MARINE FISHERIES COMMISSION BUSINESS MEETING
Hilton Garden Inn, Kitty hawk, N.C.
Nov. 16-18, 2016

N.C.G.S. 138A-15(e) mandates at the beginning of any meeting of a board, the chair shall remind all members of their duty to avoid conflicts of interest under Chapter 138. The chair also shall inquire as to whether there is any known conflict of interest with respect to any matters coming before the board at that time.

N.C.G.S. 143B-289.54.(g)(2) states a member of the Marine Fisheries Commission shall not vote on any issue before the Commission that would have a "significant and predictable effect" on the member's financial interest. For purposes of this subdivision, "significant and predictable effect" means there is or may be a close causal link between the decision of the Commission and an expected disproportionate financial benefit to the member that is shared only by a minority of persons within the same industry sector or gear group. A member of the Commission shall also abstain from voting on any petition submitted by an advocacy group of which the member is an officer or sits as a member of the advocacy group's board of directors. A member of the Commission shall not use the member's official position as a member of the Commission to secure any special privilege or exemption of substantial value for any person. No member of the Commission shall, by the member's conduct, create an appearance that any person could improperly influence the member in the performance of the member's official duties.

Commissioners having questions about a conflict of interest or appearance of conflict should consult with counsel to the Marine Fisheries Commission or the secretary's ethics liaison. Upon discovering a conflict, the commissioner should inform the chair of the commission in accordance with N.C.G.S. 138A-15(e).

Nov. 16

6 p.m. Public Meeting
Receive public comment relative to any fisheries management issues

Nov. 17

9 a.m. Call to Order*
Invocation
Conflict of Interest Reminder
Roll Call
Vote on Approval of Agenda**
Vote on Approval of Meeting Minutes**

9:15 a.m. Petition for Rulemaking by the North Carolina Wildlife Federation – Blakely Hildebrand
Presentation of petition to designate all coastal fishing waters not otherwise designated as nursery areas as special secondary nursery areas; establish clear criteria for the opening of shrimp season; and define the type of gear and how and when gear may be used in special secondary nursery areas during shrimp season.

9:30 a.m. Public Comment
Receive public comment relative to any fisheries management issues

11:30 a.m. Chairman's Report
- Letters
- Ethics Training Reminder
- 2017 Meeting Schedule Reminder

11:45 a.m. Committee Reports
- Nominating – Michelle Duval
  - **Vote on slate of nominees for obligatory seat for the Mid-Atlantic Fishery Management Council****
- Standard Commercial Fishing License Criteria – Nancy Fish
  - **Vote on recommendations****

12:30 p.m. Lunch Recess

2 p.m. Martins Point Conflict Resolution – Kathy Rawls
- **Vote to approve proclamation****

2:30 p.m. Fishery Management Plan Update – Catherine Blum

2:45 p.m. Albemarle Roanoke Striped Bass Stock Assessment – Charlton Godwin

3 p.m. Central Southern Management Area Striped Bass Genetics Study – Charlton Godwin (Presentation)

4 p.m. Collaborative Shrimp Trawl Gear Study Update - Kevin Brown (Presentation)

4:30 p.m. Rulemaking – Catherine Blum

- 2016/2017 rulemaking cycle
- Periodic review and expiration of existing rules (Presentation)

4:45 p.m. Rules Suspensions – Kathy Rawls

The commission must vote to continue suspension of the following rule(s)

- **Vote on rule suspension for 15A NCAC 03M .0516 COBIA regarding possession limits ****
- **Vote on rule suspension for a portion of 15A NCAC 03L .0201 CRAB HARVEST RESTRICTIONS regarding culling tolerance and size limits and for a portion of 15A NCAC 03L .0203 CRAB DREDGING regarding targeted crab dredging****
- **Vote on rule suspension for portions of 15A NCAC 03J .0501 DEFINITIONS AND STANDARDS FOR POUND NETS AND POUND NET SETS to increase the minimum mesh size of escape panels for flounder pound nets****
- **Vote on rule suspension for portions of 15A NCAC Shad and 03Q .0107 SPECIAL REGULATIONS: JOINT WATERS to change the season and creel limit for American shad****

5 p.m. Recess

Nov. 18

8:30 a.m. Director's Report – Director Braxton Davis

Reports and updates on recent Division of Marine Fisheries activities

- Division of Marine Fisheries quarterly update
- Atlantic States Marine Fisheries Commission – Michelle Duval and Chris Batsavage
  - Red Drum Stock Assessment Update – Lee Paramore
  - Sustainable Fishery Management Plan for Shad – Holly White and Charlton Godwin (Presentation)
- Informational materials
  - Quotas
  - Landings for red drum and southern flounder
  - Protected Resources
    - Observer Program
  - Mid-Atlantic Fishery Management Council
  - South Atlantic Fishery Management Council
  - Highly Migratory Species
  - Preliminary Landings, January – June 2016
  - License and Statistics 2016 Annual Report

10:30 a.m. Issues from Commissioners

11 a.m. Meeting Assignments and Preview of Agenda Items for February Meeting – Nancy Fish

11:15 a.m. Adjourn

2017 Meeting Dates

Feb. 15-17	**Hilton Wilmington Riverside, Wilmington**
May 17-19	**BridgePointe Hotel and Marina, New Bern (location tentative)**
Aug. 16-18	**Brownstone, Raleigh**
Nov. 15-17	**Hilton Garden Inn, Kitty Hawk**

**** Times indicated are merely for guidance. The commission will proceed through the agenda until completed.***

*****Potential Action Items***

Minutes

Marine Fisheries Commission Business Meeting Minutes
Hilton Brownstone Hotel
Raleigh, North Carolina
Aug. 17-18, 2016

The commission held a public meeting on the evening of Aug. 17, followed by a business meeting Aug.18, at the Doubletree by Hilton University Brownstone Hotel in Raleigh, North Carolina.

The briefing book, presentations, motions and audio from this meeting can be found at http://portal.ncdenr.org/web/mf/08-2016-briefing-book.

PUBLIC MEETING – AUG. 17

Chairman Sammy Corbett called the meeting to order at 6 p.m. The following individual spoke:

David Bush, with the North Carolina Fisheries Association, spoke about a fisheries workshop scheduled for the Sept. 17 at the History Center in New Bern. The purpose of the workshop is to promote a better understanding of the way fisheries are managed in North Carolina, and it is open to anyone.

BUSINESS MEETING - MOTIONS AND ACTIONS – AUG. 18

Chairman Sammy Corbett convened the Marine Fisheries Commission business meeting at 9 a.m. and reminded commissioners of their conflict of interest and ethics requirements.

The following commission members were in attendance: Sammy Corbett-Chairman, Joe Shute - Vice Chairman, Mark Gorges, Chuck Laughridge, Janet Rose, Rick Smith, Mike Wicker and Alison Willis.

Motion by Chuck Laughridge to approve agenda, as modified. Second by Rick Smith. Motion carries with no opposition.

Motion by Alison Willis to approve minutes with modification. Second by Chuck Laughridge. Motion carries with no opposition.

Public Comment

David Sneed, Executive Director of the Coastal Conservation Association – North Carolina, talked about the Division of Marine Fisheries' most recent stock status report, saying it shows only three out of the 13 state-managed fisheries are viable. This is the legacy of the 1997 Fisheries Reform Act, he said, and for 20 years the department has been telling the division, and subsequently the commission, that it is their job to manage the state's public trust resources for maximum harvest and fair allocations between user groups. There is nothing in the Fisheries Reform Act that directs the commission to manage for fair allocations, and until this division and this commission decided it's time to manage our fisheries based on what is best for the resource, ahead of maximum sustainable harvest and allocation, this trend will not change, he said. Sneed pointed out that three of the sitting commissioners are at the end of their current term, and he doesn't know if they will be reappointed or if this will be their last meeting. He asked if they wanted this to be their legacy on this commission and said they all face the same finality in your role as a commissioner and should be asking yourself what legacy you plan to leave behind for your children and your grandchildren and all the citizens of North Carolina. He said, based on

public attendance, it appears the public has given up on this process. He closed by saying the commission has been given the power and opportunity to leave a lasting legacy for the public trust resources of North Carolina, please do not waste this opportunity.

Ron McCoy, from Hampstead, said he has been coming to these meetings for two years, since he retired, because he cares about the fish. At the last meeting, he showed a picture of one of his fishing buddies holding a pinfish on the north end of Lee Island and it drew some disagreement about the stock status of our fishery. For this meeting, he brought picture of his mom, Rachel, that appeared on the cover of the Morehead City Tide Chart in 1960. He talked about what an outstanding angler his mother was. He said his mother quit fishing in the 1980s because she said it wasn't worth the 50-mile drive from Cove City to the Iron Steamer Pier to catch a few small croakers and spots. He talked about changes through the years in the stock status of red drum, spotted seatrout, grey trout, southern flounder, whiting, stops and croaker. He closed by saying we really need to focus on the resource to get things turned around.

Alan Faircloth, a commercial fisherman from Surf City, said he primarily fishes for shrimp inside and he flounder nets. In 2016, we had to replace the webbing for flounder nets and using a six-inch stretch, and now you are shutting down in mid-October when the catch is the best. He said he did not think gigging was the proper way to harvest flounder because even experienced fishermen will gig undersized fish. With his nets, he said he had yet to remove and undersized, dead flounder or red drum. He did not think it was fair to approve weekend shrimping, even for the live bait fishery. He said he assumed weekend shrimping was closed due to safety concerns because there was much more activity on the water on the weekend. He also wants the area north of the high rise bridge at North Topsail Beach open to shrimping.

Chris Elkins, President of Coastal Conservation Association - North Carolina and former Marine Fisheries Commission member, said he was going to address striped bass in the Central Southern Management Area. The first priority of the fishery management plan is having a self-sustaining population. He said the evidence for a depleted stock is that this is a closed system where the number of fish put in and taken out is known and that there was no cryptic reservoir of fish. These fish demonstrate severely truncated age classes and three independent studies using different methods concur there are little or no mature fish to maintain a self-sustaining stock because the cause is clearly overfishing, primarily by the commercial sector, which kills between 65 percent and 85 percent of the juvenile fish. The solution, he said, is to stop overfishing. More studies and removing more dams will make no difference if we don't have mature fish. Elkins said in the fishery management plan, the commission granted proclamation authority to the division director. Additionally, the division has the ability to direct Director Davis to implement overfishing controls and this is what his organization is asking for. It is tough on a new guy to come in with limited experience; however, he said, there are a bunch of "old salts" here that know this fishery and that need to direct him. The commission should, at a minimum, close the commercial harvest to these stocked fish to allow some to mature. Additional steps can be done now, or you can wait the three or four years it will take to review this plan. This fishery is a $60,000 a year fishery and it represents 1 percent to 2 percent of the total commercial harvest of striped bass and hybrid aquaculture, thus the consumer will not miss these fish. Moreover, the harvest of a public trust resource is a privilege, he said, and not a right and that right should be revoked when the resource is in danger. We have depleted two river systems of striped bass for $60,000 a year – which is comparable to a single salary of a middle class worker. Elkins closed by saying this is sheer lunacy.

David Knight, representing the North Carolina Wildlife Federation on behalf of the Sound Solutions campaign, said he wanted to hear more on issues not on the agenda, like the definition of a commercial fisherman and licensing and fee levels, the Joint Enforcement Agreement letter to the General Assembly, and who leads between the division and commission on certain issues. On the agenda you do have listed a vote to cap the number of commercial licenses available in the Eligibility Pool – this is an opportunity to reduce this number to a more rational level that resembles reality, he said. His organization recommends reducing the number of licenses in the pool to 90 percent of the average over the last five years and then reducing that number by 10 percent every year thereafter. He also recommend abolishing the resell of the Standard Commercial Fishing License and the ability to transfer licenses at will. He ended by letting the commission know they were invited to the annual Governor's Banquet on Sept. 9 and that the Marine Patrol Officer of the Year award was going to Officer Gene Maready from Columbia.

Chairman Corbett responded that the Standard Commercial Fishing License Criteria Committee would be meeting the latter part of September and that up to three letters have been sent to the General Assembly regarding the Joint Enforcement Agreement.

Chairman's Report

Chairman Corbett asked Commission Liaison Nancy Fish to review letters that were received and sent on various issues since the last commission meeting.

It was determined the 2017 meeting schedule would be:
Feb. 15-17
May 17-19
Aug. 16-18
Nov. 15-17

Fish also reminded the commission of its ethics training requirements.

Election of Vice-Chair

Each year the commission elects its vice-chairman at the first meeting after July 1. Joe Shute was nominated and elected vice chairman of the commission.

Motion by Alison Willis to elect Joe Shute as vice chair. Second by Rick Smith.
Motion carries unanimously.

Conservation Fund Committee

Nancy Fish reported that the Conservation Fund Committee had met on June 20, 2016 and recommended the commission approve disbursement of $21,412 to fund a genetics study of fin clips from striped bass from the Central Southern Management Area.

The commission approved this disbursement.

Motion by Chuck Laughridge to approve $21,412 from the Conservation Fund for a striped bass genetic study. Second by Joe Shute.
Motion carries unanimously.

Standard Commercial Fishing License Eligibility Report/Set Eligibility Pool Cap
Stephan McInerny of the division's License and Statistics Section and Capt. Jason Walker with the Marine Patrol gave a presentation on the annual Standard Commercial Fishing License Eligibility Pool process and reviewed the number of licenses available for the pool for the 2016-2017 license/fiscal year.

The commission set the number of Standard Commercial Fishing Licenses available through an Eligibility Pool for the 2016-2017 fiscal year at 100.

A presentation on the Eligibility Pool determination can be found at: http://portal.ncdenr.org/c/document_library/get_file?uuid=80f25c62-2593-4f24-ac92-4da76fa31cdd&groupId=38337.

Motion by Mike Wicker to set the number of Standard Commercial Fishing Licenses available in the Eligibility Pool at 100 for the 2016-2017 fiscal year. Second by Joe Shute. Motion carries 6-1.

Landings Overview
Stephanie McInerny, Alan Bianchi and Dough Mumford, with the division's License and Statistics Section, provided the commission with an overview of trends in North Carolina landings and harvest.

Mild weather allowed North Carolina's commercial fishermen to work into late autumn and early winter in 2015, resulting in more seafood caught and sold for the second year in a row.

Commercial fishermen sold 66 million pounds of finfish and shellfish to seafood dealers in 2015, 6.8 percent more than in 2014 and higher than the five-year average of 60.5 million pounds. The dockside value of these landings rose slightly to an estimated $95 million, topping the five-year average annual value of $83.8 million.

Most notable among 2015 commercial fishing statistics were increases in shrimp and hard crab landings during the latter months of the year.

Coastal recreational fishermen also hooked more fish in 2015 than they did in 2014.

Anglers brought an estimated 10.2 million fish to the docks in 2015, an increase of 6.8 percent over 2014. The estimated weight of these landings rose by 32 percent to 11.6 million pounds. Anglers also released 6 percent more fish in 2015 than in 2014.

The top five recreational species harvested, by pounds, were dolphin, bluefish, yellowfin tuna, cobia and wahoo. Landings increased for three of these five species.

The presentation can be found at: http://portal.ncdenr.org/c/document_library/get_file?uuid=10b975f6-f614-4ea5-bbb6-48da20226748&groupId=38337

Stock Status Report

Lee Paramore with the division's Fisheries Management Section, provided the commission with an overview of the 2016 Stock Status Report and also discussed dependent and independent sampling processes.

This annual report is intended to serve as an overview of the overall health of North Carolina's fisheries resources. The information contained in the stock status report is used to prioritize development of state fishery management plans and subsequent plan reviews. In the 2016 report, there were no changes to any species under state fishery management plans. One species, summer flounder, listed under the Interjurisdictional Fishery Management Plan, moved from "viable" to "concern."

The downgrade to "concern" for summer flounder was based on the 2015 National Marine Fisheries Service Northeast Fisheries Center benchmark stock assessment for U.S. waters north of Cape Hatteras. The assessment indicated that the stock was not overfished but that overfishing was occurring. To prevent overfishing, the annual Acceptable Biological Catch for this species was lowered by 29 percent in 2016 to 16.26 million pounds. North Carolina receives 27.4 percent of the Acceptable Biological Catch.

The complete 2016 Stock Status Report can be found on the division's website at http://portal.ncdenr.org/web/mf/stock-status-reports. Attached is a table that summarizes the report and includes information about which fisheries management authorities manage the stock in parenthesis under each species name. It is intended to help the public better understand the various state and federal management agencies involved in the management of many of North Carolina's fisheries.

The presentation can be found at:
http://portal.ncdenr.org/c/document_library/get_file?uuid=9ace2c60-067a-41bc-ac14-f24d4dc255b2&groupId=38337.

Central Southern Management Area Striped Bass Meeting Update

Charlton Godwin, with the division's Fisheries Management Section, gave the commission an overview of meetings the division had with Wildlife Resources Commission staff, along with joint recommendations for addressing problems with striped bass reproduction in the Central Southern Management Area.

Staffs from both divisions met June 22 and discussed stocking efforts and subsequent implications for the status of the stocks of estuarine striped bass in the Central Southern Management Area. The staffs agreed to recommend to their respective directors that the Marine Fisheries Commission adjust the Fishery Management Plan Review Schedule at its August 2016 business meeting, so that the review of Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan would be initiated in August 2017, rather than August 2018.

The directors from both divisions met and agreed with the staff recommendation.

The genetic study of fin clips from striped bass from the Central Southern Management Area was discussed. Recent parentage-based tagging analyses of Central Southern Management Area striped bass in the Tar/Pamlico, Neuse and Cape Fear rivers indicates the stocks on the spawning grounds are near 100 percent hatchery origin. From 2010-2015, the majority of samples used in genetic analysis have been obtained by the North Carolina Wildlife Resources Commission from the spawning grounds in these systems. There is a need to obtain samples for genetic testing

from fish from areas in the Central Southern Management Area that are well away from the spawning grounds and harvested by the commercial and recreational sectors. This will give a more complete analysis of hatchery contribution to these stocks.

The South Carolina Department of Natural Resources Population Genetics Lab is currently contracted to perform this work for the North Carolina Wildlife Resources Commission. Fin clip samples collected by the Division of Marine Fisheries have also been sent to this lab. Division staff has been in contact with Dr. Tanya Darden at the South Carolina Department of Natural Resources Population Genetics Lab regarding the timeline of accomplishing this work. Dr. Darden's lab is currently cataloging the samples in their database and will begin genetic analysis in early September, and anticipate providing results for review by the commission at its Nov. 16-18 business meeting.

The presentation can be found at:
http://portal.ncdenr.org/c/document_library/get_file?uuid=f3aa3717-ff97-4d7c-9528-83ed17ae6846&groupId=38337.

Fishery Management Plan Update

Catherine Blum, the division's Fishery Management Plan Coordinator, updated the commission on the status of the ongoing fishery management plans and reviewed the five-year schedule.

The commission voted to proceed this fiscal year with a review of the state's Blue Crab Fishery Management Plan, which had been slated for fiscal year 2018-2019, to give the commission more management flexibility. The commission also voted to accelerate the review of the state's Estuarine Striped Bass Plan by one year to 2017-2018 due to possible problems with reproduction in the Tar/Pamlico, Neuse and Cape Fear rivers.

State law requires the Division of Marine Fisheries review state fishery management plans once every five years and revise them as needed. The commission sets this review schedule in August each year.

The commission slated the review of the Southern Flounder Fishery Management Plan to begin as soon as a valid stock assessment is available. The results of a coast-wide stock assessment are expected to be available in the second half of 2017.

Motion by Alison Willis to approve the Fishery Management Plan 5-year schedule as presented by the Division of Marine Fisheries, with the exception of moving the Blue Crab Fishery Management Plan review up to 2016-2017, to include a review of 2016 data. Second by Janet Rose.
Motion carries 7-0.

Motion by Janet Rose to move up the Southern Flounder Fishery Management Plan Review to begin as soon as a valid stock assessment is available. Second by Alison Willis. Motion carries 7-0.

Rulemaking Update

Catherine Blum, the division's Rulemaking Coordinator, updated the commission on the July 2016 rulebook supplement, the 2016/2017 rulemaking cycle and reviewed the following issue papers:

- Establish Spotted Seatrout Rule
- Modify Fisheries Director's Proclamation Authority for the Protection of Public Health
- Align Method for Commencement of License, Permit and Certificate Suspension/Revocation Process

Notice of Text
The commission approved notice of text and associated fiscal analysis for a slate of proposed rules, including rules to implement amendments to the Oyster and Hard Clam fishery management plans, to take to public hearing in October.

Motion by Chuck Laughridge to approve notice of text for the following proposed rules and associated fiscal analysis to implement the Hard Clam Fishery Management Plan Amendment 2/Oyster Fishery Management Plan Amendment 4:

- **15A NCAC 03K .0201, OYSTER HARVEST MANAGEMENT**
- **15A NCAC 03K .0202, CULLING REQUIREMENTS FOR OYSTERS**
- **15A NCAC 03K .0302, MECHANICAL HARVEST OF CLAMS FROM PUBLIC BOTTOM**
- **15A NCAC 03O .0114, SUSPENSION, REVOCATION, AND REISSUANCE OF LICENSES**
- **15A NCAC 03O .0201, STANDARDS AND REQUIREMENTS FOR SHELLFISH BOTTOM LEASES AND FRANCHISES AND WATER COLUMN LEASES**
- **15A NCAC 03O .0208, TERMINATION OF SHELLFISH BOTTOM LEASES AND FRANCHISES AND WATER COLUMN LEASES**

Second by Alison Willis.
Motion carries 7-0.

Motion by Alison Willis to approve notice of text for the following proposed rules and associated fiscal analysis to Establish the Permit for Weekend Trawling for Live Shrimp:

- **15A NCAC 03J .0104, TRAWL NETS**
- **15A NCAC 03L .0102, WEEKEND SHRIMPING PROHIBITED**
- **15A NCAC 03O .0501, PROCEDURES AND REQUIREMENTS TO OBTAIN PERMITS**
- **15A NCAC 03O .0503, PERMIT CONDITIONS; SPECIFIC**

Second by Chuck Laughridge.
Motion carries 7-0.

Motion by Alison Willis to approve notice of text for the following proposed rule and associated fiscal analysis to relocate a 2003 requirement for a permit for dealers transacting in spiny dogfish from proclamation into rule:

- **15A NCAC 03O .0503, PERMIT CONDITIONS; SPECIFIC**

Second by Joe Shute.
Motion carries 7-0.

Motion by Joe Shute to approve notice of text for the following proposed rule and associated fiscal analysis to increase penalties for gear larceny:

- **15A NCAC 03O .0114, SUSPENSION, REVOCATION, AND REISSUANCE OF LICENSES**

Second by Rick Smith.
Motion carries 7-0.

Motion by Alison Willis to approve notice of text for the following proposed rule and associated fiscal analysis to correct a coordinate in a boundary for Wade Creek:

- **15A NCAC 03R .0103, PRIMARY NURSERY AREAS**

Second by Mike Wicker.
Motion carries 7-0.

Motion by Chuck Laughridge to approve notice of text for the following proposed rule and associated fiscal analysis to clarify license requirements for leaseholder designees:

- **15A NCAC 03O .0501, PROCEDURES AND REQUIREMENTS TO OBTAIN PERMITS**

Second by Joe Shute.
Motion carries 7-0.

Motion by Joe Shute to approve notice of text for the following proposed rule and associated fiscal analysis to re-establish a rule delegating proclamation authority to the fisheries director to specify time, area, means and methods, season, size, and quantity of spotted seatrout harvested in North Carolina to allow for continued management under the North Carolina Spotted Seatrout Fishery Management Plan due to an Atlantic States Marine Fisheries Commission plan to remove spotted seatrout from its managed species:

- **15A NCAC 03M .0522, SPOTTED SEATROUT**

Second by Rick Smith.
Motion carries 7-0.

Motion by Alison Willis to approve notice of text for the following proposed rules and associated fiscal analysis to modify the fisheries director's proclamation authority for the protection of public health:

- **15A NCAC 03H .0103, PROCLAMATIONS, GENERAL**
- **15A NCAC 03K .0110, PUBLIC HEALTH AND CONTROL OF OYSTERS, CLAMS, SCALLOPS AND MUSSELS**

Second by Chuck Laughridge.
Motion carries 7-0.

Motion by Mark Gorges to approve notice of text for the following proposed rule and associated fiscal analysis to align the method of commencement of proceedings to suspend or revoke a fishing license, permit, or certificate with other similar administrative proceedings by the division and commission:

- **15A NCAC 03P .0101, LICENSE, PERMIT, OR CERTIFICATION DENIAL: REQUEST FOR REVIEW**

Second by Chuck Laughridge.
Motion carries 7-0.

Rule Suspensions

If the division director suspends any fisheries rules by proclamation, the commission must re-suspend those rules at the next meeting. The commission voted to re-suspend the following rules:

Motion by Chuck Laughridge to suspend Marine Fisheries Commission rule 15A NCAC 03M .0516 COBIA regarding possession limits. Second by Joe Shute.

Motion carries 7-0.

Motion by Alison Willis to suspend a portion of Suspend the following Marine Fisheries Commission rule 15A NCAC 03L .0201 CRAB HARVEST RESTRICTIONS regarding culling tolerance and size limits. Second by Mike Wicker.
Motion carries 7-0.

Motion by Alison Willis to suspend a portion of Suspend the following Marine Fisheries Commission rule 15A NCAC 03L .0203 CRAB DREDGING regarding targeted crab dredging. Second by Mike Wicker.
Motion carries 7-0.

Motion by Rick Smith to suspend a portion of Suspend the following Marine Fisheries Commission rule 15A NCAC 03M .0301 SPANISH MACKEREL regarding minimum size limit for pound nets. Second by Chuck Laughridge.
Motion carries 7-0.

Coastal Habitat Protection Plan

Jimmy Johnson, who coordinates the Coastal Habitat Protection Plan for the Department of Environmental Quality, reviewed updates to the 2016 plan.

Motion by Chuck Laughridge to approve the Coastal Habitat Protection Plan Annual Report. Second by Joe Shute.
Motion carries 7-0.

ASMFC Weakfish Management Board Letter

The commission asked the chairman to send a letter to the Atlantic States Marine Fisheries Commission Weakfish Management Board asking it to address weakfish bycatch mortality in the shrimp trawl fishery in its next stock assessment.

Motion by Mike Wicker to ask the commission chairman to send a letter (based on provided draft template) to the Atlantic States Marine Fisheries Commission's Weakfish Management Board to address weakfish age-zero bycatch mortality in the Pamlico Sound North Carolina shrimp fishery during their next assessment. Second by Rick Smith.
Motion carries 4-3 with one abstention.

False Albacore

The commission asked the division to develop an issue paper evaluating the need for state management of false albacore and send out to the advisory committees for feedback by August 2017.

Motion by Chuck Laughridge to ask the Division of Marine Fisheries to develop an issue paper evaluating the need for state management of false albacore, and send it to the advisory committees to provide feedback to the commission by August 2017. Second by Joe Shute.
Motion carries 6-0 with one abstention.

The meeting adjourned.

Petitions

PETITIONS

North Carolina Wildlife Federation
Affiliated with the National Wildlife Federation

1346 St. Julien Street
Charlotte, NC 28205
(704) 332-5696

1024 Washington St.
Raleigh, NC 27605
(919) 833-1923

November 2, 2016

Via U.S. and Electronic Mail

Chairman Sammy Corbett
N.C. Marine Fisheries Commission
Division of Marine Fisheries
PO Box 769
Morehead City, North Carolina 28557
samjcorbett3@gmail.com

Re: Petition for Rulemaking to Amend 15A Admin. Code 3L .0101, 3L .0103, 3M .0522, 3M .0523, 3N .0151, and 3R .0105 to Designate Special Secondary Nursery Areas and Reduce Bycatch Mortality in North Carolina Coastal Fishing Waters

Chairman Corbett:

On behalf of the North Carolina Wildlife Federation ("the Federation"), the undersigned files this Petition for Rulemaking ("Petition") pursuant to and in accordance with the North Carolina Administrative Procedure Act, N.C. Gen. Stat. § 150B-20, and 15A N.C. Admin. Code 3P .0301. These provisions allow any person wishing to adopt, amend, or repeal a rule of the North Carolina Marine Fisheries Commission ("MFC" or "the Commission") to submit a rulemaking petition to the Chairman of the Commission. In order to promote and ensure the viability and sustainability of North Carolina's valuable fisheries resources for all citizens, the Federation seeks amendments to the following sections of Title 15A of the North Carolina Administrative Code: 3R .0105, 3L .0101, 3L .0103, 3N .0151, and 3I .0101. In addition, the Federation urges the adoption of two new sections to Title 15A of the Code: 3M .0522 and 3M .0523 (collectively "proposed rules"). Taken together, the proposed rules will:

(1) Designate all coastal fishing waters not otherwise designated as nursery areas as special secondary nursery areas;

(2) Establish clear criteria for the opening of shrimp season; and

(3) Define the type of gear and how and when gear may be used in special secondary nursery areas during shrimp season.

In this Petition, "coastal fishing waters" include all inshore and ocean waters out to three miles that are currently under MFC jurisdiction.[1] The proposed rules are designed to protect, conserve, and restore North Carolina's valuable marine resources for all users by protecting important habitat areas for finfish and shellfish species in our sounds and estuaries and reducing bycatch of juvenile fish in nursery areas. This Petition advocates a data-driven, research-based approach to identifying existing nursery areas in North Carolina waters and in recommending management strategies most effective in protecting habitat and reducing bycatch.

The Petition proposes expanding special secondary nursery area designations to encompass areas that are essential to juvenile development for numerous recreationally and commercially valuable species in North Carolina waters, including but not limited to weakfish, spot, and Atlantic croaker. By expanding special secondary nursery area designations, more fish will survive the critical juvenile stage, reproduce, and thrive to stock recruitment.

Substantial fishing effort occurs in North Carolina's nursery areas. It is estimated that for every pound of shrimp harvested in North Carolina waters, over four pounds of non-target catch, including juvenile finfish, are discarded.[2] These juvenile finfish and other organisms constitute bycatch, which is defined as "the portion of a catch taken incidentally to the target catch because of non-selectivity of the fishing gear to either species or size differences."[3] In 2014, an estimated 15 million pounds of juvenile Atlantic croaker, spot, and weakfish were caught by trawl nets and thrown overboard.[4] Nearly all of the fish caught in trawl nets die in the net or shortly after culling on board.

The amount of finfish bycatch in the North Carolina shrimp trawl fishery is unsustainably high, and the negative impact of shrimp trawl bycatch is felt coast wide. North Carolina is the *only* state on the east coast to allow shrimp trawling in its sounds and estuaries. Rather than propose an outright ban on shrimp trawling in North Carolina waters, this Petition proposes a balanced approach of defining the type of gear and managing fishing in areas that are essential for juvenile finfish development. These efforts will protect important nursery areas, reduce bycatch of juvenile finfish, and preserve the commercial and recreational fishing industries, which drive North Carolina's coastal economy.

The Federation is a statewide, nonprofit conservation organization established in 1945 and dedicated to the sound, scientific management of North Carolina's fish, wildlife, and habitat

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[1] *See* 15A N.C. Admin. Code 3Q .0103 (2016) (defining "coastal fishing waters" and describing the scope of MFC jurisdiction over fishing waters); *see also* N.C. Gen. Stat. § 113-134.1 (2016) (stating the resources over which the MFC has jurisdiction).

[2] *Unintended Consequences*, N.C. WILDLIFE FED'N JOURNAL 2 (Spring 2014), http://www.ncwf.org/wp-content/uploads/ncwf-journal-spring-2014.pdf; *see also See* Kevin Brown, *Characterization of the commercial shrimp otter trawl fishery in the estuarine and ocean (0-3 miles) waters of North Carolina: Final Report to the National Fish and Wildlife Foundation and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service*, N.C. DEP'T OF ENV'TL QUALITY 14, 17 (Oct. 2015).

[3] Brown, *supra* note 2, at 2 (internal citations and quotations omitted).

[4] See Jack Travelstead & Louis Daniel, A Technical Review of a proposal submitted by the North Carolina Wildlife Federation to reduce mortality of juvenile fishes in North Carolina (Nov. 2016) (Exhibit B), at 11.

resources. The Federation is the state affiliate of the National Wildlife Federation and has offices in Charlotte and Raleigh, in addition to thirteen chapters, thirty eight affiliates, and thousands of members across the state. The Federation believes that North Carolina's marine resources are a public trust resource, and as such must be protected and sustained for use and enjoyment by all citizens. The Federation holds firmly to the position that North Carolina must change its approach to the protection, management, and conservation of its marine resources.

Pursuant to 15A N.C. Admin. Code 3P .0301, this Petition is addressed to the Chairman of the MFC. As required by MFC rules, fifteen (15) copies of this Petition will be submitted via U.S. Mail. The following sections of this Petition shall be organized by and shall provide the information that is required of rulemaking petitions set forth in 15A N.C. Admin. Code 3P .0301(b)(1)-(8).

I. TEXT OF THE PROPOSED RULES

The text of the proposed rules is attached hereto as Exhibit A.

II. THE STATUTORY AUTHORITY FOR THE COMMISSION TO PROMULGATE THE RULES

The Federation urges the adoption of amendments to the following sections of Title 15A of the North Carolina Administrative Code: 3R .0105, 3L .0101, 3L .0103, 3N .0151, and 3I .0101. In addition, the Federation urges the adoption of two new sections to Title 15A of the Code: 3M .0522 and 3M .0523.

The primary purpose of the MFC is to "[m]anage, restore, develop, cultivate, conserve, protect, and regulate the marine and estuarine resources within its jurisdiction."[5] The Commission has a mandatory duty to "adopt rules to be followed in the management, protection, preservation, and enhancement of the marine and estuarine resources within its jurisdiction."[6] The MFC has jurisdiction over the "conservation of marine and estuarine resources . . . and all activities connected with the conservation and regulation of marine and estuarine resources" in North Carolina.[7] Commission rulemaking authority includes regulation of the "[t]ime, place, character, or dimensions of any methods or equipment that may be employed in taking fish" and "[s]easons for taking fish."[8] The MFC must adopt rules to "provide a sound, constructive, comprehensive, continuing, and economical coastal fisheries program" for the State.[9] All regulation of commercial and recreational fishing must be "in the interest of the public,"[10] as the marine and estuarine resources of North Carolina "belong to the people of the State."[11]

[5] N.C. Gen. Stat. § 143B-289.51(b)(1) (2016).
[6] N.C. Gen. Stat. § 143B-289.52(a) (2016); *see also* N.C. Gen. Stat. § 113-182(a) (2016).
[7] N.C. Gen. Stat. § 113-132(a) (2016); *see also* N.C. Gen. Stat. § 143B-289.51(b)(1) (2016); N.C. Gen. Stat. § 113-134.1 (2016) (clarifying that the MFC has regulatory authority over the conservation of marine fisheries "in the Atlantic Ocean to the seaward extent of the State jurisdiction over the resources").
[8] N.C. Gen. Stat. § 143B-289.52(a)(1)(a)-(b) (2016); *see also* N.C. Gen. Stat. § 113-182(a) (2016).
[9] N.C. Gen. Stat. § 143B-289.51(b)(2) (2016).
[10] N.C. Gen. Stat. § 143B-289.52(a)(2) (2016).
[11] N.C. Gen. Stat. § 113-131(a) (2016).

The Commission defines nursery areas as "areas that for reasons such as food, cover, bottom type, salinity, temperature, and other factors, young finfish and crustaceans spend the major portion of their initial growing season."[12] Nursery areas fall into one of three categories: primary nursery areas ("PNAs"), secondary nursery areas ("SNAs"), and a subset of SNAs, special secondary nursery areas ("SSNAs").[13] PNAs are defined as "those areas in the estuarine system where initial post-larval development takes place . . [and] where populations are uniformly early juveniles."[14] SNAs are "areas in the estuarine system where later juvenile development takes place [and where] [p]opulations are composed of developing sub-adults of similar size that have migrated from an upstream primary nursery area to the secondary nursery area located in the middle portion of the estuarine system."[15] North Carolina rules do not distinguish between permanent SNAs and SSNAs. The rules prohibit the use of trawl nets, swipe nets, dredges, and other gear in PNAs.[16] The rules also prohibit the use of trawl nets in SNAs and SSNAs.[17] SSNAs, however, may be opened to trawling at the discretion of the Fisheries Director.[18] The designation of nursery areas, which triggers additional restrictions on effort and gear in these areas, is a critical component of the MFC's duty to protect and conserve the fisheries resources of the state.

The proposed rules expand the designation of SSNAs to include all inshore and near shore waters under MFC jurisdiction that are not currently protected as PNAs or permanent or special SNAs. In addition, the proposed rules provide guidance to the Fisheries Director regarding the appropriate time to open shrimp season. The proposed rules also limit trawl effort in sensitive and important habitat areas. Finally, the proposed rules establish size limits for Atlantic croaker and spot.

The proposed rules are consistent with—and further the objectives of—the Coastal Habitat Protection Plan ("CHPP"), which was mandated by the Fisheries Reform Act.[19] The MFC, together with the N.C. Coastal Resources Commission and the N.C. Environmental Management Commission, adopted the CHPP and must implement the recommendations contained therein.[20] The CHPP catalogues and describes the diversity of habitats and ecosystems on North Carolina's coast, identifies threats to important coastal habitats, and recommends management actions "to protect and restore habitats" vital to the State's fishery resources.[21] The CHPP repeatedly acknowledges the important role that nursery habitats play in maintaining

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[12] 15A N.C. Admin. Code 3I .0101(4)(f) (2016).
[13] *Id.*
[14] *Id.*
[15] *Id.*
[16] *See* 15A N.C. Admin. Code 3N .0104 (2016).
[17] *Id.* at .0105.
[18] *Id.*
[19] *See* N.C. Gen. Stat §§ 143B-289.52(a)(11), 143B-279.8 (2016). *See also North Carolina Coastal Habitat Protection Plan: Source Document*, N.C. DEP'T OF ENVT'L QUALITY 2 (2016), http://portal.ncdenr.org/c/document_library/get_file?uuid=5d02ccd2-3b9d-4979-88f2-ab2f9904ba61&groupId=38337 [hereinafter *CHPP*].
[20] N.C. Gen. Stat. § 143B-279.8(c) (2016).
[21] N.C. Gen. Stat. § 143B-279.8(a) (2016).

viable fisheries and a healthy coastal ecosystem.[22] Among the CHPP's many stated goals is that of enhancing and protecting habitats from adverse physical impacts. Expanding nursery area designations to accurately account for nursery habitat and affording these habitats additional protection furthers the goals of the CHPP.

Current North Carolina fisheries management policy does not include measures to ensure proper and necessary protection of marine fisheries resources. The proposed rules will ensure that essential habitat areas for commercially and recreationally valuable species are adequately protected by: (1) designating additional special secondary nursery areas in inshore and near shore waters, and (2) limiting effort and restricting gear within designated nursery areas. These measures are consistent with and fulfill MFC's statutory duties to manage, protect, preserve, and enhance the marine and estuarine resources of North Carolina. Moreover, the proposed rules will advance the objectives of the Fisheries Reform Act of 1997.

The MFC is statutorily authorized to enact the proposed rules. Designating nursery areas, regulating the opening and closing of seasons, establishing size limits, and managing the use of gear within designated nursery areas fall squarely within the MFC's authority to regulate the appropriate areas and methods for the taking of fish.[23] In addition, the MFC has explicit authority to establish seasons for the taking of fish.[24] Neither the Fisheries Reform Act nor any other legislation restricts when the Commission may take action on these important issues.[25]

III. A STATEMENT OF THE REASONS FOR ADOPTION OF THE PROPOSED RULES

The lack of adequate habitat protections and declining and depleted status of many of our coastal fish stocks suggests a failure of the MFC, through its existing regulations, to meet its duties to "conserve, protect, and regulate" marine and estuarine resources. While environmental factors and water pollution may affect the status of fish stocks, fishing practices also contribute to decline and depletion of several stocks. Bycatch of juvenile fish in the shrimp trawl fishery in estuarine and near shore waters, as allowed by existing Commission regulations, contributes to the current status of several commercially and recreationally valuable species, including but not limited to Atlantic croaker, spot, and weakfish.

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[22] *See, e.g.*, *CHPP*, *supra* note 19, at 27 (discussing the role of nursery areas for estuarine spawners).
[23] *See* N.C. Gen. Stat. § 143B-289.52(a)(1)(a) (2016).
[24] *Id.* at (a)(1)(b).
[25] The Fisheries Reform Act, N.C. Gen. Stat. § 113-181, *et. seq.*, requires the adoption of fishery management plans for "all commercially or recreationally significant species or fisheries that compromise State marine or estuarine resources." N.C. Gen. Stat. § 113-182.1(a) (2016). Fishery management plans may be species-specific, or may be based on gear or geographic areas. *Id*. at (b). With the exception of the size limits proposed for spot and Atlantic croaker, the proposed rules are not species-specific management measures. Instead, the proposed rules designate special secondary areas and provide for appropriate practices designed to protect these areas for numerous species. Size limits for several species not the subject of a state fishery management plan have been adopted by the MFC. *See, e.g.*, 15A N.C. Admin. Code 3M .0511 (2016) (imposing a per-day catch limit and a size limit for bluefish for recreational purposes). All of the proposed rules may be adopted by the MFC outside of the fishery management plan process outlined by the Fisheries Reform Act.

As discussed in further detail in the attached expert analyses:

(1) Existing primary, secondary, and special secondary nursery area designations fail to protect vital habitat areas within which later juvenile development takes place prior to a fish's first spawning;

(2) N.C. Division of Marine Fisheries ("DMF") data demonstrates that all coastal fishing waters that are not currently designated as nursery areas are, in fact, SSNAs for several finfish species;

(3) Additional gear restrictions and effort limits are necessary to provide adequate protection to juvenile fish that have yet to spawn in SSNAs at this sensitive life stage; and

(4) All coastal fishing waters not otherwise designated must be designated as SSNAs and afforded the protections of SSNA designation.

North Carolina's commercial and recreational fisheries are some of the most productive in the country. Estuarine-dependent species account for more than 90 percent of the State's commercial fisheries landings and over 60 percent of the recreational harvest.[26] The continued success and viability of these fisheries requires protection of important habitat areas on which these species rely for survival. North Carolina's existing nursery program provides important protections to larval and early juvenile populations that inhabit shallow, protected habitat areas. Later stage juveniles—those juveniles that have not yet reached adulthood and therefore have not spawned—however, lose habitat protection once they move into the sounds and ocean waters and are exposed to shrimp trawls and other fishing gear. It is no surprise that the highest levels of bycatch of juvenile species in North Carolina waters are found in the Pamlico Sound, which is a highly productive nursery area for several species of finfish.

The impact of bycatch mortality in North Carolina nursery areas extends to the mid- and south Atlantic coast.[27] Commercially and recreationally valuable species, including Atlantic croaker, spot, and weakfish, are in depleted or declining status, and fisheries managers have struggled to mitigate further decline in these stocks.[28] In fact, these three species also account for the vast majority of finfish bycatch in North Carolina waters.[29] As the experts note, bycatch mortality in North Carolina's shrimp trawl fishery contributes to declining status of these important populations.[30] Currently, tens of millions of juvenile fish fall victim to shrimp trawl bycatch each year, and therefore do not spawn, replace themselves, and contribute to the adult population. Increasing juvenile recruitment is essential to rebuilding the stock of these species.[31]

[26] *See CHPP*, *supra* note 19, at 11.
[27] *See* Travelstead & Daniel, *supra* note 4, at 20.
[28] *See id*. at 5, 7-9.
[29] *See id.* at 1, 5-9 (citing Brown 2015).
[30] *Id.* at 2.
[31] *Id.*

Critical ecosystem services are also lost as a result of sustained high bycatch levels.[32] Atlantic croaker, spot, and weakfish serve an important role in the trophic structure of the state's fisheries resources. Spot and Atlantic croaker, for example, transfer energy from benthic species (their primary diet component) to other economically valuable species, including spotted seatrout, red drum, and southern and summer flounder. [33] Removing significant levels of juvenile fish in shrimp trawls disadvantages higher-level species. The trawling activity itself compounds this effect, as bottom disturbing gear disrupts bottom habitat and bottom-dwelling benthic communities.[34]

The MFC's efforts to minimize bycatch of juvenile finfish have proven unsuccessful to date, as discussed below. The MFC limited the scope of Amendment 1 to the North Carolina Shrimp Fishery Management Plan ("FMP") to address the significant levels of bycatch in the state's shrimp trawl fishery. The MFC fell far short of taking meaningful action to protect important habitat areas and reduce bycatch of juvenile fish. Decades of inaction by the MFC have led to unsustainable levels of bycatch, and the time for action is now.

A. **Nursery Area Protection is Essential to Achieving Sustainable Fisheries.**

Nursery areas serve as vital habitat areas for the development of finfish and shellfish species from early larval to late juvenile life stages. As discussed in detail in the attached expert reports, nursery habitat supports high abundance levels and diversity of fish species, and the ecological processes that occur in nursery habitat support growth of individual fish. For decades, researchers have recognized the importance of nursery areas for juvenile life stage development. Estuarine nursery areas have been shown to contribute disproportionately to the production of individual fish that recruit into adult populations.[35] Nursery areas must be maintained in their natural state to promote and support species development.

Atlantic croaker, spot, and weakfish, among other estuarine-dependent species, spawn in coastal and near shore ocean waters and recruit as early juveniles in estuarine habitats like the Pamlico Sound.[36] The majority of the individuals found in the Pamlico Sound are juvenile fish that have yet to spawn or have not reached their full spawning potential.[37] As discussed in more detail below and in the attached expert reports, harvesting or otherwise subjecting these juveniles to high levels of fishing mortality before first spawning leads to recruitment overfishing and growth overfishing, and may ultimately impact fishery yields and long-term stock productivity.[38]

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[32] *See* Luiz Barbieri, *Technical Review: The Need to Reduce Fishing Mortality and Bycatch of Juvenile Fish in North Carolina's Estuaries* (Nov. 2016) (Exhibit E), at 9.
[33] *See* Travelstead & Daniel, *supra* note 4, at 12.
[34] *See id*. at 15; *see also* Barbieri, *supra* note 32, at 11.
[35] *See* Barbieri, *supra* note 32, at 5 (citing Able 2005, Beck, et. al., 2001, Heck and Crowder 1991).
[36] *See id.* at 9 (citing Lowerre-Berbieri et al. 1995, Barbieri et al. 1994a, Weinstein and Walters 1981, Chao and Musik 1977).
[37] *See id*.
[38] *See id.* at 11-12.

1. The Existing Nursery Area Program Fails to Protect Important Habitat Areas that are Essential for the Viability and Recovery of Fish Stocks.

The first steps in protecting nursery areas are to properly define "nursery area" under North Carolina rules and to designate important habitat areas as nursery areas. In 1988, approximately 3.9 percent of the state's estuarine waters were designated as PNAs; 1.7 percent were designated as SNAs; and 0.7 percent were designated as SSNAs.[39] In sum, approximately 129,000 acres, or 6.3 percent, of the state's estuarine waters were designated as nursery areas at that time.[40] Fast forward almost 30 years and little has changed, despite current and historical data demonstrating that additional areas serve as nursery habitat for several finfish species.[41] As a result, important habitat areas are left unprotected and few gear restrictions apply in these critical areas. Indeed, the CHPP acknowledges that "many shallow soft bottom areas are productive but *not* designated as primary or secondary nursery."[42] The existing nursery area designations fail to protect larger juvenile fish or very young adult fish and shellfish prior to spawning or reaching full spawning potential because existing designations do not account for large swaths of important habitat areas.[43] The MFC may obtain its goal of "balancing competing public trust uses with the goal of habitat protection" by expanding the areas designated as SSNAs and allowing commercial and recreational activities in SSNAs within certain limitations.[44]

DMF conducts several surveys to identify nursery area habitat in North Carolina waters, including the Program 120 ("P120") Survey and the P195 Pamlico Sound Survey. DMF conducted trawling and seine surveys in the 1970s to develop an inventory of the state's estuarine resources and to identify those areas of the state's estuaries that consistently support juvenile populations of shrimp, crab, and finfish.[45] The 1970s trawl surveys served as the initial survey to build DMF's inventory of coastal and estuarine resources and led to the first designation of PNAs, SNAs, and SSNAs. DMF surveys annually through the P120 survey, which provides updated data to identify nursery areas and builds a database of annual juvenile populations of economically beneficial species.[46] The P120 survey is concentrated in shallow, upper estuarine areas. The P195 Pamlico Sound Survey is conducted annually by DMF staff in June and September in the Pamlico Sound. The P195 survey has several objectives, including determining which species utilize the Sound and whether nursery habitats exist in the Sound for identified species.[47] Pamlico Sound Survey stations are located in the deeper parts of the

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[39] Elizabeth Noble and Robert Monroe, *Classification of Pamlico Sound Nursery Areas: Recommendations for Critical Habitat Criteria*, N.C. DEP'T OF ENV'T, HEALTH AND NAT. RES., 5 (1991).
[40] *Id.*
[41] *See* Travelstead & Daniel, *supra* note 4, 14-15 (citing Brown 2015, Casey and Zapf 2015).
[42] *CHPP*, *supra* note 19, at 169.
[43] *See* Travelstead & Daniel, *supra* note 4, at 2, 10-12 ; *see also* Barbieri, *supra* note 32, at 7.
[44] *Amendment 1 to the North Carolina Shrimp Fishery Management Plan*, N.C. DIV. MARINE FISHERIES, 170 (2015), http://portal.ncdenr.org/c/document_library/get_file?uuid=3d0d96c3-05bf-4cb6-84c3-fd119ad25d7e&groupId=38337 [hereinafter *Amendment 1*].
[45] *See id.* at 168; *see also North Carolina Division of Marine Fisheries Primary Nursery Area Designation Protocol*, N.C. DIV. MARINE FISHERIES, 1 (2002) [hereinafter *Protocol*].
[46] *See Amendment 1*, *supra* note 44, at 169.
[47] *See* Travelstead & Daniel, *supra* note 4, at 10 (citing Knight and Zapf 2015).

Pamlico Sound.[48] Generally, the Pamlico Sound Survey and P120 Survey stations do not overlap.

The following criteria are used to determine the presence of nursery areas: abundance, size composition, species diversity, bottom type, and depth.[49] The abundance analysis under the P120 survey, however, is limited to the following species: brown shrimp, blue crab, spot, Atlantic croaker, and southern flounder.[50] As the MFC has acknowledged, 90 percent of commercially and recreationally valuable species in North Carolina waters are dependent on nursery areas during an important life stage.[51] Those areas that "consistently support[] populations of juvenile shrimps, crab, and finfishes" and meet the criteria outlined by DMF should be designated as PNAs, SNAs, and SSNAs.[52]

2. North Carolina's Inshore Waters and Ocean (0-3 miles) Waters are Nursery Areas.

As explained in detail in the expert reports attached hereto as Exhibits B and E, current and historical DMF data clearly demonstrates that inshore and ocean (0-3 miles) waters serve as nursery areas for several species of finfish, including Atlantic croaker, spot, and weakfish. The MFC can no longer ignore its obligation to protect and conserve these areas for juvenile species, which are critical to recruitment and stock recovery.

The results of the annual Pamlico Sound Survey consistently indicate high levels of abundance of Atlantic croaker, spot, and weakfish in the Pamlico Sound.[53] Moreover, length frequency data suggests that the vast majority of the fish found in the Sound are juveniles that have not yet reached maturity.[54] These results are consistent with DMF characterization studies conducted in inshore waters south of the Pamlico Sound, including Bogue Sound and Core Sound, and in ocean waters.[55] In addition, physical habitat characteristics in these areas, including bottom type, salinity, and temperature, support the growth of juveniles into adulthood.[56]

The proposed rules designate all undesignated coastal fishing waters out to three miles offshore as SSNAs, recognizing the important role that these waters play in pre-spawn, late juvenile development. The proposed rules also amend the definition of "secondary nursery areas" to include "ocean waters" that serve as nursery habitat for food and forage species.

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[48] *See id*. at 10, 22 (Fig. 2).
[49] *See Protocol*, *supra* note 45, at 2-3.
[50] *See id*. at 2; *see also Amendment 1*, *supra* note 44, at 169.
[51] *Amendment 1*, *supra* note 44, at 168.
[52] *Protocol*, *supra* note 45, at 1.
[53] *See* Travelstead & Daniel, *supra* note 4, at 10-11 (citing Knight and Zapf 2015).
[54] *See id*. Abundance is the most important variable in determining the presence of nursery areas. *See Amendment 1*, *supra* note 44, at 169.
[55] *See* Travelstead & Daniel, *supra* note 4, at 11 (citing Brown 2015, Knight 2015, Knight and Zapf 2015, Brown 2009, Johnson 2006, Logothetis & McCuiston 2004, Johnson 2003, Diamond-Tissue 1999).
[56] *See id*. at 12.

B. **Gear Restrictions and Reduced Effort Are Necessary to Protect Habitat in Special Secondary Nursery Areas.**

Juvenile populations of Atlantic croaker, spot, and weakfish, among many other species, are subjected to intense fishing pressure in the shrimp trawl fishery in North Carolina waters. Ninety-two percent of shrimp landings in state waters are harvested with otter trawls.[57] Otter trawls catch essentially everything in their path, leading to extraordinarily high levels of bycatch. In addition, otter trawls disturb the sea or sound floor, which are fragile and productive ecosystems. A legislative panel pre-dating the Fisheries Reform Act found that bottom trawling gear, including shrimp trawls, had the greatest potential to impact bottom habitats in estuarine and coastal waters.[58] These impacts include physical disruption of habitat, changes in functional organization of species, increases in total suspended solids and turbidity, destruction of submerged aquatic habitat, and decreases in habitat complexity.[59] In North Carolina, designated PNAs, SNAs, and SSNAs are afforded protection; however, existing designations fail to account for all habitat areas that serve as nurseries. This is in spite of the fact that the MFC has recognized that "nursery areas need to be maintained . . . in their natural state, and the populations within them must be permitted to develop in a normal manner with as little interference from man as possible."[60]

In 2014 alone, approximately 15 million pounds of juvenile spot, Atlantic croaker, and weakfish were caught and discarded in North Carolina waters.[61] The vast majority of commercial shrimp landings from North Carolina are from inshore waters.[62] Substantial numbers of shrimp are also harvested in near shore ocean waters. High levels of juvenile abundance of valuable species have been found in these areas as well.[63] As discussed in detail above, these inshore and near shore areas serve as important habitat areas for an abundant and diverse population of juvenile fish. It is imperative to protect these nursery areas, as they provide "food, protection and proper environmental conditions (salinity and bottom type) for development and growth of young fish and crustaceans."[64]

North Carolina remains the only state on the east coast to allow trawling in inshore waters. A wholesale ban on trawling in inshore waters would substantially reduce bycatch in the commercial and recreational fisheries—but this extreme policy would have a detrimental impact on commercial fishermen, recreational fishermen, and North Carolina's coastal economy. The Federation proposes the following balanced, research-based approach to reduce bycatch mortality of juvenile species and to protect vital habitat areas in North Carolina's estuaries and ocean waters while allowing shrimp trawling to continue under new parameters. These management strategies are intended to apply to both the commercial and the recreational fishing

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[57] *See* Brown, *supra* note 2, at 1.
[58] *See CHPP*, *supra* note 19, at 163.
[59] *See id*. at 163-67.
[60] *See Amendment 1*, *supra* note 44, at 168; *see also* 15A N.C. Admin. Code 3N .0104-0105 (2016).
[61] *See* Travelstead & Daniel, *supra* note 4, at 11.
[62] *See* Brown, *supra* note 2, at 1 ("The majority of landings are from Pamlico Sound (56%), the Atlantic Ocean (24%) and Core Sound (6%), respectively.").
[63] *See* Travelstead & Daniel, *supra* note 4, at 11 (citing Brown 2015).
[64] *Amendment 1*, *supra* note 44, at 168; *see also* 15A N.C. Admin. Code 3I .0101(4)(f) (2016).

industries, including recreational fisherman operating under a recreational commercial gear license.

Taken together, the proposed rules will provide protection to essential habitat areas in which juvenile fish grow and thrive, reduce bycatch of juvenile fishes, and put North Carolina's fisheries on the path to recovery, which will benefit all North Carolinians—commercial and recreational fishermen alike. The Federation recommends that the proposed rules take effect in the shrimp season following their adoption. The following management measures are discussed in more detail in the attached expert reports.

1. Open Shrimp Season Under Established Guidelines.

Currently, the Fisheries Director must open each shrimp season by proclamation. Commission rules, however, provide no guidelines for the opening of the season. The Director should be guided by conservation principles in exercising proclamation authority under MFC rules. The Federation proposes opening shrimp season once the shrimp count in the Pamlico Sound reaches 60 shrimp per pound (heads on), as evaluated by DMF staff.[65]

2. Reduce Headrope Length.

Average headrope length in otter trawls has increased steadily over time, which in turn increased overall yield and higher levels of bycatch.[66] In 2012, average maximum headrope length on commercial otter trawls measured 94 feet.[67] By 2015, average maximum headrope length increased to 134 feet.[68] As discussed in detail in the attached expert reports, a headrope length restriction would reduce the total amount of bycatch by reducing the overall net size on all trawls in state waters.[69] Currently, combined headropes may be as long as 220 feet in some internal coastal waters, while headrope length is restricted to 90 feet in other internal coastal waters.[70]

Other states with significant commercial shrimping industries have established combined headrope length limits well below the current 220 feet maximum in North Carolina waters. For example, the maximum combined headrope length for shrimp trawls in Mississippi waters is 100 feet.[71] In Alabama, recreational shrimp trawl nets cannot exceed 16 feet (only one net per boat)

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[65] *See* Travelstead & Daniel, *supra* note 4, at 18-19.
[66] *See id.* at 17-18.
[67] *Id.* (citing Brown 2015). *See also Amendment 1*, *supra* note 44, at 312-313.
[68] Travelstead and Daniel, *supra* note 4, at 17 (citing Brown 2015).
[69] *See id. See also North Carolina Shrimp Fishery Management Plan*, N.C. DIV. OF MARINE FISHERIES 315 (2006), http://portal.ncdenr.org/c/document_library/get_file?uuid=7dc55c67-c6df-4a39-9ffc-32471c055c23&groupId=38337 (stating that limiting headrope sizes will lead to reduction in bycatch).
[70] Maximum headrope length cannot exceed 90 feet in certain Internal Coastal Waters. *See* 15A N.C. Admin. Code 3L .0103 (2016).
[71] *See* 21-1 MISS. CODE. R. § 15:05 (2014) (restricting individual trawl net sizes in different coastal areas to 12, 25, and 50 feet and placing limitations on the size of trawl doors).

and commercial trawl nets cannot exceed a combined 50 feet in length (limit of two nets per boat).[72]

The Federation proposes a maximum headrope length on all trawls in state waters not to exceed 90 feet. A consistent maximum headrope length not to exceed 90 feet will provide clarity and consistency for all fishermen and result in more efficient fishing practices in state waters.

