NORTH CAROLINA MARINE FISHERIES COMMISSION

August 2025

Business Meeting Briefing Materials

August 20-21, 2025

Raleigh, N.C.

NC Marine Fisheries Commission

Table of Contents

August 2025 Quarterly Business Meeting

Contents

Preliminary Matters

August 2025 Quarterly Business Meeting

Documents

Meeting Agenda

Draft May 2025 Meeting Minutes

Marine Fisheries Commission Business Meeting
AGENDA

Hilton Raleigh North Hills; Raleigh, NC
August 20-21, 2025

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).

Wednesday, August 20, 2025

1:00 p.m. Preliminary Matters

- Swearing in of New Commissioners
- Commission Call to Order* – *Sammy Corbett, Chairman*
- Moment of Silence and Pledge of Allegiance
- Review Ethics Evaluations of New Commissioners
- Conflict of Interest Reminder
- Roll Call
- Remarks by Department of Environmental Quality Secretary Wilson
- **Approval of Agenda ****
- **Approval of Meeting Minutes ****

1:15 p.m. Chairman's Report

- Letters and Online Comments
- Ethics Training and Statement of Economic Interest Reminder
- 2026 Proposed Meeting Schedule
- **Elect Vice Chair ****

1:30 p.m. Director's Report – *Kathy Rawls*

- Informational Materials
- Rule Suspension Memo

2:00 p.m. Rulemaking – *Catherine Blum*

- 2024-2025 Rulemaking Cycle Update

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

- 2025-2026 Rulemaking Cycle Update

2:15 p.m. Independent Sampling – *Jacqui Degan*

2:45 p.m. Blue Crab Fishery Management Plan Amendment 3 Adaptive Management – *Robert Corbett*

3:15 p.m. Break

6:00 p.m. Return for Public Comment Period

Thursday, August 21, 2025

9:00 a.m. Public Comment Period

9:30 a.m. Atlantic Bonito Information Update – *Jacqui Degan*

10:00 a.m. Standard Commercial Fishing License Eligibility Report – *Capt. Garland Yopp, Chearin Lewis*

- **Vote on setting temporary cap on the number of licenses in the Eligibility Pool****

10:30 a.m. FMP Annual Review – *Charlton Godwin*

11:30 a.m. Characterization of North Carolina's Sheepshead Fisheries– *Anne Markwith*

12:00 p.m. Lunch Break

1:30 p.m. Characterization of North Carolina's Black Drum Fisheries – *Chris Stewart*

2:00 p.m. Southern Flounder Fishery Management Plan Amendment 4 – *Jeff Dobbs, Anne Markwith*

- **Vote on Final Adoption of Amendment 4**

2:30 p.m. Southern Flounder Fishery Management Plan Amendment 5 – *Jeff Dobbs*

- Commission input on management issues/topics for inclusion in draft plan

3:30 p.m. Central/Southern Management Area Striped Bass Data Analysis – *Dan Zapf, Todd Mathes, Charlton Godwin*

4:30 p.m. Issues from Commissioners

5:00 p.m. Meeting Assignments and Preview of Agenda Items for Next Meeting – *Jesse Bissette*

5:15 p.m. Adjourn

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

*****Probable Action Items***

Marine Fisheries Commission Business Meeting Minutes

DRAFT

Beaufort Hotel

Beaufort, North Carolina

May 21-23, 2025

The Marine Fisheries Commission (MFC) held a business meeting May 21-23, 2025, at the Beaufort Hotel in Beaufort, North Carolina. In addition to the public comment sessions, members of the public submitted public comment online or via U.S. mail. The written comments, briefing materials, presentations, and full audio from this meeting are available here.

Actions and motions from the business meeting are listed in **bold** type.

BUSINESS MEETING

May 21, 2025

Public Comment Period

Chairman Sammy Corbett held a public comment session that began at 6:00 p.m. The following members of the public provided comments to the commission: Gregory Judy, Tim Hergenrader, Joe Romano. With no one else wishing to speak, Chairman Corbett ended the public comment period at 6:09 p.m.

View the video recording of the May 21, 2025, 6:00 p.m. public comment session

May 22, 2025

Public Comment Period

Chairman Sammy Corbett held a public comment session that began at 9:00 a.m. The following members of the public provided comments to the commission: Lisa Rider, Dan Mose, Robert Pike, Chris Elkins, Stuart Creighton, Richard Newman, Tara Foreman. With no one else wishing to speak, Chairman Corbett ended the public comment period at 9:18 a.m.

