Chairman you see fit, based on the comments here to encourage some change in words here – so what the public sees – and what we move forward with working off of. I would certainly

support to that concern. But I think the important part is getting the comments on the record that we just did, about what our intent is and what our process is going to be going forward. I would defer to you whether that is sufficient or not in your eyes.

CHAIRMAN BORDEN: Let me just read this one more time. It is my intent that if this motion passes that this will be the first phase in the process and that analysis will be completed and the report provided to the board at the next meeting. All right, further discussion on this; are you ready for the question? You need a caucus? **If not, all those in favor of the motion raise your right hand; 10 in favor, opposed – 1 opposed, abstentions – 1 abstention, any null votes? The motion carries.**

GULF OF MAINE MANAGEMENT AND GEORGES BANK MANAGEMENT

CHAIRMAN BORDEN: Okay so the next item of business here is Pat Keliher had requested time before the board to discuss the issue of the Gulf of Maine management and Georges Bank management. Okay so Megan has raised the point about tasking the TC. Is there any objection to tasking the TC with reviewing this? Bob, are you objecting?

MR. GLENN: Well, I think we need clarification of exactly what the final product is supposed to be. Are we analyzing what the impact on the fishery is at 20, 30, 40, 50, 60 percent increments? Are we changing based on egg production or are we looking at how that relates to mortality? I'm a little unclear as to exactly what we're supposed to be analyzing.

CHAIRMAN BORDEN: The motion says target egg production. I would view that the first thing you're going to do is you are going to review the Rhode Island analysis, right? Then I think you would factor that into a range of options and basically bring back some alternatives and

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characterize what you think the impacts are under a couple of different scenarios of that.

MR. GLENN: You want the Technical Committee to propose management measures to achieve those egg production changes?

CHAIRMAN BORDEN: No, I think it is similar to what Rhode Island has been doing. Rhode Island is not analyzing specific management measures, but they are looking at a couple of examples of the impacts. I think that would be helpful. It goes to a number of the questions that have been raised, Mike has raised questions about; what does a 1/32 inch increase do for this? What would a 2/32 inch increase do for this; those types of things?

MR. GLENN: My concern is that there is a myriad of possible different combinations of things. I think it would be helpful for the TC to have fairly specific guidance, so that we don't produce a lot of unpalatable options that folks wouldn't be interested in. We can stick with gauge increases if that is what the primary tool is going to be.

But I would think we would want to make sure that is what the board was interested in; as opposed to like in the beginning of that it says through maximum size, closed season, closed areas, trap caps. There is a whole huge suite in there. That would be a lot for the TC to analyze all those possible combinations and how they interact together. I am just a little apprehensive.

CHAIRMAN BORDEN: I'll kind of reiterate what I said before. I think a few examples; we don't want you to take the laundry list and go down and do every single one. But I think to the extent you can give us some examples of what this means; narrowly focused examples. Then the board at least can have some discussion about whether or not this is an appropriate objective for this action. Once we actually do that then we can start to flesh out the management measures.

I mean the whole context for this action has always been that we need a clear goal, okay, and I'm not sure we have it yet. We need a clear goal. Once you get a clear goal then you can basically start the process of working with the PDT, working with the LCMTs to flesh out which alternatives we're going to consider. At that point they get analyzed. Yes, Craig.

REPRESENTATIVE MINER: I am kind of perplexed at this point, because when I hear from folks that are charged with coming up with information that we're going to take out to the public and they're confused. Now I feel like I'm in good company. This is the first time in the time I've served on the ASMFC where I communicated with lobstermen prior to coming down here.

I sensed a real concern on their part about the resource, and that was pretty telling to me. I am pretty sure it was probably similar to a conversation you might have had with an Indian about bison a long time ago. There may not be any left. I am not a scientist. I couldn't tell you what this says.

But what I can tell you is when I have to go back and relate what this says to somebody that is in the industry, I can't imagine they are going to think I did my job. I don't know how we unwind this clock or if we can unwind this clock, but it just seems to me that it's got to be very direct. I don't know whether we should close the fishery.

I mean I listen to Ritchie White, and I would say to you, Ritchie that most of the lobstermen in Connecticut, their business is down now down to about 10 percent lobsters, 90 percent moving buoys, doing any number of other things; just so they can stay in the business. Now whether we can get an agreement between Rhode Island, New York and Connecticut about what all those lobstermen do, I don't know.

But what I do know is that they know where these lobsters are, and another year where they know where they are and we haven't done

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anything there is going to be less of them the next time we go to talk about it; and that is my frustration. I don't know what to do, but I drove all the way down here because I thought we were going to do something. I respect the people that know a lot more about how to draft this than I do. If this was legislation I would know how to draft it. Sorry.

CHAIRMAN BORDEN: All right, are there any other motions to follow this one? If not, we're going to move on to the next agenda item. Pat Keliher.

MR. KELIHER: Obviously things in the Gulf of Maine are quite different than they are in southern New England. The intent of what I am going to bring forward today is to hopefully avoid the conversation that we just had for the last several hours in the future when we start to see changes in the Gulf of Maine. This is not to diminish the importance of the southern New England lobster fishery, but to put it in perspective. If you look at today's landings, Maine during the peak of the season catches the total amount of what is caught in southern New England in about 14 days. Our fishery is at an all-time high. We've been maintaining catches for the last four years over 120 million pounds. Ex-vessel value is now a half a billion dollars. What I am proposing to make for a motion is to start putting together plans now for what is inevitably going to be a changing lobster stock in the face of a changing environment.

Just as a reminder, the current FMP reference abundance is 35 million pounds. If we did not react to the change until we hit that 35 million pounds level, the state of Maine would have an economic disaster on our hands that would pale all other fisheries disasters that we have seen in the past.

We are seeing shell disease within our state fisheries, it remains prevalent, but luckily we are at a low level and it makes up less than 1 percent of the harvest. However, we do see – and this

correlates exactly with what the conversations in southern New England – while we have a historically high spawning stock biomass we have now seen four out of five years in declining settlement within our state settlement surveys.

We for the first time have picked up that decline in eastern Maine in our ventless trap surveys. That is a continued indication that we are starting to see change. I am not by any means suggesting that the sky is falling yet, but with the lessons learned in southern New England, I believe now is the time to start preparing with having the best available information and the best thought out process by which we would adapt to those changes.

Anecdotally, fishermen up and down the coast are telling me on a daily basis that things are changing. This fishery is moving farther offshore, we were seeing earlier sheds, the water temperature issues continue to drive all of the changes that we're seeing within the Gulf of Maine with all of our fisheries; whether it is green crab infestation, sexually maturing lobsters at a smaller, younger age.

All of those pieces are kind of part of what lead me to be very concerned about what the future will be to this fishery within the Gulf of Maine. With that Mr. Chairman, I would like to make a motion, a tasking motion if you will; and I'm hesitant to do so after the last conversation and the workload that was just put onto the Technical Committee, because Bob is about ready to crawl under the table I think right now.

Megan, do you have a copy of that? I don't know if you could put it up. **I would like to make a motion to have the Technical Committee examine the following tasks. Synthesize current literature and studies which investigate the connectivity between the Gulf of Maine and Georges Bank stock and Canada.**

Plot changes in distribution of egg-bearing females over time in the Gulf of Maine and

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Georges Bank stock. Understand changes in the Gulf of Maine ocean currents and how this could be affecting larval supply patterns. Investigate the stock-recruitment relationship in the Gulf of Maine and Georges Bank stocks.

Review ongoing research on Gulf of Maine lobster in order to identify research holes and prioritize the importance of these data holes to effect management. Examine the competing management measures between Area 1, 3 and the outer Cape Cod to look at the benefits of harmonizing these measures. And lastly, to investigate and develop a Traffic Light Analysis as a potential control rule using average harvest and abundance values from the last ten years as a baseline. This approach would include using multiple indices such as the settlement and ventless-trap surveys, trawl-survey data, landings information, and other indices as recommended by the TC. If I have a second, Mr. Chairman I would be happy to speak further on this.

CHAIRMAN BORDEN: Second by Ritchie White. Discussion, any discussion, no hands up. Tom, are you scratching your head again or is that a hand up?

MR. FOTE: I just wanted to support this motion. I think it is the right move to make and I really congratulate Maine for stepping forward.

CHAIRMAN BORDEN: Yes, I would also speak in favor of this. I think it's a good idea. I think the commission, given the experience in southern New England from the nineties; where we went from literally record abundance and catch rates that kind of rivaled some of the catch rates that Pat's fishermen are seeing.

We went from there in a very short period of time to the fishery had basically collapsed. I think it's important for the commission to do this. A lot of this will result, if you approve this, a lot of this will result in the design of research

projects that have to be done to gain additional information on it.

MR. ABBOTT: What might be an appropriate timeline to gather all this information?

MR. KELIHER: I was thinking that preliminary information could start coming back at this winter meeting. I don't think, as I said earlier the sky is not falling. But I think starting to bring this information together now, especially some of the prioritization work that needs to be done; I think would benefit us in state in particular.

We're getting ready to hire on two new research scientists. I think it would also allow us to start as a commission, prioritize research work that is needed, and start looking for additional funding, and maybe even get the service to elevate this on their priority list.

CHAIRMAN BORDEN: Any other discussion on this? Any need for a caucus? No hands up, are you ready for the question? **All in favor signify by raising your right hand, 11 in favor; oppose, any opposed, any abstentions, 1 abstention, null votes – motion carries.** Okay next item on the – it is almost exhilarating to make this progress like this.

DRAFT ADDENDUM I TO THE JONAH CRAB FMP

CHAIRMAN BORDEN: The next item on the agenda is the Draft Addendum I to the Jonah Crab FMP, this is a final action. This deals with the issue of bycatch in two different categories, and Megan is going to give a short review and then we're going to get some comments from other individuals. Then there is a motion that's been prepared on the issue.

REVIEW OF OPTIONS

MS. WARE: Before we get started could I just ask Mark Robson and Mr. Gwin to come up, because they'll be helping me with this presentation. All right, good afternoon everyone. Just as a

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reminder, as David said this is final action. This document went out for a public comment this spring, so I'll be going just quickly through the different options. I'll focus on the public comment and then we have an LEC and an AP report. Then we can open it up for discussion. Just an overview of my presentation today, first I'll go through the timeline of this addendum. I'll review the two issues; we'll go through public comment and then approve it. This addendum was initiated in November, after concern that the current bycatch limit is too low; that it doesn't include all participants in the fishery.

The board approved the document for public comment in February, and they also added a second issue to address bycatch by non-lobster trap gear. Public comment closed just a few weeks ago, and we are now here to consider final action. This is the regulation that is currently in the FMP. It says there are 200 crabs per calendar day, 500 crabs per trip, and incidental bycatch limit for non-trap gear. Again, those are those gillnetters, trawlers.

There were two concerns that have come up. The first is that the limit for non-trap gear does not include all participants; that we need to increase it so that those individuals can carry on business as usual. The second issue is that there is no limit right now for non-lobster trap gear; so those will be conch pots, fish pots, and this could lead to increased effort as well as trap proliferation since some of those fisheries do not actually have a trap limit like the lobster fishery does.

I am going to start with Issue 1 first, non-trap gear, just briefly go through the data then the options; I'll switch to Issue 2. This table here shows the landings by non-trap gear of Jonah crab from 2010 to 2014. Then it shows the percent of trips that were over the current limit. This was updated actually from the public comment that was received from the New England Council.

Originally we thought that there were 23 trips over the limit, but now it looks as though there have just been 8 trips over the limit between 2010 and 2014. Three trips landed over 900 crabs between May, 2013 and August, 2015. In total the landings from the non-trap gear is less than 1 percent of the fishery, but we can see we had a higher year in 2010; but since 2011 we've increased from roughly 3,000 pounds to 13,000 pounds in 2014.

There are three options for Issue 1; the first is status quo, so that would be preserving the 200 crab per day, 500 crabs per trip limit. Option B is to increase it to 1,000 crabs per trip limit; and this would be a trip of any length, and then Option C would be to remove the bycatch limit. Moving on to Issue 2; non-lobster traps.

This data is just again for review, it is from the BTR database. From May 1, 2013 through August 31, 2015, there were 194 trips that landed Jonah crab with non-lobster traps; 60 percent of these trips had 200 crabs or fewer, 20 percent of trips landed between 200 and 500 crabs, and 20 percent of trips landed more than 450 crabs.

We have four options here, and I just wanted to include the exact language of who this issue applies to. It applies to all trips by vessels hauling traps which do not have a valid lobster tag. I just wanted to be clear on that; because I'm not sure that that has been clear before. But Option 1 would be status quo, so there is no bycatch limit.

Right now these individuals are required to obtain an incidental permit from their jurisdiction, but they can land as many Jonah crab as they like, with as many traps as they like. Option B is a limit of 200 crabs per day, 500 crabs per trip for three days or longer. Option C is a limit of 200 crabs in the first 24 hours and then any trip longer than 24 hours they would have 1,000 crab limit. Then Option D is a limit of 1,000 crabs for a trip of any length.

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PUBLIC COMMENT SUMMARY

MS. WARE: I'll move right on to public comment and then I'll take questions after that. We received 7 letters, 3 from individuals, and 4 from groups. Then we had 7 public hearings; they were held from Maine to Maryland, and roughly 55 people attended those public hearings in total. For Issue 1, non-trap gear the table here looks at who was in favor of which option for both public hearings and written comment.

You can see looking at the totals it is basically evenly split between the three options. What I'm going to do is just kind of go over the rationales that people had for the different options; since they were generally the same. For Option A, those who supported the current 200 crab per day, 500 crab limit; they generally felt that this was an adequate allowance and this would prevent non-trap fishermen from targeting Jonah crabs.

Those who supported the 1,000 crab limit felt that this was a slight increase. It would allow people to continue business as usual, but at least it created some sort of limit for this gear. Then those who supported Option C, which is no bycatch limit, felt that there really wasn't a need to limit such a small portion of the fishery; especially when lobster permit holders who are the major harvesters in this fishery aren't limited in the number of crabs that they are landing.

Those were kind of the general rationales behind each of the different options there. Moving on to Issue 2, we had two clear winners here; Option A and Option B. Those who supported no bycatch limit again felt that there was no need to limit such a small portion of the fishery. They didn't feel the stock was in jeopardy, so there was no need to be restrictive at this time.

Option B, those who supported the 200 and 500 crab limit felt that there was concern about trap proliferation from these gear types; that it was important to set a limit that would allow some

catch, but would be sure to cap effort. Just some other comments we got on the document. We had one individual say that clarification is needed on whether the addendum applies to bycatch landings or a possession limit.

We had people say that the Jonah crab fishery should adopt LCMAs. There is continued confusion on the difference between Jonah crab and rock crab. We had some people say claw landings are an integral part of the fishery, and some say that a claw fishery would be a detriment to the stock. Then some people feel that the FMP should be paused until there is a completed stock assessment.

ADVISORY PANEL REPORT

MS. WARE: I am now going to turn it over to Mr. Gwin, who is the AP Chair for Jonah crab to give the AP report.

MR. EDWIN GWIN: Yes, well the AP decided or came to a consensus that it was probably good to have a thousand crab limit for everybody. That would allow an increase in the fishery, since the management plan is here to cap the fishery as it is; and that's with the participants. A thousand crab limit would still allow people that have landed Jonah crab to land them and still let an ex-vessel price of .85 to \$1.00; still be able to sell them and make a profit out of it.

Also with the Large Whale Take Reduction Plan, if we increased any effort and let the non-lobster trap people have the permit to catch Jonah crab; this might put more buoy lines in the water. I think we all agree that we don't want no more buoy lines in the water. Are there any questions?

CHAIRMAN BORDEN: Any questions on this?

MR. MCKIERNAN: Yes, Sonny, can you codify the position of the AP was to establish a thousand crab limit for those who do not have a lobster permit?

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MR. GWIN: That's pretty much. If you don't have a lobster license it would be a thousand crab limit.

CHAIRMAN BORDEN: Any other questions on this? Bill.

MR. ADLER: Therefore, the AP on the non-trap fishery would support which option?

MR. GWIN: A thousand crab limit for everybody; for all trawlers, dredgers.

MR. ADLER: Per day?

MR. GWIN: Per trip.

MR. ADLER: Per trip and for the non-lobster trap a thousand again?

MR. GWIN: A thousand.

MR. ADLER: Not a thousand a day.

MR. GWIN: A thousand crabs per trip.

CHAIRMAN BORDEN: Both, so Bill, you're clear they're proposing same limit for both categories.

MR. GWIN: Exactly.

LAW ENFORCEMENT COMMITTEE REPORT

CHAIRMAN BORDEN: Okay any other questions? If not we're going to proceed with the Law Enforcement Committee report, Jon are you giving the report?

MR. JON CORNISH: Thank you, Chairman Borden. Good afternoon. The LEC met via teleconference March 11, 2016. This issue was discussed in depth. After reviewing the proposed bycatch options for the non-lobster trap harvest of Jonah crab, the LEC reiterates its previous positions and rationales for bycatch limits as prescribed in the memoranda of the American Lobster Board.

For Issue 1, the non-trap gear, the LEC supports Option A, status quo; 200 crabs per calendar day and up to 500 crabs per trip. For Issue 2, the non-lobster trap gear, the LEC supports Option B, 200 crabs per calendar day and up to 500 crabs per trip. Before the Jonah crabs were regulated there was no need to inspect bycatch as there were no restrictions in size or egg bearers.

Now restrictions will increase significantly. The time and effort required for law enforcement to inspect bycatch. In addition we are concerned with the larger bycatch allowances that could well increase the potential for gear conflicts and/or add additional trap lines into the coastal waters. We also want to promote uniformity between the non-lobster trap and the non-trap bycatch fisheries. In this case we feel they should both be 200 per day, 500 per trip. I'll take any questions you may have.

CONSIDER FINAL APPROVAL OF ADDENDUM I

CHAIRMAN BORDEN: Any questions for Jon?

MR. STOCKWELL: Not necessarily for Jon, but perhaps for Megan. I just note in the LEC report where we have Option A of the 200, 500. In her presentation Option A was no trip limit. Just when we go to put motions up on the board, we ought to be clear exactly what we're going to either move or substitute.

MS. WARE: I believe Option A for non-trap gear is the 200, 500. Then for Issue 2, it is Option A. The different options for those two issues, even though some of the options are the same they do not correlate to the same letter.

MR. STOCKWELL: I'm even more confused.

MS. WARE: How about I go to the very last slide, it is a summary slide; and this shows all the options here. You'll see that some of the options, like Option C for Issue 1 and Option A for Issue 2 are the same; but they are a different letter. Okay.

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CHAIRMAN BORDEN: Terry.

MR. STOCKWELL: I'm all set, thanks, David.

MR. LUISI: Just to be clear, A in both cases is the status quo; correct in your summary slide?

MS. WARE: That is correct, yes. Just one comment to add on this last slide, one thing I wanted to add is throughout the public comments and the written comments, one of the patterns I've seen is that whatever option the board chooses or whatever option that public commenter's supported; they supported the same value for both non-trap gear and non-lobster trap gear, kind of citing ease of enforcement, ease of regulations. They are supporting the same bycatch limit for both non-trap and non-lobster trap gear.

CHAIRMAN BORDEN: Anyone else? Bill Adler.

MR. ADLER: I personally think, I actually support the 200, 500 for non-trap and the 200, 500 for non-lobster trap. The Law Enforcement Committee did make a comment on was if you give non-trap higher catches, like the scallopers or the druggers; that the gear conflict issue, they may really start to want to catch this more directed than others when they can catch that much.

To usually do that they will usually try to target where the crabs are, which is where the lobster traps are. I can see a gear conflict issue developing. I'm also concerned that with the higher limits there will be a more directed fishery by anybody, which once again means more traps perhaps going out if they're trapping them.

That is a problem with traps. If they do a directed fishery, I also don't think that the non-lobster trap fishermen need a thousand pounds in one trip. I don't think they could do it. That is why I sort of like the 200, 500 idea; and yes I do like the fact of having both the same rather than having a different rule for this one and a

different rule for that one. That is my thoughts and concerns about this.

CHAIRMAN BORDEN: Anyone else? Jim.

MR. GILMORE: When you're ready would you like a motion, Mr. Chairman?

CHAIRMAN BORDEN: All right so Jim requested the floor to make a motion.

MR. GILMORE: Move to adopt under Issue 1 for the non-trap gear bycatch Option A; 200 crabs per day, and a 500 crab per trip limit. Under Issue 2, Option B; 200 crabs per days, and a 500 crab trip limit for Draft Addendum I to the Jonah Crab FMP.

CHAIRMAN BORDEN: Is there a second? Seconded by Bill Adler. Discussion.

MR. STOCKWELL: It is probably going to be no surprise that I have a little different opinion from my friend across the table here and sort of my comments are going to be just specific to non-trap landings. I came to this meeting prepared to either support Option B or C. After reviewing the meeting materials and further considering all the effort data the council staff mined from 2010 to 2015, which indicate the landings by non-trap permit holders constitute a fraction of 1 percent.

I am quite tempted to move Option C, the no landing limit, as I believe there is no evidence that provides a need for non-trap bycatch limit; when the vast majority of the trap fishery is not limited altogether. But with the absence of a Jonah crab assessment, and in support of the APs recommendation and my intent to freeze the footprint of the existing non-trap fishery; I'm going to move to substitute Option B, 1,000 pounds trip limit. If I get a second I'll provide further rationale.

CHAIRMAN BORDEN: I have a motion to substitute; seconded by Roy. We need to get the

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motion. Terry, can you restate the motion slowly so we can get it up on the board?

MS. KERNS: It's just which issue.

MR. STOCKWELL: My motion is to substitute Option B for the non-trap fishery. I am not prepared to address non-lobster trap fishery, because it is not the council's responsibility. The motion is specific to the non-trap fishery.

MR. GROUT: Just to be clear, is this a motion to amend? Jim's motion combined Issue 1 and Issue 2. I know you're trying to substitute, but really you're amending the motion under Issue 1 to be an Option B.

CHAIRMAN BORDEN: Terry, would you like to change the language on that to motion amend?

MR. STOCKWELL: Sure, I'll jump in with both feet here. **No, a motion to substitute for both the non-trap and the non-lobster trap; Option B of 1,000 pounds, which is consistent with the APs recommendation.**

CHAIRMAN BORDEN: Roy, on that point.

MR. ROY W. MILLER: That was my original understanding and why I seconded it; that it would be a thousand crabs for each issue, thank you.

CHAIRMAN BORDEN: I just point out the speed of the deliberations here has been breathtaking, and probably caught some of you off guard.

MR. STOCKWELL: To the point I made earlier, I just was confused about the labeling of the motions in the non-lobster trap. It's a different option, but my intent is 1,000 crabs per non-trap and per non-lobster trap. It would be a motion to substitute for consistency.

MR. LUISI: I am going to support this option. I think that it provides, like Mr. Gwin told us from the AP. It puts a backstop there for catch for

harvest, but it doesn't restrict. I don't think the intention was to ultimately restrict the current catch. If I'm thinking back to the slide that Megan presented on catch over 4 or 500 pounds.

There was a proportion of the fishery that currently exists that falls within the range that would be restricted under the 200 and 500 crab option. With that and knowing that while we're learning more about this stock, this puts a significant backstop in to keep fisheries that aren't using lobster traps from expanding to any degree. I'm going to support the motion.

CHAIRMAN BORDEN: Anyone else on the motion to substitute? Brandon and then Dan.

MR. MUFFLEY: I'm going to speak in opposition to the motion, particularly on Option A. We have a measure that's in place that covers 99 percent of the fishery over the last five years. We're making the exemption for not eight fishermen; we're talking about eight trips over the last five years that we're going to make an exemption for.

There are no other requirements. They don't need to land anything else with this. They can go out and target if they wanted to. We can call it a bycatch fishery, but they could in theory go out and target 500 crabs per day and I also agree with consistency between the two; but my main opposition is to the opposition to A. I think we have it covered already, and I don't see the need to make an exemption for eight trips.

CHAIRMAN BORDEN: All right next on the list I have Dan and then Doug; anyone else? Steve.

MR. McKIERNAN: I agree with Brandon's comments and I would also want to point out that in my opinion, I think that this is going to attract more trap fishing effort by those fishermen who don't already have a lobster permit. If this motion fails, I would be prepared to do a substitute motion as a compromise to create a 200 per day, 1,000 for a five day trip as a substitute.

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MR. GROUT: I am tempted to support the motion to substitute. I am a little puzzled by the argument that we're going to be attracting fishermen into the crab fishery; where right now the trap fishery, the non-lobster trap fishery has no limit on it. From what I've read in the document, it doesn't appear that there has been an increase in their effort; the same way with the non-trap gear in Issue 1. It doesn't seem like there has been an increase in their effort. Why would putting a cap on it increase, tempt people to get into the fishery?

MR. TRAIN: I would say I oppose the substitute motion at this point, because of the potential effort increase. We have trouble with bycatch definition here. We seem to think if you catch something that is below a limit it is a bycatch, we don't care what else you're catching. I thought it was supposed to be a smaller portion of your total catch. I am worried about a directed fishery. It may only be eight or ten people at this point, but this would allow 200 people to direct on it up to 1,000; because it's a bycatch. I don't like the substitute motion for that reason.

MR. NOWALSKY: I might just ask staff to reflect that these are Jonah crab no Joan crabs in both motions.

CHAIRMAN BORDEN: All right, anyone else here? Are you ready to vote on the motion to substitute? I see no hands up. John, do you want to comment? Caucus; okay a two minute caucus, are you ready? **Ready for a vote, this is on the motion to substitute? All in favor on the motion to substitute raise your right hand. Seven in favor, opposed; 4 opposed, null votes or any abstentions; no null votes, no abstentions. The motion carries; the motion to substitute. Now the main motion as substituted, are you ready for the question?** All right is the motion clear?

MR. McKIERNAN: Will there be any discussion on this?

CHAIRMAN BORDEN: If you'd like to discuss it go ahead. I asked are you ready for the question and no one put their hands up. If you want to address the board, go ahead.

MR. McKIERNAN: I would like to, thanks. The rationale for a low trip limit, especially on the non-lobster trap fishery is to constrain the growth of a new trap sector. I don't think any of the agencies here at the table, at least I haven't heard plans to issue crab trap tags, crab trap limits, crab trap escape panels, crab trap escape fence.

There is a lot of work that is going to have to be done if we're all willing to open the door for 1,000 crabs a day fishery with things that look exactly like lobster traps. If you go down this road you better be prepared to do the work to manage this. Now in Maine, New Hampshire, and Massachusetts, to my knowledge you have to have a lobster permit to land a Jonah crab. There won't be any new trap fishing boats, effort and administration of that fishery. But everywhere else, you are going to have to take on this burden; so please keep that in mind.

CHAIRMAN BORDEN: Are there discussion? Any other discussion, are you ready for the question; need a caucus on this? Nobody seems to want to caucus on it. **All those in favor of the motion signify by raising your right hand. Keep your hands up; 9 in favor, no votes; 1 no vote, any abstentions, 2 no votes, any abstentions, any null votes? The motion carries. Yes, 2 nos.** Are there any other issues on this? We then I think need a motion to approve the addendum as modified today; correct, Toni?

MS. KERNS: You need an implementation date and then roll call for final action.

CHAIRMAN BORDEN: All right you hear Toni. Someone care to make that as a motion? Anyone? Doug.

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MR. GROUT: I'll throw something out. Move an implementation date of January 1, 2017.

CHAIRMAN BORDEN: Okay is there a second to that? Seconded by Terry, discussion on the motion? Is there any discussion on the motion? I'm not going to call the question until we have it up on the board so everybody can read it; any discussion, no hands up. I can see some people on that side of the table twitching.

MR. SIMPSON: My question was, the suggestion was implement January 1, '17 and what this does is liberalizes the trip limits. Is there any issue with implementing sooner than January 1?

CHAIRMAN BORDEN: I don't think so. I think the states have flexibility to do that; and in fact I just point out that Megan per my request has been keeping like a running tally of which states are doing what on Jonah crabs, and then we periodically send it out. Some states are just feeding it into their internal regulatory process when it's convenient.

But everybody has got the same deadline. Any other questions, okay so you've got a motion on the board by Doug Grout, it's seconded by Terry Stockwell. Any further discussion on it, any need for a caucus? Seeing no hands up we're going to vote on it. **All those in favor signify by raising your right hand; I've got 10 in favor, no votes – 1 no vote, any null votes, any abstentions? The motion carries.**

I guess we have one more motion to do on this issue. We need a motion to approve the addendum as submitted today, and once we get that we'll have a discussion on it. Then we need a roll call vote; correct? All right, is there a motion?

MR. GROUT: Motion to approve Addendum I to the Jonah Crab FMP as amended today.

CHAIRMAN BORDEN: Second, seconded by Emerson, discussion, any discussion – no hands

up? Are you ready for a vote; if you're ready for a vote, Toni or somebody going to call the roll, Megan? Bob.

EXECUTIVE DIRECTOR BEAL: If there is no objection you can do this through voice vote, but if you anticipate one vote or one state would object you probably need to go through the roll call. I'm not sure what your vibe is; but if you want to speed it up you can.

CHAIRMAN BORDEN: Anyone care to object to this? At least one person is going to object. We need to vote on it with a roll call.

MS. WARE: I'll just call the states. Maine.

MR. KELIHER: Yes.

MS. WARE: New Hampshire.

MR. GROUT: Yes.

MS. WARE: Massachusetts.

MR. McKIERNAN: No.

MS. WARE: Rhode Island.

MR. REID: Yes.

MS. WARE: Connecticut.

MR. SIMPSON: Yes.

MS. WARE: New York.

MR. GILMORE: Yes.

MS. WARE: New Jersey.

MR. MUFFLEY: Yes.

MS. WARE: Delaware.

MR. CLARK: Yes.

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MS. WARE: Maryland.

MR. LUISI: Yes.

MS. WARE: Virginia.

MR. JOE CIMINO: Yes.

MS. WARE: NMFS.

NMFS: Yes.

MS. WARE: New England Council.

MR. STOCKWELL: Yes.

CHAIRMAN BORDEN: **The vote is 11 to 1; so it carries.** Any other business on this issue, yes, Mike.

MR. LUISI: I wonder if Megan could just take a second to clarify for the record the issue regarding the control date that was in the original FMP. We had fishermen that qualified; non-lobster trap fisherman that qualified under a control date to take part in this fishery. I just don't know how that control date now applies with the landings limits that we just voted on. Can you just clarify for the record?

MS. WARE: My understanding at this point now is that the control date is really going to be for the claw fishery, which we may be changing on the next agenda item. Right now that is what it applies to.

CHAIRMAN BORDEN: Any follow up on that by anybody? If not we're going to move on to the next item on the agenda.

DISCUSS A NEED TO CREATE COASTWIDE STANDARD FOR CLAW LANDINGS

CHAIRMAN BORDEN: Okay so the next item on the agenda is a need to discuss a coastwide standard for claws. In terms of this particular issue, in terms of the background, when we

originally adopted the FMP we provided an exemption for New Jersey through Virginia.

Then subsequent to that the state of Maine and New York came forward and documented additional claw landings. I point out that we also had the New Hampshire Fish and Wildlife staff did an analysis of mortality in this regard. We've also received a letter from NOAA. With that as a little background I think what I would like to do is to take up the letter from NOAA. Alli, are you going to discuss this?

MS. ALLISON MURPHY: As you just said, following the February board meeting the Commission sent a letter to NOAA Fisheries, requesting preliminary guidance on allowing claw harvest in federal waters. Can you hear me better now? Following the February board meeting the Commission sent to NOAA Fisheries a letter requesting preliminary guidance on allowing claw harvest in federal waters.

We responded to that letter in late February, and that letter was included in the meeting materials. Just to summarize what we said in that letter. We have biological enforcement and legal concerns with the claw only fishery. With regard to the biological concerns, I spoke at the last meeting about that preliminary New Hampshire study; saying that we believe it would be difficult to justify a claw only fishery, given the levels of mortality seen in that preliminary study.

Our enforcement folks have also weighed in, indicating that a claw only fishery would complicate the effective enforcement of the minimum size standards. These comments I believe are in line with what the Law Enforcement Committee said during their comments on the original Jonah Crab FMP.

Finally, as you all know, any federal regulations issued for the Jonah crab fishery must be in compliance with the National Standards that are included in the Magnuson Act. It may be challenging for us to issue regulations that

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include a claw only exemption based on the provisions that were in the original FMP; due to National Standard 4. With all that being said, we are definitely supportive of the Commission process and hope that an addendum is initiated that considers a wide range of alternatives on this issue.

CHAIRMAN BORDEN: Questions? Any questions for Alli? No hands up, okay thank you very much for the report. Okay so everyone is clear on this. Since we adopted the addendum and it did not restrict or constrain this particular activity; what we need to do here is basically promulgate an addendum, identify some options for the addendum, let it go to public hearing, and then bring it back at a future meeting. With that in mind, Jim Gilmore asked to address this. Jim.

MR. GILMORE: I think you covered most of the issues. The only think I'll add is during the public hearings for Addendum I, we cheated a little bit and we asked some of the guys about the claw fishery. I think it further emphasized how much we don't know about this fishery. For instance, there is some seasonality to it in New York; maybe only during the warmer months that they're actually harvesting claws.

There is also a gear component to it, some gillnet fishermen essentially have been certain times of the year; they are just taking the claws off of the nets. There is more to it than even we kind of understood. I think an addendum is appropriate, and I have a motion when you are ready, Mr. Chairman.

CHAIRMAN BORDEN: Any further discussion on this before we entertain a motion? If not, Jim, go ahead and make your motion, please.

MR. GILMORE: Are we going to do this live, or do you have this one written out for me? Are you ready, Kirby? Oh, there it is. I'll read it. **Move to initiate an addendum to create a coastwide standard for claw landings in the Jonah crab fishery with options to one,**

establish a requirement to allow only whole crabs be landed.

Two, establish a requirement to land only whole crabs, but allow a specified (volumetric) amount of detached claws per vessel trip which meet a minimum length of 2.5 inches. Proposed volumetric amounts may include the following: a single five gallon container, a bushel, or a standard fish tote. Three, allow the unlimited landing of detached claws, which meet a minimum length of 2.5 inches.

CHAIRMAN BORDEN: You have a motion on the table, is there a second to the motion; Mike second. Discussion. Any discussion? No hands up. Are you ready to vote on this? Jim, are you all set? Are you ready to vote on this? Keep in mind the only thing you're doing is you're authorizing the development of an addendum.

Any need for a caucus? Is there any objection to this motion? Does anyone object? **No objection, motion is adopted by consensus.**

UPDATE ON NEFMC DEEP SEA CORAL HABITAT AMENDMENT AND ASMFC SURVEY TO AREA 3 FISHERMEN

CHAIRMAN BORDEN: Okay so the next issue on the agenda is the ASMFC survey, Area 3 fishermen. Just as a little bit of background, the council is proceeding with a coral amendment.

As part of that effort they did a data analysis to look at impacts on certain user groups; one of which was the offshore lobster fishery. The result of that was that there was really very poor quality information in terms of landing levels in the area that might be affected. As a result of that the council staff in conjunction with the commission staff, Mass Marine Fisheries and others, put together a survey. I'm going to ask Megan to report on the survey.

MS. WARE: Just sort of a bit of brief background, but I'll go through it. On December 18, 2015, we

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received a letter from the New England Council requesting data on the distribution of offshore lobster fishing effort; specifically around the canyons. This request was related to the Omnibus Deep Sea Coral Amendment; which looks to protect deep sea corals either through discreet settlements of broad regional areas.

How does this coral amendment relate to the Lobster Board? The amendment may restrict bottom tending gear, and it is currently unknown how the lobster industry is going to be impacted. Lobster is not managed by or is not under the auspice of the Magnuson-Stevens Act, but the councils do have the authority to protect deep sea corals from fishing gear.

The most recent advice from NOAA General Counsel suggests that the council can restrict lobster traps. Just to give an idea of the area we're talking about here. There outlined in black are the different canyons, also seamounts. Then there is a blue line you kind of see going down out to the EEZ. It might not be as clear on the screen here, but there are actually three different lines that go through the canyons.

They represent a 300 meters, 400 meters, or 500 meters; and those are the potential broad zones that are being considered. I am going to refer to the council's area of interest quite frequently in this presentation, when I say that I mean the highlighted areas here, so the areas that are boxed out that are generally seaward of that 300 meter mark.

As David mentioned, we were asked to provide data on the effort that is occurring out there; but unfortunately the data right now is just too coarse. It is reported by statistical area, so we can't say specifically what type of fishing is happening in different canyons or the revenue associated with different canyons.