3. Limit Tow Times.

Mortality of bycatch captured in trawl nets can vary widely based on tow times; longer tow times generally lead to higher bycatch mortality.[73] Conversely, shorter tow times would lead to a reduction in culling time and bycatch mortality.[74] Tow times vary widely in both the commercial and recreational fishery. Overall tow times have increased over the last several years. In 2012, average tow times in the shrimp trawl fishery during an observer study totaled 100 minutes in the Pamlico Sound.[75] By 2015, tow times under the same study increased more than 75 percent and averaged 181 minutes.[76] Maximum tow times likewise increased over the study period from 240 minutes in 2012 to 360 minutes in 2015.[77]

A reduction in tow times is unlikely to have an impact on overall harvest or income for commercial fishermen.[78] Bycatch mortality, however, is expected to decrease, giving juvenile fish caught in nets a higher likelihood of survival. The Federation proposes limiting tow times to 45 minutes in SSNAs.

4. Limit Fishing Days to Three Days per Week During Daylight Hours.

Reducing the number of fishing days each week and limiting trawling to daytime hours will reduce overall effort and, thus, bycatch of juvenile species in state waters. Under existing rules, shrimp trawling is prohibited in inshore waters between 9:00 pm on Friday until 5:00 pm on Sunday evenings.[79] An additional two day closure would reduce overall bycatch, provide fish species the opportunity to move out of trawling areas, and allow fish to recover from encounters with shrimp trawls during fishing days.[80] Shrimp landings are highest immediately after the opening of trawling for the week, suggesting that an additional two days of closure could

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[72] *See* ALA. ADMIN CODE R. 220-3-.01(8) (2014).
[73] *See, e.g.*, *Amendment 1*, *supra* note 44, at 304 ("Reduced tow times would likely reduce bycatch mortality.").
[74] *See id.*; *see also* Travelstead & Daniel, *supra* note 4, at 18.
[75] Travelstead & Daniel, *supra* note 4, at 18 (citing Brown 2015).
[76] *Id*.
[77] *Id*.
[78] *See Amendment 1*, *supra* note 44, at 306 (noting that implementing a tow time would not likely have an impact on harvest or income and that the Advisory Committees did not consider this management option when developing Amendment 1).
[79] 15A N.C. Admin. Code 3L .0102 (2016).
[80] *See* Travelstead & Daniel, *supra* note 4, at 18; *see also Amendment 1*, *supra* note 44, at 302 (discussing Ingraham's (2003) evaluation of nighttime closure off the coast of Brunswick County and noting that finfish bycatch was higher during nighttime trawling).

improve overall efficiency in the fishery.[81] Limiting trawling to daytime hours further limits effort in the fishery, without sacrificing catch.[82] Monitoring the shrimp trawling fishery is more effective during daylight hours because the trawlers can be more readily seen by DMF officers.

The Federation, therefore, proposes limiting the number of days for trawling in designated SSNAs to three days each week during daylight hours only.

5. Require the Use of Two DMF-certified Bycatch Reduction Devices.

No current North Carolina statute, regulation, or proposed regulation requires the use of a BRD by shrimp trawlers in state waters, other than a turtle excluder device.[83] The Fisheries Director may, but is not required to, issue a proclamation mandating the use of BRDs to reduce the number of finfish caught by shrimp trawl nets.[84] The use of one BRD has been required by proclamation since the 2012 shrimp season.[85] After the adoption of Amendment 1 to the Shrimp FMP, the Fisheries Director issued Proclamation SH-2-2015, which requires the use of two DMF-authorized BRDs on all otter and skimmer trawls in coastal fishing waters.[86] Amendment 1 also provided for the convening of a stakeholder group to initiate industry testing of several BRDs, with the target of reducing bycatch by 40 percent and minimizing shrimp loss.[87] DMF, with the support and involvement of the commercial industry stakeholders, has tested several promising BRDs over the last two shrimp seasons that significantly reduce bycatch levels while minimizing shrimp loss. The results of this study support the implementation of this management strategy.

Proclamations are binding on all fishermen fishing in North Carolina waters;[88] however, a proclamation may be rescinded at any time by the Fisheries Director. A rule requiring the use of two BRDs would put in place a permanent and consistent requirement and signal to fishermen MFC's commitment to reducing bycatch in the state's shrimp trawl fishery.

The Federation proposes a rule that requires all fishermen to use two DMF-certified BRDs when trawling in any state waters, which is consistent with Proclamation SH-2-2015.

6. Establish Size Limits for the Possession of Spot and Atlantic Croaker.

A size limit will supplement efforts in the commercial fishery to reduce bycatch, preserve habitat, and protect sensitive juvenile finfish populations. Currently, no size limits exist for the

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[81] *See Amendment 1*, *supra* note 44, at 301 (citing Johnson 2006); *see also* Travelstead & Daniel, *supra* note 4, at 18.
[82] *See* Travelstead & Daniel, *supra* note 4, at 18.
[83] 15A N.C. Admin. Code 03L .0103(g) (2016).
[84] 15 N.C. Admin. Code 3J .0104(d) (2016).
[85] *See* Proclamation SH-3-2012 Re: Shrimp Trawling, N.C. Div. of Marine Fisheries (May 22, 2012), *available at* http://portal.ncdenr.org/web/mf/proclamation-sh-03-2012.
[86] *See* Proclamations SH-2-2015 Re: Shrimp Trawl BRD Requirements, N.C. Div. of Marine Fisheries (May 12, 2015), http://portal.ncdenr.org/web/mf/proclamation-sh-02-2015.
[87] Amendment 1, *supra* note 44, at 356.
[88] 15 N.C. Admin. Code 3H .0103(a) (2016).

possession of Atlantic croaker or spot in North Carolina waters.[89] To allow these species to grow to full maturity and spawn at least once, the Federation recommends establishing size limits for spot and Atlantic croaker for the recreational fishery. Specifically, the Federation proposes an 8 inch size limit for the harvest of spot and a 10 inch size limit for the harvest of Atlantic croaker.

IV. A STATEMENT OF THE EFFECT ON EXISTING RULES

The proposed rules will amend the following sections of 15A of the North Carolina Administrative Code: 3R .0105, 3L .0101, 3L .0103, and 3N .0151. The proposed rules also add two additional sections to Chapter 3, Subchapter M of Title 15A of the North Carolina Administrative Code. The proposed rules are not expected to affect any other existing rules.

V. COPIES OF ANY DOCUMENTS AND DATA SUPPORTING THE PROPOSED RULES

Copies of documents supporting the proposed rules are attached hereto as Exhibits B through F. Exhibit B is a technical review provided by Jack Travelstead and Dr. Louis Daniel, and details the important role of nursery areas in juvenile fish development, the stock status of several commercially and recreationally important species, and the contribution of bycatch mortality in nursery areas to overall stock status. In addition, Mr. Travelstead and Dr. Daniel recommend several management strategies that the MFC must adopt to provide adequate protection to nursery areas and mitigate bycatch levels in North Carolina waters. Exhibit E is a technical review provided by Dr. Luiz Barbieri, which outlines the need to reduce fishing and bycatch mortality of juvenile fish in North Carolina's estuaries. Exhibits C, D, and F include the curriculum vitae of supporting experts.

VI. A STATEMENT OF THE EFFECT OF THE PROPOSED RULE ON EXISTING PRACTICES IN THE AREA INVOLVED, INCLUDING AN ESTIMATE OF COST FACTORS FOR PERSONS AFFECTED BY THE PROPOSED RULES

The proposed rule is designed to minimally affect the commercial and recreational fishing industries. Commercial and recreational fishermen would be expected to see increases in the availability of fishes for harvest under the proposed rules. Commercial shrimp trawl fishermen with smaller boats and nets shorter than 45 feet will be minimally affected. Those fishermen who already employ the use of a second BRD will minimally affected by the proposed rules. Fishermen with large boats and nets exceeding the total headrope maximum may be required to discontinue the use of one or two nets while in state waters. In addition, fish dealers may be impacted if the availability, quantity, or price of harvested shrimp is positively or negatively affected by the proposed rules.

[89] The MFC prohibits the possession of weakfish below 12 inches in the commercial and recreational fishery and limits the catch of weakfish to 1 bag per day in the recreational fishery. *See N.C. Recreational Coastal Waters Guide for Sports Fishermen*, N.C. DIV. OF MARINE FISHERIES, http://portal.ncdenr.org/web/mf/recreational-fishing-size-and-bag-limits (last updated Oct. 13, 2016).

Efficiencies in terms of reduced effort and associated costs would be measureable. As pointed out in the attached expert reports, limiting shrimping during the day and the earlier part of the week results in minimal shrimp loss. Anecdotal evidence suggests that several of the management strategies required by the proposed rules will increase the size, and therefore the value, of shrimp harvested in North Carolina waters, which would benefit the commercial fishing industry. Moreover, all commercial and recreational fisheries will benefit if fish stocks currently in depleted or declining status rebound as a result of the proposed rule. Without an economic analysis that considers the specific proposals contained in this Petition, any prediction of cost is purely speculative.

Cost factors associated with the proposed rule include, but are not limited to, the following: (1) cost of new gear, including a headrope meeting the proposed rule requirements and a second bycatch reduction device, and installation of new gear, if necessary; (2) cost of delaying the shrimp season by a short time to allow shrimp count to reach 60 shrimp per pound (heads on) as determined by the Fisheries Director; (3) cost of reducing tow time to 45 minute tows and trawl effort to three days per week during nighttime hours, if these reductions affect overall effort; and (4) the cost of implementing a size limit on spot and Atlantic croaker.

VII. A DESCRIPTION OF THOSE MOST LIKELY TO BE AFFECTED BY THE PROPOSED RULES

As described above, the proposed rules will affect individuals who participate in the commercial and recreational fishing industries, as well as the general public. The general public will derive substantial benefits from the adoption of the proposed rule changes. Economically valuable North Carolina and coast-wide fish stocks have struggled to rebound after several years, and in some cases decades, of decline. Bycatch mortality in the absence of adequate habitat protection has contributed to declining and depleted stock statuses. By protecting valuable habitats and reducing bycatch levels, the proposed rules will protect marine and estuarine resources for all citizens of the State.

VIII. THE NAME AND ADDRESS OF THE PETITIONER

Tim Gestwicki, Chief Executive Officer
North Carolina Wildlife Federation
1346 Saint Julien Street
Charlotte, NC 28205

IX. CONCLUSION

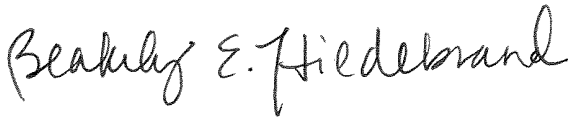
The Commission has a duty to adopt rules “in the public interest” for the “protection, preservation, and enhancement” of fish stocks adversely affected by bycatch in the shrimp trawl fishery. The Federation has proposed rules that would allow the continuation of a shrimp trawl fishery while protecting habitat, reducing bycatch, and contributing to the restoration of declining and depleted fish stocks. The proposed regulations are within the authority of the Commission and in the public interest, and will enable the Commission to meet its duties under the law to conserve, preserve, protect, and enhance marine and estuarine resources.

For the reasons stated above, the Federation requests that the MFC adopt the proposed rules. Pursuant to 15A N.C. Admin. Code 3P .0303(b), the MFC has 120 days to make a final determination regarding the Petition. The Federation appreciates the opportunity to informally discuss this Petition with the Commission on November 17, 2016.

The Federation welcomes questions from the Commission, and appreciates the Commission's consideration of the Petition. Please direct any questions regarding the Petition to Blakely Hildebrand at bhildebrand@selcnc.org or (919) 967-1450.

Sincerely,

Tim Gestwicki
Chief Executive Officer
North Carolina Wildlife Federation



Blakely E. Hildebrand
Associate Attorney
Southern Environmental Law Center

Enclosures (6)

CC (w/encl.):
Vice Chairman, Commissioner Joe Shute, N.C. Marine Fisheries Commission
Commissioner Rick Smith, N.C. Marine Fisheries Commission
Commissioner Janet Rose, N.C. Marine Fisheries Commission
Commissioner Mike Wicker, N.C. Marine Fisheries Commission
Commissioner Alison Willis, N.C. Marine Fisheries Commission
Commissioner Mark Gorges, N.C. Marine Fisheries Commission
Commissioner Chuck Laughridge, N.C. Marine Fisheries Commission
Braxton Davis, Director, N.C. Division of Marine Fisheries

EXHIBIT A

TEXT OF PROPOSED RULES

The added text is denoted by underline and deleted text is denoted ~~by strike-through~~ below.

15A N.C. Admin. Code 3R .0105: Special Secondary Nursery Areas

The special secondary nursery areas referenced in 15A NCAC 3N .0105(b) are designated in the following coastal water areas:

(1) Roanoke Sound:

(a) Outer Shallowbag Bay--west of a line beginning on Baum Point at a point 35° 55.1461' N--75° 39.5618' W; running southeasterly to Ballast Point to a point 35° 54.6250' N--75° 38.8656' W; including the canal on the southeast shore of Shallowbag Bay; and
(b) Kitty Hawk Bay/Buzzard Bay--within the area designated by a line beginning at a point on the east shore of Collington Creek at a point 36° 2.4360' N--75° 42.3189' W; running westerly to a point 36° 2.6630' N--75° 41.4102' W; running along the shoreline to a point 36° 2.3264' N--75° 42.3889' W; running southwesterly to a point 36° 2.1483' N--75° 42.4329' W; running along the shoreline to a point 36° 1.6736' N--75° 42.5313' W; running southwesterly to a point 36° 1.5704' N--75° 42.5899' W; running along the shoreline to a point 36° 0.9162' N--75° 42.2035' W; running southeasterly to a point 36° 0.8253' N--75° 42.0886' W; running along the shoreline to a point 35° 59.9886' N--75° 41.7284' W; running southwesterly to a point 35° 59.9597' N--75° 41.7682' W; running along the shoreline to the mouth of Buzzard Bay to a point 35° 59.6480' N--75° 32.9906' W; running easterly to Mann Point to a point 35° 59.4171' N--75° 32.7361' W; running northerly along the shoreline to the point of beginning;

(2) In the Pamlico and Pungo rivers Area:

(a) Pungo Creek--west of a line beginning on Persimmon Tree Point at a point 35° 30.7633' N--76° 38.2831' W; running southwesterly to Windmill Point to a point 35° 31.1546' N--76° 37.7590' W;
(b) Scranton Creek--south and east of a line beginning on the west shore at a point 35° 30.6810' N--76° 28.3435' W; running easterly to the east shore to a point 35° 30.7075' N--76° 28.6766' W;
(c) Slade Creek--east of a line beginning on the west shore at a point 35° 27.8879' N--76° 32.9906' W; running southeasterly to the east shore to a point 35° 27.6510' N--76° 32.7361' W;
(d) South Creek--west of a line beginning on Hickory Point at a point 35° 21.7385' N--76° 41.5907' W; running southerly to Fork Point to a point 35° 20.7534' N--76° 41.7870' W; and
(e) Bond Creek/Muddy Creek--south of a line beginning on Fork Point 35° 20.7534' N--76° 41.7870' W; running southeasterly to Gum Point to a point 35° 20.5632' N--76° 41.4645' W;

(3) In the West Bay Area:

(a) West Thorofare Bay--south of a line beginning on the west shore at a point 34° 57.2199' N--76° 24.0947' W; running easterly to the east shore to a point 34° 57.4871' N--76° 23.0737' W;
(b) Long Bay-Ditch Bay--west of a line beginning on the north shore of Ditch Bay at a point 34° 57.9388' N--76° 27.0781' W; running southwesterly to the south shore of Ditch Bay to a point 34° 57.2120' N--76° 27.2185' W; then south of a line running southeasterly to the east shore of Long Bay to a point 34° 56.7633' N--76° 26.3927' W; and
(c) Turnagain Bay--south of a line beginning on the west shore at a point 34° 59.4065' N--76° 30.1906' W; running easterly to the east shore to a point 34° 59.5668' N--76° 29.3557' W;

(4) In the Core Sound Area:

(a) Cedar Island Bay--northwest of a line beginning near the gun club dock at a point 34° 58.7203' N--76° 15.9645' W; running northeasterly to the south shore to a point 34° 57.7690' N--76° 16.8781' W;
(b) Thorofare Bay-Barry Bay--northwest of a line beginning on Rumley Hammock at a point 34° 55.4853' N--76° 18.2487' W; running northeasterly to Hall Point to a point 34° 54.4227' N--76° 19.1908' W;
(c) Nelson Bay--northwest of a line beginning on the west shore of Nelson Bay at a point 34° 51.1353' N--76° 24.5866' W; running northeasterly to Drum Point to a point 34° 51.6417' N--76° 23.7620' W;
(d) Brett Bay--north of a line beginning on the west shore at a point 34° 49.4019' N--76° 26.0227' W; running easterly to Piney Point to a point 34° 49.5799' N--76° 25.0534' W; and
(e) Jarrett Bay--north of a line beginning on the west shore near Old Chimney at a point 34° 45.5743' N--76° 30.0076' W; running easterly to a point east of Davis Island 34° 45.8325' N--76° 28.7955' W;

(5) In the North River Area:

(a) North River--north of a line beginning on the west shore at a point 34° 46.0383' N--76° 37.0633' W; running easterly to a point on the east shore 34° 46.2667' N--76° 35.4933' W; and
(b) Ward Creek--east of a line beginning on the north shore at a point 34° 46.2667' N--76° 35.4933' W; running southerly to the south shore to a point 34° 45.4517' N--76° 35.1767' W;

(6) Newport River--west of a line beginning near Penn Point on the south shore at a point 34° 45.6960' N--76° 43.5180' W; running northeasterly to the north shore to a point 34° 46.8490' N--76° 43.3296' W;

(7) New River--all waters upstream of a line beginning on the north side of the N.C. Highway 172 Bridge at a point 34° 34.7680' N--77° 23.9940' W; running southerly to the south side of the bridge at a point 34° 34.6000' N--77° 23.9710' W;

(8) Chadwick Bay--all waters west of a line beginning on the northeast side of Chadwick Bay at a point 34° 32.5630' N--77° 21.6280' W; running southeasterly to a point near Marker "6" at 34° 32.4180' N--77° 21.6080' W; running westerly to Roses Point at a point 34° 32.2240' N--77° 22.2880' W; following the shoreline in Fullard Creek to a point 34° 32.0340' N--77° 22.7160' W; running northwesterly to a point 34° 32.2210' N--77° 22.8080' W; following the shoreline to the west point of Bump's Creek at a point 34° 32.3430' N--77° 22.4570' W; running northeasterly to the east shore to a point 34° 32.4400' N--77° 22.3830' W; following the shoreline of Chadwick Bay back to the point of origin;

(9) Intracoastal Waterway--all waters in the IWW maintained channel from a point near Marker "17" north of Alligator Bay 34° 30.7930' N--77° 23.1290' W; to a point near Marker "49" at Morris Landing at a point 34° 28.0820' N--77° 30.4710' W; and all waters in the IWW maintained channel and 100 feet on either side from Marker "49" to the N.C. Highway 50-210 Bridge at Surf City;

(10) Cape Fear River--all waters bounded by a line beginning on the south side of the Spoil Island at the intersection of the IWW and the Cape Fear River ship channel at a point 34° 1.5780' N--77° 56.0010' W; running easterly to the east shore of the Cape Fear River to a point 34° 1.7230' N--77° 55.1010' W; running southerly and bounded by the shoreline to the Ferry Slip at Federal Point at a point 33° 57.8080' N--77° 56.4120' W; running northerly to Bird Island to a point 33° 58.3870' N--77° 56.5780' W; running northerly along the west shoreline of Bird Island and the Cape Fear River spoil islands back to point of origin;

(11) Lockwood Folly River--all waters north of a line beginning on Howells Point at a point 33° 55.3680' N--78° 12.7930' W and running in a westerly direction along the IWW near IWW Marker "46" to a point 33° 55.3650' N--78° 13.8500' W; and

(12) Saucepan Creek--all waters north of a line beginning on the west shore at a point 33° 54.6290' N--78° 22.9170' W; running northeasterly to the east shore to a point 33° 54.6550' N--78° 22.8670' W.

(13) All Coastal Fishing Waters under the jurisdiction of the Marine Fisheries Commission, pursuant to N.C. Gen. Stat. § 113-132(a), not otherwise designated as primary, secondary, or special secondary nursery areas under .0103, .0104, or above, respectively.

15A N.C. Admin. Code 3L .0101: Shrimp Harvest Restrictions

(a) It is unlawful to take shrimp until the Fisheries Director, by proclamation, opens the season.

(b) The Fisheries Director may not open the season until the shrimp count reaches 60 shrimp per pound, heads on, in the Pamlico Sound.

~~(b)~~ (c) The Fisheries Director may, by proclamation, impose any or all of the following restrictions on the taking of shrimp:

(1) specify time;
(2) specify area;
(3) specify means and methods;
(4) specify season;
(5) specify size; and
(6) specify quantity.

15A N.C. Admin. Code 3L .0103: Prohibited Nets, Mesh Lengths and Areas

(a) It is unlawful to take shrimp with nets with mesh lengths less than the following:

(1) Trawl net--one and one-half inches;
(2) Fixed nets, channel nets, float nets, butterfly nets, and hand seines--one and one-fourth inches; and
(3) Cast net--no restriction.

(b) It is unlawful to take shrimp with a net constructed in such a manner as to contain an inner or outer liner of any mesh length. Net material used as chafing gear shall be no less than four inches mesh length, except that chafing gear with smaller mesh may be used only on the bottom one-half of the tailbag. Such chafing gear shall not be tied in a manner that forms an additional tailbag.

~~(c) It is unlawful to take shrimp with trawls that have a combined headrope of greater than 90 feet in Internal Coastal Waters in the following areas~~:

~~(1) North of the 35| 46.3000' N latitude line;~~
~~(2) Core Sound south of a line beginning at a point 34| 59.7942' N--76| 14.6514' W on Camp Point; running easterly to a point 34| 58.7853' N--76| 9.8922' W on Core Banks; to the South Carolina State Line;~~
~~(3) Pamlico River upstream of a line from a point 35| 18.5882' N--76| 28.9625' W at Pamlico Point; running northerly to a point 35| 22.3741' N--76| 28.6905' W at Willow Point; and~~
~~(4) Neuse River southwest of a line from a point 34| 58.2000' N--76| 40.5167' W at Winthrop Point on the eastern shore of the entrance to Adams Creek; running northerly to a point 35| 1.0744' N--76| 42.1550' W at Windmill Point at the entrance of Greens Creek at Oriental.~~

~~(d)~~ (c) Effective January 1, 201~~7~~8 it is unlawful to take shrimp with trawls that have a combined headrope of greater than 90 feet in Coastal Fishing Waters. ~~220 feet in Internal Coastal Waters in the following areas:~~

~~(1) Pamlico Sound south of the 35| 46.3000' N latitude line and north of a line beginning at a point 34| 59.7942' N--76| 14.6514' W on Camp Point; running easterly to a point 34| 58.7853' N--76| 9.8922' W on Core Banks;~~

~~(2) Pamlico River downstream of a line from a point 35| 18.5882' N--76| 28.9625' W at Pamlico Point; running northerly to a point 35| 22.3741' N--76| 28.6905' W at Willow Point; and~~

~~(3) Neuse River northeast of a line from a point 34| 58.2000' N--76| 40.5167' W at Winthrop Point on the eastern shore of the entrance to Adams Creek; running northerly to a point 35| 1.0744' N--76| 42.1550' W at Windmill Point at the entrance of Greens Creek at Oriental.~~

~~(e)~~ (d) It is unlawful to use a shrimp trawl in the areas described in 15A NCAC 3R .0114.

~~(f)~~ (e) It is unlawful to use channel nets except as provided in 15A NCAC 3J .0106.

~~(g)~~ (f) It is unlawful to use shrimp pots except as provided in 15A NCAC 3J .0301.

~~(h)~~ (g) It is unlawful to use a shrimp trawl that does not conform with the federal rule requirements for Turtle Excluder Devices (TED) as specified in 50 CFR Part 222.102 Definitions, 50 CFR Part 223.205 (a) and Part 223.206 (d) Gear Requirements for Trawlers, and 50 CFR Part 223.207 Approved TEDs. These federal rules are incorporated by reference including subsequent amendments and editions. Copies of these rules are available via the Code of Federal Regulations posted on the Internet at http://www.gpoaccess.gov/cfr/index.html and at the Division of Marine Fisheries, P.O. Box 769, Morehead City, North Carolina 28557 at no cost.

~~(i)~~ (h) It is unlawful to use a shrimp trawl without two (2) authorized North Carolina Division of Marine Fisheries bycatch reduction devices properly installed and operational in the cod end of each net in Coastal Fishing Waters.

15A N.C. Admin. Code 3N .0105: Prohibited Gear, Secondary Nursery Areas

(a) It is unlawful to use trawl nets for any purpose in any of the permanent secondary nursery areas designated in 15A NCAC 3R .0104.

(b) It is unlawful to use trawl nets for any purpose in any of the special secondary nursery areas designated in 15A NCAC 3R .0105(1)-(12), except that the Fisheries Director, may, by proclamation, open any or all of the special secondary nursery areas listed in 15A NCAC 3R .0105(1)-(12), or any portion thereof, ~~listed in 15A NCAC 3R .0105~~ to shrimp or crab trawling from August 16 through May 14 subject to the provisions of 15A NCAC 3L .0100 and .0200.

(c) It is unlawful to use trawl nets for any purpose in any of the special secondary nursery areas designated in 15A NCAC 3R .0105(13), except that the Fisheries Director, may, by proclamation, open any special secondary nursery areas listed in 15A NCAC 3R .0105(13), or any portion thereof, to shrimp or crab trawling, subject to the provisions of 15A NCAC 3L. 0100 and .0200 and the restrictions described below:

(1) Trawling may only occur during shrimp season;
(2) Trawling is restricted to a total of three days per week;
(3) Trawling is prohibited between sunset and sunrise; and
(4) Tow time may not exceed 45 minutes. Tow time begins when the doors of the trawl enter the water and ends when the doors exit the water.

15A N.C. Admin. Code 3I .0101: Definitions

All definitions set out in G.S. 113, Subchapter IV and the following additional terms apply to this Chapter:

(1) Enforcement and management terms:

(a) Commercial Quota. Total quantity of fish allocated for harvest by commercial fishing operations.

(b) Educational Institution. A college, university, or community college accredited by an accrediting agency recognized by the U.S. Department of Education; an Environmental Education Center certified by the N.C. Department of Environment and Natural Resources Office of Environmental Education and Public Affairs; or a zoo or aquarium certified by the Association of Zoos and Aquariums.

(c) Internal Coastal Waters or Internal Waters. All Coastal Fishing Waters except the Atlantic Ocean.

(d) Length of finfish.

i. Curved fork length. A length determined by measuring along a line tracing the contour of the body from the tip of the upper jaw to the middle of the fork in the caudal (tail) fin.
ii. Fork length. A length determined by measuring along a straight line the distance from the tip of the snout with the mouth closed to the middle of the fork in the caudal (tail) fin, except that fork length for billfish is measured from the tip of the lower jaw to the middle of the fork of the caudal (tail) fin.
iii. Pectoral fin curved fork length. A length of a beheaded fish from the dorsal insertion of the pectoral fin to the fork of the tail measured along the contour of the body in a line that runs along the top of the pectoral fin and the top of the caudal keel.
iv. Total length. A length determined by measuring along a straight line the distance from the tip of the snout with the mouth closed to the tip of the compressed caudal (tail) fin.

(e) Recreational Possession Limit. Restrictions on size, quantity, season, time period, area, means, and methods where take or possession is for a recreational purpose.

(f) Recreational Quota. Total quantity of fish allocated for harvest for a recreational purpose.

(g) Regular Closed Oyster Season. March 31 through October 15, unless amended by the Fisheries Director through proclamation authority.

(h) Scientific Institution. One of the following entities:

(i) An educational institution as defined in this Item;

i. A state or federal agency charged with the management of marine or estuarine resources; or
ii. A professional organization or secondary school working under the direction of, or in compliance with mandates from, the entities listed in Subitems (h)(i) and (ii) of this Item.
iii. Seed Oyster Management Area. An open harvest area that, by reason of poor growth characteristics, predation rates, overcrowding or other factors, experiences poor utilization of oyster populations for direct harvest and sale to licensed dealers and is designated by the Marine Fisheries Commission as a source of seed for public and private oyster culture.

(2) Fishing Activities:

(a) Aquaculture operation. An operation that produces artificially propagated stocks of marine or estuarine resources or obtains such stocks from permitted sources for the purpose of rearing in a controlled environment. A controlled environment provides and maintains throughout the rearing process one or more of the following:

i. food;
ii. predator protection;
iii. salinity
iv. temperature controls; or
v. water circulating, utilizing technology not found in the natural environment.

(b) Attended. Being in a vessel, in the water or on the shore, and immediately available to work the gear and be within 100 yards of any gear in use by that person at all times. Attended does not include being in a building or structure.

(c) Blue Crab Shedding. The process whereby a blue crab emerges soft from its former hard exoskeleton. A shedding operation is any operation that holds peeler crabs in a controlled environment. A controlled environment provides and maintains throughout the shedding process one or more of the following:

i. food;
ii. predator protection;
iii. salinity;

iv. temperature controls; or
v. water circulation, utilizing technology not found in the natural environment. A shedding operation does not include transporting pink or red-line peeler crabs to a permitted shedding operation.

(d) Depuration. Purification or the removal of adulteration from live oysters, clams, or mussels by any natural or artificially controlled means.

(e) Long Haul Operations. Fishing a seine towed between two vessels.

(f) Peeler Crab. A blue crab that has a soft shell developing under a hard shell and having a white, pink, or red-line or rim on the outer edge of the back fin or flipper.

(g) Possess. Any actual or constructive holding whether under claim of ownership or not.

(h) Recreational Purpose. A fishing activity that is not a commercial fishing operation as defined in G.S. 113-168.

(i) Shellfish marketing from leases and franchises. The harvest of oysters, clams, scallops, or mussels from privately held shellfish bottoms and lawful sale of those shellfish to the public at large or to a licensed shellfish dealer.

(j) Shellfish planting effort on leases and franchises. The process of obtaining authorized cultch materials, seed shellfish, and polluted shellfish stocks and the placement of those materials on privately held shellfish bottoms for increased shellfish production.

(k) Shellfish production on leases and franchises:

i. The culture of oysters, clams, scallops, or mussels on shellfish leases and franchises from a sublegal harvest size to a marketable size.
ii. The transplanting (relay) of oysters, clams, scallops, or mussels from areas closed due to pollution to shellfish leases and franchises in open waters and the natural cleansing of those shellfish.

(l) Swipe Net Operations. Fishing a seine towed by one vessel.

(m) Transport. Ship, carry, or cause to be carried or moved by public or private carrier by land, sea, or air.

(n) Use. Employ, set, operate, or permit to be operated or employed.

(3) Gear:

(a) Bunt Net. The last encircling net of a long haul or swipe net operation constructed of small mesh webbing. The bunt net is used to form a pen or pound from which the catch is dipped or bailed.

(b) Channel Net. A net used to take shrimp that is anchored or attached to the bottom at both ends or with one end anchored or attached to the bottom and the other end attached to a vessel.

(c) Commercial Fishing Equipment or Gear. All fishing equipment used in Coastal Fishing Waters except:

i. Cast nets;
ii. Collapsible crab traps, a trap used for taking crabs with the largest open dimension no larger than 18 inches and that by design is collapsed at all times when in the water, except when it is being retrieved from or lowered to the bottom;
iii. Dip nets or scoops having a handle not more than eight feet in length and a hoop or frame to which the net is attached not exceeding 60 inches along the perimeter;
iv. Gigs or other pointed implements that are propelled by hand, whether or not the implement remains in the hand;
v. Hand operated rakes no more than 12 inches wide and weighing no more than six pounds and hand operated tongs;
vi. Hook-and-line and bait-and-line equipment other than multiple-hook or multiple-bait trotline;
vii. Landing nets used to assist in taking fish when the initial and primary method of taking is by the use of hook and line;
viii. Minnow traps when no more than two are in use;
ix. Seines less than 30 feet in length;
x. Spears, Hawaiian slings, or similar devices that propel pointed implements by mechanical means, including elastic tubing or bands, pressurized gas, or similar means.

(d) Corkline. The support structure a net is attached to that is nearest to the water surface when in use. Corkline length is measured from the outer most mesh knot at one end of the corkline following along the line to the outer most mesh knot at the opposite end of the corkline.

(e) Dredge. A device towed by engine power consisting of a frame, tooth bar or smooth bar, and catchbag used in the harvest of oysters, clams, crabs, scallops, or conchs.

(f) Fixed or stationary net. A net anchored or staked to the bottom, or some structure attached to the bottom, at both ends of the net.

(g) Fyke Net. An entrapment net supported by a series of internal or external hoops or frames, with one or more lead or leaders that guide fish to the net mouth. The net has one or more internal funnel-shaped openings with tapered ends directed inward from the mouth, through which fish enter the enclosure. The portion of the net designed to hold or

trap fish is completely enclosed in mesh or webbing, except for the openings for fish passage into or out of the net (funnel area).

(h) Gill Net. A net set vertically in the water to capture fish by entanglement of the gills in its mesh as a result of net design, construction, mesh length, webbing diameter, or method in which it is used.

(i) Headrope. The support structure for the mesh or webbing of a trawl that is nearest to the water surface when in use. Headrope length is measured from the outer most mesh knot at one end of the headrope following along the line to the outer most mesh knot at the opposite end of the headrope.

(j) Hoop Net. An entrapment net supported by a series of internal or external hoops or frames. The net has one or more internal funnel-shaped openings with tapered ends directed inward from the mouth, through which fish enter the enclosure. The portion of the net designed to hold or trap the fish is completely enclosed in mesh or webbing, except for the openings for fish passage into or out of the net (funnel area).

(k) Lead. A mesh or webbing structure consisting of nylon, monofilament, plastic, wire, or similar material set vertically in the water and held in place by stakes or anchors to guide fish into an enclosure. Lead length is measured from the outer most end of the lead along the top or bottom line, whichever is longer, to the opposite end of the lead.

(l) Mechanical methods for clamming. Dredges, hydraulic clam dredges, stick rakes, and other rakes when towed by engine power, patent tongs, kicking with propellers or deflector plates with or without trawls, and any other method that utilizes mechanical means to harvest clams.

(m) Mechanical methods for oystering. Dredges, patent tongs, stick rakes, and other rakes when towed by engine power, and any other method that utilizes mechanical means to harvest oysters.

(n) Mesh Length. The distance from the inside of one knot to the outside of the opposite knot, when the net is stretched hand-tight in a manner that closes the mesh opening.

(o) Pound Net Set. A fish trap consisting of a holding pen, one or more enclosures, lead or leaders, and stakes or anchors used to support the trap. The holding pen, enclosures, and lead(s) are not conical, nor are they supported by hoops or frames.

(p) Purse Gill Nets. Any gill net used to encircle fish when the net is closed by the use of a purse line through rings located along the top or bottom line or elsewhere on such net.

(q) Seine. A net set vertically in the water and pulled by hand or power to capture fish by encirclement and confining fish within itself or against another net, the shore or bank as a result of net design, construction, mesh length, webbing diameter, or method in which it is used.

(4) Fish habitat areas. The estuarine and marine areas that support juvenile and adult populations of fish species, as well as forage species utilized in the food chain. Fish habitats as used in this definition, are vital for portions of the entire life cycle, including the early growth and development of fish species. Fish habitats in all Coastal Fishing Waters, as determined through marine and estuarine survey sampling, include:

(a) Anadromous fish nursery areas. Those areas in the riverine and estuarine systems utilized by post-larval and later juvenile anadromous fish.

(b) Anadromous fish spawning areas. Those areas where evidence of spawning of anadromous fish has been documented in Division sampling records through direct observation of spawning, capture of running ripe females, or capture of eggs or early larvae.

(c) Coral:

i. Fire corals and hydrocorals (Class Hydrozoa);
ii. Stony corals and black corals (Class Anthozoa, Subclass Scleractinia); or
iii. Octocorals; Gorgonian corals (Class Anthozoa, Subclass Octocorallia), which include sea fans (Gorgonia sp.), sea whips (Leptogorgia sp. and Lophogorgia sp.), and sea pansies (Renilla sp.).

(d) Intertidal Oyster Bed. A formation, regardless of size or shape, formed of shell and live oysters of varying density.

(e) Live rock. Living marine organisms or an assemblage thereof attached to a hard substrate, excluding mollusk shells, but including dead coral or rock. Living marine organisms associated with hard bottoms, banks, reefs, and live rock include:

i. Coralline algae (Division Rhodophyta);
ii. Acetabularia sp., mermaid's fan and cups (Udotea sp.), watercress (Halimeda sp.), green feather, green grape algae (Caulerpa sp.) (Division Chlorophyta);
iii. Sargassum sp., Dictyopteris sp., Zonaria sp. (Division Phaeophyta);
iv. Sponges (Phylum Porifera);
v. Hard and soft corals, sea anemones (Phylum Cnidaria), including fire corals (Class Hydrozoa), and Gorgonians, whip corals, sea pansies, anemones, Solengastrea (Class Anthozoa);
vi. Bryozoans (Phylum Bryozoa);
vii. Tube worms (Phylum Annelida), fan worms (Sabellidae), feather duster and Christmas treeworms (Serpulidae), and sand castle worms (Sabellaridae);
viii. Mussel banks (Phylum Mollusca: Gastropoda); and
ix. Acorn barnacles (Arthropoda: Crustacea: Semibalanus sp.).

(f) Nursery areas. Areas that for reasons such as food, cover, bottom type, salinity, temperature, and other factors, young finfish and crustaceans spend the major portion of their initial growing season. Primary nursery areas are those areas in the estuarine system where initial post-larval development takes place. These are areas where populations are uniformly early juveniles. Secondary nursery areas are those areas in the ocean and estuarine system where later juvenile development takes place. Populations are composed of developing sub-adults of similar size that have migrated from an upstream primary nursery area to the secondary nursery area located in the middle portion of the estuarine system.

(g) Shellfish producing habitats. Historic or existing areas that shellfish, such as clams, oysters, scallops, mussels, and whelks use to reproduce and survive because of such favorable conditions as bottom type, salinity, currents, cover, and cultch. Included are those shellfish producing areas closed to shellfish harvest due to pollution.

(h) Strategic Habitat Areas. Locations of individual fish habitats or systems of habitats that provide exceptional habitat functions or that are particularly at risk due to imminent threats, vulnerability, or rarity.

(i) Submerged aquatic vegetation (SAV) habitat. Submerged lands that:

i. are vegetated with one or more species of submerged aquatic vegetation including bushy pondweed or southern naiad (Najas guadalupensis), coontail (Ceratophyllum demersum), eelgrass (Zostera marina), horned pondweed (Zannichellia palustris), naiads (Najas spp.), redhead grass (Potamogeton perfoliatus), sago pondweed (Stuckenia pectinata, formerly Potamogeton pectinatus), shoalgrass (Halodule wrightii), slender pondweed (Potamogeton pusillus), water stargrass (Heteranthera dubia), water starwort (Callitriche heterophylla), waterweeds (Elodea spp.), widgeongrass (Ruppia maritima), and wild celery (Vallisneria americana). These areas may be identified by the presence of above-ground leaves, below-ground rhizomes, or reproductive structures associated with one or more SAV species and include the sediment within these areas; or
ii. have been vegetated by one or more of the species identified in Sub-item (4)(i)(i) of this Rule within the past 10 annual growing seasons and that meet the average physical requirements of water depth (six feet or less), average light availability (secchi depth of one foot or more), and limited wave exposure that characterize the environment suitable for growth of SAV. The past presence of SAV may be demonstrated by aerial photography, SAV survey, map, or other documentation. An extension of the past 10 annual growing seasons criteria may be considered when average environmental conditions are altered by drought, rainfall, or storm force winds.

This habitat occurs in both subtidal and intertidal zones and may occur in isolated patches or cover extensive areas. In defining SAV habitat, the

Marine Fisheries Commission recognizes the Aquatic Weed Control Act of 1991 (G.S. 113A-220 et. seq.) and does not intend the submerged aquatic vegetation definition, or this Rule or Rules 3K .0304 and .0404, to apply to or conflict with the non-development control activities authorized by that Act.

(5) Licenses, permits, leases and franchises, and record keeping:

(a) Assignment. Temporary transferal to another person of privileges under a license for which assignment is permitted. The person assigning the license delegates the privileges permitted under the license to be exercised by the assignee, but retains the power to revoke the assignment at any time, and is still the responsible party for the license.

(b) Designee. Any person who is under the direct control of the permittee or who is employed by or under contract to the permittee for the purposes authorized by the permit.

(c) For Hire Vessel. As defined by G.S. 113-174, when the vessel is fishing in state waters or when the vessel originates from or returns to a North Carolina port.

(d) Holder. A person who has been lawfully issued in his or her name a license, permit, franchise, lease, or assignment.

(e) Land:

i. For commercial fishing operations, when fish reach the shore or a structure connected to the shore.
ii. For purposes of trip tickets, when fish reach a licensed seafood dealer, or where the fisherman is the dealer, when fish reach the shore or a structure connected to the shore.
iii. For recreational fishing operations, when fish are retained in possession by the fisherman.

(f) Licensee. Any person holding a valid license from the Department to take or deal in marine fisheries resources.

(g) Logbook. Paper forms provided by the Division and electronic data files generated from software provided by the Division for the reporting of fisheries statistics by persons engaged in commercial or recreational fishing or for-hire operators.

(h) Master. Captain of a vessel or one who commands and has control, authority, or power over a vessel.

(i) New fish dealer. Any fish dealer making application for a fish dealer license who did not possess a valid dealer license for the previous license year in that name. For purposes of license issuance, adding new categories to an existing fish dealers license does not constitute a new dealer.

(j) Office of the Division. Physical locations of the Division conducting license and permit transactions in Wilmington, Washington, Morehead City, Roanoke Island, and Elizabeth City, North Carolina. Other businesses or entities designated by the Secretary to issue Recreational Commercial Gear Licenses or Coastal Recreational Fishing Licenses are not considered Offices of the Division.

(k) Responsible party. Person who coordinates, supervises, or otherwise directs operations of a business entity, such as a corporate officer or executive level supervisor of business operations, and the person responsible for use of the issued license in compliance with applicable statutes and rules.

(l) Tournament Organizer. The person who coordinates, supervises, or otherwise directs a recreational fishing tournament and is the holder of the Recreational Fishing Tournament License.

(m) Transaction. Act of doing business such that fish are sold, offered for sale, exchanged, bartered, distributed, or landed.

(n) Transfer. Permanent transferal to another person of privileges under a license for which transfer is permitted. The person transferring the license retains no rights or interest under the license transferred.

(o) Trip Ticket. Paper forms provided by the Division and electronic data files generated from software provided by the Division for the reporting of fisheries statistics by licensed fish dealers.

15A N.C. Administrative Code 3M .0522: Spot (new section)

It is unlawful to possess spot less than 8 inches in total length.

15A N.C. Administrative Code 3M .0523: Atlantic croaker (new section)

It is unlawful to possess Atlantic croaker less than 10 inches in total length.

EXHIBIT B

A TECHNICAL REVIEW OF A PROPOSAL SUBMITTED BY THE NORTH CAROLINA WILDLIFE FEDERATION TO REDUCE MORTALITY OF JUVENILE FISHES IN NORTH CAROLINA

Prepared by Jack Travelstead and Dr. Louis Daniel

Submitted to the North Carolina Marine Fisheries Commission

November 2, 2016

I. INTRODUCTION

The level of bycatch and discard mortality of juvenile marine fishes in shrimp trawls in the coastal and estuarine waters of North Carolina is extraordinary. Though other fisheries contribute to juvenile bycatch, shrimp trawls are the largest source of bycatch mortality, and proper management would have a significant and measureable impact in restoring overfished and declining stocks.

North Carolina is the only state on the east coast of the United States that still allows shrimp trawls to operate in estuarine nursery areas, and its trawling regulations are the most lax nationwide. Despite efforts to reduce the documented bycatch that occurs in this fishery through the use of bycatch reduction devices ("BRDs"), closed seasons, and restricted areas, hundreds of millions of juvenile fish continue to die each year from shrimp trawls, which contributes to declining stocks. The critical importance of all these species to the recreational and commercial fisheries of North Carolina, as well as their ecosystems function as forage and energy transfer, cannot be overstated.

Viable fish populations depend on the recruitment of juvenile fish into the adult population so that they can spawn and replace themselves before being harvested or dying. This is the essential tenet behind the "sustainable harvest" objective of North Carolina's Fisheries Reform Act of 1997. Juvenile fishes first enter the estuary at the larval or early juvenile stage and move into shallow protected habitats inside North Carolina's expansive estuarine system. In defined Primary and Secondary Nursery Areas, these fishes are partially protected from recognized, destructive fishing practices such as shrimp trawling. Natural mortality during these early life stages is extremely high. Fishes that survive the high natural mortality rates during these stages move out of the confines of North Carolina's limited nursery area system and into the open rivers and sounds where fish receive far less regulatory protection. Though natural mortality declines during this time, mortality in the form of discard mortality from shrimp trawls progressively increases, thus depressing recruitment of juvenile fish into the adult population.

Many of the adult populations of fish stocks subjected to shrimp trawl bycatch have declined significantly, which means that increased juvenile recruitment to rebuild those populations is more important today than ever. Specifically, spot, Atlantic croaker, and weakfish were critical components of North Carolina's estuarine commercial and recreational fisheries prior to their dramatic declines in the late 1980s. In 1981, the commercial landings of these three species were 37.6 million pounds. In 2015 that number dropped to 2.3 million pounds, a 95 percent decline. The recreational fishery shows a similar trend: in 1981 recreational landings were 5.3 million pounds compared to 1.6 million pounds in 2015, a 70 percent decline. This precipitous decrease comes despite increases in angler effort in terms of numbers of fishermen. Primarily, the high juvenile mortality from bycatch, along with overfishing of adult stocks in directed fisheries, confound efforts to rebuild these populations. Declining spawning stock biomass and continued high discards must be addressed immediately to restore the viability of these important fisheries to North Carolina and the east coast.

The purpose of this paper is to provide a review of the management history, concerns, and impacts of the shrimp trawl fishery on important stocks. In addition, this paper proposes

solutions to existing issues that should be considered and addressed to restore severely depleted fish stocks in the estuarine waters of North Carolina.

II. BACKGROUND

The Atlantic Coastal Fisheries Cooperative Management Act (1993) and the North Carolina Fisheries Reform Act (1997) were passed 20 years ago. The intent of these legislative mandates was to restore overfished fish stocks and provide ongoing protections to facilitate responsible and sustainable fishing. The general concept is simple: coordinated management of fish stocks would yield healthy fishery resources that benefitted all users as well as the ecosystem. A review of the stock status of many of the fisheries managed under these laws indicates these goals have not been achieved. Today, many stocks remain in an overfished or overfishing status or fall into a category of concern as population measurements either languish at low levels or are in decline.

Government agencies and stakeholders involved in the early development and passage of this legislation expected more tangible results than what has been achieved. Whether the issue is uncertainty in stock assessments, continued overharvest, failure to adequately characterize and address substantive bycatch issues, or the inter- and intra-state concerns over allocation, many south and mid-Atlantic fish stocks are no better off, and are likely in worse condition, than they were 20 years ago. Most nearshore, state waters fisheries of importance to North Carolina and the mid- and south Atlantic states have declined to either concern, depleted, or unknown status. The common thread for these fish stocks is that virtually all are subjected to intense juvenile mortality and many lack any protective size limits.

Alverson et al. (1996) indicate that the global impacts of trawl bycatch are enormous. Shrimp trawls generate more bycatch than any other gear leading to declining fish stocks on a global scale. It is undisputed that discarded finfish species rarely survive their encounter with a shrimp trawl. Moreover, the research consistently indicates that discards from fisheries that impact large quantities of juvenile fish can generate significant population effects. The combined effects of overfishing, discard mortality on natural species assemblages, altered predator/prey dynamics, and modified structure and function of benthic communities contribute to population declines. Even 20 years ago, it was believed that Atlantic croaker in the Gulf of Mexico declined by more than 40 percent as a result of shrimp trawl bycatch. Estimated bycatch during the 1980s was 7.9 billion fish per year. In addition, the Gulf of Mexico Fishery Management Council recognized that shrimp trawl bycatch was the primary source of mortality for red snapper in 1990 (Alverson et al. 1996). Despite the implementation of BRDs since the 1990s, the evidence presented in Alverson et al. (1996) indicates that many of the ecological impacts of shrimp trawl bycatch and other bycatch fisheries have yet to be studied but likely have negative consequences on stock dynamics. Researchers suggest that “[t]he single action that will provide the greatest improvement to the bycatch and discard problem will be the reduction in these efforts levels. Without such control, other solutions to the bycatch and discard problem will be less effective and real success in our efforts to better manage the ocean’s resources much more difficult” (Alverson et al. 1996). Bycatch and discard mortality continue to negatively impact fish stocks along the east coast, especially in North Carolina waters.

North Carolina is unique along the east coast in that it allows significant fishing effort in its estuaries, which results in excessive fish mortalities, especially among juvenile fish. In fact, North Carolina is the *only* state on the east coast that permits trawling in inshore waters. Despite efforts to mitigate those impacts by fisheries managers, North Carolina shrimp trawling is the leading contributor to bycatch mortality (Brown 2015, ASMFC Fishery Management Plans for spot, Atlantic croaker, weakfish). However, it is worth noting that other fisheries also contribute to high levels of bycatch. For example, hook and line, large and small mesh gill nets, long haul seines, and unlimited crab pot efforts contribute to bycatch mortality. Though some of these fish are sold, many others are discarded. Many of these fisheries are either prohibited or significantly limited in other states.

Many of the stocks deemed overfished, overfishing, or of concern in the North Carolina Stock Status Report are impacted by shrimp trawl bycatch, including spot, Atlantic croaker, weakfish, summer flounder, and southern flounder. The hundreds of millions of juvenile fishes discarded from fishing activities prior to reaching adulthood and having the opportunity to contribute to the spawning stock biomass are a significant threat to the health and productivity of these important fish populations.

III. METHODS

We relied heavily on published reports, stock assessments, journal articles, and data sets from the North Carolina Division of Marine Fisheries ("NC DMF") and the Atlantic States Marine Fisheries Commission ("ASMFC") to conduct this review. The ASMFC is a compact of the east coast states that manage fisheries that migrate up and down the coast. The ASMFC's mission is to ensure healthy, self-sustaining fisheries. All data sources are readily available to the public and most, if not all, have undergone peer-review or ASMFC approval. In several cases, we used our experience and expertise in managing east coast fisheries to make suggestions or point out issues that are unavailable in the literature we reviewed.

IV. DATA REVIEW

What follows is an examination of the status of the three finfish species—Atlantic croaker, spot, and weakfish—that are most impacted by shrimp trawl bycatch in North Carolina.

A. Atlantic croaker

The life history of most members of the drum family (*Sciaenidae*), including Atlantic croaker, is characterized by cyclical abundance: it is natural for these fish populations to fluctuate over time. However, periods of low abundance have lasted longer than normal in recent years. While landings may be naturally cyclical as a result of environmental conditions and population abundance, fishing effort also plays a role. At periods of high abundance, effort increases and Atlantic croaker are harvested in large amounts with no constraints. Catches can exceed 100,000 pounds in a single trip. The most recent landings peak in 2001 (43 million pounds) has been followed by a persistent decline through 2014 (10 million pounds). The ASMFC (2015) recently raised concern over declining trends in fishery-independent indices and commercial and recreational landings of Atlantic croaker.

a. Stock Status of Atlantic croaker

North Carolina and Virginia account for approximately 90 percent of the commercial landings of Atlantic croaker along the east coast (ASMFC 2015). Trawling is prohibited in Virginia state waters, while neither state has any size or possession limits. From the mid-1960s until the early 1990s, North Carolina dominated landings with a single year high of 21.1 million pounds in 1980. By 2015, however, that number had fallen to 1.8 million pounds. Today, Virginia ranks number one in Atlantic croaker commercial landings while landings in the south Atlantic, including North Carolina, South Carolina, Georgia, and Florida, have significantly declined.

The recreational fishery for Atlantic croaker in North Carolina and the south Atlantic has also declined. In 1990, North Carolina accounted for 22 percent of the recreational Atlantic croaker harvest, while all the south Atlantic states accounted for 48 percent of recreational landings. By the last year of the benchmark stock assessment, North Carolina recreational harvest had fallen to 4 percent, and the recreational harvest in the south Atlantic to just 12 percent of the coast wide harvest (ASMFC 2010a).

Ideally, one would see a distribution of all sizes and ages in a healthy fishery. However, the 2010 ASMFC stock assessment's (ASMFC 2010a) summary of information on reproductive ecology based on fish collected in North Carolina and Virginia shows that state fisheries are increasingly relying on juvenile fishes. The midpoint of the published estimates of L100%[1] for Atlantic croaker is approximately 270 mm TL. In 2004, Atlantic croaker taken below L100% in the North Carolina recreational fishery comprised 68 percent of the harvest. In 2015, 90 percent of the Atlantic croaker harvest had yet to reach L100%. This increasing reliance on juvenile fish in the catch is indicative of a stock in decline.

To address concerns with declining landings, the ASMFC developed and approved Addendum II to the Atlantic croaker Fishery Management Plan ("FMP") in 2014. Addendum II takes a precautionary approach in managing the Atlantic croaker in light of the current and persistent decline in the stock. The addendum tracks trends in abundance, life history characteristics, and responses to fishing pressure. Based on the 2015 stock status review (ASMFC 2015b) all characteristics are trending down with some above the threshold for management action. While further action may be forthcoming from the ASMFC, it will likely not address the biggest source of mortality in the fishery—shrimp trawl—because those concerns rest primarily within the jurisdiction of North Carolina.

b. Impact of bycatch on Atlantic croaker stock

The estimated bycatch of Atlantic croaker in the south Atlantic peaked in 1995 at approximately 46.3 million pounds. Since 1950, estimates of Atlantic coast bycatch in all fisheries has exceeded harvest (ASMFC 2010a). Atlantic croaker are extremely resilient and can be very productive when environmental conditions are favorable, hence the boom and bust fisheries we have observed. By reducing the level of discards, especially for those fish that have yet to contribute to the population through at least one spawning event, the busts become more

[1] L100% is the length at which 100 percent of the sampled fish were mature as evidenced by developing, developed, or spent gonads.

infrequent and the fishery becomes more stable. More spawning fish impact not only the ecological value of Atlantic croaker but generally produce higher average recruitment. Higher recruitment means more yield for the benefit of the fishery and the ecosystem.

Atlantic croaker are the dominant bycatch species by number and weight in the North Carolina shrimp trawl fishery. In fact, Brown et al. (2015) found that Atlantic croaker dominated the shrimp trawl catches during virtually every season from 2012 to 2015 in their estuarine and coastal ocean bycatch characterization study, regularly exceeding the harvest of shrimp. During the four-year study period (August 2012 toAugust 2015), observers covered 1.2 percent of all commercial estuarine and ocean (0-3 miles) trips (n = 388, including 227 estuarine and 161 ocean trips). The total number of commercial trips reported to the North Carolina trip ticket program during the study period was 32,388. The total weight of all Atlantic croaker taken from observed trips during the study period was 322,883 pounds, which amounts to approximately 5.1 million fish. All of these fish were discarded as unmarketable and ranged in size from 70 to 200 mm TL, and were primarily juvenile fish (Brown 2015).

Brown et al. (2015) estimated that the average at-net mortality of Atlantic croaker was 23.4 percent. These estimates, including those for spot and weakfish, should be viewed with caution as extremely low. By contrast, the 2010 benchmark stock assessment for Atlantic croaker by the ASMFC uses a discard mortality rate of 100 percent for fish discarded from both gill nets and trawls (ASMFC 2010a). Brown (2015) characterized fish on deck as alive or dead immediately upon dumping the nets. However, as Brown (2015) correctly points out, “delayed mortality associated with discarded bycatch in the commercial shrimp otter trawl fishery will likely be much higher than at-net mortality due to factors including sorting time of catch, physical injury associated with capture, and indirect predation from birds, sharks, and dolphins.” Culling time, delayed mortality from injuries, and increased predation once discarded likely result in these estimates being unreasonably optimistic.

The magnitude of unmarketable Atlantic croaker discards in the North Carolina estuarine and ocean shrimp trawl fishery greatly exceeds the directed harvest. Assuming that observer data are representative of the fishery, summary tables in Brown (2015) indicate that 322,883 pounds of Atlantic croaker representing approximately 5,141,487 individuals were observed in the shrimp trawl during the study period. Expanding the observed trips to approximate total fishery-wide bycatch based on average catch per trip (322,883 pounds per 388 trips = 832 pounds per trip) and total trips reported during the four-year study period (n = 32,388), indicates that nearly 27 million pounds of Atlantic croaker were taken in the shrimp trawl fishery during the study period. The average weight of Atlantic croaker varied by year and season (0.05-0.11 lbs.) and averaged .076 lbs. (Brown 2015). Larger juveniles were taken in the ocean fishery. Employing a range of estimates (10-20 fish/pound) provides a total estimated bycatch of Atlantic croaker during the study period from 270 to 540 million fish. Using discard mortality rates ranging from 23.4 percent (Brown 2015) to the more defensible 100 percent estimated for trawls in the benchmark stock assessment (ASMFC 2010a), Atlantic croaker mortality in the North Carolina shrimp trawl fishery during the study period ranges from 63 to 540 million dead fish.

B. Spot

Spot have been a very popular and culturally important fish along the east coast for decades. The North Carolina Spot Festival occurs in Hampstead, North Carolina each September to celebrate the arrival and significance of this little fish. Many of the coastal ocean fishing piers were constructed, in part, so that anglers could intercept their fall runs. Like Atlantic croaker and weakfish, spot appeal to a huge demographic in the fishery because they are easy to catch and inexpensive to pursue when they are abundant.

a. Stock Status of Spot

A coast-wide stock assessment is underway for spot and results are expected in late 2016. Current data indicate concerns related to declines in the juvenile abundance index for spot from 1990 until the mid-2000s, with improvements noted in 2011 and 2012. While the ASMFC technical committee report for spot indicates that triggers were not tripped for management action in 2014, analysis shows concerning declining trends in abundance indices and harvest (ASMFC 2015).

The most recent status review for spot continues to show that spot harvest varies in terms of quantity landed and fishing sector. In some years, the recreational harvest dominates and, in other years, the commercial fishery catches the larger amount. North Carolina currently accounts for just 14 percent of the current commercial landings of spot on the east coast, down from 50 percent in the 1980s. North Carolina landings have steadily declined from 3.0 million pounds in 2001 to 0.76 million pounds in 2014. As with Atlantic croaker, North Carolina dominated commercial landings up until the early 1990s when Virginia took over the top spot (ASMFC 2015a).