View the video recording of the May 22, 2025, 9:00 a.m. public comment session

Preliminary Matters

Chairman Corbett called the May 21-23, 2025, business meeting to order.

Chairman Corbett began the meeting with a moment of silence, followed by the pledge of allegiance.

Next, Chairman Corbett reminded all commissioners of N.C. General Statute § 138A-15(e), which 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. There were no stated conflicts of interest from any commissioner.

The following MFC members were in attendance: Sammy Corbett – Chairman, Ryan Bethea, Mike Blanton, Willie Closs, Sarah Gardner, Alfred Hobgood, Doug Rader, Tom Roller, and William Service.

Chairman Corbett asked for any corrections or additions to the meeting agenda and then requested a motion to approve the agenda.

Motion by Commissioner Roller to approve the meeting agenda.

Second by Commissioner Hobgood.

Motion passed by unanimous consent.

Chairman Corbett asked for any corrections, additions or deletions that need to be made to the March 2025 MFC Quarterly Business Meeting minutes.

Commissioner Roller inquired about the recent change in the meeting minute format, specifically with the public comment portion of the minutes. After MFC Liaison Jesse Bissette and MFC Counsel Phillip Reynolds explained the change, Chairman Corbett called for a motion.

Motion by Commissioner Hobgood to approve the March 2025 business meeting minutes.

Second by Commissioner Rader.

Motion passed with one objection.

View the recording of the motions and surrounding discussion

Chairman's Report

Letters and Online Comments

Chairman Corbett asked MFC Liaison Jesse Bissette to refer commissioners to the written comments provided in the briefing materials.

Ethics Training and Statement of Economic Interest Reminder

Chairman Corbett reminded commissioners to work with MFC Liaison Jesse Bissette to stay up to date on their ethics training and Statement of Economic Interest.

Committee Reports

Chairman Corbett asked MFC Liaison Jesse Bissette to refer commissioners to the committee reports provided in the briefing materials.

View the video recording of the Chairman's Report and surrounding discussion

Director's Report

Director Kathy Rawls began her report by acknowledging the presence of the DEQ General Counsel Dan Hirschman. She provided an overview of proposed legislative bills with potential impacts on North Carolina's fisheries. Updates were also given on both state and federal budgets, including anticipated effects on Division operations and ongoing programs. Director Rawls reported on staffing updates within the Division, noting several vacancies have been filled, including the Stock Assessment Program Manager and Stock Assessment Biologist positions. She also discussed progress on Mandatory Harvest Reporting, highlighting outreach and education initiatives and a redesign of relevant webpages. An update was provided on the status of the CCA lawsuit, which has experienced a delay, as well as on other active legal matters, including litigation and hearings related to shellfish leases. Director Rawls referenced the Cold Stun Update and Rule Suspension memos included in the briefing materials. She concluded by announcing that Division-issued cellphones have been provided to Commissioners, and associated contact information has been posted online.

View the video recording of the Director's Report and surrounding discussion

Economic Analysis Presentation

DMF Economist Jason Walsh gave a presentation on the Economic Analysis of Rulemaking and Fishery Management Plans.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

Rulemaking

Division of Marine Fisheries (DMF) Rulemaking Coordinator Catherine Blum provided updates on the 2023-2024 rulemaking cycle, 2024-2025 rulemaking cycle, and 2025-2026 rulemaking cycle.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

Motion by Commissioner Roller to approve Notice of Text for Rulemaking for amendment of:

- **15A NCAC 03I .0101, .0114, 03O .0501-.0503 for Permit-Related Rules; and**
- **15A NCAC 03I .0101, 03O .0201, .0207, .0208, .0210 for Franchises and Shellfish Leases.**

Second by Commissioner Gardner.

ROLL CALL VOTE					
Member	**Aye**	**Nay**	**Abstain**	**Recuse**	**Absent**
Bethea	☒	☐	☐	☐	☐
Blanton	☒	☐	☐	☐	☐
Closs	☒	☐	☐	☐	☐
Gardner	☒	☐	☐	☐	☐
Hobgood	☒	☐	☐	☐	☐
Rader	☒	☐	☐	☐	☐
Roller	☒	☐	☐	☐	☐
Service	☒	☐	☐	☐	☐
Corbett	☒	☐	☐	☐	☐

Motion passed unanimously.