The purpose of this survey was twofold. It was to obtain detailed information on fishing locations and revenue, and also to provide a

picture of potential impacts to the lobster fishery should lobster traps be proposed as restricted gear. A summary of this survey is going to be presented to the council's PDT and/or Habitat Committee, whatever we feel is most appropriate in discussion with the council.

I am going to go through the survey responses; they are just the highlights of the survey. The entire report on the survey responses is included in your supplemental materials; but I thought these were kind of the most important points. We mailed out 97 surveys to active Area 3 fishermen, and 34 of those were returned within the five week period; with a response rate of 35 percent.

Of those 34 that were returned, 19 surveys represented vessels that fish traps in the area of interest. Most of these fishermen that are fishing in the canyons were coming from Mass and Rhode Island. We had one fisherman from New Hampshire. This graphic, shows the locations fished. We have the different statistical areas in purple.

A darker purple color means that more fishermen responded that they fish in that statistical area. Then we have the different canyons in shades of orange. A darker orange color means that more fishermen said they fish at that canyon or in and around that canyon. All six of the statistical areas that span the council's area of interest were fished in 2014 to 2015.

The majority of fishermen were fishing in Statistical Area 525, about 74 percent; and this one has the most number of canyons, so maybe that's not surprising. The second highest one was Statistical Area 526 at 63 percent, which has Veatch Canyon. That was the canyon that was most fished in this survey, 19 of the 21 canyons were fished by respondents; so as I just mentioned the most popular one was Veatch at 42 percent. This was followed by Hydrographer and Atlantis. Chebacco and Filebottom were the two canyons that were not reported as fished.

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Another portion of our survey was to try and understand the depth at which fishermen are setting their traps. An open question in the survey is, what is your maximum depth fished. We got a range of answers from 220 to 549 meters, but it averaged out at 406 meters.

We also had questions that asked about fishermen's effort at different depth categories; and you can see those here ranging from less than 100 meters to greater than 400 meters. In general, most fishermen said that their highest percentage of traps allocated by depth was in that 200 to 300 meter range; and also 93 percent of the survey respondents said that they were fishing in that range.

We also asked about effort, so the trips that are being taken and the traps that are being hauled. This chart here is going to look at the average number of trips; the min, the max and the total, so it is not a depth category here. On average, fishermen who responded to the survey reported 30 trips per year to the area of interest.

However, there was a wide range from 15 to 49 trips reported. In total there were 570 trips in 2014 and 554 trips reported in 2015. The average number of traps hauled per trip in 2014 to 2015, and average of those two years was 1,779; but again there is a range from 1,100 to 2,600. Individual traps tended to be set at least twice in a single trip for 86 percent of the respondents.

One of the large sections of the survey was asking about revenue that is associated with both lobster and Jonah crab fishing in these canyons. On average 77 to 79 percent of an individual's lobster and Jonah crab revenue came from the area of interest. It shows that there is really a high dependence on these areas.

The average revenue per trip from lobster and Jonah crab was \$32,000.00. We were also able to look at the amount of revenue that's coming from lobster as opposed to Jonah crab. Breaking

down the revenue by species, 88 percent of fishermen reported higher revenue from lobster as opposed to Jonah crab.

For these individuals the value of lobster was on average six to eight times higher. The total lobster revenue was between roughly 12 million and 13 million in 2014 and 2015, and then the total Jonah crab revenue from the respondents was between 2.8 and 3.3 million per year. We were also able to break out revenue by depth; so we can see on average 97 percent of an individual's revenue came from traps that were fished between 0 and 400 meters.

The highest average revenue, about 33 percent, came from the 100 to 200 meter depth category. Then finally, we were able to break down revenue by canyon. What you have here in the blue bars is lobster revenue, and the red bars are Jonah crab revenue. The bars represent how often or the percentage of times that that specific canyon was named as a top contributor to either lobster or Jonah crab revenue.

The top three individual canyons that contributed most to fishermen's lobster revenue were Veatch, Lydonia, and Atlantis. Then for Jonah crab it was actually a seven-way tie; so seven canyons were named equally as often as top contributors to a fisherman's Jonah crab revenue. These included Alvin, Atlantis, Veatch, Hydrographer, Powell, Munson and Nygren Canyons. I'll take any questions, but I would like to thank Kelly Whitmore, Elizabeth Morrissey and Robert Glenn from Mass DMF for helping draft the survey, collect the responses and also analyze this. It would not have been possible without them.

CHAIRMAN BORDEN: Questions for Megan? Any questions? No questions that is a good sign. We're wearing them out.

MR. ADLER: First of all, I don't know if this is the place. In the comments that the council can manage lobster traps. Is this a change from

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when, several years ago, we were dealing with Closed Area 2; where the mobile gear had agreed to something and the council was able to rectify or put in the rule book? Whether they did or not I don't remember. They were going to put it in, because they could.

But then they turned to us and they said, but we can't put a rule in to tell the lobstermen out there that they have to stick to their side of the bargain, which the lobstermen in Area 3 had agreed to. We at the ASMFC had to put an addendum, I believe it was an addendum, in place that basically put the lobstermen on the queue that yes, you've got this schedule, this schedule and the ground fishermen, the council's handling them or NMFS is handling their side.

But the point here was that they had come and said, well we can't control the lobster side of things, but we want you to; and we did, we passed it. The other question on this coral thing that you just presented showed out in Area 3, way out. But if this is passed by the council and National Marine Fisheries Service that they have these restrictions out there for the coral out there.

What is to prevent an expansion of those closures, if that is what they do, to other areas other than what they're looking at right now? I mean, in other words if they pass this way out there in the middle of I don't know where, but they pass it. Then all of a sudden, well we passed this rule that does some restriction, but let's look at these other areas and then they start bumping areas closer to shore.

I don't know what the answer to that is, except I get worried that we opened the door. I don't know, Mr. Chairman where I'm going with this; other than the fact that I just wanted to alert that one thing was managing lobster traps out there and did something change from the way we did it before. The second is more of a concern that could any development on the coral side develop

into an expansion in federal? I guess that's where I am and I'll say amen.

CHAIRMAN BORDEN: Bill, we're going to get into the coral discussion next. You're raising all valid points. I'll just add my own two cents. The way I would characterize this, your recollection of history is correct. The way I would characterize it is, there has been an evolving position by NMFS from, no you can't regulate lobster pots and the lobster fishery to now they basically have issued a legal opinion that says that they can.

But there are certain linkages as part of that and conditions as part of that that they have to adhere to. I have not gotten personally a detailed briefing on that aspect of the issue, but there are others in the room that have; particularly the New England Council leadership. I think this is a case where, this is my understanding, where an argument can be made that lobster pots may have negative impacts in terms of corals; and if they do, then the council within its purview has the right to restrict the fishery. That does not mean the council has the right to regulate the fishery. In other words, they can look at specific closed areas and those types of regulations. That is different than minimum sizes and all the rest of it. We still retain the right to do that. I would point out; we work with NOAA as part of that. They are partners in that effort. They handle federal waters portion of it. I don't know whether any of the council members want to comment, Terry, on behalf of the council.

MR. STOCKWELL: I'm not going to add to Bill's comfort, but I am going to just follow up on your fairly complete summary. The NRCC, which is comprised of the New England, Mid-Atlantic and the Commission sought legal clarification for the management of corals; following the Mid-Atlantic's Coral Amendment and with the New England Coral Amendment coming up.

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In the supplemental materials of the lobster board there is a significant amount of information that provided the context for this nexus. In order to move that ahead, our Lobster Board chairman was added to the council's Habitat Committee. The presentation that Megan just gave related to the deep sea canyons and the sea mounts is only part of what the council is contemplating for a future action.

There are some very large areas in the Gulf of Maine that are also being considered. We've got a long way to go between now and when we get close to finalizing on that. I guess the long and the short of it is, it is a partnership between the commission and the council as we move forward to protect corals; while still trying to incorporate the operational realities of the lobster fishery.

CHAIRMAN BORDEN: Any other comments on the survey itself? If not, I'm going to make a suggestion. The survey itself has not been distributed to the industry. My suggestion here is we take, say one month. We allow any of you that want to review the survey in more detail the opportunity to do that; and submit whatever written comments to Megan that you might want to do.

In addition to that I would suggest, and our association can probably help with this, we'll distribute copies, either us or ASMFC. We can take the list of permit holders and mail a copy of the survey out to all the permit holders and let them read it and review it. If they want to make comments in the same timeframe they can.

That way we'll have the benefit of everyone here reading all of the details, and allowing the industry to weigh in on the comments. Then when we formally submit whatever we submit to the council, we'll have the benefit of both perspectives. Does anybody object to doing that? No objections, okay so we'll handle that. Let me just say this; that if there is something that the staff views as being significantly flawed in this review, then I think we should have the

right to put it on an agenda and bring it back before you. Any objection to that?

MS. KERNS: David, just for clarification purposes of what we give to the New England Council and when we give it to them. Would you want us to wait to provide any information to the councils Habitat Committee, PDT, or the full council until after you've received the full feedback from industry; at least one month from now if not before then? They have not indicated when their next meeting will be, but I do know that they want to start to incorporate feedback from the commission and these survey results into the documents that they begin to draft.

CHAIRMAN BORDEN: In my own case I wouldn't have any objection to giving them a draft copy of the report now, so they can consider the provisions. I still think we need to go through some kind of comment period here with the industry. That way we get the benefit of both. Now, in terms of – and Terry, please correct this – it is my understanding that the council is not going to have another Habitat Committee meeting for a couple of months; because the staff is dealing with other issues. I think we've got a little bit of time on this.

Okay, so with that as guidance we'll move on to the next issue which is corals; and we're back to Bill Adler. There are two aspects of the coral issue. Actually we had three items on the agenda that are related to this. I am just going to talk about the first one. I'm not going to be too long with this.

Council has this process, it's going on. Doug Grout and Terry got together and I think decided that it was appropriate for the Lobster Board Chair to serve on the committee, so I've been doing that. We've had one meeting. About two years ago or three years ago the council was well into their coral amendment, and for a whole variety of reasons decided to delay action on it, so they did that.

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There is basically a draft document that has been prepared. Now what they've done, and Terry, please correct this if I misspeak. They've decided to prioritize this. One of the priorities that the council identified when they annually set their priorities; and they've started work on it, so there has been one meeting of the committee since I've been on it.

It is one of these cases where they've got to start the whole process over. They're going to look at goals and objectives and basic management frameworks to move forward. Although there is a draft document that document has not been reviewed by the council and there is no formal position on the part of the council; other than a few provisions that had been recommended by the committee.

This is essentially my point in this; this is essentially the start of the process. What I would envision doing in my capacity as Chair, I'll try to represent the interest of the board as well as I can. But I think it is going to be critical to pass some of the documents off to the board and eventually get one of the New England Council staff down here to brief the board in detail.

At the end of the period, we'll have a public hearing document is what we'll have. I think it is incumbent upon the commission to take a position on that and formulate whatever recommendations we want in that. I would also note that the Mid-Atlantic Council went through a similar process that I was not privy to, but about half the people around the table were part of that.

It has been a widely regarded output. There have been lots of complements. What I would envision that the New England Council is going to follow some of the format that the Mid-Atlantic Council, particularly when it comes time to doing workshops. I think when we get to the point where we hold workshops on this particular issue, I think we need to have representatives that represent our fisheries at those meetings.

I don't have much more to say. There are a number of people, Terry is a member of the committee, and Doug Grout is a member of the committee, Mark Gibson and Eric Reid. There are five of us, basically who are commissioners who are on the New England Council's committee. I can pretty much assure you that I may be the bashful sort, but none of these other individuals are. I'm sure that our interests will be well represented. Any questions on that? No questions.

OFFSHORE MONUMENTS PROPOSAL DISCUSSION AND BOARD RESPONSE

CHAIRMAN BORDEN: Okay so the other part of this is the monument issue.

I'm just going to provide a very brief introduction. Then I would like Doug to actually talk. This is kind of a parallel effort, and it deals with a lot of the same issues. And actually, maybe it would be better if I just let Doug do the intro on this. Doug, do you want to comment?

MR. GROUT: Sure, Dave. In your supplemental material there are a couple of memos, one from me regarding this issue and one from Chairman Borden. Last fall the Obama Administration announced that it was considering protecting waters off of the coast of New England through the Antiquities Act.

For those of you who are not familiar with this, this is essentially the act that helped establish a lot of national parks. The proposal specifically identified the New England Coral Canyons and Seamounts as a region, as well as originally there was a proposal to protect Cashes Ledge; but there were no details behind it, what kind of restrictions might occur nor were there any details about the boundaries of it.

Then on March 25, the White House Council on Environmental Quality announced that they were removing Cashes Ledge from

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consideration; at least under this administration, for designation as a national monument. However, those areas southeast of Cape Cod were still going to be considered.

As I said, the Antiquities Act has been used to create national monuments on federal lands, and of course 3 to 200 miles is considered federal waters. It is supposed to be the areas that contain historical landmarks, prehistoric structures, and here is the part that applies to us or at least to the ocean here is; other objects of historic or scientific interest.

I think the main purpose behind considering these is to protect the deep sea corals. It is also supposed to be when they establish it; it is supposed to be the smallest area compatible with the proper care and management of the objects to be protected. Some of the critics of the Antiquities Act highlight that there are no requirements for an environmental review or public participation.

They also mention that they are vague on the size of the requirements or the criteria for establishing the monuments. Those who support it, using the Antiquities Act, state that it is important to expeditiously preserve resources for future generations. Because as we've seen from the survey that we just reviewed of the offshore lobster fishery.

We know there is significant lobster fishing effort going on in the offshore canyons. You saw that it's worth about \$15 million a year for the combined lobster and Jonah crab landings. I am proposing that at least this board consider whether they want to take a position on this potential national monument proposal.

Now in the other document, I am going to turn it over to our chairman to explain some of the issues here. But if you do decide to take a stand here, we will then bring it to the full commission for consideration on Thursday at the Policy Board. It says in here the Executive Committee;

that was only put in because we weren't sure when we were going to meet with the council on environmental quality. It may have occurred before our policy board meeting. We now know it is going to be after; so we will be coming to the full commission if you decide to take a position on this. For more details on this I am going to turn it back over to our chairman of the Lobster Board.

CHAIRMAN BORDEN: A couple of points. As Doug indicated, the Antiquities Act itself does not require public hearings and impact analyses; similar for instance to a Magnuson Act process, which has to go through great details on that. The last agenda item we just went through a report, which kind of details at least for a third of the industry, if not more, the importance of this area in terms of lobster fishing activity.

I would point out that in my memo to the board; every state represented around the table has some fishermen or interest in this issue. The two states with the predominant interest are obviously Massachusetts and Rhode Island, but states in northern New England, New Hampshire has a very pronounced interest in this issue.

The issue of where you would draw a line. I think everybody should think about this in the context that there is no guarantee that a monument is going to be created at all. As Doug identified, there is no proposal. You can't go someplace and pick up a proposal and say, this is what is being proposed.

In a normal regulatory format that all of us have kind of grown up with over the last few decades, we would have a proposal, we would take public comments; we would allow this body to debate the pros and cons of it; and then offer written comments on it. Notwithstanding the fact that that isn't a requirement of the Antiquities Act; we do have an opportunity on May 9, the Office of CEQ has been meeting with individuals who have an interest in this.

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They've met with, I think the council representatives, and they've met with some of the states and some of the fishing interest in New England. We have a meeting with them, where we can go talk about the importance of the canyons to the offshore lobster fishery. Clearly we have that linkage with our charge.

But I would also point out that this is not a narrow issue. This issue has the potential to affect the squid fishing that takes place in proximity to the canyons. There is a whiting fishery. There are monk fish fisheries. If you look through, as I put in my memo to the board, there are a number of different fisheries that this commission does not regulate; but will be affected, depending upon where a line is drawn.

I really think we have a vested interest to try to flesh out a position on this. In the context of not testifying in favor or opposed to a monument, but more in the context of providing guidance to CEQ in the context of, if you are going to go forward with this, we recommend you look at certain ways of minimizing the impacts on some of the constituents that we all represent.

What I would like to do is take any comments that people want to offer. The basic question I think to the board is, do you want to try to finalize some kind of preliminary position on this? I use the word preliminary, because if for instance there is no action on this and a proposal comes out; then I think it is incumbent upon both the board and the commission to actually take a formal position based on whatever the written position is at that time. But in the meantime, I think we need to provide some guidance to office of CEQ on how this would be done to mitigate impacts. The last thing, I just saw Tom Fote's hand go up. Recreational fishermen could be affected by this. This is not just a commercial issue. Tom, on the issue of whether or not you think we should comment; and then Bill Adler.

MR. FOTE: When President Clinton proposed Hawaii to put the first monument there and

closed millions of acres of commercial fishing, and recreational. The recreational community in Hawaii said, well it is not affecting us. I was one of the people yelling and screaming that no, you better watch out; this is going to affect you, and you shouldn't be supporting this.

You shouldn't support closing an area like that in the monuments. That is what happens to most of the monument areas, without the science to justify the closure. As you pointed out, there was no science. Came George W. Bush, and he expanded that and then it did affect them and they were already stuck in the battle of basically what to do on those areas.

The California coast, since I am involved in a lot of national issues because of my relationship with other organizations, I've been involved with this up and down both coasts and in Hawaii. It upsets me that we close areas and we put these monuments in without any justification of the science or any consequences; just arbitrarily somebody by executive order puts a position in and we're stuck with it.

I am looking at we should study this and if we decide that we should oppose it, we should oppose it; because I think we get ourselves sucked into saying, well we should just agree with it, they provide this. Then all of a sudden five years later another president can come in and change it altogether. Depending who they listen to, which they listen to other groups that are not involved in the fisheries, it affects both commercial and recreational fishermen.

We basically testified and sent our letters in regarding that; and the same way we're doing against the proposed sanctuary for Sandy Hook Bay in the areas. They just came and decided that. Because a guy from Heritage Foundation decided this was a good move. He has no idea of commercial or recreational fishing, but said it's a great idea.

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I said do you know what the consequences are; he said well I don't care. I just thought it was a good idea; and so they're moving forward. We have to be careful. We're here to represent sustainable fisheries; that is what is in the charter, and everything that won't promote that that just arbitrarily shut down areas we should be opposing.

MR. ADLER: I do think we ought to put some type of a letter in or some kind of a response saying that you know you've got to look out for this you've got to look out for that. Then perhaps as Tom had brought up, if there is a proposal we put our position in or our thoughts in. Apparently they may not have listened to us, so then we oppose it.

My question is, if they do a monument, national monument, who puts the rules in on that or is it just yes, this is a monument; no rules, no changes? Does somebody get assigned; I don't know whether it's the National Marine Fisheries Service, to put in restrictions for the thing that was just declared a monument? I don't know. I also wanted to see, what other areas were submitted or are in there that; please have a national monument here. I'm thinking particularly of Stellwagen Bank Sanctuary, where we went around and around with putting restrictions in to that area for a research area to make it beautiful, so all the ships that sank there are all wonderful. I just was curious as to whether Stellwagen had put in something on this monument thing that; hey, consider us. That is one thing. The second thing is, yes we should comment and the third thing is who puts rules in once a national monument is declared?

CHAIRMAN BORDEN: Let me take those. In terms of rules my understanding, if anybody has a different view please offer it, my understanding is that as part of any declaration the Office of the President basically can specify what those rules are. It simply the Antiquities Act is an act, at least in my own view that has been used historically. It was originally adopted

in 1906. It has been used to great effect, I think by both Republican administrations and Democratic administrations to create some of the greatest parks in the country.

But that said, in this particular case, we're now whatever it is 110 years past the implementation date of the original act; and times have changed. I mean there is a whole series of presidential executive orders from both democrats and republicans talking about the need to have due process, for instance.

None of that really is required here. The answer to one of your questions, Bill is the president can specify what the rules are, and they can be very restrictive. As Tom Fote pointed out, in some areas of the Hawaiian chain, I believe there are requirements to get a permit to sail through the area, with no commercial fishing and no recreational fishing.

I mean in my own case I view this as a serious issue. I think we should provide all the guidance we can provide to CEQ before they make their determination. It is extraordinarily, if you read through that document we put in the briefing material, there have been cases where the actions of a president have been overturned or modified by Congress, but they have been slim and few between.

I think now is our time to have some input to it. If in fact we get a written position, then I think we should just circulate it. Maybe Doug would put together a small committee to formalize a written recommendation for review by the rest of the commission, or whatever; handle it in a more formal manner than just doing it du jour at this point.

MR. ADLER: Is there a list of one's they're looking at? I know you just said that they turned down Cashes Ledge. Okay, but is there some list out there as to what they are considering?

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CHAIRMAN BORDEN: They've got an area primarily focused around oceanographers and all the sea mounds that are under consideration. Originally Cashes Ledge was in the mix. Then you probably saw the press in New England that there had been meetings between CEQ staff and various fishing organizations, and that was off the table.

But I'm also privy to the fact that this decision isn't over until it's over. In other words the President has the right to make a determination at any point, sign a document and it's done. The fact that there was an initial recommendation to take Cashes off the list does not mean that it's off the list until it's over.

MR. ADLER: But is there a list?

CHAIRMAN BORDEN: No. It is pretty generic. There is no proposal. This is one of the biggest problems with this that in my own case I've been trying to deal with this at the association level. There is not a written proposal on this, so it is very difficult for all of us; regardless of our perspective, whether you like this or don't like this, to comment. You can't offer comments on how to mitigate this unless you know what the details are of the proposal. Sarah, do you want to speak?

REPRESENTATIVE PEAKE: I think that you paint an accurate portrayal of what the process or lack of a process is. There may be some restriction on the number of days prior to the end of an administration, after which the President cannot declare either an underwater valley or seamount or something inside of the continental United States a national monument. But it can pretty happen by the stroke of a pen. I agree, I think it behooves us to be as engaged as we can in the process. Doug, I would be happy to work with you on coming up with a proposal.

This is a very different process, this declaring of a national monument; very different and shortened and almost circumventing a public

input process, very different from establishing well like the Stellwagen Bank National Marine Sanctuary, the Gerry Studds Sanctuary. Their fishing interests were highly negotiated by it. I believe it was created by an act of Congress as opposed to just an executive order of the President. I will say I know from my own legislative body that there is a push afoot, and of course the state legislature really has no say in this whatsoever.

We have no jurisdiction over it. However, state legislators along the coast do have a bully pulpit with which to weigh in. There is a concerted effort to get especially legislators that represent coastal communities to weigh in, in favor of the creation of this protection around, first it was the sea mounds and the canyons; now it is primarily just the canyons.

As an organization I think that we can certainly, at a minimum go back to our home states and for the legislative representatives, whether proxies who are here to reach out to our colleagues inside the state legislatures to say; hey, before you just sign on to some sort of group letter encouraging this, come talk to us. Let's see what the proposal is from the ASMFC. Then I think for this group to take a position is also critically important.

CHAIRMAN BORDEN: Just a follow up on that. I note that Beth Casoni and others in the audience have already submitted very detailed letters to the president on this. In Beth's case she was speaking on behalf of 10,000 lobstermen. I've got Pat Keliher. Anybody else; and then I am going to make a suggestion.

MR. KELIHER: I think the points have captured a lot of the process. The state of Maine has been very vocal on this particular issue. Governor LePage submitted a letter to the President, unanswered but submitted a letter. We participated at the listening session, if you will, in Providence, Rhode Island.

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As a side note, Brown University pushed very hard, and I wanted to un-enroll my son from that school immediately based on some of the comments I heard from Brown University, but he wouldn't leave. The one thing that has not been talked about is the fact that the President also has created a National Ocean Council. He has completely gone around one of his own executive orders in doing so. He has been silent on that particular issue. We addressed that with CEQ at a meeting this winter. To your point, your very accurate point, it is not over until it's over. When CEQ told myself and some of my staff that Cashes was off the table, they used their words very carefully. It said, Cashes is off the table – for now, and they were focusing on the canyons and seamounts. I think it would behoove this body as a board and as a commission to take action and lay out a very carefully worded letter expressing our concerns; especially from a process relationship. This is for me very problematic that we could move down this road; create these large closures with zero input from the public and from the industry.

CHAIRMAN BORDEN: All right, let me just suggest this. Is there anyone around the table who disagrees with the comment that we should try to comment on this? There is no disagreement with that. Let me try to expedite this. Eric Reid and others have been working on a proposal, and Eric would like to expose the board to it and see whether or not you are receptive to it. I just introduce it by saying, it is a process suggestion.

What I mean by that. His suggestion is basically to create a line, and if, and this is a big if, if there is going to be a monument then deal with a monument from this line seaward and then allow the New England Council to proceed with their coral management process; which is a very public process with impact analysis and so forth, to flesh out the details inside. Eric, do you want to offer comments and then put your proposal on the table?

MR. REID: Are you putting up a chart on the board as well, or no? I'll do my rationale first and then I have the motion, you can start reading the motion, if you don't want to listen to me that's fine. Time is not something we have the luxury of, time is of the essence. The Antiquities Act could be used tonight, perhaps, if our President decided to do so. Two acts of Congress that are possibly in play on this issue, and we should prefer that the Magnuson-Stevens Act, the council process be used.

The reasoning for that in my opinion is that it is better informed on the issue, it is more experienced with corals and industry protection alike; and there was some mention of the award winning effort by the Mid-Atlantic in their coral action, which there are some people in this room were involved in that for sure.

Magnuson is much more open and public in its methodology, and it allows for input from all the stakeholders, and it requires NEPA review and guidelines; which the Antiquities Act does not do. There is a very real possibility that the Antiquities Act will be used, and it will trump all the aforementioned processes and the expertise.

With all that in mind, if the President, this President or future Presidents should chose to use the Antiquities Act, then we should be proactive and we should propose and present our stance on the issue of marine monuments in the Atlantic; and particularly the New England region to that office and its advisor, which is CEQ.

This is the chart that we drew, and if you don't like it I drew it, if you do like it, it took a village. Let's leave it at that. But basically, this was developed, first of all this is a publically seen option and it has been shown to CEQ and the President for use and their guidance. We don't know if there are any other ideas behind closed doors.

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But that is all the more reason that this body should use the commission form and the path of the MSA into developing protection for industry and corals alike. The boundary before you is the only effort and option to date, given to the Executive Branch, which has been developed with considerable, and I mean considerable, input from fishermen; including offshore trawlers, lobster and crab fishermen, the red crab industry, bottom longliners, gillnetters, as well as scientific advice from a lot of sources and members of Congress. I would be happy to answer any questions, and if you want me to read the motion into the record I'll do that too.

CHAIRMAN BORDEN: If I understand the essence of the proposal, as I said before it is, have a line. If you're going to consider a monument you do it seaward of this line; and then anything shoal of that would be deferred to the New England Council process.

MR. REID: That would be my opinion. This does not mean that anything is going to go away today. What it means is we would prefer of course that MSA be allowed to run its course and not invoke the Antiquities Act. However, what we're proposing is that if in fact the Antiquities Act be used, it be used outside of the line that is on that chart; and allow the Magnuson-Stevens Act to take care of the much more technical and detailed activity following what the Mid-Atlantic did, the award winning effort in the Mid-Atlantic, to cover the rest. It's a combination and that line is to designate where one should be used and where another one should be used.

CHAIRMAN BORDEN: All right Eric, do you want to make a motion?

MR. REID: I'm ready. **Move that the Board endorse the following concepts and request that the ISFMP Policy Board consider the same. I don't know if we have to change that language from what Doug said or not. The preference of the commission would be for the current New England Council coral management process to**

continue without Presidential use of the Antiquities Act to protect deep sea corals.

Should the President, advised by CEQ, insist upon designating a New England waters deepwater monument prior to the end of his Presidency, the Commission requests that any areas so designated be limited to the smallest area compatible with the proper care and management of the objects to be protected; as required by the Antiquities Act.

The area be limited to depths greater than approximately 900 meters and encompass any or all of the region seaward of this line out to the EEZ. That only bottom tending fishing effort be prohibited in the area, and that all other mid water and surface fishing methods, both recreational and commercial be allowed to continue to use the area; and that the public and affected user groups be allowed to review and comment on any specific proposal prior to its implementation. If I get a second I could talk about it forever.

CHAIRMAN BORDEN: All right, do we have a second on the motion? We've got a couple of hands up; Emerson. Eric, do you want to comment further on the motion?

MR. REID: I could talk about it all day. It is critical that we take a stand and we don't waste any time. It is a scary thing, the Antiquities Act. It has been amended by Congress a few times, but basically it is uncontestable. There was an earlier discussion about the income of 18 or 20 lobstermen that's it.

I mean a lobster business out in these areas, at least what we think these areas are, we're not really sure, is \$38 million ex-vessel price, which is well over \$100 million valuated industry. That is one fishery. There is a huge whiting fishery out there, there is butterfish there is squid. There is the red crab industry, who fishes deeper than anybody. That is \$15 million ex-vessel and 150 people working in New Bedford; and that fishery

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is MSC certified. I know it's late, but I can't stress the importance of taking a position on this anymore.

CHAIRMAN BORDEN: Eric, I just want to make sure that I understand the process here. If this motion were to be adopted, it is a recommendation to the policy board; if the policy board adopts it then the commission would send a letter to CEQ articulating this position. When the leadership of the commission goes and meets with CEQ on this, we'll verbalize whatever the position is. Is that correct?

MR. REID: As far as I understand, Mr. Chairman that is correct. To answer your question, CEQ is the Council on Environmental Quality, which is basically the advisor to the President in these kinds of actions. They have been to New England for at least five, more or less invitation only meetings to discuss this issue.

They have met in the White House with several other user groups. It is a listen only, and a few questions. This effort is to say, hey; we don't want you to use the Antiquities Act, but if you do, we feel that the combination of Antiquities Act seaward of this line, outside of the line and the Magnuson Act inshore of the line, is the best combination for the public.

CHAIRMAN BORDEN: Eric, the other question is, do you have any sense for how much of the corals will be protected by this line?

MR. REID: Of known corals, depending on which status that you look at, it is 60 to 80 percent of known corals outside of that line. When you consider what Magnuson Act will do. I can't really guess at it, but it will be 80 to 90 percent; depending on how Magnuson plays out.

CHAIRMAN BORDEN: Questions on the motion. I've got Toni and then Dennis.

MS. KERNS: I was just going to suggest that the language at the beginning of the motion reflect what the intent is to do and it is that the Lobster Board is requesting that the ISFMP Policy Board sent a letter to CEQ, so that is what you would be asking for; so it is just clear on the record of what we're asking the Policy Board to do. It is to CEQ that you want the letter to be sent to, correct? Who would the letter go to?

MR. REID: You would send it to the President.

MS. KERNS: Okay to draft a letter to the President then.

CHAIRMAN BORDEN: All right, Eric is that agreeable to you and the seconder? If it is then might I suggest you work with Kirby and add that language into it while I take a few comments? Any comments on this? Mark Gibson.

MR. GIBSON: A couple of comments. First I would suggest dropping the words prior to the end of his Presidency. I think that; well it implies that there is some legacy building issues to go on here, and I don't think that really belongs in a letter to the highest Chief Executive. That may be true, but I don't think we should be saying something like that. The second thing, the weaknesses that occurred to me, I don't object to the plan but the designation under a marine monument is protected over all extractive activities. What we're suggesting is that we can take care of the fishing part of it; ASMFC and the Council. That leaves us open to where proponents can marshal the argument that we're worried about more than fishing.

We're worried about mineral extraction, gas and oil, sand mining, whatever else might go on there. That is all out of our reach with the exception of consultations for essential fish habitat actions that might impact that. I just wanted to put that point out there and also suggest that we could be a little more respectful in that set of words there.

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REPRESENTATIVE PEAKE: In that vein, I think it would be powerful for the motion to lead with the notion that the public and affected user groups should be allowed to review, you know we ask that they be allowed to review and comment on any specific proposal prior to its implementation.

I think a key element of what's missing here is the lack of public process; and therefore the lack of the ability for what will become a final order to be amended and negotiated, compromised over, and ultimately for the best solution to come out of the process. What we are looking for, even though there is no public process, we're going to send a letter and try to create a public process here. But I think asking not only that we, but the other affected user groups be allowed to review and comment is absolutely essential to what is going on here.

MR. ABBOTT: Just a question about this. I'm assuming that the Antiquities Act doesn't expire with Obama's administration in January. Is that not true?

CHAIRMAN BORDEN: Doug, you are shaking your head.

MR. GROUT: The Antiquities Act has been in place since 1906.

MR. ABBOTT: Again, my point would be then in the paragraph that says, should the President. It almost speaks about the existing President; should it not read should a President?

CHAIRMAN BORDEN: That's another perfection so we can avoid making motions and substitute motions. Eric.

MR. REID: Yes that is fine with me, and Sarah's request to put the last bullet at the top is fine with me as well. The way I wrote it originally was the President, current or future. But that is fine.

CHAIRMAN BORDEN: Does the seconder agree to that; yes.

MR. HASBROUCK: Yes that's fine with me.

CHAIRMAN BORDEN: If the staff could revise that motion accordingly. Other points on the motion, any other points? Yes, Pete Burns. Excuse me, Pete it is getting late.

MR. BURNS: You're doing a good job, Mr. Chairman, thank you. I just wanted to say for the record that NOAA Fisheries certainly appreciates and respects that the board wants to comment on this issue; but we're going to abstain from this, because the proposal comes from the Office of the President.

MR. STOCKWELL: I want to follow Pete in saying the New England Council is a quasi-federal agency and I will be abstaining from voting on this motion as well.

CHAIRMAN BORDEN: Anyone else on this? I'm going to take a few comments from the audience. Greg or anyone else in the audience wants to comment on this motion?

MS. CASONI: Thank you, Mr. Chairman; Beth Casoni. We support this effort by the Commission and we thank you in advance. We've been meeting with Congressional members and bringing this to their attention continually. It is of the utmost importance that this does not happen. I commend you for your efforts going forward, and if there is anything we can do as an organization, we're here to help.

MR. DiDOMENICO: Greg DiDomenico; Garden State Seafood Association. We support this approach completely and appreciate this body weighing in. I can tell you that having gone through this in the Mid-Atlantic, the important part, and I think Eric has characterized it well; that is if you don't do something there will be unintended consequences to this action, if it does in fact go as an antiquities designation that

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will be irreversible. This is something that several fisheries will just not survive. Thank you very much.

MR. ARNOLD LEO: Yes, Arnold Leo; I represent the fishing industry of the town of East Hampton. I just want to put us on record as supporting this motion before you. I do think one word about the wording of the motion. In the paragraph that says should a President insist upon designating, I think insist is a little over the border. I think if it just says should a President designate a New England deepwater monument would suffice. Thanks.

CHAIRMAN BORDEN: Anyone else in the audience before I go back to the board? Dick Allen. Is there anyone else while Dick is going up there? Okay, no hands up.

MR. DICK ALLEN: I just want to speak on behalf of Little Bay Lobster Company and the Atlantic Red Crab Company that I think this is an excellent approach. I think it really satisfies everybody's interest that is not like you're just opposing it. It gives those who want to protect a huge area what they want, while it is still protecting the ability to do the process right as you go along. We would support this, thanks.

CHAIRMAN BORDEN: Back to the board. Any other perfections of the language? Are you ready for the question?

MR. WHITE: I guess I agree with Arnold on the "insist" is I think a little harsh. How about if we say, should a President decide to designate; as opposed to insist.

CHAIRMAN BORDEN: Okay so Eric and the seconder, you've got another perfection here.

MR. REID: I'm fine.

CHAIRMAN BORDEN: Emerson.

MR. HASBROUCK: Yes, I'm fine with that.

CHAIRMAN BORDEN: Any objections to the perfection; no objections. Ready for the vote? Do you need a caucus? No hands up. All those in favor signify by raising your right hand.

MS. KERNS: I hate to do this to you, Eric; but you've changed it a little bit here and there so I think we should read it into the record. I know that you've changed the language.

CHAIRMAN BORDEN: All right, so Eric would you read it one more time?

MS. KERNS: That is what Joe would tell us. That is what Joe would tell us.

MR. REID: Yes, Joe. Is this language okay, before I read it? I'm not reading it again; we're good. **Move that the American Lobster Board recommend the ISFMP Policy Board send a letter to the President of the United States of America regarding the following: The preference of the Commission would be for the current New England Council coral management process to continue without Presidential use of the Antiquities Act to protect deep sea corals.**

Should a President, advised by CEQ, decide to designate a New England waters deepwater Monument prior to the end of his Presidency, the Commission requests that any areas so designated, be limited to the smallest area compatible with the proper care and management of the objects to be protected; as required by the Antiquities Act.