Recreational landings data show a similar, but less pronounced, declining trend since data was first recorded in 1981. The recreational contribution of North Carolina to coast-wide spot landings in 1985 was 52 percent (3.1 million pounds), compared to 24 percent (704,445 pounds) in 2014. Coast-wide recreational landings have declined by 50 percent since 1985, however, the decline in the south Atlantic is the most pronounced. In 1985, the south Atlantic states accounted for 64 percent of the coast-wide recreational catch, compared to 34 percent in 2014 (ASMFC 2015a).

Spot mature at sizes between 184 and 292 mm TL for both sexes. Males mature at slightly smaller sizes, and full maturity (the L100%) for both sexes is 220 mm TL or greater (ASMFC 2010b). Length-frequency information on the commercial gill net fishery for spot in North Carolina indicates an average size of 213 mm TL, with 65 percent of the harvest less than the L100%. Because there is no size limit in North Carolina, unmarketable spot and Atlantic croaker can be included as bait and are typically sold to participants in both the crab pot and recreational fisheries. Sizes of spot taken in the recreational fishery range from 120 to 410 mm TL. In 2005, 2 percent of the spot harvested were greater than 300 mm TL, compared to 0.04 percent in 2015. Recreational landings statistics from 2015 in North Carolina indicate that 69 percent of the spot harvested were less than its L100% value (NC DMF Marine Recreational Information Program

("MRIP") data request), compared to 58 percent in 2005. It should be noted that in a healthy population, a significant percentage of the population should be larger than the L100%. The fact that so few mature fish have occurred in the population for over a decade raises concern about maintaining a healthy, spawning stock biomass.

b. Impact of bycatch on spot stock

While juvenile spot are known to be a bycatch component of many fisheries, "the largest bycatch component for spot comes from the south Atlantic shrimp trawl fishery" (ASMFC 2015). Spot are second only to Atlantic croaker in abundance among bycatch species in the North Carolina shrimp trawl observer program (Brown 2015). During the study period, researchers observed 110,113 pounds of spot as unmarketable discards in the observed trips (284 lbs./trip). Sizes generally ranged from 70 to 200 mm TL, and mean weight for all years and seasons was 0.065 pounds (ranging from 10 to 25 fish per pound). Researchers observed a total of 2 million spot. The at-net mortality of spot was much higher than for Atlantic croaker at 66 percent, without factoring in delayed mortality as described above for Atlantic croaker. Using the same method as above for Atlantic croaker, the number of spot observed in the North Carolina shrimp trawl fishery (32,388 trips) during the four-year study period ranged from 92 to 230 million fish.

C. Weakfish

The management history of weakfish is complex. The states took significant actions to reduce the directed and by-catch mortality of weakfish in the mid-1990s with Amendment 3 to the Interstate FMP for Weakfish (ASMFC 1996). Many felt certain that increased size limits, reduced bag limits, bycatch reduction in the south Atlantic shrimp trawl fishery, and the closure south of Cape Hatteras to flynets would result in recovery. While monitoring of the fishery showed positive early signs, the stock had lost all gains by the mid-2000s and was again declared depleted. Years of technical analysis indicated something had changed in terms of natural mortality as fishing mortality was estimated to be very low. Addendum IV to the Weakfish FMP closed the fishery to all but a minimal bycatch allowance, which is where it has remained since (ASMFC 2009).

a. Stock status of Weakfish

North Carolina and Virginia have historically dominated the commercial fishery for weakfish. Throughout the 1980s and 1990s, North Carolina accounted for 60 to 70 percent of the coast wide commercial harvest. The percentage declined to 19 percent in 2007. Since 2010, commercial fisheries have been limited to a 100 pound bycatch allowance likely resulting in an increase in discards in many fisheries that go unreported (ASMFC 1996, 2009).

The commercial fishery in North Carolina operates under a 12 inch TL minimum size limit, except the estuarine long haul seine and pound net fisheries, which are held to a 10 inch TL size limit. The recreational fishery operates under a 12 inch TL limit and a one fish bag limit. These size limits, unique among the three fishes reviewed, prevent directed harvest of juvenile fish, however, undersized and regulatory discards still consist of juvenile fish (ASMFC 1996; 2009).

Age frequency distribution of weakfish in the North Carolina recreational fishery is truncated. The current size distribution taken in the North Carolina recreational fishery range from 310 to 480 mm TL. Weakfish can live well into their teens, however, current catch levels reveal less than 5 percent of the catch is greater than 430 mm TL (age IV) (NC DMF MRIP data request). Analysis of the coast wide recreational fishery likewise shows a truncation in the age structure with 0.01 percent of weakfish harvested recreationally at age V+ compared to 46 percent in 1998 (ASMFC 2016). Similar to Atlantic croaker and spot, the weakfish harvest is increasingly reliant on smaller fish, many of which are juveniles or the least fecund.

Though weakfish grow rapidly and often mature and spawn at age I, their fecundity greatly increases with age. The 2016 peer review report on weakfish (ASMFC 2016) cited Nye et al. (2008) and noted that "despite maturing early, first spawn weakfish at age I spawned less frequently, arrived later to the estuarine spawning grounds, and had lower batch fecundity than older fish, likely resulting in an overly optimistic assumption about the contribution of age I fish to the overall reproductive success of the stock. This is currently amplified by the fact that larger, older fish comprise a small proportion of the overall population." Lowerre-Barbieri et al. (1996) found that 90 percent of weakfish were mature at age I and that the eggs to female ratio significantly increased with both total length and weight. Specifically, batch fecundity (the number of eggs per spawning event) estimates ranged from 75,289 to 517,845 eggs per female. Lowerre-Barbieri noted that the fecundity increased significantly with both total length and weight. Consequently, while weakfish are afforded more protection to spawn at least once in the directed fisheries, the reproductive capacity of these young fish is slight compared to the larger and older fish.

b. Impacts of bycatch on weakfish

There is significant bycatch of weakfish associated with the south Atlantic shrimp trawl fishery. Brown (2015) reported 29,688 pounds of weakfish in the North Carolina shrimp trawl characterization study (77 lbs. per trip) over four years. Additionally, the at-net mortality for weakfish was the highest of the three species examined in their analysis at 87 percent. Like Atlantic croaker, the less conservative ASMFC benchmark assessment employs a 100 percent mortality rate for trawls. The weakfish taken in the Brown (2015) study were all characterized as regulatory discards with sizes ranging from approximately 70 to 280 mm TL, with most falling between 110 and 180 mm TL size classes (age 0). Weakfish averaged 7 to14 fish per pound during the study period, yielding an estimated number of weakfish observed from 17 to 34 million fish over the four-year study period. Based on the most conservative estimates, weakfish mortality due to trawling during Brown's study period totaled over 15 million fish, most of them age 0 and juvenile. However, it is worth noting that, while less common, higher fecundity weakfish age I and age II are also subjected to shrimp trawl mortality (Brown 2015).

D. Importance of Nursery Areas to Juvenile Fish

The abundance and distribution of juvenile fishes reported by Brown (2015) are supported by the data collected during the time series of the NC DMF Pamlico Sound Survey that has occurred for decades (e.g., Knight 2015, Knight and Zapf 2015). Numerous Pamlico Sound Survey reports are available and consistently provide evidence that the majority of the species

encountered in the Pamlico Sound are juvenile finfishes. The Brown (2015) study occurred over a four-year period in the primary shrimping grounds of the state (Figures 3 and 4), including the Pamlico Sound and waters south. Another characterization study was conducted from Carteret County to Brunswick County in North Carolina (Brown 2009), which found results similar to the more recent study (Brown 2015). In the 2009 study, Spanish mackerel and flounders were taken in higher numbers in the southern estuaries and catches were dominated by juvenile fishes, primarily Atlantic croaker and spot. Multiple surveys and characterization studies referenced in Brown (2015) and NCDMF (2006, 2015) have also occurred in these same general locations. NCDMF (2015) points out that blue crab, weakfish, Atlantic croaker, and spot have accounted for the majority of all shrimp trawl bycatch since studies began in the 1950s and that situation continues today. All available data reviewed provide solid evidence that all regions and locations surveyed using trawls are dominated by the presence of juvenile fishes.

The Pamlico Sound Survey occurs in June and September each year within Pamlico Sound and has the following objectives:

> (1) To determine and monitor the distribution, relative size abundance, and size composition of fish, shrimp, and crab in the survey area and how they vary temporally and spatially.
>
> (2) To provide data to ascertain fishery-independent estimates of mortality and population size to compare to commercial fishery samples and landings data.
>
> (3) *To determine which species utilize (and to what extent) the sound during their early life development and identify nursery areas for those species (i.e.* Cynoscion sp., Paralichthys sp. *etc.).*
>
> (4) To determine if catch rates of various species are correlated with indices of juvenile abundance derived from the juvenile trawl survey.
>
> (5) To determine if species distributions are correlated with each other or with some other measured parameter(s).
>
> (6) To monitor the movement of organisms out of the nursery area and into the open waters of Pamlico Sound where they are available for commercial and recreational exploitation.

(Knight and Zapf 2015). The survey is conducted within Pamlico Sound and extends up into the Neuse, Pamlico, and Pungo Rivers. Stations are sampled during each cruise period from an established survey grid (Figure 2). As an example, during a single nine day cruise in September 2014, 54 randomly selected stations were sampled with two 30-foot mongoose nets outfitted with small mesh (approximately 1 inch) for 20 minutes. The estimated area of the sound floor swept by each net was estimated at 97,500 square feet. Forty-seven species of finfish were observed, and the most abundant species observed are considered economically important and include: spot, Atlantic croaker, blue crab, weakfish, brown shrimp, summer flounder, southern flounder, bluefish, southern kingfish, white shrimp, and pink shrimp. Spot were present in all strata, and were the most abundant species collected. Atlantic croaker were also present in all strata, and

were the second most abundant species collected. Weakfish were present in all but the Neuse River stratum, and were the sixth most abundant species collected and fourth most abundant amongst the economically important species. Length frequency data for the species listed above indicate that all specimens were juvenile fish taken within the Pamlico Sound during shrimp season (e.g., Casey and Zapf 2015).

The Pamlico Sound Survey data (e.g., Knight 2015, Knight and Zapf 2015), combined with the shrimp trawl characterization studies of Brown (2009, 2015), and numerous other studies and surveys provide substantial evidence that all estuarine and nearshore ocean waters of North Carolina function as important nursery habitat for hundreds of species of finfish and crustaceans. Many of these species (e.g., spot, Atlantic croaker, weakfish, flounders, blue crab) are valuable components of the commercial and recreational fisheries of North Carolina and are all in decline. The persistent loss of these fishes at juvenile life stages as discard mortality greatly affects fishing success and yield.

The studies of Brown (2009, 2010, 2015), Diamond-Tissue (1999), Johnson (2003, 2006), and Logothetis and McCuiston (2004) all corroborate our concerns that shrimp trawl bycatch in waters south of the Pamlico sound, in addition to the Pamlico Sound and nearshore coastal ocean, is comprised of primarily juvenile fishes. The bycatch levels found in these studies are extraordinary and exceed the directed harvest for many species impacted, particularly spot, Atlantic croaker, and weakfish. From the Intracoastal Waterway in Brunswick County to the upper reaches of the Pamlico Sound and various water bodies in between, the problem is systemic and must be addressed if the affected stocks are to show meaningful recovery.

While we understand the difficulties in quantitatively assessing the impacts of juvenile bycatch in shrimp trawls and other fisheries in stock assessments, the issue is a matter of scale. Diamond (2003) suggests that bycatch estimates are meaningless without an estimate of population abundance. However, when the bycatch of juvenile fishes approaches or exceeds the annual, directed removals, particularly for stocks in decline or depressed, the likelihood of negative impacts is great. Additionally, when a large percentage of the fishes harvested are also juvenile fishes, the problem is magnified. We believe it unwise to ignore this major component of fishing mortality any longer, based on simulated modeling exercises that fail to provide a direct link to the magnitude of this problem or require an unattainable population abundance estimate in order to act. If even a fraction of the 15 million pounds of spot, Atlantic croaker, and weakfish taken as shrimp trawl bycatch in 2014 had been afforded the protection to grow to maturity and spawn, it is hard to imagine a scenario in which the stocks would not respond favorably.

Nursery areas in North Carolina are currently defined (15A NCAC 03I.0101) as

> "areas that for reasons such as food, cover, bottom type, salinity, temperature, and other factors, young finfish and crustaceans spend the major portion of their initial growing season. Primary nursery areas are those areas where in the estuarine system where initial post-larval development takes place. These are areas where populations are uniformly early juveniles. Secondary nursery areas are those areas in the

estuarine system where later juvenile development takes place. Populations are comprised of developing sub-adults of similar size that have migrated from an upstream primary nursery area to the secondary nursery area located in the middle portion of the estuarine system."

Based on our analysis, it is evident that all estuarine and nearshore ocean waters of North Carolina meet these criteria and function as secondary nursery areas. All of North Carolina's estuarine and nearshore waters provide the necessary physical conditions in terms of salinity and temperature required for development of several commercially and recreationally valuable species. Further, the soft organic sediments, along with shell bottom, oyster reefs, live bottom, and other structures present in inshore and nearshore areas provide essential habitat for feeding and cover. The currently designated secondary nursery area contain but a small fraction of those important habitats. Consequently, growth, development, and maturity of these sensitive life history stages are severely compromised by the lack of protection afforded to these nursery areas, limiting the ability of these fisheries to measurably improve. In addition, the failure to protect these juvenile fishes by significantly reducing the anthropomorphic sources of mortality compromises the ecosystems effects of these life stages by their premature loss and inability to either provide energy exchange to higher trophic levels or contribute to the spawning stock.

We believe that further protection of these vital nursery habitats from harm is critical. Moreover, additional protection of nursery areas is consistent with the recommendations of the North Carolina Coastal Habitat Protection Plan (NC DEQ 2015) and the ASMFC.[2] Specifically, the ASMFC designates all estuaries as Habitat Areas of Particular Concern for spot and Atlantic croaker and advises that any fishing gear determined by management agencies to have a negative impact on the habitat for these species should be prohibited. The ASMFC states that "in addition to losses of abundance as target and bycatch some fishing gears, particularly dredges and trawls, can impact sciaenid habitats. These gears remove epifauna, alter bathymetry, re-distribute substrates, and change organism assemblages. Habitat loss by fishing gears can take months to years to recover."

E. Ecosystems impacts of shrimp trawl bycatch

The value of the hundreds of millions of juvenile finfish and crustaceans to the ecosystem as forage is high. The Food and Agriculture Organization of the United Nations ("FAO") Technical Guidelines for Responsible Fisheries adopted an ecosystem approach to fisheries management and suggested that where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent degradation (FAO 2003).

The ecosystems approach to fisheries management recognizes that fisheries should be managed to limit their impact on the ecosystem and that management strategies should be

[2] *See* Atlantic Sciaenid Habitats: A review of utilization, threats, and recommendations for conservation, management, and research (2016). This document is available in the meeting materials contained on the ASMFC website for the Annual Meeting in 2016, but has not yet been published. Proceedings of the 2016 ASMFC Annual Meeting may be accessed at the following link: http://www.asmfc.org/home/2016-annual-meeting.

precautionary because our knowledge of the ecosystem is incomplete. The impacts of shrimp trawls on bottom habitat, particularly structural components such as live bottom and shell bottom habitats, is well established.

Numerous studies have been conducted that demonstrate that juvenile spot and Atlantic croaker are important components in the diet of many fishes of importance to commercial and recreational fisheries (Mercer, 1987). Specifically, juvenile spot and Atlantic croaker are important ecosystem components for energy transfer because their early diets consist mostly of benthic invertebrates that they convert into fish flesh for higher trophic level predators. In a study of juvenile red drum and spotted seatrout, Daniel (1988) found that spot was the second most important prey item to the diet of young-of-the-year red drum, second only to grass shrimp in the tidal creeks of coastal South Carolina. Spot were also documented as an important prey item to juvenile spotted seatrout. In a broader study, Wenner et al. (1990) found spot to be the most important component of the diet of southern flounder by frequency, volume and number, while spot also contributed to the diet of summer flounder. Fish and crustaceans dominate the diet of spotted seatrout. Grass shrimp were the dominant crustacean and spot were the dominant finfish species observed. The diet of red drum is more varied than the other species in this study. Various species of shrimp and crabs dominated the red drum diet. Fishes (Atlantic menhaden and spot) were second in importance to larger red drum. Additional diet studies, mostly lacking in North Carolina, would further show the importance of many shrimp trawl bycatch components to the diets of most estuarine and nearshore predators so important to east coast fisheries (*see* Mercer 1987 for review).

In summary, more conservative management of important forage based fishes (e.g., spot, Atlantic croaker, weakfish), to provide for maximum abundance rather than maximum yield, is necessary to allow them to achieve their important role in the trophic balance of the ecosystem, as well as provide the necessary surplus production to support valuable fisheries in North Carolina and elsewhere.

V. ANALYSIS

All states in the mid-Atlantic and south Atlantic regions have taken different approaches to fisheries management. North Carolina stands alone as the only state on the east coast that allows trawling in estuarine waters. The specific impacts of this fishery on several species are provided above. Virtually all east coast states have some type of juvenile survey in estuarine waters to document the abundance and diversity of fishes that occur there. These surveys provide solid evidence that estuarine waters are critical nursery habitat. Other states have acted on these data by protecting those important areas. For example, the Virginia Institute of Marine Science trawl survey has occurred since 1955. The species composition and relative abundance of fishes in Virginia waters are similar to those found in trawl research conducted in North Carolina. Atlantic croaker, weakfish, and spot were exceeded in abundance only by bay anchovy, hogchoker, and white perch during their survey periods. Trawling has been prohibited in the Chesapeake Bay for decades.

The bycatch associated with shrimp trawling confounds fisheries managers in North Carolina and impacts fisheries along much of the east coast that rely on spillover from the

important nursery that is North Carolina's sounds. The persistent harvest and mortality of juvenile fishes in North Carolina upsets the natural migration of inter-jurisdictional fishes that move to feeding and spawning areas outside of North Carolina waters. In many instances, these fish would normally return to North Carolina as larger fish. North Carolina also receives recruits from sister states to its south and north, which have provided far greater protection for its juvenile fish resources in the past.

The data is clear that substantive rule changes to minimize mortality, particularly juvenile mortality, in the North Carolina shrimp trawl fishery are necessary in order to build on the management programs already in place at the interstate level. The amount of effort and the bycatch that continues in the commercial fisheries is extraordinary and especially concerning for stocks in decline or at low levels of abundance. Likewise, the discard mortality in the growing recreational fishery and lack of controls such as size and bag limits, particularly on the larger juveniles, is a concern. Though progress has been made— turtle excluder devices and BRDs are required in shrimp trawls, the long haul seine fishery has declined in participants, and gill nets have been much reduced in some areas as a result of Incidental Take Permits for Atlantic sturgeon and sea turtles—efforts to control substantive bycatch issues to date, particularly in the shrimp trawl fishery, are inadequate.

North Carolina's important, but rudimentary, nursery area program, illustrated in Figure 1, fails to consider and protect those areas in the estuarine and nearshore coastal waters where juveniles are abundant and need protection in order to develop into adults, and where habitat conditions are ideal for juvenile life stage development. Outside of the designated nursery areas of North Carolina, fish populations in Pamlico Sound and other estuarine areas are clearly comprised of larger juveniles that will soon put energy into reproductive growth for their first spawn (e.g., Casey and Zapf 2015). These largest juveniles have migrated out of the designated Primary and Secondary Nursery Areas located in the more upper and middle portion of the estuarine system to the middle and lower portions of the estuarine system and waters. Juveniles of species important to commercial and recreational fishermen dominate commercial and fishery-independent trawl catches. Fishes generally remain in these areas until they spawn or move to overwintering nursery areas offshore. The fact that extensive commercial and recreational fisheries are allowed in these critical areas compromises the ability of numerous fish stocks and forage species to rebuild.

It is counterproductive to protect the smallest juveniles that already face high natural mortality rates in the current nursery area and not continue that protection until these individuals actually contribute to the health of the population by spawning. The only difference between the limited areas currently defined as nursery habitat in North Carolina and the rest of North Carolina's estuarine and nearshore coastal ocean waters is the size of the juveniles encountered. Multiple sampling efforts in North Carolina, which include extensive trawl and gill net surveys, along with samples of recreational and commercial catches show a very large and variable preponderance of juvenile fishes throughout North Carolina waters. The survey grid for the Pamlico Sound Survey (Figure 2) is expansive and catches are almost exclusively juvenile fishes, in much the same area as the commercial shrimp trawl fishery operates (Figures 3 and 4). As juvenile fishes, "protected" in the current and geographically limited nursery areas grow in North

Carolina, their natural tendency is to move to the more open, higher salinity waters of larger sounds and bays. It is at this time that these fishes, fit enough to survive, are subjected to intense anthropomorphic sources of mortality in the form of shrimp trawls. In some circumstances, fishes with healthy abundance levels can withstand high levels of mortality and still produce a surplus. Such is not the case for most species of concern in North Carolina's estuaries. Consequently, all North Carolina inshore and nearshore waters are indeed nursery areas and should be afforded maximum protection. Doing so would allow the vulnerable species currently subjected to shrimp trawls the opportunity to spawn at least once.

Some might suggest that fishing mortality of juvenile fishes has a negligible impact on population viability and that those fishes would have likely died anyway. During various opportunities for public comment others suggest that bycatch provides a service to the ecosystem by providing needed food to the members of the system. However, diet studies of most predatory fishes indicate that these fishes are visually-oriented, opportunistic predators that focus on the weakest of the particular prey items for their meal, e.g., the survival of the fittest (*see* Mercer 1987 and Wenner et al. 1990 for review). With bycatch and discards the fittest are no more fit than the weakest, throwing the ecosystem off balance. Species that reportedly benefit from this "free lunch" do not appear to be benefiting as one might expect. For example, the North Carolina Marine Fisheries Commission recently revised their FMP schedule to update the blue crab FMP sooner than expected as a result of the fishery decline and concerns over the health of the stock. One might expect that if blue crab were a beneficiary of the significant bycatch in North Carolina fisheries, the stock would be viable. We are unaware of any positive link between bycatch in shrimp trawls and stock status.

Because absolute estimates of age-specific discard mortality are highly variable and difficult to quantify, some argue that the absence of this data in quantitative stock assessments lessens its importance or cautions against management actions. This conclusion is erroneous and dangerous, particularly when one reviews the stock status and landings history of many of the species that are particularly vulnerable to significant bycatch and discard mortality. Spot, Atlantic croaker, and weakfish all suffer from low trends in biomass and harvest (*see* ASMFC FMP citations above). During the shrimp trawl characterization study alone, during a time when all three of these key species were at low and declining abundance, the estimated number of discards from the shrimp trawl fishery was conservatively estimated at approaching ½ billion fish. This is despite the fact that shrimp trawl nets were outfitted with turtle excluder devices and BRDs (Brown 2015). The Atlantic croaker, spot, and weakfish stocks are highly productive and could provide tremendous access, opportunity, economic value, and ecosystem function if further protected.

This analysis focused on spot, Atlantic croaker, and weakfish, however, concern is not limited to those three species. The impacts on numerous other components of the ecosystem that succumb to pre-spawn mortality are likely in the same position, not to mention the disruption to the bottom structure and critical benthic communities resulting from fishing efforts. Other species of recreational and commercial importance taken in the North Carolina shrimp trawl fishery include kingfishes, pigfish, southern and summer flounder, and king and Spanish mackerel (Brown 2009, 2015).

The concept that first spawn fishes that may naturally spawn over a decade or more can somehow rebuild populations is outdated. The reproductive capacity of first spawn fishes is but a fraction of their true capacity (Lowerre-Barbieri et al. 1995, Nye et al. 2003). The fecundity, fitness, and survivability of the eggs of a virgin spawner simply cannot compare to the fecundity of their larger counterparts in the population. The more fecund, and presumably valuable, older fishes in the population are mostly absent from these populations today (see ASMFC annual reports on spot, Atlantic croaker, and weakfish for review, NC DMF MRIP data request 2016). Proper management should be implemented that allows for an expansion in the age structure of these populations, and thereby spawning stock biomass, by utilizing measures that allow these fishes to spawn at least once, and preferably twice, before any allowable harvest.

In summary, bycatch and discard mortality, along with the directed harvest, of juvenile and pre-spawn adult fishes in North Carolina is alarming. Current trawling practices lead to the discard of billions of juvenile fish each decade, decimating populations and seriously impacting local, fishery dependent economies and communities. Using only the data from 2014 in Brown (2015), when observer coverage was greatest and covered all seasons, the estimated discards of spot, Atlantic croaker, and weakfish from shrimp trawls was 15 million pounds of nearly all juvenile fish. For comparison, the commercial and recreational harvest of these three species in North Carolina in 2014 was 4.6 million pounds and greater than 50 percent were juvenile fishes. The coast wide commercial and recreational harvest of these three species, all designated as depleted or depressed, was 18.7 million pounds. The potential yield of these small fishes, if they were afforded the protection to grow to adulthood, is staggering: the benefits of protecting juvenile fish far outweigh the costs in terms of fishery yield and success for commercial and recreational fisheries alike. Furthermore, an expansion of the range of these fishes into other jurisdictions, which will come with further regulation of bycatch, is entirely consistent with the basic tenants of inter-jurisdictional fisheries management.

The commercial fishery in the estuarine waters of North Carolina has limited restrictions on extraordinary amounts of commercial gear. The health of both species that exclusively call North Carolina home and many inter-jurisdictional fisheries depends on the concerted conservation efforts of all.

VI. MANAGEMENT RECOMMENDATIONS

The need to substantially reduce discards in North Carolina fisheries cannot be overstated. While measures to date have helped, they have fallen short of meaningful changes in bycatch rates. Based on this review, the following recommendations are offered to measurably address this systemic problem in North Carolina. The recommendations are based on what is best for the long-term economic viability of these fish stocks. Closing the shrimp trawl fishery in North Carolina inshore and nearshore waters, as other states on the east coast have done, would be the most effective single strategy to protect important nursery areas and juvenile fishes. This solution, however, is unreasonable; thousands of North Carolinians rely on the commercial shrimp industry for their livelihood. These measures balance conservation goals with current fishing practices to mitigate the effects of bycatch mortality while still providing for a productive commercial and recreational fishery.

A. Designate all inshore and ocean (0-3 miles) waters as nursery habitat

Because these areas function as important nursery habitats, bycatch and mortality issues from the shrimp trawl fishery in estuarine waters is unique to North Carolina in the south Atlantic. Data collected by NC DMF regarding the occurrence of juvenile fishes in inside waters is adequate, appropriate, and clear to support nursery area designation for all inshore, estuarine and ocean waters (0-3 miles offshore). The preponderance of data regarding juvenile life stages of fishes in these programs illustrate that all inside waters serve as important locations where juvenile fishes feed and grow to maturity. Juvenile fish are defined here as fishes that have yet to spawn at least once. While some fishes may be harvested and possess mature gonads, if they are harvested prior to spawning, their contribution to the population is zero, threatening population stability and population growth. In fact, there is no evidence that any areas within the estuarine system of North Carolina do *not* function as a nursery area. These data, along with the Pamlico Sound survey and the decline of Atlantic croaker and spot in the south Atlantic, provide unequivocal support to the argument that the area functions as critical nursery habitat.

B. Implement strategies to reduce shrimp trawl bycatch of juvenile fishes in all designated nursery areas

Shrimp trawl bycatch, particularly in nursery areas, confound efforts to protect important inter-jurisdictional fishes. Although limited data are available to unequivocally prove the effectiveness of various strategies to reduce bycatch, the critical importance of such reductions is logical, particularly for species of concern. The only estuarine shrimp trawl fishery on the east coast exists in North Carolina; however, concerns related to its impact on fish stocks are enormous.

While no shrimp trawling in newly designated nursery areas would yield the best result biologically, if it is to continue, effort needs to be significantly reduced by employing the following suite of management strategies.

a. Reduce maximum headrope length in shrimp trawl fishery

First, reduce the maximum combined headrope length from 220 feet to 90 feet for all nets combined. Headrope length is a measure of the size of the shrimp trawl, with larger vessels tending to use larger nets to catch more shrimp. While improved efficiency and overall yield are the primary objectives, bycatch also increases. A reduction in the allowable headrope length is necessary to reduce effort, and subsequent bycatch in this fishery.

During the development of the original North Carolina Shrimp FMP (NC DMF 2006), the recognition of specific problems related to juvenile southern flounder bycatch resulted in rules to limit sensitive areas to trawling by closing some areas and limiting others to a 90 foot headrope maximum. The NC DMF points out in their plan (NC DMF 2006, p. 315) that headrope restrictions reduce bycatch and the fishing power of larger vessels. Further, no other south Atlantic or Gulf Coast state allows shrimp trawls over 60 feet in their jurisdictional waters. During the Brown (2015) study, maximum headrope lengths ranged from 220 to 240 feet. The average headrope length increased from 94 feet in 2012 to 134 feet in 2015. While this increase in headrope size may not be completely reflective of all fleet activities, the study reports these

trips as representative of the fishery. These data also suggest that many vessels in the fleet already employ nets less than 90 feet, thereby mitigating the impacts of the proposed reduction. A 90 foot maximum headrope for all nets combined in all estuarine and nearshore ocean waters is recommended to reduce the bycatch of *all* fishes impacted by shrimp trawls.

b. Require the use of two bycatch reduction devices ("BRDs") on all shrimp trawls

Second, require the mandatory use of a second, federally certified BRD or device tested by DMF and certified to further reduce bycatch by at least 25 percent. Recent studies by NC DMF, pursuant to Amendment 1 to the N.C. Shrimp FMP (NC DMF 2015), indicate that a second Florida Fish Eye BRD placed next to the currently required single BRD shows great promise in further reducing bycatch in the brown shrimp fishery while limiting shrimp loss. The N.C. Marine Fisheries Commission ("MFC") contemplated the requirement of a second BRD in Amendment 1. The MFC should require the use of a second BRD with documented, additional bycatch reduction.

c. Limit tow times to 45 minutes

Third, limit tow times to 45 minutes. Reducing tow times to a maximum of 45 minutes would reduce bycatch, culling time, and discard mortality. Logothetis and McCuiston (2006) reported that survivability of bycatch increased with reduced culling time. Shorter tow times generally mean less catch and shorter culling time. This regulation is especially important in light of rapidly increasing tow times in recent years: Brown (2015) reported an increase in average tow times over his study period from 100 minutes in 2012, 142 minutes in 2013, 187 minutes in 2014, and 181 minutes in 2015. Maximum tow times likewise increased from 240 minutes in 2012 to 360 minutes in 2015.

d. Limit shrimp trawl effort to three days per week, during daylight hours only

Fourth, limit all shrimp trawl effort to three days per week during daylight hours only. Fishermen are known to fish harder in the wake of restrictions to make up for lost opportunities due to measures such as tow times and reduced net size. A limit of three days per week of trawling during daylight hours would significantly reduce attempts at fishing harder and allow some fishes to move out of trawling areas or recover from encounters during open days. Lay days may also serve to limit the number of out of state vessels that may travel to North Carolina in order to participate in this unique estuarine fishery.

This time restriction would both reduce bycatch and improve the efficiency of the shrimp trawl industry. Finfish bycatch is significantly higher at night while shrimp catches are higher during the day (Ingraham 2003). Additionally, Johnson (2003) reported that far more shrimp are taken early in a fishing week than later (cited in NC DMF 2015).

Brunswick County provides a template for success: it is currently unlawful to shrimp during nighttime hours in the ocean off Brunswick County. This rule was implemented to reduce bycatch (NC DMF 2015). The current restrictions off of Brunswick County should be expanded to all estuarine and coastal waters of North Carolina.

e. Delay the opening of shrimp season

Seasonal openings should be based on a shrimp count size. Delaying the harvest season until shrimp are larger provides not only a more valuable product to the industry, but reduces the length of the season when gear is in the water, thereby reducing bycatch. While determining count size for all North Carolina waters is impractical, delaying harvest in Pamlico Sound until shrimp count reaches 60 shrimp per pound (heads on) is prudent and reduces concerns from fishermen and dealers that shrimp are either too small or that bycatch is too high when the fishery traditionally opens in early to mid-May.

These five actions must be implemented together in order to achieve the desired effect of meaningful bycatch reduction in the shrimp trawl fishery. While it is beyond our ability to determine, or even speculate, on the absolute reductions that would be realized by taking this course of action, it is a step in the right direction and would measurably reduce bycatch in our judgment.

f. Establish size limits and bag limits for spot and Atlantic croaker

In the event North Carolina makes these important changes in the shrimp trawl fishery, the abundance and subsequent encounters with juvenile fishes in other fisheries should dramatically increase. Hilborn and Walters (1992) point out the need to allow fish to grow to a reasonable size before they are harvested. Size limits developed to delay harvest to allow juvenile fish to spawn at least once has been a common sense management approach used for decades. The fishery management plans of the ASMFC, federal Councils, and North Carolina are replete with examples of the impacts, not only on increasing spawning stock biomass, but yield per recruit as well. We recommend strategies to reduce this potential increase in the bycatch of juvenile and pre-spawn adult fishes in all fisheries. Many of the species of concern in North Carolina and coast wide either have no size limits or size limits have proven to be ineffective. This is certainly the case for Atlantic croaker and spot. An 8 inch size limit for spot and a 10 inch size limit for Atlantic croaker in all North Carolina fisheries are slightly below the L100% for these two species and would allow nearly all fish to reach maturity and spawn at least once. An alternative to size limits in the higher volume commercial fisheries could be changes to mesh sizes in primary gears such as gill nets and trawls to minimize interactions altogether in those fisheries. The positive impacts in terms of increased spawning stock biomass and yield to the fishery would be enormous and go a long way towards sustainable fishing in the future.

VII. CONCLUSION

The only difference between the limited areas currently defined as nursery habitat in North Carolina and the rest of North Carolina's estuarine and nearshore coastal ocean waters is the size of the juveniles encountered. The majority of fishes in the unprotected areas of North Carolina's estuarine and nearshore waters are juveniles, have not yet reached maturity, and therefore have not yet reproduced and contributed to the population. It makes no sense to protect the smallest juveniles that already face high natural mortality rates in the current nursery area and not continue that protection until they actually contribute to the health of the population by spawning at least once.

Spot, Atlantic croaker, and weakfish were critical components of North Carolina's estuarine commercial and recreational fisheries prior to their dramatic decline in the fisheries late 1980s.

The combined landings of these three species in the commercial fishery in 1981 were 37.6 million pounds. In 2015, commercial landings were 2.3 million pounds, a 95 percent decline. A similar trend is observed in the recreational fishery when, in 1981, recreational landings were 5.3 million pounds compared to 1.6 million pounds in 2015, a 70 percent decline.

During the 2014 season, 149 of the 8,670 (1.72 percent) reported shrimping days in the estuary and ocean waters were observed. Spot, Atlantic croaker, and weakfish accounted for 268,116 pounds of the 415,283 total pounds, or 65 percent, of catch observed, including shrimp. Expansion of these observed numbers to the total estimated catch of the shrimp trawl fishery in 2014 yields 15.6 million pounds of spot, Atlantic croaker, and weakfish, primarily juveniles, discarded as bycatch by shrimp trawlers. This level of bycatch is four times the combined commercial and recreational harvest in North Carolina (3.9 million pounds) and nearing the coast wide harvest of all three species in 2014 (18.7 million pounds).

This goal of sustainable and healthy fisheries is severely compromised by the magnitude of juvenile mortality that occurs in North Carolina fisheries. The fact that North Carolina remains the lone state to allow shrimp trawl activity in coastal and estuarine nursery areas provides a common denominator that may explain the dramatic shift in landings from the south Atlantic to the mid-Atlantic region. The current boom or bust cycle in our fisheries will persist with longer gaps between boom years unless measures are taken to reduce juvenile mortality and improve spawning stock biomass.

Sound science points to shrimp trawl bycatch, despite efforts to reduce it, as the primary factor that is impacting North Carolina's fisheries. Measures taken to date to reduce shrimp trawl bycatch in North Carolina have skirted around the edges of a complex problem. The data provided in the North Carolina Shrimp FMP and Amendment I clearly indicate that the magnitude of shrimp trawl bycatch is significant and impacts to fish populations are concerning. The North Carolina Shrimp FMP (NC DMF 2015) states that it is commonly known that harvesting a fish before it matures and spawns can lead to recruitment overfishing and impair the stock's ability to sustain itself. Further, harvesting a fish before it reaches some optimal size leads to growth overfishing and reduced overall yield from the fishery. Measureable improvements in North Carolina fisheries and the fragile ecosystems they rely on for food, protection, growth, and reproduction will languish until shrimp trawl bycatch is properly addressed.

Figure 1. Nursery area map, with locations of the various nursery area locations for estuarine waters of North Carolina. The N.C. Marine Fisheries Commission prohibits trawling in primary nursery areas, however, the mesh sizes and size constraints of these areas preclude significant activity or potential juvenile fish mortality. Further, the fishes utilizing these areas are typically far too small to be retained in traditional shrimping gear. Consequently, we argue that the nursery area protections are far more habitat-related than fisheries-resources related.

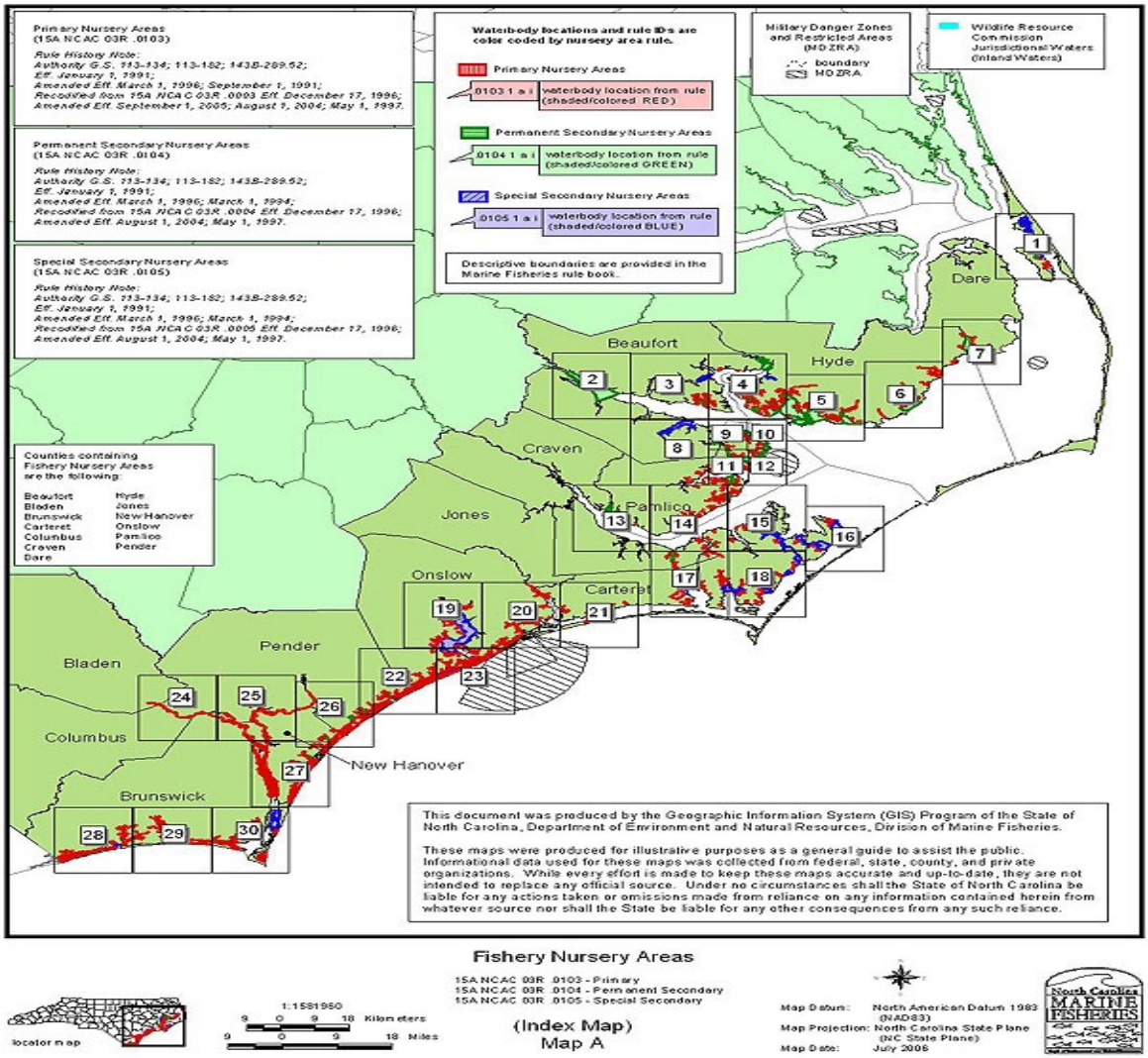


Figure 2. Randomized sample locations of the Pamlico Sound survey are obtained from areas outside of any of the designated nursery areas. With few exceptions, these areas are subjected to intense fishing pressure by all sectors of the fishery, including trawls, long haul seines, gill nets, and hook and line, all of which harvest and/or discard substantial quantities of juveniles fishes.

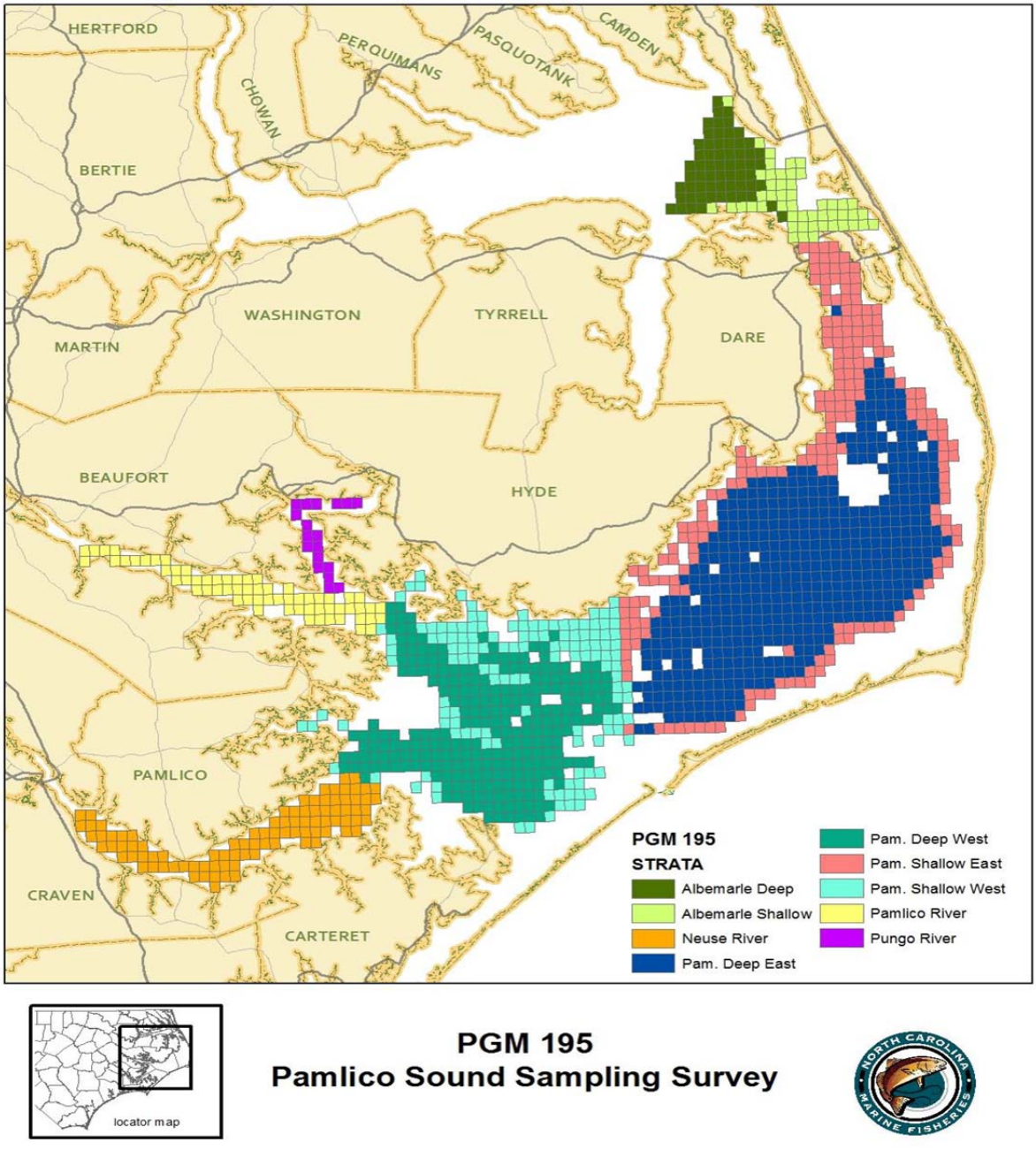


Figure 3. Location of commercial shrimp trawl observations made in northern North Carolina, January–December 2014 (Brown 2015).

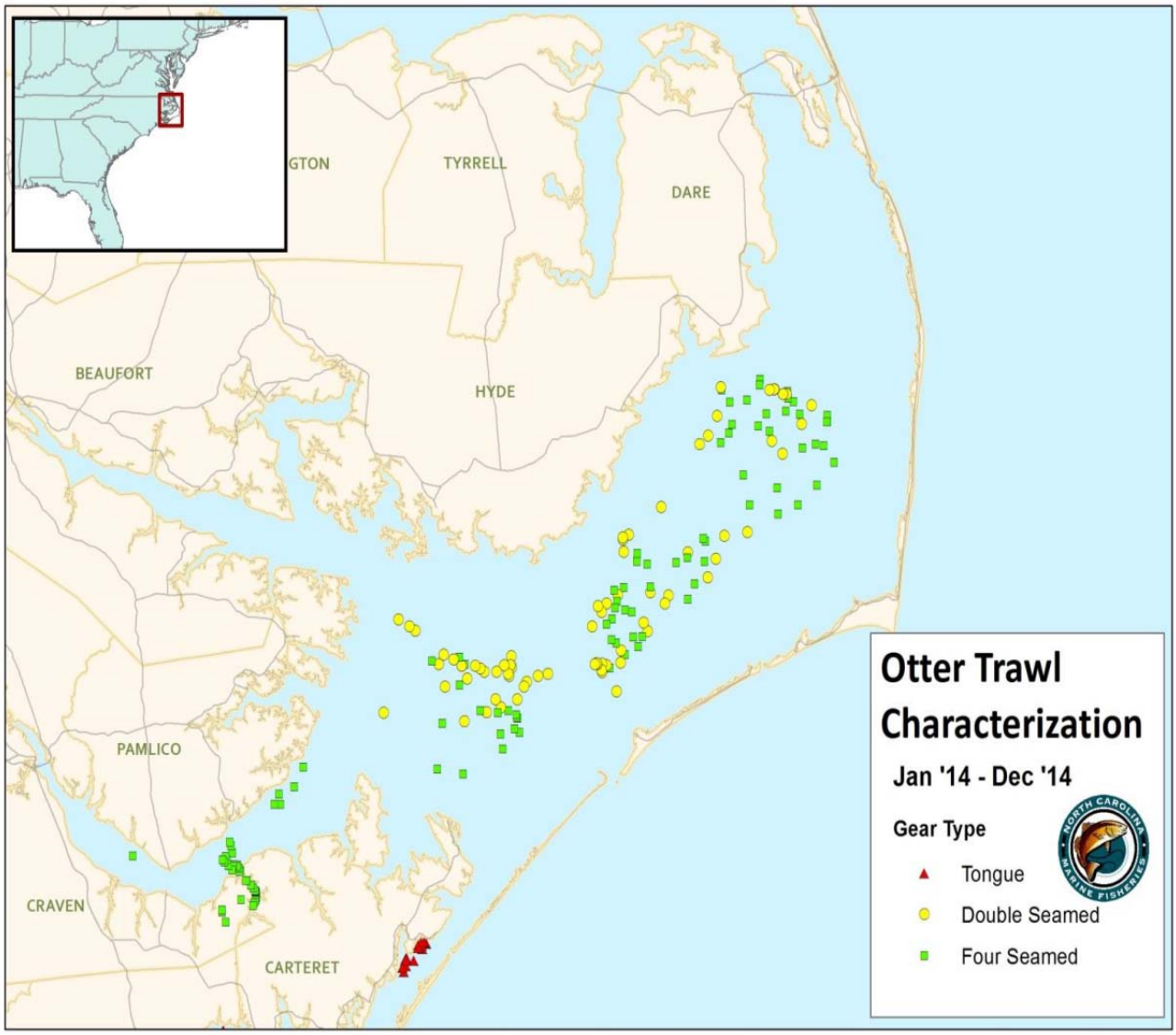


Figure 4. Location of commercial shrimp trawl observations made in southern North Carolina, January–December 2014 (Brown 2015).

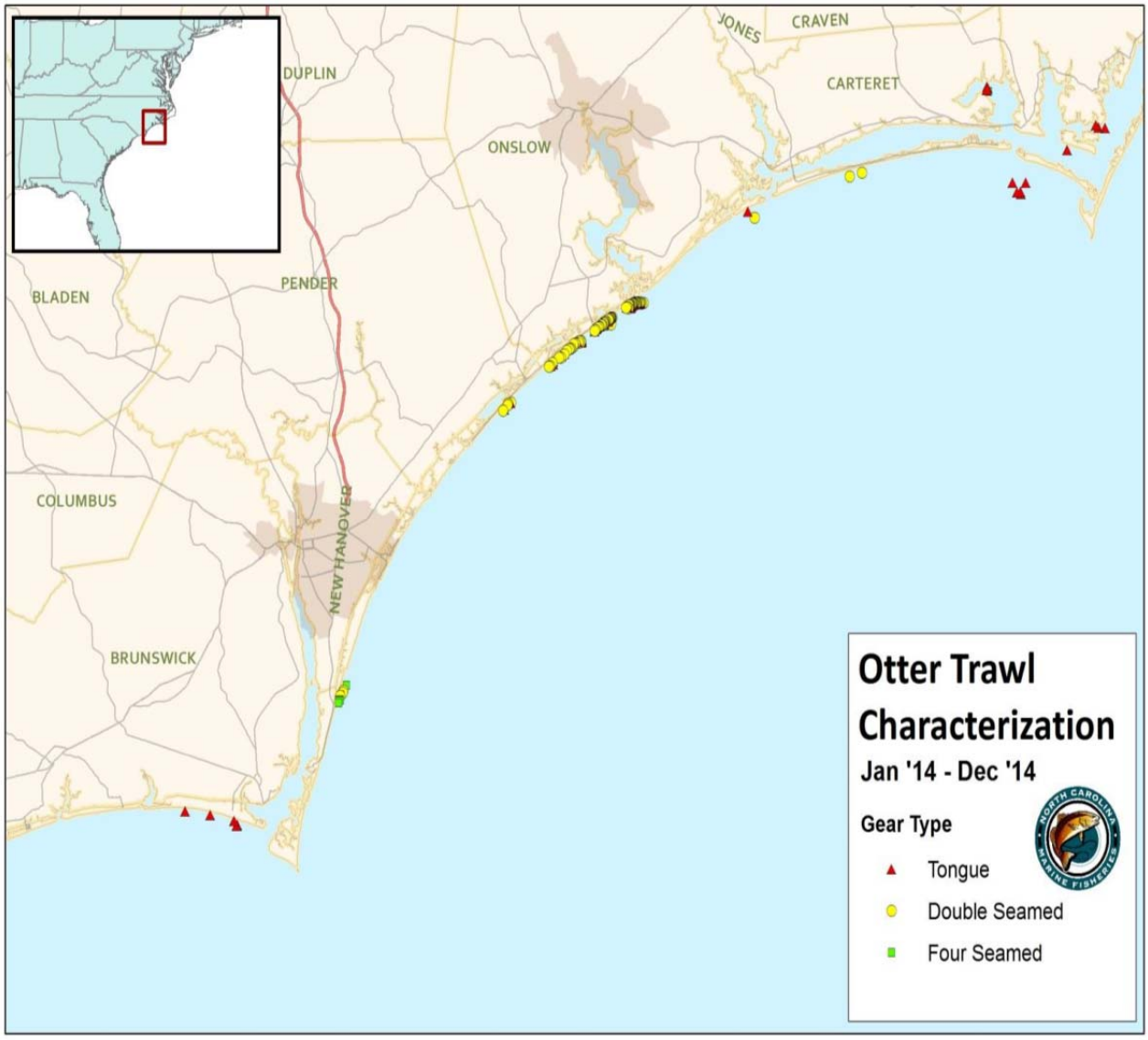


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EXHIBIT C

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EDUCATION:

B.S. Biology, Old Dominion University, 1976. Summa Cum Laude.

M.A. Marine Science, College of William and Mary, Virginia Institute of Marine Science, 1980.

Virginia Executive Institute, 1989.

EMPLOYMENT HISTORY:

2014-2016	Consultant to the Coastal Conservation Commission and other organizations. Monitor activities of the Atlantic States Marine Fisheries Commission.
2012-2014	Commissioner, Virginia Marine Resources Commission. Served as Agency Head and Chairman of the Agency's dual regulatory board. Directed the work of four Divisions, consisting of 160 employees: Fisheries Management, Habitat Management, Law Enforcement (Virginia Marine Police), and Administration and Finance. Responsible for an annual agency budget of $23 million.
2006-2012	Chief Deputy Commissioner, Virginia Marine Resources Commission. Served as second in command of the agency. Advised the Commissioner and Regulatory Board on agency policies and programs. Provided policy guidance to the Division Chiefs.
1984-2012	Chief, Fisheries Management Division, Virginia Marine Resources Commission. Directed the Fisheries Management Division of the Agency. Provided fishery management guidance to the Regulatory Board. Directed the collection and analysis of scientific, biological, economic and sociological information pertaining to Virginia fisheries. Supervised departments pertaining to fishery planning and statistics, fishery management plan development, shellfish conservation and replenishment, artificial reef construction

	and the promotion of recreational fisheries. Served as the agency's representative to the Atlantic States Marine Fisheries Commission and the Mid-Atlantic Fishery management Council.
1982-1984	Fisheries Manager, Head of the Department of Fisheries Plans and Statistics, Virginia Marine Resources Commission. Investigated and reported on the conditions of Virginia's commercial and recreational fisheries. Recommended regulatory options for the conservation and management of Virginia's fisheries to the agency regulatory board. Served as the agency alternate to the ASMFC and MAFMC.
1981-1982	Fisheries Liaison Officer, Virginia Marine Resources Commission. Served as agency alternate to the MAFMC. Investigated and reported to the Commissioner on special fishery issues.

AWARDS AND COMMENDATIONS

2003, Captain David H. Hart Award of the Atlantic States Marine Fisheries Commission, for outstanding leadership and contributions to the management of Atlantic coastal fisheries.

2009, Commander's Award for Public Service, Department of the Army. For outstanding effort and dedication while serving on the Management Team for the production of the Chesapeake Bay Oyster Programmatic Environmental Impact Statement.

2011, Conservation Award, Tidewater Chapter, American Fisheries Society.

2012, Ricks E. Savage Award of the Mid-Atlantic Fishery Management Council, for positive influence and contributions to the conservation and management of mid-Atlantic fisheries.

EXHIBIT D

CURRICULUM VITAE

LOUIS BROADDUS DANIEL, III

Birth date: February 14, 1963

Current Address: 109 Barringer Drive, Newport, North Carolina 28570

Telephone: 252-808-8147 *Fax: 252-726-0254*

Email: *sciaenops1@gmail.com*

Education:

College of William and Mary, School of Marine Science, Virginia Institute of Marine Science, Gloucester Point, Virginia, Ph.D., Marine Science, Graduated 1995.

College of Charleston, Charleston Higher Education Consortium, Charleston, South Carolina, M.S., Marine Biology, Graduated 1988.

Wake Forest University, Winston-Salem, North Carolina, B.A., Biology, Graduated 1985.

Employment History:

June 2016 to present
- Position: Environmental/Fisheries consultant
- Description: Administer various grants and contracts.
- Supervisor: Self
- Employer: Self

January 2016 to present
- Position: Adjunct Professor
- Description: Developed a marine resources policy and management curriculum for the sea semester at the NC State Center for Marine Sciences and Technology.
- Supervisor: Dave Eggleston
- Employer: North Carolina State University

March 2016 to June 2016
- Position: Assistant Section Chief, Shellfish Sanitation
- Description: Transitioned out of Director role, assisting section in day to day operations and sampling programs. Developed good understanding of general program requirements.
- Supervisor: Shannon Jenkins
- Employer: North Carolina Division of Marine Fisheries

February 2007 to March 2016
- Position: Director of the North Carolina Division of Marine Fisheries
- Description: Represent North Carolina on the ASMFC that oversees the management of fisheries resources along the Atlantic coast. Implement the North Carolina Fisheries Reform Act, Coastal Recreational Fishing License, Waterfront Access and Marine Industry Fund. Coordinate the development of Fishery Management Plans and Coastal Habitat Protection Plan. Responsible for management of Marine Fisheries headquarters and 5 field office with nearly 300 staff in 8 sections including Marine Patrol and a $30+ million budget.
- Supervisor: Secretary Donald van deer Vaart

Employer: North Carolina Division of Marine Fisheries

February 1998 to 2007

Position: Executive Assistant for Councils

Description: Represent North Carolina on the South Atlantic Fishery Management Council that oversees the management of fisheries resources in the south Atlantic EEZ. Assist the Fisheries Director in implementation of the North Carolina Fisheries Reform Act and serve as a technical advisor to the North Carolina Marine Fisheries Commission (NCMFC). Coordinate the development of Fishery Management Plans. Write and present numerous technical issue papers for action by the NCMFC and Joint Legislative Committee on Seafood and Aquaculture. Serve as the North Carolina representative on several ASMFC management boards.

Supervisor: Preston P. Pate, Jr.

Employer: North Carolina Division of Marine Fisheries

April 1995 to February 1998

Position: Marine Fisheries Biologist Supervisor

Description: Supervise 5 biologists and 5 technicians in various studies on North Carolina finfish and shellfish fisheries (i.e., long haul seine, otter trawl, gill net, pound net), bycatch reduction, and the population dynamics of important commercial and recreational fish species. Serve as the North Carolina representative on numerous ASMFC and SAFMC technical committees, stock assessment subcommittees, and plan development teams. Serve as the Chairman of the North Carolina Division of Marine Fisheries Biological Review Team, whose purpose is to review all biological activities performed by the Division.

Supervisor: David L. Taylor

Employer: North Carolina Division of Marine Fisheries

Selected Presentations, Reports, and Publications*:*

Since 2002, prepared, edited, and reviewed approximately 40 fishery management plans, amendments, and supplements for public hearings and recommendations to the Marine Fisheries Commission.

Since 2002 have given numerous presentations to academic, public, and legislative gatherings related to the management of marine fisheries.

Daniel, L.B., III. 2002. North Carolina Interjurisdictional Fisheries Management Plan. North Carolina Division of Marine Fisheries, Morehead City, NC 28557.

Daniel, L.B., III and Lee Parramore (with Plan Development Team). 2001. North Carolina Red Drum Fisheries Management Plan. North Carolina Division of Marine Fisheries, Morehead City, NC 28557.

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Vaughan, D.S., L.B. Daniel, and R.W. Gregory. 1998. Assessing Weakfish Using Biased Historical ageing Data. 1998 Annual Meeting of the American Fisheries Society, Hartford Connecticut.

Daniel, L.B. 1997. Moderator and speaker for a symposium on the North Carolina weakfish fishery and its management. Tidewater Chapter, American Fisheries Society, Beaufort, North Carolina.

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Daniel, L.B.,III and J.E. Graves. 1994. Morphometric and genetic identification of eggs of spring spawning sciaenids in lower Chesapeake Bay. Fish. Bull. U.S. 92(2): 254-261.

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Olney, J.E. and L.B. Daniel, III. 1992. Spawning and recruitment of black drum, Pogonias cromis, in lower Chesapeake Bay. Final Report. Va. Mar. Res. Co., U.S. Fish and Wildlife F-95-R.

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Daniel, L.B. 1987. Aspects of the early life history of the spotted seatrout, Cynoscion nebulosus, in South Carolina. 67th Annual Meeting, ASIH, Albany, New York.

Field Experience:

March 1998 to June 2016

Participated in various aspects of division operations as needed and available. Lead or participated in various field trip exercises for legislative members and staff.

April 1995 to February 1998

Supervise and assist in sampling programs including a juvenile trawl survey, seine survey for juvenile red drum, fishery dependent port and on-water surveys, gear development, shrimp sampling, by-catch reduction, and tagging studies.

1989 to 1991

Chief scientist on 20 cruises aboard the R/V Bay Eagle to sample ichthyoplankton using an in situ silhouette photography system.

1986 to 1988

Participated in weekly rotenone, stop net, trammel net and gill net collections for juvenile and adult inshore recreational fishes in South Carolina. Extensive small (<25 ft.) boat use.

Selected Awards and Professional Offices:

2011-2015

Chairman and vice-Chairman of Atlantic States Marine Fisheries Commission

2002-2006

Chairman and vice-Chairman of the South Atlantic Fishery Management Council

1998 to 2007

North Carolina representative on South Atlantic Fishery Management Council.

1998 to 2016

North Carolina representative on Atlantic States Marine Fisheries Commission

Management Boards (Weakfish (Chairman 2003-2006), Coastal Sharks, Horseshoe Crabs, South Atlantic Board (Chairman 1999-2002)).

2002 to 2007
North Carolina representative on the National Marine Fisheries Service Highly Migratory Species Advisory Panel.

2000
DENR Distinguished Service Award

1995
USFWS Outstanding Service Award

1997 to Present
Adjunct Assistant Professor with the University of North Carolina at Chapel Hill, Institute of Marine Science.

2003 to Present
Adjunct Assistant Professor with North Carolina State University. Developed and taught Marine Resources Management and Policy (ES 295-2) during spring 2016.

1998 to 2007
Chairman of the North Carolina DMF Management Review Team

1995 to 1998
North Carolina Division of Marine Fisheries (NCDMF) representative on the ASMFC weakfish technical (Chairman) and stock assessment committees, bluefish technical and stock assessment committees and alternate for Science and Statistics Committee. Member of SAFMC Science and Statistics Committee, Bycatch Reduction Subcommittee, and Red Drum Assessment Committee.

1995 to 1998
Chairman of the North Carolina Division of Marine Fisheries Biological Review Team.

1998 to 2003
South Atlantic Representative on MARFIN Panel

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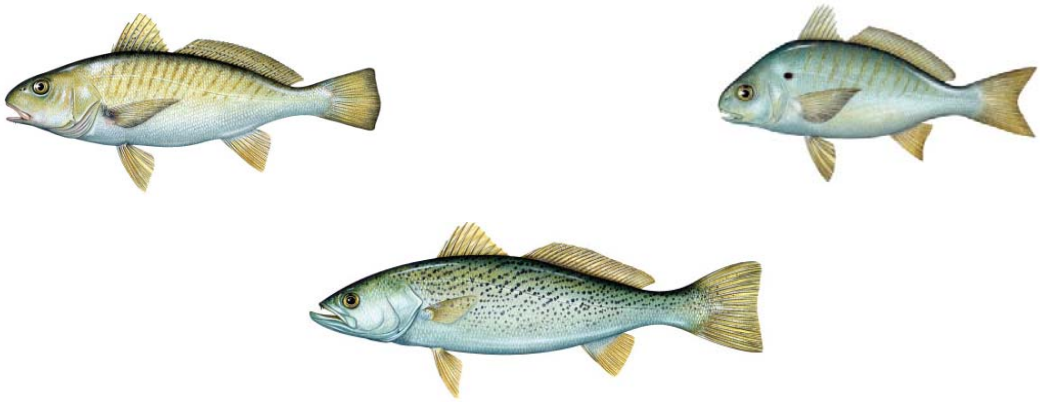
EXHIBIT E

TECHNICAL REVIEW: THE NEED TO REDUCE FISHING MORTALITY AND BYCATCH OF JUVENILE FISH IN NORTH CAROLINA'S ESTUARIES



Prepared by Dr. Luiz Barbieri

Submitted to the North Carolina Marine Fisheries Commission

November 2, 2016

I. INTRODUCTION

The recreational and commercial fisheries in the state of North Carolina play an important role in the state's economy and culture, supporting a multi-million-dollar industry. Unfortunately, these fisheries have been facing increasing stressors caused by habitat alteration, juvenile bycatch, high levels of discards, and the effects of climate change. Given the recurrent concerns regarding population status and decreased fisheries landings for economically important species such as Atlantic croaker, spot, and weakfish (ASMFC 2010, 2015, 2016), a critical review of the factors contributing to long-term fisheries sustainability and population health is warranted. However, the problems caused by high levels of juvenile bycatch and nursery habitat alteration go beyond just these species. Even species that are not directly impacted by these stressors are likely affected by the removal of a substantial proportion of their prey biomass and the emergence of other ecosystem-level impacts (Hall 1999).

In North Carolina, the lack of sufficient nursery habitat protection and the need for a more rigorous and scientifically-informed process for protection of habitats not only for very early life stages (e.g., eggs, larvae, and post-settlement early juveniles) but also for juveniles, sub-adults, and first-time spawners is clear. From a fisheries management perspective, the problem of juvenile bycatch is a major impediment to sound practice, primarily because the magnitude of discards is not usually recorded and, therefore, not properly incorporated in fisheries stock assessments. Since most fisheries assessment methods rely on catch data for their operation, the uncertainty associated with unknown levels of bycatch can be enormous. Indeed, the problems are so great that some assessment scientists feel that without proper integration of bycatch mortality, the data used to conduct assessments is of questionable utility (Hall 1999, Walters and Martell 2004). From a practical perspective, this means that the true condition of croaker, spot, and weakfish stocks is likely to be even worse than we know because a significant source of mortality is not properly accounted for.

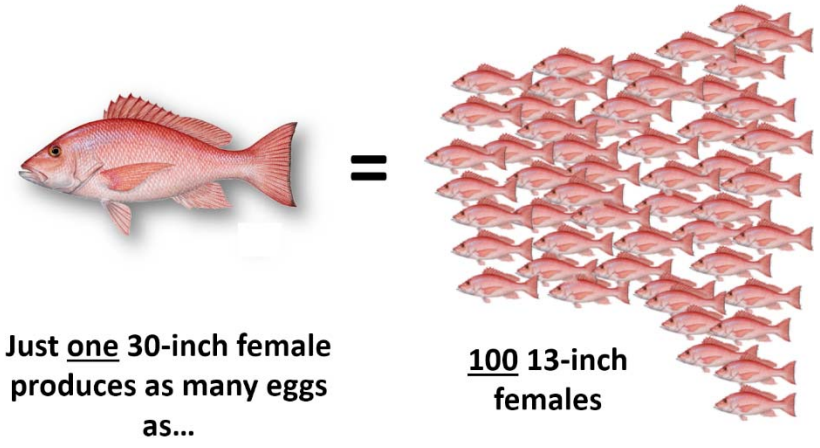
On many grounds, therefore, finding solutions to the high discard and bycatch problem is highly desirable by many sectors of the fisheries that depend on the long-term sustainability of fisheries resources. This paper provides a summary technical review of *how* and *why* a more comprehensive and inclusive designation of nursery habitat in North Carolina estuarine waters would greatly benefit not just the greater Pamlico Sound ecosystem but the many fisheries that depend on its productivity and health.

II. SCIENTIFIC DEFINITION OF "JUVENILE" AND "ADULT" FISH

In the scientific literature that deals with fisheries biology, the term "juvenile" is used to designate the young and relatively small individuals in the population that have not yet reached sexual maturity and therefore are not capable of spawning—i.e., they have not yet developed active reproductive organs such as ovaries and testes. It follows from this that individuals in the population reach "adulthood" (i.e., turn into adults) when they become sexually mature and are capable of reproducing (Lowerre-Barbieri 2009, Brown-Peterson et al. 2011).

Some species reach sexual maturity relatively early in life (e.g., in weeks, months, or one year), while others can take from a few years to decades to become sexually active (Stearns 1992, Lowerre-Barbieri, 2009). The specific reproductive strategy utilized by each individual species results from evolutionary processes and selective pressures that take place over millions of years (Stearns 1992, Lowerre-Barbieri 2009, Brown-Peterson et al. 2011, Lowerre-Barbieri et al. 2011, Lowerre-Barbieri et al. 2016). For example, common species found in North Carolina estuaries such as Atlantic croaker, weakfish, and spot mature relatively early in life. About 50 percent of individuals are sexually mature at age 1, and 80 to 90 percent are mature by age 2 (Barbieri et al. 1994a, Lowerre-Barbieri et al. 1996). However, first time spawners—females just reaching sexual maturity and spawning for the first time—have significantly lower fecundity and, therefore, much lower reproductive value than larger, older females (Stearns 1992, Lowerre-Barbieri 2009, Lowerre-Barbieri et al. 1998, Lowerre-Barbieri et al. 2016). Here the term "reproductive value" is used to denote higher reproductive capacity, usually measured by higher fecundity, higher egg quality, and the production of better fit larvae that have a higher probability of survival (Stearns 1992, Berkeley et al. 2004, Lowerre-Barbieri et al. 2016). The consequence is that by killing large numbers of juvenile, sexually immature, or even first time spawners, bycatch and discard mortality in North Carolina estuaries is likely to be severely impacting the egg production and reproductive capacity of these stocks. How does this work?

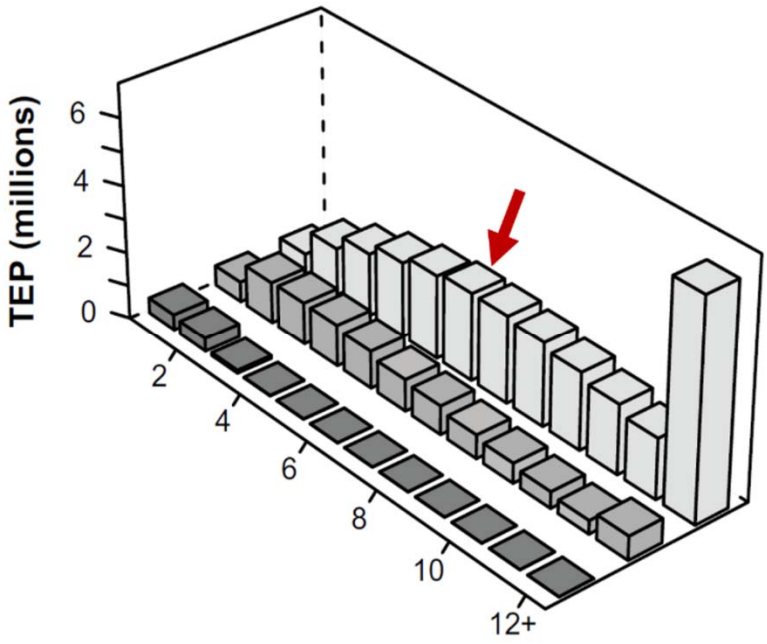
The example in the graphic below illustrates the concept of "size, age, and reproductive value" for red snapper, another important commercial and recreational fisheries species in the southeastern United States. Since body weight increases as a power function of fish length, the egg production of larger, older females is disproportionally larger than that of smaller, younger females (Berkeley et la. 2004, Hixon et al. 2014). The results are astonishing. Just one 30-inch female red snapper can produce as many eggs as 100 13-inch females (Porch *et al*. 2015).



Further, the idea of relying on first time spawners to maintain a population's egg production and reproductive capacity is completely flawed and without scientific support (Cooper et al. 2013, Hixon et al. 2014, Lowerre-Barbieri et al. 2015). As seen in the red snapper example

above, the reproductive capacity of first time spawners is exponentially lower than that of older females. A growing body of fisheries research shows that big, old, fat, fertile female fish—what scientists call BOFFFF's—are critically important to sustainable management of marine fisheries because their reproductive capacity is so large (Hixon et al. 2014). BOFFFF's are so vital because they produce a higher quantity of larger eggs that have a better chance of developing into larvae that can withstand environmental impacts and other threats (Berkeley et al. 2004, Hixon et al. 2014). BOFFFF's also tend to have longer spawning sessions, may spawn in a wider range of locations than smaller fish, and are more likely to survive bad years, reproducing feverishly when conditions improve (Cooper et al. 2013, Hixon et al. 2014). Since smaller females are also more susceptible to predation they are usually more restricted to safer habitats and thus different food supplies (Hixon et al. 2014). Smaller, younger females must also devote more energy to growth than larger females, which can devote more energy to reproduction (Stearns 1992, Cooper et al. 2013, Hixon et al. 2014, Lowerre-Barbieri et al. 2015, 2016).

Another example of the importance of letting enough fish mature, grow, and age to achieve their maximum reproductive potential can be found in the spotted seatrout (speckled trout), a close cousin to the weakfish or gray trout. A recently published study (Cooper et al. 2013) looked at the effect of age truncation and size-dependent timing on the spawning potential of spotted seatrout. In the fisheries biology scientific literature, the term "age truncation" means the removal of older age classes, leaving the population "juvenesced," or lacking the larger, older fish that produce the most eggs. Size-dependent timing of spawning means that females of different sizes (and presumably different ages) spawn at different time intervals during the



spawning season. The results of the Cooper et al. (2013) study are consistent with the pattern shown by red snapper: larger, older females were reported to have disproportionally larger total egg production (TEP) than their smaller, younger counterparts (Lowerre-Barbieri et al. 2015, Porch et al. 2015). The graph above shows the estimated TEP of spotted seatrout by age for different fishing mortality regimes: the light gray bars indicate stocks under no fishing pressure; the middle, a bit darker gray bars show results under a moderate level of fishing mortality; and the darker gray bars represent stocks under a relatively high level of fishing mortality. First, it is clearly noticeable that fish under no fishing pressure reach maximum TEP between the ages of five and seven years (red arrow) (Cooper et al. 2013). As seatrout stocks are subject to higher fishing mortality, fewer of the older fish survive and the population's egg production becomes progressively more dependent on younger females that, as shown above, have much lower reproductive capacity.

III. THE IMPORTANCE OF HABITAT PROTECTION FOR JUVENILE FISH

The nursery-role concept was first applied nearly a century ago to motile invertebrates and fishes with complex life cycles, in which larvae are transported to estuaries, metamorphose, grow to sub-adult stages, and then move to adult habitats offshore (Heck and Crowder, 1991). Some scientists trace this idea to work done between the early to mid-1900s on blue crabs, shrimp, and several finfish species (Beck et al. 2001). The concept became so pervasive that from a fisheries ecology perspective it has been termed a "law." For example, Deegan (1993) states that "estuarine fish faunas around the world are dominated in numbers and abundance by species which move into the estuary as larvae, accumulate biomass, and then move offshore."

Nearshore estuarine ecosystems—e.g., seagrass meadows, marshes, and mangrove forests—serve many important functions in coastal waters. Most notably, they have extremely high primary and secondary productivity and support a great abundance and diversity of fish and invertebrates. Because of their effects on the diversity and productivity of macrofauna, these estuarine and marine ecosystems are often referred to as nurseries in numerous papers, textbooks, and government-sponsored reports (Beck et al. 2001, Able 2005). The underlying premise of most studies that examine nursery-role concepts is that some nearshore, juvenile habitats contribute disproportionally to the production of individuals that recruit to adult populations (Heck and Crowder 1991, Beck et al. 2001, Able 2005). Therefore, the ecological processes operating in nursery habitats, as compared with other habitats, support greater contributions to adult recruitment (Beck et al. 2001). Indeed, the role of these nearshore ecosystems as nurseries is an established ecological concept accepted by scientists, conservation groups, managers, and the public, and is cited as justification for the protection and conservation of these areas (Able 2005).

IV. REVIEW OF NORTH CAROLINA'S NURSERY AREA PROGRAM

North Carolina regulations define "nursery areas" as "those areas in which for reasons such as food, cover, bottom type, salinity, temperature and other factors, young finfish and crustaceans spend the major portion of their initial growing season." 15A N.C. Admin. Code 3I.0101. Nursery areas in North Carolina are categorized based on various stages of juvenile

development and life history strategy. The map below (Fig. 1) provides the locations of the various nursery areas mapped for estuarine waters of North Carolina, which includes a very small fraction of the vast estuarine habitats of the state. For fisheries management purposes these areas are designated as:

(1) Primary Nursery Areas (PNAs), which are those areas of the estuarine system where initial post-larval development takes place. These areas are located in the uppermost sections of a system where populations are uniformly very early juveniles. 15A N.C. Admin. Code 3I.0101. Since 1978, PNAs have been designated by the N.C. Marine Fisheries Commission to protect areas where initial post-larval development takes place. The PNA designation is intended to maintain these habitats, as much as possible, in their natural state to allow juvenile populations to develop in a normal manner with as little interference from man as possible. Approximately 80,000 acres have been designated as PNAs in North Carolina.

(2) Secondary Nursery Areas (SNAs) are those areas of the estuarine system where later juvenile development takes place. Populations are usually composed of developing sub-adults of similar size which have migrated from upstream primary nursery areas to the secondary nursery areas located in the middle portion of the estuarine system. 15A N.C. Admin. Code 3I.0101.

(3) Special Secondary Nursery Areas (SSNAs) are areas adjacent to secondary nurseries. It is unclear how SSNAs are distinguishable from SNAs. North Carolina rules do not define SSNAs.

The logical conclusion after examination of the definitions above is that North Carolina regulations does not include habitat designations to protect larger juveniles (i.e., sub-adults in pre-spawning condition) or the very young fish and shellfish that have perhaps spawned once but have not yet reached even a fraction of their reproductive potential (Barbieri et al. 1994a, Lowerre-Barbieri et al. 1995, Lowerre-Barbieri et al. 1998). This raises a major fisheries management concern because it is these sub-adults and first time spawners that will eventually recruit into the main spawning stock to maintain the egg production and juvenile recruitment needed for sustainable fisheries (Lowerre-Barbieri et al. 1998, Lowerre-Barbieri 2009, Cooper et al. 2013).

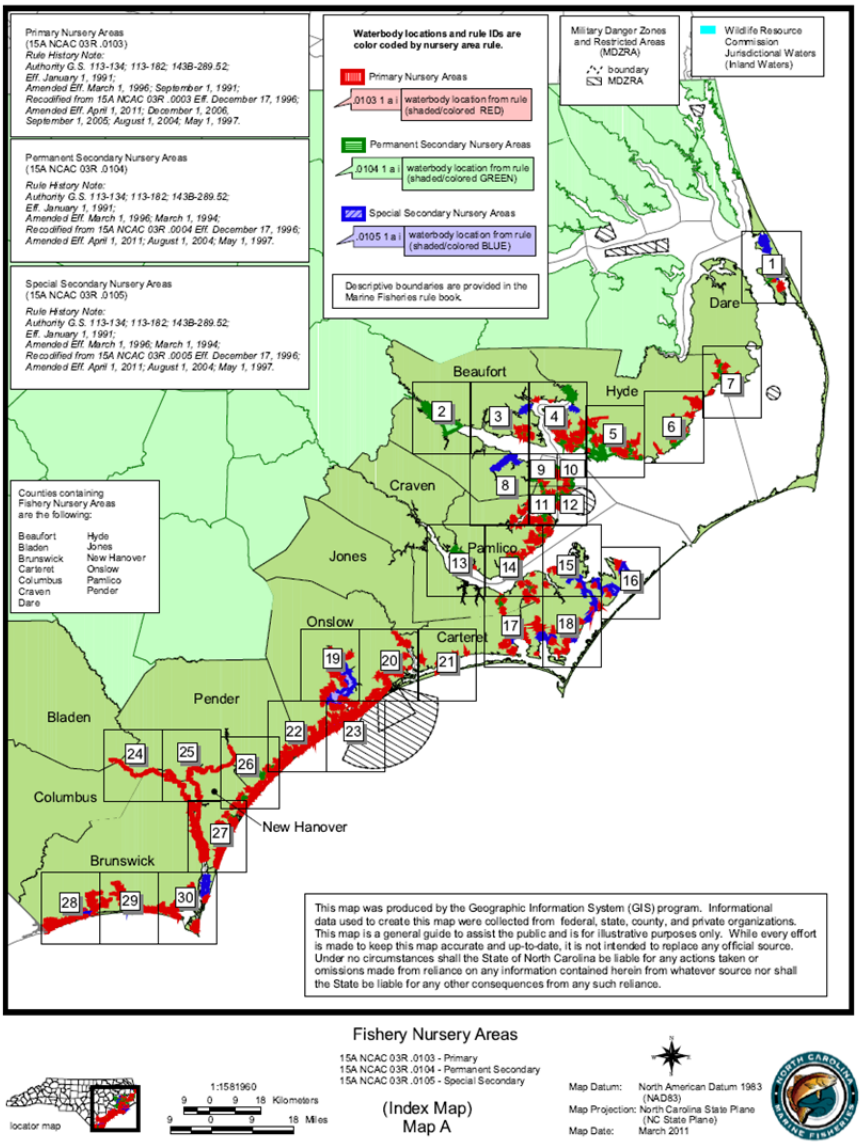


Fig. 1 – Locations of the various nursery areas for estuarine waters of North Carolina

Even a cursory review of the main fisheries that operate in North Carolina estuaries unequivocally indicate that the current nursery habitat designations do not provide adequate protection to the early life history stages of finfish and crustaceans that use these systems as nursery habitats (Broome et al 2011). Specifically, the North Carolina Division of Marine Fisheries Primary Nursery Area Designation Protocol, (also known as the P120 protocol) issued in 2002 mentions that of the approximately 2.1 million acres of open water and 200,000 acres of wetlands in coastal North Carolina, only 162,265 acres (or approximately 8 percent of the total estuarine waters) have been designated as nursery areas. Designations of estuarine areas that consistently support populations of juvenile shrimps, crab, and finfish—and, therefore, provide the basis for nursery area designation—is based on surveys conducted in the early 1970s (NCDMF 2002) and have not been substantially updated since.

People from other states are usually surprised by these facts. Most states prohibit trawling inside bays or other inshore areas deemed as estuarine nursery habitats. In North Carolina, with few exceptions, estuarine nursery areas are subject to intense fishing pressure by all sectors of the fishery (trawls, long-haul seines, gill nets, and hook and line), all of which harvest and/or discard substantial quantities of juvenile fish species such as Atlantic croaker, spot, weakfish, summer flounder, and blue crabs (Murray et al. 1992, Broome et al. 2011). Technically, trawling in North Carolina is prohibited in designated nursery areas. However, the problem is that Pamlico Sound and other estuarine areas providing nursery habitat have not been designated as nursery areas. Data derived through the N.C. Division of Marine Fisheries Pamlico Sound Survey are obtained from areas outside of any of the designated nursery areas (Fig. 2). In other words, although DMF conducts surveys in the Pamlico Sound, scientific sampling to properly designate the location, geographic extent, and ecological function of estuarine nursery areas in the Sound is lacking.

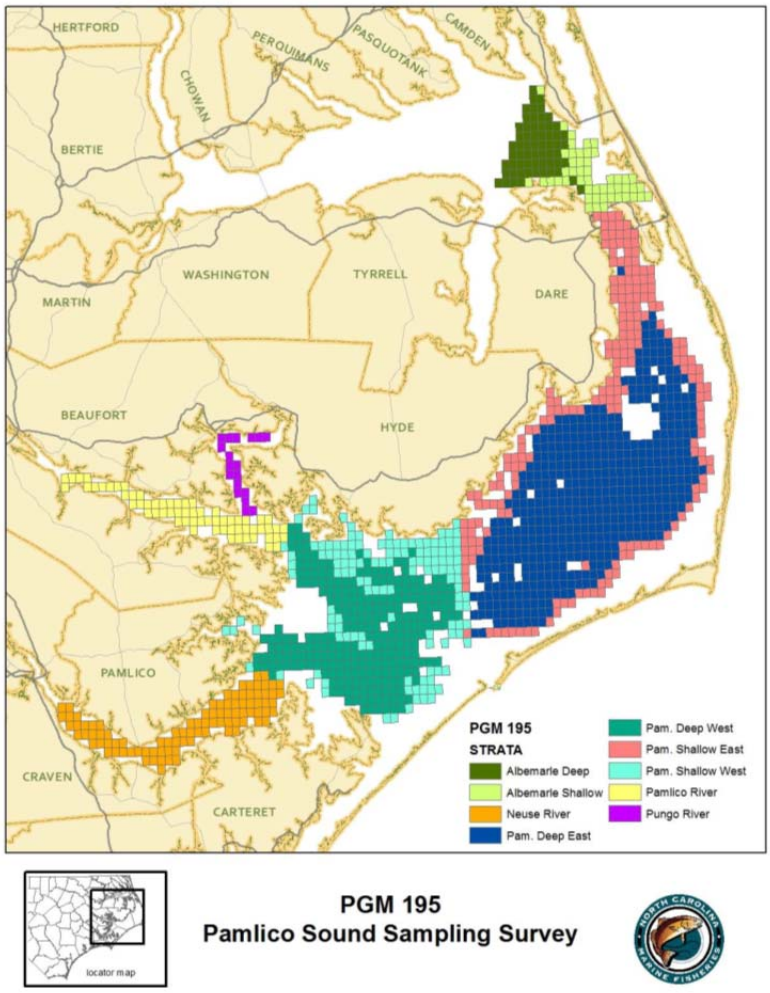


Fig. 2 – Locations of the North Carolina DMF random-stratified sampling program for estuarine waters of North Carolina.

Because of the estuarine-dependent nature of their life history, Atlantic croaker, spot, and weakfish spawn primarily in coastal and nearshore shelf waters (Barbieri et al. 1994a, Lowerre-Barbieri et al. 1995) and recruit as early juveniles into Pamlico Sound nursery habitats (Chao and Musick 1977, Weinstein and Walters 1981). Although adults of these species use open waters of the Sound as feeding grounds, the bulk of croaker, spot, and weakfish found in Pamlico Sound are small, young fish that have not had a chance to spawn or have spawned perhaps once before reaching maximum egg production and spawning capacity. If we follow the nursery habitat concept described by Heck and Crowder (1991) in which larvae are transported to estuaries, metamorphose, grow to sub-adult stages, and then move to adult habitats offshore, then there is no question that Pamlico Sound constitutes a major nursery habitat for these species.

Another serious concern with the current lack of protection for the main areas of Pamlico Sound and other inshore waters is the impact of shrimp trawling on the bottom. When attempting to assess the impact of trawling, two key pieces of information are required—the type of gear used and the frequency of disturbance (Hall 1999). Unfortunately, the lack of data on rates, distributions and intensities of fishing disturbance on the Pamlico Sound floor prevents a more quantitative analyses of these impacts. However, what we do have is a fairly clear picture of how bottom communities respond to fishing disturbance. For the most part this response is consistent with the generalized model of how biological benthic communities respond to perturbation: loss of erect and sessile *epifauna* (the invertebrates and small fishes that live on the bottom), increased dominance by smaller, faster-growing species, and a general reduction in species diversity and ecosystem services (Hall 1999).

Ecosystem services are the benefits people obtain from ecosystems (Palumbi et al. 2008). These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth. People seek many services from ecosystems and thus perceive the condition of an ecosystem in relation to its ability to provide desired services. In a narrow sense, the sustainability of a particular ecosystem service can refer simply to whether the biological potential of the ecosystem to sustain the yield of that service (such as food production) is maintained. Thus, a fish provision service is sustainable and promotes resilience if the *surplus* but not the *resource base* is harvested, and if the *fish's habitat* is not degraded by human activities. In fisheries management, this is what we call "sustained yield management." (Hilborn and Walters 1992, Walters and Martell 2004, Lowerre-Barbieri et al. 2016). The continued bottom trawling impacts on Pamlico Sound estuarine communities (Broome et al. 2011) and habitats is likely to seriously impact ecosystem health and interfering with essential ecosystem services.

V. THE CONSEQUENCES OF NOT PROTECTING JUVENILE, PRE-SPAWNING FISH IN PAMLICO SOUND

By imposing significant mortality on juvenile and pre-spawning fish, contributions to their respective populations in terms of both fishery yield and spawning potential are severely compromised. How and why does this happen?

A. Losses in Fishery Yield

In general, fishery harvest is similar to agriculture or farming. For example, to raise chickens, the farmer must wait until the chicks reach a certain size and weight before selling the chicks for meat. Obviously, killing small chicks for meat would be incredibly unprofitable because the chicks have not grown to the point that they have enough meat to be of any marketable value. Most fish follow this same rule of thumb. Fish grow fast when they are young, and it is much better to wait until fish reach an ideal size and weight to be harvested (Barbieri et al. 1997, Walters and Martell 2004). Growth overfishing results when a fish is harvested before it reaches this ideal weight (Hilborn and Walters 1992). Growth overfishing a stock is literally throwing away or wasting fishery yield production, not unlike the example with

the chicks and chickens above (Hilborn and Walters 1992, Barbieri et al. 1997, Walters and Martell 2004). It's that simple. Now, multiply this loss in fishery yield (actual pounds of fish meat) by the hundreds of millions of juvenile Atlantic croaker, weakfish, and spot killed by fishing gear in Pamlico Sound, and one gets an idea of the huge economic loss this is causing in North Carolina (Broome et al. 2011). A study conducted by the North Carolina Sea Grant program determined that of the top ten bycatch species by weight, five were commercially or recreationally important species such as blue crab, Atlantic croaker, weakfish, spot, and summer flounder (Broome et al. 2011).

B. Losses in Spawning Potential

Perhaps the greater concern is the extraordinary quantities of Pamlico Sound forage and food fishes that succumb to fishing-induced mortality prior to spawning at least once. Drawing on the same chicken farm example, it is easy to see that to have sustainable long-term production some level of egg production to generate enough chicks that can grow into full size chickens must be maintained. Killing a large number of chicks before they can lay eggs will eventually lead to trouble. In fisheries, this is what we call "recruitment overfishing" (Hilborn and Walters 1992, Walters and Martell 2004). This type of overfishing is just as detrimental to the fishery as growth overfishing, but it is much more dangerous because it depresses annual fishery yields, damages long-term stock productivity, and renders fisheries as economically unviable (Hilborn and Walters 1992, Lowerre-Barbieri 2009, Walters and Martell 2004, Lowerre-Barbieri et al. 2016). In other words, killing so many juveniles before their first spawning severely reduces the stocks' reproductive capacity and compromises the annual production of new recruits (i.e., fingerlings coming into the population). The consequences are manifold, but can be summarized into two main impacts: (1) the amount of spawning is inadequate to generate new recruits and keep the stock in a sustainable state, and (2) the reduced spawning and juvenile recruitment cause a reduction in the populations to a small fraction of its original size and allows other species (competitors) to take advantage of the open space and fill in the void (Botsford et al. 1997). For example, starting in the early 1900s, the California sardine fishery became the largest fishery in North America and supported a major industry (Radovich 1982). Due to overfishing, sardine populations in the area declined until it was no longer economical to fish sardines in Pacific North America. With the decline in the population of the California sardine came an increase in the population of its primary competitor, the anchovy (Radovich 1982). This only added fuel to the problem. The California Fish and Game Commission took lessons from the death of the sardine industry and since then has embraced scientifically-based fisheries management (Radovich 1992)

Although direct scientific evidence is lacking, the similarity with the phenomenal collapse of the weakfish fishery in the mid-Atlantic is instructive. Once a thriving commercial and recreational fishery throughout the mid-Atlantic, weakfish stocks started to steadily decline in the 1980s and by the mid-1990s were considered to be in serious trouble—landings dropped from over 19 million pounds in 1982 to roughly 200,000 pounds in 2014 (ASMFC 2016). The majority of landings occur in North Carolina and Virginia and, since the early 1990s, the primary gear used to harvest has been gillnets (ASMFC 2016). Discarding of weakfish by commercial

fishermen is known to occur, especially in the northern trawl fishery, and the discard mortality is assumed to be 100 percent (Broome et al. 2011).

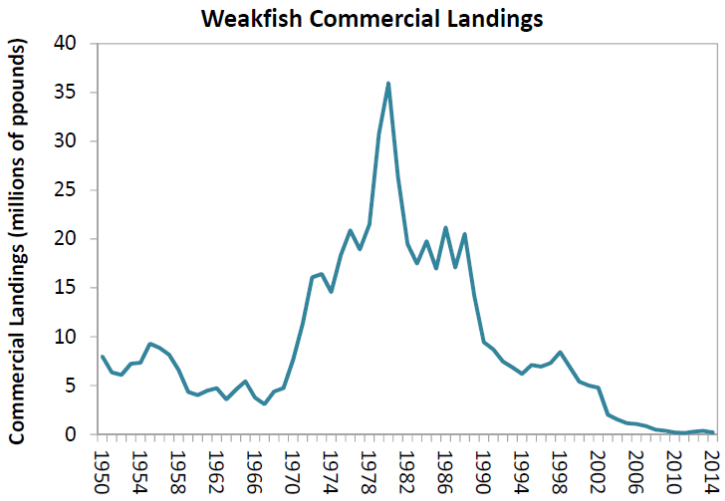


Fig. 3 – Weakfish Commercial Landings, 1950 – 2014

By 1996, the Atlantic States Marine Fisheries Commission (ASMFC) had adopted Amendment 3 as a long-term recovery plan to restore weakfish to healthy levels in order to maintain commercial and recreational harvests consistent with a self-sustaining spawning stock (ASMFC 2016). Unfortunately, while managers were preparing for a weakfish resurgence, something else was happening—unbeknownst to anyone—which would eventually cause a rapid increase in weakfish mortality. Increased predation from other species such as striped bass and spiny dogfish as well as competition with Atlantic croaker, decreasing prey items such as bay anchovy and Atlantic menhaden, and increasing water temperatures may all have been playing key roles in the weakfish decline (ASMFC 2016).

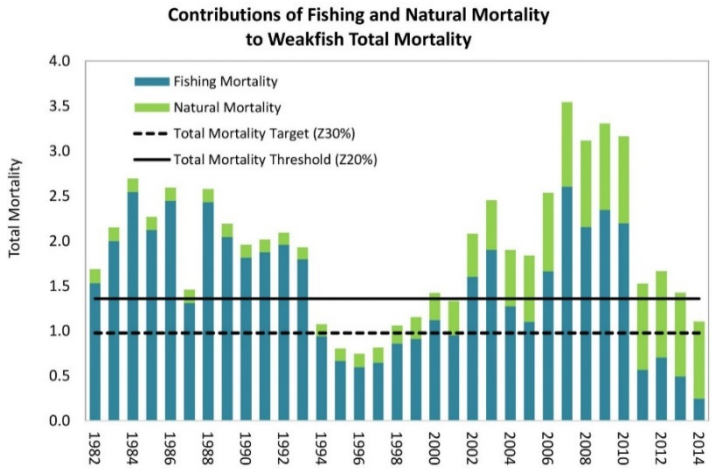


Fig. 4 – Fishing and Natural Mortality of Weakfish, 1982 - 2014

How many more productive North Carolina fisheries must go through this same precipitous decline before managers recognize that sustained injury to nursery habitats and the lack of adequate protection for juveniles and first time spawners is likely causing serious harm to the very ecosystem responsible for keeping North Carolina fisheries in business? In other words, although the main fisheries for weakfish and croaker take place in nearshore waters (Barbieri et al. 1994a, 1994b, Lowerre-Barbieri et al. 1995,1996), juvenile bycatch and nursery habitat destruction in Pamlico Sound will impact the fisheries by either increasing mortality of juvenile life stages or by destroying the habitats they inhabit (Broome et al. 2011).

VI. SOURCES OF MORTALITY FOR WEAKFISH, SPOT, CROAKER, AND OTHER SPECIES COMMONLY FOUND IN NORTH CAROLINA WATERS

Some people suggest that high fishing mortality on juvenile fishes has a negligible impact on population viability because natural mortality is already so high that, most likely, those fish would have died anyway. The key difference here is natural mortality versus fishing mortality. Natural mortality is the mortality fish populations experience due to natural causes such as old age, predation, disease, and environmental impacts. Fishing mortality is the mortality caused by any kind of fishing-related activity, including harvest, bycatch, and release mortality, to name a few (Hilborn and Walters 1992, Stearns 1992, Walters and Martell 2004). There is no question that early juvenile stages (i.e., young-of-the-year fingerlings) of weakfish, spot, croaker, and other species commonly found in Pamlico Sound have very high natural mortality (Barbieri et al. 1994b, Lowerre-Barbieri et al. 1995). This is due to a life history strategy selected (by natural selection) to produce huge numbers of eggs and larvae that can account for the high predation most fish species experience in early life. In other words, to compensate for the fact that most eggs, larvae, and early juveniles will be heavily preyed upon by larger-sized fish (sometimes other species but cannibalism is not uncommon) these fish have, over millions of years, evolved to produce very large numbers of young (Lowerre-Barbieri 2009). A good way to look at natural mortality in animals is to compare what is called their "Survivorship Curves" (Deevey 1947, Stearns1992, Walters and Martell 2004). Figure 3 below shows the typical shapes of

survivorship curves for fish, reptiles, and mammals. Type I survivorship curves are characterized by high age-specific survival probability in early and middle life, followed by a rapid decline in survival in later life. They are typical of species that produce few offspring but care for them well, including humans and many other large mammals (Deevey 1947, Stearns 1992, Walters and Martell 2004). Type II curves are an intermediate between Types I and III, where roughly constant mortality rate/survival probability is experienced regardless of age. Some birds and some lizards follow this pattern (Deevey 1947, Stearns 1992). In Type III curves, the greatest mortality (lowest age-specific survival) is experienced early in life, with relatively low rates of death (high probability of survival) for those surviving this bottleneck. This type of curve is characteristic of species that produce a large number of offspring (see r/K selection theory, Stearns 1992, Winemiller and Rose 1992). This includes most fish and marine invertebrates.

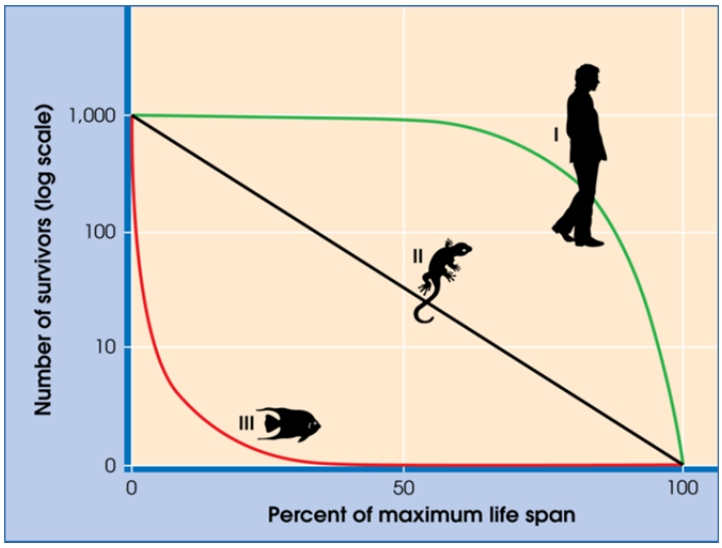


Fig. 5 – Most fishes (including Atlantic croaker, spot, and weakfish) have a type III natural survivorship curve, i.e., they experience exponentially higher mortality early in life (egg, larval, and juvenile stages).

Extrapolating this expected high rate of natural mortality to these species' ability to also withstand large rates of fishing induced mortality is nonsensical. Why is that?

Many decades of studies on fish population dynamics (e.g., Beverton and Holt 1957, Hilborn and Walters 1992, Walters and Martell 2004) clearly indicate that:

$$Z = M + F$$

Where, Z = total mortality, M = natural mortality, and F = fishing mortality.

Clearly, fishing mortality is *additive* to natural mortality, not a replacement for it. In other words, even though larvae and early juveniles of species that utilize nursery habitats in Pamlico Sound have been selected to have high rates of natural mortality this doesn't mean they are

capable of also withstanding an additional source of mortality, especially at the magnitudes observed in North Carolina estuaries (Murray et al. 1992, Broome et al. 2011). The result is literally the meaning of adding insult to injury. As juveniles inhabiting more protected nursery areas grow, their natural tendency is to move to more open, higher salinity waters of the larger sounds and bays (Barbieri et al. 1994b). These fishes have survived during periods of the highest natural mortality and the level of mortality drops exponentially as they grow (Deevey 1947, Winemiller and Rose 1992; Walters and Martell 2004; Able 2005). It is at this time that these fishes, fit enough to have survived the early period of high mortality, become subjected to intense sources of fishing mortality—either by direct harvest or bycatch mortality (Murray et al. 1992, Broome et al. 2011).

The fish and invertebrate species that inhabit North Carolina estuaries are part of a complex ecosystem that fuels the productivity of fisheries in state waters and beyond (Barbieri et al. 1994a, 1994b, 1997; Lowerre-Barbieri et al. 1995, 1996, 1998). With adequate management and habitat protection—i.e., designation of Pamlico Sound as nursery habitat—these fisheries can support long-term sustainable harvest, generating fresh local seafood, business opportunities and jobs for millions of people. The consequences of continuing the current pattern of juvenile bycatch and discard mortality in North Carolina estuaries is irreparable harm to the ecosystem and destruction of the businesses that rely on fish and shellfish species that use these areas as nursery habitats.

VII. THE STATUS OF SPOT, CROAKER, AND WEAKFISH IN NORTH CAROLINA WATERS

Juvenile spot, croaker and weakfish dominate the finfish bycatch, making up a majority of the total bycatch in North Carolina estuaries (Broome et al. 2011). Not surprisingly, the stock status of these three species is considered poor (ASMFC 2010, 2015, 2016). Spot and croaker are classified by the North Carolina Division of Marine Fisheries as being of "concern," and weakfish are classified as "depleted." Stock assessments and other data summary reports conducted by ASMFC show the same pattern (ASMFC 2010, 2015, 2016). This is not surprising. It is estimated that each year, approximately 100 million juvenile Atlantic croaker, 50 million juvenile spot, and 25 million juvenile weakfish are caught and killed by otter trawls in Pamlico Sound (Broome et al. 2011). All are shoveled back into the Sound where they either get eaten or rot (Broome et al. 2011). The impact of this bycatch is uncertain, but because of the large number of pre-spawning age fish that are killed, common sense points to it being a major factor in the decline of these fish populations (ASMFC 2010, 2015, 2016; Broome et al. 2011).

In fisheries management the practice of implementing a minimum size limit is based on the concept that stock productivity relies on having enough spawning and egg production to maintain the surplus production above the replacement line (see Figure 6 below).

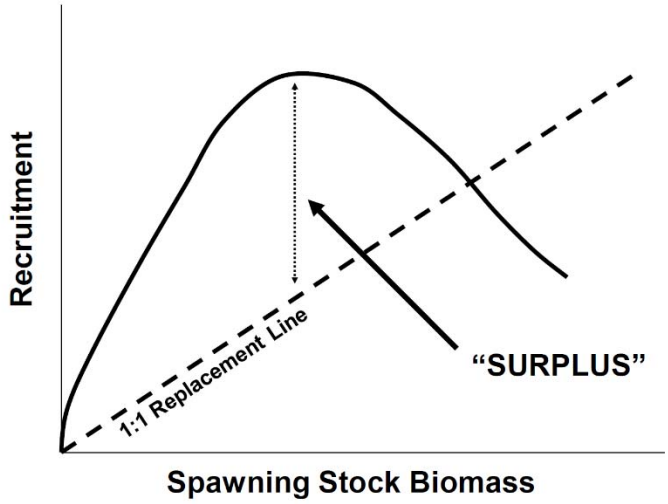


Fig. 6 – Recruitment and spawning stock biomass.

When fishing mortality removes too many young fish from the population, the result is a much smaller proportion of the population reaching sexual maturity and contributing to future stock productivity. Tropical and temperate fish populations like croaker, spot, and weakfish have the ability to withstand this type of negative impact for a short time given their high compensatory capacity (Kindsvater et al. 2016), but over time the ability of the stock to maintain long-term resilience is severely compromised (Lowerre-Barbieri et al. 2016). Consider the reproductive output (i.e., spawning potential, egg production) produced by a cohort of fish over its lifespan (by "cohort" we mean the fish born in a certain year). The equilibrium spawning potential (SP) per recruit is given by:

$$SP = \int_0^{\infty} B(a) \cdot Mat(a) \cdot \%Eggs \; da$$

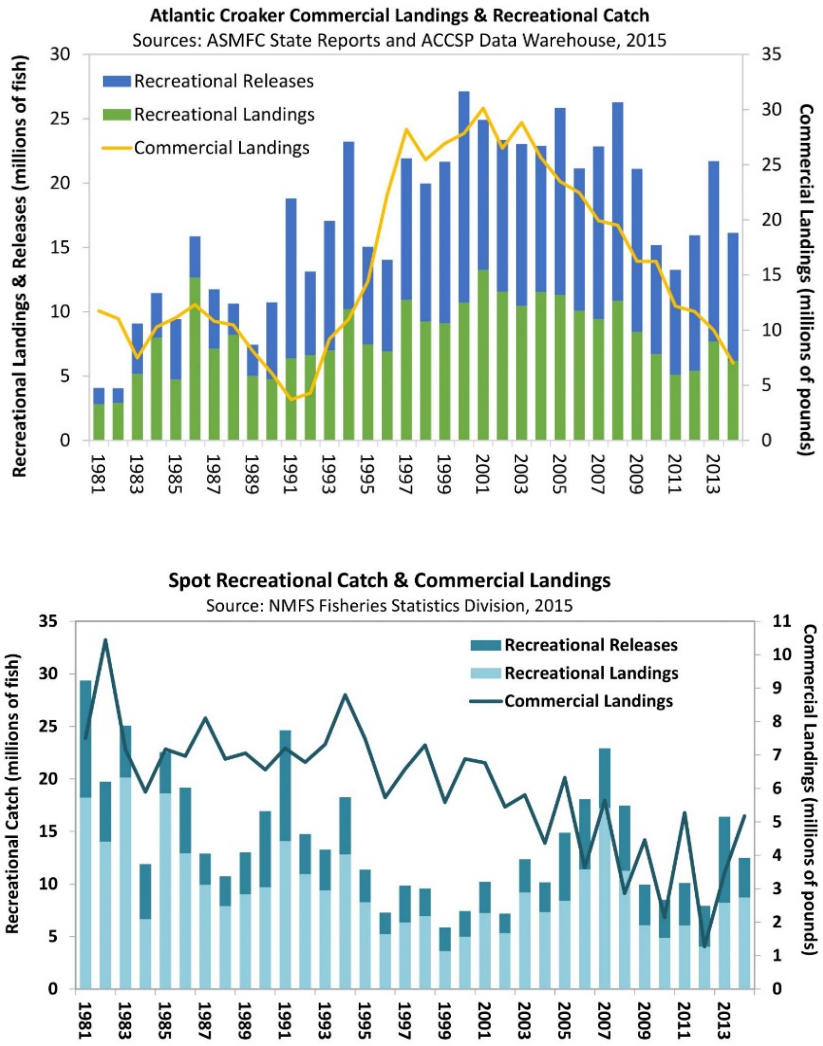
$$\frac{SP}{R} = \int_0^{\infty} \exp[-(M + F(a)) \cdot a] \cdot W(a) \cdot Mat(a) \cdot \%Eggs \; da$$

Where: **B**(**a**) is biomass at age of females, **Mat**(**a**) is the proportion mature at age, **%Eggs** is the proportion of a female's body mass that is ovaries.

It is clear from the equation above that the biomass of females at age, the proportion of females sexually mature at age, and the proportion of a female's body mass dedicated to reproduction (i.e., ovary tissue mass) are very important factors in maintaining the levels of reproduction needed to support long-term fisheries sustainability. Further, as discussed above,

preventing fish from growing to their ideal size and weight has tangible consequences in terms of fisheries yield. For example, the figure below shows the equilibrium fishery yield expected under two scenarios. The levels of yield produced at different fishing mortality rates are much higher when the fish selected by the gear have grown to their ideal size and weight (black line). When the fish selected by the fishing gear are too young—and therefore too small—the yields produced are much lower.

Unfortunately, the negative impact on weakfish has been massive. Although Atlantic croaker and spot are not in such critical condition as compared to weakfish, landings of both these species are a fraction of what they once were (ASMFC 200, 2015). For all practical purposes, stocks of Atlantic croaker and spot in North Carolina and the mid-Atlantic region are in a state fisheries biologists call "sustainably overfished." (Walters and Martell, 2004). This means that although their current level of depletion has not reached catastrophic levels and these stocks still support some level of fisheries harvest, the productivity of these stocks has been sapped to the point that they no longer support the fisheries and associated businesses that once thrived in the region (Hall 1999, Walters and Martell 2004).



Figs. 7, 8 - Atlantic Croaker and Spot Recreation and Commercial Landings, 1981 - 2013

As a result, the future of sustainable fisheries in North Carolina is at stake. Even with some fish populations displaying an extraordinary capacity for recovery, human interferences should never cause such drastic changes in the marine ecosystems we depend on (Walters and Martell 2004, Lowerre-Barbieri et al. 2015). Besides, the impacts caused by juvenile bycatch and discard mortality are multidimensional. For the economist, the impacts of these practices generate additional costs without affecting the revenues, and may hinder profitability. For the fishermen, these fishing practices cause conflicts among fisheries, give fishers a bad public image, generate regulations and limitations on the use of resources, and effect future yield.

In an article entitled "The Historical Collapse of Southern California Fisheries and the Rocky Future of Seafood," Katie Lee describes how economically valuable southern California

fisheries (kelp and barred sand bass) collapsed "right under the noses of management agencies." Though the media tends to focus on the effects of pollution, climate change, or overfishing, outdated systems of management that do not explicitly incorporate habitat protection as part of a broader conservation strategy are actually the main cause of the collapse in many cases. In the particular case of North Carolina, a combination of improved and updated regulations that can provide the habitat protection needed for early life stages, late juveniles, and first time spawners throughout Pamlico Sound and other estuarine waters must be incorporated into fisheries management *before* fish populations collapse. Further, this added habitat protection would certainly benefit stocks already impacted and at low abundance and greatly assist their rebuilding to a healthy condition.

VIII. CONCLUSION

Dead discards and bycatch are major problems for fisheries in the southeastern United States. In North Carolina, extensive trawling and the use of other non-selective fishing methods are likely impacting the abundance and productivity of important commercial and recreational species such as Atlantic croaker, spot, and weakfish. These fishing practices lead to high levels of juvenile bycatch and discards, as well as ecosystem-level impacts such as the destruction of bottom habitats and the disruption of trophic interactions.

It is difficult to imagine that fishermen and fisheries managers are not very aware of this problem and have a strong desire to do something about it. The scientific evidence discussed throughout this paper shows clear evidence that:

(1) There is a definite need for a more inclusive, expanded nursery habitat designation in North Carolina estuarine systems. The system currently in place is outdated and does not follow a rigorous and scientifically-informed process.

(2) This problem is causing large bycatch mortality of economically and ecologically important species that support valuable fisheries (e.g., Atlantic croaker, spot, weakfish, and summer flounder). Further, shrimp trawling in large expanses of Pamlico Sound is very likely disrupting the bottom and negatively impacting the benthic communities needed to maintain ecosystem health.

(3) The Primary Nursery Areas (PNAs) designation in North Carolina affords some level of protection to upper estuarine habitats used by the very early life stages of fishes and macroinvertebrates (e.g., eggs, larvae, and post-settlement early juveniles). However, late juveniles, sub-adults, and first-time spawners moving into more open areas of Pamlico Sound are still subject to fishing mortality due to shrimp trawl bycatch and discards by other fisheries activities.

(4) Designation of the entire Pamlico Sound as a nursery habitat area would expand the protection of larger juveniles, sub-adults, and first-time spawners from shrimp trawling and other fishery mortality impacts. This action would also prevent or substantially decrease the ecosystem-level impacts of habitat alteration and food-web disruptions in

Pamlico Sound caused by bycatch, discards, and physical damage to benthic communities.

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EXHIBIT F

CURRICULUM VITAE

LUIZ R. BARBIERI

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Florida Fish and Wildlife Conservation Commission
100 Eighth Avenue SE
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EDUCATION

Ph.D. in Marine Science, The College of William and Mary, Virginia Institute of Marine Science, 1993
M.Sc. in Biological Oceanography, Rio Grande University, Brazil, 1986
B.S. in Biology, Santa Ursula University, Brazil, 1981

PROFESSIONAL EXPERIENCE

2003-present	Program Administrator, Marine Fisheries Research Program, Fish and Wildlife Research Institute, FWC
2000- present	Adjunct Graduate Faculty, Division of Marine and Environmental Systems, Florida Institute of Technology
1999-2003	Senior Research Scientist, Florida Marine Research Institute, FWC
1997-1999	Research Administrator, Florida Marine Research Institute, FWC
1995-1997	Assistant Research Scientist, Marine Institute, The University of Georgia
1993-1995	Postdoctoral Research Associate, Marine Institute, The University of Georgia

SCIENTIFIC PANELS AND COMMITTEES

2016-present	Co-Chair, 2016 Committee on Review of the Marine Recreational Information Program, Ocean Studies Board, National Academies of Science
2015-present	Chair, Scientific and Statistical Committee (SSC), Gulf of Mexico Fisheries Management Council
2012-present	Member, SSC, South Atlantic Fisheries Management Council
2012-2016	Chair, SSC, South Atlantic Fisheries Management Council
2010-2015	Florida Institute of Oceanography, Oil Spill Research Advisory Committee
2008-2012	Vice-Chair, SSC, South Atlantic Fisheries Management Council
2009-2010	Chair, ABC Control Rule Working Group, Gulf of Mexico Fishery Management Council
2009-2011	National SSC Working Group on Development of ABC Recommendations for Data Poor Stocks
2002-2008	Management and Science Committee, Atlantic States Marine Fisheries Commission

1998-2000	Marine Protected Areas Advisory Panel, South Atlantic Fisheries Management Council

SYNERGISTIC ACTIVITIES AND SERVICE

2015-present	Fisheries Forum Advisory Group – Fisheries Leadership & Sustainability Forum, Nicholas Institute for Environmental Policy Solutions at Duke University.
2014-present	Steering Committee – Southeast Marine Resource Education Program (MREP)
2013-present	Board of Directors – Gulf Wild Program, Gulf of Mexico Reef Fish Shareholders Alliance.
2009	Keynote Speaker – Ibero-American Symposium on Reproductive Ecology, Recruitment, and Fisheries Management (SIBECORP), Nov. 23-27, Vigo, Spain.

HONORS AND AWARDS

2015	Captain Phil Chapman Conservation Award – awarded by the Florida Guides Association.
2013	The Aylesworth Award – awarded by the Southeastern Fisheries Association for outstanding service as a government employee.

RESEARCH GRANTS

Synthesizing spatial dynamics of recreational fish and fisheries to inform restoration strategies: red drum in the Gulf of Mexico – Gulf Research Program Data Synthesis Grant. Co-PI with K. Lorenzen, C. Adams, R. Ahrens, M. Allen, E. Camp, J. Dutka-Gianelli, S. Larkin, W. Pine, J. Struve, S.K. Lowerre-Barbieri, M. Murphy, and J. Tolan. October 1, 2015-September 31, 2018. $480,000.

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Fisheries Initiative (MARFIN) Program. Co-PI A. Collins. September 1, 2013 - August 31, 2016. $274,563

Assessment of Florida's Marine Hatchery Programs – U.S. Fish and Wildlife Service, Federal Aid in Sport Fish Restoration Program. Co-PI J. Estes. April 2009-March 2015. $1,103,333.

An evaluation of the effects of catch and release angling on survival and behavior of goliath grouper (*Epinephelus itajara*) with additional investigation into long-term residence and movement patterns – National Marine Fisheries Service, NOAA, Marine Fisheries Initiative (MARFIN) Program. Co-PI A. Collins. September 1, 2010 - August 31, 2013. $184,777.

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Development of standard methodologies to support a coast-wide approach to age determination of marine fishes – Atlantic Coastal Cooperative Statistical Program, ASMFC, NOAA. Co-PI with A.G. Woodward and D. DeVries. July 2002-June 2003. $61,661.

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Nearshore and Estuarine Gamefish Behavior, Ecology, and Life History – U.S. Fish and Wildlife Service, Federal Aid in Sport Fish Restoration Program. April 1998-March 2003. $1,704,789.

Reef Fish Abundance and Biology in Southeast Florida – U.S. Fish and Wildlife Service, Federal Aid in Sport Fish Restoration Program. April 1997-March 2001. $1,541,825.

Reproductive Parameters Needed to Evaluate Recruitment Overfishing of Spotted Seatrout in the Southeastern U.S. - National Marine Fisheries Service, NOAA, Saltonstall-Kennedy Program. Co-PIs S.K. Lowerre-Barbieri and J.J. Alberts. January-December 1997. $97,338.

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SELECTED PEER-REVIEWED PUBLICATIONS

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Berkson, J., **L. Barbieri**, S. Cadrin, S. L. Cass-Calay, P. Crone, M. Dorn, C. Friess, D. Kobayashi, T. J. Miller, W. S. Patrick, S. Pautzke, S. Ralston, M. Trianni. 2011. Calculating Acceptable Biological Catch for Stocks That Have Reliable Catch Data Only (Only Reliable Catch Stocks – ORCS). U.S. Dep. Commerce, NOAA Technical Memorandum NMFS-SEFSC-616, 56 P.

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Barbieri, L. R. and S. K. Lowerre-Barbieri. 2011. Sucesso reprodutivo e plasticidade de estoque pesqueiros: O que precisamos saber para melhorar o manejo da pesca. Pages 11-14 *In*: Saborido-Rey *et al*., (Eds.) Actas I Simposio Iberoamericano de Ecología Reproductiva, Reclutamiento y Pesquerías. Vigo, España. 400 pp. http://hdl.handle.net/10261/39081.

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Tringali, M. D., K.H. Leber, W. G. Halstead, R. McMichael, J. O'Hop, B. Winner, R. Cody, C. Young, C. , H. Wolfe, A. Forstchen, and **L. Barbieri**. 2008. Marine stock enhancement in Florida: a multi-disciplinary, stakeholder-supported, accountability-based approach. Reviews in Fisheries Science, 16:51–57.