The area be limited to depths greater than approximately 900 meters and encompass any or all of the region seaward of this line out to the EEZ. That only bottom tending fishing effort be prohibited in the area and that all other mid water/surface fishing methods, recreational and commercial, be allowed to continue to use the area. That the public and affected user groups be allowed to review and comment on

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any specific proposal prior to its implementation.

CHAIRMAN BORDEN: All right, are you ready for a vote on this? **If so, all those in favor raise your right hand; 9 in favor, opposed, any opposed, abstentions, 3 abstentions, any null votes? The motion passes.** Any other business on this agenda item?

MR. MCKIERNAN: Other business?

OTHER BUSINESS

CHAIRMAN BORDEN: I'm going to go into other business, but I'm just saying any other business on this agenda item, no? Okay so I think we're to Other Business. Terry had asked for time under Other Business; is that correct?

MR. STOCKWELL: I'm going to defer to John Bullard or Pete or Chip for an update on the SBRM coverage for lobsters in New England.

SBRM COVERAGE FOR LOBSTERS IN NEW ENGLAND

MR. BURNS: Just a brief update. As most of you probably already know, the standardized bycatch reduction methodology is an omnibus amendment that applies to all of the New England Council's fishery management plans; and the intent of the amendment is to allocate observer coverage in order to get a better idea of bycatch. The sampling design includes all vessels that have a vessel trip report requirement. When this was rolled out last year to the lobster industry, it only captured only those federal lobster vessels that had a vessel trip report requirement. About 40 percent of the federal lobster fishery does not have one of those requirements, so there was a significant amount of sea days that were applied to the lobster fishery, but only to that sector of the industry that had the vessel and trip report requirements. There were some concerns by the industry about this that it didn't necessarily give

a representative sample of what was happening in the lobster fishery with respect to bycatch.

We convened a workshop back in October, and we had staff from the Commission, from NOAA Fisheries, from the Northeast Fisheries Science Center and also from the states come together and talk a little bit about the program; and we came up with a methodology to be able to expand this sampling pool to all federal lobster vessels.

It seemed to be a decent way to go, but it turns out that in order to change the sampling design in the SBRM, there has to be a change to the amendment, and so there is a process that needs to take place in order to do that. Right now NOAA Fisheries is working with the councils, and I believe this issue is going to be raised at the Northeast Regional Coordinating Council very soon; and they will be discussing that.

Just the outcome for this year is that it is going to result in about 18 sea days now for the lobster fishery in New England, so it is a smaller amount of sea days that are going to be applied to just this subset of vessels that have a vessel trip report requirement and a federal lobster permit. Last year it was a significantly higher number of days.

But that was because it was keyed in with the groundfish requirements; and this year I think it hinges off of other fisheries, so the number of sea days in the interim is not expected to be that burdensome on the industry. Hopefully moving forward if something happens and it can be changed at the council, then the new expanded approach for the lobster fleet can be implemented possibly next year.

CHAIRMAN BORDEN: Terry, follow up?

MR. STOCKWELL: Yes, one bit of follow up is the NRCC meets next week in Portland, Maine.

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CHAIRMAN BORDEN: All right any other questions on this issue? Any of the board members have – Toni.

MS. KERNS: Peter, then no sea days were allocated south of New England?

MR. BURNS: I'm not sure of that. But I do know that it was 18 days in the New England region.

MS. KERNS: Do you think they could let us know at the NRCC if there is any sea days allocated to south of New England for the offshore area?

MR. BURNS: We can certainly get that information for you, Toni.

CHAIRMAN BORDEN: Any other questions? Any other business to come before the Board, Dan.

MR. McKIERNAN: David, this has to do with an issue that already passed earlier today and has to do with the incidental bycatch that Steve Train raised; and he said we need a definition on incidental bycatch. My question to you is how can we get this defined in this Jonah Crab Plan going forward?

To me, incidental bycatch should be catch that doesn't exceed all the other catch that is on the boat, taken by the gear that the crabs were taken. I think we're fairly comfortable that a dragger taking Jonah crabs isn't dragging likely for Jonah crabs; it is a secondary species. But because we went with such a high limit, we need to define incidental bycatch; otherwise it is a thousand crab directed fishery. When can we get that accomplished? Can I get that onto this addendum that is going forward on claws?

CHAIRMAN BORDEN: I defer to the board, but have you got a specific proposal you want to put on the table?

MR. McKIERNAN: Yes, I would suggest that incidental bycatch is an amount of crabs that does not exceed the weight of all other species

aboard, caught during the trip by the same gear that caught the Jonah crabs. You wouldn't want to get on a boat and find 1,500 pounds of herring and 1,000 Jonah crabs and call it bycatch. That is different gear. I see Officer Cornish is nodding his head.

CHAIRMAN BORDEN: Okay, so let me just ask the board, what is your preference on how to handle this? Dan is making a specific proposal. We can deal with it now; we can delay the addendum and deal with it at the next meeting. Let's see, this doesn't have to go before the Policy Board, so this is the only opportunity; correct, Doug? In other words, if we don't take action on it, either now or at some point in the future, it is not like there is the policy board. You could raise this at the Policy Board?

MR. GROUT: I'm not sure. I honestly, in one sense it sounded like you were trying to, this is an issue for the addendum that we just passed. That would require a new addendum. Now, were you talking about trying to attach it as another item onto the claw, any kind of claw addendum that we develop?

MR. McKIERNAN: I'm looking for options, because I think this is a serious hole in the plan that we've just approved. It didn't come to my attention, because I never dreamed it would be a 1,000 limit. When it was low as 200 there was no issue, but when you get to 1,000 for trap gear, then all of a sudden it has to be defined.

Steve Train pointed it out, Mike Luisi started asking questions about, well what is the eligibility for someone to take part in the Jonah trap fishery, and so clearly there is a loop hole here. I'm asking when we can do it. Maybe we do it at the next meeting. I just want to bring that up now.

CHAIRMAN BORDEN: Maybe we can get help from staff, but the way I would see it is you've got to start a new addendum, because we just approved that addendum. That is going to

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require development of measures. I think you should bring it up, have it as an agenda item on the next meeting.

MS. WARE: In talking with Toni, I think we have two options. We could include it in the claw addendum that was just initiated if the board can come to a quick consensus on what they want. Something that has also been talked about is the possibility of a third addendum being initiated in August, to deal with another loop hole; and it could be included at that time and discussed in August. I think it is really up to the board.

CHAIRMAN BORDEN: What is the preference of the board on this? Does anyone have a preference? Mike, and then Terry.

MR. LUISI: I appreciate the need to define this incidental bycatch. I just don't think it fits in the claw amendment or the Claw Addendum. Maybe if we're going to have a loophole addendum, and that is what we're calling it; we can close a few loop holes. Personally I would prefer to do it that way and discuss it in August.

MR. STOCKWELL: Mike covered my thoughts. I do agree with Dan, I would second his motion when it comes up.

ADJOURNMENT

CHAIRMAN BORDEN: Any objection to doing that; any other business to come before the board? I know you have all had a wonderful time today. Okay without objection the meeting is adjourned.

(Whereupon the meeting was adjourned at 3:54 o'clock p.m. on May 2, 2016)



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: American Lobster Management Board
FROM: American Lobster Technical Committee
DATE: July 15, 2016
SUBJECT: Evaluation of Management Tools to Increase Egg Production in SNE

At the May 2016 meeting, the Board requested the American Lobster Technical Committee (TC) conduct analysis on management strategies that may achieve a 20%-60% increase in egg production in the Southern New England (SNE) lobster stock. The TC investigated how trap reductions and changes to the gauge size may impact egg production. **Analysis on gauge size changes suggests that, both inshore and offshore, minimum gauge size changes result in larger increases in egg production than maximum gauge size changes over the same increment across all scenarios.** Analysis on trap reductions was problematic and there were multiple concerns regarding the underlying assumptions relating traps to exploitation rates. **While the results suggest that the current 25% reduction in traps may result in egg production increases up to 13.1%, other research suggests that the increase may be much less than this and concerns regarding this analysis prevent the TC from supporting the use of trap reductions as a means to increase egg production.** In particular, the analysis is predicated on the assumption that fishermen maintain a constant soak time when their trap allocation is reduced, an assumption that can be difficult to test and is not supported by empirical data. As a result, the TC cautions the Board in pursuing further trap reductions as a means to reduce exploitation or increase egg production.

Most importantly, the TC highlights that increases in egg production will benefit the stock only if environmental conditions are favorable for larval development and settlement. As mentioned in the April 2016 TC memo to the Lobster Board, recruitment appears to be decoupled from SSB (Figure 1). This could potentially be the result of reduced mating success, environmentally-mediated changes in survivorship, and/or increased predation (Figure 1). Prospective increases in egg production will only benefit the stock if recruitment rates remain constant or improve. As a result, this management strategy may not result in stock improvements if current environmental conditions persist. **The TC warns the Board that increasing egg production by 20% to 60% is unlikely to be sufficient to prevent further declines in the SNE lobster stock.** Projection analyses provided by the TC indicate that an 85% reduction in exploitation would be necessary to stabilize the stock

This report is split into three sections. The first section defines the various metrics the Board has used to describe population components in SNE. This is included to address questions raised by Board members at the May meeting regarding the difference between egg production

and spawning stock biomass. The second section describes expected increases in egg production from changes to the gauge size. The third section reviews analysis on trap reductions, concerns with the relationship between traps fished and exploitation, and potential increases in egg production which may result if soak time remains constant.

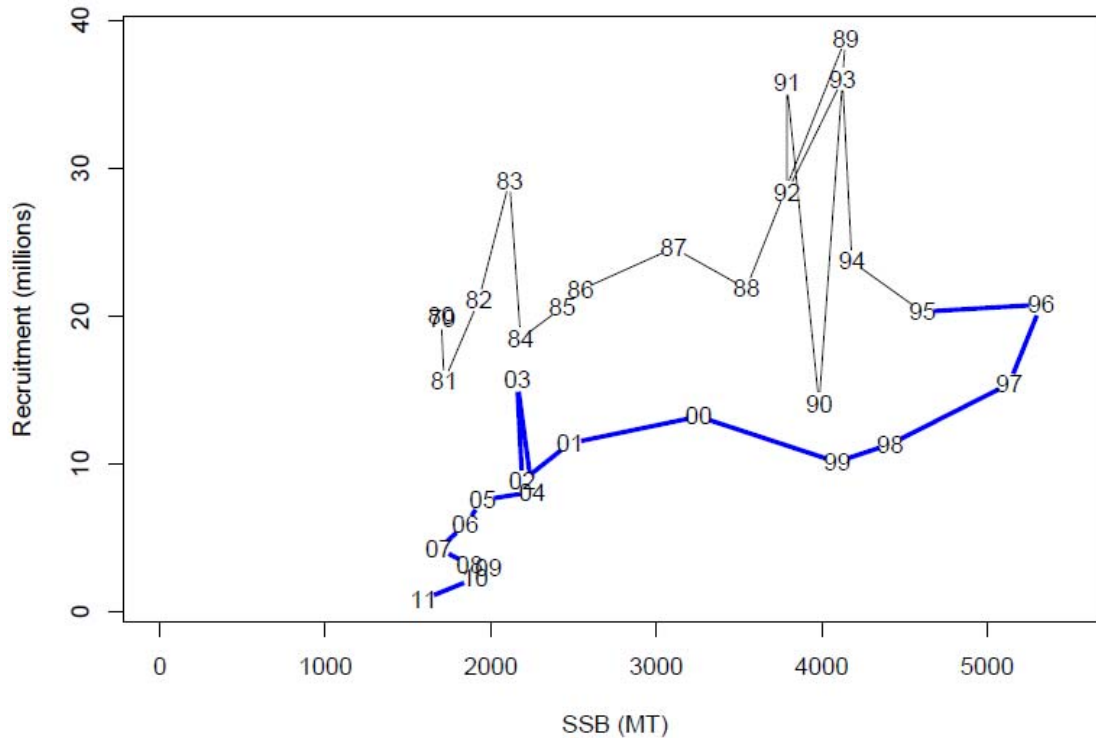


Figure 1. The relationship between model-based spawning stock biomass and recruits from 1979 to 2011. The blue line denotes the trajectory from 1995 – 2011 (recruiting to the model from 1998 to 2014).

1. Metrics To Describe Population Components

Over the past year, the TC has used several metrics to describe population conditions in the SNE stock and present simulation model results attempting to predict outcomes of various strategies. These metrics have included population size, reference abundance, spawning stock biomass (for just females, and for both sexes combined), and egg production. These terms are not interchangeable, and here we attempt to clarify the various metrics and terms used, how they are related, and propose clearer terminology moving forward.

Reproductive population: This is a newly proposed term to describe the number of mature females AND males within the population. Given uncertainties regarding male maturity and the

size at which they become reproductively active, the maturity ogive for females is applied to the males. As written, “reproductive population” would be the number of mature individuals within the population. Biomass estimates could also be applied, using the appropriate length-weight relationships, to generate a “reproductive biomass” estimate. These are the terms the TC will use moving forward, whenever analyses incorporate mature individuals of both sexes.

Population size: The number of individual lobsters (both sexes) in the population. The model used by the stock assessment currently includes all lobsters 53 mm carapace length (CL) and larger in the estimates of population size.

Reference abundance: The number of individual lobsters (both sexes) that are 78 mm CL and above present in the population at the beginning of the year (January 1), plus those lobsters that will molt into this size range during the year. This size range applies to both stocks (GOM and SNE). This is intended to represent the component of the population that is or will be available to the fishery within the year.

Spawning stock biomass (“SSB”): The total weight of sexually mature females in the population. On recent occasion, estimates of SSB presented to the Board have included both mature females and males, and this was clearly described in accompanying text. However, this may cause confusion as SSB typically refers specifically to females, and in the future will only be used when talking specifically about mature females. The calculation of SSB is based on applying the maturity ogives to the number of females in each length bin to generate the number of mature females at a given size. The length-weight relationship is then applied to the number of mature females within a size bin to calculate the weight of mature females in each size bin. The weights for each size bin are then summed to produce a total estimate of the weight of mature females present in the population, resulting in spawning stock biomass.

Egg production: The estimated number of eggs produced by the mature females in the population were calculated based on the maturity ogive, the probability at-length of carrying a clutch in a given year, and the fecundity-at-length, applied to the number of female lobsters in individual size bins. We used the same maturity ogive as the 2015 Stock Assessment. Probability at-length of carrying a clutch in a given year was based on the molt probability at-size curve that was calculated for the growth matrix, based on tagging data, for the 2015 Stock Assessment. On an annual basis, approximately half of the mature females < 120 mm CL should be carrying eggs (because of the trade-off between molting and spawning, females in this size range produce a clutch every other year). Thus, the estimate of total egg production is appropriately divided in half to represent this 2 year cycle of actual egg production. Note that there is some uncertainty as to how many females actually follow this 2 year cycle, as opposed to either annual egg production, or lengthier intervals between clutches.

Fecundity-at-length is based on the fecundity-at-length relationship published by Estrella and Cadrin (1995). Individual fecundity can be highly variable, and dependent not only on female size, but also potentially on female condition (health) and the quantity and/or quality of sperm received by the male. See details on egg production calculation in section 2.

In the past, the Board and the TC have moved away from using egg production to describe population conditions due in part to large mismatches in egg production at the recruit level (egg-per-recruit) and observed stock conditions (see Addendum VIII). Accurate estimates of egg production require assumptions regarding population stability that have proved troublesome in the past, and there is no new information to improve these estimates.

The TC would like to note that it is important to consider management measures that would protect mature individuals of both sexes. While males can and do mate with multiple females in a reproductive season, there is a large degree of uncertainty regarding their capacity to accomplish multiple matings, and how density and molt timing might impact this. Given the depleted condition of the SNE stock and uncertainties regarding reproduction, both males and females should be conserved in order to provide the best potential for egg production.

2. Potential Egg Production from Gauge Size Changes

The objective of this work was to quantify prospective American lobster (*Homarus americanus*) egg production increases for the Southern New England (SNE) stock if minimum and/or maximum carapace length regulations were to change. Gauge changes in theory would result in more fecund females remaining in the population longer and higher egg production than under the current regulations. Increasing egg production in SNE will enhance the potential for improved recruitment if environmental conditions become favorable.

Methods

The influence of gauge changes on egg production was estimated with a projection model. The projection model uses the University of Maine (UMaine) population model outputs, such as population abundance and size structure, for the SNE stock. The terminal year of the UMaine output and stock assessment (2013) is used to represent the current population structure. For further description of the UMaine model, please see the Atlantic States Marine Fisheries Commission Lobster Benchmark Stock Assessment Report (ASMFC, 2015).

The projection model carries forward the terminal year results of the UMaine model, allowing for investigation into how changes in lobster life history, fishing pressure, and/or population dynamics would influence the population structure in future years. Only females were included in this analysis as the desired units were egg production and management measures often affect females differently than males. Selectivity of lobsters to the fishing industry (via minimum and maximum gauge changes) was the only input that varied in this analysis, with all

other adjustable parameters held constant. Starting abundances at length and growth matrices were as described in the 2015 Assessment (ASMFC 2015). Fishing mortalities were estimated based on mean rates from 2008 to 2012, and described on a quarterly basis. Harvest rates from quarter one through four were 0.07, 0.42, 0.43, and 0.30, respectively. Future recruitment was also held constant, and was calculated as the average female recruit abundance from 2012 to 2014. Natural mortality was set as 0.285 for all size classes and held constant over time.

Egg production was calculated using probability of molting information and a length-based fecundity model. Probability of molting at a given size was used to infer what proportion of females at size would not have a clutch at a given time, assuming that in a given year a female lobster is either molting or carrying a clutch. Molting probabilities were the same as used in the 2015 Stock Assessment and derived from historic tag-recapture data from the SNE region only. Probability of molting (P_M) was described as a logistic function (Figure 2a) using carapace length (CL, mm):

$$P_M = \frac{1}{1 + e^{-4.186 + 0.0439 * CL}}$$

However, it's assumed that all lobsters are molting at a minimum of once every 4 years ($P_M=0.25$). Thus, all probabilities less than 0.25 were set to this minimum (Figure 2a). Probability of carrying a clutch (P_C) was then calculated as the difference between one and the probability of molting (Figure 2b):

$$P_C = 1 - P_M$$

Fecundity at size (F_L) was modeled as a power function using carapace length (Figure 2c), derived from Estrella and Cadrin (1995):

$$F_L = (0.000497CL^{3.7580})1.01522$$

Egg production for the inshore and offshore contingents were calculated as:

$$EP_L = P_{C,L} \times F_L \times N_L$$

where EP_L is egg production at length, $P_{C,L}$ is the proportion of female lobsters carrying a clutch at the given size, F_L is the fecundity at length, and N_L is the number of females at size at the end of the second quarter (June). Given the abundances at size are in 5 mm bins, egg production estimates were averaged across the 5mm bin.

Egg production estimates from model projections are based on comparing different projection scenarios once the population has reached an equilibrium state, in this case after about 10 years (2025). We present results for equilibrium states because:

- The initial size compositions for projection runs are based on the size composition from the terminal year of the assessment model, which are notoriously unstable.
- Because lobsters grow slowly, it takes several years for changes in gauge size to take effect, particularly for larger lobsters.
- We wished to analyze separate scenarios for inshore and offshore SNE which have different legal sizes and fishing pressures, and length compositions for subsets of the stock are unknown.

Hereafter, egg production estimates are presented for the projection model results in year 2025, representing when the population has presumably reached equilibrium. These results should not be interpreted as needing 10 years for management measures to have an effect, though some management measures would require time for the benefits to be fully realized. The current min/max regulations inshore and offshore were also used to calculate baseline egg production for assessing increases in production relative to the status quo.

Both inshore and offshore analyses were tested by changing minimum and maximum gauges by 1mm units. The 1mm increment was chosen in an effort to provide changes relevant to industry units (just over a 1/32" gauge change) while also using units relevant and discernable in the projection model. Relative egg production increase was calculated by dividing the egg production of the population under new gauge changes by that under the current gauge sizes and subtracting by one. Values near zero indicate little or no change in egg production, while values greater than zero reflect relative egg production increases from the current conditions.

Results

Figures 3 and 4 represent resulting egg production increases inshore and offshore when adjusting the minimum or maximum gauge only and keeping the other gauge at the current size. At equilibrium and with the minimum gauge held constant at the current sizes, a max gauge size approaching 4 inches would be necessary to achieve a 20% or greater increase in egg production both inshore and offshore (Table 1). Holding the maximum gauge size constant, a minimum gauge size of 92mm (3 5/8") inshore and 95mm (3 3/4") offshore would result in a 20% increase in egg production. A 60% increase in egg production is obtainable when only changing the minimum gauge inshore or offshore, but is unobtainable when only adjusting the maximum gauge (Table 1).

Evaluating resulting egg production increases under the different combinations of gauge changes (Figures 5 and 6) also indicates that a given incremental change in gauge size is more effective for the minimum gauge than the maximum. Maximum gauge changes have minimal effect on egg production unless significant maximum size reductions are implemented. Combinations of gauge changes that result in 20% and 60% increases in egg production from Figures 5 and 6 are presented in Table 1. The wide range of maximum gauge changes with an

associated minimum gauge change (Table 2) highlights the impact of the minimum gauge relative to maximum gauges both inshore and offshore.

Efforts were also made to estimate potential egg production increases resulting from standard gauge sizes across SNE. There were several challenges to this analysis; namely that baseline egg production levels inshore and offshore differ due to the disparate gauge sizes and the geographic spread of females inshore versus offshore is unknown. As a result, only a range of potential egg production increases could be estimated. Two scenarios were considered: 89mm-140 mm (3.5"-5.5") and 89mm-127mm (3.5"-5"). Under the first scenario, increases in egg production could range from 0.01% to 9%, depending on where the females primarily reside. In the second scenario, egg production could increase from 0.19% to 9%.

Limitations and Future Consideration

While these egg production estimates attempt to account for several important biological aspects of American lobster, there are a few assumptions and sources of uncertainty worth mentioning:

- Natural mortality is held constant for all size classes, where in reality natural mortality likely decreases with age and size. While there is currently no information regarding natural mortality specifically at larger sizes, the assumption of constant M may result in underestimating egg production, particularly for scenarios with maximum gauge changes.
- Current egg production conditions were based on regulations for inshore and offshore; however, current regulations vary by Lobster Management Area (LMA). Thus, egg production potential may vary within inshore and offshore regions from these estimates depending on the LMA of interest.

Additionally, projections should be interpreted in light of the model assumptions and aspects of lobster life history, data used for the UMaine model, and UMaine model output. Considerations include:

- Uncertainty associated with the model functions are not incorporated in the projections (i.e. mean model fits are used). Results are based on one set of functional forms used to describe lobster population dynamics.
- Uncertainty associated with the lack of data on the growth, reproduction, and natural mortality for the offshore lobster population.

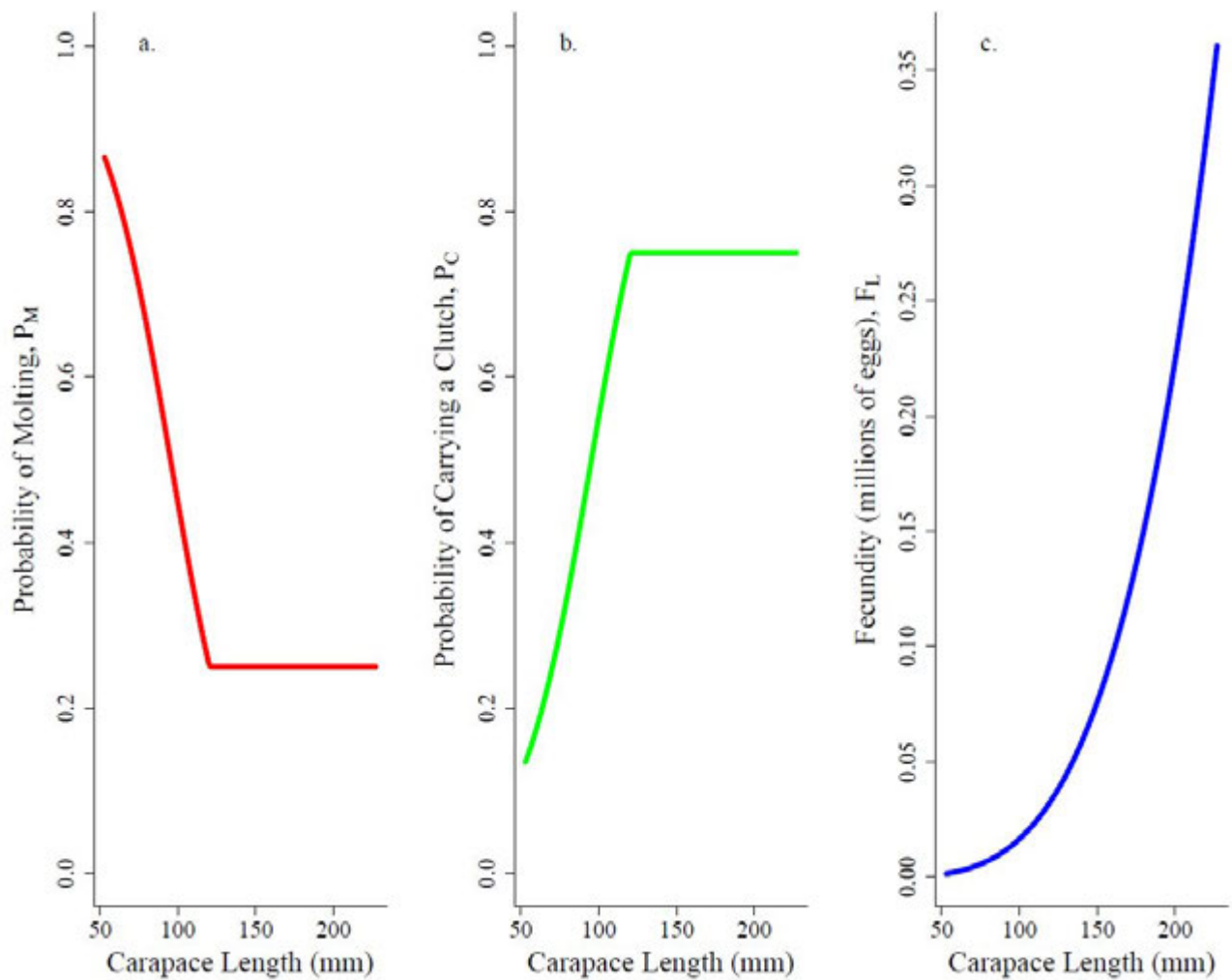


Figure 2. Probability of a female molting in a given year (a), probability of a female carrying a clutch in a given year (b), and fecundity (c) at given carapace lengths (mm). Multiple or ranges in sizes for a given maximum gauge indicate that all of the referenced sizes, accompanied by the corresponding minimum gauge size listed, result in the specified percent increase in egg production.

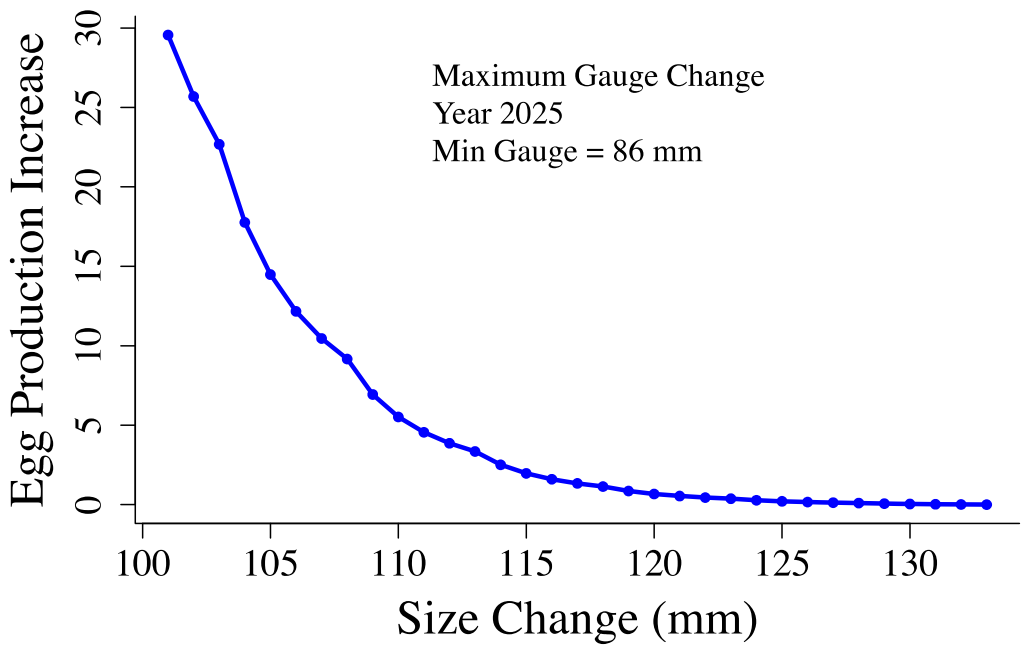
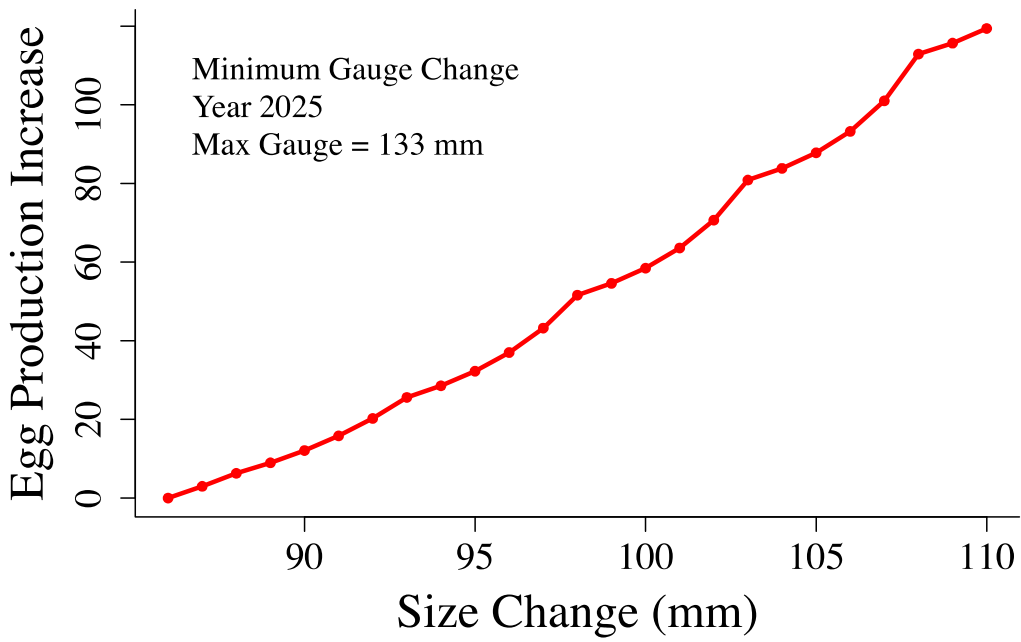


Figure 3. Inshore egg production percent increases from minimum (top, red) and maximum (bottom, blue) gauge changes. The current inshore gauge size is 86-133mm or 3 3/8"-5 1/4".

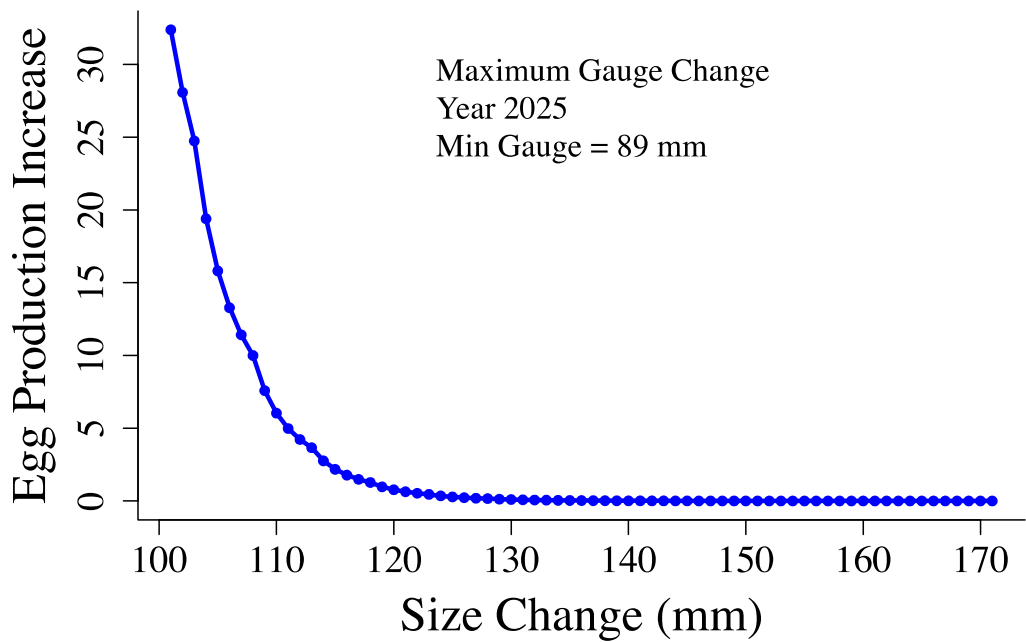
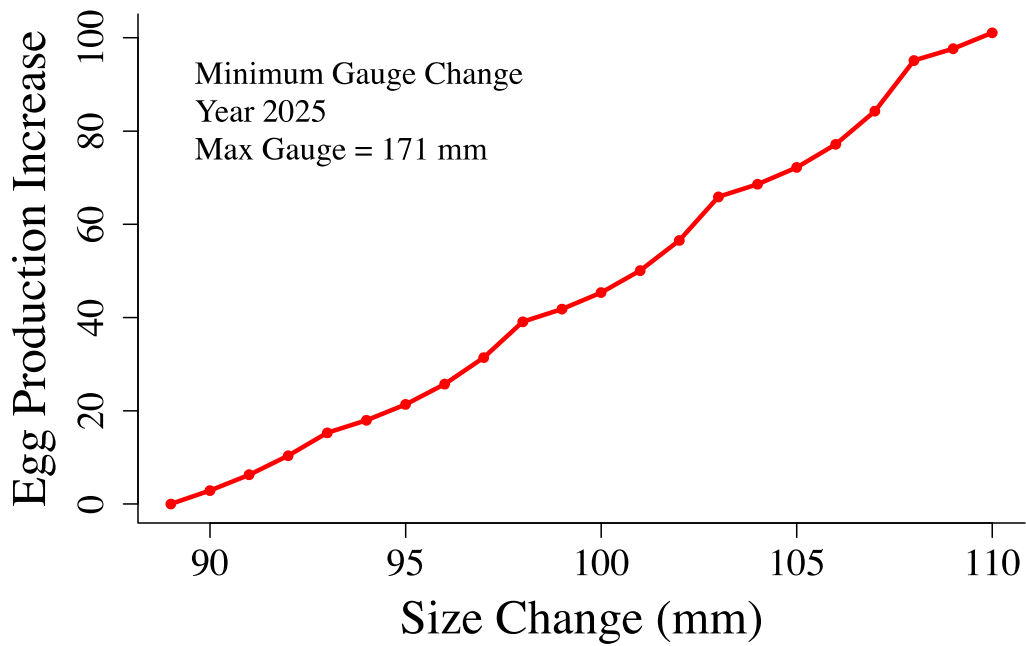


Figure 4. Offshore egg production percent increases from minimum (top, red) and maximum (bottom, blue) gauge changes. The current offshore gauge size is 89-171mm or 3 17/32"-6 3/4".