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Andreata, J.V., and **L.R. Barbieri**. 1993. Cranial osteology of *Geophagus brasiliensis* (Quoy and Gaimard, 1824) (Perciformes, Labroidei, Cichlidae). Biotemas 6:73-88.

Barbieri, L.R., R.P. dos Santos and J.V. Andreata. 1992. Reproductive biology of the marine catfish, *Genidens genidens* (Siluriformes, Ariidae) in the Jacarepaguá Lagoon system, RJ, Brazil. Envir. Biol. of Fishes 35:23-35.

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Chairman's Report

NORTH CAROLINA MARINE FISHERIES COMMISSION
DEPARTMENT OF ENVIRONMENTAL QUALITY

Aug. 24, 2016

Mr. Russ Allen, Chairman
ASMFC Weakfish Management Board
New Jersey Department of Fisheries and Wildlife
P.O. Box 418
Port Republic, New Jersey 08241-0418

Dear Chairman Allen:

The North Carolina Marine Fisheries Commission would like to request that during the next Atlantic States Marine Fisheries Commission benchmark stock assessment for weakfish, which is scheduled to take place in 2021, that the assessment model be modified to consider weakfish age 0 mortality resulting from the inshore penaeid shrimp fishery in North Carolina's Pamlico Sound.

Charging the Weakfish Technical Committee and the Weakfish Stock Assessment Subcommittee with this task now will enable them to also recommend any additional sampling needed to generate a robust estimate of weakfish bycatch in the Pamlico Sound shrimp fishery.

Thank you for your consideration of this request.

Sincerely,

Sammy Corbett

Sammy Corbett, Chairman
N.C. Marine Fisheries Commission

cc: Joe Cimino, ASMFC Weakfish Technical Committee
Douglas Grout, ASMFC
Bob Beal, ASMFC
Kirby Rootes-Murdy, ASMFC
Katie Drew, ASMFC
Toni Kerns, ASMFC
Braxton Davis, North Carolina Division of Marine Fisheries
Michelle Duval, North Carolina Division of Marine Fisheries
Representative Bob Steinburg, North Carolina Legislator on ASMFC
Doug Brady, North Carolina Governor's Appointee on ASMFC

NORTH CAROLINA MARINE FISHERIES COMMISSION
DEPARTMENT OF ENVIRONMENTAL QUALITY

Aug. 25, 2016

Mr. Bob Lorenz
P.O. Box 10512
Wilmington, NC 28404

Dear Bob:

I wanted to let you know at last week's Marine Fisheries Commission meeting I announced the Sea Turtle Advisory Committee was being disbanded. I wanted to contact you directly and let you know I had taken this action and the reason why.

The commission has a multitude of committees, many of which are statutorily mandated, such as the Northern and Southern regional advisory committees and the Finfish, Shellfish/Crustacean and Habitat and Water Quality advisory committees. These committees require a great deal of attention, both in staff time and in resources. In looking for efficiencies in our committee system, I felt our regional and pertinent standing advisory committees could serve as venues to review and provide the needed input on sea turtle issues. So, after much consideration, I decided to disband the Sea Turtle Advisory Committee, because it is not statutorily required. This was a difficult decision, especially since I served on the Sea Turtle Advisory Committee prior to being appointed to the Marine Fisheries Commission.

Later this fall we will be doing our annual solicitation for advisers. If any of you are interested in serving on other committees, please let me know and I will make every effort to place you on one of these committees as openings become available.

In closing, please know how much I appreciate your dedication and service to the state. I encourage you to please stay involved in fisheries issues and I hope to see you or hear from you in the future.

Sincerely,

Sammy Corbett

Sammy Corbett, Chairman
N.C. Marine Fisheries Commission

cc: Chris Batsavage, Division of Marine Fisheries

NORTH CAROLINA MARINE FISHERIES COMMISSION
DEPARTMENT OF ENVIRONMENTAL QUALITY

Oct. 7, 2016

The Honorable Jimmy Dixon
N.C. House of Representatives
16 W. Jones Street, Room 2226
Raleigh, NC 27601-1096

Dear Representative Dixon:

It was good seeing you last week at the Marine Fisheries Commission's Standard Commercial Fishing License Criteria Committee meeting. I can't express to you how grateful we were that you took the time to travel to Morehead City and meet with us.

As promised, I have attached a copy of the committee's draft recommendations that will be presented to the full Marine Fisheries Commission at our Nov. 16-18 business meeting in Kitty Hawk for further discussion. We would love to have you join us at this meeting also if your schedule permits – we anticipate continued dialogue on these issues.

As we discussed last week, licensing our fishermen is a complex but necessary undertaking. We want to ensure that people continue to have access to recreationally and commercially harvest coastal fisheries at sustainable levels. We also want to ensure that commercial fishermen are well qualified, well informed, and experienced with sustainable fishing practices. And we want to ensure that the Division of Marine Fisheries and Marine Fisheries Commission are basing our decisions on reliable data and analyses of fishing efforts and landings from different types of fishing licenses and permits. For these reasons, I think examining our licensing system to look for potential improvements is a worthwhile initiative.

Again, thank you for your interest in our fisheries and the management of this important public trust resource. I look forward to working with you, the members of the House Select Committee on Wildlife Resources, and the N.C. General Assembly on this important issue.

Sincerely,

Sammy Corbett

Sammy Corbett, Chairman
N.C. Marine Fisheries Commission

cc: Marine Fisheries Commission
Members of the N.C. General Assembly
DEQ Secretary Donald van der Vaart

DRAFT RECOMMENDATIONS FROM THE MARINE FISHERIES COMMISSION'S STANDARD COMMERCIAL FISHING LICENSE CRITERIA COMMITTEE MEETING
Sept. 30, 2016

Recommendations that would likely require legislative changes by the NC General Assembly:

Full-time Standard Commercial Fishing License Eligibility – Modify the existing licensing laws to limit Standard Commercial Fishing License eligibility based on a certain number of fishing trips or trip tickets submitted or number of days fished within a specified time period. Must include:

- An exemption for aquaculture operations (it can take several years for these operations to produce a harvestable crop);
- A hardship clause for illness or acts of God; and
- A way to list multiple crew members on a trip ticket to document their fishing participation.

Part-time Standard Commercial Fishing License – Create a new part-time license that anyone could qualify for at one-half the cost of the Standard Commercial Fishing License. This license would allow the use of limited amounts of commercial gear and would require trip ticket reporting. This license could serve as a stepping stone to qualify for a full-time Standard Commercial Fishing License - have the Marine Fisheries Commission set the criteria.

Heritage Standard Commercial Fishing License – Create a new type of license that is an inactive license, sold at one-half the cost of the current Standard Commercial Fishing License. This license could be activated to a full-time Standard Commercial Fishing License for one time only. Active licenses would then have to maintain criteria set for full-time licenses.

Commercial Gear Usage – Require that all landings caught by commercial gear, regardless of the type of license held, or whether the catch is sold or caught for personal use, be recorded on trip tickets.

Tax Exempt Status – Set an income threshold for tax exempt status at $10,000 for commercial fishing.

For-Hire License – Require holders of this license to report catch via a logbook.

Resident Land or Sell License – Create a new license to allow state residents to have similar opportunities as the Land or Sell License. This license would allow individuals to land and sell catch like bluefin tuna caught in federal waters. Currently the Land or Sell License is only available to non-residents.

Recommendations that would require rule changes by the Marine Fisheries Commission:

Standard Commercial Fishing License Eligibility Board Criteria – Develop rules to improve criteria used to determine who is eligible to receive a license through the Eligibility Board. Consider graduation or completion of classes from a community college in commercial fishing as an additional way to qualify.

Transfers/Assignments - Develop rules to limit 3rd party transfers and/or refine criteria allowing temporary assignments of Standard Commercial Fishing Licenses.

Other

Recreational Catch – Have Division of Marine Fisheries staff explore options to enhance recreational data collection; for example, using a phone app to report catch.

RESOLUTION
OF SUPPORT OF THE OPPOSITION AGAINST THE SUPPLEMENT PROCESS TO RESTRICT SOUTHERN FLOUNDER FISHING

WHEREAS, during their November 2015 meeting at Jeanette's Pier, the North Carolina Marine Fisheries Commission ("NCMFC") approved using a controversial "Supplement Process" to close down most of the State's fishing for southern flounder; and

WHEREAS, the established procedure for responsible fisheries governance is through the use of a Fisheries Management Plan ("FMP"), which is designed to incorporate peer reviewed science, stakeholder input, and other pertinent facts to establish fisheries policies in a deliberate, open and transparent way; and

WHEREAS, instead of relying on a thoroughly vetted Amendment Process to the Southern Flounder Fisheries Management Plan, the NCMFC chose instead to invoke the use of the Supplement Process in spite of the fact that there is no scientific evidence to support such a drastic measure that will have draconian consequences; and

WHEREAS, when the NCMFC adopted the Supplement Process, they violated and misused the statutory authority granted them in NCGS 113-182.1 which requires that the NCMFC provide a position on the supplement based on science from the Division of Marine Fisheries or from independent experts; and

WHEREAS, the North Carolina Marine Fisheries Commission also chose to ignore the will of the people as expressed in resolutions it received prior to their November meeting from the counties of Bertie, Camden, Carteret, Currituck, Dare, Hyde, Pasquotank, and Tyrrell opposing the use of the Supplement Process to restrict southern flounder; and

WHEREAS, the arbitrary and capricious action taken by NCMFC at its November 2015 meeting threatens to harm North Carolina's commercial fishermen by depriving them of a traditional source of income that is fundamental to sustaining local economies throughout North Carolina's coastal communities without cause; and

WHEREAS, the Carteret County Board of Commissioners approved a resolution on condemning the action of the North Carolina Marine Fisheries to use the Supplement Process to restrict southern flounder fishing; and

WHEREAS, since the NCMFC meeting, a group of commercial fishermen and the North Carolina Fisheries Association contemplate bringing a complaint against the NCMFC concerning the adoption by the NCMFC of the Supplement Process.

NOW, THEREFORE, BE IT RESOLVED, that the Carteret County Board of Commissioners are in favor of joining in as a party in the complaint against the NCMFC in the best interest of Carteret County's and surrounding counties' fishing industry.

ADOPTED, this the 19th of September 2016.

Robin V. Comer, Chairman
Carteret County
Board of Commissioners

Attest:

Rachel Hammer, Clerk to the Board

BOARD OF COMMISSIONERS OF CARTERET COUNTY N. C

REMINDER

MANDATORY EDUCATION REQUIREMENTS

MANDATORY EDUCATION.

Public Servants and Ethics Liaisons. The State Government Ethics Act *requires* that every public servant and ethics liaison complete an ethics and lobbying education presentation/program approved by the State Ethics Commission *within 6 months* of the person's election, reelection, appointment, or employment **and** complete a refresher ethics presentation *at least every two years thereafter*.

The willful failure of a public servant serving on a board to comply with the education requirements may subject the person to removal from the board. The willful failure of a public servant who is a State employee to comply with the education requirement may be considered a violation of a written work order permitting disciplinary action. Therefore, if there are public servants in your agency or on your covered state board or commission who are past due for completing their ethics education requirements, **those individuals should attend a live presentation, distance video-streamed presentation *or* complete the online education as soon as possible.**

Legislators. The State Government Ethics Act *requires* that every legislator complete an ethics and lobbying education presentation/program approved by the State Ethics Commission and the Legislative Ethics Committee *within 2 months* of either the convening of the General Assembly to which the legislator is elected or the legislator's appointment, whichever is later, **and** complete a refresher ethics education presentation *at least every two years thereafter*.

The willful failure of a legislator to comply with these education requirements may subject the legislator to sanctions under the Legislative Ethics Act.

Legislative Employees. The State Government Ethics Act *requires* that every legislative employee complete an ethics and lobbying education presentation/program approved by the State Ethics Commission and the Legislative Ethics Committee *within 3 months* of the person's employment **and** complete a refresher ethics education presentation *at least every two years thereafter*.

The willful failure of a legislative employee to comply with these education requirements may subject the person to disciplinary action by their hiring authority.

Legislators and Legislative Employees may check the status of their ethics education by going to the General Assembly intra-net page. Legislators and legislative employees who are past due for completing their ethics education requirements should contact Denise Adams with the Research Division of the General Assembly at denise.adams@ncleg.net or 919-301-1991 to coordinate/schedule their ethics education training.

ETHICS AND LOBBYING EDUCATION TRAINING.

Public Servants and Ethics Liaisons may complete the required basic or refresher ethics and lobbying education training by either attending a live presentation, a distance video streamed presentation or completing the online education modules.

- **Live and Distance Video-Streamed Presentation Dates.** The State Ethics Commission has scheduled live ethics and lobbying education presentations and distance video-streamlined presentations for the remainder of 2014. Dates, locations, and registration information are on the Commission's website at: www.ethicscommission.nc.gov/education/eduSchedule.aspx.

- **Online Education.** The State Ethics Commission also offers online ethics and lobbying education. The education modules and instructions are on the Commission's website at: www.ethicscommission.nc.gov/education/eduOnline.aspx.

Legislators may complete the required basic or refresher ethics and lobbying education training by attending a live presentation at the beginning of the legislative session jointly provided by the Ethic Commission and the Research Division of the General Assembly.

Legislative Employees may complete the required basic or refresher ethics and lobbying education training by going online to the General Assembly intra-net page.

REGISTRATION AND QUESTIONS.

- **Public Servants and Ethics Liaisons** please contact Sue Lundberg at (919) 715-2071 or by e-mail at Education.Ethics@doa.nc.gov to register for ethics and lobbying education training or if you have ethics education questions.

- **Legislators and Legislative Employees** please contact the General Assembly ethics hotline at 919-301-1991 or email Denise Adams at denise.adams@ncleg.net if you have questions about the ethics and lobbying education training or have ethics education questions.

Thank you for giving this matter your immediate attention and for sharing this information with all members of your covered board, commission or committee, all staff and employees covered under the State Government Ethics Act, and all legislators and legislative employees.

2017 Meeting Planning Calendar

January

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- MFC
- ASMFC
- SAFMC
- MAFMC
- State Holiday
- Southern Regional AC
- Northern Regional AC
- Finfish AC
- Habitat and Water Quality AC
- Shellfish/Crustacean AC

June 22, 2016

Committee Reports

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

MEMORANDUM

TO: N.C. Marine Fisheries Commission
MFC Nominating Committee

FROM: Michelle Duval and Nancy Fish
Division of Marine Fisheries, DEQ

DATE: Oct. 14, 2016

SUBJECT: Marine Fisheries Commission Nominating Committee Meeting Minutes

The N.C. Marine Fisheries Commission Nominating Committee met on Thursday, Oct. 13 at 2 p.m. at the N.C. Division of Marine Fisheries Headquarters Office, 3441 Arendell Street, Morehead City, N.C.

The following were in attendance:

Committee members: Chuck Laughridge (Chairman), Joe Shute
Staff: C.J. Alley, Michelle Duval, Nancy Fish, Chris Batsavage
Public: Jerry Schill

Chairman Laughridge called the meeting to order at 2:18pm. The agenda was approved without modification.

Motion by Joe Shute to approve the minutes from the March 23, 2016 Nominating Committee meeting, seconded by Chuck Laughridge. Motion passed without dissent.

Public Comment
Mr. Jerry Schill, representing the N.C. Fisheries Association, stated that they had no objections to the list of candidates (Dewey Hemilright, Chris Hickman, Jeff Oden and Brent Fulcher) for the committee's review and recommended Dewey Hemilright (incumbent) as a preferred candidate.

Review of N.C. General Statutes and federal Magnuson-Stevens Act requirements and consideration of candidates for the Mid-Atlantic Fishery Management Council obligatory seat
Michelle Duval, division staff lead for the committee, reviewed the requirements of the N.C. General Statutes pertaining to the selection of nominees for federal fishery management council seats. The statute requires that all nominees for the governor's consideration be approved by the commission. Next, she reviewed the requirements of the federal Magnuson-Stevens Act as well as federal regulations associated with the council nomination process. Duval reminded the committee that the governor must submit a list of no fewer than three qualified nominees for consideration by the U.S. secretary of commerce. She also noted that because the seat is an obligatory seat, only a resident of North Carolina can be appointed to fill the seat. The list of candidates approved by the committee will be reviewed by the full commission at its Nov. 16-18, 2016 business meeting.

Selection of Candidates for Nomination for the Obligatory Seat on the Mid-Atlantic Fishery Management Council

Duval then reviewed the candidate bios, describing the background and qualifications of the four candidates: Dewey Hemilright (incumbent), Chris Hickman, Jeff Oden and Brent Fulcher. Chris Batsavage, division representative on the Mid-Atlantic Fishery Management Council, provided additional details regarding the background and experiences of the candidates, and answered questions from the committee.

Duval noted that staff always advises both the committee and the full commission that they not recommend a preferred candidate, but rather leave this decision to the governor. She acknowledged Mr. Schill's comment, but stated that on the occasions the commission has recommended a preferred candidate, that recommendation has not always been consistent with the recommendation from the governor's office. The committee engaged in additional discussion regarding the candidates and made the following motion:

Motion by Joe Shute to forward the names of Dewey Hemilright, Chris Hickman, Jeff Oden and Brent Fulcher to the Marine Fisheries Commission for consideration for the Mid-Atlantic Fishery Management Council obligatory seat. Seconded by Chuck Laughridge. Motion passed unanimously.

Meeting adjourned.

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL – 2017 OBLIGATORY SEAT CANDIDATE BIOS

Dewey Hemilright (incumbent)

Kitty Hawk, NC, Phone 252-255-5791. Mr. Hemilright is the owner/operator of the 42-ft. F/V TARBABY with his homeport in Wanchese, NC. He has been commercial fishing for 26 years off the east coast, ranging from New York to Florida and has a wide range of fisheries experience. He has served on advisory panels for Highly Migratory Species (HMS), Dolphin-Wahoo (South Atlantic Fishery Management Council) and as chairman of the N.C. Spiny Dogfish Compliance Advisory Panel. Mr. Hemilright holds permits and fishes for tuna, swordfish, dolphin-wahoo, bluefish, spiny dogfish, smooth dogfish, croakers, blueline tilefish, golden tilefish and large costal sharks, species which are mainly managed by the Mid-Atlantic Fishery Management Council, the South Atlantic Fishery Management Council, the Atlantic States Marine Fisheries Commission or the HMS Division of the National Marine Fisheries Service. He is a member of the North Carolina Fisheries Association, The Bluewater Fishermen's Association and North Carolina Watermen United.

Mr. Hemilright was initially appointed in 2012 to complete the term of Mr. Jule Wheatley, who passed away after being reappointed to the Mid-Atlantic Fishery Management Council in 2011. Mr. Hemilright is currently completing his first full term on the Mid-Atlantic Fishery Management Council and has been involved in the following council committees: Protected Resources, Law Enforcement, Highly Migratory Species, Spiny Dogfish, Demersal and Tilefish. He has also participated in collaborative research and monitoring on a number of species, including both spiny and smooth dogfish, and most recently dusky sharks and blueline tilefish.

When not out at sea, Mr. Hemilright is spreading awareness about the importance of the fishing industry in North Carolina. He has been active in an outreach program for K-12 students across the country for the past seven years through Provider Pals. He has compiled a presentation showcasing an array of photos from his years of fishing, including the unique sights of nature he has been privileged enough to capture. His presentation summarizes a day in the life of a commercial fisherman, and challenges students to think about all the logistics that are involved with operating a fishing vessel for a living. Mr. Hemilright expanded his outreach program by teaming up with the N.C. Coastal Federation, sharing his lesson with over 400 middle school students living on the coast of North Carolina.

Brent Fulcher
New Bern, NC, Phone (252) 514-7003. Mr. Fulcher is a third generation family member with over 30 years in the seafood industry. He is vertically integrated in the seafood industry with harvesting, purchasing, packing, processing and marketing, through his ownership in two seafood processing facilities, B&J Seafood in New Bern and Beaufort Inlet Seafood in Beaufort. Mr. Fulcher's business's support and purchase from over 200 independent fishermen from up and down the East Coast in addition to the ten vessels that he presently owns. Mr. Fulcher's vessels hold state and federal fishing permits for Shrimp, Summer Flounder, Atlantic Sea Scallops, Monkfish, Scup, Black Sea Bass, etc. B&J Seafood and Beaufort Inlet Seafood also pack, process, and market seafood from state and federally permitted vessels and fishermen from all over the United States. Mr. Fulcher is currently Chairman of the North Carolina Fisheries Association, a Board Member on the Southern Shrimp Alliance for the state of North Carolina, a member of the Blue Water Fishermen's Association, and presently a Finfish Advisory Committee member and has previously been a member of the Protected Species Advisory Committee for NC DMF.

Christopher S. Hickman

Hatteras, NC, Phone 252-986-2217. Mr. Hickman is a full time commercial fisherman who has resided in Hatteras, NC for the past 34 years. He currently participates in gill net fisheries from Cape Hatteras to the Gulf of Maine. He targets several species that are managed by the Mid-Atlantic and/or the New England Fishery Management Councils: monkfish, spiny dogfish, bluefish and black sea bass. During the fall and winter months, he frequently participates in North Carolina gill net fisheries for weakfish, Atlantic croaker and king mackerel. Mr. Hickman has also participated in the winter trawl, crab pot and long haul seine fisheries. Mr. Hickman serves as a fishing industry representative on the MFC Spiny Dogfish Compliance Advisory Panel and the Mid-Atlantic/New England Fishery Management Council Spiny Dogfish and Monkfish Committees. He also serves as an industry representative on the National Marine Fisheries Service Atlantic Large Whale and the Bottlenose Dolphin Take Reduction Teams.

Jeff Oden

Hatteras, NC, Phone 252-986-2515. Mr. Oden is a native of Hatteras, NC and is the owner/operator of the F/V Seabound. He has been a commercial fisherman for 39 years and currently participates in fisheries for sharks, tilefish, dolphin (mahi), tuna, snowy grouper, croaker and king mackerel. Mr. Oden currently serves as a technical advisor to the International Commission for the Conservation of Atlantic Tunas (ICCAT), and as a member of the National Marine Fisheries Service Highly Migratory Species Advisory Panel. He also sits on the Bottlenose Dolphin, Harbor Porpoise and Pelagic Longline Take Reduction Teams. In the past, Mr. Oden has served on the Atlantic States Marine Fisheries Commission Weakfish Advisory Panel, the South Atlantic Fishery Management Council Snapper Grouper Advisory Panel, and the N.C. Marine Fisheries Commission Finfish Advisory Committee. He served as an appointed observer for SEDAR (South East Data, Assessment and Review) 36 for Snowy Grouper. Mr. Oden has recently participated in cooperative research efforts pertaining to management of dusky sharks. Mr. Oden is a member of the Bluewater Fisheries Association, N.C. Watermen United and the N.C. Fisheries Association.

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

MEMORANDUM

TO: N.C. Marine Fisheries Commission
MFC Nominating Committee

FROM: Michelle Duval and Nancy Fish
Division of Marine Fisheries, DEQ

DATE: Oct. 3, 2016

SUBJECT: Marine Fisheries Commission Nominating Committee Meeting Minutes

The N.C. Marine Fisheries Commission Nominating Committee met on Wednesday, March 23 at 4 p.m. at the N.C. Division of Marine Fisheries Headquarters Office, 3441 Arendell Street, Morehead City, N.C.

The following were in attendance:

Committee members: Chuck Laughridge (Chairman), Joe Shute, Mike Wicker (via phone)
Staff: C.J. Alley, Michelle Duval, Nancy Fish, Jim Kelley
Public: David Bush

Chairman Laughridge called the meeting to order. The agenda was approved without modification.

Motion by Mike Wicker to approve the minutes from the Oct. 23, 2015 Nominating Committee meeting, seconded by Joe Shute. Motion passed without dissent.

Public Comment
Mr. David Bush, representing the N.C. Fisheries Association, stated that the association had no objection to adding the name of Mr. Tim Griner to the list of nominees and that he was available to answer any questions the committee had. Michelle Duval, division staff lead for the committee, reviewed written public comments received by Mr. Chris McCaffity, expressing support for Mr. Randy McKinle and requesting that stakeholders be allowed to vote for council representation via an online forum prior to candidates being sent forward to the governor. Duval also reviewed written comments from Mr. Jerry Schill, president of the N.C. Fisheries Association, expressing support for the addition of both Mr. Tim Griner and Mr. David Bush to the list of candidates for the governor's consideration. Chairman Laughridge noted that Mr. McCaffity's request for an online forum was not within the purview of the committee.

Review of N.C. General Statutes and federal Magnuson-Stevens Act requirements and consideration of additional candidates for the South Atlantic Fishery Management Council obligatory seat

Duval noted briefly the N.C. General Statutes pertaining to the selection of nominees for federal fishery management council seats. She pointed out that the statutes specifically allow for the governor to consult with the commission regarding additions to the list of nominees and that was the purpose of today's meeting.

The committee briefly reviewed the candidate bios and made the following motion:

Motion by Mike Wicker to add the names of Mr. Tim Griner and Mr. Sammy Corbett to the list of South Atlantic Fishery Management Council obligatory seat candidates for consideration by the governor. Seconded by Joe Shute. Motion passed unanimously.

Meeting adjourned.

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

MEMORANDUM

TO: Marine Fisheries Commission
Standard Commercial Fishing License Criteria Committee

FROM: Nancy Fish
Division of Marine Fisheries

DATE: Oct. 28, 2016

SUBJECT: Standard Commercial Fishing License Criteria Committee Meeting

The Standard Commercial Fishing License Criteria Committee met at 10 a.m. on Friday, Sept. 30, 2016 at the Crystal Coast Civic Center, 3505 Arendell Street, Morehead City, NC 28557. The following attended:

Committee Members: Sammy Corbett – Chairman, Chuck Laughridge, Janet Rose, Joe Shute, Mike Wicker and Alison Willis

Absent: Mark Gorges

Staff: Braxton Davis, Dee Lupton, Nancy Fish, C.J. Alley, Col. Dean Nelson, Kathy Rawls, Stephanie McInerny, Michelle Duval, Chris Batsavage, Suzanne Guthrie, Grace Kemp, Trish Murphey, and Katy West

Public: Rep. Jimmy Dixon, Garrett Myrke, Rick Sasser, Jerry Schill, Kenny Rustic, Pam Morris, Brent Fulcher, Adam Tyler, Aundrea O'Neal, Bradley Styron, Brent Fulcher, Jan Willis, Scott Baker and Glenn Skinner

Sammy Corbett, serving as chair, called the meeting to order, reminded commissioners of their duty to avoid any conflicts of interest and asked Nancy Fish to do the roll call.

Chairman Corbett recognized Representative Jimmy Dixon, who was in the audience, and Lewis King from the Speaker's Office, who was on the phone.

APPROVAL OF AGENDA

Motion by Chuck Laughridge to approve the agenda. Second by Mike Wicker. Motion passes unanimously.

SCOPE AND PURPOSE

Chairman Corbett explained that earlier in the year at the February meeting, the commission decided to convene a committee made up of commission members to discuss defining a commercial fisherman and any necessary actions or recommendations the committee feels need to be made. He also explained that in the General Assembly, several legislators have been talking about fisheries issues, including commercial licensing. A few weeks ago Representatives Jimmy Dixon and Ted Davis met with various stakeholders to discuss these issues, with the intent of having the House Select Committee on Wildlife Resources look at some of these matters in the upcoming legislative session. Chairman Corbett said he advised the legislators this committee was going to be meeting and Representative Dixon asked if the committee could share its recommendations and if the division could also provide any recommendation it had by mid-October. Chairman Corbett said he envisioned the committee meeting multiple times over the course of several months, but after hearing the legislative request, he thought it would be best if the committee and the division could get together at this meeting and come up with recommendations to share with the legislators.

PUBLIC COMMENT

Kenny Rustic, a full-time commercial fisherman from Carteret County, said he had no problem with part-time fishermen, they contribute to the economy. He felt the committee deliberations were ridiculous and stressed that people needed to work.

Wicker asked if some type of threshold was needed and Rustic replied the license criteria should stay at status quo. Wicker asked if he was concerned about people who hold a license but have no sales. Rustic said if there was concern about people selling seafood illegally, that was a law enforcement issue, not a licensing issue.

Chairman Corbett said that some groups were expressing concerns about people holding a Standard Commercial Fishing License in order to get around recreational bag limits.

Glenn Skinner, a full-time commercial fisherman from Carteret County, advised the committee that some people frequently have to start out as a part-time fisherman and work their way up to fishing full-time. He questioned if it was legal, or possibly unconstitutional, to implement a production requirement to qualify for a license. Skinner doesn't want the legislature telling him what to do and he said he would challenge the requirement if the state implements new criteria.

Laughridge asked if he had an objection to catches not being reported on trip tickets and possible black market sales. Skinner replied that not reporting catch or black market sales were law enforcement issues, not licensing issues. He further stated that in his opinion a commercial fisherman was someone who holds a Standard Commercial Fishing License and sells their catch and if it was decided to get rid of inactive licenses, there needs to be a phase-out period or a time limit.

Laughridge talked about Marine Patrol only having 40 officers in the field and asked Skinner if he would be willing to go to Raleigh and support having more Marine Patrol officers.

Rose said she thought the Marine Patrol was doing its job and talked about fines and civil penalties being assessed if a person was caught selling seafood without the proper licenses.

Jerry Schill, the president of the North Carolina Fisheries Association, said that 30 years ago his association endorsed an income threshold of 75 percent for someone to be considered a commercial fisherman. He immediately started receiving phone calls from state representatives expressing concerns that many of their constituents that were farmers also relied on fishing, especially in Hyde County. Schill said that was still a need today, but on a more limited basis. He confirmed with an agricultural extension agent that there were still farmer/fishermen. Since that time, the North Carolina Fisheries Association has supported the approach that if you hold a commercial fishing license and sell fish then you are a commercial fisherman.

Schill said he knew data collection was important and the black hole in North Carolina data is in the recreational sector reporting. He said this issue has been discussed many times over the years.

Wicker pointed out the current law defines a commercial fisherman as someone who holds a Standard Commercial Fishing License or a Shellfish License, it does not mention selling fish. Schill said they were opposed to an income requirement and that people are making this a problem when none exists and said he did not think it was a serious problem if people held a commercial license to circumvent recreational bag limits. He doubts this is a serious problem, but it needs to be quantified.

Laughridge asked if the North Carolina Fisheries Association had a position on full-time and part-time fishermen and Schill responded they did not.

Laughridge asked if Schill had a problem with someone buying a license on-line that did not have any knowledge about fishing and that inexperienced fisherman caught a turtle and shut the whole or part of the fishery down – was the industry willing to take that risk? Schill said yes, they were doing that now.

Laughridge asked if the North Carolina Fisheries Association had a stance on people buying licenses on-line and Schill responded they did not have a position on that issue.

Chairman Corbett said there were about 3,100 people that hold a commercial license, that do not have any reported trip tickets in three years, and if you get rid of those licenses, then that revenue is lost also. Schill said just because people don't have trip tickets does mean they are trying to subvert the system – he referenced comments from Billy Carl Tillett back in 2012 when the commission formed a committee to look at this issue. Tillett had explained that as a business owner who ran a fish house and had several boats, he rarely had trip tickets on his licenses. Schill said there were also a lot of people that are crew on boats that do not have trip tickets.

Rose said she had two licenses that she wanted to keep that were her husband's – they are part of her family's heritage. One day she might have a grandson or a son-in-law that wants those licenses and if she chooses to pay the state of North Carolina $400 each year for each of those licenses, then that is her choice.

Schill closed his comments by saying he remembered a time when the Division of Marine Fisheries director would reach out to interest groups and seek support of legislative and budget agendas and he'd like to see that type of relationship start again.

Pam Morris said she is an original member of the Standard Commercial Fishing License Eligibility Board since 1998 and a longtime member of the Carteret County Fisheries Association. Regarding license transfers and assignments, if someone is sick, they need to be able to assign their license to someone else to work their gear and that for transfers, if someone was selling their boat, that the value of the operation is in in the license in many instances.

For income requirements, she had worked at length with the late Senator Jean Preston and they tried to keep in mind there would be new license holders or crew members that don't have landings. With buying or deleting licenses out of the pool, she views that as curtailing or limiting the future of commercial fishing in North Carolina. She doesn't agree with the "use it or lose it" approach – her husband has not fished for eight years, but still considers himself a commercial fisherman, even though he works at Cherry Point. She said it was not fair to limit the license and has never heard of another license being discussed in this manner.

Wicker talked about the cost of the licenses people are selling on-line and that the price is much higher than what the state charges and he said there seems to be a perceived problem that the commission is trying to limit people who use commercial gear to make a living. Morris said she didn't think it was as big a problem as it was being made out to be, except maybe in the southern region.

She talked about license changes and costs through the years and how those had impacted the number of commercial fishermen. She encouraged the committee to not reduce future capacity of commercial fishermen in the state and asked the committee not to decrease the number of licenses in the Eligibility Pool and warned they could be excluding crew members.

Laughridge asked if crew members could attach a 1099 tax from with their license and Morris said you can't require someone to provide a copy of their tax returns.

Aundrea O'Neal said if you purchase a Standard Commercial Fishing License then you are a commercial fisherman, no matter where you are from. She said she would rather have people subsidize their income from part-time fishing than have them drawing welfare from her taxes.

Wicker questioned if no one sells fish then there is zero income, then they are not commercial. O'Neal said that was not correct, that she knew people who fish on scallop boats that do not have trip tickets, but they are fishermen.

Wicker said there is a perception about being able to re-enter the fishery.

O'Neal talked about recreational fishermen needing to fill out trip tickets and that that they sell fish on the black market. She said this is a paper trail problem. She closed by saying the creation

of the recreational fishing license has caused a division between the recreational and commercial fishermen in the state.

Bradley Styron, member of the Carteret County Fisherman's Association and former Marine Fisheries Commission member, said if someone pays $400 for a Standard Commercial Fishing License, then they are probably serious about it and that if someone from Charlotte has a license they are probably not going to cause a problem, but they will produce revenue.

He talked about the recent increase in commercial license fees to fund the Observer Program and that industry is responsible. He urged the committee not to rock the boat. He said the number of available Standard Commercial Fishing Licenses is capped at approximately 9,000 licenses, while there is no limit on the number of recreational licenses that can be issued and about 1 million of those recreational licenses are sold. He questioned why the commercial industry should have to jump through hoops – it is an honorable profession that provides food for consumers. Styron said there are 9 million people that don't fish in North Carolina, but they still need access to the fisheries to enjoy eating seafood. He talked about the North Carolina Seafood Festival being held in Morehead City.

He said there was lots of talk about the amount of seafood being caught declining and he said that was simple, that there was probably only 20 days of fishing with large mesh gill nets this year and that the commercial industry is strapped as much as it can handle right now.

Laughridge asked if Styron had concerns about a person buying a license on the internet for $1,600 and if the state should have a concern. Styron said if someone paid $1,600 for a license then they wanted it, but he could not interpret their intent. He explained he had four sets of licenses since 1994 – look at the investment I have in that, he said. He explained that he was a fish dealer and he assigned his licenses so people can work for him. He also said there had been concerns expressed about inexperienced people taking turtles and that if there was no risk, there was no gain – no foul, no harm.

Wicker asked if there was a problem with re-entry or entry into the commercial industry for the guy who wants to do it; but if a person pays $1,600 for the license, they are doing it for some reason. But to have over 3,000 people who hold a license that do not submit trip tickets – I think that is a problem we should address, said Wicker.

Rose asked what was the problem? Wicker said that people spending more money than they needed to just catch a couple of fish did not make sense.

Styron said if someone buys a license they should be able to do what they like with it within the rules and regulations. He said he knew someone from Grantham that liked to come down and set more than 100 yards of gill net, if that is how he wants to spend his money why is it a problem.

He said the legislature capped the number of commercial licenses at about 8,896 licenses so he doesn't understand why this is a problem. He said he sat of the commission for 11 years and he has seen how this has transpired. He said the commission closed a loophole several years ago, where people were getting a license from the pool and then selling it.

Styron said his license should go back to the state when he is done with it for future fishermen. Rose said part of the reason people buy them on-line is because they are not eligible to get one through the Eligibility Board and they are willing to pay $1,600. She said people buy Virginia fishing licenses online too and that she knew someone who paid $15,000 in order to get a permit to have 250 crab pots, so it is happening everywhere.

Wicker questioned if we were suffering from unintended consequences of past rulings that have us in a quandary, because some people feel a new person can't enter the fishery and there is pressure to keep people from doing that.

Chairman Corbett said the Standard Commercial Fishing License Eligibility Board met recently; he sits on that board and they had 22 applications and issued 18 licenses and that it was easy to get a license from the pool – you just have to show three years of experience. He said some people buy a license on-line because they don't want to wait to get a license from the pool if they don't have that experience. He was fine with doing away with on-line license sales because if someone wants to get a license they can get one through the Eligibility Board.

Wicker said he has asked people why they bought a license on Craig's List and they said they didn't have that legacy or experience and he questioned if they should consider making it easier to get a license and that would take the market away from on-line sales, like Craig's List.

Chairman Corbett explained how the eligibility process works and said people need to have some knowledge before we turn them loose on the water because they don't know what they are doing and they will make the commercial industry look bad and cause problems.

Rose said the average person could not afford to be a helper on a crab boat for three years in order to get the license and support a family at the same time.

Wicker said there needs to be an avenue for young people to gain that experience and knowledge.

Laughridge referenced the guy from Grantham that wanted to fish more than 100 yards of gill net, but didn't have any trip tickets, and said we are concerned that these fish are not documented and said we could make it a requirement to have a trip ticket for all fish caught by someone with a Standard Commercial Fishing License. Chairman Corbett said if we are going to go this route, we need to let Representative Dixon know that we need the for-hire guys to report their catch too – that was a terrible thing that happened when the for-hire guys didn't have to report their data through logbooks.

Styron asked if there was a problem with the current cap on the number of Standard Commercial Fishing Licenses available and Laughridge said it had been mentioned about the commission lowering the number of licenses available through the Eligibility Pool – this is a number that is set each year and it can be raised or lowered depending on the need.

Laughridge said he was not opposed to having a full-time and part-time license, but we are worried about seafood being harvested and not documented. There has to be some financial motive for people to justify the expense of paying $1,600 or more for a license.

Wicker said we have a bunch of people with commercial licenses and we don't know what they are doing and that someone like him should not set a gill net for a family cookout, that he should have to buy it from a dealer - from the people who are trying to make a living.

Styron said he disagreed; if you have a license you should be able to use it as long as you stay within the rules and the committee is trying to put people in a box and if someone was willing to pay $1,600 for a license on-line, he doesn't think it is a problem.

Styron said he was against income requirements and he said we need all the licenses we can get to fund the work being done by the Division of Marine Fisheries.

Laughridge said whatever we do has to be revenue neutral and asked if the industry would be willing to pay for the Observer Program, which was followed by a discussion about the funding of this program.

Chairman Corbett asked what if everyone who had submitted a trip ticket could keep their license, and that people could have a retired or heritage license for half price and were allowed to take that license out of retirement one time, if the Recreational Commercial Gear License was discontinued and if a part-time license was created that would be a stepping stone for someone to get their three-years-worth of knowledge to get a full-time license - would those measures be acceptable. Styron said he felt there was a place for the Recreational Commercial Gear License and that there might be a place for a part-time license too and he would like to sit down and have more discussion about it.

Brent Fulcher, chairman of the North Carolina Fisheries Association, owner of several fish houses and member of the Finfish Advisory Committee, said he is trying to understand what the dilemma was with the current definition.

Rose said we have insinuated that people who are willing to pay more for a license on-line have something up their sleeve but he didn't agree it was an issue and if people are willing to pay that was their choice, maybe it was just a good investment.

Chairman Corbett said his problem was user conflict and some people holding a commercial license who don't know what they are doing.

Fulcher said if people are willing to pay more money on-line to get a license, rather than go through the Eligibility Pool, that was commerce. He said industry has come a long way to address user conflict and that the state needs to move from the incidental take permit process and go with an incidental take statement, with a biological opinion, that allows you to fish under certain criteria, but you don't count numbers.

He said these are cooperative things we can do. He talked about the shrimp trawl gear study that industry and the state have done that has shown a 50 percent reduction in bycatch.

Fulcher said again he did not understand what the problem was that we were trying to fix. Chairman Corbett pointed out that Fulcher was not there when the meeting began and he reviewed again the sequence of events that led to the meeting.

Wicker said commercial fishermen generate income and over half of the commercial licenses have not had trip tickets reported to show they are generating income and that influences the ability to have good data; he also thinks there is a perceived problem that people think there is a barrier to someone that would want to enter the industry. Wicker also said the part-time license has merit and we have a real chance to make some improvements here.

Chairman Corbett asked Fulcher if he would allow Representative Dixon to speak before he had to leave.

Representative Jimmy Dixon talked about an initiative he is spearheading relative to improving the Fisheries Reform Act; and is currently looking for ideas, concerns and recommendations regarding commercial fishing licenses for possible consideration by the Wildlife Resources Oversight Committee that is chaired by Representative John Bell. He has met with various stakeholders on this topic already, and found the information being discussed at this committee meeting very informative.

He said he understands what legislators hear and reality can be different and that he doesn't want to make decisions because of the loudest squeaking wheel. He feels we can all agree on the following points:

1. We have fish in our fisheries;
2. They are a public trust resource;
3. The citizens of North Carolina have a right to access these resources; and
4. There are two basic fishing groups, recreational fishermen and commercial fishermen.

The General Assembly's job, he said, is to establish parameters to administer fair access to the resource and this is a good opportunity to work collaboratively and to make sure this public trust resource is transferred to the next generation.

He cautioned he would not be part of spreading misinformation, arguing or finger pointing and that it is time for these type of actions to stop. He discussed a recent legislative attempt to hold a referendum on banning gill nets and that the bill was sent to the Rules Committee to die because the leadership did not think that was the way to do legislation.

He said he is unbiased towards these issues and does not want to be harmful. He said owning a license is not a right and that you must qualify, and he feels the General Assembly created a black market when it limited the number of commercial fishing licenses. He does not want to limit someone from becoming a commercial fisherman.

This issue, he said, is too important to let it come down to who walks the halls of the General Assembly and that we have to hit the ball this time. He closed by saying his final test would be – is it good or bad for the resource.

Brent Fulcher (continued) said that Representative Dixon talked about having a requirement for the license. The division uses a "P" number (which is the vessel identification number) to help track data, so if someone wants to expedite the process and buy a license on-line, he said, and if they do have a "P" number that would be fine. If they don't have that number, then require them to meet the same criteria as people who get licenses from the Eligibility Pool. That way they don't have to wait for the next Eligibility Board meeting. He also offered that he was happy to let people work with him to gain experience. Fulcher suggested that the Eligibility Board process could be fast-tracked and that the criteria could possibly be tweaked and the board could meet more frequently. He said if a license holder is not acting appropriately and causing problems, it is the responsibility of the license holder to be aware of fishing laws and rules.

Laughridge asked if the vessel identification number, or "P" number could be used to cover the crew and document participation and Fulcher said it would not.

Chairman Corbett said a place would need to be created on the trip ticket to list an individual's license number, or "F" number, to record all the crew so their effort could be documented.

Fulcher said what he was hearing is that you might be letting people buy their way into the industry and that some of those people might be hurting the industry. He said you can fix that by making them meet the Eligibility Board criteria.

He asked what would happen to a license holder that was hurt and cannot work for several years and cannot document any type of effort; Chairman Corbett said a hardship provision needs to be considered.

Fulcher thinks the current definition of a commercial fisherman is fine and is working well and that there are just a few loopholes that need to be addressed.

Jan Willis, a recreational fisherman from Carteret County and adviser to the Coastal Recreational Fishing License Committee, said she was there to offer a different perspective. Most people think there are only two user groups that harvest seafood – the recreational and the commercial, she said. Recreational fishermen go out on the water to have fun, fish with a rod-n-reel and take a creel limit home to family dinner. Commercial fishermen go out on the water to work, use specialized gear in a professional manner, catches as much as they can, and sells their harvest for money to support their family. These are two distinct groups in both their goals and practices.

However, she said, there is a third group of harvesters that is a hybrid between recreational and commercial. This group thinks and acts as if they are above the rules that are put in place to manage marine fisheries. They are recreational fishermen that exploit the commercial license in order to harvest more seafood than allowed. They do not sell their catch as true commercial fishermen would do. In essence, they tell the commercial fishermen they do not respect their

professionalism and to the recreational fishermen they are saying we are better than you and do not have to follow the daily creel limit.

Willis offered two solutions:

1) Have the commission recommend that the General Assembly pass a law that all seafood harvested under a Standard Commercial Fishing License must be sold and recorded on a trip ticket. Right now, she said, a Standard Commercial Fishing License can keep unlimited amounts of seafood for personal use without recording it on a trip ticket. The undocumented harvest prevents the division from collecting this needed data for management.
2) The commission should define a commercial fisherman based on a percentage of income. This will protect full-time commercial fishermen from dishonest recreational fishermen. This will help ensure there are adequate numbers of fish for the legitimate businessman and the recreational fisherman. She recommended a 50 percent threshold to retain a Standard Commercial Fishing License to accomplish this needed protection.

Rick Sasser, a recreational fisherman from Wayne County, said commercial fishing is a business and it is dangerous and hard work. He said he had worked on a farm and knew the meaning of hard work. He understood that people feel a sense of heritage associated with fishing, but that includes recreational fishing too. He remembered his father and grandfather would come and rent cabins at Radio Island and fish.

Sasser said our fisheries are a public trust resource that needs to be managed sustainably for all sectors of the public that want to access that resource. This resource was currently in trouble and the past director of the Division of Marine Fisheries said in February 2016 that we are at overcapacity in most, if not all of our fisheries. What we are addressing here today are capacity issues and who has the right to set commercial gear. We have to get control because we are killing the resource for everyone, said Sasser.

He said 80 percent of transfers fall outside of policy and are an exception to both rule and law. State statute does not allow these transfers, but they are occurring because someone with the division decided we needed to keep as many licenses active as possible to generate revenue. He said licenses are being managed to generate revenue to the division and not managed as a way of controlling the resource. He showed examples of licenses be sold on Craig's List that ranged from $1,800 to $33,000. He said we should be holding transfers to state statute and do away with the 80 percent of transfers that don't follow the law. Really, we should do away with all transfer and assignments because we have a legitimate process through the Eligibility Board that allow people to get a license.

He said that he looked at division data from 2012-2015 for Standard Commercial Fishing Licenses and Retired Standard Commercial Fishing Licenses and over that four-year period, an average of 3,661 license holders, or 57.8 percent, did not report any landings. During that same time frame, 713 licenses had between $1 - $1,000 of income and only 294 licenses had between $1,001-$2,500 of income. So if you want to define a commercial fisherman you should focus on the 400 licenses that sold between $10,000 - $25,000 and any above that level.

He said it was also important to set a fair market value for these licenses because people are willing to pay so much more on-line than the $400 the state charges for the license. He said $400 was too cheap for someone to have a license that allows them to harvest a public trust resource.

He also said there was not enough enforcement and that fines were too small and were just considered a cost of doing business.

He said that not having 60 percent of your licenses report landings also put the state in violation of its federal incidental take permits, because these permits require a minimum amount of coverage in gill net fisheries. If you do not know how much effort you have, then you have no clue on how much coverage you need or have and this is a lawsuit waiting to happen.

He said the chairman had earlier said that there were 3,200 licenses that didn't report landings. If you multiply that number by the license cost of $400, that equals $1.3 million of revenue generated from licenses with no landings. There had been discussion about keeping any recommendations or changes revenue neutral. He said if we increased the cost of the Coastal Recreational Fishing License to match the cost of the inland fishing license, then you could generate $2 million annually, and that would more than offset the loss of doing away with the commercial licenses that do not have landings. He doesn't want to put hard working people trying to support their families out of work, but that should not be the priority. The priority should be to protect the resource and have sustainable fisheries. He said the recreational fishery was worth $1.6 billion and the commercial fishery was worth $300 million.

DISCUSSION OF STANDARD COMMERCIAL FISHING LICENSE CRITERIA, ISSUES AND CONSIDERATIONS

Wicker asked if the 72.8 percent of transfers that Sasser referenced were all Craig's List-type of transactions. Division Deputy Director Lupton explained there were three categories for transfers:

1) Retirement – the term "retirement" is not defined.
2) Death – when a license holder dies, the license is transferred to the executor of the estate and then can be transferred to immediate family or it can eventually go to a third party.
3) Sale of a vessel – the Standard Commercial Fishing License is separate from the Commercial Fishing Vessel Registration, but it can be transferred with the vessel.

Lupton also explained that most were probably licenses that were sold on on-line, but transfers can also occur within a business operation. She also pointed out that we have no idea what is actually paid for these licenses on-line, we only see what is being asked for the license. She also agreed this is an area that could be further defined to close some loopholes and it is something for this group to consider. There was also a discussion that early on in the development of the license, the division was advised by the Attorney General's Office that the license was considered a commodity.

Sasser talked about the policy for allowing transfers for retirement and that it was supposed to be used if you were selling your boat and gear, not to sell on Craig's List. Sasser said he had a Standard Commercial Fishing License to catch king mackerel bait in the ocean and in case the state was to ever require people who gigged for flounder to have a commercial license.

Wicker said he had asked several people who had purchased licenses on-line what they had paid for the license and it was fairly reflective of the lower end of what was advertised.

Rose asked if Sasser would support having recreational fishermen report their catch and he said he would. He also said there are substantially less recreational fishermen on the water now as in the past. He said people come down and buy a three-day license and go to Walmart and buy a rod and sit out on the beach and maybe they will fish. The true guys that fish for fun, their numbers are way down because there are no fish to catch.

Chairman Corbett said he spends a great amount of time on the water and he feels recreational activity is increasing, especially from Snead's Ferry to the South Carolina line. Sasser said the southern area of the coast was one of the fastest growing regions and he explained in the central area of the state, recreational effort was down and these are depressed areas that could benefit from a strong recreational fishery.

Rose questioned what would be the effect of increasing the cost for the recreational fishing license and Sasser responded that recreational fishermen fought for a recreational license for years and former Senator Marc Basnight had blocked the recreational license because he didn't want to empower the 1.2 million recreational anglers. Only when the feds came in and said they were going to create a recreational license to better manage these fisheries, did Basnight allow it.

Rose said we still don't know what we are catching recreationally and Sasser said he supported anglers reporting their catch, and he said most anglers felt that way. There was a discussion about creating an app to report recreational catch.

Chairman Corbett said the only recreational people who have not supported reporting catch were the for-hire guides that didn't want a logbook.

He also said for the licenses not being used, like the licenses Commissioner Rose is holding that were her decreased husband's, he'd like for people to be able to hold onto those heritage licenses.

Rose said that for the licenses not reporting catch, they may not even be catching any seafood, but she said she was going to start catching fish with those licenses now. Chairman Corbett said you could charge half price for a retired or heritage license and not allow that license to harvest seafood and then we would have an understanding of how many people fall into that category. He said he did not want to put anyone out if they were even catching one fish. He wants to find out exactly what the recreational guys are catching, the commercial guys are catching and the for-hire/charter boat guys are catching.

Sasser referenced a pilot study the division had done on personal consumption and latent licenses, but it was pointed out there were flaws with the pilot study and it could not be used for quantitative purposes.

Lupton said there are about 700 to 800 people who wait to renew their licenses at the very end of the license year – most likely these people are not using the license, but are holding onto them.

Wicker said there are people who hold commercial licenses for speculative reasons.

Rose said there are also people who had a license when they were young, went on to another career, and want to go back to commercial fishing when they retire from their other job.

Wicker said it appeared we could improve commercial and recreational licensing and it appears we are being too restrictive on people wanting to get a commercial license.

Laughridge said a Standard Commercial Fishing License is a powerful thing to use and there is a sales tax exemption that is fairly substantial and that was probably a reason why people want to get the license. There was a discussion about the sales tax exemption.

Shute said so many people would come into his tackle shop that had the right documentation to get the sales tax exemption, but they were not true commercial fishermen and he said one thing that is a problem is when people were buying licenses to sell blue fin tuna and he talked about the inequity of out-of-state people being able to buy the Land and Sell License.

Laughridge said another issue is the statutory language that allows licenses to be assigned to out-of-state fishermen and Rose questioned how many assignments actually fell into this category. Lupton reported from 2009-2014 there was an average of 750 total assignments, with 35 of those going to out-of-state residents.

Laughridge said assignments were a way around people getting a Standard Commercial Fishing License and Rose responded that assignments were used for people helping with the fishing operation. Lupton also explained that someone who held multiple licenses might assign one of those licenses to a boat captain to run a boat. Assignments also allow people to gain experience and qualify for a license from the Eligibility Board.

Laughridge said he was in the investment business and he could not sell his license or assign it and he felt there were problems with the licensing system from a fiscal and biological standpoint.

Chairman Corbett said he had met with division staff several weeks ago and had jotted down a few ideas. First, any changes need to be revenue neutral and if we did send forward any recommendations on setting a threshold for the Standard Commercial Fishing License, that it needs to be based on trip tickets and not income. Additionally, there needs to be a place on trip tickets to record "P" numbers or "F" numbers so that crew can get credit for their fishing effort and there needs to be a way to account for number of days fished too. He said if a license holder wanted to inactivate or retire their license, they could be charged half the license cost that could be reactivated one time and there cannot be any trip ticket from that license when it was inactive. He also said For-Hire License holders that also have Standard Commercial Fishing Licenses are playing both sides of the fence. We would also like to have a Bluefin Tuna License because there are some folks that buy the Standard Commercial Fishing License, simply to be able to sell a bluefin tuna if they catch one. There are many of us who think we should do away with the Recreational Commercial Gear License and make it a part-time license instead. He said there

also needs to be a hardship clause included if there was an income or activity threshold established for the Standard Commercial Fishing License.

Division Director Davis said for him it was helpful to separate the discussion out into new entrants and those maintaining their license. It appears that the commission has the authority to modify the rules regarding third party transfers, and the division could get behind this, but we will need to get the commission counsel's guidance. We have been asked what is the problem we are trying to address and one thing that has been common in the discussion here today it that you are trying to professionalize the industry and you want folks that come into the industry to know what they are doing – to have good fishing practices and to know the rules. When you go through a third party transfer, you are skipping out on all of that and that presents a risk. Davis said if there's a way for the commission to cut down on third party transfers, but maybe take into account allowing transfers to intra-family and intra-business, that would be worth considering. It would also be good to cut down on third party transfers on Craig's List and get people to go through the Eligibility Board, we think that would be a positive step. Brent Fulcher brought up an alternative that the extra price you pay on the market is because you want to get the license sooner than the next board meeting, so you might be able to create some standards that the division could expedite rather than going to the board. The criteria for the Eligibility Board already has the requirement for significant involvement standard, but you could further define what that means. He said completion of a certified community college program could be added as a way to qualify to receive a license from the pool. It seems like there is some common ground on new entrants into commercial fishing, it needs to be determined what that would look like and how much can be done by the commission and what needs to be done by the General Assembly. He appreciates the comments about being revenue neutral and if there are discussions about raising license costs we have to be mindful about impacts to the Observer Program. Davis said he wanted people to know he is taking a close look the incidental take permit and is talking with industry and will hopefully come out with ways to improve that program soon.

Rose expressed concern if the committee was talking about raising the costs of commercial licenses, because these fees were recently increased. She said she thought that was kind of tough when we have imposed all these new restrictions. Chairman Corbett reminded people that it was the industry that supported doubling the license cost, so we could maintain the Observer Program so our flounder fishermen could keep fishing. Rose agreed that was the case, but where did it get us, fishermen could hardly fish last year because of shutdowns due to turtle interactions, she said.

Wicker said we could eliminate the Recreational Commercial Gear License and create a part-time license that could off-set the revenue losses.

Lupton said you have to figure out what problem you are trying to solve; currently those people who are not using the license are subsidizing the work the division is doing. If you raise the price of the Recreational Commercial Gear License, those people will most likely not renew their licenses. Chairman Corbett said if those folks moved to the part-time license and were required to submit trip tickets you would be getting a lot of data that you are currently losing and it could serve as an apprenticeship to qualify for a full-time license through the Eligibility Board. The part-time license could be sold at half the cost of a full-time license, would allow use of limited amounts of commercial gear, and trip tickets would be allowed with sales. Lupton said there was

about 3,800 Recreational Commercial Gear Licenses sold last year and that sales had been steadily declining and she pointed out that the General Assembly determines the cost of licenses.

There was a discussion about the how to balance the costs of licenses with the revenue needs and that it would probably take a couple of years to be able to project how many licenses would be purchased; it was mentioned there could be a possible sliding scale for fees.

Laughridge said the issue of Standard Commercial Fishing Licenses that did not have any trip tickets needs to be addressed.

Wicker said when fishermen renew their license a standard could be established to hold a Standard Commercial Fishing License; he did not think it would be appropriate to eliminate a license or take a license away from someone during the license year.

Laughridge talked about considering a certain number of trip tickets or a 50 percent income threshold as a qualification standard. He said there is a precedent of an income standard in the statute where commercial fishing seats on the commission have to earn at least 50 percent of their income from commercial fishing.

Wicker liked having the flexibility of the either/or scenario, in case someone did not want to submit their tax records.

Rose had concerns with an income requirement due to the amount of paperwork the fishermen would have to do and the calculations to estimate market price.

Chairman Corbett said if you set the standard at five trip tickets you would eliminate 630 license holders and if you combine them with the 3,200 that don't have any trip tickets at all then you will put almost 4,000 people out of the fishery that now have licenses.

Rose asked if that was the goal – to eliminate licenses? Chairman Corbett said that wasn't the goal, he was just trying to add perspective to the discussion.

Laughridge asked about possibly requiring one trip ticket per month

Rose talked about a fisherman she knows that fishes fyke nets to supplement his Social Security, she would hate to make him go out and fish more than he has too, just to reach a certain number of fishing trips.

Chairman Corbett said there were 979 fishermen that had 12 or fewer trips reported. He asked where the money is going to come from if you get rid of almost 5,000 licenses? He asked how many licenses we currently had and staff responded 6,455.

Wicker said it was obvious that whatever we do will impact the number of licenses and the revenue those licenses generate, but he doesn't think that is a good reason not to do anything. He said we could set the trip ticket requirement low enough not to eliminate people like the fyke net fisherman that Commissioner Rose talked about.

Chairman Corbett said if you set the standard at five trip tickets, then you would eliminate 3,915 licenses. How much money would you be losing?

Lupton offered that the committee needed to decide what they wanted to do and let the division worry about the figures.

Skinner said he thought the committee was approaching it wrong; he felt if you modified the tax exempt status to only cover people who were truly fishermen that would most likely eliminate a large number of the license holders that don't have any trip tickets. He said a trip ticket threshold would not be hard to achieve.

Wicker said we need to make sure whatever recommendations we come up with are enforceable.

Laughridge said if you set a $10,001 threshold to be eligible for tax exempt status then you would cut participants by 57.8 percent.

Skinner said he did not recommend they could not have the license if they didn't make over a certain dollar amount, only that they could not be tax exempt.

Laughridge said setting a threshold at one trip was too low, and he felt just one trip a month was too low.

Lupton added that shellfish lease holders, when they are first getting started may not have any landings or trip tickets for three years, and we need to keep that in mind as aquaculture is a growing aspect of the industry.

Chairman Corbett said there would have to be an exemption for aquaculture.

Rose said she does not have a tax exempt status and are we really worried about people not paying taxes. She said why should she have tax exempt status because she was not a full-time commercial fisherman.

Chairman Corbett talked about just the recent costs he had of outfitting his commercial fishing operation and Rose said then he deserved the tax exempt status.

Laughridge asked Rose if she made 50 percent of her income as a commercial fisherman and she responded not this year, I have done very well selling real estate.

Wicker asked if it would be easier to do a trip ticket delineation rather than an income delineation and Lupton responded that it would and that she did not want to put division staff in the position of determining where somebody got their income from.

There was a general discussion amongst the committee and the staff about license types, costs, and criteria. The number of days fished, instead of just relying on the number of trip tickets also needs to be considered.

Wicker offered that commercial gear can only be used in activities that generate trip tickets, where it could be documented if the catch was for sale or for personal consumption.

There was a discussion about increasing penalties for fisheries violations. Lupton pointed out that if you are caught selling seafood without the proper license, then not only can criminal penalties of an average of $35 plus court costs be assessed, but also civil penalties can be assessed up to $10,000, and there have been civil penalties of several thousand dollars. It was also discussed that if a license is revoked or suspended, then all the person with the revoked or suspended license has to do is get someone with a license to go out with him and he can continue fishing, so there is not that much of a deterrent.

There was discussion about the division's position on these issues and the need to define the problem. Director Davis said the criteria for the Eligibility Board could be enhanced to make sure new entrants are professional and experienced. Gear usage and capacity issues are generally dealt with through the fishery management plan process; it is hard to have a position on the part-time license until the gear restrictions with that license are laid out, but there could be a number of benefits.

Laughridge talked about not reissuing a license to Standard Commercial Fishing License holders who had not had any trip tickets submitted in the last three years and having those licenses go into the Eligibility Pool; those folks could apply to the Eligibility Board to get the license back if they qualified; and there would be no more licenses transferred/sold on the open market.

Chairman Corbett talked about having full-time, part-time and heritage categories for the Standard Commercial Fishing License.

Wicker said there was an issue with perception – commercial fishermen think we are trying to get rid of them, but that is not the case. He felt many issues could be resolved by simply requiring that if you use commercial gear you have to submit a trip ticket.

There was a discussion about transfers. Deputy Director Lupton explained the Fisheries Reform Act gave the commission the ability to develop rules. Several attorneys with the Attorney General Office have advised over the years that commercial fishing licenses were considered a commodity and that influenced how license transfers have been treated through the years.

Director Davis talked about the possibility of creating a Resident Land and Sell License to allow fishermen to catch and sell pelagic species and land them in the state – fishermen would still have to have the appropriate federal permits.

Laughridge talked about sending recommendations forward to General Assembly and Rose questioned if the full commission should vote on this matter prior to sending recommendations.

Chairman Corbett explained that Representative Dixon had requested input by mid-October, because Dixon's committee was wanting to start meeting on this issue in November and that if they waited until the Nov. 16-18 commission meeting, it may be too late to provide input.

Rose continued to express concerns with sending committee recommendations directly to the legislature, without being approved by the full commission first, and Wicker agreed.

Chairman Corbett again explained that Representative Dixon wanted to receive input from the commission on commercial licensing issues, but that he needed it by mid-October.

There was discussion about just reporting to the General Assembly the outcome of the committee meeting, and clarifying that the issue still had to go to the full commission for consideration.

Willis asked each of the committee members if they felt there were problems with the commercial license that needed to be address. All of the members felt there were issues, except for Rose.

The committee developed the following slate of recommendations:

Recommendations that require statutory changes – Legislative action needed:
Full-time Standard Commercial Fishing License Eligibility *– Modify the existing licensing laws to limit Standard Commercial Fishing License eligibility based on a certain number of fishing trips or trip tickets submitted or number of days fished within a specified time period. Must include:*

- *An exemption for aquaculture operations (it can take several years for these operations to produce a harvestable crop);*
- *A hardship clause for illness or acts of God; and*
- *A way to list multiple crew members on a trip ticket to document their fishing participation.*

Part-time Standard Commercial Fishing License *– Create a new part-time license that anyone could qualify for at one-half the cost of the Standard Commercial Fishing License. This license would allow the use of limited amounts of commercial gear and would require trip ticket reporting. This license could serve as a stepping stone to qualify for a full-time Standard Commercial Fishing License - have the Marine Fisheries Commission set the criteria.*
Heritage Standard Commercial Fishing License *– Create a new type of license that is an inactive license, sold at one-half the cost of the current Standard Commercial Fishing License. This license could be activated to a full-time Standard Commercial Fishing License for one time only. Active licenses would then have to maintain criteria set for full-time licenses.*
Commercial Gear Usage *– Require that all landings caught by commercial gear, regardless of the type of license held, or whether the catch is sold or caught for personal use, be recorded on trip tickets.*
Tax Exempt Status *– Set an income threshold for tax exempt status at $10,000 for commercial fishing.*
For-Hire License *– Require holders of this license to report catch via a logbook.*
Resident Land or Sell License *– Create a new license to allow state residents to have similar opportunities on the Land or Sell License. This license would allow individuals to land and sell catch like bluefin tuna caught in federal waters. Currently the Land or Sell License is only available to non-residents.*

Recommendations that require rule changes – Marine Fisheries Commission action needed:

Standard Commercial Fishing License Eligibility Board Criteria *– Develop rules to improve criteria used to determine who is eligible to receive a license through the Eligibility Board. Consider graduation or completion of classes from a community college in commercial fishing as a way to qualify.*

Transfers/Assignments *- Develop rules to refine transfer and/or assignment criteria for the Standard Commercial Fishing License.*

Other

Recreational Catch *– Have Division of Marine Fisheries staff explore options to enhance recreational data collection; for example, using a phone app to report catch.*

It was discussed that the full commission will consider these recommendations at its Nov. 16-18 business meeting in Kitty Hawk.

It was also determined that the committee recommendations will also be sent to Representative Dixon, along with other members of the N.C. General Assembly.

Enclosures

Cc:
Catherine Blum
Mike Bulleri
Scott Conklin
Dick Brame
Braxton Davis
Charlotte Dexter
Jess Hawkins
Dee Lupton
Nancy Marlette
Katie Mills
Phillip Reynolds
Jerry Schill
Gerry Smith
District Managers
Committee Staff Members
Marine Patrol Captains
Section Chiefs

Issues/Reports

Marine Fisheries
ENVIRONMENTAL QUALITY

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Governor

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Secretary

BRAXTON C. DAVIS
Director

October 21, 2016

MEMORANDUM **Conflict Res 11-16**

TO: Marine Fisheries Commission

FROM: Kathy Rawls, Fisheries Management Section Chief

SUBJECT: Currituck Sound – Martins Point Conflict Resolution

On March 14, 2016 the division received a user conflict resolution package from Leigh and Janine Forbes of Kitty Hawk, North Carolina. They live in the Dare County community of Martins Point on the Currituck Sound and were joined by 37 other homeowners in their petition for conflict resolution. The information included in the package described a conflict between the petitioners and Mark Evanoff, a commercial gill net fisherman who also lives in the Martins Point community. The primary complaint is that Mr. Evanoff is setting his gill nets too close to docks and piers and in such a manner that is causing a navigation hazard for homeowners and in many instances preventing them from getting their boats to and from their docks. This conflict has been ongoing since at least 2014. Mr. Forbes has contacted the division on multiple occasions and provided public comment about the ongoing conflict at the commission's November 2015 meeting.

In accordance with North Carolina Marine Fisheries Commission User Conflict Resolution Rule 15A NCAC 03I .0122, the division reviewed the information submitted and determined that user conflict resolution was necessary and that mediation would be the next step. Mr. Forbes readily agreed to mediation. After multiple attempts, the division was able to get a verbal agreement for mediation from Mr. Evanoff, via his attorney. The division contacted the Mediation Center of Eastern Carolina to conduct the mediation. The Mediation Center and the division made multiple attempts to contact Mr. Evanoff (directly and through his attorney) to initiate mediation, none of which were successful. The division contacted Mr. Forbes and informed him that our attempts to initiate mediation for the user conflict resolution were unsuccessful and the division would present a draft proclamation to the Marine Fisheries Commission for approval at its November 2016 meeting.

The petitioners requested gill nets be set a minimum of 200 feet from their piers and docks in order to allow them ample room to navigate their boats to and from their property. The draft proclamation makes it unlawful to use any gill nets in the Currituck Sound – Martins Point Conflict Resolution Area within 200 feet of any dock, bulkhead or shoreline structure. The Currituck Sound – Martins Point Conflict Resolution area encompasses a shoreline area of approximately 2.5 miles in length in southern Currituck Sound Joint Waters beginning at a point 36° 07.6750 N - 75° 44.9550 W at Martins Point; running south along the shoreline to the Wright Memorial Bridge (See draft Proclamation and Map).

The division recommends that the commission approve the draft proclamation for issuance when/if necessary.

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Director

M-XX-2016

PROCLAMATION

RE: GILL NETS – CURRITUCK SOUND – MARTINS POINT CONFLICT RESOLUTION AREA

This proclamation implements conflict resolution measures for gill nets in the Currituck Sound – Martins Point Conflict Resolution Area.

Braxton C. Davis, Director, Division of Marine Fisheries, hereby announces that effective at **TIME/DATE TO BE DETERMINED** the following provisions shall apply to the use of gill nets in the following area:

I. AREA DESCRIPTION AND SPECIFIC AREA RESTRICTIONS (Map 1)

Currituck Sound - Martins Point Conflict Resolution Area: encompasses an area in southern Currituck Sound Joint Waters beginning at a point 36° 07.6750 N - 75° 44.9550 W at Martins Point; running south along the shoreline to the Wright Memorial Bridge.

It is unlawful to use ANY gill nets in the Currituck Sound – Martins Point Conflict Resolution Area within 200 feet of any dock, bulkhead or shoreline structure.

II. GENERAL INFORMATION

A. This proclamation is issued under the authority of N.C.G.S. 113-182; 113-221.1; and N.C. Marine Fisheries Commission Rules 15A NCAC 03I .0122 and 03J .0103.
B. It is unlawful to violate provisions of any proclamation issued by the Fisheries Director under his delegated authority pursuant to N.C. Marine Fisheries Commission Rule 15A NCAC 03H .0103.
C. The restrictions in this proclamation apply to gill nets used by Recreational Commercial Gear License holders.
D. The intent of this proclamation is to implement conflict resolution measures in the Currituck Sound - Martins Point Conflict Resolution Area. **All other existing gill net rules and proclamations remain in effect.**
E. In accordance with N.C. General Statute 113-221.1(c) all persons who may be affected by proclamations issued by the Fisheries Director are under a duty to keep themselves informed of current proclamations.
F. Contact N.C. Division of Marine Fisheries, P.O. Box 769, Morehead City, NC 28557 252-726-7021 or 800-682-2632 for more information or visit the division website at www.ncmarinefisheries.net
G. **This proclamation implements conflict resolution measures in the Currituck Sound - Martins Point Conflict Resolution Area in accordance with N.C. Marine Fisheries Commission Rule 15A NCAC 03I .0121 User Conflict Resolution. It makes it unlawful to use ANY gill nets within 200 feet of any dock, bulkhead or shoreline structure in the specified area.**

By: _____
Braxton C. Davis, Director
DIVISION OF MARINE FISHERIES

October 13, 2016
11:00 A.M.
M-21-2016
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PROCLAMATION
M--2016

Martins Point

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Currituck Sound – Martins Point Conflict Resolution Area.
Unlawful to use ANY gill nets within 200 feet
of any dock, bulkhead or shoreline structure

Marine Fisheries
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Datum: NAD83
Map Date: October 2016

Marine Fisheries
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Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

October 21, 2016

MEMORANDUM **FMP 11-16**

TO: Marine Fisheries Commission

FROM: Catherine Blum, Fishery Management Plan and Rulemaking Coordinator

SUBJECT: Fishery Management Plan Update

This memo provides an overview about the status of the North Carolina fishery management plans for the November 2016 commission meeting. There is a single handout provided showing where the active plans are in the process; no action is required by the commission.

At the commission's August meeting, the rulemaking process was approved to begin for the implementing rules of the draft Hard Clam Fishery Management Plan Amendment 2 and Oyster Fishery Management Plan Amendment 4. The proposed rules have been published in the *North Carolina Register* and a public comment period is underway. Additional details are provided in the rulemaking update in the briefing materials.

A plan not yet represented by the formal steps in the handout is the review of the Blue Crab Fishery Management Plan. A news release was issued Sept. 29 soliciting commercial and recreational fishermen and scientists to serve on the Blue Crab Fishery Management Plan Advisory Committee; which will assist the division in amending the plan. The deadline to submit an application is Nov. 15. The division's plan development team is reviewing the available data in preparation for the review of the plan.

Also in preparation for the formal steps in the fishery management plan process, work is continuing on the coastwide stock assessment of southern flounder. An in-person data workshop was held Aug. 15-17, 2016 in Raleigh. The stock assessment workgroup is continuing to work remotely and meet by conference call. The stock assessment is expected to be completed in the second half of 2017, after which the next review of the plan will commence.

NORTH CAROLINA FISHERY MANAGEMENT PLANS

November 2016

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

October 21, 2016

MEMORANDUM **ARSBSA 11-16**

TO: Marine Fisheries Commission

FROM: Albemarle/Roanoke Striped Bass Stock Assessment Workgroup

SUBJECT: Albemarle/Roanoke Striped Bass Stock Assessment Update

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Albemarle/Roanoke striped bass are managed jointly between the Division of Marine Fisheries and the Wildlife Resources Commission. The Albemarle/Roanoke Striped Bass Stock Assessment Workgroup met recently to discuss results of the 2016 Albemarle/Roanoke striped bass stock assessment update. The estimate of fishing mortality (F) in the terminal year of the assessment (2014) was 0.06, below the fishing mortality threshold of 0.41, suggesting the stock is not experiencing overfishing (Figure 1), as outlined in the November 2014 Revision to Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan. The spawning stock biomass (SSB) in 2014 was estimated at 2,028,837 pounds, above the spawning stock biomass threshold of 772,588 pounds, suggesting the stock is not overfished (Figure 2) – this threshold was also set out in the 2014 revision to the plan. The terminal year estimates of fishing mortality and spawning stock biomass have the most uncertainty associated with them and should be interpreted with caution. As more years of data are added to the time series, the terminal year estimates will change, but to what degree and in what direction cannot be predicted.

The overall trend in spawning stock biomass shows very low biomass through the 1980s and early 1990s when the stock was experiencing chronic spawning failures and low total abundance. Starting in the early 1990s, the stock experienced nearly a decade of above average spawning success and recruitment of age-1 fish to the stock (Figure 2). The stock began increasing in overall biomass, which in turn led to an increase in the number of older and larger fish in the stock. Starting in 2001, the opposite trend was observed. Several years of unsuccessful spawns due to unfavorable environmental conditions during the spring spawning period led to a decline in spawning stock biomass and total abundance from the highs of the mid-2000s (Figures 1 and 2). Fishing mortality was high in the early years of the assessment when biomass was very low. Strict regulations reduced fishing mortality through the early 1990s. As the stock recovered and harvest levels were allowed to increase, fishing mortality increased commensurately. Since the stock was declared recovered in 1997 fishing mortality has remained below the threshold for all years except 2004 and 2005 (Figure 1).

Landings follow a similar trend to stock abundance and age-1 recruitment. Landings increased from the late 1990s through the mid-2000s and have declined since as total abundance has declined. Low landings from both the recreational and commercial sectors in 2013 and 2014 contributed to the low estimates of fishing mortality (F) in those years (Figure 3). The next benchmark assessment is scheduled for 2017, in conjunction with the scheduled full review of the North Carolina Estuarine Striped Bass Fishery Management Plan.

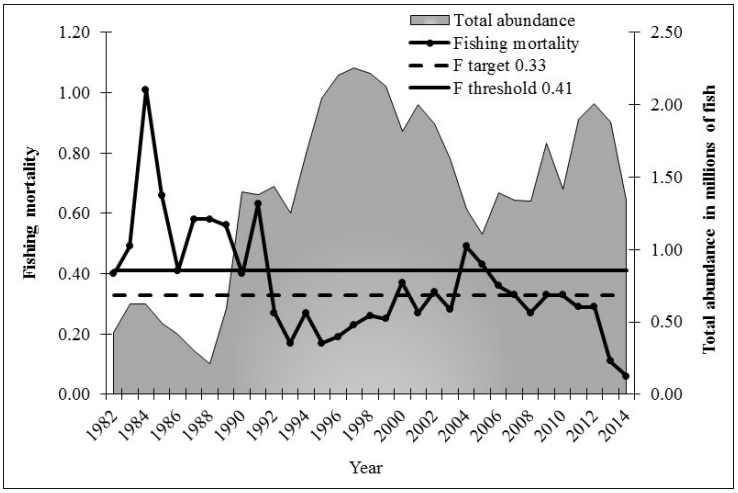

Figure 1. Estimates of fishing mortality (F) and total abundance from the 2016 Albemarle/Roanoke striped bass stock assessment update.

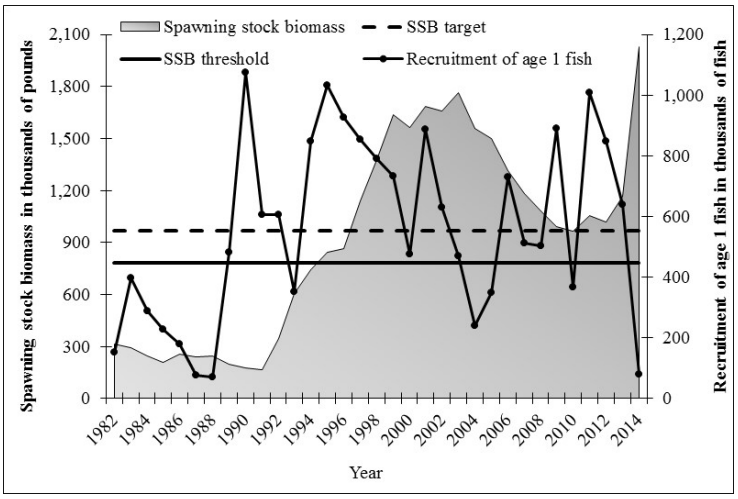

Figure 2. Estimates of spawning stock biomass (SSB) and recruitment of age-1 fish from the 2016 Albemarle/Roanoke striped bass stock assessment update.

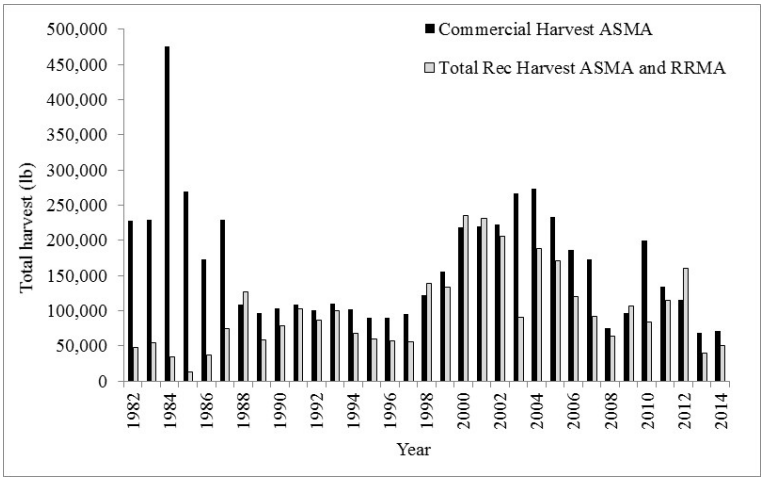

Figure 3. Striped bass landings from the Albemarle Sound Management Area (ASMA) and the Roanoke River Management Area (RRMA), 1982-2014.

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INFORMATION WILL BE PROVIDED AT THE MEETING.

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BRAXTON C. DAVIS
Director

October 21, 2016

MEMORANDUM **Trawl Study 11-16**

TO: Marine Fisheries Commission

FROM: Kevin Brown, Gear Development Biologist

SUBJECT: Collaborative Shrimp Trawl Gear Study

Background

The Marine Fisheries Commission, at its November 2012 meeting, directed the division to amend the Shrimp Fishery Management Plan, but to limit the scope of the amendment to bycatch issues in the commercial and recreational fisheries. An advisory committee was formed with this same charge, and spent a large part of 2013 developing recommendations. In February 2104, the commission selected its preferred management strategies and the plan was sent forward for departmental and legislative review, with rulemaking beginning later in 2014. At its February 2015 meeting, the commission gave final approval of Amendment 1 to the North Carolina Shrimp Fishery Management Plan, and its associated rules. One of the management strategies in the plan was:

> **Convene a stakeholder group to initiate industry testing of minimum tail bag mesh size, T-90 panels, skylight panels, and reduced bar spacing in Turtle Excluder Devices to reduce bycatch to the extent practicable with a 40 percent target reduction.**
>
> - **Upon securing funding, testing in the ocean and internal waters will consist of three years of data using test nets compared to a control net with a Florida fish eye, a federally approved Turtle Excluder Device and a 1.5-inch mesh tailbag.**
> - **Results should minimize shrimp loss and maximize reduction of bycatch of finfish. Promising configurations will be brought back to the commission for consideration for mandatory use.**
> - **The stakeholder group may be partnered with the division and Sea Grant.**
> - **Members should consist of fishermen, net/gear manufacturers and scientific/gear specialists.**

Funding

To accomplish this strategy, the division partnered with North Carolina Sea Grant and National Oceanographic and Atmospheric Administration Harvesting Systems Unit and sought funding for this project. In November 2014, the commission approved funding from its Conservation Fund, with matching support from the commercial industry. The division negotiated the industry's in-kind contribution. This funded the first workgroup meeting and the testing of three gears (later modified to five) in the summer brown shrimp fishery in 2015, with a goal of 60 tows-per-gear. The division also partnered with Dr. Pingguo He (UMass-Dartmouth) on

a Saltonstall-Kennedy grant to test a topless trawl. The workgroup received additional funding from National Oceanographic and Atmospheric Administration's Bycatch Reduction Engineering Program to test three gears in the 2016 summer brown shrimp fishery and from the National Fish and Wildlife Foundation to test three gears in the 2016 fall white shrimp fishery.

Workgroup meetings

An industry workgroup consisting of a geographically diverse segment of fishermen, net makers, industry leaders and researchers was formed. There have been two formal meetings of the group so far and numerous informal meetings of select members. The first meeting occurred in March 2015 and the second in January 2016. Researchers from the North Carolina Division of Marine Fisheries, National Oceanographic and Atmospheric Administration Harvesting Systems Unit, North Carolina Sea Grant, Texas Sea Grant, UMass-Dartmouth, Gulf and South Atlantic Foundation, and the Gulf of Maine Research Institute presented recent advancements in bycatch reduction device technology and provided guidance on the process. The workgroup selected gears to be tested in each fishery and discussed the acceptable shrimp loss as being between 3 percent and 4 percent. Both formal meetings were well attended and productive.

Results

Three commercial shrimp fishing trawl vessels conducted comparative bycatch reduction device testing throughout Pamlico Sound during the summer 2015. Each vessel tested a different bycatch reduction device for three to four weeks. All control nets (turtle excluder devices, tail bags, and fisheyes) were standardized on each vessel.

A total of 44 matched pairs were analyzed, testing the composite panel with a fish "spooker" cone. An average 1 percent shrimp loss, and 27 percent fish loss was calculated with the use of this gear relative to the control gear (Table 1).

Following an initial week with the use of the 3-inch grid alone as a bycatch reduction device, the test gear was modified to also include a square mesh panel, 1 7/8-inch tailbag and a federal fisheye for the remainder of the study. The 3-inch grid alone reduced finfish by 20 percent, but lost greater than 12 percent of target shrimp on average. The added combinations maintained an increased fish loss of 27 percent, and shrimp losses were less than 3 percent on average (Table 2).

The Ricky Bycatch Reduction Device test was also modified after the first week of testing. Specifically, the Ricky Bycatch Reduction Device was eliminated, and two federal fisheyes were placed in the tailbag (inline) with a 1 7/8-inch tailbag. The Ricky Bycatch Reduction Device alone reduced about 5 percent of finfish on average, and showed an increase (26 percent) in the mean percent of shrimp captured. Greater than a 38 percent mean fish loss and a slight gain (2 percent) in the mean shrimp catch was observed with the modified test gear for the remainder of the study (Table 3). Preliminary results from 2016 testing show two of the bycatch reduction devices (double federal fisheye,1 ¾-inch tailbag, and 3-inch turtle excluder device; Virgil Potter Bycatch Reduction Device with funnel) tested approaching 50 percent finfish reduction with approximately 7 percent shrimp loss. The division's plan is to test variations of these more promising combinations of bycatch reduction devices on smaller vessels using smaller nets and in the ocean.

Table 1. Percent reductions in shrimp and finfish, inclusive with means and confidence intervals for comparative testing with the composite panel and fish "spooker" cone in Pamlico Sound, NC during 2015.

Bycatch Reduction Device	Species Group	N	Control Net		Experimental Net		Lower 95 percent Confidence Interval	Percent Difference	Upper 95 percent Confidence Interval	*p* value
			Mean (kg)	Standard Deviation (kg)	Mean (kg)	Standard Deviation (kg)				
Composite Panel with fish spooker cone	Shrimp	44	72.15	45.12	71.16	43.00	- 2.86	1.37	5.60	0.1938
	Finfish	44	180.45	65.88	132.45	56.48	19.91	26.60	33.28	0.0000

Table 2. Percent reductions in shrimp and finfish, inclusive with means and confidence intervals for comparative testing with the 3" grid, and 3" grid, square mesh panel, 1 7/8" tailbag, and federal fisheye combination in Pamlico Sound, NC during 2015.

Bycatch Reduction Device	Species Group	N	Control Net		Experimental Net		Lower 95 percent Confidence	Percent Difference	Lower 95 percent Confidence	*p* value
			Mean (kg)	Standard Deviation (kg)	Mean (kg)	Standard Deviation (kg)				
3" Grid	Shrimp	19	50.42	28.36	44.35	20.71	- 2.88	12.03	26.95	0.0451
	Finfish	19	109.34	47.83	87.17	41.71	7.23	20.27	33.32	0.0021
3" Grid, Square Mesh Panel, 1 7/8" tailbag and federal fisheye	Shrimp	40	77.10	36.14	75.05	36.21	- 1.25	2.65	6.56	0.0904
	Finfish	40	121.01	76.35	88.16	50.80	15.66	27.15	38.64	0.0000

Table 3. Percent reductions in shrimp and finfish, inclusive with means and confidence intervals for comparative testing with the Ricky Bycatch Reduction Device and then two federal fisheyes and 1 7/8" tailbag combination in Pamlico Sound, NC during 2015.

Bycatch Reduction Device	Species Group	N	Control Net		Experimental Net		Lower 95 percent Confidence	Percent Difference	Upper 95 percent Confidence	*p* value
			Mean (kg)	Standard Deviation (kg)	Mean (kg)	Standard Deviation (kg)				
Ricky Bycatch Reduction Device	Shrimp	15	56.49	31.62	71.40	64.95	-105.37	- 26.39	52.58	0.1948
	Finfish	15	160.43	84.91	153.16	71.51	- 9.97	4.53	19.03	0.2552
2 federal fisheyes, 1 7/8" tailbag	Shrimp	26	94.36	46.70	95.81	46.50	- 9.00	- 1.54	5.93	0.3366
	Finfish	26	134.96	67.33	83.23	47.21	25.16	38.33	51.49	0.0000

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Director

October 21, 2016

MEMORANDUM **Rules 11-16**

TO: Marine Fisheries Commission

FROM: Catherine Blum, Fishery Management Plan and Rulemaking Coordinator

SUBJECT: Rulemaking Update

This memo describes the rulemaking materials for the November 2016 commission meeting. There are two informational items, the second of which will be accompanied by a brief presentation; no action is required by the commission. Each item is summarized below:

2016/2017 Rulemaking Cycle

This section includes a table that shows the steps of the process for the commission's 2016/2017 annual rulemaking cycle. The dates in the table are adjusted to accommodate the delay in starting the package due to reconsideration of an issue from the Oyster and Hard Clam Fishery Management Plans. Instead of the usual intended effective date of April 1 of a given year for the rules to be complete, staff will make every effort to find efficiencies at the end of the process so the rules can become effective either May 1 or June 1, 2017.

At its August business meeting, the commission gave approval to begin the rulemaking process for 15 proposed rules. The rules were published in the Oct. 3 issue of the *North Carolina Register*. The public comment period for the proposed rules runs from Oct. 18 through Dec. 2. A public hearing is scheduled on Oct. 26 at 6 p.m. at the division's Central District Office located at 5285 Highway 70 West in Morehead City. The commission will receive an update on any comments that have been received at its November meeting. Final approval of the rules and the amendments to the Oyster and Hard Clam Fishery Management Plans is scheduled to occur at the commission's February 2017 business meeting.

Periodic Review and Expiration of Existing Rules

Session Law 2013-413, the Regulatory Reform Act of 2013, implemented requirements known as the "Periodic Review and Expiration of Existing Rules." These requirements are codified in a new section of Article 2A of Chapter 150B of the General Statutes in G.S. 150B-21.3A. A copy of the statute is provided in the briefing materials. These requirements directly affect the commission as the agency with the authority to set rules for marine and estuarine resources under its jurisdiction. Staff gave a presentation to the commission about the new requirements November 2013 and May 2014.

Under the requirements, each agency is responsible for conducting a review of all its rules at least once every 10 years in accordance with a prescribed process. The review has two parts: a report phase, followed by the re-

adoption of rules. The Office of Administrative Hearings developed a schedule for all agencies with rules to undergo the periodic review, numbering approximately 20,000 rules statewide. The process will begin for the commission at its February 2017 business meeting.

The first step in the process is for each agency to make a determination as to whether each rule is necessary with substantive public interest, necessary without substantive public interest, or unnecessary. The agency posts the results of the initial determination on the division web site for public comment for a minimum of 60 days. It is important to note, for the purposes of these requirements, “public comment” means written comments from the public objecting to the rule. The agency must review the public comments and prepare a brief response addressing the merits of each comment. The agency then submits a report to the Rules Review Commission, which, if approved, is forwarded to the Joint Legislative Administrative Procedure Oversight Committee for final determination.

The second part of the process is the re-adoption of rules. The final report determines the process for re-adoption. Rules determined to be necessary and without substantive public interest and for which no public comment was received remain in effect without further action. Rules determined to be unnecessary and for which no public comment was received expire on the first day of the month following the date the report becomes effective. Rules determined to be necessary with substantive public interest must be readopted as though the rules were new rules. The Rules Review Commission works with each agency to consider the agency’s rulemaking priorities in establishing a deadline for the re-adoption of rules.

An evaluation of the rules under the authority of the Marine Fisheries Commission will be undertaken in two lots. A report on the rules in Title 15A, Environment and Natural Resources, Chapter 03, Marine Fisheries is due to the Rules Review Commission December 2017. A report on the rules in Chapter 18, Environmental Health, for portions of Subchapter A that govern shellfish sanitation and recreational water quality is due January 2019. The Marine Fisheries Commission has approximately 210 rules in Chapter 03 and approximately 165 rules in Chapter 18A. The Marine Fisheries Commission is the body with the authority for the various approval steps prescribed in the process for these rules.

North Carolina Marine Fisheries Commission
2016-2017 Annual Rulemaking Cycle

November 2016

Time of Year	Action
April 2016	Last opportunity for a new issue to be presented to Division of Marine of Fisheries Rules Advisory Team
May 2016	Second review by Division of Marine Fisheries Rules Advisory Team
May-July 2016	Fiscal analysis of rules prepared by Division of Marine Fisheries staff and approved by Office of State Budget and Management
August 2016	Marine Fisheries Commission considers approval of Notice of Text for Rulemaking
October 2016	Publication of proposed rules in the North Carolina Register
October 2016	Public hearing held *
(January 2017)	(Last opportunity for a new issue to be presented to Division of Marine Fisheries Rules Advisory Team for next annual cycle)
(February 2017)	(Second review by Division of Marine Fisheries Rules Advisory Team)
February 2017	Marine Fisheries Commission considers approval of permanent rules
April 2017	Rules reviewed by Office of Administrative Hearings Rules Review Commission
April 15, 2017	Commercial license sales begin
April/May 2017	New rulebook drafted and sent to vendor for publication
May 1, 2017	Earliest possible effective date of rules
May or June 1, 2017	Actual effective date of new rules
May or June 1, 2017	Rulebook available online and for distribution

* Wednesday, Oct. 26, 2016, 6 p.m.
Division of Marine Fisheries
5285 Highway 70 West
Morehead City, NC 28557

MARINE FISHERIES COMMISSION
SUMMARY OF PUBLIC HEARING FOR PROPOSED RULES
DIVISION OF MARINE FISHERIES
MOREHEAD CITY CENTRAL DISTRICT OFFICE
MOREHEAD CITY, NORTH CAROLINA
OCT. 26, 2016, 6 PM

Marine Fisheries Commission:	Sammy Corbett
Division of Marine Fisheries Staff:	Catherine Blum, Nancy Fish, Michele Turner
Public:	None
Media:	None

Commission Chairman Sammy Corbett opened the public hearing for Marine Fisheries Commission proposed rules at 6 p.m. No one from the public or media was in attendance. Seeing no one to provide comments on the proposed rules, Chairman Corbett closed the hearing at 6:15 p.m.

/cb

§ 150B-21.3A. Periodic review and expiration of existing rules.

(a) Definitions. – For purposes of this section, the following definitions apply:

(1) Commission. – Means the Rules Review Commission.

(2) Committee. – Means the Joint Legislative Administrative Procedure Oversight Committee.

(3) Necessary with substantive public interest. – Means any rule for which the agency has received public comments within the past two years. A rule is also "necessary with substantive public interest" if the rule affects the property interest of the regulated public and the agency knows or suspects that any person may object to the rule.

(4) Necessary without substantive public interest. – Means a rule for which the agency has not received a public comment concerning the rule within the past two years. A "necessary without substantive public interest" rule includes a rule that merely identifies information that is readily available to the public, such as an address or a telephone number.

(5) Public comment. – Means written comments objecting to the rule, in whole or in part, received by an agency from any member of the public, including an association or other organization representing the regulated community or other members of the public.

(6) Unnecessary rule. – Means a rule that the agency determines to be obsolete, redundant, or otherwise not needed.

(b) Automatic Expiration. – Except as provided in subsection (e) of this section, any rule for which the agency that adopted the rule has not conducted a review in accordance with this section shall expire on the date set in the schedule established by the Commission pursuant to subsection (d) of this section.

(c) Review Process. – Each agency subject to this Article shall conduct a review of the agency's existing rules at least once every 10 years in accordance with the following process:

(1) Step 1: The agency shall conduct an analysis of each existing rule and make an initial determination as to whether the rule is (i) necessary with substantive public interest, (ii) necessary without substantive public interest, or (iii) unnecessary. The agency shall then post the results of the initial determination on its Web site and invite the public to comment on the rules and the agency's initial determination. The agency shall also submit the results of the initial determination to the Office of Administrative Hearings for posting on its Web site. The agency shall accept public comment for no less than 60 days following the posting. The agency shall review the public comments and prepare a brief response addressing the merits of each comment. After completing this process, the agency shall submit a report to the Commission. The report shall include the following items:

a. The agency's initial determination.

b. All public comments received in response to the agency's initial determination.

c. The agency's response to the public comments.

(2) Step 2: The Commission shall review the reports received from the agencies pursuant to subdivision (1) of this subsection. If a public comment relates to a rule that the agency determined to be necessary and without substantive public interest or unnecessary, the Commission shall determine whether the public comment has merit and, if so, designate the rule as necessary with substantive public interest. For purposes of this subsection, a public comment has merit if it addresses the specific substance of the rule and

relates to any of the standards for review by the Commission set forth in G.S. 150B-21.9(a). The Commission shall prepare a final determination report and submit the report to the Committee for consultation in accordance with subdivision (3) of this subsection. The report shall include the following items:

a. The agency's initial determination.
b. All public comments received in response to the agency's initial determination.
c. The agency's response to the public comments.
d. A summary of the Commission's determinations regarding public comments.
e. A determination that all rules that the agency determined to be necessary and without substantive public interest and for which no public comment was received or for which the Commission determined that the public comment was without merit be allowed to remain in effect without further action.
f. A determination that all rules that the agency determined to be unnecessary and for which no public comment was received or for which the Commission determined that the public comment was without merit shall expire on the first day of the month following the date the report becomes effective in accordance with this section.
g. A determination that all rules that the agency determined to be necessary with substantive public interest or that the Commission designated as necessary with public interest as provided in this subdivision shall be readopted as though the rules were new rules in accordance with this Article.

(3) Step 3: The final determination report shall not become effective until the agency has consulted with the Committee. The determinations contained in the report pursuant to sub-subdivisions e., f., and g. of subdivision (2) of this subsection shall become effective on the date the report is reviewed by the Committee. If the Committee does not hold a meeting to hear the consultation required by this subdivision within 60 days of receipt of the final determination report, the consultation requirement is deemed satisfied, and the determinations contained in the report become effective on the 61st day following the date the Committee received the report. If the Committee disagrees with a determination regarding a specific rule contained in the report, the Committee may recommend that the General Assembly direct the agency to conduct a review of the specific rule in accordance with this section in the next year following the consultation.

(d) Timetable. – The Commission shall establish a schedule for the review and readoption of existing rules in accordance with this section on a decennial basis as follows:

(1) With regard to the review process, the Commission shall assign each Title of the Administrative Code a date by which the review required by this section must be completed. In establishing the schedule, the Commission shall consider the scope and complexity of rules subject to this section and the resources required to conduct the review required by this section. The Commission shall have broad authority to modify the schedule and extend the time for review in appropriate circumstances. Except as provided in subsections (e) and (f) of this section, if the agency fails to conduct the review by the date set by the Commission, the rules contained in that Title

which have not been reviewed will expire. The Commission shall report to the Committee any agency that fails to conduct the review. The Commission may exempt rules that have been adopted or amended within the previous 10 years from the review required by this section. However, any rule exempted on this basis must be reviewed in accordance with this section no more than 10 years following the last time the rule was amended.

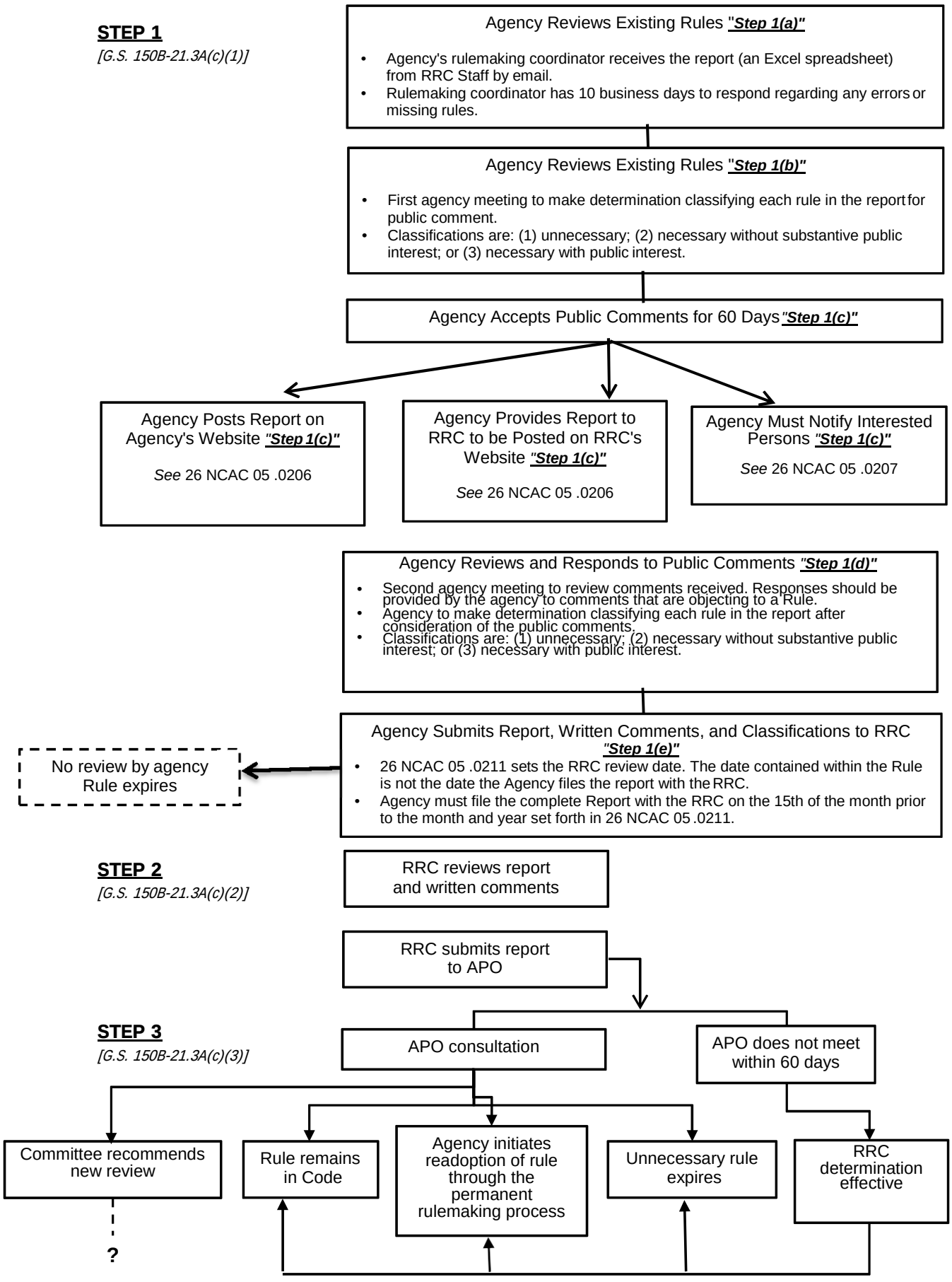
(2) With regard to the readoption of rules as required by sub-subdivision (c)(2)g. of this section, once the final determination report becomes effective, the Commission shall establish a date by which the agency must readopt the rules. The Commission shall consult with the agency and shall consider the agency's rule-making priorities in establishing the readoption date. The agency may amend a rule as part of the readoption process. If a rule is readopted without substantive change or if the rule is amended to impose a less stringent burden on regulated persons, the agency is not required to prepare a fiscal note as provided by G.S. 150B-21.4.

(e) Rules to Conform to or Implement Federal Law. – Rules adopted to conform to or implement federal law shall not expire as provided by this section. The Commission shall report annually to the Committee on any rules that do not expire pursuant to this subsection.

(e1) Rules to Protect Inchoate or Accrued Rights of Retirement Systems Members. – Rules deemed by the Boards of Trustees established under G.S. 128-28 and G.S. 135-6 to protect inchoate or accrued rights of members of the Retirement Systems administered by the State Treasurer shall not expire as provided by this section. The Commission shall report annually to the Committee on any rules that do not expire pursuant to this subsection.

(f) Other Reviews. – Notwithstanding any provision of this section, an agency may subject a rule that it determines to be unnecessary to review under this section at any time by notifying the Commission that it wishes to be placed on the schedule for the current year. The Commission may also subject a rule to review under this section at any time by notifying the agency that the rule has been placed on the schedule for the current year. (2013-413, s. 3(b); 2014-115, s. 17; 2014-120, s. 2; 2015-164, s. 7; 2015-286, s. 1.6(a).)

Periodic Review and Expiration of Existing Rules



Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

October 21, 2016

MEMORANDUM **RS 11-16**

TO: Marine Fisheries Commission

FROM: Kathy Rawls, Fisheries Management Section Chief

SUBJECT: Rule Suspensions

Attached is the temporary rule suspension information for the November 2016 meeting. In accordance with the Division of Marine Fisheries Resource Management Policy Number 2014-2, the Marine Fisheries Commission will vote on any new rule suspensions that have occurred since the last meeting of the commission. No new rule suspensions have occurred since the August 2016 meeting, therefore, no action is necessary at this time. In accordance with the policy the division will provide a verbal reminder of all current rule suspensions at each November meeting of the commission. The current rule suspensions are as follows:

- Continued suspension of North Carolina Marine Fisheries Commission Rule 15A NCAC 03M .0516 Cobia in its entirety for an indefinite period of time. Suspension of this rule allows the division to implement season closures, increase the recreational size limit and decrease the recreational harvest limit for cobia in response to management actions taken by the commission at their May 2016 meeting. This suspension was implemented in Proclamation FF-28-2016.

- Continued suspension of portions of North Carolina Marine Fisheries Commission Rule 15A NCAC 03L .0201 Crab Harvest Restrictions and portions of 03L .203 Crab Dredging for an indefinite period of time. This continued suspension allows the division to implement the blue crab harvest restrictions adopted by the commission in the May 2016 Revision to Amendment 2 of the North Carolina Blue Crab Fishery Management Plan. These suspensions were implemented in Proclamation M-11-2016.

- Continued suspension of portions of North Carolina Marine Fisheries Commission Rule 15A NCAC 03J .0501 Definitions and Standards for Pound Nets and Pound Net Sets for an indefinite period of time. Suspension of portions of this rule allows the division to increase the minimum mesh size of escape panels for flounder pound nets in accordance with Supplement A to Amendment 1 of the North Carolina Southern Flounder Fishery Management Plan. This suspension was implemented in Proclamation M-34-2015

- Continued suspension of portions of North Carolina Marine Fisheries Commission Rule 15A NCAC Shad and 03Q .0107 Special Regulations: Joint Waters for an indefinite period of time. Suspension of portions of these rules allows the division to change the season and creel limit for American shad under the management framework of the North Carolina American Shad Sustainable Fishery Plan. These suspensions were implemented in Proclamation FF-63-2015.

N.C. Marine Fisheries Commission Rule Suspension Update- As of October 28, 2016
(In accordance with Division of Marine Fisheries Resource Management Policy 2014-2: Temporary Rule Suspensions)

New Suspension - No Action Required
No new suspensions have occurred since the commission's August 2016 meeting, therefore, no action is required at this time.

Continuing Suspensions - No Action Required

- **N.C. Marine Fisheries Commission Rule 15A NCAC 03M .0516 COBIA is suspended:**
  (a) It is unlawful to possess cobia less than 33 inches fork length
  (b) It is unlawful to possess more than two cobia per person per day.

Suspension of this rule allows the division to implement season closures, increase the recreational size limit and decrease the recreational harvest limit of cobia in response to management actions taken by the commission at their May 2016 meeting. These changes were implemented in Proclamation FF-28-2016.

- **The following portion of N.C. Marine Fisheries Commission Rule 15A NCAC 03L .0201 CRAB HARVEST RESTRICTIONS is suspended:**
  Sections (a) and (b), which read:
  (a) It is unlawful to possess more than 10 percent by number in any container, male and immature female hard blue crabs less than five inches from tip of spike to tip of spike and to fail to return hard blue crabs not meeting this restriction to the waters from which taken, except the Fisheries Director may, by proclamation authority established in Paragraph (f) of this Rule, further restrict the harvest of blue crabs. All blue crabs not sorted into containers as specified in Paragraph (b) of this Rule shall be deemed hard blue crabs for the purpose of establishing the 10 percent culling tolerance.
  (b) It is unlawful to possess blue crabs less than five inches from tip of spike to tip of spike unless individual crabs are sorted to and placed in separate containers for each of the following categories:
    (1) soft crabs;
    (2) pink and red-line peeler crabs;
    (3) white-line peeler crabs; and
    (4) from March 1 through October 31, male crabs to be used as peeler crab bait.

- **The following portion of N.C. Marine Fisheries Commission Rule 15A NCAC 03L .0203 CRAB DREDGING is suspended:**
  Section (a), which reads:
  (a) It is unlawful to take crabs with dredges except:
    (1) from January 1 through March 1 in the area of Pamlico Sound described in 15A NCAC 03R .0109; and
    (2) incidental to lawful oyster dredging operations in areas not subject to the exception in Subparagraph (a)(1) of this Rule provided the weight of the crabs shall not exceed:
      (A) 50 percent of the total weight of the combined oyster and crab catch; or
      (B) 500 pounds, whichever is less.

Suspension of the above rules relative to crab harvest and dredging allows the division to implement the blue crab harvest restrictions adopted by the Marine Fisheries Commission in the May 2016 Revision to Amendment 2 of the N.C. Blue Crab Fishery Management Plan. These restrictions were implemented in proclamation M-11-2016.

- **The following portion of N.C. Marine Fisheries Commission Rule 15A NCAC 03J .0501 DEFINITIONS AND STANDARDS FOR POUND NETS AND POUND NET SETS is suspended:**
  Section (e)(2), which reads:
  (e) Escape Panels:
  (2) It is unlawful to use flounder pound net sets without four unobstructed escape panels in each pound. The escape panels shall be fastened to the bottom and corner ropes on each wall on the side and back of the pound opposite the heart. The escape panels shall be a minimum mesh size of five and one-half inches, hung on the diamond, and shall be at least six meshes high and eight meshes long.

Suspension of portions of this rule allows the division to increase the minimum mesh size of escape panels for flounder pound nets in accordance with Supplement A to Amendment 1 of the North Carolina Southern Flounder Fishery Management Plan. This suspension was implemented in Proclamation M-34-2015.

- **The following portion of N.C. Marine Fisheries Commission Rule 15A NCAC 03M .0519 SHAD is suspended:**
  Paragraphs (a) and (b) which read:
  (a) It is unlawful to take American shad and hickory shad by any method except hook-and-line from April 15 through December 31.
  (b) It is unlawful to possess more than 10 American shad or hickory shad, in the aggregate, per person per day taken by hook-and-line or for recreational purposes.

- **The following portion of N.C. Marine Fisheries Commission Rule 15A NCAC 03Q .0107 SPECIAL REGULATIONS: JOINT WATERS is suspended:**
  Paragraph (4) which reads**:**
  (4) Shad: It is unlawful to possess more than 10 American shad or hickory shad, in the aggregate per person per day taken by hook-and-line.

Suspension of portions of these rules allows the division to change the season and creel limit of American shad under the management framework of the N.C. American Shad Sustainable Fishery Plan. These suspensions were implemented in Proclamation FF-63-2015.

Director's Report

Atlantic States Marine Fisheries Commission

75th Annual Meeting Summary

Vision: Sustainably Managing Atlantic Coastal Fisheries

75th Annual Meeting
Bar Harbor, ME
October 23 – 27, 2016

Toni Kerns, ISFMP, or
Tina Berger, Communications
For more information, please contact
the identified individual at
703.842.0740

Meeting Summaries, Press Releases and Motions

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ACFHP MELISSA LASER HABITAT CONSERVATION AWARD (OCTOBER 23, 2016)

Summary

Bonnie Bick and Jim Long of the Mattawoman Watershed Society were awarded the Atlantic Coastal Fish Habitat Partnership (ACFHP)'s 2016 Melissa Laser Habitat Conservation Award at the Commission's 75th Annual Meeting Reception on Sunday, October 23rd in Bar Harbor, Maine.

From Left: ACFHP Steering Committee member Dr. Wilson Laney, Award recipient Jim Long, Mrs. and Mr. Laser, Award recipient Bonnie Bick, and Maine Commissioner Patrick Keliher

Over the past two decades this year's awardees have worked tirelessly without financial compensation to protect one of the most important fish breeding grounds in the Chesapeake Bay watershed, Mattawoman Creek. It is used by striped bass, American and hickory Shad, alewife, and blueback herring for spawning and nursery habitat. It is one of the more productive and high quality tributaries to the Bay and is also facing significant development pressure. Their successful efforts to preserve a watershed threatened with conversion to other uses in this southern Maryland stream system are important to maintain the ecological resiliency of the watershed. Their penultimate achievement has been the recent resource-friendly comprehensive growth plan adopted by Charles County. Among other things, this plan recognizes the role of conserving Mattawoman Creek's watershed for anadromous fish – a groundbreaking achievement. This comprehensive growth plan, the blueprint for future growth, opens a new door for managing fisheries in Maryland that, hopefully, will become widespread. They have been tireless volunteers that have greatly aided the Department of Natural Resources by collecting data that otherwise would not exist. In turn, they have used the science generated by these data to defend their beloved watershed.

In addition to the comprehensive growth plan, their accomplishments include protecting more than 1,000 acres along Mattawoman Creek, stopping the proposed Cross County Connector Extension across the watershed's headwaters in Charles County, and encouraging replacement of the road project with a proposed bike path, as well as promoting a 10% impervious surface cap within the watershed, and serving as enthusiastic citizen scientists collecting the critical fish spawning and habitat data necessary to support their efforts. They also attend and testify at countless development hearings.

Bonnie and Jim display tenacity, energy, intelligence, and organizational skills in protecting fish habitat in Mattawoman Creek. Managing inland fish habitat is challenging because these watersheds are under the jurisdiction of local, not state or federal, governments, with which the natural resources management community often do not have sufficient collaboration. The awardees provide a glowing

example of how to achieve significant success through positive influence on local decision-making processes.

The Melissa Laser Fish Habitat Conservation Award is bestowed upon individuals deemed to further the conservation, protection, restoration, and enhancement of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes in a unique or extraordinary manner. The award was established in memory of Dr. Melissa Laser who passed away unexpectedly on April 27, 2010. Melissa was a biologist with the Maine Department of Marine Resources where she worked tirelessly to protect, improve, and restore aquatic ecosystems in Maine and along the entire Atlantic Coast. As an astute strategic thinker and leader, Melissa edited and coordinated the Strategic and Operational Plan for the Restoration of Diadromous and Resident Fishes to the Penobscot River. She coordinated fish passage projects, managed and oversaw the biological field staff for the Maine Western Region, and was the Bureau of Sea Run Fisheries and Habitat Program lead for habitat restoration studies and projects. She was also an effective champion for Atlantic salmon, directing and coordinating Endangered Species Act-related actions pertaining to the species. Melissa brought her smiling dedication and enthusiasm to the Commission's Habitat Committee and ACFHP's Steering Committee, catalyzed by ASMFC in 2006.

Dr. Wilson Laney, ACFHP Steering Committee member and previous award recipient, and Patrick Keliher, Annual Meeting host and Melissa's former boss, presented the award, and Melissa's family were in attendance to share in the celebration as well.

For more information, please contact Dr. Lisa Havel, ACFHP Coordinator, at lhavel@asmfc.org or 703.842.0740.

SPINY DOGFISH MANAGEMENT BOARD (OCTOBER 24, 2016)

Press Release

ASMFC Spiny Dogfish Board Approves 2017 Fishery Specifications

Bar Harbor, ME – The Commission's Spiny Dogfish Management Board approved a spiny dogfish commercial quota of 39,099,717 pounds for the 2017 fishing season (May 1, 2017 – April 30, 2018). The Board maintained a 6,000 pound commercial trip limit in state waters (0-3 miles from shore) in the northern region (Maine through Connecticut). States in the southern region (New York to North Carolina) have the ability to set state-specific trip limits based on the needs of their fisheries.

	Northern Region (ME-CT)	NY	NJ	DE	MD	VA	NC
Possession Limit	6,000	To be specified by the individual southern region states					
Allocation	**58%**	**2.707%**	**7.644%**	**0.896%**	**5.92%**	**10.795%**	**14.036%**
2017 Quota	22,677,836	1,058,429	2,988,782	350,333	2,314,703	4,220,814	5,488,036

The quota and northern region trip limit are consistent with the measures recommended to NOAA Fisheries by the Mid-Atlantic Fishery Management Council. Although the spiny dogfish commercial quota represents a slight decrease from the previous year, the 2015 assessment update projects spawning stock biomass to increase starting in 2019. Therefore, the commercial quota is expected to increase in the next specifications cycle if the projection is supported by catches in the Northeast Fisheries Science Center spring survey.

The 2017 spiny dogfish commercial quota allocations (in pounds) for the northern region and the states of New York through North Carolina are described below. Any overages from the 2016 season will be deducted from that region's or state's 2017 quota allocation.

For more information, please contact Max Appelman, Fishery Management Plan Coordinator, at mappelman@asmfc.org or 703.842.0740.

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PR16-28

Motions

Move to adopt the 2017 commercial quota of 39,099,717 pounds, which is consistent with the commercial quota recommended by the Mid-Atlantic Fishery Management Council to NOAA Fisheries, and a 6,000 pound trip limit for the Northern Region.
Motion made by Mr. Stockwell and seconded by Mr. Reid. Roll call vote. Motion passes unanimously.

Move to approve the 2016 Spiny Dogfish FMP Review and state compliance, and *de minimis* status for Delaware in 2016.
Motion adopted by consensus.

COASTAL SHARKS MANAGEMENT BOARD (OCTOBER 24, 2016)

Meeting Summary

The Coastal Sharks Management Board received an overview from NOAA Fisheries Highly Migratory Species (HMS) Management Division on four proposed rules. Amendment 5b to the 2006 Consolidated HMS Fishery Management Plan (FMP) proposes a range of management measures to prevent overfishing and rebuild overfished shark stocks. These measures are based on recent assessments that determined dusky sharks are overfished and experiencing overfishing. NOAA Fisheries is accepting public comment through December 22, 2016. If alternative management measures are implemented by HMS, they will apply to commercial fishermen with HMS permits and recreational fishing in federal waters. The Coastal Sharks Board has implemented some management measures that are complementary to the federal FMP, therefore these alternatives may be considered by the Board at a future date. Interested states should forward their comments to staff by November 15. If comments are received, they will be compiled and sent in the form of a letter to NOAA Fisheries HMS as part of public comment.

The Board reviewed the Draft Environmental Assessment for Amendment 10 to the HMS FMP on essential fish habitat (EFH). As proposed it would update and revise existing HMS EFH, modify existing Habitat Areas of Particular Concern (HAPCs) or designate new HAPCs for bluefin tuna and sandbar, lemon, and sand tiger sharks, and analyze fishing and non-fishing impacts on EFH since 2009. Draft

Amendment 10 does not propose implementing regulations. States are encouraged to submit individual public comments to NOAA Fisheries through December 22, 2016.

A proposed rule that would establish a commercial retention limit (CRL) for blacknose sharks was presented; the HMS preferred alternative would establish a CRL of 8 blacknose sharks/trip. The public comment period is closed. If the preferred alternative is implemented in the final rule then the Coastal Sharks Board can consider establishing an 8 blacknose shark/trip possession limit for commercial fishermen with state licenses at a future Board meeting.

The proposed specifications for the 2017 Atlantic shark fishing season were presented. Similar to the 2016 fishing season, NOAA Fisheries is proposing a January 1 opening date for all shark management groups and a variable CRL for sharks in the aggregated large coastal and hammerhead management groups. The Board will set the 2017 coastal shark specifications via an email vote after the final rule is published.

For more information, please contact Ashton Harp, Fishery Management Plan Coordinator, at aharp@asmfc.org or 703.842.0740.