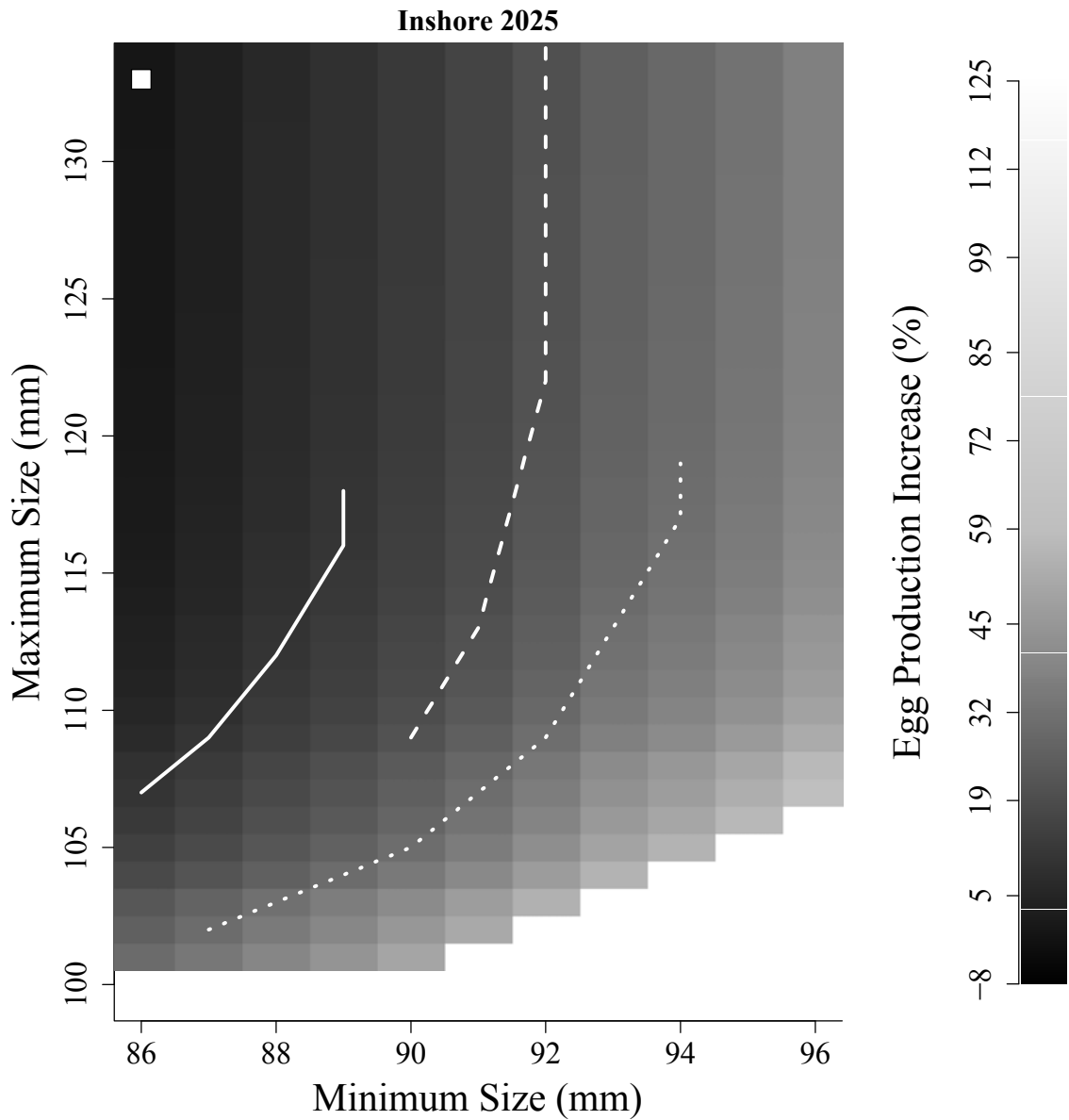


Figure 5. Inshore minimum/maximum gauge change scenarios and corresponding egg production changes from the current gauges (white boxes). Egg production is expressed as percent increases from the current conditions. Egg production increase contours for 10% (solid line), 20% (dashed line), and 30% (dotted line) are drawn for reference. Gauge change scenarios that would result a legal size range of 10mm or smaller (bottom right) are not presented, with space representing absent results and no increases in egg production. The current inshore gauge size is 86-133mm or 3 3/8"-5 1/4".

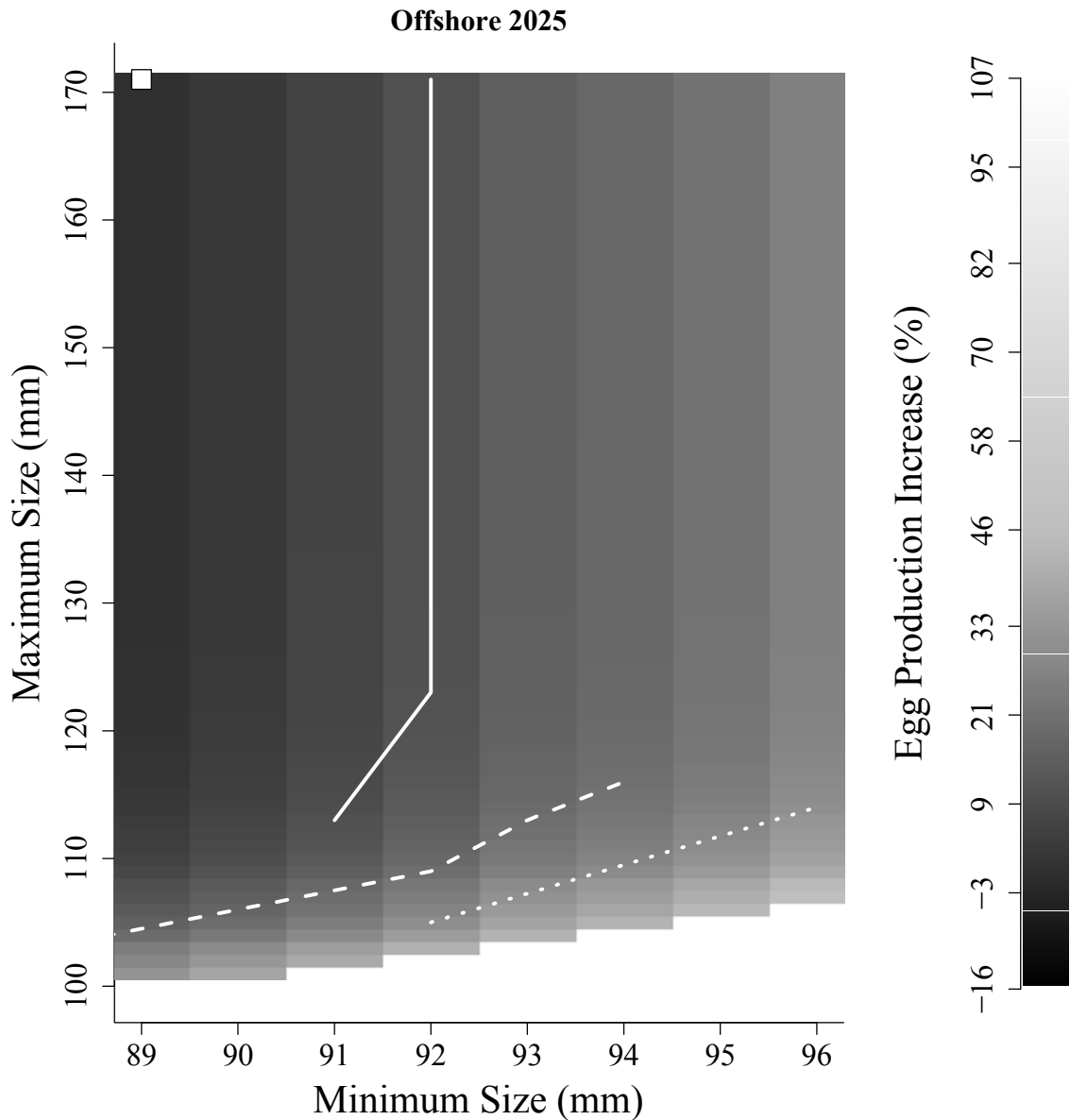


Figure 6. Offshore minimum/maximum gauge change scenarios and corresponding egg production changes from the current gauges (white boxes). Egg production is expressed as percent increases from the current conditions. Egg production increase contours for 10% (solid line), 20% (dashed line), and 30% (dotted line) are drawn for reference. Gauge change scenarios that would result a legal size range of 10mm or smaller (bottom right) are not presented, with space representing absent results and no increases in egg production. The current offshore gauge size is 89-171mm or 3 17/32"-6 3/4".

Table 1. Gauge changes (in mm) for inshore/offshore under equilibrium projections that result in at least 20% and 60% increases in egg production when the other gauge is held at its current size (extracted from Figures 3 and 4). NA indicates that the target percent increase is not obtainable with one gauge constant and the other varied over the range assessed in this analysis. The current inshore gauge size is 86-133mm and the current offshore gauge size is 89-171mm.

Scenario	20%	60%
Inshore Minimum Change	92	101
Inshore Maximum Change	103	NA
Offshore Minimum Change	95	103
Offshore Maximum Change	103	NA

Table 2. Gauge changes (in mm) for inshore/offshore under equilibrium projections that result in a 20% and 60% increases in egg production. The current inshore gauge size is 86-133mm and the current offshore gauge size is 89-171mm.

Scenario	20% Egg Production Increase		60% Egg Production Increase	
	Minimum	Maximum	Minimum	Maximum
Inshore	90	109	96	107
	91	113	97	109
	92	122-171	99	115
			100	120, 121
Offshore	88	103	100	111
	92	109	102	119
	93	113		
	94	116, 117		

3. Potential Egg Production from Trap Reductions

The Lobster Technical Committee was tasked with providing advice on how the currently-planned trap reductions would affect the SNE lobster stock, particularly in regards to egg production.

The relationship between fishing effort and fishing mortality rate is extremely problematic, particularly for trap fisheries because multiple factors beside the number of registered traps affect catch and mortality rates, including latent effort, how often the traps are fished, trap soak times, the spatial distribution of the resource, and changing fleet characteristics.

Despite these caveats, we attempted to model the relationship between the number of actively fishing traps (AFT) and fishing mortality using data and exploitation estimates from the SNE stock assessment. We then estimated new exploitation rates, assuming a 25% reduction in traps from the terminal year and projected how these would change egg production relative to current exploitation.

All previous trap reduction programs utilized in the SNE lobster stock were aimed at reducing the total trap allocation for each fisherman (which included both active and latent pots). The analyses presented here use the number of actively fished traps as documented in the 2015 Stock Assessment in order to relate effort to resulting exploitation. This analysis makes the following assumptions;

- 1. The 25% trap reduction will actually result in a 25% decrease in actively fished traps.**
- 2. Other aspects tied to fishing effort (i.e. soak times, duration of fishing season, etc.) do not change as fishers compensate for the decrease in fished traps.**

A time series of AFT in the SNE stock area and corresponding exploitation rate (model-estimated SNE exploitation) from 1981-2013 were obtained from data presented in the latest (2015) Stock Assessment. The plot of fishing exploitation vs. total traps reveals two apparent regimes in this relationship (Figure 7). Exploitation is stable and high as effort increased from 1981 to 1998; however, as the fishery decreased and minimum legal sizes increased, the exploitation rates dropped to lower levels. Based on this, we examined two relationships between exploitation and numbers of traps; one using the entire time series (hereafter “all years”) and a second using only the years since 1999 (hereafter “recent years”).

Models fitted through these points using maximum likelihood estimation and assuming a Michaelis-Menten response function are very stable, presumably because the function is forced through the origin and there is little variation in exploitation at high trap values. To better examine the uncertainty in this relationship, we bootstrapped 1,000 models, with replacement, for both “all” and “recent” years and recorded the model-predicted exploitation rates at the

current trap levels and after the 25% trap reduction (Figures 8 and 9 respectively). Based on the data for all years, a 25% reduction in traps may reduce exploitation rates from 0.270 to 0.239 constituting an 11.6% reduction (95% CI: 6.5% -16.3%). Similarly, for data from recent years, the planned trap reduction may be expected to reduce exploitation rates from 0.207 to 0.176 or a 14.3% reduction (95% CI: 3.5% - 21.2%).

Population simulations were then run with the range of bootstrapped exploitation rates for both all years and recent years, and pre- and post-reduction, to get equilibrium female and male length compositions for pre- and post-reduction scenarios. We calculated egg production using the same egg production model detailed in Section 2 and compared egg production estimates for pre-reduction to post-reduction exploitation rates.

The population simulations under different exploitation rates suggest only small increases in the abundance of lobsters above legal size (Figure 10). With annual egg production rates applied to the female lobsters, egg production is projected to increase by 9.6% (95% CI: 4.5 – 13.0%) when exploitation curves are based on all years' data and 13.1 % (95% CI: 2.6 – 19.7%) when based on recent years' exploitation data (Figure 11). A critical assumption to these estimates is that soak time does not change as trap allocations are reduced. If fishermen do reduce their soak times (haul their remaining traps more frequently) to compensate for a reduction in traps, the expected increase in egg production would be reduced.

TC Concerns with Trap Reduction Analysis

Although these analyses accurately depict the observed relationship between active traps fished and exploitation in SNE, they are based on the explicit assumption that soak time is constant. This assumption is not valid. Empirical data presented in the 2015 ASMFC lobster stock assessment for MA and CT demonstrate substantial variability in soak time, particularly in recent years (Figure 12). The only true measure of effort in trap fisheries is the number of trap hauls (preferably standardized to soak time, Miller 1990). The total amount of effort exerted by an individual trap is directly proportional to how often it is hauled and the trap's efficiency at the point at which it was hauled (Miller 1990). Both of these factors are directly influenced by soak time. The shorter the average annual soak time the more often that trap is hauled during a year. Conversely, the longer the average annual soak time, the less often that trap is hauled during a year.

In addition to the frequency with which traps are hauled, a lobster trap's efficiency (number of lobsters it retains/number of lobster it encounters) typically reaches its maxima between 1 to 4 days in inshore areas (Thomas 1973, Fogarty & Borden 1980, Auster 1986, Estrella & McKiernan 1989) and 5 to 9 days in offshore areas (Skud 1979). Trap efficiency is further complicated by interactions with population density, trap saturation, interspecific competition, bait type and quantity, trap size, spacing (trap density), trap design, and water temperature (Miller 1990).

Furthermore, soak time is directly affected by fishing behavior which is influenced by fishing costs (bait and fuel), catch rates of lobsters, and the market price of lobsters (Miller 1990). Trap density experiments conducted off of Monhegan Island in the GOM demonstrated that a 67% reduction in active traps fished resulted in only a 16% reduction in catch when soak time was held constant (Wilson 2010). Additionally, soak time experiments conducted as part of this study suggest that at a 5 day soak time, lobster traps within the study area were operating 80% below their maximum efficiency (Wilson 2010). A trap reduction program in the Florida Keys spiny lobster fishery also had limited success in reducing fishing mortality. Specially, management measures which removed roughly 40% of the traps in the fishery (939,000 traps in 1991 to 568,000 traps in 1995) only reduced fishing mortality by 16% (Mueller et al., 1997). Both studies demonstrate an ability to maintain or increase catch rates in trap fisheries by hauling substantially less gear more often on shorter and substantially more efficient soaks. As a result, quantifying a standard unit of effort in trap fisheries is extremely complex and notoriously elusive. Additional information on the relationship between traps fished and exploitation can be found in Appendix 1 - November 2010 ASMFC Lobster Technical Committee Memo to the Lobster Board.

The relationship between traps fished and exploitation presented in this analysis may depict an unrealistically optimistic view of potential reductions in exploitation associated with lower numbers of traps fished. The traps currently fished in the SNE lobster fishery are nowhere near their saturation point and current average soak times in the SNE lobster fishery are well below maximum efficiency. This is supported by the observed substantial increases in CPUE in SNE that are concomitant with the observed declines in the number of active traps fished (Figure 13 a & b). This suggests that the bootstrapped estimates of the relationship between traps fished and exploitation with extremely steep slopes (those whose point of inflection falls to the left of the bootstrapped mean; Figures 8 and 9) and long stable asymptotes are likely to be more realistic.

Conclusions

If the assumptions of this analysis are upheld (a critical and unlikely caveat) the best case scenario the TC would expect is a 14.3% reduction in exploitation with a corresponding 13.1% increase in egg production. When compared to the simulation analyses previously presented to the board, the TC would expect the SNE lobster population to continue to decline from its current levels. Additionally, the Lobster Technical Committee is very concerned that this analysis is simply a mathematical exercise that overlooks the many intervening factors described above. The TC is not able to predict fishermen behavior that would affect how often traps are hauled or how many allocated traps are actually deployed. However, it is highly likely that fishermen will respond to trap reductions by trying to maintain fishing effort by hauling the traps they do have more frequently, or in some areas (LMA2) by purchasing additional (mostly latent) trap allocation. This behavioral compensation would offset the intended effects of trap

reductions in relation to exploitation rates. As such, **the TC strongly cautions the Board against using these analyses to quantify or predict current or future reductions in exploitation related to trap reductions.**

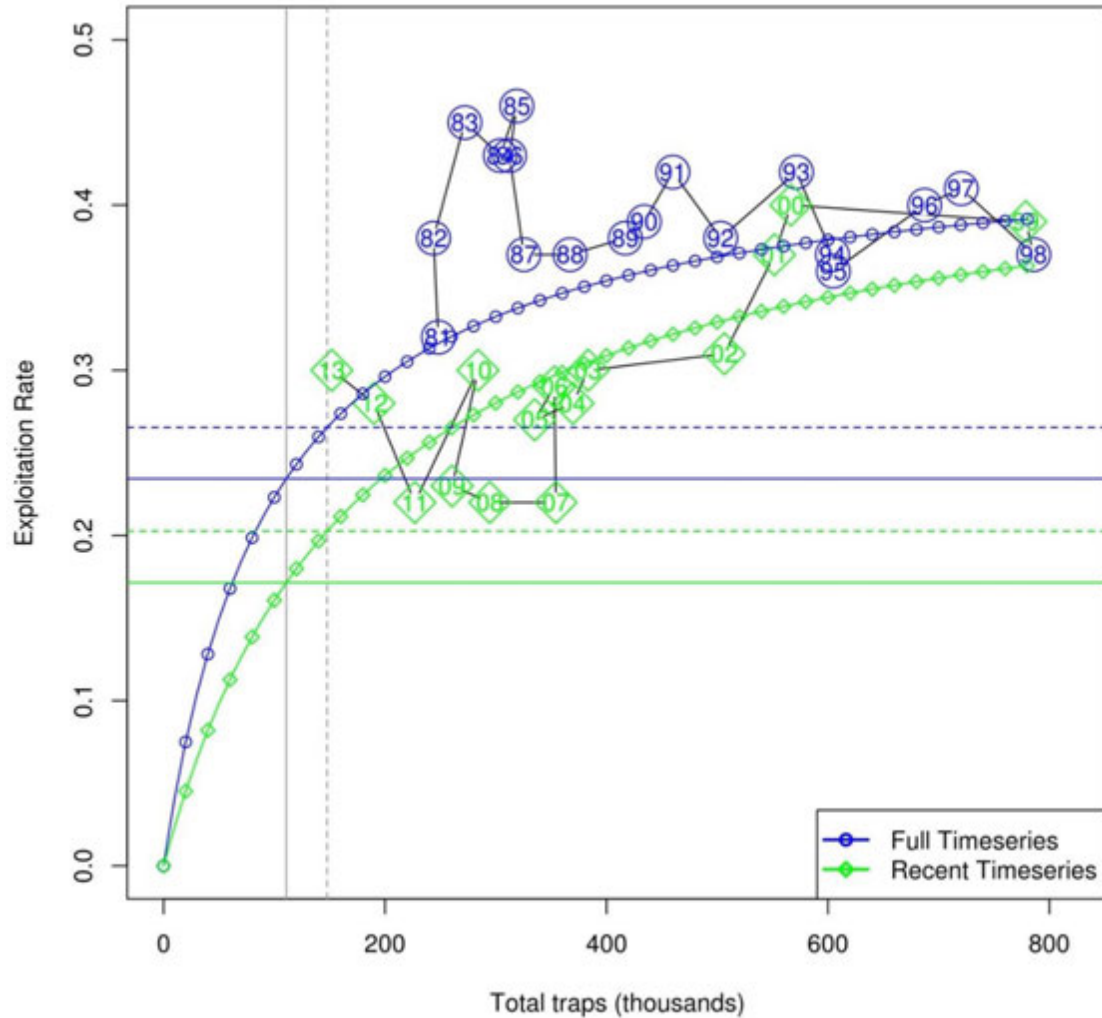


Figure 7. Plotted time series of total traps in the SNE fishery and exploitation rates from the assessment model. Numbers indicate the last two digits of the year. Early year's data and the fitted model for all years are plotted in blue with recent years data and model plotted in green. The vertical solid and dashed gray lines represent the post- and pre-trap reduction levels respectively. Horizontal lines represent estimated pre- and post-reduction exploitation rates (dashed and solid respectively) for all and recent years models (blue and green lines respectively).

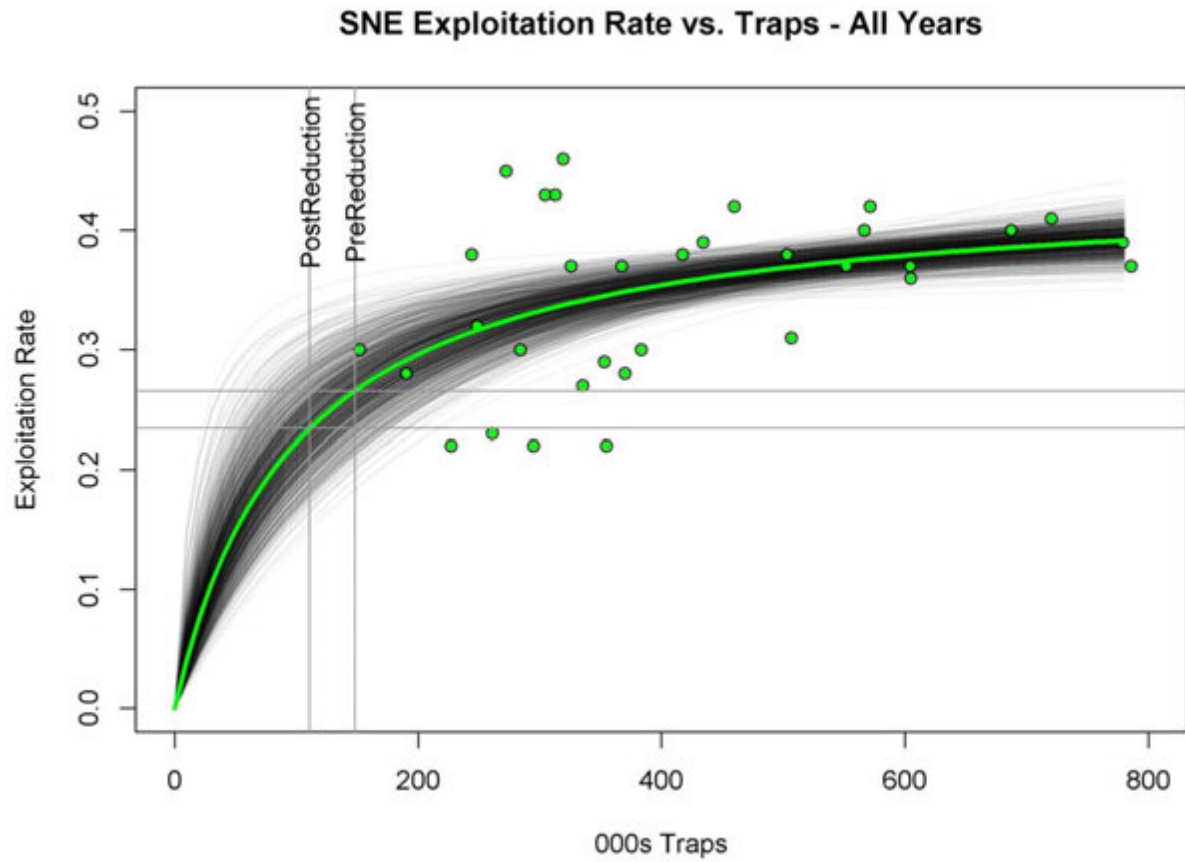


Figure 8. Relationship between effort and exploitation for all years with the model curve for the full data set (green line) and each of the 1,000 bootstrap models (gray lines).

SNE Exploitation Rate vs. Traps - Recent Years

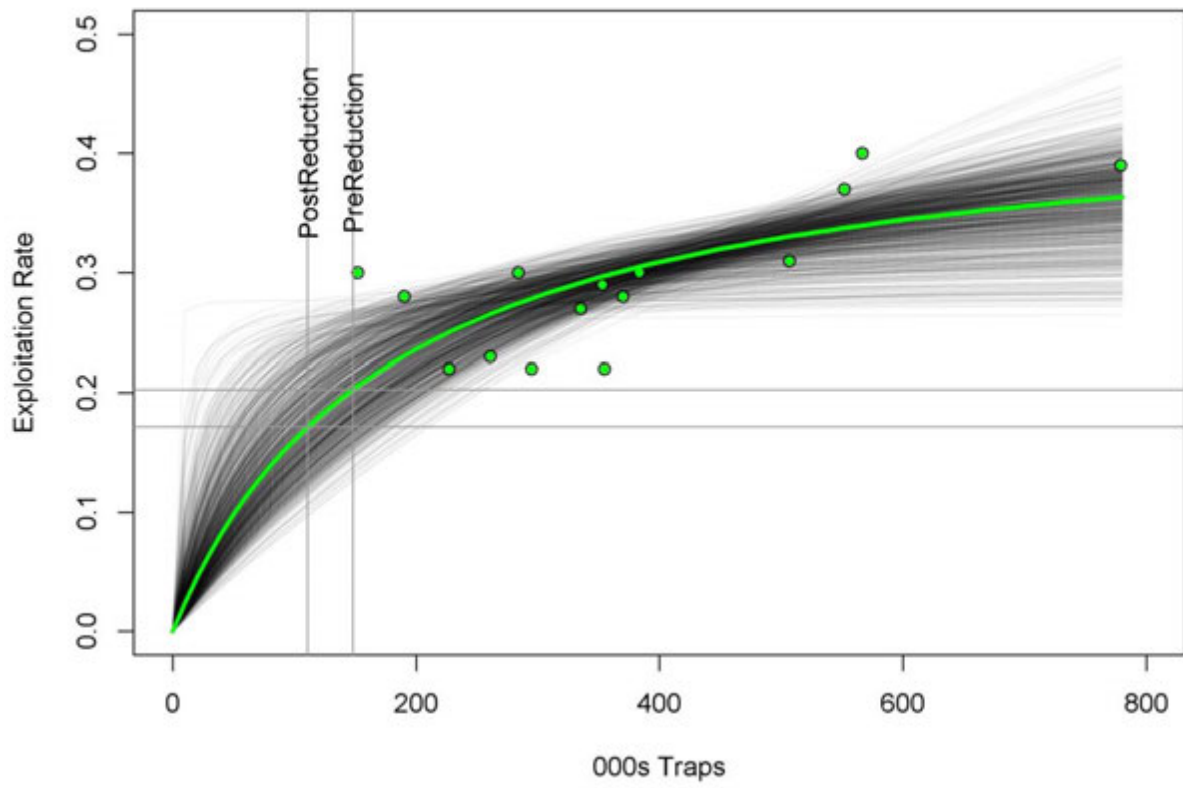


Figure 9. Relationship between effort and exploitation for recent years with the model curve for the recent data set (green line) and each of the 1,000 bootstrap models (gray lines).

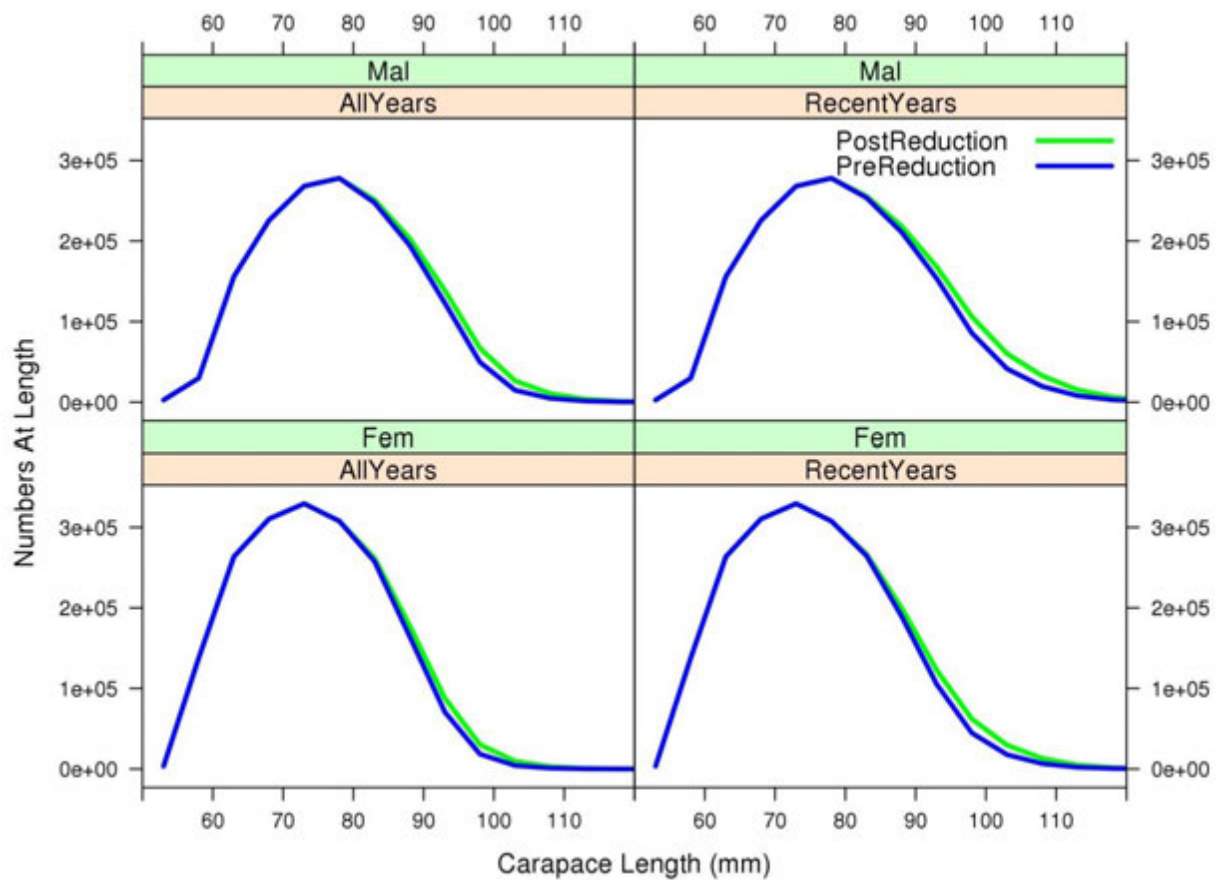


Figure 10. Mean numbers of lobsters at size for males (top) and females (bottom) from population simulations based on exploitation curves from all years (left) and recent years (right). Separate length compositions are shown for the pre-trap reduction (blue) and post-trap reduction (green) scenarios. Models assume basecase assessment model growth and natural mortality rates and continued current recruitment levels.

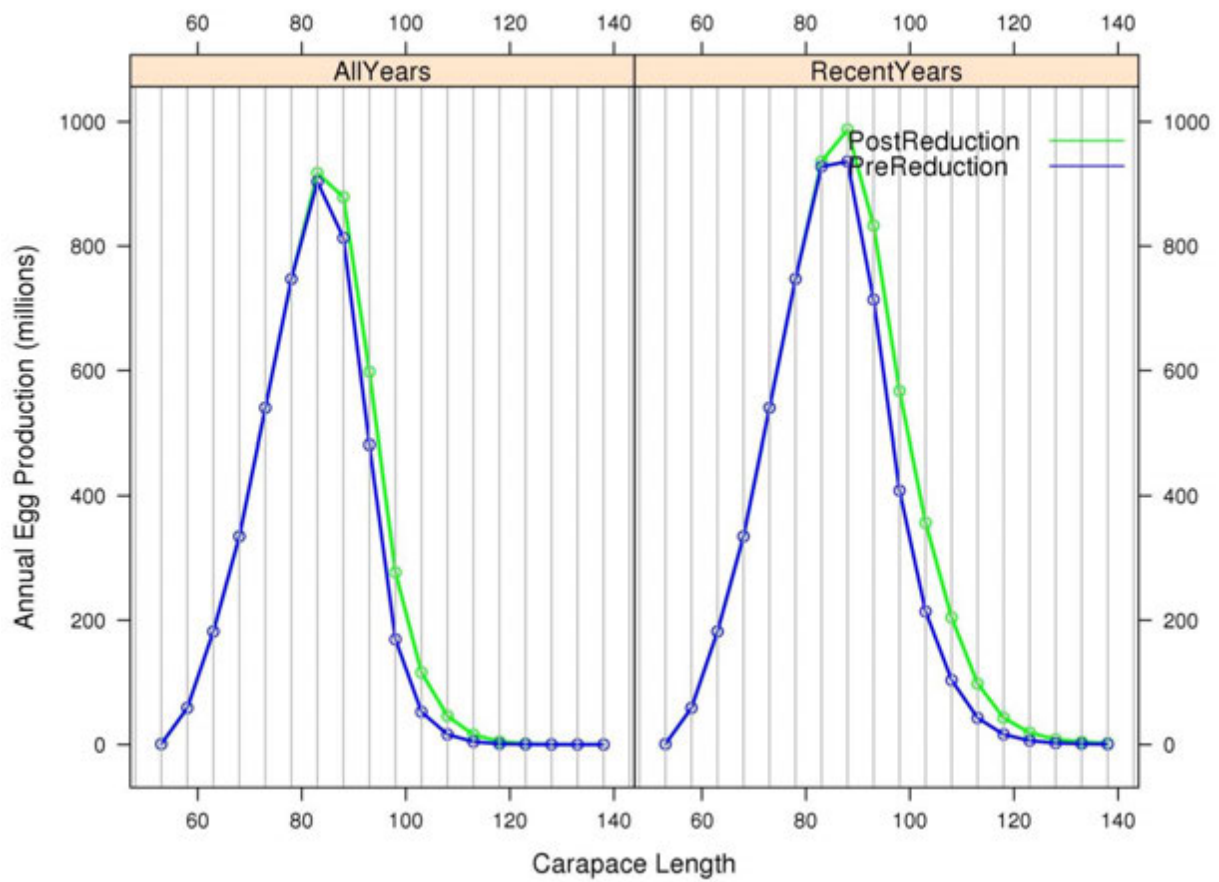


Figure 11. Egg production at-size based on the female numbers-at-size from Figure 4.

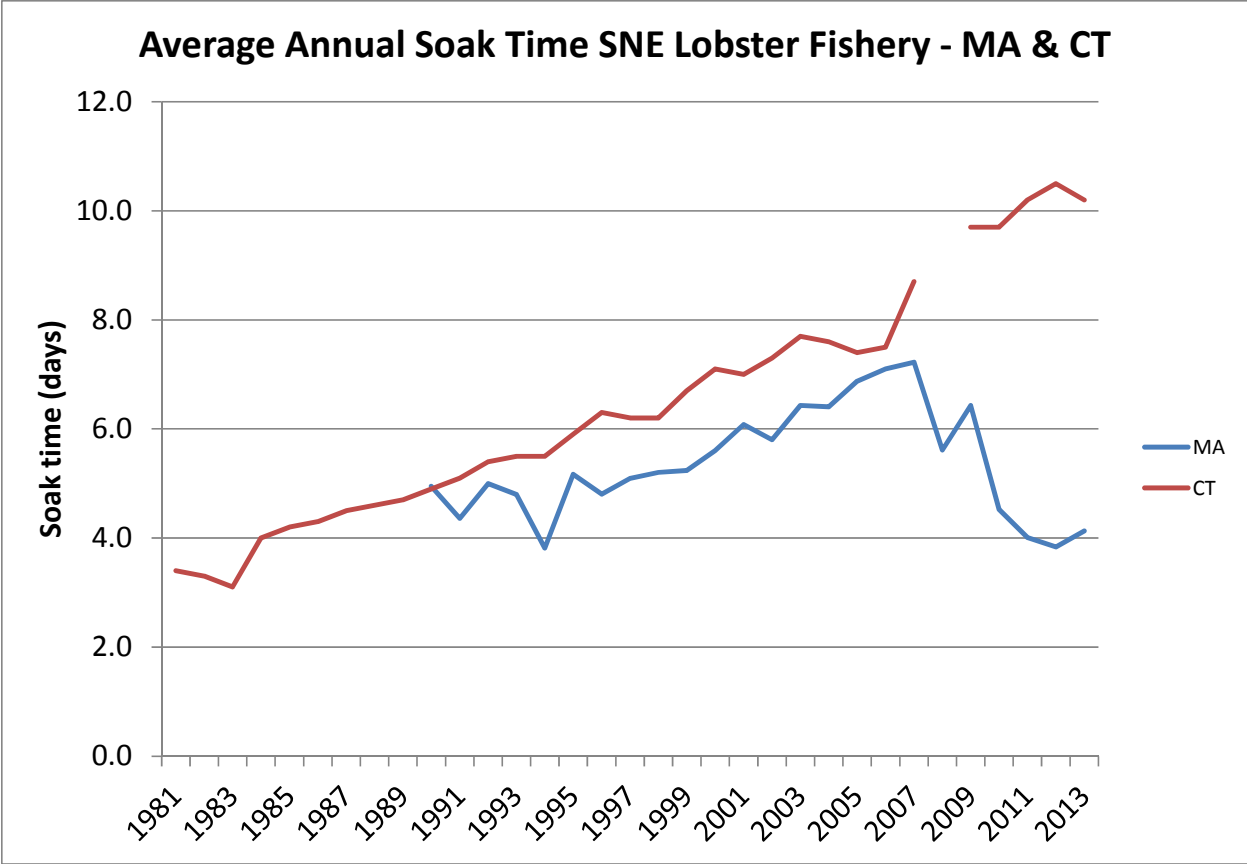
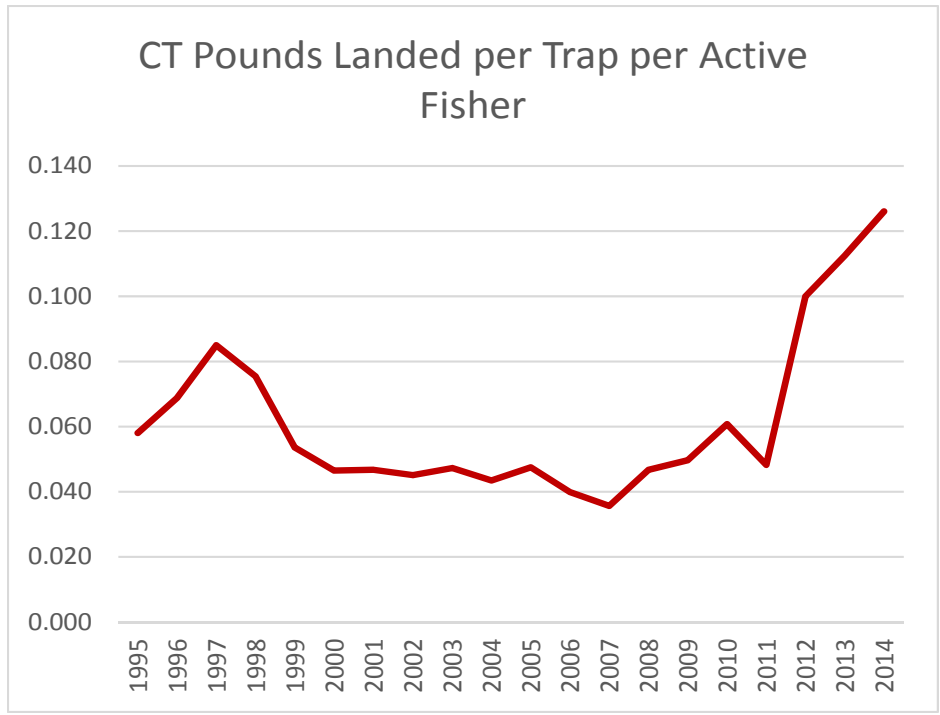
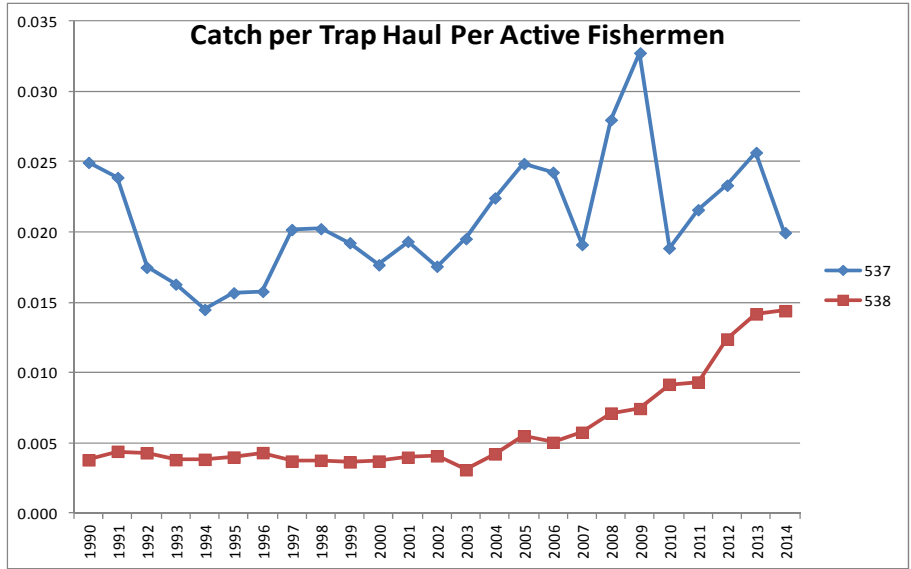


Figure 12. Annual mean soak time for SNE lobster fishery in CT (red) and MA (blue) from harvester reports 1981 to 2015.



Figures 13a and 13b. CPUE – Catch per trap haul per active fishermen in SNE – MA (a) and CT (b)

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Appendix 1

Atlantic States Marine Fisheries Commission

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MEMORANDUM

November 2, 2010

To: American Lobster Board

From: American Lobster Technical Committee

Re: Southern New England Exploitation Reduction Recommendations

At the Special July Board meeting the American Lobster Board (Board) tasked the Technical Committee (TC) with evaluating the impacts on Southern New England (SNE) landings by using a variety of management options:

- closed season by state, Lobster Conservation Management Area (LCMA), and time period [1-month intervals],
- closed areas evaluated by state, LCMA and/or statistical area,
- quota based output controls based on landings by state and LCMA,
- trap limits as an input control and determine percent landings reduction associated with levels of trap reductions,
- male only / v-notch program,
- modifications to the minimum and maximum gauge size.

In addition, the Board tasked the TC to evaluate scenarios relative to a 50 or 75% reduction in exploitation to the status quo. The TC has proceeded with the assumption that exploitation reductions are equivalent to an equal percentage in landing reductions for the base years of 2007-2009, as shown in table one. As presented in previous reports, the TC would like to remind the Board that only under favorable natural mortality conditions would deterministic projections result in the SNE stock rebuilding with the proposed exploitation reductions.

There is tremendous uncertainty in the effectiveness of any measure to reduce exploitation short of direct controls on landings. The TC is not able to quantitatively evaluate the impact of each management measure listed above. Regardless, the TC has provided the Board with advice on each measure relative to previous experience in other fisheries, information currently available to the TC from the SNE stock, and a biologically driven approach to provide the maximum benefit to the resource.

The Technical Committee recommends that the Board use a combination of a quota and season closure (June through September) to achieve a 75% reduction in exploitation. The incorporation of a limited closed season in concert with a quota would provide maximum biological benefit during molt, egg extrusion, and high environmental stress periods.

I. QUOTAS

The establishment of a SNE stock quota that is a 50 or 75% reduction from the previous three years' landings is the preferred option to provide maximum benefit to the SNE lobster stock. The TC recommends a quota be distributed for the SNE stock, based on the previous landing trends (Table 1). Furthermore, the TC feels that a quota combined with seasonal closure timed to avoid molting, egg extrusion, and high environmental stress periods from June through September, would provide maximum benefit to the stock. Table 2 and 3 show what the overall SNE quota would be for a 50 and 75% reduction, respectively, based on the average landings for 2007-2009.

It is possible to control the exploitation rate by directly controlling the amount of lobster taken through a quota. The quota could be adjusted to account for changes in the abundance of lobster if the stock begins to rebuild. Quota systems could be established for total and/or individual catch as these systems have different incentives for rate of catch. Quotas place a large administrative burden on resource agencies, and to be effective, require good monitoring and enforcement. Measurements of conservation benefits are generally pre-determined. A quota set lower than the historic catch, constitutes a direct reduction in exploitation. Distributional effects of quota management systems remain an important consideration and should be thoroughly investigated by the social and economic subcommittee.

Quota Management Systems (QMS) have been introduced in a variety of lobster fisheries worldwide. The offshore Canadian Lobster Fishery (LFA 41) established a total allowable catch (TAC) in 1985. Landings in this area have remained at or below the TAC level since introduction, and are remarkably stable when compared to adjacent inshore areas in Canada/US and offshore areas in the US (DFO 2009). Full Individual Transferable Quota (ITQ) systems have been established in New Zealand (1988) and Tasmania lobster fisheries (1998). After eight years of QMS in New Zealand, Annala (1996) reports that the biological status of the stock has improved, discards have been reduced, the stock assessment process/TAC setting has become more transparent and the economic performance of the fishery has improved. In Tasmania, initial results following establishment of a QMS indicate that fishing mortality has measurably declined and fishing effort has declined by nearly 30% (Ford 2001).

II. SEASON CLOSURES

In addition to a stock-wide quota, the TC recommends a seasonal closure during June through September to provide maximum benefit during molt, egg extrusion, and periods of high environmental stress. Extending the closure through September would include the entire high water temperature period. The TC recommends a seasonal closure as an effective way of implementing the QMA discussed above, not as a means of achieving a 50 or 75% reduction in exploitation because of the unknown compensatory ability of the fishery to shift exploitation to the open fishing season (i.e. recouplement).

In SNE, a closed season would have the greatest conservation benefit if it occurred during the molt (June-July and secondarily November-December), and/or just prior to the time most females extrude eggs (July-August) so as to allow more females to extrude eggs prior to being captured. Additionally, limiting fishing activity in late spring (April-June) would minimize premature egg loss for females carrying developing (brown/tan) eggs before their hatch (Appendix 2A). Extending a closure from June through September would protect the lobster stock during the entire high water temperature period (Figure 1), thereby preventing handling stress and mortality when water temperature are above 20°C, the threshold temperature causing immune, respiratory and cardiac trauma (Dove et al. 2005, Powers et al. 2004).

Currently, lobster landings occur in every month in all states and LCMAs, however they show a strong and consistent seasonal pattern (Figure 2 and Table 4). In 2007-2009, less than 5% of the total was landed per month in the first quarter of the year, while 3-14% (average 7.5%) was landed per month in the second and fourth quarters, and 8-27% (average 17%) was landed per month in the third quarter (Table 4). If fishing patterns do not change, a closure encompassing the third quarter (July-September) would reduce harvest by 50% (Table 5). Closing spring and fall months along with summer months would reduce harvest by 75%. However, there are many factors which would compel fishers to change their fishing patterns to accommodate a closed season by recouping lost harvest during the open season.

Closed seasons have been used to manage American lobster in Canadian waters for many years. The Canadian experience has shown that a short fishing season of several months duration can result in fishing mortality rates comparable to a completely open season because the fishery is able to recoup all of their catch during the months open to harvest. Recoupment can be 100% in areas where the lobster population is particularly stationary. For example, currently winter landings (January-March) in all areas average only 6% of the total; however, prohibiting harvest in preceding months may increase fishing effort as well as resource availability during this historically inactive season.

Economic implications of seasonal closures in Maine were evaluated by Cheng and Townsend (1993); they found that gross revenues would increase from extended seasonal closures (e.g. August to November) due to a redistribution of landings across seasons which evened out prices and strengthened markets. This analysis also showed that short (1-2 months) regional closures in peak months (August and/or September) increased the value of landings, but only by a small amount because landings increased immediately after the closures, seriously depressing prices in the late fall (October-December). Optimal readjustment of landings required moving landings from July through December into January through June. In other words, closures of at least an entire season (3-4 months) were required to stabilize the fishery from an economic standpoint.

Eliminating harvest during the molt and times of high water temperature may substantially reduce total mortality and aid in rebuilding the spawning stock by minimizing gear-induced immediate and delayed mortality as well as sublethal stress. In inshore areas of Southern New England late summer and fall (July-October) bottom water temperatures often exceed 20°C, the physiological stress point for American lobster. Warm hypoxic waters are known to herd lobster into 'islands' of marginally sustainable habitat. During this time of year, repeated catch and

throwback into warm low-oxygen water can be at least stressful if not fatal, especially if major predators are actively feeding in the same area.

III. AREA CLOSURES

The TC does not recommend using area closures as the primary method of reducing exploitation. Levels of exploitation reduction, using landings as a proxy, can only be assigned Statistical Area scale or approximated to an LCMA with numerous assumptions (see notes in Table 7)

Quantifying lobster concentrations on a smaller scale can only be done using patterns in randomized research trawl surveys or anecdotal information, with unacceptable levels of uncertainty associated with either approach. It is therefore impossible to assess what the impacts of smaller areal closures on the SNE stock as a whole. Implementing and enforcing smaller area closures would require restructuring reporting regulations to march closure boundaries. Additional measures would be needed to prevent effort from shifting from closed to open areas.

Analyses of existing closed reserves (Murawski et. al 2000) have shown that optimal closed-area boundaries should be placed so as to protect spawning concentrations and/or nursery areas.

These areas have not been clearly identified in all SNE LCMAs and may be quite variable, both seasonally and regionally, due to changes in dispersion/migration of spawning adults and larval drift.

No-take zones and marine reserves have been instituted in areas inhabited by the Florida spiny lobster and the New Zealand spiny lobster (Babcock et. al 1999, Kelly et. al 2002, Cox and Hunt 2005). After several years of protection, lobster populations within these reserves have increased in average size, and therefore reproductive potential, and in some cases increased in overall density compared to abundance outside the reserve boundaries. However, these conservation benefits may be species-specific and depend upon behavior, migration patterns, and size of the reserve. The animal's need to migrate out of a closed area is a critical determinant of the effectiveness of an area closure. Existing spiny lobster reserves range from 350-3000 hectares or 90-777 sq. miles (Babcock et. al 1999, Cox and Hunt 2005). Area closures of this magnitude would be equivalent to a complete moratorium for those fishers whose grounds are closed, or trigger a large influx of effort into open areas. Either outcome would have a significant negative impact on the fishery without clear benefit to the resource.

Currently, the majority of landings in each LCMA are taken a single statistical area (SA) (Table 6 and 7). The exact locations of where fishing occurs are not recorded the landings database. The database only provides landing by statistical area. Closure at the statistical area or LCMA scale would either shut the fishery down or have little or no effect. The greatest poundage is taken in LCMA 3, 69% of which was taken in SA 537 in 2007-2009, followed by 20% taken in SA 616. Similarly, 79% of LCMA 2 landings were taken in SA 539, and 85% of LCMA 4 landings were taken in SA 612. All of LCMA 6 landings were taken in SA 611. Only the fishery in LCMA 5, which contributed 3% to 2007-2009 SNE landings, is dispersed widely enough that closure of one or two statistical areas would almost eliminate the fishery.

IV. TRAP LIMITS

The TC does not recommend the use of trap reductions alone as a mechanism to reduce exploitation because the recoupment potential for the industry to recover from trap reductions is considerable and poorly understood. There is a poorly understood non-linear relationship between the number of traps fished and landings, therefore we are unable to recommend the number of traps that would need to be removed from the SNE fishery to reduce exploitation by 50 or 75 %. However, it is the TC's belief that the current fishery needs be scaled to the size of the SNE stock, and that the total fishing capacity (both active and latent traps) of the SNE fishery severely limits the Boards ability to manage this fishery and to provide adequate conservation to the SNE stock.

If trap reductions were used as a management tool, the TC recommends the Board take an iterative approach, as the relationship between traps and landings in SNE is not known. To achieve a 50 or 75 % reduction in landings we would recommend a 75% reduction in actively fished traps from the 2005-2007 levels. The initial reduction would translate to overall SNE trap levels dropping from 221,000 to 55,000 traps. Additional reductions will likely be needed until the desired levels are achieved. It is important that latent, or unused trap allocations, are not part of the 75% reduction and would not re-enter the fishery unless the resource were to rebuild. We recommend proportional decreases in trap numbers throughout all of the LCMA's within SNE stock area. Trap reductions that do not achieve 50% or 75% reductions in landings could still enhance the benefits of other types of regulation changes.

The number of traps reported as actively fished has dropped by 56% from 2000 (573,931) through 2009 (251,542) (Figure 3). However, traps have not declined proportionally among SNE states. From information that is available, New York has seen the largest decline at 79%; followed by Connecticut, 54%; Massachusetts, 40%; and Rhode Island at 35%. The board should be cognizant that the observed reductions in the active number of traps fished are not always the result of a management measure and do not represent the large amount of latent traps that exist in each LCMA. There is no time series of trap use available for states south of New York.

Trap reductions are eventually expected to result in overall effort reductions, however the number of traps allowed in the fishery is a poor definition of effort. It is generally agreed that one unit of trap reduction will not equal one unit of effort reduction. The numbers of trap hauls, with knowledge of their respective soak times and location represents a more direct measure of effort. However it is difficult to predict how reductions in total traps will affect these other variables.

A recent example of this lack of direct relationship between traps and harvest is in the Florida spiny lobster fishery where traps were recently reduced by just over 40 % resulting in a 16% decline in fishing mortality (Muller et al 1997). Experimental (Wilson 2010) and theoretical (Fogarty and Addison 1997) results suggest that large trap reductions would be required to reduce fishing mortality in the American lobster fishery. This is due to both the excess of gear currently being fished and the ability of the fishing industry to adjust fishing practices.

Regional examples of recoupment of catch by the lobster industry with reduced numbers of traps and/or seasons include the Outer Cape Cod (OCC) LCMA, Monhegan Island Lobster

Conservation Area in Maine and the Southwest Nova Scotia fishery (Lobster Fishing Area 34). Following the implementation of the OCC trap allocation plan in 2004 there was 25.6% reduction in the number of active traps reported fished. Despite the decline in traps fished, the number of trap hauls has stayed remarkably stable at roughly 600,000 per year. This indicates that the fishery has maintained its effective level of effort by hauling traps more frequently and over a longer season to compensate for having fewer in number. The OCC LCMA reached the goal of a 20% reduction of active traps fished as intended in Addendum III. However, there has been no reduction in fishing mortality as intended by the trap reduction. In fact there is evidence that there has been a 40% increase in fishing mortality on the Georges Bank stock since 2002 in the OCC LCMA (ASMFC 2009, 2010).

The Monhegan Island Lobster Conservation Area (MILCA) is an approximately 30 nm² body of water surrounding Monhegan Island, located in the mid-coast Maine. Monhegan Island fishermen have observed a summer closed season since 1907. By statute, MILCA may have a maximum of 17 participants (there are currently 12). Recent legislative action expanded the open fishing to a maximum of 270 days starting no earlier than October 1, but reduced the maximum allowable traps from 600 to 475 ([12 M.R.S. §6471](#)). The final season length and trap numbers is at the discretion of Maine's Marine Resource Commissioner. In the past three fishing seasons the Commissioner has set the season length at 270 consecutive days starting October 1 with a maximum of 300 traps. MILCA participants have consistently caught 50% of their annual catch within the first seven weeks of the season. The median catch of MILCA participants exceeds the median catch in southern and mid-coast Maine, areas with a maximum of 800 or 600 traps and a year round fishery (C. Wilson, 2010, personal communication).

Finally, LFA 34 is the most productive lobster fishing area in Canada, accounting for 40% of Canadian landings and 23% of the combined US/CA lobster landings. LFA 34 has a six month open fishing season that opens the last Monday in November and ends May 31 the following year. There are 967 licenses with a maximum trap limit of 375 (an additional 25 traps tags are issued after April 1)(DFO 2006). Annual landings in the last ten years have averaged approximately 30 million pounds. During this period 50% of the annual catch is landed in the first 15-22 days (D. Pezzack ,2010, personal communication) with an average of 3.75 to 5.5 pounds per trap per day at the start of the season. Early season catch rates are approximately ten times those observed in SNE in recent years. When compared to the Maine fishery, LFA 34 has approximately 1/5 the fishermen and 1/10 the traps as Maine.

Although trap reductions may improve profits to some fishermen, they have the most immediate negative impact on those who are fishing all their gear in the most efficient means possible. Unintended negative impacts may also be felt by deck hands, whose services may no longer be required by captains pulling less gear. The perceived economic effects of trap reductions are open to wide debate and have been the topic of many past LCMT deliberations. Trap reductions coupled with a transferability system may improve profits to fishermen and would provide a mechanism for some fishers to survive a stock wide 75% reduction in the exploitation rate.

V. SIZE LIMITS

The TC does not recommend using additional gauge increases/decreases as the sole means to reduce exploitation in the SNE stock. The TC explored the development of a uniform size

window to balance restrictions that approximate equivalent reductions for areas that are dominated by smaller (inshore) and larger (offshore) lobster. However, at the size limits estimated (3 1/2" - 3 3/4" or 3 7/8" for a 50% reduction and 3 1/2" - 3 5/8" or 3 3/4" for a 75% reduction), the fishery would be targeting a very narrow gauge range, 1/4 - 3/8" to achieve a 50% reduction and 1/8-1/4" for a 75% reduction. This would result in extremely high discard rates (approximately 80 to 90 %; Table 8), causing increased stress on lobster due to trapping, handling, and temperature fluctuations and exposure to predation while being hauled to the surface.

Size limits can lead to increased egg production. The minimum gauge size can be set to achieve a desired level of egg production before lobsters are legally susceptible to harvest. SNE sea sampling data indicate approximately 27% of mature female lobster are egg bearing annually (Table 9). The TC does not recommend managing the fishery solely through minimum gauge restrictions because it does not reduce the fisheries' current reliance on newly recruited lobster. At high exploitation rates there would still be complete dependence on newly recruited lobster to sustain the resource and the fishery. Under this scenario annual fluctuations in recruitment can create an unstable fishery and recruitment shortfall, as has occurred in SNE.

In addition, minimum size limits can select for slower growing individuals and may cause evolutionary changes to the population (Conover and Munch, 2002; Williams and Shertzer, 2004). The areas of SNE that have had the greatest effort have the smallest sized lobster. In contrast, maximum size limits can provide protection against recruitment variation because large lobsters have proportionally more eggs which have a greater rate of survival. A pool of large lobster would provide a buffer against recruitment variations and dependence on first time spawners. Additionally, it will conserve the genes of fast growing individuals in the population.

The maximum gauge restriction raises a concern because it will have the biggest impact on offshore fishermen where there is a higher proportion of larger lobster. Lobster above the maximum size represent a permanent loss of yield to the fishery. In inshore areas, where exploitation rates are high, very few lobster live long enough to reach the current maximum size limit (5 1/4 inch). However, if fishing rates were reduced in high exploitation areas then more lobster may survive to the maximum size. Despite these concerns the fishery would benefit from increased egg production and protection from recruitment variation.

However, uniform minimum and maximum gauge sizes in all areas would be desirable to minimize stock assessment uncertainty and social, political, and enforcement problems. In addition, concerns have been raised about diminished conservation value of non-uniform size limits if there is movement of lobster between jurisdictions. However, a uniform gauge will have varying impacts due to differences in lobster size distribution among areas, which varies greatly among areas in SNE. This can be seen in the plot of sea and port samples by LCMA and NMFS statistical area (Figure 4 and Appendix 2B). This variation is due to the different LCMA gauge regulations, population characteristics, and sample size. In general, the size distributions of lobster in the inshore LCMA's (2, 4, and 6) are smaller than off shore (LCMA 3) (Figures 5 and 6). The one exception is lobster sampled in LCMA 5 whose size distribution is much larger than the distributions of the other inshore LCMA's and more similar to distributions seen offshore (Figures 5 and 6).

Due to this geographic variation in size distribution, changes in gauge size will affect LCMAs differently. Increases to the minimum gauge while holding the maximum size at 5 ¼” will largely affect the inshore fishery. Decreases in the maximum gauge will mainly affect the offshore fishery (Table 10). To develop a uniform minimum and maximum size limit that would reduce both the inshore and offshore landings by similar proportions, the minimum size limit inshore would need to increase and the maximum size limit offshore would need to decrease. Of the combinations examined in Table 2, a minimum size of 3 ½” and a maximum size between 3 ¾ and 3 ⅞ would generally result in a 50% reduction of landings and a minimum size of 3 ½” and a maximum size between 3 ¾ and 3 ⅞ would generally result in a 75% reduction of landings.

The TC has serious concerns about the use of a minimum and maximum size limit as the sole means of achieving a reduction in exploitation. At the size limits estimated above, the fishery would be fishing on a very narrow range of size, ¼ - ⅜” for 50% reduction and ⅛-¼” for a 75% reduction. This would result in extremely high discard rates, of approximately 80 to 90% (Table 8). This is an additional 13 to 24 % above the current discard rate. While these lobster would be protected from harvest, the high rate of discard would cause increased stress on lobster due to trapping, handling, and exposure to temperature fluctuations while being hauled to the surface. Lobster may also experience increased exposure to predators while being discarded. In addition, the efficiency of the fishery would decrease significantly since an increased percentage of the lobster caught would need to be discarded. It may be possible to modify trap gear to decrease the discard rate by increasing the vent size and decreasing the entrance size, but this would still affect the efficiency of the fishery. The TC does not recommend that changes to the minimum and maximum size limits be used as a primary management tool due to the concerns about the increased discard rate and decreased efficiency in the fishery. However, they feel that changes to the minimum and maximum size could have substantial benefit if used in a complimentary fashion with other management tools.

VI. MALE ONLY/V-NOTCH FISHERY

The TC does not recommend a management strategy that focuses solely on single sex harvest. This type of management would be precedent setting for American lobster and the TC can not predict the affect this management strategy would have on the reproductive dynamics of the SNE stock. There are several areas within SNE, where the sex ratio is already highly skewed toward females.

Male Only Fishery

The TC strongly cautions the Board about the use a of male-only harvest strategy. While it would likely cause a substantial reduction in catch (40 to 80%), this reduction would not be equitable among LCMA’s and states, nor would it be equitable within LCMA’s, states, and regions. This strategy would likely lead to increases in effort, and to changes in the distribution of fishing gear which would lead to gear conflicts. The impact of a highly female skewed sex ratio on American lobster populations is largely unknown, but could be damaging to the reproductive dynamics of the SNE stock.

American lobster are known to segregate by gender seasonally. In general, male lobster tend to be more resilient to changes in temperature and salinity and as a result are more likely to be found in shallow estuarine waters and tend to make smaller scale seasonal migrations. Female lobster are more likely to be found in deeper water where temperature and salinity are more stable. This phenomenon appears to be related to behavioral thermoregulation, whereby egg-bearing females undergo seasonal migrations along depth contours to maintain stable water temperature for developing embryos. As a result of these sex specific behavioral tendencies, the bathymetry and oceanographic conditions of a specific location have a large influence on the population demographics (density, gender, maturity status, molt stage) of the lobster living there. Ultimately it is these demographics which determine the composition of the catch in these areas.

The sex ratios of the commercial catch from 2007 and 2009 were examined spatially and temporally to determine the impact of a male-only harvest program on the SNE lobster fishery, and it's potential effectiveness as a management strategy. The percentage of the commercial catch comprised of females in the SNE stock varies substantially among seasons, among statistical areas, and even within statistical areas (Table 11). The shallower embayments tend to be closer to a 1:1 female to male sex ratio, or even slightly male dominated; the deeper portions of inshore waters and nearshore waters tend to be female dominated; and the SNE canyons tend to be male dominated. As a result the impact of a male-only harvest strategy on the Southern New England lobster fishery would be dramatically different among LCMA's, within segments of LCMA's, within segments of statistical areas, and within states. As expected, the reduction in catch would be most dramatic in areas with female dominated sex-ratios. For example a male only fishery would result on average in > 80% reduction in catch within statistical area 538, whereas it would result in only a 51% reduction in catch in central Long Island Sound. These differences in sex ratio within specific portions of LCMA's would likely cause some fishermen to move their gear into areas with higher proportions of males to obtain higher catch rates. Therefore it is not possible for the TC to accurately predict the overall impact of a male-only harvest strategy on the SNE stock, a specific LCMA, or even within a state.

The TC also has concern that a male-only harvest strategy will cause fishermen to increase their effective effort (trap hauls) to compensate for the loss of catch. This would cause increased pressure on the male portion of the stock, and would also cause increased stress to female lobster that will likely be caught and released multiple times in the process. The TC also anticipates that a male-only harvest strategy will substantially skew the sex-ratio toward females. This raises additional concern about potential problems with sperm limitation within the Southern New England stock. There is no concrete evidence of sperm limitation occurring in American lobster, however, male-only harvest strategies have been linked sperm limitation and disruption of the reproductive output of opilio crabs (Sainte-Marie et al 2008) and spiny king crabs (Sato *et al.* 2007).

V-Notch Fishery

The TC does not have any empirical evidence to support that a mandatory v-notch program or a mitigation style v-notch program would be successful at reducing the exploitation rate of the total SNE stock by 50 or 75%. The TC reiterates its concerns about a management strategy that focuses solely on females and cautions the Board about using a management strategy that requires the fishery to maintain substantial harvest rates to be successful.

It is difficult for the TC to provide meaningful advice relative to the effectiveness of a v-notch program without having specific details about the nature of any proposed program. Currently, the observed proportion of v-notched female lobster in the overall SNE catch is low. Those that are observed are the result of remnants of the North Cape Oil Spill Mitigation Program, the CT v-notch management initiative in 2008, as well as result of a small number of fishermen actively v-notching. The current observed rates of v-notching in the SNE stock do not reflect the results of any on-going management program.

A mandatory v-notch program would have the potential to substantially reduce exploitation on the female portion of the stock if there were good compliance with this management measure. In Maine, where v-notching has been a “management staple” since the late 1940’s and the fishery has been extremely productive in the last decade, v-notching protects roughly 35% of the exploitable female population from harvest. The amount protected in the SNE fishery by this type of management program would depend on the exploitation rate, the rate of compliance, and the length of time a female would be protected by the v-notch definition used. Given the condition of the SNE fishery the TC warns that there would be substantial financial disincentive to participate in a mandatory v-notch program and that this management measure is difficult to enforce.

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Tables

Table 1. 2007-2009 Average State SNE Landings (Pounds) By Month

State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total	%Total
Connecticut	26,446	9,946	9,511	18,335	32,943	60,792	133,432	90,873	24,353	7,427	16,789	36,869	467,714	9%
Massachusetts	20,375	13,165	21,326	35,550	54,358	78,795	146,226	151,753	120,858	96,033	55,594	33,431	827,465	15%
New York	26,647	7,313	10,329	25,018	54,613	94,751	196,153	171,495	106,399	65,008	43,790	31,547	833,062	15%
NJ-DE-MD-VA	19,658	12,215	14,059	45,132	79,463	111,265	123,702	105,959	82,176	88,608	64,349	45,107	791,693	14%
Rhode Island	64,302	28,975	31,619	64,956	171,720	317,532	503,107	441,070	336,239	281,536	194,301	115,556	2,550,912	47%
Grand Total	157,428	71,614	86,845	188,991	393,097	663,136	1,102,619	961,149	670,025	538,612	374,822	262,510	5,470,846	

Table 2. SNE Stock Quota by state based on a 50% reduction in the average landings from 2007-2009

State	Quota
Connecticut	233,857
Massachusetts	413,733
New York	416,531
NJ-DE-MD-VA	395,847
Rhode Island	1,275,456
Grand Total	2,735,423

Table 3. SNE Stock Quota by state based on a 75% reduction in the average landings from 2007-2009

State	Quota
Connecticut	116,928
Massachusetts	206,866
New York	208,266
NJ-DE-MD-VA	197,923
Rhode Island	637,728
Grand Total	1,367,712

Table 4. 2007-2009 Average SNE Landings (Percentage) By Month and LCMA

LMA	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
2	3.1%	1.4%	1.8%	3.4%	5.6%	13.3%	25.2%	18.1%	10.9%	7.3%	5.4%	4.6%	100%
3 & 5	2.0%	1.1%	1.5%	2.9%	7.5%	10.7%	14.5%	16.5%	15.5%	14.3%	9.0%	4.4%	100%
4	2.8%	1.5%	1.7%	5.9%	9.7%	14.2%	17.1%	14.7%	10.6%	8.9%	7.2%	5.7%	100%
6	4.6%	1.5%	1.5%	3.7%	7.5%	12.7%	27.2%	20.5%	7.8%	3.8%	3.8%	5.5%	100%
All of SNE	2.9%	1.3%	1.6%	3.5%	7.2%	12.1%	20.2%	17.6%	12.2%	9.8%	6.9%	4.8%	100%

Table 5. Percent of Annual Landings Occurring in Various Seasons by LCMA and for the Total Stock

LCMA	Jul-Sept	Jun- Sept	May-Sept	Jun-Oct	Jul-Nov
2	54%	67%	73%	75%	67%
6	56%	68%	76%	72%	63%
4	42%	57%	66%	66%	59%
3 & 5	46%	57%	65%	71%	70%
All of SNE	50%	62%	69%	72%	67%

Table 6. 2007-2009 Average Landings (pounds) by Statistical Area

Stat Area	Total Pound	%Total
537	1,655,963	30%
538	184,546	3%
539	1,171,210	21%
611	1,098,707	20%
612	431,461	8%
613	75,207	1%
614-615	118,222	2%
616-533	452,309	8%
621-622	123,879	2%
623	127,077	2%
624-633	32,266	1%
Total	5,470,846	100%

Table 7. 2007-2009 Average Landings (pounds) by LCMA

LCMA	Total Pounds	%Total
2	1,476,313	27%
3	2,237,475	41%
4	506,701	9%
5	165,912	3%
6	1,084,445	20%
Total	5,470,846	100%

Massachusetts:	Stat Area 538 and 539 landings were assigned to LMA 2; Stat Area 537 landings were assigned to LMA 3.
Rhode Island:	Landings from all stat areas were assigned to LMA based on annual tallies of license holders' known fishing practises and permit history.
Connecticut:	Stat Area 611 landings were assigned to LMA 6 except those from subarea 149 which were assigned to LMA 2.
New York:	Landings from all stat areas were assigned to LMA based on annual tallies of license holders' known fishing practises and permit history.
New Jersey:	Inshore Stat Area landings were assigned to LMA 5 (614 & 615), LMA 4 (612 & 613), and LMA 6 (611); all other landings were assigned to LMA 3.
DE, MD, VA:	Compliance report total reported landings for 2008 and 2009 were apportioned to Stat Areas based on NMFS partial reporting; (2008: 42,960 lbs expanded to 52,570 lbs; 2009: 30,390 lbs expanded to 49,861 lbs). 2007 landings as reported in Assessment. Inshore Stat Area landings were assigned to LMA 5 (614,615,621,625,631,635) or LMA 4 (612); all other landings were assigned to LMA 3.

Table 8. Percentage of catch discarded due to size limit changes, and percentage increase of discards over current levels.

	LCMA 2		LCMA 3		LCMA 6		SNE	
		Addn'l bycatch above current levels		Addn'l bycatch above current levels		Addn'l bycatch above current levels		Addn'l bycatch above current levels
% Released at Current Slot Limit	70%		59%		76%		66%	
% of total catch released at:								
Alternative Minimum Sizes (5-1/4" max)								
> 3-1/2" (88.9 - 133.4mm)	82%	12%	59%	0%	88%	12%	73%	7%
> 3-17/32" (89.7 - 133.4mm)	84%	14%	62%	3%	90%	14%	75%	9%
> 3-9/16" (90.5 - 133.4mm)	86%	16%	65%	5%	92%	16%	77%	11%
> 3-19/32" (91.3 - 133.4mm)	87%	17%	65%	6%	93%	17%	78%	12%
> 3-5/8" (92.1 - 133.4mm)	91%	21%	71%	11%	95%	19%	82%	16%
> 3-21/32" (92.9 - 133.4mm)	92%	23%	73%	14%	96%	20%	84%	18%
> 3-3/4 (95.3 - 133.4 mm)	96%	26%	80%	21%	98%	23%	89%	23%
3-3/8 Minimum & Alternative Maximum								
> 3-3/8" - 4" (85.7 - 101.6mm)	71%	1%	42%	-17%	76%	0%	59%	-7%
> 3-3/8" - 3-5/8" (85.7 - 92.1mm)	79%	9%	66%	6%	81%	5%	73%	7%
> 3-3/8" - 3-17/32" (85.7 - 89.7mm)	86%	16%	74%	15%	86%	10%	80%	14%
> 3-3/8" - 3-1/2" (85.7 - 88.9mm)	88%	18%	77%	18%	88%	12%	83%	17%
> 3-3/8" - 3-15/32" (85.7 - 88.1mm)	91%	21%	80%	21%	90%	14%	85%	19%
> 3-3/8" - 3-7/16" (85.7 - 87.3mm)	94%	24%	85%	25%	93%	17%	89%	23%
3-1/2 Minimum & Alternative Maximum								
> 3-1/2" - 5" (88.9 - 127.0mm)	82%	12%	60%	0%	88%	12%	73%	7%
> 3-1/2" - 4" (88.9 - 101.6mm)	83%	13%	66%	7%	88%	13%	76%	10%
> 3-1/2" - 3-7/8" (88.9 - 98.4mm)	83%	13%	71%	12%	89%	13%	79%	13%
> 3-1/2" - 3-3/4" (88.9 - 96.8mm)	86%	16%	79%	20%	90%	14%	84%	17%
> 3-1/2" - 3-5/8" (88.9 - 92.1mm)	91%	21%	89%	30%	93%	17%	90%	24%
> 3-1/2" - 3-19/32" (88.9 - 91.3mm)	93%	23%	92%	32%	94%	19%	93%	26%

Table 9. 2007 - 2009 Percent of egg bearing females 1-5mm below legal size

State	2007	2008	2009	2007-2009 Average
CT	41.7%	29.3%	30.1%	33.2%
MA	31.5%	38.7%	33.8%	34.7%
NJ	NA	12.5%	13.2%	12.8%
NY	17.2%	13.2%	15.5%	15.3%
RI	32.8%	37.8%	42.5%	37.7%
Average SNE	30.8%	26.3%	27.0%	26.7%

Table 10. Percentage Reduction in Landings due to size limit changes (gray boxes indicate where there is a > 50% reductions and bolded boxes where there is > 75% reductions).