Motions

Move to approve the 2017 coastal sharks specifications via an email vote after NOAA Fisheries publishes the final rule for the 2017 Atlantic Shark Commercial Fishing season.
Motion made by Mr. Baum, seconded by Mr. O'Reilly. Motion carries without objection.

Move to approve Roger Wooleyhan Jr. and Charles Witek as members of the Coastal Sharks Advisory Panel.
Motion by Mr. Luisi and seconded by Mr. Heins. Motion carries without objection.

ATLANTIC STRIPED BASS MANAGEMENT BOARD (OCTOBER 24, 2016)

Meeting Summary

The Atlantic Striped Bass Management Board (Board) met to review the Technical Committee's (TC) report evaluating the variables affecting the harvest in 2015 under Addendum IV, and to review the 2016 stock assessment update.

The Atlantic Striped Bass Plan Review Team (PRT) conducted a preliminary review on the performance of the Addendum IV measures during the annual FMP review process to determine if the target reductions in harvest had been achieved in each region and sector. The PRT review indicated that realized harvest from the commercial fisheries, and on a coastwide scale, was very close to those estimated by the TC. However, 2015 harvest from the recreational fisheries in the ocean and in the Chesapeake Bay diverged significantly from those estimated by the TC. At its August meeting, the Board tasked the TC to investigate a number of variables for the recreational fisheries to explain the large differences in the realized harvest in 2015 compared to those predicted by the TC. The TC concluded that changes in effort and changes in the size and age structure of the population, and the distribution of the 2011 year class along the coast relative to the Chesapeake Bay were the most significant variables contributing to the

large differences in the realized harvest compared to those estimated by the TC. Effort (i.e., number of trips targeting striped bass) in the Chesapeake Bay recreational fishery increased by 50% in 2015 compared to the reference period, while effort in the ocean recreational fisheries decreased by 27%. Additionally, age and length structure of the recreational catch data suggest that the large 2011 year class was nearly fully recruited to the Chesapeake Bay fisheries, but only partially available to the ocean fisheries. In other words, not only are these fish just starting to migrate into the ocean populations, but a large proportion of fish from this year class are of harvestable size in the Bay (i.e., greater than or equal to 20" total length).

The 2016 stock assessment update results indicated that although the Atlantic striped bass stock is not overfished and overfishing is not occurring, spawning stock biomass (SSB) continues to decline towards the threshold level. SSB in 2015 was estimated at 58,853 metric tons with a 40% probability of being below the SSB threshold level of 57,626 metric tons. Fishing mortality (F) in 2015 was estimated at 0.16 which is below the threshold and the target levels (0.22 and 0.18, respectively). A primary goal of Addendum IV was to bring F back down to the target level. Since F was estimated to be below the target in 2015, the Board tasked the TC to determine the percent liberalization in harvest that would increase F from the 2015 point estimate of 0.16 to the target level of 0.18. As part of this tasking, and because Addendum IV continues to set the regulatory program for Atlantic striped bass (i.e., commercial quotas, and recreational size and bag limits), the TC will provide a recommendation to the Board on the preferred dataset using updated length-frequency data for states to use when preparing conservation equivalency proposals.

For more information please contact Max Appelman, Fishery Management Plan Coordinator, at mappelman@asmfc.org or 703.842.0740.

Motions

Move to task the Striped Bass Technical Committee to 1) determine the percent liberalization in harvest that would increase fishing mortality (F) from the 2015 terminal year estimate of 0.16 to the FMP target F of 0.18, and 2) to recommend a preferred dataset using updated length frequency data for states to use when preparing conservation equivalency proposals for recreational regulations. Motion made by Mr. Luisi and seconded by Mr. Clark. Motion carries (8 in favor, 6 opposed).

EXECUTIVE COMMITTEE (OCTOBER 24, 2016)

Meeting Summary

The Executive Committee reviewed the FY16 Audit and deferred approval until the February meeting to allow staff additional time to resolve some issues identified in the draft audit. The committee reviewed the updated Conservation Equivalency guidance document and recommended it for approval by the ISFMP Policy Board. They reviewed an updated draft of the ASMFC standard meeting practices document and provided additional editorial feedback. This document will be considered for approval by the policy board at the February 2017 meeting. The Executive Committee discussed a number of Human Resources issues associated with having multiple ASMFC employees housed in our member states. The Committee agreed to include an ACCSP goal in the Commission's annual action plan. Under other business, the committee discussed pending MRIP economic surveys. They agreed to engage MRIP staff on to determine if there is a more appropriate way to collect this information.

For more information, please contact Laura Leach, Director of Finance and Administration, at lleach@asmfc.org or 703.842.0740.

LAW ENFORCEMENT COMMITTEE (OCTOBER 24 & 25, 2016)

Meeting Summary

The Law Enforcement Committee (LEC) met over two days during the 2016 annual meeting of the Atlantic States Marine Fisheries Commission (ASMFC) in Bar Harbor, Maine. The LEC welcomed new LEC member Grant Burton representing Florida.

Species Issues

American Lobster — Megan Ware of ASMFC staff briefed the LEC on development of an addendum to address the Southern New England stock. One issue of concern was the possible increase in regulatory complexity in offshore harvest areas, given the recent work of a subcommittee to address existing enforcement limitations in the offshore trap fishery. The LEC will review and comment on proposed management measures as they are developed.

The **Lobster Enforcement Subcommittee** also reported on its work to identify and recommend enhancements to existing enforcement efforts for the lobster trap fishery. The subcommittee was formed to proactively address enforcement needs in response to trap limitation programs and increasing activity in more remote waters. The LEC reviewed language in a draft letter from the ASMFC requesting that NOAA Office of Law Enforcement increase its priority ranking for American lobster work. The ranking is important to providing federal reimbursement to states for enforcement activities targeting the fishery. The NOAA representative to the LEC confirmed that it is timely to submit such a letter now in advance of planning for 2018-2023 priorities. The LEC continued a discussion of the limitations of enforcement vessels for reaching and checking offshore lobster trap lines. Where enforcement actions have occurred, untagged traps are being discovered. The United States Coast Guard District 5 considers American lobster a priority species for their work, but they are not set up to pull and check traps on their vessels. In addition to increased federal funding to support enforcement efforts, the LEC concluded that the next best area to focus on would be the comprehensive establishment of a vessel monitoring system (VMS) for the lobster fishery, with design characteristics suitable for law enforcement uses.

Jonah Crab — Megan Ware provided information on a proposed addendum to address claw harvest and bycatch standards. After reviewing management options the LEC expressed its continued support for a whole-crab-only harvest. Given the direction of the ASMFC to allow claw harvest, the LEC discussed one complication. If a minimum claw size is specified along with a whole-crab minimum size, confusion in the markets could ensue if claws removed from legal whole crabs do not meet the minimum claw size. This confusion would lead to greater difficulty in enforcing any minimum size limit for claw harvest. The LEC also supported reintroducing an option to allow a 5-gallon bucket volume allowance for harvesting crabs for personal consumption as a relatively straightforward means of enforcing a bag limit. The LEC opposes a bycatch definition based on percent composition as difficult to manage and monitor by both the fisherman and a checking officer. They are also difficult cases to successfully prosecute. The ASMFC's *Guidelines for Resource Managers on the Enforceability of Fishery Management Measures,*

Second Ed. 2015 ranked bycatch limits based on percent composition the 3rd lowest of 26 management measures included in the guidelines.

American Eel — Kirby Rootes-Murdy reviewed the modifications to the eel aquaculture plan from the state of North Carolina. The LEC discussed the removal of warrantless search provisions that were part of the 2016 plan. Despite this change, the LEC reaffirmed its support of the proposed aquaculture operation. Recognizing that the North Carolina General Assembly has provided statutory direction to disallow such warrantless searches, the LEC felt that the remaining general permit conditions and limitations of the proposal, along with its limited application to a single Permittee, would be sufficient to monitor and ensure compliance. On a broader level, the LEC established that under nearly all situations with which it is familiar, issuance of permits or licenses allows for such searches and is considered a vital component of enforcement to ensure compliance with regulations and harvest limits. The LEC is concerned about the possible precedent of removing what is considered an effective compliance tool; namely the ability to conduct warrantless inspections and searches directly related to the actions of permitted or licensed individuals, and where such inspections or searches are made a condition of the permit or license. That ability was a primary consideration of the LEC in rating "Permits" among the most enforceable management measures in its *Guidelines for Resource Managers on the Enforceability of Fishery Management Measures, Second Ed. 2015.*

Summer Flounder — Kirby Rootes-Murdy requested input from the LEC on current state safe harbor provisions and the related idea of landings flexibility for summer flounder that is being considered in the ongoing development of a summer flounder 'Comprehensive' amendment. Members pointed out that these items should be understood or seen as two separate issues. For the first issue, Safe Harbor requests are essential to address safety-at-sea concerns, and should be kept separate from management considerations of multi-state landings allowances and quota transfers. Members pointed out recent increases in safe harbor requests in the summer flounder fishery, often from the same individuals or vessels. It is a concern that safe harbor requests may be abused in the interest of off-loading catches for business or convenience purposes. Several states have now adopted policies for handling legitimate safe-harbor requests, and the LEC supports development of a single, standardized policy that all states could adopt. On the second issue as states move towards more and more management policies that allow flexibility in landings (e.g. aggregate, dual-landings permits, out-of-state) the result is inevitably less and less enforceability. The LEC expressed concern that abuse of safe harbor requests is already leading to harvest of flounder that are not accounted for, or ultimately become commercial discards. It was highlighted that this byproduct of abuses of safe harbor may be contributing to fishing mortality that is currently accounted for in a limited capacity, and may have implications on recent stock assessment findings (2015 and 2016 Summer Flounder Stock Assessment Update). Moving forward, Kirby will work to get information on active/in-active permits and dual-state permit holders at the state level to better understand the number of individuals or vessels that may benefit from 'landings flexibility', and share this information with the LEC as soon as possible. Kirby will likely schedule a call with the LEC prior to the joint ASMFC and MAFMC Meeting in December 2016.

Other Issues

The LEC reviewed proposed **2017 Action Plan** items and confirmed that its work will address the tasks outlined in Goal 3 of the plan.

Members shared information on their states' participation levels in the **Interstate Wildlife Violators Compact.** In most cases adherence to the compact includes recognition of another state's action to suspend or revoke licenses of a resource violator, and an equivalent suspension in the cooperating state. Members discussed problems of sharing data on license suspensions, and inconsistencies among the states in how provisions of the compact may be applied. While the language of the compact is general in nature, some states do not apply it to commercial or fisheries violations. The LEC Coordinator will review and compile information for more in-depth review by the committee.

Dan McKiernan requested information from the LEC on state regulations or statutes that address **combining recreational and commercial landings** on the same trip. Members provided general information from their states, which varied widely in approaches. Mark Robson was directed to forward additional details of state regulations for Massachusetts' use when those are provided.

The work of the **Aerial Enforcement Subcommittee** was reported to the LEC. There are two primary issues. First, the current *Enforceability Guidelines* ratings of management measures include separate ratings for "Aerial Enforcement". The LEC has concluded that these ratings are not justified as a stand-alone category. Rather, as with vessels, vehicles and other equipment, aerial resources are part of the suite of tools that enable at-sea and dockside enforcement. The LEC recommends that this category be removed from the rating system, conduct an updated survey with the current LEC members, and amend the guidelines document. The second issue relates to funding of aerial enforcement work by NOAA through joint enforcement agreements (JEAs) with the states. NOAA OLE reported on changes underway that will guide how state enforcement activities will be reimbursed through JEAs.

Commissioner Dennis Abbott presented information on a fund-raising **effort to honor Chris Schoppmeyer** for his years of dedication to the Town of Newmarket, NH, and for his distinguished career in conservation enforcement. Funds will be used to secure land for a local park dedicated to Mr. Schoppmeyer.

Members shared information from their respective agencies on recent **staffing and training activities.** Several LEC members reported on the high-value training offered by the National Association of Conservation Law Enforcement Chiefs Leadership Academy. The LEC currently has two members of the Academy steering team and three additional recent graduates.

For more information, please contact Mark Robson, LEC Coordinator, at markrobson2015@outlook.com.

SOUTH ATLANTIC STATE/FEDERAL FISHERIES MANAGEMENT BOARD (OCTOBER 25, 2016)

Press Release

ASMFC South Atlantic Board Approves Cobia PID for Public Comment

Bar Harbor, ME – The Commission's South Atlantic State/Federal Fisheries Management Plan approved for public comment the Public Information Document (PID) for the Interstate Fishery Management Plan (FMP) for Cobia. As the first step in the FMP development process, the PID provides stakeholders with an opportunity to inform the Commission about changes observed in the

fishery and provide feedback on potential management measures as well as any additional issues that should be included in the Draft FMP. Specifically, the PID seeks comment on the management unit; goals and objectives of the plan; commercial and recreational measures; coastwide, regional or state-by-state measures; and other issues.

This action responds to a request by the South Atlantic Fishery Management Council (SAFMC) for the Commission to consider joint or complementary management of the resource in light of the significant overage of the 2015 recreational annual catch limit (ACL) and the impact of those overages to state management. Further, during most recent years, a majority of recreational landings of cobia along the Atlantic coast occurs in state waters. The Commission considered this request in August and agreed to move forward with the development of a complementary FMP.

Widely distributed throughout the western Atlantic and Gulf of Mexico, cobia are managed as two distinct groups – the Gulf Migratory Group and the Atlantic Migratory Group. The Atlantic Migratory Group, which range from New York to Georgia, is managed by the SAFMC. The east coast of Florida falls under the Gulf Migratory Group. The SAFMC manages the east coast of Florida sub-ACL which is set by the Gulf of Mexico Fishery Management Council. Recreational landings of the Atlantic Migratory Group in 2015 were approximately 1.5 million pounds, 145% over the ACL, resulting in a June 20, 2016 closure of the fishery by NOAA Fisheries. Commercial cobia landings in 2015 were 83,148 pounds, 38% over the ACL. Late landings reports in 2015 precluded a timely closure of the commercial fishery.

Concerns were expressed by some states whose recreational seasons would have been significantly reduced by federal waters closure due to the 2015 quota overage. Instead of following the federal closure, several states developed alternate management strategies to reduce economic impacts to their state fisheries which resulted in differing regulations for federal and state water fishing. An intent of the complementary Cobia FMP is to provide the states the flexibility to respond to changes in the fishery and stock that meet their state fisheries needs without impacting federal fishermen while meeting the goals and objectives of the FMP.

The PID will be available on the Commission website early next week under Public Input (http://www.asmfc.org/about-us/public-input). It is anticipated states from Delaware through Florida will be conducting hearings over the next couple of months. The details of those hearings will be released in a subsequent press release. For more information, please contact Louis Daniel at ldaniel@asmfc.org or 252-342-1478.

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PR16-29

Meeting Summary

The South Atlantic State/Federal Fisheries Management Board met to review the Red Drum Technical Committee (TC) and Stock Assessment Subcommittee (SAS) to investigation of the appropriateness of current biological reference points and development of an overfished reference point, investigate the feasibility of an F-based reference point that looks strictly at the harvest of juvenile red drum, evaluate how red drum life history and current regulations may limit the validity of an age-based model, and provide a recommendation on how to proceed with the Stock Synthesis III (SS3) model. The Red Drum

TC and SAS jointly constructed a report recommending the use of spawning potential ratios as appropriate reference points for management use. The TC and SAS do not recommend using a reference point for overfished status because of difficulties in reliably estimating spawning stock biomass for this stock. The TC and SAS do not recommend using a juvenile fishing mortality reference point for management because this reference point would require information on a stock-recruit relationship (which is currently unreliable), would not account for adult mortality, and would not be able to reliably account for recruitment variability. The TC and SAS recommended the use of an age-structured model and did not recommend SS3 as the modeling framework at this time due to current data limitations. The TC and SAS recommended using a statistical catch-at-age model (consistent with that used in SEDAR 18), with the addition and continuation of current survey indices, as the base model for the stock assessment.

The Board discussed the timing and ways in which the red drum stock assessment could be completed. Currently, only data through 2013 is being used in the assessment model. The decision before the Board was to complete the ongoing assessment using the currently available data and plan to update the assessment soon after its completion or to delay the completion of the assessment until data for more recent years could be compiled and incorporated into the stock assessment data set. The Board decided to have the TC/SAS complete the ongoing assessment through 2013, with the intent of updating with data through 2015 or 2016 soon after the assessment's completion.

Lastly, the Board approved FMP Reviews, State Compliance Reports, and *de minimis* statuses where applicable for black drum, Spanish mackerel, and spotted seatrout.

For more information, please contact Michael Schmidtke, Fishery Management Plan Coordinator, at mscmidtke@asmfc.org or 703.842.0740.

Motions

Move to accept the Draft Cobia FMP Public Information Document for public comment as amended.
Motion made by Mr. Boyles and seconded by Ms. Fegley. Motion passes unanimously.

Move to accept the FMP Review and compliance reports for the black drum 2014 and 2015 fishing years.
Motion made by Dr. Rhodes and seconded by Dr. Laney. Motion passes unanimously.

Move to approve the FMP Review and compliance reports for the Spanish mackerel 2015 fishing year, approve *de minimis* status for Georgia, New Jersey, and Delaware.
Motion made by Dr. Rhodes and seconded by Mr. Clark. Motion passes unanimously.

Move to accept the FMP Review and compliance reports for the spotted seatrout 2015 fishing year, and approve *de minimis* status for New Jersey, and Delaware.
Motion made by Mr. Boyles and seconded by Mr. Geer. Motion passes unanimously.

Move to accept Bill Parker, Glenn Ulrich, Lee Southward, and Aaron Kelly to the South Atlantic Advisory Panel.
Motion made by Dr. Rhodes and seconded by Mr. Batsavage. Motion passes unanimously.

TAUTOG MANAGEMENT BOARD (OCTOBER 25, 2016)

Meeting Summary

The Tautog Management Board reviewed the regional and coastwide assessment update results. The update includes data through 2015 for all regions which include Massachusetts-Rhode Island (MA-RI), Long Island Sound (LIS), New Jersey-New York Bight (NJ-NYB) and Delaware-Maryland-Virginia (DMV). See the table for regional stock status.

Stock Region	Maximum Sustainable Yield (MSY) or Spawning Potential Ratio (SPR)	Spawning Stock Biomass (SSB) Target (mt)	SSB Threshold (mt)	SSB 2015 (mt)	Fishing Mortality (F) Target	F Threshold	F 3-year Avg (2013-15)	Stock Status
MA-RI	MSY	3,631	2,723	2,196	0.14	0.28	0.23	Overfished, Overfishing not occurring
	SPR	2,684	2,004	2,196	0.28	0.49	0.23	Stock not overfished, Overfishing not occurring
LIS	MSY	2,865	2,148	1,603	0.28	0.49	0.51	Overfished, Overfishing
	SPR	2,980	2,238	1,603	0.27	0.46	0.51	Overfished, Overfishing
NJ-NYB	SPR	3,154	2,351	1,809	0.20	0.34	0.54	Overfished, Overfishing
DMV	SPR	1,919	1,447	621	0.16	0.24	0.16	Overfished, Overfishing not occurring
Coastwide	MSY	14,944	11,208	6,014	0.17	0.24	0.38	Overfished, Overfishing
	SPR	9,448	7,091	6,014	0.25	0.43	0.38	Overfished, Overfishing not occurring

The Board provided the Plan Development Team with guidance on Draft Amendment 1 management options. Specifically, the Board discussed the following issues: reference points, projections to reduce fishing mortality, rebuilding plan, commercial and recreational harvest reductions, commercial quota, commercial harvest tagging program and management within a region. The Board elected to create regional working groups that will meet prior to the February 2017 Board meeting to further discuss the issues and the best approach relative to the region. Feedback from the working groups will be presented at the February 2017 Board meeting and Draft Amendment 1 for public comment will be presented at the May 2017 Board meeting.

The Board received an update on the tautog tagging trial that is underway. The research team will prepare a project report after the trial has concluded. It will be presented to the Law Enforcement Sub-Committee in the fall and to the Board at the February 2017 meeting.

For more information, please contact Ashton Harp, Fishery Management Plan Coordinator, at aharp@asmfc.org or 703.842.0740.

Motions
No motions made.

SUMMER FLOUNDER, SCUP AND BLACK SEA BASS MANAGEMENT BOARD (OCTOBER 25, 2016)

Press Release

ASMFC Summer Flounder Board Initiates Draft Addendum for Alternative Management Options for 2017 Recreational Fishery

Bar Harbor, ME – The Commission's Summer Flounder, Scup and Black Sea Bass Management Board initiated development of Draft Addendum XXVIII to the Summer Flounder Fishery Management Plan (FMP) to consider alternative management approaches, including regional options, for the 2017 recreational summer flounder fishery. The Draft Addendum will have options which are designed to achieve the 2017 recreational harvest limit (RHL).

Changes in summer flounder distribution, abundance and availability created problems under the static state-by-state allocations, with overages often occurring. In response, states would implement regulations to reduce harvest, resulting in differing regulations between neighboring states. In 2014, the Board shifted away from traditional state-by-state allocations to a regional approach for managing summer flounder recreational fisheries. A benefit of the regional approach is it provides the states the flexibility to temporarily share allocations. The intent is to set regulations that account for shifting distribution, abundance and availability while providing stability and greater regulatory consistency among neighboring states as well as individual states in achieving but not exceeding the coastwide RHL.

In August, the Board and Mid-Atlantic Fishery Management Council (Council) approved a 30% reduction in the 2017 coastwide RHL relative to 2016. This was in response the 2016 Stock Assessment Update which found fishing mortality was higher in recent years and population estimates were lower than previously projected.

The Draft Addendum will be presented to the Board for its consideration and approval for public comment at its joint meeting with the Council in December in Baltimore, Maryland. At that meeting, the Board and Council will also consider extending ad-hoc regional approaches for 2017 black sea bass and scup recreational management in state waters. The Board and Council are scheduled to review the Black Sea Bass Stock Assessment Report and Peer Review Report and consider possible management responses at their joint meeting in February 2017 in Kitty Hawk, North Carolina.

For more information, please contact Kirby Rootes-Murdy, Senior Fishery Management Plan Coordinator, at krootes-murdy@asmfc.org or 703.842.0740.

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PR15-36

Motions

Move to initiate an addendum to consider adaptive management, including regional approaches, for the 2017 summer flounder recreational fishery.

Motion made by Mr. Clark and seconded by Mr. Simpson. Motion passes (11 in favor, 1 opposed).

SHAD AND RIVER HERRING MANAGEMENT BOARD (OCTOBER 25, 2016)

Meeting Summary

The Shad and River Herring Management Board met to consider approval of Massachusetts's Nemasket River Sustainable Fishery Management Plan for River Herring. The Massachusetts Division of Marine Fisheries developed the plan in partnership with the Middleborough-Lakeville Herring Fishery Commission. The proposed management measures include an allowance of unlimited local permits (residents of the towns of Middleborough and Lakeville) and restricts the non-resident permits to 250 per year. It also restricts the harvest period to 3 days of fishing per week over 5 weeks and a weekly catch limit of 20 fish per person. The primary sustainability measure to monitor run status is the ongoing run count. Harvest will be capped at 10% of the time series mean (TSM) and recalculated each year. Action thresholds such as, exceeding the catch cap or a run count that is below the 25th percentile, will trigger management action. Potential management responses include an allowable harvest reduction from 10% to 5% of the TSM or a three-year closure (refer to the SFMP for a complete overview of the sustainability measures). The Technical Committee reviewed the Nemasket River Sustainable Fishery Management Plan and had no critiques. The Board approved the Nemasket River Sustainable Fishery Management Plan for river herring.

The Board reviewed a timetable for existing sustainable fishery management plans to be updated in 2017. Three plans will be reviewed at the February meeting (2 river herring and 1 shad). Eight plans will be reviewed at the May meeting (2 river herring and 6 shad).

The Board received an update on the Mid-Atlantic Fishery Management Council's (Council) decision regarding shad and river herring management. In October the Council determined management of shad and river herring through a Council fishery management plan is not warranted. The Council will continue to use catch caps to incentivize harvesters to reduce shad and river herring bycatch.

For more information, please contact Ashton Harp, Fishery Management Plan Coordinator, at aharp@asmfc.org or 703.842.0740.

Motions

Move to approve the Nemasket River, Massachusetts Sustainable Fishery Management Plan for river herring.

Motion made by Mr. Adler and seconded by Mr. Simpson. Motion passes unanimously.

HORSESHOE CRAB MANAGEMENT BOARD (OCTOBER 26, 2016)

Press Release

ASMFC Horseshoe Crab Board Sets 2017 Specifications for Horseshoe Crabs of Delaware Bay Origin

Bar Harbor, ME – The Commission's Horseshoe Crab Management Board approved the harvest specifications for horseshoe crabs of Delaware Bay origin. Under the Adaptive Resource Management (ARM) Framework, the Board set a harvest limit of 500,000 Delaware Bay male horseshoe crabs and zero female horseshoe crabs for the 2017 season. Based on the allocation mechanism established in Addendum VII, the following quotas were set for the states of New Jersey, Delaware, Maryland and Virginia, which harvest horseshoe crabs of Delaware Bay origin:

	Delaware Bay Origin Horseshoe Crab Quota (no. of crabs)	Total Quota**
State	**Male Only**	**Male Only**
Delaware	162,136	162,136
New Jersey	162,136	162,136
Maryland	141,112	255,980
Virginia*	34,615	81,331

*Virginia harvest refers to harvest east of the COLREGS line only

** Total male harvest includes crabs which are not of Delaware Bay origin.

The Board chose a harvest package based on the Technical Committee and ARM Subcommittee recommendation. The ARM Framework, established through Addendum VII, incorporates both shorebird and horseshoe crab abundance levels to set optimized harvest levels for horseshoe crabs of Delaware Bay origin. Previously, the horseshoe crab abundance estimate was based on data from the Benthic Trawl Survey conducted by Virginia Polytechnic Institute. However, due to a lack of funding, the Benthic Trawl Survey has not been conducted in recent years. Therefore, a composite index of the Delaware Trawl Survey, New Jersey Delaware Bay Trawl Survey, and New Jersey Ocean Trawl Survey was used instead. The Benthic Trawl Survey has been funded for 2016 and is currently underway. Funding for future years is being explored.

Given the upcoming benchmark stock assessment in 2018 and the potential for management changes resulting from the assessment, the Board postponed any further action of Draft Addendum VIII until after the assessment and peer review. In preparation for the assessment, the Horseshoe Crab Technical Committee, Delaware Bay Ecosystem Technical Committee, and the ARM Subcommittee emphasized the need for information on sex-specific mortality of horseshoe crabs from the time of collection to release by biomedical bleeding facilities. Further, the committees recommended the states conduct surveys of eel and whelk fishermen to gain information on current baiting practices for these fisheries. The states agreed to work on both issues with its biomedical industries and fishermen. Results of these surveys are expected to be made available to the Board in May 2017.

For more information, please contact Michael Schmidtke, FMP Coordinator, at 703.842.0740 or mschmidtke@asmfc.org.

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PR16-31

Motions

Move to postpone development of Draft Addendum VIII until after the 2018 Horseshoe Crab Benchmark Stock Assessment has been completed.
Motion made by Mr. Luisi and seconded by Mr. Miller. Motion passes (15 in favor).

Move to select harvest package 3 for 2017 horseshoe crab harvest in Delaware Bay.
Motion made by Mr. Luisi and seconded by Mr. Michels. Motion carries without objection (Roll Call Vote: In favor - MA, RI, CT, NY, NJ, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS).

Move to accept the Horseshoe Crab 2016 FMP Review and state compliance reports, and approve *de minimis* requests for the Potomac River Fisheries Commission, South Carolina, Georgia, and Florida.
Motion made by Mr. Boyles and seconded by Mr. Adler. Motion is adopted unanimously.

Move that the Board approve the request to transfer quota (1,250 crabs) from Georgia to North Carolina.
Motion made by Dr. Duval seconded by Mr. Geer. Motion is adopted unanimously.

ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM COORDINATING COUNCIL (OCTOBER 26, 2016)

Meeting Summary

The ACCSP Coordinating Council met to receive Program and Committee Updates, an overview presentation on "The Universe of Electronic Reporting Efforts on the Atlantic Coast", take Final Action on the FY17 funding distribution and approval of the Addendum to the Memorandum of Understanding and the Governance Transition Document. Both the Chair and the Vice-chair requested that ACCSP take an opportunity to give a presentation of the "Universe of Electronic Reporting on the Atlantic Coast". This presentation encompassed the status of reporting whether electronic or paper, of dealers, commercial fisheries and for-hire fisheries for both federal and state reporting requirements. This presentation will likely be used to discuss the electronic reporting status on the Atlantic Coast for external ACCSP presentations such as at the regional councils. The Council took final action and approved the consensus recommendation of the Advisory and Operations Committee to fully fund all Maintenance proposals, fully fund the MA DMF sea bass aging and the GA DNR trip ticket new proposals and partially fund the SEFSC snapper-grouper observer new proposal. If additional funds are available the ACCSP Leadership Team will meet to determine the additional allocation. The Council also took final action and approved the Governance Transition Workgroup's unanimous recommendation to approve the ACCSP Transition Document and MOU Addendum thereby approving the transfer of ACCSP from an independent program to a program of the ASMFC.

Finally, under Other Business Mark Alexander presented the Council with a concern from SeaPlan (who conducted andocean use pilot using eTrips/Mobile). There are concerns about the collection and retention of vessel location data. Mike Cahall will have a conference call with SeaPlan to determine the best way to proceed. SeaPlan will be closing by the end of the year, thus the outcome will be coordinated through the Leadership Team.

For more information, please contact Mike Cahall, ACCSP Director, at mike.cahall@accsp.org.

Motions

Motion to accept the Operations and Advisory Committee recommendation of funding all maintenance proposals, fund MA DMF sea bass aging and GA DNR trip ticket and partially fund the SEFSC snapper-grouper observer project. If additional funds are available the ACCSP Leadership Team will meet to determine additional allocation.

Motion made by Mr. Stockwell and seconded by Ms. Patterson. Motion carries.

Motion to accept the Governance Transition Workgroup unanimous recommendation of the approval of the ACCSP Transition Document and MOU Addendum thereby approving the transfer of ACCSP from an independent program to a program of the ASMFC.

Motion made by Mr. Heins and seconded by Dr. Duval. Motion carries.

BUSINESS SESSION (OCTOBER 26, 2016)

Meeting Summary

The Business Session reelected Douglas Grout of New Hampshire and James Gilmore of New York as its Chair and Vice-chair, respectively. It also reviewed and approved the 2017 Action Plan, to guide Commission activities throughout the coming year. The approved Action Plan will be available on the Commission website, www.asmfc.org, early next week. For more information, please contact Bob Beal, Executive Director, at rbeal@asmfc.org or 703.842.0740.

Motions

On behalf of the Nominating Committee, I move to nominate Jim Gilmore as the ASMFC Vice Chair for 2017.

Motion made by Mr. Miller. Motion passes unanimously.

Move to add task 1.2.7 to work with the regional fishery management councils and NOAA Fisheries to review changes in national standard 1 guidelines and their implications for alignment of state and federal fishery management programs.

Motion made by Dr. Pierce and seconded by Mr. McNamee. Motion carries unanimously.

On behalf of the Administrative Oversight Committee, I move to recommend approval of the 2017 ASMFC Action Plan as amended today.

Motion made by Mr. Grout. The motion passes unanimously.

CAPTAIN DAVID H. HART AWARD LUNCHEON (OCTOBER 26, 2016)

Press Release

ASMFC Presents William Goldsborough Prestigious Captain David H. Hart Award

Bar Harbor, ME – The Atlantic States Marine Fisheries Commission presented William "Bill" Goldsborough of the Chesapeake Bay Foundation the Captain David H. Hart Award, its highest annual award, at the Commission's 75th Annual Meeting in Bar Harbor, Maine. Bill is the first person to receive all three Commission awards, having previously received an Annual Award of Excellence for Management & Policy Contributions and the Atlantic Coastal Fish Habitat Partnership (ACFHP) Melissa Laser Fish Habitat Conservation Award.

Hart Award recipient Bill Goldsborough (front row center) joined by ASMFC Executive Director Bob Beal, ASMFC Chair Doug Grout and 10 previous Hart Award recipients.

Throughout his 30 years on the front lines of fisheries management and conservation, Bill has remained a thoughtful and persistent voice of reason in his commitment to science-based decision making. A senior scientist for the Chesapeake Bay Foundation since 1988, Bill has provided an independent, conservation-oriented voice to the fisheries discussion. Bill joined the Commission in 1995 after having served as a member of the Commission's Atlantic Coastal Fisheries Cooperative Management Act Transition Team. From 1995 through 2004 he was the Maryland Governor's Appointee and again from 2007 until this year.

During his career, Bill has made significant contributions to the protection and recovery of several key Chesapeake Bay fishery species. He played a central role in the striped bass recovery, beginning with the

implementation of the Maryland moratorium in 1985 and continuing through to the reopening the fishery in 1990, having achieved consensus among diverse stakeholders to move towards a conservation-based approach to striped bass management. He also led a public blue crab conservation campaign that resulted in a broad commitment to cap effort in the fishery and led to the adoption of bay-wide fishery management plans under the Chesapeake Bay Agreement.

A passionate advocate for aquatic habitat, Bill made habitat protection and restoration a topic of critical and common concern among fishermen. Regionally, he brought together a diverse group of commercial and recreational fishermen to adopt codes for protecting the Chesapeake Bay. Coastwide, he has left an indelible mark on the Commission's Habitat Program as one of the earliest members of the Habitat Committee and its longest serving Chair, having serving in that position for 10 years. Thanks to his leadership and participation, the Committee has developed habitat sections for many of the Commission's fishery management plans and released numerous publications – all of which have elevated our understanding that healthy aquatic habitats are the foundation of abundant fisheries. As a Steering Committee member, Bill also played an important role in the development and launching of the Atlantic Coastal Fish Habitat Partnership.

Perhaps one of Bill's most notable and lasting endeavors is his commitment to ecological fisheries management, which the Atlantic Menhaden Board is now pursuing through Amendment 3. In 2005 and 2006, he was instrumental in developing the Chesapeake Bay reduction cap for menhaden and prompting a five-year Chesapeake Bay population research program. Throughout the oftentimes contentious deliberations, Bill's was the calm voice reminding us to stay the course.

His contributions and composure in the face of challenging decision-making negotiations undoubtedly spring from his concurrent participation in other fisheries management fora, including his work with the EPA Chesapeake Bay Program where he serves on the Sustainable Fisheries Goal Implementation Team, and his tenures as a member of the Chesapeake Bay Program's Fishery Management Workgroup (1987-2001), Aquatic Reef Habitat Workgroup (1993-2000), Fish Passage Workgroup (1987-2000), and the Fishery Management Plan Review Taskforce (1993). From 1996 through 2003, he was a member of NOAA's Bi-State Blue Crab Advisory Committee. For eight years (2002-2010), he was the NGO representative on NOAA's Chesapeake Bay Fisheries Steering Committee.

These are only some of the highlights in the remarkable career of an exceptional ecologist who has found ways to bridge gaps between stakeholders and the environment while deftly negotiating the terrain between what could be ideal and what is humanly possible.

The Commission instituted the Award in 1991 to recognize individuals who have made outstanding efforts to improve Atlantic coast marine fisheries. The Hart Award is named for one of the Commission's longest serving members, who dedicated himself to the advancement and protection of marine fishery resources.

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PR16-32

ATLANTIC MENHADEN MANAGEMENT BOARD (OCTOBER 26, 2016)

Press Release

ASMFC Atlantic Menhaden Board Sets 2017 TAC at 200,000 MT & Approves Draft Amendment 3 Public Information Document for Public Comment

Bar Harbor, ME – The Commission's Atlantic Menhaden Management Board approved a total allowable catch (TAC) for the 2017 fishing season of 200,000 mt, a 6.45% increase from the 2016 TAC. According to Technical Committee analysis this increase has a zero percent probability of resulting in overfishing. The TAC will be made available to the states/jurisdictions based on the state-by-state allocation established by Amendment 2 (see accompanying table).

2017 ATLANTIC MENHADEN QUOTAS*		
STATE	**QUOTA (MT)**	**QUOTA (LBS)**
ME	77.96	171,882
NH	0.06	131
MA	1,660.35	3,660,454
RI	35.47	78,195
CT	34.54	76,152
NY	109.78	242,032
NJ	22,159.75	48,853,880
DE	26.15	57,646
MD	2,717.77	5,991,662
PRFC	1,229.15	2,709,809
VA	168,937.75	372,443,990
NC	975.68	2,150,995
SC	-	-
GA	-	-
FL	35.58	78,449
TOTAL	200,000	440,924,524

*Quotas may be adjusted pending final 2016 landings. Total landings after 1% set-aside for episodic events.

"Given the healthy condition of the resource, this modest increase provides additional fishing opportunities while the Board proceeds with the development of Draft Amendment 3 to the Interstate Fishery Management Plan." stated Board Chair Robert Ballou from Rhode Island.

Additionally, the Board approved the Public Information Document (PID) for Draft Amendment 3 for public comment. As the first step in the amendment process, the PID provides stakeholders with an opportunity to inform the Commission about changes observed in the fishery and provide feedback on potential management measures as well as any additional issues that should be included in the Draft Amendment. Specifically, the PID presents a suite of tools to manage the menhaden resource using ecological reference points as well as options to allocate the resource among the states, regions, and user groups.

The PID will be available on the Commission website, www.asmfc.org, early next week. It is anticipated that the majority of states will be conducting public hearings over the next couple months. A subsequent press release to provide the details of those hearings. For more information, please contact Megan Ware, Fishery Management Plan Coordinator, at mware@asmfc.org or 703.842.0740.

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PR16-32

Meeting Summary

At their October 2016 meeting, the Atlantic Menhaden Management Board (Board) set fishery specifications for the 2017 fishing year, approved a Public Information Document (PID) for Draft Amendment 3, and approved nominations to the Atlantic Menhaden Advisory Panel (AP).

The Board set the 2017 Total Allowable Catch (TAC) at 200,000 metric tons, a 6.45% increase from the 2016 TAC. The TAC will be provided to jurisdictions based on the state-by-state allocation method established in Amendment 2. The Board also approved the Amendment 3 PID for public comment. The document presents a suite of management tools regarding ecological reference points and allocation methods, and provides stakeholders the opportunity to inform the Commission of changes in the fishery.

A TC report reviewing the paper "The Fate of an Atlantic Menhaden Year Class" was presented to the Board as well as an update from the Biological Ecological Reference Point (BERP) Working Group. Multispecies models from the BERP Working Group are expected to be peer reviewed in 2019. Finally, the Board approved Bob Hannah (MA), Patrick Paquette (MA), Dave Monti (RI), Meghan Lapp (RI), Paul Eidman (NJ), Leonard Voss (DE), Peter Himchak (VA), and Scott Williams (NC) to the Menhaden AP. The Board also approved Jeff Deem as a third representative from Virginia, adding another seat to the AP.

For more information, please contact Megan Ware, Fishery Management Plan Coordinator, at mware@asmfc.org or 703.842.0740.

Motions

Tabled Motion from August 2016

Motion to set the 2017 coastal total allowable catch (TAC) for the Atlantic menhaden fishery at 255,456 metric tons (20% increase).

Motion made by Mr. Gary and seconded by Mr. Schill. Motion amended.

Motion to Amend

Move to amend the motion to set the 2017 coastal total allowable catch for Atlantic menhaden at 200,000 metric tons (approximate 6.45% increase).

Motion made by Dr. Rhodes and seconded by Mr. Stockwell. Motion passes unanimously. Roll Call Vote: In favor – ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, NFMS, USFWS.

Main Motion as Amended

Move to set the 2017 coastal total allowable catch for Atlantic menhaden at 200,000 metric tons (approximate 6.45% increase).

Motion to Amend

Move to amend to set the 2017 coastal total allowable catch for Atlantic menhaden at 187,880 metric tons (status quo).

Motion made by Mr. Goldsborough and seconded by Mr. White. Motion fails (8 in favor, 10 opposed). Roll Call Vote: In favor – NH, MA, CT, PA, SC, GA, FL, USFWS; Opposed – ME, RI, NY, NJ, DE, MD, PRFC, VA, NC, NMFS.

Main Motion as Amended
Move to set the 2017 coastal total allowable catch for Atlantic menhaden at 200,000 metric tons (approximate 6.45% increase).
Motion passes (16 in favor, 2 opposed). Roll Call Vote: ME, NH, MA, RI, CT, NY, NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS; Opposed – PA, USFWS.

Move to approve the Atlantic Menhaden PID with the additions suggested and discussed by the Board today, and including editorial changes submitted to the FMP Coordinator by Friday COB.
Motion made by Mr. Boyles and seconded by Mr. Gilmore. The motion passes unanimously.

Move to appoint Bob Hannah (MA), Patrick Paquette (MA), Dave Monti (RI), Meghan Lapp (RI), Paul Eidman (NJ), Leonard Voss (DE), Peter Himchak (VA), and Scott Williams (NC) to the Atlantic Menhaden Advisory Panel.
Motion made by Dr. Duval and seconded by Mr. Adler. The motion is approved by consent.

Move to appoint Jeff Deem as a third member from Virginia to the Atlantic Menhaden Advisory Panel.
Motion made by Mr. O'Reilly and seconded by Ms. Meserve. The motion is approved by consent.

INTERSTATE FISHERIES MANAGEMENT PROGRAM POLICY BOARD (OCTOBER 27, 2016)

Meeting Summary
Chair Grout updated the ISFMP Policy Board on the actions of the Executive Committee (see Executive Committee Meeting summary). The Board reviewed and approved the second edition to the Conservation Equivalency Guidance Document. The Commission employs the concept of conservation equivalency in a number of interstate fishery management programs (FMPs). Conservation equivalency allows states/jurisdictions the flexibility to develop alternative regulations that address specific state or regional differences while still achieving the goals and objectives of interstate FMPs. The guidance document was updated to reflect the current practices of the Commission. It includes standards for proposals, submission timelines, and review and evaluation protocols.

The Risk and Uncertainty Policy Workgroup updated the ISFMP Policy Board on its progress to develop a policy that provides a way to account for both scientific and management uncertainty in the Commission's decision making process. The Workgroup presented a white paper which outlines the goals and objectives of the Commission's policy as well as an example of a decision-tree framework. This framework would allow the Commission to set acceptable risk levels when determining quotas for data-rich species. The Board agreed the Workgroup should host a workshop for the Board that tests the decision-tree approach for Atlantic striped bass during an ASMFC meeting next year.

The Habitat Committee presented a summary of the activities from its meeting in October. The Board reviewed and approved sending a letter drafted by the Habitat Committee to BOEM regarding its concerns with seismic testing. The letter highlights that fish and other marine resources depend on sound for vital life functions and there is insufficient information on how seismic surveys and G&G activities affect fisheries and ecosystem structure and function. Research is needed to better understand the consequences of these activities. The letter, which also extends an invitation to BOEM to join the

Habitat Committee as a member, is similar to that already sent by the Mid-Atlantic and South Atlantic Fishery Management Councils. The Board also approved the Sciaenid Habitat Source Document, which covers the biology, habitat needs, habitat research needs and habitat stresses for Atlantic croaker, black drum, red drum, spot, spotted seatrout, weakfish, northern kingfish, southern kingfish and Gulf kingfish. The Committee identified ongoing practices in each state's coastal regulatory planning that address climate change impacts which were compiled into a report.

The Atlantic Coast Fish Habitat Partnership (ACFHP) Steering Committee met in November and reported a summary of its activities to the Board. The Committee received presentations from the Gulf of Maine Research Institute on an overview of coastal ecosystem monitoring projects, and from the Great Bay-Piscataqua Waterkeepers on the status of submerged aquatic vegetation (SAV) in the Great Bay Estuary and the Exeter Dam Removal endorsed by ACFHP. The Committee received updates on the National Fish Habitat Partnership (NFHP), Coastal FHPs, and Whitewater to Bluewater Initiatives. A report on progress with the Mid-Atlantic black sea bass habitat research project was also provided. The Science and Data Subcommittee updated the Steering Committee on recruiting new membership, and the status of the NOAA-funded Southeast Habitat Mapping Project to prioritize restoration and protection areas. ACFHP also developed recommendations for habitat restoration projects to be supported by FY2017 USFWS-NFHAP funding.

From 2010 to 2016 the USFWS has awarded more than $480,000 to partners to complete 15 on-the-ground projects from Florida to Maine. Funding supported three marsh/mangrove projects, two SAV projects, two oyster reef restoration projects, seven fish passage projects, and one sturgeon spawning habitat restoration project. The Steering Committee had a working session to further develop ACFHP's new five-year Conservation Strategic Plan. An update was provided on ACFHP operations funding, and reallocation of $20,000 in unspent FY16 funds towards the Bradford Dam removal. Finally, the Committee visited two habitat restoration project sites, Edwards Dam removal on the Kennebec River, and the Coopers Mill Dam and fishway on the Sheepscot River.

The National Parks Service (NPS) released updates to the Director's Order on Fishing. The policies in the Order are not new but derived directly from the 2006 version of the NPS management Policies. Some of these polices are specific to regulations for commercial and recreational fishermen that could be in conflict with state regulations. The Board formed a working group to review the Order and make recommendations on comments to the NPS regarding fishing regulations.

The American Fisheries Society (AFS) developed a document to provide the next Administration with a summary of the challenges faced by fisheries in 2017 and beyond. AFS is asking groups with interests in fisheries to endorse the document. Given there was not a consensus to support the document, the Commission decided not to become signatories.

The Board agreed to send several letters. The first is a letter to HMS for comments that will be collected from the states on the proposed Dusky Shark Amendment 5b (see coastal sharks meeting summary). The second is a letter to NOAA requesting fishermen be allowed to transit through federal waters in possession of species which have open seasons in state waters but closed in federal waters. The third is a letter to NOAA's Office of Law Enforcement requesting lobster become a higher enforcement priority within the Northeast Region.

For more information, please contact Toni Kerns, ISFMP Director, at tkerns@asmfc.org or 703.842.0740.

Motions

Move that we approve the Conservation Equivalency Guidance Document as modified today.
Motion made by Dr. Duval and seconded by Mr. Fote. Motion is approved by consensus (Roll Call Vote: In Favor - ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS).

Move to approve the Sciaenid Habitat Source Document, with editorial discretion to staff.
Motion made by Mr. Fote and seconded by Dr. Laney. Motion is approved by unanimous consent.

Move to approve the draft letter to BOEM regarding seismic testing.
Motion made by Mr. Fote and seconded by Mr. Blazer. Motion is approved by unanimous consent.

Main Motion
Move to send a letter to NOAA's Office of Law Enforcement asking for lobster to become a higher priority within the northeast region through their Joint Enforcement Agreements Program.
Motion made by Mr. Borden and seconded by Mr. Keliher.

Motion to Postpone
Move to postpone the motion until a draft set of priorities is developed for each region within the Commission's range.
Motion made by Mr. Simpson and seconded by Mr. Gilmore. Motion fails (6 in favor, 8 opposed, 1 null).

Move to send a letter to NOAA's Office of Law Enforcement asking for lobster to become a higher priority within the Northeast region through their Joint Enforcement Agreements Program.
Motion made by Mr. Borden and seconded by Mr. Keliher. Motion carries (11 in favor, 3 opposed, 2 abstentions).

ATLANTIC HERRING SECTION (OCTOBER 27, 2016)

Press Release

ASMFC Atlantic Herring Section
Initiates Addendum to Improve Performance of Area 1A Fishery

Bar Harbor, ME – The Commission's Atlantic Section initiated Addendum I to Amendment 3 of the Interstate Fishery Management Plan for Atlantic Herring to improve the performance of the Area 1A (inshore Gulf of Maine) Atlantic herring fishery. The purpose of the addendum is to develop additional management alternatives for the days out program. It is in response to the accelerated pace of Area 1A Trimester 2 (June through September) landings in recent years and the increasingly dynamic nature of days out measures to control Trimester 2 effort that have varied across states.

The Section utilizes days out of the fishery to slow the rate of Area 1A catch so the seasonal quota can be distributed throughout each trimester. Currently, the days out program is specific to landing day

restrictions. The increase in the number of larger carrier vessels in the area has rendered days out less effective in controlling effort because vessels can transfer catch to large carrier vessels at-sea, allowing harvesters additional days of fishing beyond the days that are open to landings.

In 2016, Maine's Department of Marine Resources (DMR) implemented a series of emergency rules that were more restrictive than Commission measures in an attempt to extend the Trimester 2 quota into September. These rules included a weekly landing limit, restricted landing and fishing days, as well as at sea transfer restrictions. DMR's measures only applied to vessels landing in Maine. New Hampshire and Massachusetts implemented one of these management measures – three consecutive landing days. The Draft Addendum will explore these measures and potentially others that could be uniformly applied by the Area 1A of Maine, New Hampshire and Massachusetts.

For more information on Area 1A fishery performance in the 2015 and 2016 fishing year that brought about the need for alternative management measures refer to a white paper, which is available on the Commission website at http://www.asmfc.org/uploads/file/58124582AtlHerringArea1AFisheryPerformance_2015_2016.pdf.

For more information, please contact Ashton Harp, Fishery Management Plan Coordinator, at aharp@asmfc.org or 703.842.0740.

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PR16-34

Meeting Summary

In addition to initiating an addendum to consider improvements to Area 1A days out measures (see above), the Section allocated the 2017 Area 1A sub-ACL seasonally with 72.8 percent available from June through September and 27.2 percent allocated from October through December. The fishery will close when 92 percent of the seasonal period quota has been harvested. Quota underages from June through September may be rolled into the October through December period. For more information, please contact Ashton Harp, Fishery Management Plan Coordinator, at aharp@asmfc.org or 703.842.0740.

Motions

Move to elect Mark Gibson as vice-chair of the Atlantic Herring Section.

Motion made by Mr. Abbott and seconded by Mr. Simpson. Motion carries without objection.

Move to initiate an Addendum to improve the performance of the Area 1A Atlantic herring fishery. The purpose of this addendum is to develop additional management alternatives for the landings day program. These measures will include:

1. **Mandatory daily reporting. Two options: Category A, B and C permits and Category A and B permits.**

2. **Modify the day out program such that the small-mesh bottom trawl fleet (SMBT) with C or D herring permits could have a different allocation of landings days and times that are separate from the purse seine and mid-water trawl fleet landing days.**

3. **Modify the program to restrict fishing days for purse seiners and midwater trawlers, in addition to landing days. Two options: Category A, B and C permits and Category A and B permits.**

4. **Modify the program to create a weekly landing limit (pounds or trucks) for purse seines and midwater trawls. Two options: Category A, B and C permits and Category A and B permits.**

5. **Modify the program to restrict harvester vessels making at-sea transfer for purse seine and midwater trawls. Two options: All carrier vessels landing herring are limited to receiving at-sea transfers from one vessel per week and no transfer at sea.**

6. **Modify the program to implement a tiered weekly landing limit for Category A and B permits.**

7. **Modify the program to allow for a set-aside a percentage or value of the Area 1A sub-ACL for the SMBT.**

8. **Modify the program to restrict a vessel from using a different gear type mid-season within Area 1A.**

9. **Clarify what it means for states to "agree" on the numbers of days out in the fishery, does this mean consensus or vote? If states, cannot agree then what is the default landing day scenario, 7 landing days?**

Motion by Mr. Stockwell, seconded by Mr. Grout. Motion carries without objection.

Move to allocate the 2017 Area 1A sub-ACL seasonally with 72.8 percent available from June through September and 27.2 percent allocated from October through December. The fishery will close when 92 percent of the seasonal period quota has been harvested; and underages from June through September may be rolled into the October through December period.

Motion made by Mr. Grout and seconded by Mr. Stockwell. The motion passes unanimously.

AMERICAN LOBSTER MANAGEMENT BOARD (OCTOBER 27, 2016)

Press Release

ASMFC American Lobster Board Approves Jonah Crab Draft Addendum II for Public Comment

Bar Harbor, ME – The Commission's American Lobster Management Board approved Draft Addendum II to the Jonah Crab Fishery Management Plan (FMP) for public comment. The Draft Addendum considers establishing a coastwide standard for claw harvest to address concerns regarding the equity of the current claw provision. Specific options include establishing a whole crab fishery or allowing for the harvest of claws coastwide. The Draft Addendum also considers establishing a definition of bycatch, based on a percent composition of catch, in order to minimize the expansion of a small-scale fishery under the bycatch allowance.

The FMP currently establishes a whole crab fishery with the exception of fishermen from NJ, DE, MD, and VA who have a history of claw landings prior to June 2, 2015. Following approval of the FMP, claw fishermen from NY and ME were identified. Currently, these fishermen are required to land whole crabs. As a result, jurisdictions have expressed concern regarding the equity of this provision as some fishermen with a history of claw landings are allowed to continue this practice while others must land whole crabs.

In order to address concerns regarding the expansion of a small-scale fishery, consideration of a bycatch definition was added as a second issue in the Draft Addendum. Addendum I established a bycatch allowance of 1,000 crabs per trip for non-trap gears and non-lobster trap gears (i.e., fish pots, crab pots, whelk traps). Fishermen using these gears are not required to have other species on Board when harvesting Jonah crab. As a result, fishermen harvesting Jonah crab under the bycatch limit may, in fact, directly target Jonah crab by landing 1,000 crabs per trip and nothing else. This does not reflect the intention of the bycatch allowance which is to account for Jonah crab caught while targeting another species.

The Draft Addendum will be available on the Commission website, www.asmfc.org (under Public Input) by mid-November. It is anticipated that the majority of states of Maine through Maryland will be conducting public hearings; the details of those hearings will be released in a subsequent press release. The Board will review submitted public comment and consider final action on the Draft Addendum at the Commission's Winter Meeting in February. For more information, please contact Megan Ware, Fishery Management Plan Coordinator, at mware@asmfc.org or 703.842.0740.

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PR16-35

Meeting Summary

The American Lobster Management Board met to discuss Draft Addendum XXV to Amendment 3 to the American Lobster Fishery Management Plan (FMP), Draft Addendum II to the Jonah Crab FMP, and consider improvements to the harvester reporting requirements for lobster.

The Board reviewed Draft Addendum XXV, which seeks to address the poor condition of the Southern New England (SNE) lobster stock. Results of the 2015 stock assessment found the SNE stock to be depleted, with record low abundance and recruitment. In response, the Board initiated Addendum XXV with the goal of increasing egg production and reducing fishing mortality. The Draft Addendum outlines a suite of targeted increases in egg production, ranging from 0% to 60%, as well as potential tools to achieve them (i.e., gauge size changes, trap reductions, and season closures). The document also considers where these management measures should apply in Lobster Conservation Management Area (LCMA) 3 (offshore waters), since the LCMA contains both the Gulf of Maine/Georges Bank and SNE stocks. Following review of the document, the Board decided to provide an opportunity for industry input via Lobster Conservation Management Teams (LCMTs) prior to approving the document for public comment. States will submit industry comments to the Commission by November 30th and these will be reviewed by a subset of Commissioners and the Plan Development Team. The Board will consider approving Draft Addendum XXV for public comment in February 2017.

The Board also reviewed and approved Draft Addendum II to the Jonah Crab FMP for public comment. The Draft Addendum considers establishing a coastwide standard for claw harvest and proposes a definition for bycatch in the fishery. Further information on Draft Addendum II and public hearings can be found in above press release.

Given the increasing need for improved harvester reporting in the lobster fishery, the Board reviewed goals and recommendations proposed by the Lobster Reporting Work Group. These included a higher percentage of harvester reporting, the collection of additional data on trap hauls, soak time, and gear configuration, and the incorporation of VMS on lobster vessels. The Board will consider the initiation of an addendum in February 2017 to comprehensively examine reporting in the fishery.

The Board also reviewed a report by the Trap Cap Working Group which discussed the implementation of trap caps in federal waters, as specified in Addenda XXI and XXII. Currently, NOAA Fisheries has suspended its rule-making process for trap caps and banking as the Commission considers changes to the management of SNE lobster. The Board decided to re-examine this issue following final action on Draft Addendum XXV. Finally, the Board approved the 2016 FMP Review, state compliance reports, and *de minimis* status for DE, MD, and VA.

For more information, please contact Megan Ware, Fishery Management Plan Coordinator, at mware@asmfc.org or 703.842.0740.

Motions

Move to include in Option C a range of small volumetric claw harvest from 5 gallons to the bycatch limit of 2,000 claws.
Motion made by Mr. Luisi and seconded by Mr. Clark. Motion postponed until October meeting.

Motion to postpone indefinitely.
Motion made by Mr. Gibson and seconded by Mr. Gilmore. Motion passes by unanimous consent.

Move to add option D (Claw Harvest Permitted Coastwide) under Section 3.0 Management Measures.

Under this option, there shall be no minimum size for claws. Claws may be detached and harvested, but may not exceed a volumetric limit of 5 gallons. If a fisherman chooses to participate in the claw fishery, possession of whole crabs is prohibited.

Motion made by Mr. Keliher and seconded by Mr. Gilmore. Motion postponed indefinitely.

Motion to postpone indefinitely.
Motion made by Mr. Grout and seconded by Mr. Gibson. Motion passes.

Move to add under option C, if a volumetric measure greater than 5 gallons is retained, the claws must meet a minimum size of 2.75 inches.
Motion made by Mr. Keliher and seconded by Mr. Grout. Motion passes by unanimous consent.

Move to approve Draft Addendum II to the Jonah Crab FMP for public comment as modified by the comments today.
Motion made by Mr. Heins and seconded by Mr. Keliher. Motion passes by unanimous consent.

Move to approve the 2016 Lobster FMP Review, state compliance reports, and *de minimis* status for Maryland, Delaware, and Virginia.
Motion made by Mr. McKiernan and seconded by Mr. Muffley. Motion passes by unanimous consent.

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

October 20, 2016

MEMORANDUM **Red Drum SA 11-16**

TO: Marine Fisheries Commission

FROM: Lee Paramore, Fisheries Management Section

SUBJECT: Atlantic States Marine Fisheries Commission Red Drum Stock Assessment Update

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At its August 2016 meeting the Marine Fisheries Commission requested staff provide an update on the status of the red drum stock assessment being conducted by the Atlantic States Marine Fisheries Commission. This 2016 benchmark assessment will be the first assessment for red drum along the Atlantic Coast since the 2009 assessment and includes coastwide data through 2013. The 2009 assessment is the basis for current red drum management in North Carolina. The 2016 stock assessment update and subsequent peer review was presented to the Atlantic States Marine Fisheries Commission South Atlantic Board in May of 2016. Results of the models, using the Stock Synthesis framework, suggested overfishing is occurring in both the northern and southern regions of the stock. The northern model, which includes North Carolina, indicated low adult abundance (age-6+) since 1989. The board raised several questions about the assessment inputs, reference points, and model types and asked the Red Drum Technical Committee and Stock Assessment Committee to investigate these concerns. Primary among these concerns was the lack of a continuity run using the statistical catch at age model from the 2009 assessment. Since that time, the statistical catch at age model has been updated and a final report is being prepared.