Alternative Minimum Sizes (5-1/4" max)	LCMA 2	LCMA 3	LCMA 4	LCMA 5	LCMA 6	SNE
> 3-1/2" (88.9 - 133.4mm)	-37.1%	-3.9%	-26.3%	-7.1%	-45.6%	-22.8%
> 3-17/32" (89.7 - 133.4mm)	-45.3%	-8.4%	-32.1%	-9.4%	-54.0%	-28.5%
> 3-9/16" (90.5 - 133.4mm)	-53.4%	-13.3%	-39.0%	-11.7%	-61.9%	-35.0%
> 3-19/32" (91.3 - 133.4mm)	-62.8%	-17.8%	-46.9%	-14.5%	-70.8%	-42.2%
> 3-5/8" (92.1 - 133.4mm)	-69.8%	-22.8%	-53.9%	-16.5%	-75.0%	-48.5%
> 3-21/32" (92.9 - 133.4mm)	-75.1%	-27.4%	-59.9%	-18.6%	-79.4%	-54.0%
>3-3/4 (95.3 - 133.4 mm)	-88.0%	-41.4%	-75.7%	-27.3%	-90.4%	-68.7%
3-3/8 Minimum & Alternative Maximum						
> 3-3/8" - 4" (85.7 - 101.6mm)	-1.9%	-26.2%	-5.7%	-55.3%	-2.1%	-11.1%
> 3-3/8" - 3-5/8" (85.7 - 92.1mm)	-30.2%	-75.6%	-46.1%	-83.5%	-25.0%	-51.1%
> 3-3/8" - 3-17/32" (85.7 - 89.7mm)	-54.7%	-90.4%	-67.9%	-90.6%	-46.0%	-71.3%
> 3-3/8" - 3-1/2" (85.7 - 88.9mm)	-62.9%	-94.9%	-73.7%	-92.9%	-54.4%	-77.0%
> 3-3/8" - 3-15/32" (85.7 - 88.1mm)	-70.3%	-97.7%	-78.8%	-94.8%	-63.4%	-81.9%
> 3-3/8" - 3-7/16" (85.7 - 87.3mm)	-79.4%	-99.4%	-85.6%	-96.8%	-74.5%	-87.8%
3-1/2 Minimum & Alternative Maximum						
> 3-1/2" - 5" (88.9 - 127.0mm)	-37.1%	-5.8%	-26.4%	-12.6%	-45.6%	-23.4%
> 3-1/2" - 4" (88.9 - 101.6mm)	-39.0%	-31.3%	-32.0%	-62.5%	-47.7%	-34.1%
> 3-1/2" - 3-7/8" (88.9 - 98.4mm)	-41.4%	-44.7%	-38.0%	-69.8%	-50.1%	-41.2%
> 3-1/2" - 3-3/4" (88.9 - 96.8mm)	-49.1%	-67.7%	-50.6%	-79.8%	-53.0%	-55.1%
> 3-1/2" - 3-5/8" (88.9 - 92.1mm)	-67.3%	-80.8%	-72.5%	-90.7%	-70.6%	-74.1%
> 3-1/2" - 3-19/32" (88.9 - 91.3mm)	-74.4%	-86.1%	-79.4%	-92.7%	-76.7%	-80.6%

Table 11. Percentage of the “marketable” comprised of female lobsters by statistical areas – 2007–2009; a.) SA 611 – LMA 6, b.)SA 538 – LMA 2, c.) SA 539 – LMA 2, d.) SA 537 – LMA 2 & 3, e.) SA 616 – LMA 3.

A. Connecticut - Stat Area 611 - inshore

% Female - marketable lobsters only			
	2007 - 2009 Average		
	EAST	CENTRAL	WEST
Jan	47%	38%	40%
Feb	64%		44%
Mar	71%		
Apr			
May		49%	33%
Jun	77%	40%	83%
Jul	73%	43%	52%
Aug	85%	72%	78%
Sep	79%	80%	45%
Oct	57%		
Nov	51%	71%	42%
Dec	44%	28%	18%

*box is gray where the sample size < 50

B. Massachusetts Stat Area 538 - inshore

% Female - marketable lobsters only			
	2007	2008	2009
May	77%	67%	82%
Jun	83%	83%	90%
Jul	73%	57%	77%
Aug	85%	72%	70%
Sep	83%	90%	
Oct	86%	93%	89%
Nov	86%	91%	93%

C. Rhode Island - Stat Area 539 - inshore

% Female - marketable lobsters only						
	2007		2008		2009	
	NARRAGANSETT BAY	RI SOUND	NARRAGANSETT BAY	RI SOUND	NARRAGANSETT BAY	RI SOUND
Jan	53%	55%	52%	76%	54%	74%
Feb	26%	55%	51%	59%	38%	93%
Mar	28%	57%	50%	39%	37%	71%
Apr	39%	47%	52%	72%	40%	48%
May	24%	38%	36%	88%	29%	61%
Jun	52%	58%	34%	59%	18%	37%
Jul	70%	65%	49%	41%	51%	42%
Aug	69%	67%	51%	81%	60%	51%
Sep	70%	69%	44%	84%	46%	88%
Oct	42%	74%	32%	88%	31%	85%
Nov	37%	88%	24%	92%	23%	85%
Dec	49%	80%	49%	84%	28%	88%

D. Rhode Island - Stat Area 537- offshore

% Female - marketable lobsters only			
	2007	2008	2009
Jan	27%	25%	18%
Feb	32%	32%	40%
Mar	28%	29%	27%
Apr	33%	39%	25%
May	32%	28%	25%
Jun	27%	23%	25%
Jul	21%	19%	27%
Aug	26%	27%	28%
Sep	42%	30%	37%
Oct	31%	40%	38%
Nov	53%	63%	39%
Dec	51%	41%	42%

E. Rhode Island - Stat Area 616- offshore

% Female - marketable lobsters only			
	2007	2008	2009
Jan		40%	24%
Feb		39%	20%
Mar		38%	33%
Apr		28%	39%
May		22%	34%
Jun	21%	16%	21%
Jul	22%	24%	17%
Aug	22%	34%	33%
Sep	45%	40%	36%
Oct	40%	31%	37%
Nov	39%	31%	38%
Dec	33%	32%	30%

Figures

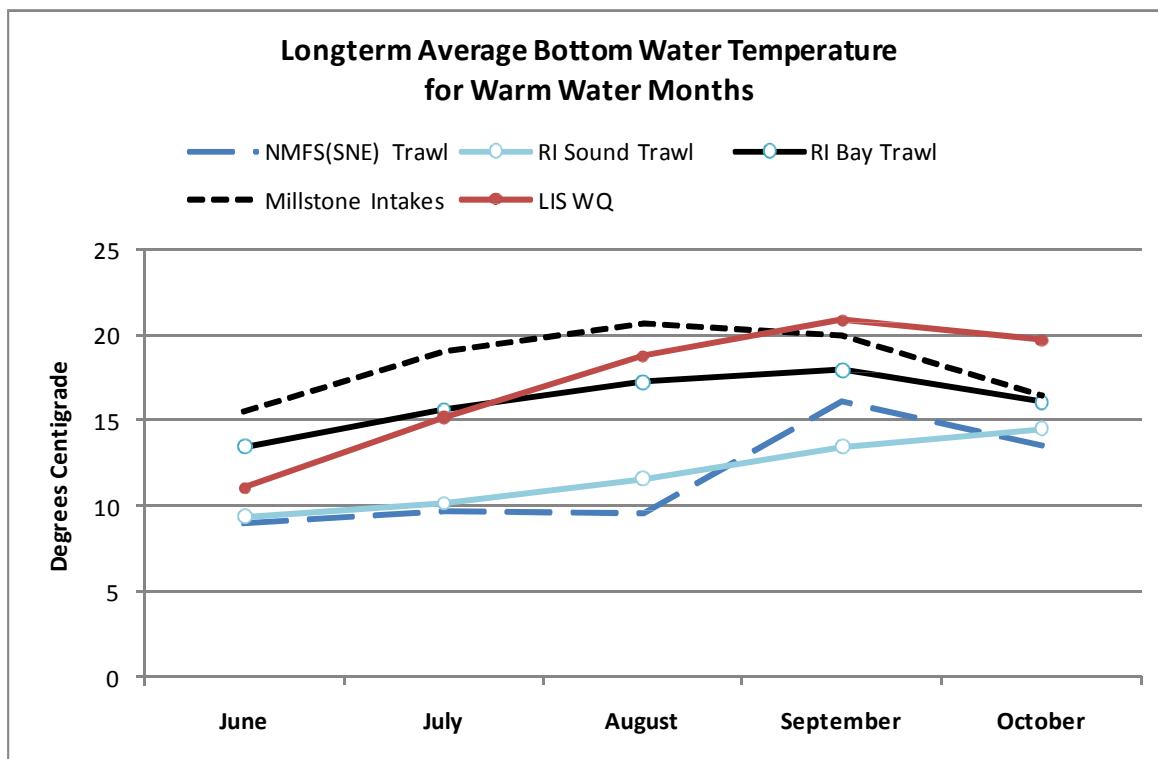


Figure 1. Longterm average bottom water temperature for warm water months.

Average temperatures ($^{\circ}\text{C}$) taken is four longterm monitoring programs: NMFS bottom trawl survey at SNE sites (1964-2009); RI Trawl Survey at RI Sound sites and Lower Narragansett Bay sites (1995-2009); Millstone Power Station intakes in eastern Long Island Sound (1976-2009); and CT DEP Long Island Sound (LIS) Water Quality (WQ) Survey (1991-2008).

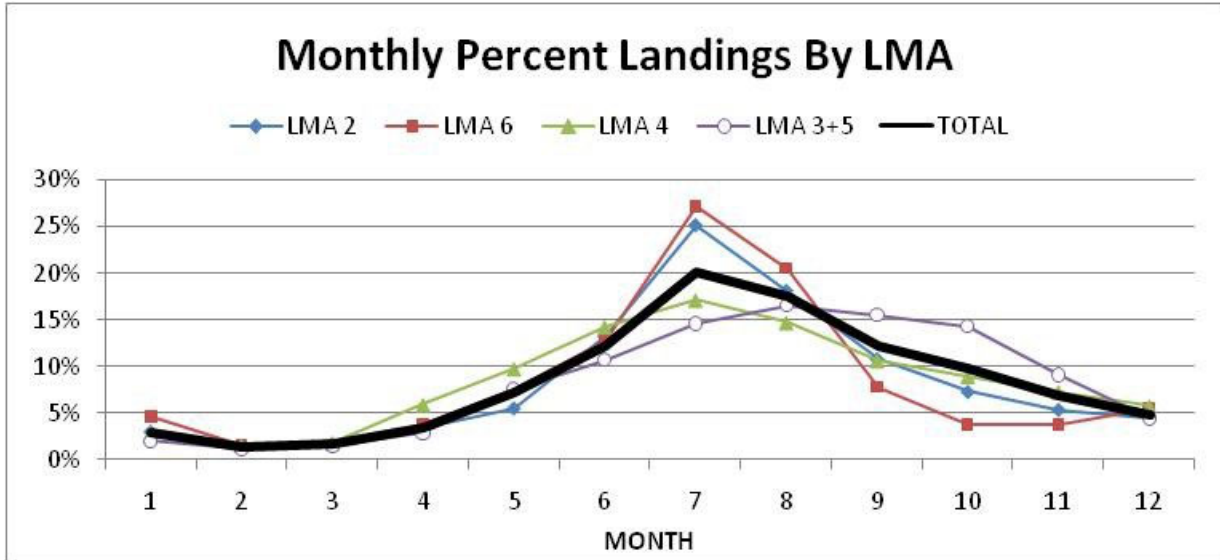


Figure 2. 2007-2009 Monthly Lobster Landings in SNE by LCMA.

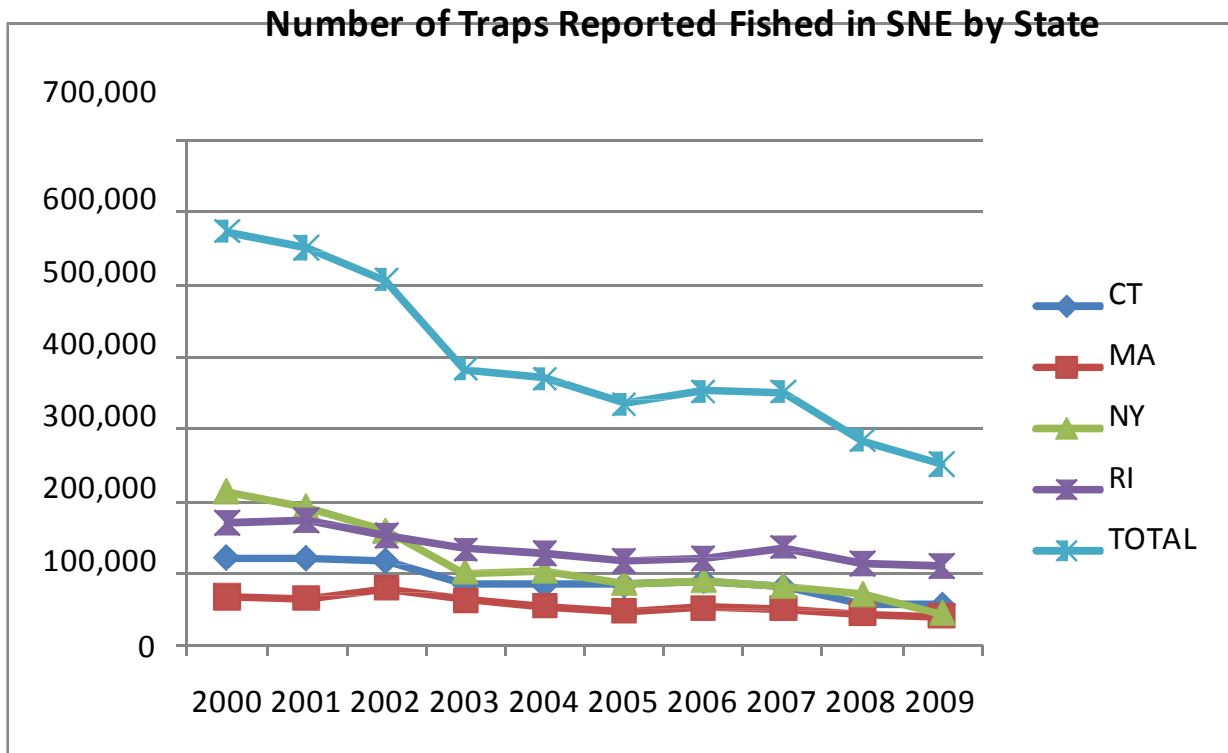


Figure 3. Number of traps reported fished from 2000-2009 by state in SNE (the 2009 number for CT was not available at the time of the report, the 2008 number was used as a proxy for 2009. This number will be updated when the 2009 number is available).

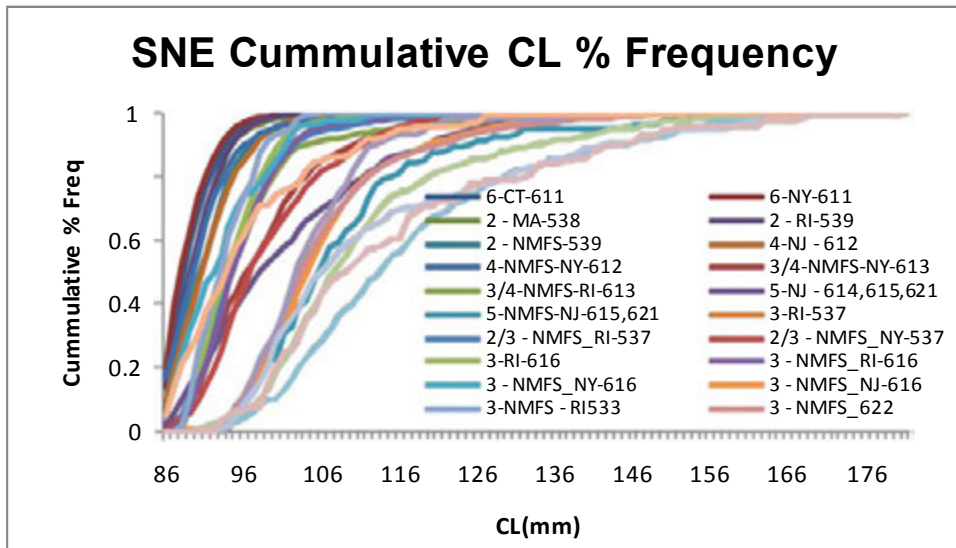


Figure 4. Cumulative % frequency of SNE sea and port samples by agency, LCMA and stat area

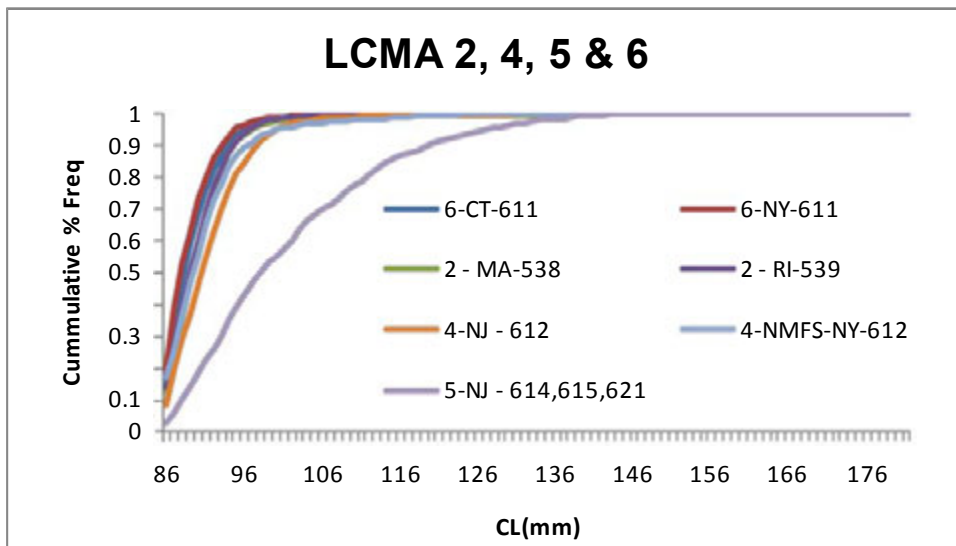


Figure 5. Inshore LCMA size distribution.

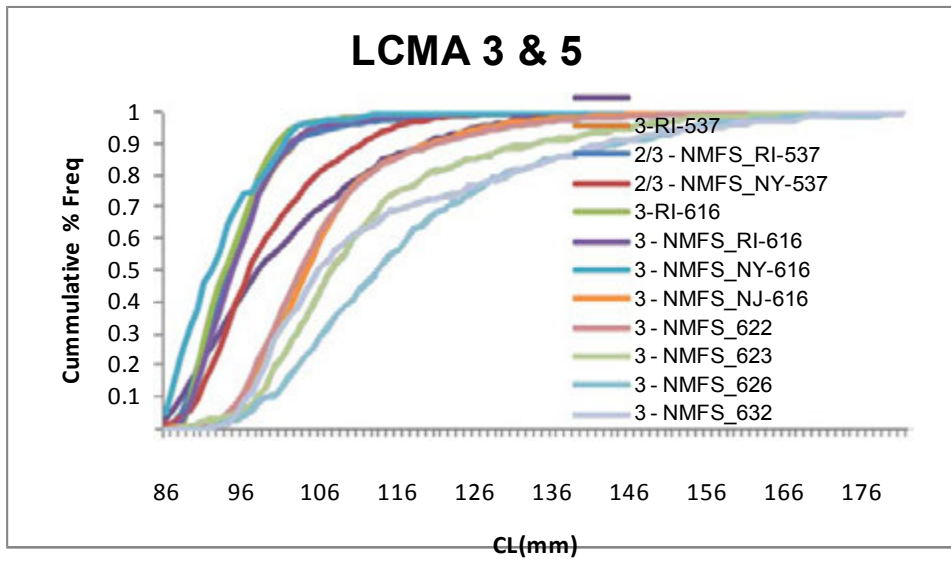


Figure 6. Offshore size distribution (LCMA 3 and 5)



Atlantic States Marine Fisheries Commission

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Douglas E. Grout (NH), Chair

James J. Gilmore, Jr., (NY), Vice-Chair

Robert E. Beal, Executive Director

Vision: Sustainably Managing Atlantic Coastal Fisheries

February 26, 2016

John Bullard, Regional Administrator
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, Massachusetts 01930

Dear Mr. Bullard,

On behalf of the American Lobster Management Board (Board), the Atlantic States Marine Fisheries Commission (Commission) is requesting NOAA Fisheries implement 100% trip level reporting for all federally licensed lobster vessels in order to increase data on catch composition and the location of lobster fishing effort in the EEZ.

At the November 2015 meeting, the Board tasked the American Lobster Technical Committee (TC) with re-evaluating the problem statement in *Section 2.1.3 Data Collection* in Addendum XVII (2012) to Amendment 3 to the Interstate Fishery Management Plan for American Lobster. The section focuses on deficiencies in landings, effort, and biological data which limit the effectiveness of assessment and management, particularly in Southern New England (SNE). Addendum XVII states that catch disposition in federal waters of the SNE lobster fishery is poorly characterized and harvester reporting systems as a whole do not have complete coverage of all vessels participating in the fishery.

In February 2016, the TC presented their evaluation of this issue and found many of the same data gaps still exist in the lobster fishery. Notably, the TC found the resolution of biological data throughout federal waters to be lacking, especially in comparison to state waters where ventless trap surveys are conducted. Additionally, the TC stated that catch disposition in federal waters of the SNE lobster fishery continues to be poorly characterized as there are mixed levels of reporting in the stock. Federally permitted lobster vessels who hail out of New Jersey, Delaware, Maryland, and Virginia are not required to submit harvest reports to NOAA Fisheries or their respective state programs. This is particularly concerning given the offshore portion of the SNE fishery is becoming increasingly scrutinized as lobster abundance inshore continues to decrease. Fishermen from New Hampshire through New York, as a requirement of their state permit, have 100% harvester reporting programs through logbook or VTR programs.

In order to improve the resolution of data in federal waters, the TC recommended in 2012, and again in 2016, that NOAA Fisheries implement 100% trip level reporting for all federally licensed vessels. The Commission is requesting NOAA Fisheries make this change to improve data on catch and the location of effort in the federal fishery. Given the offshore

portion of the SNE fishery supports many of the remaining pockets of lobster fishing effort, this action is necessary to support effective management.

The Commission asks NOAA Fisheries to implement 100% trip level reporting for all federally licensed vessels. The Commission remains dedicated to improving lobster management, and will be happy to assist NOAA Fisheries to implement this request. Please let me know if you need additional information from the Commission regarding this request.

Sincerely,



Robert E. Beal

cc: Tom Nies, Executive Director NEFMC
American Lobster Management Board

16-007



ATLANTIC OFFSHORE LOBSTERMEN'S ASSOCIATION

Grant Moore, President
exec@offshorelobster.org

David Borden, Executive Director
dborden@offshorelobster.org

June 28, 2016

Dave Gouveia
Marine Mammal and Sea Turtle Conservation Coordinator
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930

Dear Dave,

As representatives of the New England lobster fleet, we are writing to provide comments relevant to the ALWTRT Monitoring Work Group's efforts to improve fisheries and whale data components of the co-occurrence model. We agree there is a need for better data and understand that current data deficiencies leave both the industry and protected resources vulnerable. However, we have concerns with the Work Group's approach to date.

Primarily, we are concerned that the Protected Resources Division's approach may not fully consider existing and developing data collection initiatives, and lead to redundant or conflicting reporting requirements for fishermen. Specifically, we urge you to develop any new requirements in collaboration with GARFO and NEFSC's collaborative Fishery Dependent Data Committee, Fishery Dependent Data Collection Modernization Project, and the Atlantic Coastal Cooperative Statistics Program (ACCSP). We also believe that Protected Resources should continue to push for inclusion of more current and comprehensive data on whales. We are concerned that use of historic sightings alone will not adequately inform this issue.

The Fishery Dependent Data Collection Modernization Project has been described as a holistic review of data collection methods and systems across New England and the Mid-Atlantic regions, and is slated to implement revised data requirements in 2017. We believe that this effort, while federal in nature, is taking into consideration state partner input through the ASMFC process and ACCSP data warehouse. It seems terribly counterproductive to develop TRT specific data and permitting requirements insular to this broader NOAA/regional effort. We ask that your staff investigate the possibility of integrating with the Modernization Project and report your findings at the next TRT meeting.

Integration with the Modernization Project, which would include consideration of ACCSP programs, may be the best approach to ensure that industry can provide the required information without it being redundant, overly burdensome, or in conflict with other state and federal reporting. We are happy to consider additional reporting to better populate the co-occurrence model, but

additional requirements must be appropriate in scope and scale and preferably integrated with current permitting and reporting processes, rather than be yet another form to complete.

Please feel free to contact us to discuss further.

Sincerely,

David Borden, Executive Director
Atlantic Offshore Lobstermen's Association

Beth Casoni, Executive Director
Massachusetts Lobstermen's Association

Patrice McCarron, Executive Director
Maine Lobstermen's Association

CC:

Peter Burns, NOAA NMFS GARFO

John Bullard, NOAA NMFS GARFO

Tom Nies, NEFMC

Robert Beal, ASMFC

Mike Cahall, ACCSP

Draft Document for Board Review. Not for Public Comment.

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM II TO THE INTERSTATE FISHERY MANAGEMENT PLAN FOR JONAH CRAB

Coastwide Standard for Claw Landings



Vision: Sustainably Managing Atlantic Coastal Fisheries

This draft document was developed for Management Board review and discussion at the August 2016 meeting week. This document is not intended to solicit public comment as part of the Commission/State formal public input process. However, comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. Also, if approved, a public comment period will be established to solicit input on the issues contained in the document.

June 2016

Draft Document for Board Review. Not for Public Comment.

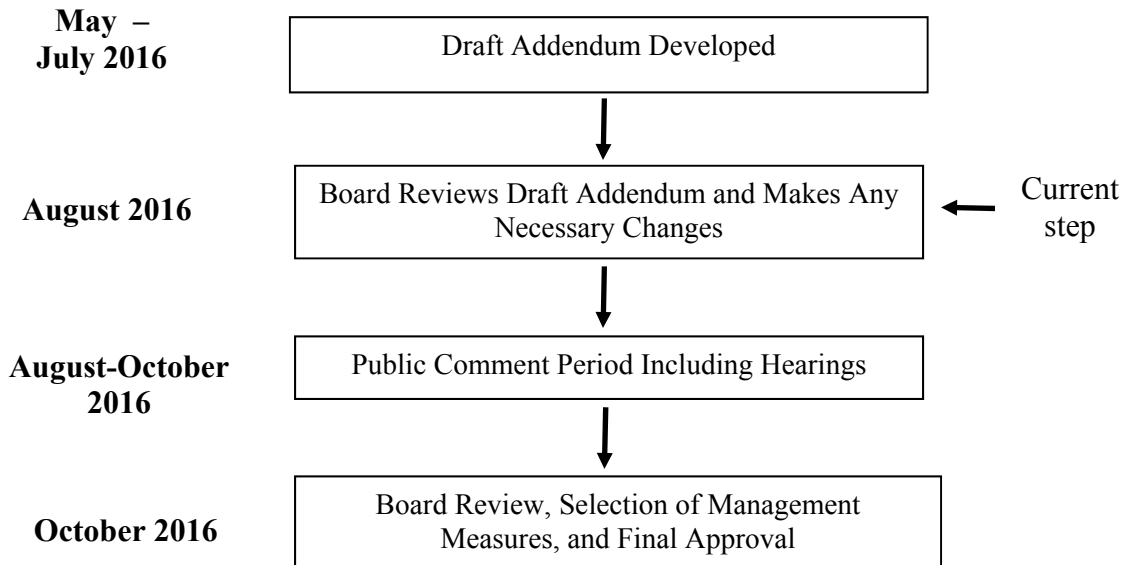
Public Comment Process and Proposed Timeline

At its May 2016 meeting, the American Lobster Management Board (Board) discussed concerns over the equity of the current claw provision in the Jonah Crab Fishery Management Plan (FMP). The Board initiated Draft Addendum II to consider establishing a coastwide standard for claw landings in the Jonah crab fishery.

The public is encouraged to submit comments regarding the proposed management options in this document at any time during the addendum process. The final date comments will be accepted is **Month Day at 5:00 p.m. EST**. Comments may be submitted by mail, email, or fax. If you have any questions or would like to submit comments, please use the contact information below.

Mail: Megan Ware
Atlantic States Marine Fisheries Commission
1050 N. Highland St. Suite 200A-N
Arlington, VA 22201
Fax: (703) 842-0741

Email: mware@asmfc.org
(Subject line: Jonah Crab
Draft Addendum II)



Draft Document for Board Review. Not for Public Comment.

1.0 Introduction

The Atlantic States Marine Fisheries Commission (ASMFC) coordinates the interstate management of Jonah crab (*Cancer borealis*) in state waters (from 0-3 miles offshore). ASMFC manages Jonah crab through an Interstate Fishery Management Plan (FMP), which was approved in August 2015 under the authority of the Atlantic Coastal Fisheries Cooperative Management Act (1993). Management authority in the exclusive economic zone (EEZ), which extends from 3-200 miles offshore, lies with NOAA Fisheries. The management unit for Jonah crab includes the Atlantic states from Maine through Virginia. The biological range of the species is primarily from Newfoundland, Canada to Florida.

The American Lobster Management Board (Board) initiated Addendum II to the FMP to consider a coastwide standard for claw landings in the Jonah crab fishery. The FMP currently specifies a whole crab fishery with the exception of individuals from New Jersey, Delaware, Maryland and Virginia who can prove a history of claw landings before the June 2, 2015 control date. The FMP allows claw landings for these fishermen due to the historic practice of declawing Jonah crab in the Delmarva Peninsula. After final action was taken on the FMP, claw fishermen were identified in New York and Maine. In accordance with the FMP, these New York and Maine fishermen are required to land whole crabs.

Given concerns regarding the equity of the current claw provision (namely that some fishermen with a history of claw landings are allowed to continue this practice while others must land whole crabs) and the fact that the fishery is primarily executed in federal waters, the Board requested NOAA Fisheries provide regulatory guidance on the claw provision in the FMP. In a letter dated February 29, 2016, NOAA Fisheries highlighted potential challenges with implementing the current claw regulation since it does not provide equal opportunities to like participants across the fishery.

The purpose of this Draft Addendum is to consider modifications to the claw provision for Jonah crab. The Board is considering a range of options which would establish a coastwide standard for claw harvest in the Jonah crab fishery.

2.0 Overview

2.1 Statement of the Problem

The Jonah Crab FMP established a whole crab fishery with the exception of individuals from New Jersey, Delaware, Maryland, and Virginia, who can prove a history of claw landings before June 2, 2015. However, following approval of the FMP, claw fishermen from New York and Maine were identified. These individuals are currently only allowed to land whole crabs. Given concerns about the equity of the current claw provision, as well as potential challenges implementing the regulation in federal waters, the Board initiated this addendum to consider establishing a coastwide standard for claw harvest in the Jonah crab fishery.

2.2 Background

Jonah crab has long been considered a bycatch of the lobster industry; however, in recent years there has been an increase in targeted fishing pressure and demand for Jonah crab. Since the early 2000s, landings of Jonah crab have increased 650%, creating a mixed crustacean fishery that can target lobster or crab at different times of the year based on slight, legal gear modifications and small shifts in the areas in which traps are fished. This rapid increase in demand can be attributed to an increase in the price of other crab (such as Dungeness), creating a substitute market for Jonah crab, as well as a decrease in the abundance of lobsters in Southern New England, causing fishermen to supplement their income with Jonah crab. As a result of this growing demand, ASMFC approved a FMP for Jonah crab to support the implementation of a unified coastal management program which promotes the conservation and full utilization of the Jonah crab resource.

Landings in the commercial fishery fluctuated between approximately 2 and 3 million pounds throughout the 1990's but steadily rose to over 17 million pounds in 2014. A similar increase occurred in the economic importance of the fishery as ex-vessel value rose from roughly \$1.5 million in the 1990's to an estimated \$13 million in 2014. Landings in 2014 predominately came from Massachusetts (70.4%), followed by Rhode Island (24.5%).

While the majority of Jonah crab is harvested as whole crabs, fishermen from numerous states, including Maine, New York, New Jersey, Delaware, Maryland and Virginia land claws. Jonah crab claws are relatively large and can be an inexpensive substitute for stone crab claws. As a result, they can provide an important source of income for fishermen. Claws can also be harvested for personal consumption; however, these landings are not well documented. Small boat fishermen, especially in the Mid-Atlantic, harvest Jonah crab claws because they do not have a seawater storage tank on board to store whole crabs. As a result, landing claws avoids economic inefficiencies for this small fleet.

Jonah Crab Claw Landings

Information on the magnitude of the Jonah crab claw fishery is limited. As a result, it is unclear how many fishermen are landing claws or the magnitude of pounds being harvested. The primary obstacle in obtaining this information is that trip level harvester reporting has not been required in all jurisdictions. Furthermore, prior to the implementation of the Jonah Crab FMP, many states did not require trip-level dealer reporting to delineate between whole crabs and claws.¹ As a result, data on Jonah crab claw fishery is incomplete. Refer to Appendix 1 for a summary of state reporting in the Jonah crab fishery prior to the implementation of the FMP.

¹ As a part of the Jonah Crab FMP, states were required to implement Jonah crab dealer reporting which specifies market grade by June 1, 2016.

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Table 1 shows claw landings reported to the ACCSP Data Warehouse between 2010 and 2015. Total claw landings from 2010-2015 were just under 150,000 lbs; however, this is likely an underestimate given that Jonah crab dealer reporting has not always specified market grade and claws harvested for personal consumption are often not reported. Claws are primarily landed by pots and traps, with lobster pots accounting for 44% to 95% of the claw landings (a majority of pots and traps are not specified in the data reports so it is unclear what percentage of these landings are from lobster pots versus fish pots). Gill net and otter trawl fishermen comprise 2.7% of claw landings. When these gears encounter Jonah crab, fishermen harvest the claws because they are often forced to detach the claws in order to remove the crab from the net.

Table 1: Jonah crab claw landings from 2010-2015. (Source: ACCSP Data Warehouse.) The unspecified 'pots/traps' category could include lobster pots, fish pots, conch pots, and crab traps.

Year	Pots/traps (Type not specified)	Lobster Pot	Fish Pot	Gill Net	Otter Trawl	Total
Jonah Crab Claw Landings from 2010 – 2015 (lbs)	75,847	66,296	3,081	2,115	1,958	149,297
Percent of Total	50.8%	44.4%	2.1%	1.4%	1.35%	100%

While prior to the FMP Maryland did not require reporting to differentiate between claws and whole crabs, efforts were made to determine the grade of Jonah crab landings from trip level reports. ACCSP confidential dealer reports and state fishing report data were analyzed. Available fishermen were questioned and a Jonah Crab Advisory Panel member described the practices of the fleet over the time period. From these efforts, Maryland staff determined that between 2000 and 2015, only one fishing vessel predominately landed whole crabs while the remainder of the fleet (n=18) landed both claws and some whole crabs. The information also showed that the number of trips landing claws has increased from approximately 19 trips in 2011 to 70 trips in 2015. The amount of claws landed on these trip ranged from just a few pounds to a couple thousand pounds. These vessels used a variety of gears including lobster pots, conch pots, otter trawls, and gill nets.

Jonah Crab Claw Morphometric and Mortality Data

To date, the life cycle of Jonah crab is poorly understood. Several studies have recently been conducted to better understand the biology of this species. As part of a Saltonstall-Kennedy Grant awarded in 2015 to collect biological data on the Jonah crab fishery, the Massachusetts Division of Marine Fisheries measured the carapace width and claw length of several hundred Jonah crabs from Southern New England (inshore and

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offshore) and Georges Bank. From this data, the relationship between carapace width and claw length was examined (Figure 1). The data suggests that, for a male crab whose carapace width meets the minimum size of 4.75" (120.65 mm), an expected claw length would be 2.47" (62.84mm).

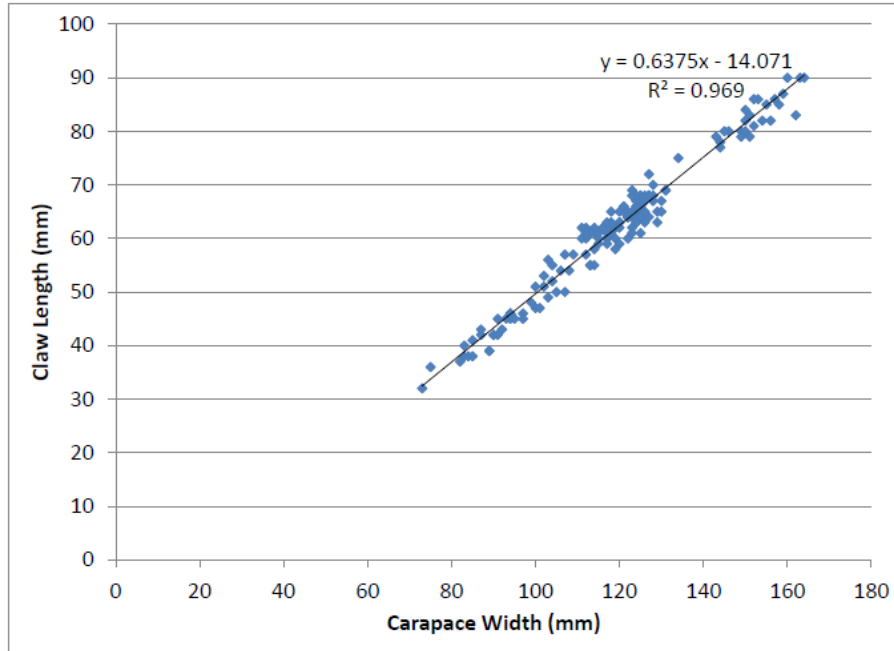


Figure 1: Linear regression between the carapace width and claw length of Jonah crabs (n=153). Measurements from regenerated claws were removed using a least square method. Regional differences in claw length may be masked since crabs from Southern New England and Georges Bank are presented together. (Source: MA DMF).

Preliminary data is also available from a small scale laboratory study which is investigating Jonah crab claw removal and its impacts on survivorship. The study, conducted by New Hampshire Fish & Game and the University of New Hampshire, looked at the biological implications of harvesting claws by subjecting crabs to one of three treatments: one claw removed, two claws removed, and no claws removed. Crabs (n=232) were monitored in seawater trays over a four week period and their activity levels and survival were evaluated. Preliminary results suggest that 19% of crabs died when no claws were removed, 56% of crabs died when one claw was removed, and 74% died when both claws were removed.

Federal Adoption of the Jonah Crab FMP

Given that the Jonah crab fishery is primarily executed in federal waters and there is a need for NOAA Fisheries to enact complementary measures in the EEZ, the Board sent a letter to NOAA Fisheries asking for preliminary guidance on the current claw provision. In a letter dated February 29, 2016, NOAA Fisheries responded to the Board's request, highlighting several concerns with a claw fishery in federal waters. Specifically, NOAA Fisheries reiterated the Law Enforcement Committee's position that a claw fishery could

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“complicate effective enforcement of a minimum-size standard, and introduce an opportunity to move undersized crabs through the system”.² Additionally, NOAA Fisheries stated that it “may prove challenging”³ to implement the current claw provision due to Magnuson-Stevens Fishery Conservation and Management Act’s National Standard 4, which requires that management measures “not discriminate between residents of different states”⁴. NOAA Fisheries noted their support of the Commission’s public process, encouraging the Board to consider changes to the Jonah Crab FMP through an addendum which encompasses a range of alternatives and is released for public comment. Refer to Appendix 2 for a copy of the NOAA Fisheries letter received by ASMFC.

Given that the current claw provision does not provide the same fishery opportunities to like participants, the Board initiated this addendum to the Jonah Crab FMP to consider establishing a coastwide standard for claw harvest. The Draft Addendum considers a range of options including a strictly whole crab fishery and the allowance of claw harvest coastwide.

3.0 Management Program

This section proposes to replace “Crab Part Retention” in *Section 4.1* of the Jonah Crab FMP.

Option A: Status Quo

Under this option, only whole crabs may be retained and sold with the exception of individuals who can prove a history of claw landings before the June 2, 2015 control date in the states of New Jersey, Delaware, Maryland, and Virginia.

The PDT notes that if the Board pursues this option, it may be necessary to specify the size and volume of claws which may be harvested.

Option B: Coastwide Whole Crab Fishery

Under this option, only whole crabs may be retained and sold coastwide.

This option would eliminate the provision that those who can prove a history of claw landings before June 2, 2015 in the states of New Jersey, Delaware, Maryland, and Virginia can land detached claws.

Option C: Coastwide Whole Crab Fishery with Small Volumetric Claw Harvest

Under this option, the Jonah crab fishery would be primarily a whole crab fishery; however, there would be a 5 gallon coastwide tolerance of detached crab claws per vessel per trip which may be retained and sold. All harvested claws must meet a minimum length of 2.5”. Two claws may be harvested from the same crab.

This option would eliminate the provision that those who can prove a history of claw landings before June 2, 2015 in the states of New Jersey, Delaware, Maryland, and Virginia can land detached claws.

² John Bullard to Robert Beal. 29 February 2016. Re: Jonah Crab Claw Fishery.

³ John Bullard to Robert Beal. 29 February 2016.

⁴ Ibid.

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Option D: Claw Harvest Permitted Coastwide

Under this option, whole crabs which meet a minimum carapace length of 4.75" **and** detached claws which meet a minimum length of 2.5" may be retained and sold coastwide. Two claws may be harvested from the same crab. Bycatch limits will remain in effect per Addendum I such that a fisherman under the bycatch allowance may land up to 2,000 claws (1,000 whole crabs = 2,000 detached claws).

This option would eliminate the need for the provision that those who can prove a history of claw landings before June 2, 2015 in the states of New Jersey, Delaware, Maryland, and Virginia can land detached claws.

4.0 Compliance

If approved, states must implement the management measures in Addendum II by Month, 201X.

5.0 Recommendation for Federal Waters

The management of Jonah crab in the EEZ is the responsibility of the Secretary of Commerce through the National Marine Fisheries Service (NMFS). The Atlantic States Marine Fisheries Commission recommends that the federal government promulgate all necessary regulations in Section 3.0 to implement complementary measures to those approved in this addendum.

6.0 Literature Cited

ASMFC, 2015. [Interstate Fishery Management Plan for Jonah Crab](#). Atlantic States Marine Fisheries Commission, Arlington, VA. 73p.

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Appendix 1: States Jonah crab reporting prior to implementation of the Jonah Crab FMP.

	NMFS	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA
Is it lawful for harvesters to land Jonah crabs and NOT report?	No for most federal permit holders. Yes for federal lobster-only permit holders and Jonah crab-only harvesters with no other federal permits	Yes	No	No	No	No	No	Yes, only if the vessel does not have a federal permit and is fishing state waters.	No	No	No
Trip-level harvester data collected delineates landings as whole crab vs. claw	No	No	No	No	No	No	No	No	No	No	Yes (though not always done in the past)
Trip-level dealer data is collected that would capture Jonah crab transactions	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes, through SAFIS for vessels with federal permit.	No	Yes	Only for federal water harvest that is sold to a federal dealer and can be tied back to a VTR
Trip-level dealer data delineates transactions as whole crab vs. claws	No	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No

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Appendix 2



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

FEB 29 2016

Robert Beal
Executive Director
Atlantic States Marine Fisheries Commission
1050 N. Highland St, Suite A-N Arlington, VA 22201

Dear Bob:

Thank you for your February 17, 2016, letter requesting preliminary guidance on the development of a claw-only Jonah crab fishery under the Interstate Fishery Management Plan for Jonah Crab. As your letter points out, I cannot provide definitive, final guidance on this issue because the Lobster Board continues to discussion revisions to claw-only measures and my staff have not yet completed the rulemaking process to implement the management measures recommended in the Jonah Crab Plan. I can provide guidance on preliminary conservation, enforcement and legal issues associated with a claw-only fishery.

As you noted, I urged the Lobster Board in my July 16, 2016 letter to develop a whole-crab fishery, as the Jonah Crab Plan did "not contain information on the post-release survivability of Jonah crab after one or both claws has been removed." My staff echoed this concern at the August 2016, Lobster Board meeting. Since that time, the University of New Hampshire and New Hampshire Fish and Game have undertaken a small scale laboratory study to evaluate the impacts of claw removal on the health and behavior of Jonah crabs. Preliminary results from these trials indicate high levels of mortality (approximately 50 percent for crabs with one claw removed and approximately 75 percent for crabs with both claws removed). Unless additional information becomes available indicating that post-claw removal survival is higher than this preliminary study suggests, I believe the Lobster Board would have a difficult time justifying that a claw-only fishery is a sustainable practice and is consistent with the Jonah Crab Plan goals and objectives.

As you noted, the Law Enforcement Committee previously weighed in on the option for a claw- only fishery, stating "Introducing an option to retain parts or remove claws will complicate effective enforcement of a minimum-size standard, and introduces an opportunity to move undersized crabs through the system. Adding an additional measurement standard for claws, such as a count-per-pound or something similar, will greatly complicate enforcement requirements to monitor and inspect fishing." Staff from NOAA's Office of Law Enforcement participated in that discussion and concurred with the Committee's recommendation. In addition, the Office of Law Enforcement has indicated that implementing multiple sets of requirements, such as whole and claw-only provisions, in a single management area complicates and weakens enforcement. This is why we have historically supported one set of regulations that can be applied consistently across jurisdictions and areas. I believe the Lobster Board should



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discuss and closely evaluate the potential enforcement concerns associated with a claw-only fishery.

As you know, any regulation promulgated under the Atlantic Coastal Fisheries Cooperative Management Act must be in accordance with the Magnuson-Stevens Fishery Conservation and Management Act's National Standards. Your letter referenced National Standard 4, which states in part that "Conservation and management shall not discriminate between residents of different states..." During our rulemaking process, we would formally review whether the Commission-recommended Jonah crab measures comply with National Standard 4, including whether it is a conservation measure without discriminatory intent. It may prove challenging for us to implement the claw-only exemption, as constructed in the August 2015 Jonah Crab Plan because of National Standard 4. My recollection of the August claw-only discussion is that additional development of claw-only permitting requirements and management measures would be necessary prior to implementation. Once developed and recommended, these measures would be subject to a formal review under National Standard 4.

While I remain in favor of a whole-crab fishery, I am supportive of the Commission's public process. Changes to the Jonah Crab Plan should be considered by Lobster Board through an addendum that encompasses a range of alternatives and subsequently released for public comment.

Thank you for the opportunity to provide additional comments on this important issue. If you have any questions, please contact Allison Murphy at (978) 281-9122 or allison.murphy@noaa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'JKB', with a long horizontal line extending to the right.

John K. Bullard
Regional Administrator

cc: David Borden, American Lobster Board Chairman
Megan Ware, ASMFC Fishery Management Plan Coordinator



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF MARINE RESOURCES
BUREAU OF MARINE PATROL
21 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0021

PATRICK C. KELIHER
COMMISSIONER

June 8, 2016

Mr. David Borden
Chair, American Lobster Board
Atlantic States Marine Fisheries Commission
1050 N. Highland St., Suite 200A-N
Arlington, VA 22201

RE: Request for Conservation Equivalency - Maine Lobster Trap Tag Pilot Project

Dear Mr. Borden:

In the Spring of 2015, the Maine Department of Marine Resources (DMR) was given approval by the Atlantic States Marine Fisheries Commission's Lobster Management Board to conduct a one year pilot project aimed at examining the efficiencies and effectiveness of its lobster trap tag exchange program. Because of the program's success, Maine DMR is requesting approval of a conservation equivalency to continue this program for the foreseeable future.

The specific purpose of this project was to consider enforcement issues relative to the elimination of Maine's traditional procedure for exchanging lobster trap tags. Under the pilot project, harvesters were allowed to bring traps back to shore, cut the existing tags from traps, and reattach those same tags by "hog ringing" the tag back into the new gear. This change eliminated the need for the harvester to return the cut tags and receive a corresponding number of new exchange tags. As a reminder, the current FMP does not allow for the transfer of tags from trap to trap. However, by allowing tags to be transferred, we have eliminated the issuance of 20,000 exchange tags. We firmly believe that this has removed illegal gear from the fishery.

The pilot project focused on identifying potential impacts on both compliance and enforceability of Maine's exchange tag program with these modifications. In conducting this assessment, Marine Patrol's Command Staff implemented a system to record gear inspection efforts, examine the nature of associated violations, and compared data against historical compliance rates based on years of expertise.

Over the course of the last year, Marine Patrol Officers hauled and inspected nearly 13,000 lobster traps while at sea. Officers also inspected thousands more traps at dockside locations and aboard commercial lobster fishing vessels. These inspections targeted specific areas of industry based on the expertise and knowledge of Marine Patrol. After close examination of the pilot project gear inspection efforts, we can confidently conclude that eliminating exchange tags has had a positive impact on the lobster trap limit compliance rate in Maine.

The second issue to consider, regarding the ASMFC pilot project, is enforceability. The prior system of issuing new exchange tags required Marine Patrol to accurately track the issuance of the additional 20,000 tags annually. A single, original allocation of trap tags is easily enforced, but the issuance of exchange tags introduced unnecessary complexity which some fishermen undoubtedly attempted to exploit. Achieving compliance with trap limits is inherently challenging, and only becoming more so with the potential for counterfeit tags, and with the ability of fishermen to deploy and retrieve sunken lobster trap trawls. Eliminating the need to also track exchange trap tags will help us to focus efforts appropriately toward our most serious concerns in this important fishery.

In closing we can confidently say the resulting evidence suggests that this program has enhanced both compliance and enforceability in Maine's lobster fishery. After inspecting thousands of lobster traps during the course of the last year, Marine Patrol is confident that this initiative removed illegal traps from the water. The trap gear inspected by Marine Patrol which contained tags secured with hog rings was negligible and not indicative of the historical allocations of exchange tags issued. This clearly suggests that the original exchange tag program was flawed. In moving forward, it only makes sense to utilize the results captured during the pilot project and permanently eliminate this unnecessary procedure.

Respectfully submitted,

Sent electronically

Patrick Keliher
Commissioner

cc American Lobster Board
Megan Ware, ASMFC



Atlantic States Marine Fisheries Commission

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703.842.0740 • 703.842.0741 (fax) • www.asmfmc.org

MEMORANDUM

July 11, 2016

To: American Lobster Management Board
From: Law Enforcement Committee
RE: Maine Trap Tag Transferability Program

At the May 2016 meeting of the Law Enforcement Committee (LEC) of the Atlantic States Marine Fisheries Commission (ASMFC), members heard a presentation and update on Maine's pilot trap tag transferability program. The following were in attendance:

LEC: Capt. Steve Anthony (NC); Deputy Chief Kurt Blanchard (RI); Deputy Chief Jon Cornish (ME); Lt. Mike Eastman (NH); Asst. Director Larry Furlong (PA); Special Agent-in-Charge Honora Gordon (USFWS); Capt. Jamie Green (VA); Wayne Hettenbach (USDOJ); Bob Hogan (NOAA GC); Capt. Tim Huss (NY); Capt. Rob Kersey (MD); Capt. Bob Lynn (GA); Capt. Doug Messeck (DE); Maj. Pat Moran (MA); Director Kyle Overturf (CT); Lt. Colby Schlaht (USCG); Capt. Rama Shuster (FL); Lt. Jason Snellbaker (NJ);

LEC ALTERNATES: Jeff Ray (NOAA OLE)

OTHER ATTENDEES: David Borden (RI); Rene Cloutier (ME); Pat Keliher (ME)

STAFF: Mark Robson; Megan Ware

During the meeting, representatives from Maine presented an update and summary information regarding their pilot trap tag transfer program that was implemented for the previous year. The LEC first heard about the pilot program during their October 2014 meeting. At that time the LEC was on record as being generally opposed to such transfer allowances, but was willing to assess the outcome of the Maine pilot program and determine if they could endorse such a system going forward.

During the review of the pilot program results at the May 2016 meeting, LEC members heard about the various advantages of the tag transfer system over the previous system of providing "exchange tags" to fishermen who bring traps back to shore and replace them with new gear. As reported by the Maine representatives, the tag transfer program has provided better accountability, allowed tags to be attached with secure hog rings, and continues to rely on extensive inspection of traps on the water and at the dock. Over a 12-month period, Maine Marine Patrol found that "...none of the very few untagged gear violations involved any evidence or indication that a trap limit violation existed." Maine Marine Patrol also believes eliminating production of over 20,000 exchange tags has helped alleviate existing problems of counterfeit tags, further improving accountability of tags and traps in the fishery.

LEC discussion centered on the fact that other states may have different requirements for issuing and replacing tags, and each state should be allowed the flexibility to utilize exchange-tags or to allow trap-to-trap transfer of original tags as they deem necessary. With that caveat, the LEC agreed by consensus to endorse the Maine tag transfer program.



Atlantic States Marine Fisheries Commission

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Douglas E. Grout (NH), Chair

James J. Gilmore, Jr., (NY), Vice-Chair

Robert E. Beal, Executive Director

Vision: Sustainably Managing Atlantic Coastal Fisheries

July 15, 2016

Jim Landon, Director
NOAA Office of Law Enforcement
1315 East-West Highway
Suite 3301
Silver Spring, Maryland 20910

Dear Mr. Landon,

On behalf of the American Lobster Management Board (Board) and the Law Enforcement Committee, the Atlantic States Marine Fisheries Commission (Commission) is requesting the NOAA Office of Law Enforcement make the American lobster fishery a higher priority for enforcement in the Northeast Division and a funding priority in Joint Enforcement Agreements (JEA).

The American lobster fishery has experienced immense growth over the last decade, with landings rising from roughly 87 million pounds in 2005 to just under 147 million pounds in 2015. The value of the fishery has also increased to over \$617 million in 2015, making it one of the top three most valuable fisheries in the United States. At the same time the lobster fishery has grown, it has also moved farther offshore with a greater percentage of catch coming from federal waters.

Effort in the lobster fishery is primarily controlled through trap allocations which are tied to limited entry permits. Trap tags are used to identify legal gear as fishermen are restricted in where and how many traps they can set. As a result, the enforcement of legal tags and trap allocations is critically important to the sustainability of the lobster fishery. This is especially true in Southern New England, where fishermen are currently going through a series of trap reductions in order to scale the size of the fishery to the size of the resource. If these trap reductions cannot be enforced, the management measure will not be successful in removing latent effort from the fishery.

Enforcement of regulations in the offshore portion of the lobster fishery should scale with the threat and there is concern from the Board and industry that the incidence of non-compliance is growing. While the distance from shore and depth of water create unique challenges in monitoring the offshore lobster fishery, the Commission believes solutions exist to effectively enforce regulations throughout the management unit. As a result, the Commission is requesting that the NOAA Office of Law Enforcement make the American lobster fishery a higher priority for the Northeast Division, increasing the fiscal resources that are allocated to this iconic species. Furthermore, the Commission requests a larger portion of JEA funding be allocated to state law enforcement agencies whose activities support federal lobster regulations. This will allow states who already monitor and inspect lobster gear in state waters to expand these activities farther offshore.

The Commission remains dedicated to improving lobster management and ensuring the sustainability of the resource. Please let me know if you need additional information from the Commission regard this request.

Characterization of the offshore American lobster and Jonah crab trap fishery in Lobster Conservation Management Area 3 in and around the Southern New England and Georges Bank canyons

Kelly Whitmore¹, Elizabeth Morrissey¹, Megan Ware², and Robert Glenn³

Massachusetts Division of Marine Fisheries

¹30 Emerson Avenue, Gloucester, MA 01938

³1213 Purchase Street, New Bedford, MA 02740

²Atlantic State Marine Fisheries Commission

1050 N. Highland Street, Suite 200A-N, Arlington, VA 22201

April 20, 2016

Updated July 5, 2016

Background

The Atlantic States Marine Fisheries (ASMFC) initiated a mail survey to collect information on the extent and value of the offshore American lobster and Jonah crab trap fishery occurring in and around the deep-water canyons in Southern New England (Lobster Conservation Management Area (LCMA) 3). The purpose of this survey was to characterize the canyon fishery, as current lobster and Jonah crab trip reports include data only to the broad level of NMFS statistical reporting area. Information on the distribution of effort, fishing patterns, and value of harvest in and around the canyons was requested by the New England Fishery Management Council (NEFMC) as they draft an Omnibus Deep-Sea Coral Amendment to modify several Fishery Management Plans. The Amendment may establish discrete deep-sea coral protective zones, as well as broad deep-sea coral regions along the edge of the continental shelf from the Alvin canyon to the Exclusive Economic Zone (i.e. Hague Line). A region identified as the ‘NEFMC Area of Interest’ encompasses 21 Southern New England/Georges Bank canyons (Figure 2). The NEFMC is expected to debate potential gear restrictions within the Area of Interest. As such, the comprehensive data collected through this survey provided an important context on the American lobster and Jonah crab trap fisheries occurring in this unique region of LCMA 3.

Methods

On February 23, 2016, a cover letter and survey (Appendix A) and self-addressed postage-paid return envelope were mailed to all 97 of the 2015 commercial lobster permit holders with a trap allocation in LCMA 3. Two reminder letters were sent in the weeks following the survey to encourage additional participation. The final response deadline was June 15, 2016. In general, the mail survey inquired about fishing locations, effort, and value of American lobster and Jonah crab landings within the NEFMC Area of Interest from 2014 to 2015. Fishermen were asked to specify the canyons, depths, and seasons they fished and how their effort and revenue were allocated across those variables. Nautical charts that identified the proposed NEFMC Area of Interest and the discrete canyons within it were included with the survey for clarification. Optional demographic data were collected at the end of the survey including vessel name, permit, and homeport, as well as comments about the survey or topic. The survey indicated that all confidential data would be protected and an individual's data would not be shared. Survey responses were categorized, summarized, and reported below. Most results are provided as the percentage of responses relevant to the statement being made "(X%)" out of the total number of survey responses obtained for that particular question "(n=X)".

Results

Survey Response

A total of 34 of the 97 surveys were returned within five weeks of the original mailing date, for an overall response rate of 35%. One additional survey was received during the reminder period; however it was not included in the analysis because data for that vessel had already been received in a previous survey.

Of the 34 completed surveys, 19 (56%) were applicable, meaning that individuals fished traps within the NEFMC Area of Interest in 2014-2015. Forty-four percent of returned surveys were either for vessels that did not fish in LCMA 3 (n=2), did not fish near the LCMA 3 canyons (n=11), or did not fish with traps (n=2) (Figure 1). Of the total potentially applicable survey pool, the response rate for those fishing traps within the Area of Interest was 23% (19 of 82).

Response rates were also categorized by trap allocation and by state on permit. This was possible because identifying information was provided by respondents for all but one (97%) of the 34 surveys. Of the 97 total permit holders, 56 had trap allocations exclusively in LCMA 3 (Figure 1). Excluding the anonymous survey, 43% of these individuals responded to the survey and 17 provided applicable surveys meaning that they fished traps within the NEFMC Area of Interest in 2014-2015. The other 29% (7) of individuals with an allocation only in LCMA 3 reported that they did not fish in the vicinity of the canyons in 2014-2015.

Forty-one of the 97 permit holders had allocations in more than one LCMA (LCMA 3 *and* LCMA 1, 2, 4, and/or 5) (Figure 1). Excluding the anonymous survey, 22% of those with mixed-area allocations responded to the survey, and only one survey was applicable. Eight were not applicable because four individuals did not fish in the vicinity of the canyons, two did not fish in LCMA 3, and two did not fish with traps (Figure 1).

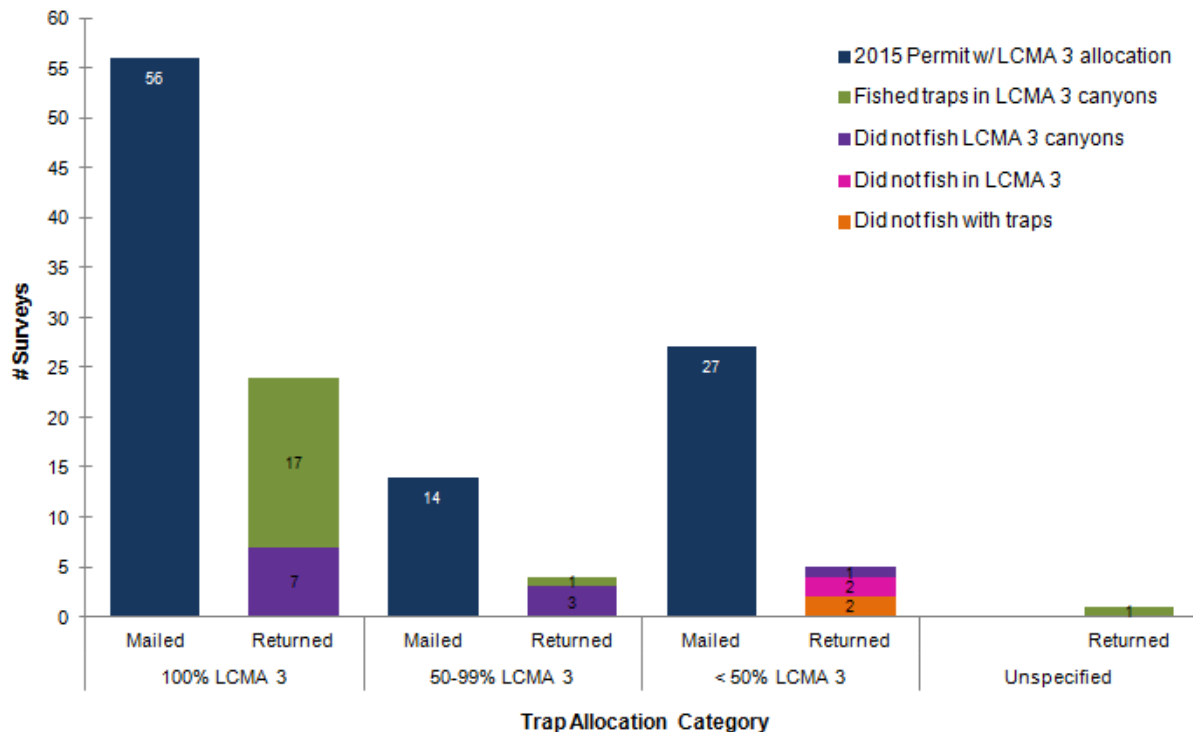


Figure 1. Number of surveys mailed to 2015 commercial lobster permit holders with LCMA 3 trap allocations and the number of surveys returned, categorized by each individual's trap allocation (%) in LCMA 3 (of their total allocation among LCMA 1 to 5).

Response rates were favorable across states (by permit) (Table 1). The 19 total respondents that fished traps within the NEFMC Area of Interest for lobster and/or Jonah crab in 2014-2015 hailed from the states of Massachusetts, New Hampshire, or Rhode Island (Table 1). Each of these respondents provided detailed information on fishing practices and revenue generated from within the LCMA 3 canyons region.

Table 1. Survey response rates by state (from 2015 commercial lobster permit).

State	Surveys Mailed	Surveys Returned	Response Rate	Applicable Surveys
ME	8	2	25%	0
NH	12	4	33%	1
MA	36	11	31%	10
RI	28	14	50%	8
CT	1	0	0%	0
NY	4	1	25%	0
NJ	8	2	25%	0
Total	97	34	35%	19

Nearly all (95%) of those fishing within the Area of Interest indicated that they report trips and catches using the NMFS Fishing Vessel Trip Reports (VTR) (n=19). At the time of the survey, 79% of individuals fishing the Area of Interest were aware that the NEFMC was considering the development of an Amendment to several Fishery Management Plans to protect deep sea corals in the region.

Locations Fished

All six of the NMFS statistical reporting areas (SRA) that span the NEFMC Area of Interest, including SRA 525, 526, 534, 537, 541, and 562, were reported fished in 2014-2015 by survey respondents (Figure 2). A majority of fishermen (74%, n=19) fished in SRA 525, which encompassed the highest number of canyons (12 of 21 canyons), and SRA 526 (63%, n=19), which encompassed Veatch Canyon, the canyon fished by most respondents (see text below, and Figure 2). Fewer fishermen (16%) reported fishing in SRAs 534 and 541, the only statistical areas that do not overlap entire canyons (or canyon heads) (Figure 2). Fishermen often fished in more than one statistical area *per trip*; 68% reported this at least once in 2014-2015 (n=19). Additionally, differences in statistical areas fished by home port were noted. Vessels from

Massachusetts fished in all six statistical areas within the NEFMC Area of Interest, while those from Rhode Island fished in three (SRAs 525, 526 and 537), and New Hampshire in two (SRAs 525 and 526) (Figure 3).

All but two of the 21 canyons located within the NEFMC Area of Interest were fished in 2014-2015 by respondents (Figure 2 and Figure 4). Individual fishermen set traps in anywhere from two to ten discrete canyons (average 4.4 ± 0.5 SE canyons) in 2014-2015. Veatch canyon was fished by the most (42%) respondents, followed by Hydrographer (37%), Atlantis (32%), Alvin, Gilbert, Lydonia, Oceanographer (each 26%), and Clipper, Dogbody, Heel Tapper, Munson, Nygren, Powell, and Welker (each 21%). Fewer reported fishing Heezen, Nantucket, Shallop, Sharpshooter, and Unnamed canyons (each 16%) (Figure 2 and Figure 4). Chebacco and Filebottom canyons were the only canyons not fished by those who responded (Figure 2 and Figure 4). Most canyons were fished by several fishermen regardless of vessel origin. The only evident regional difference was that Rhode Island fishermen were less likely to transit to the canyons furthest east (Nygren, Unnamed, and Heezen) (Figure 4).

All fishermen reported fishing between canyons as well in and around them (n=19). A majority (84%) reported that they most often set traps both at the heads of canyons and between canyons, while the remaining 16% were split evenly as to whether they most often fish at the heads of the canyons, between canyons, or neither (i.e. set on a loran line).

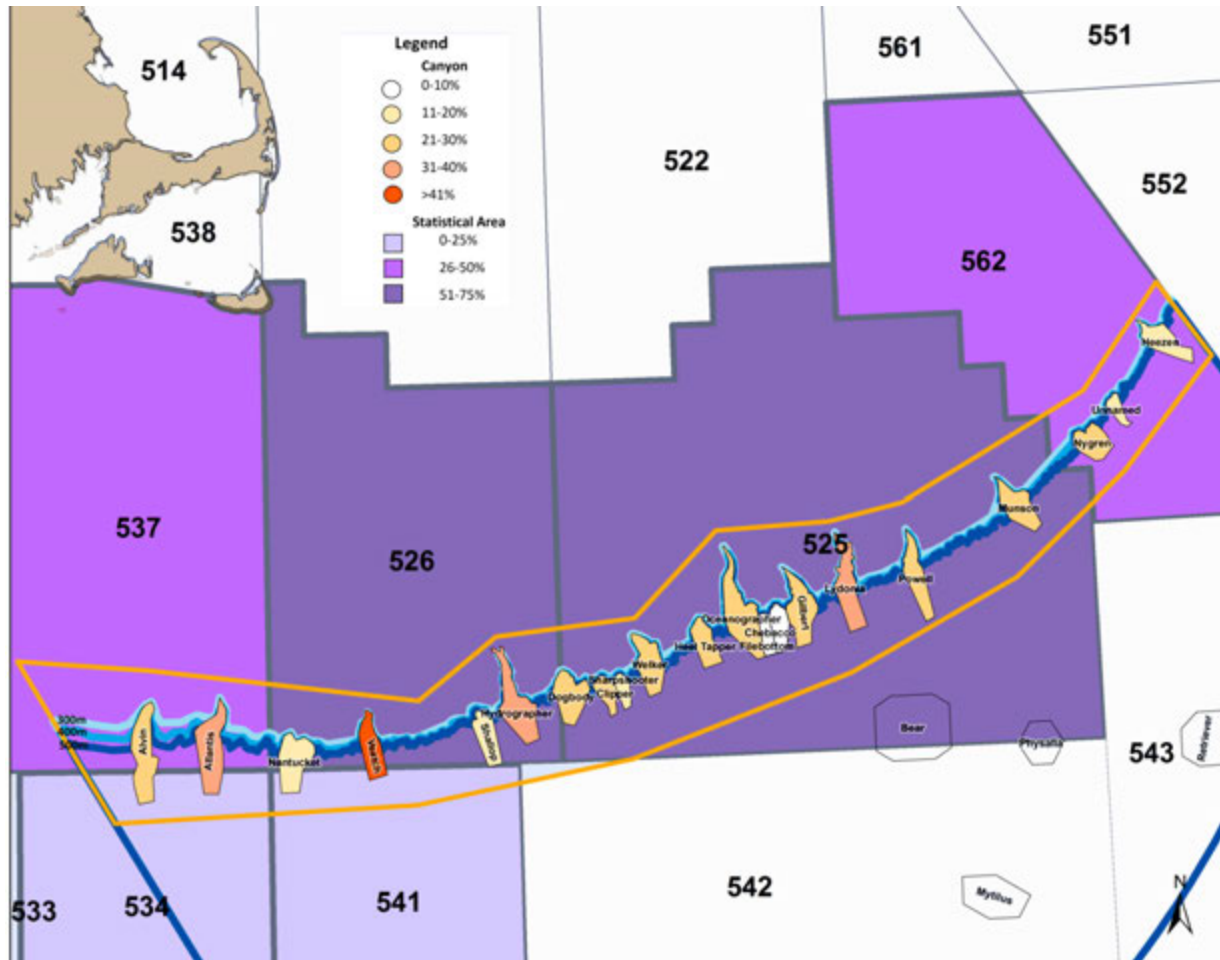


Figure 2. Comparative fishing effort by canyon and by NMFS statistical reporting area within the NEFMC Area of Interest (orange line) as the percentage of respondents citing the canyon(s) or statistical area(s) fished for lobster and/or Jonah crab in 2014-2015. For canyons, the darker the color orange, the more frequently the canyon was named. For statistical area, the darker the color purple, the more frequently the statistical area was named. Depth contours at 200 m, 400 m, and 500 m within the NEFMC Area of Interest are indicated in shades of blue.

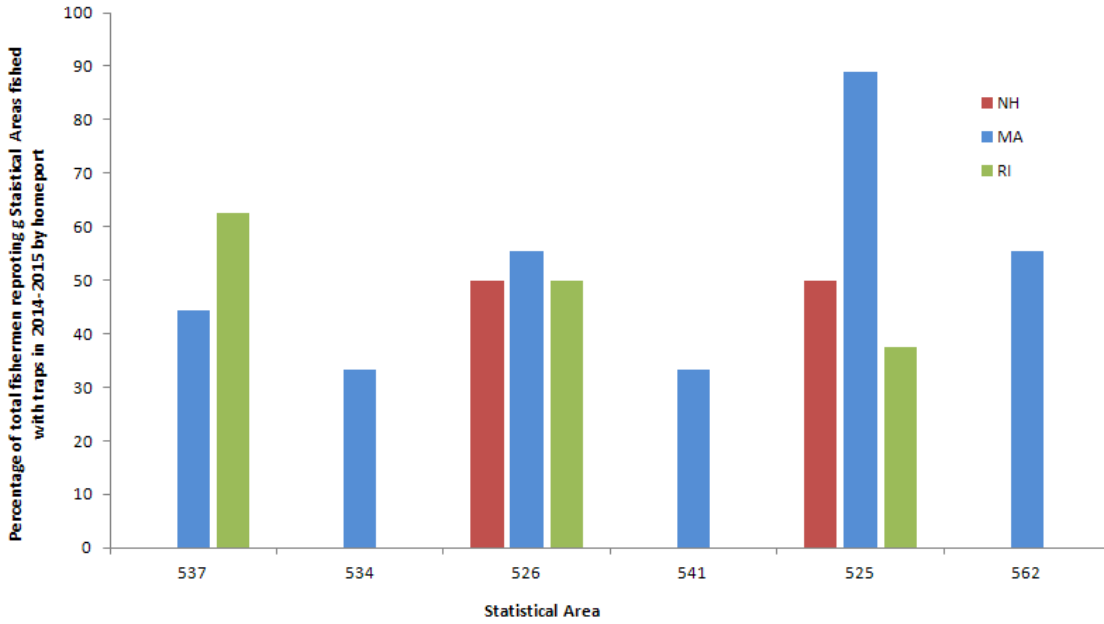


Figure 3. Percentage of fishermen reporting NMFS statistical area fished (within the NEFMC Area of Interest) in 2014-2015 by state/homeport. Statistical areas are listed in west to east orientation (L-R).