The Atlantic States Marine Fisheries Commission's South Atlantic Board will send this updated statistical catch at age model to peer review in November 2016. Final results of the model and peer review will be available at the 2017 Atlantic States Marine Fisheries Commission February winter meeting. At that time, the board will review available data and determine if any changes are needed concerning the current management strategy for red drum. Current management for red drum along the Atlantic Coast is based on Amendment 2 to the Atlantic States Marine Fisheries Commission Red Drum Fishery Management Plan.

A formal review of Amendment 1 to the North Carolina Red Drum Fishery Management Plan is pending the outcome of the board-approved assessment update and any subsequent management changes that may impact North Carolina's compliance requirements mandated under the Atlantic States Marine Fisheries Commission Plan. Clarity on any changes should be available after the 2017 Atlantic States Marine Fisheries Commission's winter meeting.

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

October 21, 2016

MEMORANDUM **Shad 11-16**

TO: Marine Fisheries Commission

FROM: Division of Marine Fisheries and Wildlife Resources Commission American Shad Work Group

SUBJECT: American Shad Management Measures for 2017 and the Sustainable Fishery Plan Update

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In November 2012, the Marine Fisheries Commission approved the North Carolina American Shad Sustainable Fishery Plan, along with conditions that the sustainability parameters for the Albemarle Sound/Roanoke system, Tar/Pamlico and Neuse rivers be reevaluated every five years. Due to extensive restoration efforts to increase anadromous fish passage at Lock and Dam #1 on the Cape Fear River, the sustainability parameters in that system were to be evaluated every two years. Each fall, the American Shad Work Group, which consists of biologists from the Division of Marine Fisheries and Wildlife Resources Commission, updates the sustainability parameters with the most recent data and determines the next year's management measures for each system. This group also conducts the system evaluations required by the plan.

In 2013, thresholds were exceeded in two of the three parameters used to evaluate sustainability in the Albemarle Sound/Roanoke system. One parameter, the female abundance index derived from the Wildlife Resource Commission Roanoke River electrofishing survey, remained within the target range throughout most of the time series. However, two parameters, the Division of Marine Fisheries Albemarle Sound independent gill net survey index of female relative abundance index and the Division of Marine Fisheries Albemarle Sound independent gill net survey index of female relative fishing mortality, exceeded established thresholds from 2011 to 2013 and from 2010 to 2013 respectively (Figures 1-3). Due to two parameters exceeding their thresholds, management actions designed to reduce commercial harvest in the Albemarle Sound/Roanoke system were implemented for the 2014 fishing year. To adequately evaluate the impact of the 2014 commercial harvest reductions, similar management measures were implemented in 2015 and 2016. It should be noted that this decision was made despite the fact that thresholds were not exceeded in either 2015 or 2016, although the index value in 2016 was equal to the threshold value.

The American Shad Work Group met on Oct. 12, 2016 to review the 2016 landings and analysis of the sustainability parameters for all systems. For the Albemarle Sound/Roanoke system one of the sustainability parameters exceeded the threshold in 2016 (Figure 1) and landings declined considerably since 2014 (Figure 4). The Wildlife Resources Commission Roanoke River electrofishing parameter for female abundance exceeded the threshold for the first time since 2010. This parameter is only used in conjunction with a second index from either the female relative abundance from the Division of Marine Fisheries Albemarle Sound independent gill net survey or the female relative fishing mortality, for triggering management action. Since these other two

indices were below their respective thresholds, no additional management action was triggered. It is critical to note that although the commercial seasons for American shad in 2014, 2015, and 2016 were the same (March 3 – March 24 for a total of 22 days), landings have declined from 109,539 pounds in 2014 to 40,775 pounds in 2016, a reduction of approximately 63 percent from 2014 landings. It must be recognized that even though the American Shad Work Group recommended continuing with the same commercial season for 2017 in the Albemarle Sound/Roanoke system of March 3 – March 24, it is difficult to predict what landings will be in 2017. Annual American shad harvest is highly variable due to environmental conditions during the spring, gill net effort, gear restrictions, area closures, and relative strength of the year classes in the run. This is evident by the extremely high inter-annual variation in landings from 1994 to 2013, although the commercial seasons were practically unchanged for the time period (Figure 4).

None of the sustainability parameters in the other systems exceeded any of their thresholds. Therefore, the American Shad Work Group agreed to maintain the 2016 American shad regulations for the 2017 season in all systems (Table 1). The American Shad Work Group is scheduled to conduct a five-year review of the entire American Shad Sustainable Fishery Plan in 2017, at which time they will decide on management measures for the 2018 season in all systems.

Table 1. Management measures for the 2017 American shad season by system.

Albemarle Sound/Roanoke • Recreational: 10 fish shad aggregate, 1 A. shad limit • Commercial: March 3 – March 24	**Tar/Pamlico** • Recreational: 10 fish shad aggregate • Commercial: February 15 – April 14
Neuse • Rec: 10 fish shad aggregate, 1 A. shad limit • Commercial: February 15 – April 14	**Cape Fear** • Recreational: 10 fish shad aggregate, 5 A. shad limit • Commercial: February 15 – April 14

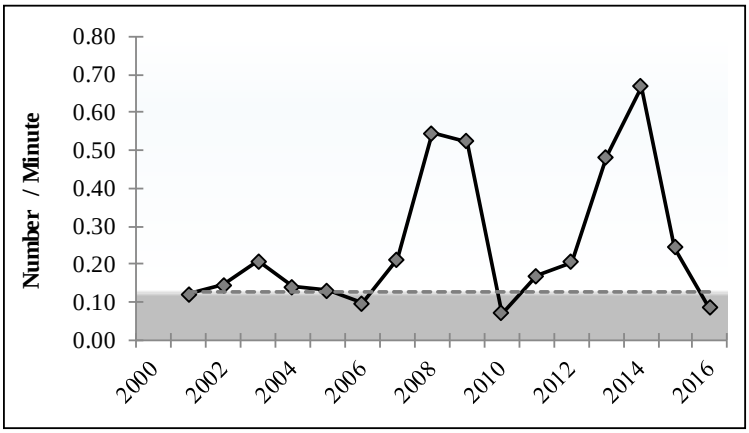

Figure 1. Annual estimates of the female abundance index from the Wildlife Resources Commission electrofishing survey for the Roanoke River, 2000–2016 (January-May). The threshold represents the 25th percentile (where 75 percent of all values are higher). The grey portion of the graph indicates the area where the threshold has been exceeded. *The 2016 index value exceeded the threshold.*

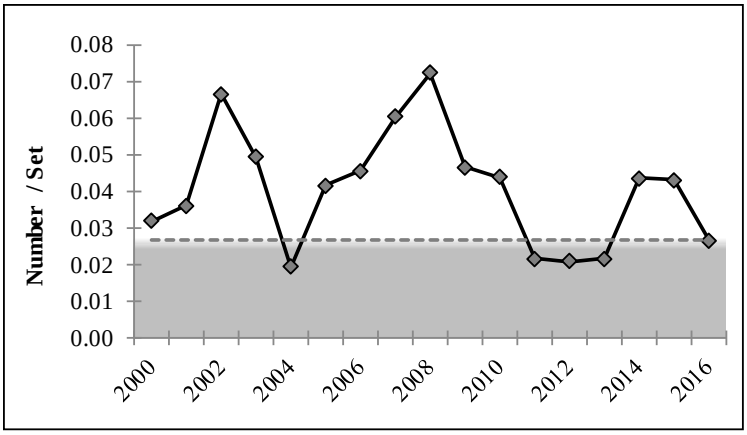

Figure 2. Annual estimates of the female index from the Division of Marine Fisheries independent gill net survey for the Albemarle Sound, 2000–2016 (January-May). The threshold represents the 25th percentile (where 75 percent of all values are greater). The grey portion of the graph indicates the area where the threshold has been exceeded. *The 2016 index value is equal to the 2016 threshold.*

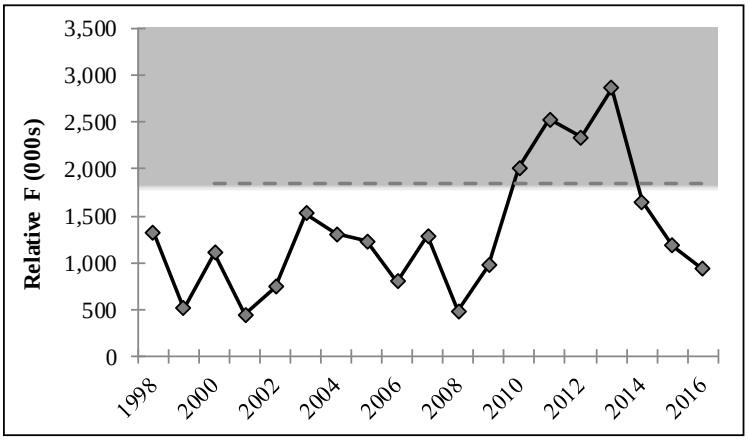

Figure 3. Annual estimates of female relative fishing mortality based on the data for the Albemarle Sound, 2000–2016. The threshold represents the 75th percentile (where 25 percent of all values are greater). The grey portion of the graph indicates the area where the threshold has been exceeded. *The 2016 index value for relative F does not exceed the threshold.*

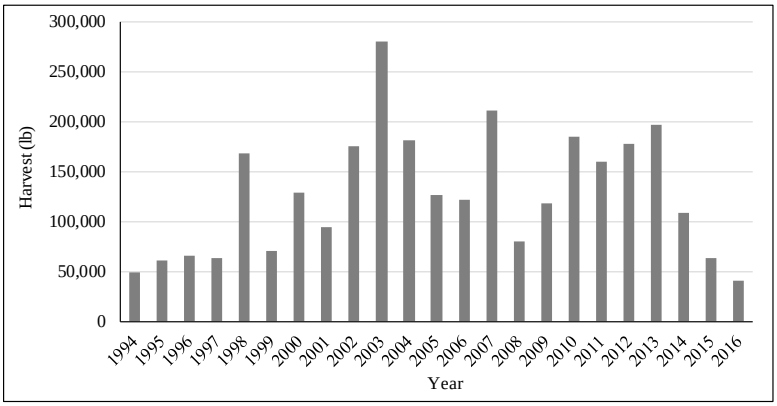

Figure 4. American shad commercial harvest (lb) from the Albemarle Sound from 1994 to 2016.

North Carolina Division of Marine Fisheries
Quota Monitoring
Landings Report

North Carolina Quota Monitored Species Reporting

Species currently under a quota monitoring requirement by the North Carolina Division of Marine Fisheries (NCDMF) include summer flounder, striped bass, black sea bass North of Cape Hatteras, spiny dogfish, and river herring. Seasons are opened and closed by proclamation as shown in the table below. Landings reports are updated weekly during the proclamation season.

2016 North Carolina Quota Monitored Landings

Updated 10/28/2016

Species	2016 Total Quota (LBS)	Quota for Winter Fishery	2016 Transfer	2016 Harvest	Winter Quota Remaining	Proclamation	Trip Limit (pounds)	Comments
2016 Summer Flounder	2,229,709	1,783,767	85,995	1,867,045	276,669	FF-21-2016	4,000	**Closed** 09/30/2016 at 6:00pm
2016 Black Sea Bass N of Cape Hatteras	297,315		1,823	189,000	106,492	FF-20-2016	1500	**Closed** 09/30/2016 at 6:00pm
2015/2016 Spiny Dogfish	7,276,052		0	2,309,097	4,966,955	FF-62-2015	per day: 20,000	**Closed** 04/30/2016 at 6:00pm
A.O. Striped Bass	360,360							
TRAWL	120,120		0	0	120,120		100 fish/day	Closed 3/21/2016
SEINE	120,120		0	0	120,120	FF-57-2015	150 fish/day	Closed 3/31/2016
GILL NET	120,120		0	0	120,120	FF-64-2015	50 fish/day	Closed 02/14/2016
ASMA Striped Bass	137,500		0	102,698	34,802	FF-43-2016	10 fish/day	Closes 04/30/2017
CSMA Striped Bass	25,000			22,568	2,432	FF-15-2016	10 fish/day	Closed 3/21/2016

*** All figures are in pounds unless otherwise noted**

For questions about quota monitoring or to report landings:

Permitted Species	FAX	E-mail Address	Telephone #
Striped Bass, River Herring	**252-264-3723**	LANDINGS@ncdenr.gov	800-338-7805
Summer Flounder, Black Sea Bass North of Cape Hatteras, Spiny Dogfish	**252-726-3903**	FLOUNDER@ncdenr.gov	800-682-2632

Red Drum Landings 2015-2016

Landings are complete through July 31, 2016
2015 Landings are final; 2016 landings are preliminary

Year	Month	Species	Pounds	2009-2011 Average	2012-2014 Average
2015	9	Red Drum	4,961	28,991	35,471
2015	10	Red Drum	18,815	43,644	59,757
2015	11	Red Drum	4,897	14,318	28,619
2015	12	Red Drum	1,398	3,428	3,401
2016	1	Red Drum	1,183	5,885	1,364
2016	2	Red Drum	1,679	3,448	3,176
2016	3	Red Drum	2,170	5,699	2,957
2016	4	Red Drum	3,698	7,848	3,945
2016	5	Red Drum	6,200	13,730	9,222
2016	6	Red Drum	6,013	12,681	7,432
2016	7	Red Drum	6,328	13,777	15,555
2016	8	Red Drum	5,267*	21,252	16,910
Fishing Year (Sept 1, 2015 - Aug 31, 2016) Landings			**62,608**		

Year	Month	Species	Pounds	2009-2011 Average	2012-2014 Average
2016	9	Red Drum	14,666*	28,991	35,471
2016	10	Red Drum	527*	43,644	59,757
Fishing Year (Sept 1, 2016 - Aug 31, 2017) Landings			**15,193**		

*partial trip ticket landings only
***landings are confidential

Year	Month	Species	Pounds	Dealers	Trips	Average (2007-2009)
2013	1	SOUTHERN FLOUNDER	2,942	42	276	7,713
2013	2	SOUTHERN FLOUNDER	896	37	254	4,617
2013	3	SOUTHERN FLOUNDER	4,387	57	682	23,512
2013	4	SOUTHERN FLOUNDER	16,696	92	1,176	68,389
2013	5	SOUTHERN FLOUNDER	49,629	123	1,778	122,514
2013	6	SOUTHERN FLOUNDER	79,203	137	2,127	154,090
2013	7	SOUTHERN FLOUNDER	119,726	150	2,840	170,387
2013	8	SOUTHERN FLOUNDER	124,184	147	2,686	201,862
2013	9	SOUTHERN FLOUNDER	416,203	161	3,632	396,301
2013	10	SOUTHERN FLOUNDER	883,476	172	5,512	781,717
2013	11	SOUTHERN FLOUNDER	483,762	121	2,589	392,150
2013	12	SOUTHERN FLOUNDER	5,288	12	27	37,303
2014	1	SOUTHERN FLOUNDER	2,978	29	183	7,713
2014	2	SOUTHERN FLOUNDER	1,823	29	285	4,617
2014	3	SOUTHERN FLOUNDER	3,430	43	677	23,512
2014	4	SOUTHERN FLOUNDER	18,997	71	933	68,389
2014	5	SOUTHERN FLOUNDER	16,001	93	681	122,514
2014	6	SOUTHERN FLOUNDER	80,142	123	1,988	154,090
2014	7	SOUTHERN FLOUNDER	84,702	141	2,148	170,387
2014	8	SOUTHERN FLOUNDER	105,208	137	2,204	201,862
2014	9	SOUTHERN FLOUNDER	404,143	153	3,588	396,301
2014	10	SOUTHERN FLOUNDER	634,514	146	3,436	781,717
2014	11	SOUTHERN FLOUNDER	320,773	121	1,991	392,150
2014	12	SOUTHERN FLOUNDER	800	5	7	37,303
2015	1	SOUTHERN FLOUNDER	1,984	30	237	7,713
2015	2	SOUTHERN FLOUNDER	495	21	93	4,617
2015	3	SOUTHERN FLOUNDER	10,750	62	768	23,512
2015	4	SOUTHERN FLOUNDER	20,824	88	1,074	68,389
2015	5	SOUTHERN FLOUNDER	42,454	117	1,282	122,514
2015	6	SOUTHERN FLOUNDER	53,838	116	1,482	154,090
2015	7	SOUTHERN FLOUNDER	42,806	106	1,144	170,387
2015	8	SOUTHERN FLOUNDER	43,900	111	1,152	201,862
2015	9	SOUTHERN FLOUNDER	255,067	122	2,335	396,301
2015	10	SOUTHERN FLOUNDER	429,234	127	2,554	781,717
2015	11	SOUTHERN FLOUNDER	301,489	90	1,755	392,150
2015	12	SOUTHERN FLOUNDER	89	7	10	37,303
2016	1	SOUTHERN FLOUNDER	2,625	33	264	7,713
2016	2	SOUTHERN FLOUNDER	1,643	31	291	4,617
2016	3	SOUTHERN FLOUNDER	9,018	57	911	23,512
2016	4	SOUTHERN FLOUNDER	10,562	72	630	68,389
2016	5	SOUTHERN FLOUNDER	24,531	89	822	122,514
2016	6	SOUTHERN FLOUNDER	44,970	100	1,247	154,090
2016	7	SOUTHERN FLOUNDER	42,816	100	1,120	170,387
2016	8	SOUTHERN FLOUNDER	39,393	55	1,048	201,862
2016	9	SOUTHERN FLOUNDER	187,234	56	2,402	396,301
2016	10	SOUTHERN FLOUNDER	17,790	9	106	781,717

2016 data are preliminary and only complete through July.

***data are confidential

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON C. DAVIS
Director

November 1, 2016

MEMORANDUM **PR 8-16**

TO: Marine Fisheries Commission

FROM: Chris Batsavage, Protected Resources Section Chief/Special Assistant for Councils

SUBJECT: Protected Resources Section Update

Observer Program

Tables summarizing observer coverage and protected species interactions from January through August 2016 are also included. These tables provide the number of trips, observer coverage, and protected species interactions for large and small mesh gill nets by month, season and management unit. Please note that observer coverage is based on the average number of trips from previous years because 2016 trip data is preliminary. The overall number of large and small mesh gill net trips in 2016 are lower than previous years, which will result in higher observer coverage values if the finalized 2016 trip data show the same trend.

A total of 21 sea turtle interactions were observed in large mesh gill nets and three in small mesh gill nets from January through August 2016, with most of the interactions occurring in July (seven). Two self-reported sea turtle interactions by gill net fishermen occurred during this time period.

A total of 13 Atlantic sturgeon interactions were observed in large mesh gill nets and five in small mesh gill nets from January through August 2016, with most of the interactions occurring in March (six). No self-reported Atlantic sturgeon interactions by gill net fishermen occurred during this time period.

Management Unit Closures

The following management units closed as a requirement of the Sea Turtle Incidental Take Permit:

- Management Unit A below the Highway 64/264 Bridges in Croatan and Roanoke sounds remains closed to large and small mesh gill nets to prevent reaching the allowed takes of sea turtles too early in the incidental take permit fishing year (Sept. 1, 2016-Aug. 31, 2017). This area could open later in the incidental take permit fishing year, depending on the number of allowed sea turtle takes remaining.
- Management Unit C closed to large and small mesh gill nets on October 1, 2016 to prevent reaching the allowed takes of sea turtles too early in the incidental take permit fishing year (Sept. 1, 2016-Aug. 31, 2017). The management unit will reopen later this year, depending on the abundance of sea turtles in the area.

Table 1. Preliminary data collected for large mesh gill nets by month through the NCDMF Observer Program through August 2016.

	Trips		Observer Large Mesh				Observed Takes By Species								
							Kemp's		Green		Loggerhead		Unknown	A. Sturgeon	
Month	Estimated [1]	Actual [2]	AP Attempts [3]	Trips	Yards	Coverage [4]	Live	Dead	Live	Dead	Live	Dead	Live	Live	Dead
January	270	536	48	22	10,400	8.1	0	0	**1**	0	0	0	0	**1**	0
February	725	768	49	43	16,655	5.9	0	0	0	0	0	0	0	**2**	0
March	1,925	1,782	81	170	101,048	8.8	0	0	0	0	0	0	0	**4**	**1**
April	1,246	773	116	81	43,940	6.5	0	0	0	0	0	0	0	**2**	**2**
May	923	488	132	63	29,240	6.8	**1**	0	0	**1**	0	0	**1**	0	0
June	1,279	621	71	67	32,385	5.2	**3**	**1**	**1**	**1**	0	0	0	**1**	0
July	1,192	328	121	46	28,410	3.9	**2**	0	**2**	**2**	0	0	**1**	0	0
August	1,450	364	40	73	16,750	5.0	0	0	**4**	0	0	0	0	0	0
Total	9,011	5,660	658	565	278,828	6.3	6	1	8	4	0	0	2	10	3

[1] Finalized trip ticket data averaged from 2011-2015

[2] Preliminary trip ticket data for 2016

[3] Alternative Platform trips where no fishing activity was found

[4] Based on estimated trips and observer large mesh trips

Table 2. Preliminary data collected for large mesh gill nets by season and management unit through the NCDMF Observer Program through August 2016.

		Trips		Observer Large Mesh				Observed Takes By Species								
								Kemp's		Green		Loggerhead		Unknown	A.Sturgeon	
Season	Unit	Estimated [1]	Actual [2]	AP Attempts [3]	Trips	Yards	Coverage [4]	Live	Dead	Live	Dead	Live	Dead	Live	Live	Dead
Winter	A	946	1,743	70	52	28,150	5.5	0	0	0	0	0	0	0	**10**	0
	B	109	36	10	0	0	0.0	0	0	0	0	0	0	0	0	0
	C	138	31	23	13	7,140	9.4	0	0	0	0	0	0	0	0	0
	D1	0	0	2	0	0	0.0	0	0	0	0	0	0	0	0	0
	D2	3	1	5	0	0	0.0	0	0	0	0	0	0	0	0	0
	E	36	42	44	15	1,955	41.7	0	0	**1**	0	0	0	0	0	0
Spring	A	2,277	1,496	71	138	86,433	6.1	0	0	0	0	0	0	0	**4**	**2**
	B	568	276	75	43	21,440	7.6	**1**	0	0	**1**	0	0	**1**	0	0
	C	878	995	39	73	49,390	8.3	0	0	0	0	0	0	0	0	0
	D1	25	5	12	0	0	0.0	0	0	0	0	0	0	0	0	0
	D2	67	92	26	4	3,000	5.9	0	0	0	0	0	0	0	0	0
	E	279	179	106	56	13,965	20.1	0	0	0	0	0	0	0	**2**	**1**
Summer	A	1,419	148	29	5	5,450	0.4	**1**	**1**	0	0	0	0	0	**1**	0
	B	1,234	152	22	3	2,800	0.2	**2**	0	**1**	**1**	0	0	0	0	0
	C	654	484	46	58	37,260	8.9	0	0	**1**	0	0	0	0	0	0
	D1	0	0	8	0	0	0.0	0	0	0	0	0	0	0	0	0
	D2	125	160	24	22	5,080	17.6	0	0	**1**	0	0	0	0	0	0
	E	489	369	103	98	26,955	20.0	**2**	0	**4**	**2**	0	0	**1**	0	0
Total		9,249	6,209	715	580	289,018	6.3	6	1	8	4	0	0	2	17	3

[1] Finalized trip ticket data averaged from 2011-2015

[2] Preliminary trip ticket data for 2016

[3] Alternative Platform trips where no fishing activity was found

[4] Based on estimated trips and observer large mesh trips

Table 3. Preliminary data collected for small mesh gill nets by month through the NCDMF Observer Program through August 2016.

	Trips		Observer Small Mesh			Observed Takes By Species								
						Kemp's		Green		Loggerhead		Unknown	A. Sturgeon	
Month	Estimated [1]	Actual [2]	Trips	Yards	Coverage [3]	Live	Dead	Live	Dead	Live	Dead	Live	Live	Dead
January	666	464	29	14,055	4.4	0	0	0	0	0	0	0	**3**	0
February	666	711	28	15,320	4.2	0	0	0	0	0	0	0	**1**	0
March	928	966	44	18,515	4.7	0	0	**1**	0	0	0	0	**1**	0
April	1,344	889	23	8,955	1.7	0	0	**1**	**1**	0	0	0	0	0
May	879	473	16	6,595	1.8	0	0	0	0	0	0	0	0	0
June	726	446	11	2,325	1.5	0	0	0	0	0	0	0	0	0
July	665	314	7	2,525	1.1	0	0	0	0	0	0	0	0	0
August	727	467	12	1,500	1.6	0	0	0	0	0	0	0	0	0
Total	6,601	4,730	170	69,790	2.6	0	0	2	1	0	0	0	5	0

[1] Finalized trip ticket data averaged from 2013-2015

[2] Preliminary trip ticket data for 2016

[3] Based on estimated trips and observer small mesh trips

Table 4. Preliminary data collected for small mesh gill nets by season and management unit through the NCDMF Observer Program through August 2016.

		Trips		Observer Small Mesh			Observed Takes By Species								
							Kemp's		Green		Loggerhead		Unknown	A.Sturgeon	
Season	Unit	Estimated [1]	Actual [2]	Trips	Yards	Coverage [3]	Live	Dead	Live	Dead	Live	Dead	Live	Live	Dead
Winter	A	1,196	1,161	50	25,290	4.2	0	0	0	0	0	0	0	**4**	0
	B	451	466	3	2,180	0.7	0	0	0	0	0	0	0	0	0
	C	162	116	9	5,100	5.6	0	0	0	0	0	0	0	0	0
	D1	5	1	0	0	0.0	0	0	0	0	0	0	0	0	0
	D2	66	23	1	200	0.0	0	0	0	0	0	0	0	0	0
	E	82	147	9	4,265	10.9	0	0	0	0	0	0	0	0	0
Spring	A	1,311	587	28	13,760	2.1	0	0	0	0	0	0	0	0	0
	B	1,295	1,463	29	12,000	2.2	0	0	**1**	0	0	0	0	**1**	0
	C	263	97	7	2,550	2.7	0	0	0	0	0	0	0	0	0
	D1	39	34	6	650	15.3	0	0	0	0	0	0	0	0	0
	D2	42	20	2	400	4.7	0	0	0	0	0	0	0	0	0
	E	201	127	11	4,705	5.5	0	0	**1**	**1**	0	0	0	0	0
Summer	A	356	32	0	0	0.0	0	0	0	0	0	0	0	0	0
	B	1,035	1,028	7	1,600	0.7	0	0	0	0	0	0	0	0	0
	C	363	69	7	2,150	1.9	0	0	0	0	0	0	0	0	0
	D1	12	4	1	0	8.3	0	0	0	0	0	0	0	0	0
	D2	66	13	3	350	4.5	0	0	0	0	0	0	0	0	0
	E	286	81	12	2,250	4.2	0	0	0	0	0	0	0	0	0
Total		7,231	5,469	185	77,450	2.6	0	0	2	1	0	0	0	1	0

[1] Finalized trip ticket data averaged from 2013-2015

[2] Preliminary trip ticket data for 2016

[3] Based on estimated trips and observer small mesh trips

Marine Fisheries
ENVIRONMENTAL QUALITY

PAT McCRORY
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BRAXTON C. DAVIS
Director

October 21, 2016

MEMORANDUM **MAFC 11-16**

TO: Marine Fisheries Commission

FROM: Chris Batsavage, Protected Resources Section Chief/Special Assistant for Councils

SUBJECT: Mid-Atlantic Fishery Management Council Meeting Summary— Oct. 4-6, 2016

The Mid-Atlantic Fishery Management Council met on Oct. 4-6, 2016 in Galloway, NJ. Management actions taken by the council are discussed below.

River Herring and Shad

The council considered whether to develop an amendment to add river herring (alewife and blueback herring) and shad (American and hickory shad) as council-managed stocks. Adding river herring and shad to the council's Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan was considered in October 2013, and the council voted to address these species through an interagency working group that comprehensively addressed river herring and shad mortality and stock status throughout their range. The council again determined that management of river herring and shad through a council fishery management plan is not warranted based on the existing management of the species in state waters by the Atlantic States Marine Fisheries Commission, the existing catch caps set by the council have kept incidental catch very low compared to historic levels, there is no evidence that river herring and shad are targeted in federal fisheries, and the council concluded that a fishery management plan would not substantially improve the condition of river herring and shad stocks. However, the council reaffirmed its commitment to participating with partners in the conservation and management of river herring and shad, noting that it will continue to protect the stocks by proactively using the tools provided in the recently-approved Ecosystem Approaches to Fisheries Management Guidance Document as well as continue to use catch caps to incentivize fishermen to reduce river herring and shad bycatch.

Spiny Dogfish 2017 Specifications

The council reviewed spiny dogfish specifications for 2017, which will be year 2 of the 2016-2018 multi-year specifications. After considering input from the Scientific and Statistical Committee and the Spiny Dogfish Advisory Panel and Monitoring Committee, the council made no changes to the previously-recommended specifications, which are a 39.1 million-pound coastwide commercial quota and a 6,000-pound trip limit in federal waters. State waters trip limits are managed under the Atlantic States Marine Fisheries Commission's Spiny Dogfish Fishery Management Plan. North Carolina's state waters spiny dogfish trip limit in 2016 was 20,000 pounds.

Communication and Outreach
Council staff presented an overview of the council's communication and outreach program and a proposed list of additional activities to be undertaken in 2017 and 2018. The council provided input and suggestions that will be incorporated into a formal communication plan.

Upcoming Meeting
The next regularly scheduled meeting of the Mid-Atlantic Fishery Management Council will be Dec. 13-15, 2016 at the Royal Sonesta Harbor Court Hotel in Baltimore, MD.

October 2016 Council Meeting Report

October 4 – 6, 2016

Galloway, New Jersey

The following summary highlights actions taken and issues considered at the Mid-Atlantic Fishery Management Council's October 2016 meeting in Galloway, New Jersey. Presentations, briefing materials, and audio recordings are available on the Council's website at www.mafmc.org/briefing/october-2016.

River Herring and Shad

The Council met to develop recommendations on whether to develop an amendment to consider adding RH/S as Council-managed stocks. Based on a comprehensive review of existing and planned conservation and management efforts, the Council determined that management of river herring and shad (RH/S) through a Council fishery management plan (FMP) is not warranted. However, the Council reaffirmed its commitment to participating with partners in the conservation and management of RH/S, noting that it will continue to protect RH/S stocks by proactively using the tools provided in the recently-approved Ecosystem Approaches to Fisheries Management (EAFM) Guidance Document. The Council will also continue to use catch caps to incentivize harvesters to reduce river herring and shad bycatch.

The Council's decision not to add these stocks to the fishery management plan for Atlantic mackerel, squid, and butterfish was largely based on the fact that RH/S are already managed by the Atlantic States Marine Fisheries Commission and that the catch caps set by the Council have kept incidental catch very low compared to historic levels. There is no evidence that RH/S are targeted in Federal fisheries, and the Council concluded that an FMP would not substantially improve the condition of RH/S stocks.

More details about this decision can be found in the press release at http://www.mafmc.org/s/pr16_16_RHS-Management.pdf. For additional background information and documents about river herring and shad, go to http://www.mafmc.org/rhs/.

Spiny Dogfish – 2017 Specifications

The Council reviewed spiny dogfish specifications for 2017, which will be year 2 of 2016-2018 multi-year specifications. After considering input from the Scientific and Statistical Committee and the Spiny Dogfish Advisory Panel and Monitoring Committee, the Council made no changes to the previously-recommended specifications, which are described at:
https://www.greateratlantic.fisheries.noaa.gov/nr/2016/August/16dogfish20162018specsphl.pdf.

Blueline Tilefish Framework

The Council met at the first framework meeting to consider modifying the recreational measures for blueline tilefish. The measures previously selected by the Council for 2017 are a season of May-October with a possession limits of 7 fish per-person for inspected for-hire vessels, 5 fish for uninspected for-hire vessels, and 3 fish for private vessels. During the meeting, staff presented an overview of possible options. The Council confirmed that it wants to proceed with development of the framework and requested that staff develop a range of alternatives that include a 5-fish uniform limit, extending the season later in the year, and/or a higher possession limit for multi-day trips by inspected for-hire vessels.

New Jersey Special Management Zone Consideration

In November 2015 the New Jersey Department of Environmental Protection (DEP) petitioned the Council to designate 13 artificial reef sites as Special Management Zones (SMZs) in the Exclusive Economic Zone (EEZ) under provisions of Amendment 9 to the Summer Flounder, Scup and Black Sea Bass FMP. The justification for

this request was based on the need to ameliorate gear conflicts between hook and line fishermen and fixed pot/trap gear at those sites.

During the meeting the Council received a report from the SMZ Monitoring Team (MT), which was formed to evaluate the NJDEP request. The report concluded that the designation of the NJDEP 13 reef sites appears to be compatible with the Magnuson-Stevens Act and other applicable federal laws. Based on evaluation of all relevant factors, the MT recommended that the Council designate all 13 New Jersey's artificial reefs located in the EEZ as SMZs. This designation would stipulate that no fishing vessel or person on a fishing vessel may fish in the 13 New Jersey Special Management Zones with any gear except hook and line and spear fishing (including the taking of fish by hand). The MT analysis indicated that commercial fishing vessels deploying pot/trap gear off the coast of New Jersey would likely face minimal to no losses in ex-vessel revenue if the artificial reefs are designated as SMZs. The Council discussed the MT's recommendations and decided to hold public hearings in November 2016 in NJ and NY to solicit public comments on the NJ SMZ request. The Council will review the public comments and take final action at its December 2016 meeting.

Draft Environmental Assessment for Amendment 10 to the Highly Migratory Species FMP

The Council received a presentation on Draft Amendment 10 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan. Draft Amendment 10 would update and revise existing HMS EFH, modify existing HAPCs or designate new HAPCs for several species, and analyze fishing and non-fishing impacts on EFH by considering environmental and management changes and new information since 2009. NMFS will conduct public hearing conference calls and webinars to allow for opportunities for interested members to submit verbal comments on Draft Amendment 10. Instructions for providing written comments are available at https://www.federalregister.gov/d/2016-21621.

Communication and Outreach

Council staff presented an overview of the Council's communication and outreach program and a proposed list of additional activities to be undertaken in 2017 and 2018. The Council provided input and suggestions which will be incorporated into a formal communication plan.

Executive Committee – 2017 Implementation Plan

The Executive Committee reviewed a draft list of priorities and activities for the 2017 implementation plan. The Committee recommended adding two items to the list of "Possible Additions." These include an action to address squid trimester issues and an action to change harvest regulations in the surfclam and ocean quahog fisheries. Council staff will incorporate the Committee's recommendations and present a revised draft for Council consideration at the December meeting. As part of this discussion, the Council reviewed a document which outlines the general process and timeline for development of an original FMP or amendment. This document is available on the Council's website at http://www.mafmc.org/s/FMP-Work.pdf.

Marine Fisheries
ENVIRONMENTAL QUALITY

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October 21, 2016

MEMORANDUM **SAFMC 11-16**

TO: Marine Fisheries Commission

FROM: Michelle Duval

SUBJECT: South Atlantic Fishery Management Council Meeting Summary (Sept. 12-16, 2016)

The South Atlantic Fishery Management Council met Sept. 12-16, 2016 in Myrtle Beach, South Carolina. The attached meeting report compiled by council staff contains a summary of the major issues addressed and actions taken. The report includes links to the post-meeting news release, briefing materials and public comments, as well as a graphical summary of the meeting via the September 2016 Council Meeting Round-up Story Map (http://arcg.is/2cs90dT).

Items that may be of particular interest to the commission include the following:

- Cobia: The council took final action on Framework Amendment 4, which will modify the existing recreational size limit, bag limit and accountability measures, as well as establish a recreational vessel limit. The amendment also modifies the commercial possession limits (see pages 2-3). Additionally, the council directed staff to move an action to change the start date of the recreational fishing year (from Jan. 1 to May 1) into a separate amendment for approval in December (see page 3). Finally, the council approved a motion to delay the cobia stock assessment in order for 2019 data to be included (see page 6, "Stock Assessment Schedule").

- For-Hire Reporting Amendment: This amendment will implement weekly electronic reporting for the federally-permitted charter vessels, similar to that already in place for federally-permitted headboats. The council has a pilot project underway in the region to test both software and hardware (e.g., tablets) and is scheduled to take final action on the amendment in December (see page 5).

- For-Hire Control Date/Limited Entry: At its June 2016 meeting, the council established a control date of June 15, 2016 for the three open-access charter/headboat permits. The control date was noticed in the Federal Register for a 30-day public comment period on Sept. 27, 2016. The council discussed development of a scoping document for review and possible approval in December (see page 5).

- Snapper Grouper Vision Blueprint Amendments: The council reviewed an options paper for a recreational snapper grouper amendment focused on fisheries seasonality and retention issues that were raised during the Vision Blueprint port meetings (see pages 7-8). A revised document will be reviewed in December, along with a similar document for the commercial fishery. Both documents will be approved for the next round of public scoping meetings scheduled for early February 2017.

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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Dr. Michelle Duval, Chair | Charlie Phillips, Vice Chair
Gregg T. Waugh, Executive Director

SEPTEBMER 12-16, 2016 COUNCIL MEETING REPORT
MYRTLE BEACH, SOUTH CAROLINA

The following summary highlights issues discussed and actions taken at the South Atlantic Fishery Management Council's September 2016 meeting in Myrtle Beach, South Carolina.

Briefing materials, presentations, and public comments are available on the Council's website at: http://blog.safmc.net/meeting-documents/safmc-sept-2016-council-meeting-briefing-book/

Read further details and see images and other links at the September 2016 Council Meeting Round-up Story Map: http://arcg.is/2cs90dT

The Meeting News Release is available at: http://safmc.net/SAFMCNR_091616_Sept2016CouncilMeeting

Major items addressed:

Issue:	Action Taken:	Schedule:
Hogfish	Final approval for review by Secretary of Commerce	September 23, 2016 – Council sends Amendment 37 (Hogfish) for formal review
Cobia	Final approval for review by Secretary of Commerce	October 14, 2016 – Council sends Framework Amendment 4 (Cobia) for formal review
King & Spanish Mackerel	Final approval for review by Secretary of Commerce	Mid-November 2016 – Gulf Council sends Framework Amendment 5 (Modify Permit Restrictions) for formal review
Red Snapper	Direction to prepare a scoping document	December 2016 – Council reviews scoping document and approves for scoping
Dolphin/Yellowtail Snapper	Provided guidance to revise the options	December 2016 – Council reviews revised document and approves for pubic hearings
Mutton Snapper	Provided guidance to revise the actions/alternatives based on public hearing input	December 2016 – Council reviews final Amendment 41 (Mutton Snapper) and approves for formal review
For-Hire Reporting Amendment	Provided guidance for preparing amendment for final approval	December 2016 – Council reviews final amendment and approves for formal review

Hogfish – Approved for Formal Review
The Council:

- Specified the total ACL for the GA-NC stock in pounds whole weight; specify the ABC and total ACL for the FLK/EFL stock of hogfish in numbers of fish.
- Management measures for the GA-NC stock:
    - Increase the recreational and commercial minimum size limit from 12 to 17 inches fork length
    - Establish a recreational bag limit of 2 hogfish per person per day
    - Establish a commercial trip limit of 500 pounds whole weight
- Management measures for the FLK/EFL stock:
    - Increase the recreational and commercial minimum size limit from 12 to 16 inches fork length
    - Reduce the recreational bag limit from 5 on the Florida east coast to 1 hogfish per person per day for the FLK/EFL stock
    - Establish a recreational fishing season of May-October
    - Establish a commercial trip limit of 25 pounds whole weight
- Accountability Measure for both hogfish stocks: If commercial landings reach or are projected to reach the commercial annual catch limit (ACL), NMFS would close the commercial sector for the remainder of the fishing year. On and after the effective date of such a notification, all sale or purchase is prohibited and harvest or possession of hogfish in or from the EEZ would be limited to the recreational bag and possession limit. This bag and possession limit applies in the South Atlantic on board a vessel for which a valid Federal commercial or charter vessel/headboat permit for South Atlantic snapper grouper has been issued, without regard to where such species were harvested, i.e., in state or Federal waters. Additionally, if the commercial ACL is exceeded, NMFS would reduce the commercial ACL in the following fishing year by the amount of the commercial overage, only if hogfish is overfished and the total ACL (commercial ACL and recreational ACL) of the respective stock is exceeded.
- Approved the amendment for formal review by the Secretary of Commerce.

Cobia – Approved for Formal Review
The Council met as a "Committee of the Whole" to allow the 2 Mid-Atlantic Council representatives to vote at the Council level to address concerns about the amount of input fishermen in Virginia have in the decision process. The Mid-Atlantic Council requested the South Atlantic Council use this approach. The following preferred management alternatives were selected:

- Establish a recreational bag limit for Atlantic cobia of 1 fish per person per day
- Establish a recreational vessel limit for Atlantic cobia of 6 fish per vessel per day (increased from a proposed 3 fish per vessel per day based on public input)
- Increase the minimum size limit for Atlantic cobia for recreational and commercial harvest of Atlantic cobia from 33 inches FL to 36 inches FL
- Accountability Measure (AM#1): 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 annual catch target (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 Regional Administrator will reduce the length of the following fishing year only if the stock ACL (commercial ACL and recreational ACL) is exceeded.
- Accountability Measure (AM#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 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 Regional Administrator will reduce the recreational vessel limit for the following fishing year only if the stock ACL (commercial ACL and recreational ACL) is exceeded.
    - The AM would be a reduced vessel limit to no less than 2/vessel, and only if stock ACL is exceeded. Reduced vessel limit would be applied before a reduced season length (AM#1).
- 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, whichever is more restrictive.

The fishing year cannot be changed through the framework so the Council directed staff to work on a separate amendment to change fishing year, schedule a webinar public hearing(s) prior to December, and bring a draft document for final approval at the December 5-9, 2016 meeting in Atlantic Beach, NC:

- Modify the fishing year for Atlantic cobia from the calendar year to May 1 through April 30.

Mackerel Framework Amendment 5 (Revise Permit Restrictions) – Approved for Formal Review

The purpose of this amendment is to eliminate permit restrictions unique to commercial king and Spanish mackerel permit holders in the Gulf, South Atlantic, and Mid-Atlantic regions.

Red Snapper – Direction to Revise the Scoping Document

SEFSC staff (Dr. K. Sigfried) delivered a presentation addressing reasons why SEDAR 24 and SEDAR 41 estimated such different productivity levels for red snapper. Selectivity changes and shifts in age composition (MRIP and headboat datasets) were cited as contributing factors. Council staff then presented an overview of options for possibly allowing harvest of red snapper while continuing to rebuild the stock. The Committee discussed options and provided guidance as follows:

- Action 2 (MSST) - Develop different Static SPR values to get over 50% SSBmsy. Add 85% of SSBmsy?
- Action 3 (ACLs) - Specify ABC/ACL in numbers of fish; include a table of red snapper landings by county

- Action 5 (optimum yield) - Remove MSA definition (Alternative 4); include an alternative for defining optimum yield: "OY is the long-term average catch, which is not designed to exceed the ACL, and will fall between the ACL and ACT."
- Action 6 (closed area(s) to reduce bycatch) - add alternative(s) to investigate depth and discard mortality. Look at 10-foot intervals from 60 ft. to 150 ft.; look at area closure alternatives from Amendment 17A with seasonal (after May 1) and depth (98 ft. to 240 ft) components; examine area closure inshore of 98 ft. with a seasonal component; examine spatial data for red snapper abundance and overlay discards and apply seasonal (temporal) component.
- Action 7 (commercial measures) - add options for no harvest and for keeping the dive fishery closed; no commercial ACT; consider limiting harvest to non-spawning months? Trip limits both in pounds and numbers of fish; measures would specify harvest as *incidental.*
- Action 8 (recreational measures) - add alternative for season and bag limit for private recreational and for-hire combined; add alternative for headboat vessel limits; have similar options those considered for the recreational sector, add option for 75 ft to Alternative 5 and other depths listed in option 6.
- Action 9 (recreational stamp) - consider referring to "permit" instead of "stamp"; include consideration of red snapper bycatch notification system to report incidental catch of red snapper or hail in/out system; bring back information on cost of possible harvest tag program (provided during discussions on Amendment 22); need to be clear about purpose of a stamp/recreational permit program (i.e., data collection or effort control?)
- Action 10 (reporting requirements for recreational sector) – consider referring to Gulf States Commission for e-logbook enforcement. Revise Alternative 5.
- Action 11 (AMs and adaptive management) – remove Alternative 7 (develop adaptive management based fishery independent monitoring using a rumble strip approach).
- Action 12 (Best Fishing Practices) – modify Alternative 2 to require venting tool and/or descending device to be on board vessel when snapper grouper species are onboard; consider descending device requirement for certain depth(s); add options for commercial and recreational sectors.

Joint Dolphin/Wahoo and Snapper Grouper Amendment – Provided guidance based on input from scoping meeting and written comments

The Council provided the following guidance:

- Direct staff to develop an action in the allocation amendment that will look at the long term average catch in the recreational sector for dolphin so that Optimum Yield will be the long-term average catch, which is not designed to exceed the Annual Catch Limit (ACL), and will fall between the ACL and the Annual Catch Target (ACT).
- Removed consideration of allocating the commercial ACL based on gear type.
- Move Alternatives 3 & 6 in Action 2 (Revise sector allocations for dolphin) to the considered but rejected appendix.
- Replace Alternative 7 in Action 2 with new wording.
- Remove Alternatives 6 & 7 in Action 3 (Revise sector allocations for yellowtail snapper) and add a new alternative.

- Clarify throughout the document that all alternatives in all actions will allow ACL transfers to either sector.
- Direct staff to develop an action that would address authorized gear aboard a vessel on which dolphin and wahoo are onboard. This surfaced to allow offshore American lobster vessels to land dolphin/wahoo caught with hook-and-line or rods/reels while fishing lobster traps.

Mutton Snapper – Revisions based on input from public hearings and actions by the FWC:
The Council specified the following as preferred management measures:

- Revised catch level specifications including annual catch limits in numbers of fish
- Designate April-June as the spawning months
- Retain mutton snapper in the 10 snapper aggregate bag limit and set the mutton snapper bag limit as 5 per person per day year-round (increased from 3 per person preferred taken to public hearings)
- Specify a commercial trip limit for mutton snapper during the "spawning months" in the South Atlantic of 5 per person per day (increased from 3 per person preferred taken to public hearings)
- Establish a commercial trip limit for mutton snapper during the "regular season" (i.e., non-spawning months) in the South Atlantic of 500 pounds (increased from 300 pounds preferred taken to public hearings)
- Increase the minimum size limit for mutton snapper in the South Atlantic region from 16 to 18 inches TL

For-Hire Reporting Amendment – Guidance for Final Approval in December

- The Council was asked to review the revised amendment document and provide any comments to staff.
- There was discussion on the importance of ensuring compliance with reporting requirements and the role of law enforcement and administrative provisions in ensuring compliance.
- Review the amendment for final approval at the December 5-9, 2016 meeting in Atlantic Beach, NC.

For-Hire Control Date & Limited Entry – Guidance for scoping document
The Council established June 15, 2016 as the control date for the three open access charter vessel/headboat permits (Snapper Grouper, Mackerel/Cobia, and Dolphin/Wahoo); the notice will publish in the Federal Register in the near future and the public will be provided an opportunity to comment. The Council discussed components of a limited entry program, discussed information they want provided at the December meeting, and directed staff to develop a scoping document for a limited entry amendment for these three for-hire fisheries. The scoping document will be reviewed at the December 5-9, 2016 meeting in Atlantic Beach, NC, and the Council will determine whether to approve the document for scoping.

Information & Education Committee
The Council received a summary of the recent Council Communications survey that was conducted in July 2016. The summary included an overview of:

- How stakeholders are using existing outreach and communication products and programs of the Council; stakeholder preferences for receiving communication from the Council;
- How stakeholders are using existing outreach and communication products/programs from other agencies/organizations;
- Feedback on the current use and possible improvements to the Council's mobile app, *SA Fishing Regulations;*
- Feedback on potential new outreach strategies from the Council; and
- Other recommendations for improving Council communications.

The Council provided guidance on each of these items; see the Final Committee report for details.

Red Grouper SAFE Report
Dr. Mike Errigo, Council Staff, presented an overview of the information in the Stock Assessment and Fishery Evaluation (SAFE) report. The Committee provided guidance to include options to explore spawning season closure modifications in both Visioning Amendments (commercial and recreational) for discussion at December 2016 meeting.

Stock Assessment Schedule & Appointments
Regarding SEDAR 50 (Blueline Tilefish) the Council was informed that the recent age workshop concluded that reliable ages could not be assigned to structures at this time. The assessment will proceed as scheduled, with a January 2017 Data Workshop and SSC review in October 2017. Results will be presented to the Council in December 2017.

Dr. Erik Williams provided a presentation on the research track proposal via webinar. The Committee supports moving ahead with the research track pilot planned for the 2018 scamp assessment. Efforts to increase assessment productivity are supported and encouraged, as long as opportunities for adequate public involvement and data evaluation are retained. Clarification was provided that the research track process applies to assessments conducted through the Center, and not to those conducted by other Cooperators (such as the Commissions and state agencies) and reviewed by SEDAR.

The Council had previously requested a cobia benchmark assessment in 2018, and to include cobia in the SEDAR stock ID workshop in 2017. The Council supported the assessment priorities approved at the prior meeting (shown below), and requested conducting the next assessment of Tilefish sooner if an opening arises earlier in 2019. The Council also requested delaying the Cobia assessment until 2019 data can be included, and prioritize Gag for 2018. The Council's recommendations will be considered by the SEDAR Steering Committee when they meet September 20-21, 2016 in Charleston, SC. The Council previously requested the Scientific and Statistical Committee provide recommendations at their October 18-20, 2016 meeting for stocks to consider for data limited assessment methods.

Table 6 of Attachment 6.							
Year	Quarter	1	2	3	4	FL FWCC	Extra
2016	1	**RSGT**	**RSGT**				SA tile
	2	**RSGT**				1	SA tile
	3	**BL**	**BL**		*RG*	GG	
	4	**BL**	**BL**		*RG*	GG	
2017	1	**BL**	**BL**	*BSB-S*	*RG*		
	2	**BL**	**BL**	*BSB-S*			
	3	**BL**	**BL**		VS	**BLG**	
	4			MRIP	VS	**BLG**	
2018	1	**S/RT**	**COBIA**	MRIP	*RP-S*	**BLG**	**KM**
	2	**S/RT**	**COBIA**	*GAJ-S*	*RP-S*	**BLG**	**KM**
	3	**S/RT**	**COBIA**	*GAJ-S*		**YTS**	**KM**
	4	**S/RT**	**COBIA**			**YTS**	**KM**
2019	1	**S/RT**	**COBIA**			**YTS**	**KM**
	2	**S/RT**		*GAG-S*	*SpMack-S*	**YTS**	
	3			*GAG-S*	*SpMack-S*		
	4			*SNG-S*	*Tile-S*	Hog, N-U	
2020	1	**GT-B**	**WhG-B-**	*SNG-S*	*Tile-S*	MS-S	
	2	**GT-B**	**WhG-B**			MS-S	
	3	**GT-B**	**WhG-B**	RS-U	RG-U		
	4	**GT-B**	**WhG-B**	RS-U	RG-U		

Species and Stocks Codes

gT	golden Tilefish	BL	Blueline Tilefish	RS	Red Snapper
S/RT	Scamp, Research Track Pilot	RG	Red Grouper	GAG	Gag Grouper
DS	HMS Dusky Shark	VS	Vermilion Snapper	SBS	Sandbar shark
GBt	Gulf Blacktip Shark	GAJ	Greater Amberjack	YTS	Yellowtail Snapper
RSGT	Red Snapper, Gray Triggerfish	ABt	Atlantic Blacktip Shark	GDL	Gulf Data Limited
BLG	Black Grouper (review only)	ABP	Best Practices, Assessments	GS	Gray Snapper, start time TBD
MRIP	Revision Updates for MRIP Data	GG	Goliath Grouper (review only)	SID	Stock ID and Meristics
CDL	Caribbean Data Limited	KM	King Mackerel		

Vision Blueprint Recreational Amendment - Fisheries Seasonality and Retention

The Committee/Council reviewed an options paper containing possible actions to modify recreational bag limits and the annual 4-month closure for shallow water groupers. The Committee/Council provided the guidance below and requested that a revised options paper be prepared for the December 2016 meeting to approve for scoping in early 2017.

- Include an alternative for an aggregate bag limit that would include the species in the existing 10-snapper aggregate and the 20-fish aggregate. The alternative would maintain current restrictions for individual species within that aggregate but would address the Council's intent to simplify regulations.
- Include an alternative that would eliminate the 10-snapper aggregate and allow specification of individual bag limits for those species.

- Include an alternative for a deepwater species' aggregate that would impose the seasonal restrictions that are currently in place for snowy grouper and blueline tilefish (recreational harvest is restricted to May-August).
- Bring in alternatives originally explored in the draft South Florida Amendment.
- Remove from consideration the alternative to eliminate the 4-month shallow water grouper closure.
- Obtain input from Snapper Grouper Advisory Panel on how to address equitable access to shallow water grouper resource. For instance, gag are not available to recreational fishermen in south Florida because they migrate northward during the closure months.
- Include explanation of actions being considered in Amendment 43 (red snapper) to explain the overlap with items from the Vision Blueprint.
- Include options for red grouper.

Highly Migratory Species Committee

- Received a presentation on a proposed rule to modify the commercial retention limit for blacknose and non-blacknose small coastal sharks in the Atlantic Region.
  The proposed rule will implement a commercial retention limit for blacknose sharks that is intended to allow for the better utilization of available non-blacknose small coastal shark quota due to quota linkages between the two groups while also rebuilding and preventing overfishing of blacknose sharks.
- Received a presentation on Draft Amendment 10 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan: Essential Fish Habitat.
  The amendment will potentially modify and/or create new Essential Fish Habitat for bluefin tuna and Habitat Areas of Particular Concern for sandbar sharks and lemon sharks in the South Atlantic Region.
- The Council approved sending a letter of support to HMS for the blacknose shark retention limits outlined in the amendment.

Other Items:

- Parliamentary Practice Workshop – conducted by Colette Collier Trohan, PRP, CPP-T from A Great Meeting, Inc. The Council learned about communication styles, motions, and how to conduct meetings.
- The Council received a report from the Habitat Ecosystem AP, a summary of FEP II South Atlantic Food Web & Connectivity and Climate Variability & Fisheries Sections, and an overview of Habitat & Ecosystem Tools and Model Development.
- The Council approved sending a letters to NMFS:
  - Outlining the cumulative impact of species-specific estimates of unusually large/small MRIP landings/discards and the impacts on the Council process; bring back in December for review
  - Requesting that NMFS make the necessary request within NOAA to have Council managed areas (Deepwater MPAS, Coral HAPCs) included on NOAA nautical charts.

- Protected Resources
    - The snapper grouper biological opinion is in review and should be finalized in the next two to three weeks.
    - Nassau grouper were listed as a threatened species under the Endangered Species Act due to decline in the population abundance, targeting the species at spawning aggregations (not in US), and limited enforcement in some foreign countries. Next steps include determining whether and where critical habitat should be designated and if a 4(d) rule is needed.
    - The stock assessment for Atlantic sturgeon is on schedule to be completed in 2017.
    - Red knot critical habitat is currently scheduled to be completed in September 2017 although the schedule may change due to the filing of two notices of intent, if potential litigation is forthcoming.
- Scientific & Statistical Committee – the Council voted to re-advertise the SSC vacancy once a conflict of interest policy is developed, and reconsider the appointment at the June meeting.
- Advisory Panel Changes
    - Made appointments to various Advisory Panels
    - Created a Cobia Sub-Panel on the Mackerel Cobia Advisory Panel. Given the high level of interest in cobia at this time, the AP Selection Committee wanted to involve more fishermen than we had open spots on the AP. They have proposed to establish a cobia sub-panel to allow more involvement of cobia fishermen while preserving the current king and Spanish mackerel expertise. There was some concern that this sub-panel was not equal in function to the Advisory Panel. The Committee discussed this and it was noted that the members proposed for the Cobia Sub-Panel were equal to members of the Mackerel Cobia AP. In fact, the Cobia Sub-Panel will be very active over the next two years as results from the stock ID workshop and pending cobia assessment become available. The Cobia Sub-Panel will meet via webinar and can also meet in person as needed. There may be times that the Council has the Mackerel Cobia AP and the Cobia Sub-Panel meet together; should this occur, the Cobia Sub-Panel members will participate and vote as full AP members.
- Public Comment Guidelines – the Council approved the method used at the June and September meetings for public comments. Having the public provide comments using the Council's Comment Form makes them available to Council members and the public.
- Regional Operations Agreement – the Council reviewed and approved the agreement that outlines the roles and responsibilities of the Council/NMFS/NOAA GC in preparing fishery management plans/amendments.

Marine Fisheries
ENVIRONMENTAL QUALITY

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DONALD R. VAN DER VAART
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BRAXTON C. DAVIS
Director

October 31, 2016

MEMORANDUM **HMS 11-16**

TO: Marine Fisheries Commission

FROM: Randy Gregory, Division of Marine Fisheries, NCDEQ

SUBJECT: Highly Migratory Species Update

The Highly Migratory Species Advisory Panel's fall meeting was held on Sept. 7 – 8, 2016 in Silver Spring, Maryland. The advisory panel discussed amendments to the 2006 Consolidated Highly Migratory Species Fishery Management Plan, including results of the 2016 dusky shark stock assessment and the Amendment 5b; Draft Amendment 10 on Essential Fish Habitat, including potential Habitat Areas of Particular Concern; implementation updates for Final Amendment 7 on bluefin tuna management; and progress updates on various other rulemakings, including archival tag requirements, blacknose and small coastal shark management.

Sharks

On Oct. 13, the National Marine Fisheries Service released Draft Amendment 5b to the Consolidated Highly Migratory Species Fishery Management Plan proposing a range of management measures to prevent overfishing and rebuild overfished shark stocks. These measures are based on recent assessments that determined dusky sharks are overfished and experiencing overfishing. Preferred alternatives for recreational anglers would require permit holders fishing for sharks recreationally to obtain a shark endorsement, which requires completion of an online shark identification and fishing regulation training course, and require the use of circle hooks while shark fishing. Preferred alternatives for the commercial fishery would require pelagic longline fishermen to release all sharks not being retained using a dehooker or cutting the gangion less than three feet from the hook, completion of a shark identification and fishing regulation training course for pelagic longline, bottom longline, and shark gillnet vessel owners and operators and require the use of circle hooks by all directed shark permit holders using bottom longline. A public hearing will be held in Manteo at the Commissioners Meeting Room, Dare County Administration Building on Nov. 28, 2016 at 5 p.m.

Bluefin Tuna

As of Oct. 31, 2016, the General category (commercial bluefin tuna hook and line fishery) has landed approximately 677.4 metric tons out of the 676.7 metric ton quota for the category. According to Highly Migratory Species Division biologists, the General category will close on or near Nov. 4. The General category will remain closed until Jan. 1, 2017 when the new fishing year begins.

INFORMATION WILL BE PROVIDED AT THE MEETING.

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