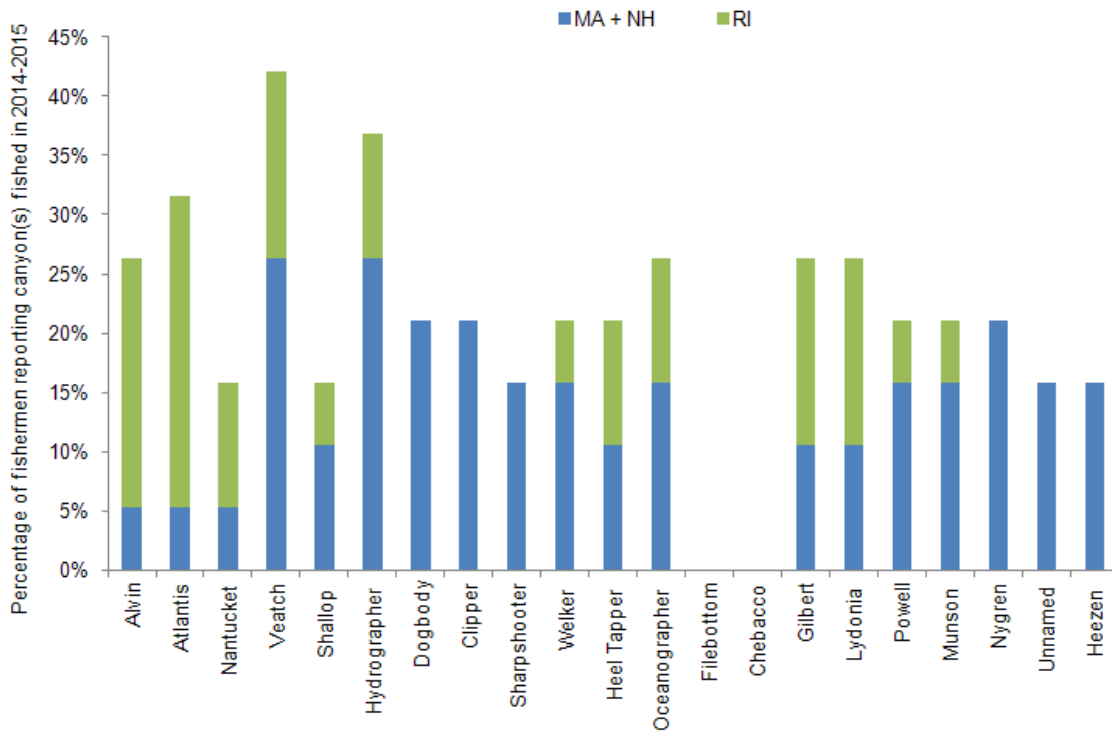


Figure 4. Percentage of fishermen reporting individual canyon(s) fished (within the NEFMC Area of Interest) in 2014-2015 by state/homeport. Massachusetts and New Hampshire fishermen were combined to preserve confidentiality (NH <3 respondents). Canyons are listed in west to east orientation (L-R).

Depth Fished

All canyon fishermen reported the maximum depth at which they fished traps (for lobster and/or Jonah crab) in 2014-2015. This was an open-ended response and consistently reported in fathoms, which were then converted to meters. Maximum depth fished per fisherman ranged from 220 to 549 meters (120 to 300 fathoms), with an average of 406 meters \pm 22 SE (222 fathoms). Cumulatively, 100% of fishermen set their deepest traps in water 200+ meters deep, 76% in 300+ meters, and 48% 400+ meters of water (n=19) (Table 2). Of the 48% of fishermen with traps set in over 400 meters of water, 14% of them set traps deeper than 500 meters.

Nearly half of (47%) respondents fished traps in deepest waters across two or more seasons, with all seasons represented (n=19). Winter (January to March) was the season most commonly named for deep trap sets (74% of responses), followed by spring (April to June; 42%), and fall (September to December; 32%). Traps were least likely to be set in the deepest waters during the summer (July to August) (named in 11% of responses).

Fishermen also indicated how their trap distribution varied by depth within the NEFMC Area of Interest. On average, 96% of an individual's traps were fished in 0 to 400 meters (0 to 219 fathoms) (Table 2 and Figure 5). Of the five depth categories provided, the most traps (35%) were allocated to 200-300 meters (109-164 fathoms). Only 4% of an individual's traps were set deeper than 400 meters (Table 2). Although fewer traps were apportioned to this deepest stratum, over a quarter (27%) of fishermen reported fishing traps over 400 meters depth (Table 2), thus the overall total traps fished in this stratum may be considerable (n=15).

Fishermen reported variable fishing patterns when asked to explain (open-ended response) their trawl configurations by depth during a single trip, e.g. whether they fished a consistent depth along the shelf or if depth fished varied across canyons. A majority of fishermen (42%) described setting traps at both consistent and varied depths along the shelf and across canyons within a trip (n=19). Patterns were often broadly illustrated and changed with areas fished but area was not well specified. Several fishermen (21%) indicated that fishing patterns changed seasonally, and as a result were unable to specify practices made during a single trip. Another 26% of fishermen reported fishing a range of depths, but did not indicate within canyons or along the shelf. A small percentage (11%) reported fishing on specific depth contours, or on a

specific loran line across many depths (5%). As reported earlier, a majority of fishermen set traps both in and between canyons. Several comments indicated that individuals fish in proximity to each other, and that they maintain organization of trap sets in and around the canyons by working with each other's fishing patterns.

Table 2. Distribution of fishing effort and revenue in the NEFMC Area of Interest in 2014-2015 by depth category.

Depth category (meters)	Max. depth fished by % fishermen	Ave. % traps allocated by depth	% Fishermen fishing at depth	Ave % revenue by depth	% Fishermen with revenue at depth
<100	0	17	47	23	67
100-200	0	21	87	33	87
200-300	26	35	93	23	67
300-400	32	23	73	18	53
>400	42	4	27	3	13
n Respondents	19	15	15	15	15

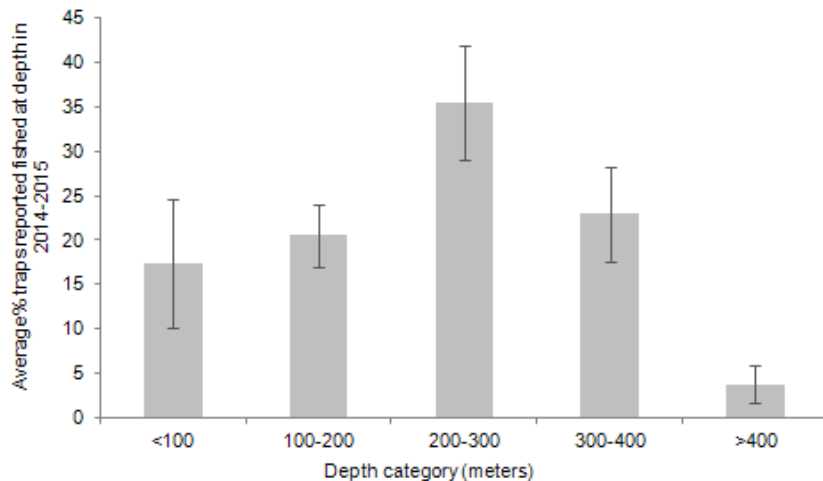


Figure 5. Average percentage of total traps fished per depth category per fisherman, within the Area of Interest in 2014-2015 (n = 15).

Effort

The average annual number of trips made by each fisherman to the NEFMC Area of Interest in 2014-2015 was $30 \pm \text{SE } 1.3$ (2014-2015 median = 29, n=19) with a fairly wide range of trips per year, from 15 to 49 (Table 3). Total number of trips to the Area of Interest in 2014-2015 for the 19 vessels was 1,124 (570 in 2014 and 554 in 2015).

Most (89%) fishermen reported that individual traps tended to be set more than once within a single trip, while two (11%) indicated traps were not re-hauled within trips (n=18). In 2014-2015, the average number of trap-hauls *per trip*, including re-hauls, was $1,779 \pm \text{SE } 106$ (median 1,614; range of 1,100 to 2,600 trap-hauls, n=18) which did not differ by homeport state (unpaired t-test $p = 0.26$) (Table 3). Note, that because of confidentiality concerns with less than three respondents, a comparison of the average trap-hauls per trip (or year) for those who do reset versus those who do not reset was not made. The *annual* average number of trap-hauls per vessel was roughly 53,000 in 2014 and 2015, with a total of over 950,000 trap-hauls per year for the 18 vessels combined (Table 3).

Most (74%) fishermen stated that there was no seasonal difference as to when they had the highest number of traps in the water in the NEFMC Area of Interest (n=19). Of the 26% whose trap totals varied by season, most reported setting the highest number of traps across several seasons. Trap totals were commonly higher in summer (July to September), followed by fall (October to December), and spring (January to March). No one reported having the highest number of traps in the water in winter (January to March), which is also when traps were reported to be set deepest.

These patterns of fishing effort are expected to persist, as the majority (74%) of fishermen did not expect their fishing effort in the NEFMC Area of Interest to change substantially over the next five years (n=19). Of the minority, 21% expected their fishing effort to increase substantially, and 5% expected it to decrease over the next five years.

Revenue

There was a high dependence on the NEFMC Area of Interest for revenue for all who fished within the Area. In 2014, $77\% \pm 5 \text{ SE}$ (median = 82%, range 35-100%) of an individual's lobster and Jonah crab revenue came from the Area of Interest, and in 2015 that figure increased to $79\% \pm 5 \text{ SE}$ (median = 85%, range 37-100%, n=18) (Table 3). The average combined revenue *per trip* from lobster and Jonah crab harvest within the NEFMC Area of Interest in 2014-2015 was \$32,514 (median \$31,841, n=19) with a range of \$9,000 to \$85,000 reported per trip per fisherman (Table 3). There was an overall 8%, or \$2,595, increase in combined revenue per trip from years 2014 to 2015 (Table 3).

Revenues for 2014-2015 were described as typical (63%) or higher than normal (16%) for the majority of fishermen (n=19). Several (21%) stated they did not have a characteristic earning with which to compare. No one reported that revenues in 2014-2015 were below normal. Accordingly, revenues generated from lobster and Jonah crab catches in and around the canyons over the past five years have steadily increased (37%) or remained constant (32%) for most. Others noted that combined revenue changed without pattern (26%) over that time frame, or for one, steadily decreased (5%) (n=19).

When breaking down earnings within the NEFMC Area of Interest by fishery, 88% of fishermen reported higher revenue from lobster than from Jonah crab (n=17). For these individuals, the value of lobster was on average six (in 2014) to eight (in 2015) times higher than for Jonah crab. For the two vessels (12%) reporting higher Jonah crab revenue than lobster, Jonah crab value was about three times that of lobster in 2014 and 2015 (figures not disclosed, <3 respondents). The average *annual* revenue from **lobster** fishing in the NEFMC Area of Interest in 2014-2015 was \$717,284 ± SE \$106,491 (median \$665,400, range \$75,000 to \$1.8 million, n=17). Annual earnings from lobster increased by an average of 10% or \$66,370 from 2014 to 2015 (Table 3). Total lobster revenue from the NEFMC Area of Interest for the fourteen individuals who responded was \$11.6 million in 2014 and \$12.8 million in 2015 (Table 3).

The average *annual* revenue from **Jonah crab** fishing in the NEFMC Area of Interest in 2014-2015 was \$182,784 ± SE \$55,868 (median \$97,000, range \$0 to \$825,000, n=17). Earnings from Jonah crab were highly variable among respondents but similar from year to year within respondents. Total average annual revenue from Jonah crab decreased by 15% or \$28,360 from 2014 to 2015 (Table 3). Total Jonah crab revenue from the NEFMC Area of Interest for the 17 individuals who responded was \$3.3 million in 2014 and \$2.9 million in 2015 (Table 3).

Table 3. Effort and revenue statistics for lobster and Jonah crab fishing within the NEFMC Area of Interest in 2014 and 2015, reported by fishermen.

	Ave. trap-hauls per Trip (incl. re-hauls)	Total Number Trips to Area		Total trap-hauls per Year		% Revenue from Area of Interest		Per Trip Revenue (USD)		Annual Revenue (USD) Lobster		Annual Revenue (USD) Jonah Crab	
	2014-2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Average	1,779	30	29	53,668	52,853	77	79	\$ 31,251	\$ 33,846	\$ 684,099	\$ 750,469	\$ 195,964	\$ 167,605
SE	106	2.0	1.8	4,143	3,850	5.1	4.9	\$ 3,549	\$ 4,121	\$ 99,733	\$ 115,348	\$ 63,418	\$ 52,541
Median	1,614	28	30	53,125	51,911	82	85	\$ 31,841	\$ 31,650	\$ 628,289	\$ 734,468	\$ 100,000	\$ 94,830
Min	1,100	20	15	26,580	26,580	35	37	\$ 10,000	\$ 9,000	\$ 120,000	\$ 75,000	\$ -	\$ -
Max	2,600	49	45	82,500	85,800	100	100	\$ 75,000	\$ 85,000	\$ 1,500,000	\$ 1,800,000	\$ 825,000	\$ 650,000
# of Respondents	18	19	19	18	18	18	18	19	18	17	17	17	17
Sum of Reported		570	554	966,023	951,353					\$11,629,691	\$12,757,974	\$ 3,328,664	\$ 2,845,774

Fishermen also identified how revenue from lobster and Jonah crab varied by depth within the NEFMC Area of Interest. On average, 97% of an individual’s revenue came from traps fished from 0 to 400 meters (0 to 219 fathoms; n=15) (Figure 6). Of the five depth categories provided, the highest average revenue (33% of total) came from 100-200 meters, which differed from where the most traps were allocated (200-300 meters) (Table 2, Figure 5, and Figure 6). On average, only 3% of an individual’s revenue came from traps fished deeper than 400 meters (Table 2, Figure 6). Individual fishermen reported anywhere from one to four depth categories (average = 3 ± 0.3 SE) that contributed to their combined revenue (n=15). Overall, 87% of fisherman reported that revenue came from traps fished in the 100-200 meter range, and only 13% reported revenue coming from the deepest depth stratum (>400 meters) (Table 2).

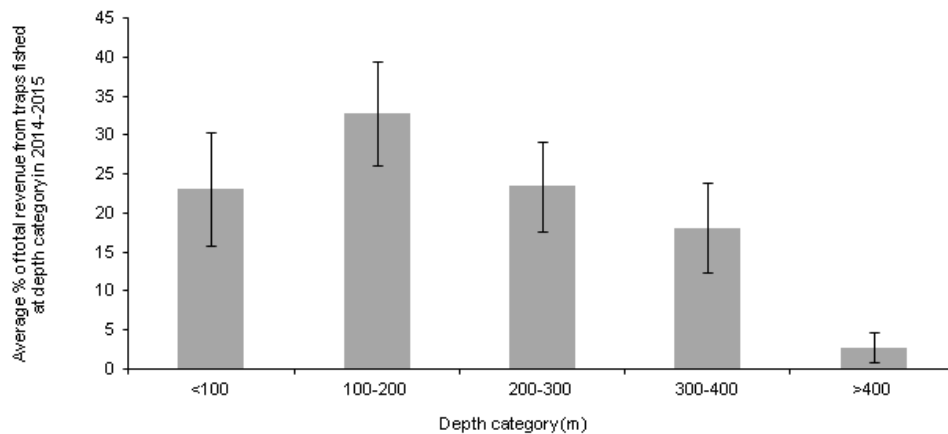


Figure 6. Average percentage of combined revenue from lobster and Jonah crab per depth category per fisherman, within the NEFMC Area of Interest in 2014-2015 (n = 15).

The top three individual canyons that contributed most to fishermen’s **lobster** revenue from within the NEFMC Area of Interest were Veatch (35%), Lydonia (29%), and Atlantis (29%) canyons (n=17) (Figure 7 and Figure 8). For Jonah crab, seven individual canyons were named equally as top contributors to fishermen’s **Jonah crab** revenue. These included Alvin, Atlantis, Veatch, Hydrographer, Powell, Munson, and Nygren canyons (n=16) (Figure 7 and Figure 9). The two vessels that reported greater revenue from Jonah crab than lobster named all canyons as most important to their combined revenues. For both lobster and Jonah crab, canyons distributed to the west and east were generally identified as important contributors more frequently than those centered in the NEFMC Area of Interest (Figure 7, Figure 8, and Figure 9).

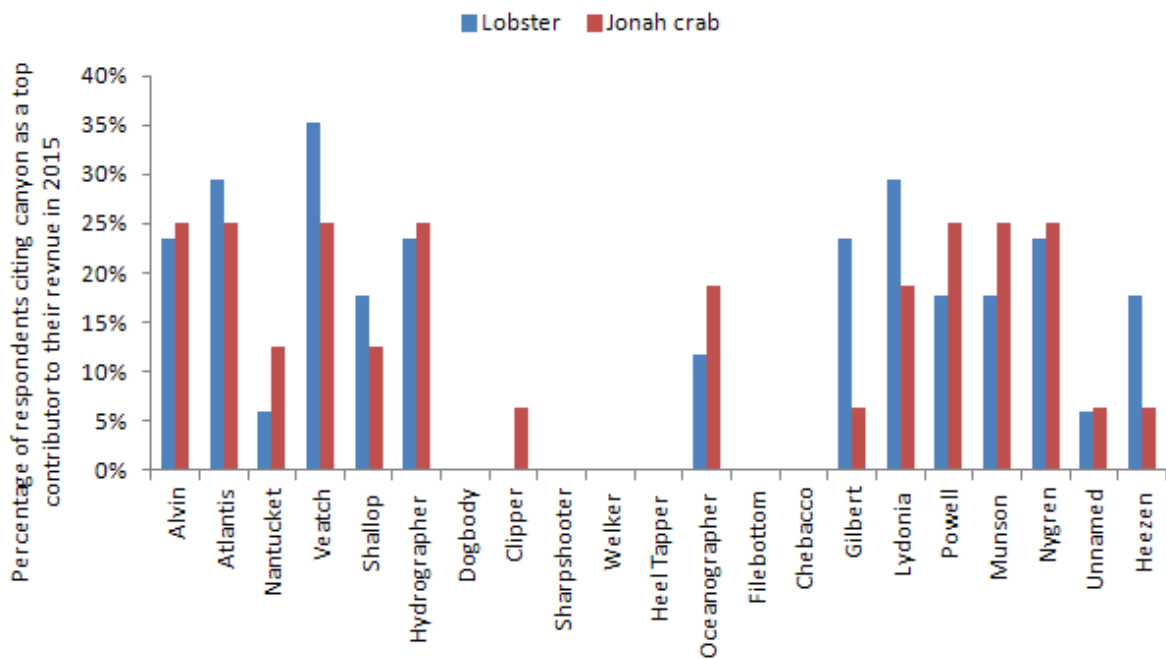


Figure 7. Importance of individual canyons as reported by the percentage of fishermen (lobster n=17; Jonah crab n=16) citing each of the top three that contributed most to their revenue from catches of lobster (blue) and Jonah crab (red) within the NEFMC Area of Interest in 2015. Canyons are listed in west to east orientation (L-R).

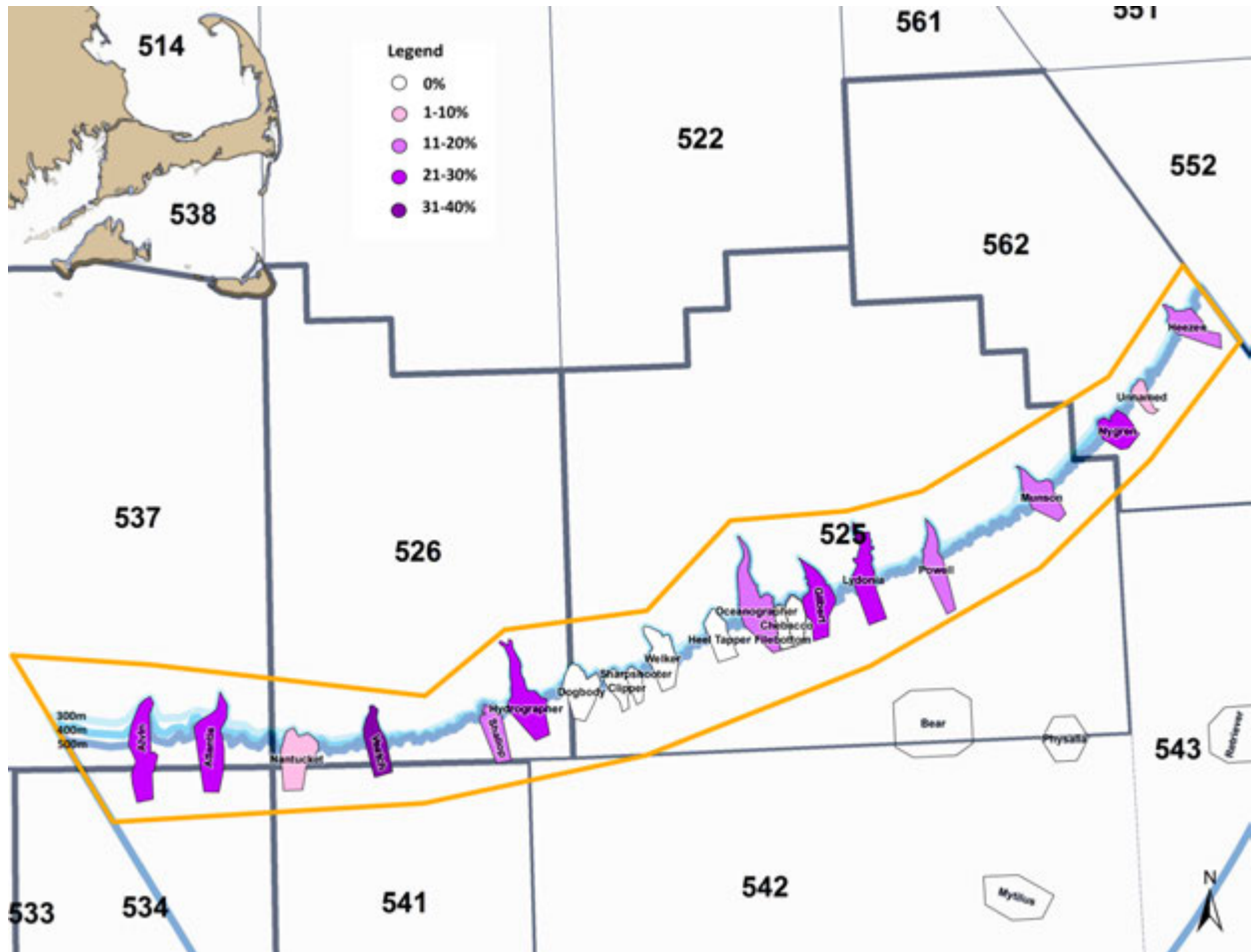


Figure 8. Importance of individual canyons to fishermen's revenue from **American lobster**, reported as the percentage of fishermen citing each as one of the top three that contributed most to their earnings from within the NEFMC Area of Interest in 2015. Canyons are listed in west to east orientation (L-R).

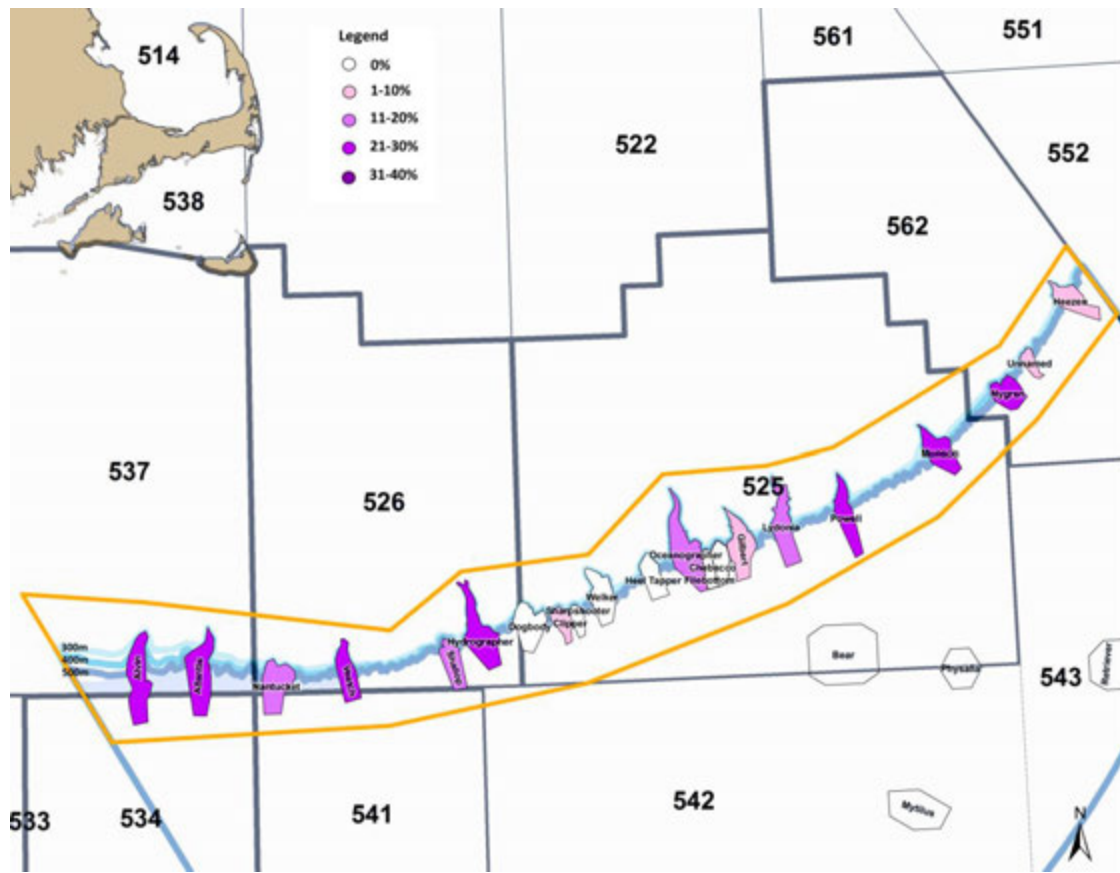


Figure 9. Importance of individual canyons to fishermen’s revenue from **Jonah crab**, reported as the percentage of fishermen citing each as one of the top three that contributed most to their earnings from within the NEFMC Area of Interest in 2015. Canyons are listed in west to east orientation (L-R).

Conclusions

Nineteen lobstermen provided unique and comprehensive descriptions of lobster and Jonah crab trap fishing practices in and around the Georges Bank and Southern New England canyons within Lobster Conservation Management Area 3 (LCMA 3). Their contributions characterized individual canyons and depths fished, as well as revenues generated in each. The response rate of applicable surveys to total permits, excluding non-applicable surveys returned, was 23%. It is not known whether the data received represent most of the lobster and Jonah crab trap fishing effort within the NEFMC Area of Interest. However, analysis of trap allocations and response rates provides some insight into the importance of the Area of Interest for LCMA 3 fishermen. Of the original survey pool, the majority (58%) of the ninety-seven 2015 permit holders held trap

allocations exclusively in LCMA 3 (versus LCMA 3 *and* LCMA 1, 2, 4, and/or 5), meaning they were wholly dependent on LCMA 3. Comparatively, most (71%; 24 of 34) survey respondents held LCMA 3-only trap allocations. Over 70% of these individuals reported having fished the offshore canyons within the NEFMC Area of Interest in 2014-2015, suggesting this is a significant resource for fishermen in LCMA 3.

The self-reported survey data revealed that the fishery within the NEFMC Area of Interest occurs year-round, in and between at least 19 of the 21 canyons, from Alvin canyon in the west to Heezen canyon in the east. Characteristics of the fleet included high effort in terms of number of trips and traps hauled per trip, wide geographic spread of canyons that are most important to overall revenue, and a range of depths that are regularly fished. Depth of fishing in and around the canyons is best characterized as variable, with the highest portion of traps in less than 400 meters (219 fathoms) of water. However, this summation should be applied cautiously, as more than a quarter of respondents fished at least some traps in waters deeper than 400 meters. Seasonally, most traps were fished from spring to fall and were set at the deepest water depths in winter.

High earnings were a hallmark of this relatively small but active fleet. The reliance of the NEFMC Area of Interest on the fleet's bottom line was evident, as an average of 78% of an individual's total revenue came from the canyons area. Total combined value of lobster and Jonah crab landings from within the NEFMC Area of Interest for the nineteen respondents alone was \$30.6 million from 2014 to 2015.

Data on canyon-area lobster and Jonah crab fishing are limited, as effort and catch data are collected for a subset of Area 3 vessels only, and fishing activity on a trip is represented spatially by a single latitude/longitude coordinate on vessel trip reports. In some cases, only the NMFS statistical area is reported, and each statistical area encompasses multiple canyons. Survey respondents' submission of highly detailed and sensitive information conveyed the importance of the NEFMC Area of Interest to individual businesses practices as well as to the Southern New England lobster industry as a whole.

Acknowledgments

The ASMFC would like to thank all survey participants for their willingness to contribute to the survey and for their submission of highly detailed fishing information.



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MEMORANDUM

TO: American Lobster Management Board
FROM: Megan Ware, FMP Coordinator
DATE: July 15, 2016
SUBJECT: Update on State Implementation of Jonah Crab FMP

The states of Maine through Virginia were required to implement provisions of the Jonah Crab Fishery Management Plan (FMP) by June 1, 2016. These include the commercial management measures outlined in *Section 4.1*, recreational management measures found in *Section 4.2*, and fishery independent sampling requirements described in *Section 3.4.1*. This memorandum serves as an update on the progress of state's implementation of these regulations. At the May meeting, the Lobster Board took final action on Addendum I and agreed to implement the 1,000 crab bycatch limit for non-trap gear and non-lobster trap gear by January 1, 2017. The Board also initiated Draft Addendum II to consider a coastwide standard for claw harvest in the Jonah crab fishery. The Board will consider approving this document for public comment in August.

Maine

Jonah crab regulations were reviewed by the DMR Advisory Council on March 1st and were implemented on March 7, 2016 (Chapter 25.45 Crab Fishing Limitations). The regulations are as follows:

- A lobster and crab license is required to participate in the directed trap fishery. All traps must conform to the specifications of the Lobster FMP.
- A prohibition on the retention of egg-bearing females in both the commercial and recreational fishery.
- Only whole crabs may be landed.
- 4 ¾ inch carapace width minimum size in the commercial fishery.
- Recreational limit of 50 crabs per day.
- It is unlawful to harvest crabs by drag in the EEZ unless the harvester holds a Draggled Crab Permit endorsement.

New Hampshire

Jonah crab regulations were adopted on October 21, 2015 (Fis 607.06). The following management measures are in effect and apply to both Jonah crab and rock crab:

- A lobster and crab license is required to participate in the directed trap fishery and recreational trap fishery. All traps must conform to the specifications of the Lobster FMP.
- A prohibition on the retention of egg-bearing females in both the commercial and recreational fishery.
- Only whole crabs may be landed.
- 4 ¾ inch carapace width minimum size in the commercial fishery.
- Recreational limit of 50 crabs per day.

Massachusetts

Jonah crab regulations were adopted on January 1, 2016 and the following management measures are in effect for all cancer crabs (including Jonah crabs and rock crabs):

- A lobster permit is required to fish for, retain, or land any edible crab. No person may set any trap that does not have a valid tag for the lobster fishery or any other permitted pot fishery. All traps used by persons fishing for any edible crabs must meet the specifications of the Lobster FMP.
- A prohibition on the retention of egg-bearing females in both the commercial and recreational fishery. Crabs from which eggs have been forcibly removed cannot be harvested.
- Only whole crabs may be landed.
- 4 ¾ inch carapace width minimum size in the commercial fishery.
- Recreational limit of 50 crabs per day.
- A state waters closed season from January 1 – April 30.

Rhode Island

Jonah crab regulations were implemented on May 11, 2016 (Part 5.5 Jonah Crab) and include the following provisions:

- Participation in the Jonah crab fishery is limited to those with a lobster trap allocation or those who can prove participation in the fishery prior to June 2, 2015. Proof of participation shall be documented by RI Harvester Logbooks or SAFIS Dealer Reports. There is no catch limit for those with a lobster trap allocation. Traps must meet the escape vent and size specifications of the Lobster FMP.
- A prohibition on the retention of egg-bearing females in the commercial fishery.
- Only whole crabs may be landed.
- 4 ¾ inch carapace width minimum size in the commercial fishery.
- 1,000 crab limit per vessel per day for gill nets, otter trawls, and non-lobster traps.
- Recreational limit of 50 crabs per day.

Connecticut

A Commissioner Declaration (16-01) addressing the requirements of the Jonah Crab FMP was signed on December 29, 2015 and came into effect on January 15, 2016. The following regulations apply to Jonah crab:

- A lobster license is required to participate in the trap fishery. All traps must meet the specifications of the Lobster FMP.
- A prohibition on the retention of egg-bearing females in both the commercial and recreational fishery. Crabs which have had eggs forcibly removed cannot be harvested.
- Only whole crabs may be landed.
- 4 ¾ inch carapace width minimum size in the commercial fishery.
- Recreational limit of 50 crabs per day.

New York

The full suite of management measures outlined in the Jonah Crab FMP have not been adopted; however, New York already prohibits the retention of egg-bearing females (Environmental Conservation Law Article 13 Section 13-0331 subsection 5) and has a recreational limit of 50 crabs per day (Environmental Conservation Law Article 13 Section 13-0331 subsection 1). It is expected that the remaining Jonah crab regulations will be implemented in the fall of 2016.

New Jersey

Final Jonah crab regulations were posted in the New Jersey Register on April 18, 2016 (N.J.A.C. 7:25-14.1, 14.9, 14.10, 14.11, 18.5, and 18.12). The following management measures are in effect:

- A New Jersey lobster pot permit is required to participate in the trap fishery. All traps must meet the specifications of the Lobster FMP
- A prohibition on the retention of egg-bearing females in both the commercial and recreational fishery.
- 4 ¾ inch carapace width minimum size in both the recreational and commercial fishery.
- Recreational limit of 50 crabs per day.

Delaware

Delaware has written the required Jonah crab regulations and has started the regulatory process under the Administrative Procedures Act. It is expected that regulations will be implemented by late 2016.

Maryland

Maryland's Jonah crab regulations are currently going through a legal and economic impact review. The final draft of the proposed regulations was printed in the Maryland Register on July 8th and public comments will be accepted through August 8, 2016. Pending the Secretary's endorsement, the regulations should be implemented on September 12, 2016.

Virginia

Jonah crab regulations in Virginia went into effect on June 1, 2016 (Chapter 4VAC20-1310). The following provisions were implemented.

- Participation in the directed Jonah crab fishery is limited to those individuals who have a legal federal lobster permit and at least one pound of documented landings of Jonah crab prior to June 2, 2015. These individuals are to obtain a Jonah Crab Limited Entry Fishery Permit. There is no landing limit for these fishermen.
- There is a no-cost Jonah crab incidental commercial permit for any harvester using gear or methods other than lobster traps in Virginia waters.
- A Limited Entry Jonah Crab Claw Fishery Permit is required to land Jonah crab claws. Permits are issued to a Virginia registered commercial fisherman who is a legal federal lobster permittee and who has at least one pound of documented claw landings prior to June 2, 2015.
- A prohibition on the retention of egg-bearing females in the commercial fishery.
- 4 ¾ inch carapace width minimum size in the commercial fishery.
- Recreational limit of 50 crabs per day.

Please contact Megan Ware, FMP Coordinator, with any questions regarding the implementation of the Jonah Crab Fishery Management Plan at mware@asmfc.org or 703-842-0740.