View the video recording of the motions and surrounding discussion

Blue Crab Fishery Management Plan Amendment 3 Adaptive Management

DMF Biologists Robert Corbett and McLean Seward gave a presentation on the Blue Crab FMP Amendment 3 Adaptive Management.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

CSMA Striped Bass Analysis Update Presentation

DMF Biologists Dan Zapf, Charlton Godwin, and Todd Mathes gave a presentation on the Central Southern Management Area Striped Bass.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

Spotted Seatrout Cold Stun Update

DMF Biologist Lucas Pensinger gave a presentation on the Spotted Seatrout Cold Stun Update.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

Eastern Oyster Fishery Management Plan Amendment 5

DMF Biologists Bennett Paradis and Joe Facendola gave a presentation on the Oyster FMP Amendment 5.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

Motion by Commissioner Roller for the MFC to approve final adoption of the N.C. Eastern Oyster Fishery Management Plan Amendment 5 consistent with the preferred management options the MFC selected at its March 2025 business meeting.

Second by Commissioner Rader.

ROLL CALL VOTE					
Member	**Aye**	**Nay**	**Abstain**	**Recuse**	**Absent**
Bethea	☐	☒	☐	☐	☐
Blanton	☐	☒	☐	☐	☐
Closs	☒	☐	☐	☐	☐
Gardner	☐	☒	☐	☐	☐
Hobgood	☒	☐	☐	☐	☐
Rader	☒	☐	☐	☐	☐
Roller	☒	☐	☐	☐	☐
Service	☒	☐	☐	☐	☐
Corbett	☐	☒	☐	☐	☐

Motion passed 5-4.

View the video recording of the motion and surrounding discussion

Hard Clam Fishery Management Plan Amendment 3

DMF Biologists Lorena de la Garza and Jeff Dobbs gave a presentation on the Clam FMP Amendment 3.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

Motion by Commissioner Roller for the MFC to approve final adoption of the N.C. Hard Clam Fishery Management Plan Amendment 3 consistent with the preferred management options the MFC selected at its March 2025 business meeting.

Second by Commissioner Service.

ROLL CALL VOTE					
Member	**Aye**	**Nay**	**Abstain**	**Recuse**	**Absent**
Bethea	☐	☒	☐	☐	☐
Blanton	☐	☒	☐	☐	☐
Closs	☒	☐	☐	☐	☐
Gardner	☒	☐	☐	☐	☐
Hobgood	☒	☐	☐	☐	☐
Rader	☒	☐	☐	☐	☐
Roller	☒	☐	☐	☐	☐
Service	☒	☐	☐	☐	☐
Corbett	☐	☒	☐	☐	☐

Motion passed 6-3.

View the video recording of the motion and surrounding discussion

Southern Flounder Fishery Management Plan Amendment 4

DMF Biologists Jeff Dobbs, Holly White, and Anne Markwith gave a presentation on the Southern Flounder FMP Amendment 4 with a review of the public comment and Advisory Committee recommendations.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

Motion by Commissioner Roller to select the following as the MFC's preferred management option for the draft N.C. Southern Flounder Fishery Management Plan Amendment 4:

- **EXPEDITED ALLOCATION SHIFT: Expedite the sector allocation transition to 50% commercial and 50% recreational in 2025 rather than in 2026 as prescribed by Amendment 3.**

Second by Commissioner Hobgood.

ROLL CALL VOTE					
Member	**Aye**	**Nay**	**Abstain**	**Recuse**	**Absent**
Bethea	☐	☒	☐	☐	☐
Blanton	☐	☒	☐	☐	☐
Closs	☒	☐	☐	☐	☐
Gardner	☒	☐	☐	☐	☐
Hobgood	☒	☐	☐	☐	☐
Rader	☒	☐	☐	☐	☐
Roller	☒	☐	☐	☐	☐
Service	☒	☐	☐	☐	☐
Corbett	☐	☒	☐	☐	☐

Motion passed 6-3.

View the video recording of the motion and surrounding discussion

Southern Flounder Fishery Management Plan Amendment 5

DMF Biologists Jeff Dobbs, Holly White, and Anne Markwith gave a presentation on the Southern Flounder FMP Amendment 5.

After the presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentation and surrounding discussion

May 23, 2025

Chairman Corbett convened the MFC business meeting at 9:00 a.m. on May 23, 2025.

Submerged Aquatic Vegetation Presentation

DMF Biologist Charlie Deaton introduced the presentations on Submerged Aquatic Vegetation. Dr. Joel Fodrie, from the University of North Carolina's Institute of Marine Sciences, presented on the dynamics of fish-habitat relationships within North Carolina's seagrass meadows. Biologist Madeline Payne, a graduate student at the University of North Carolina, gave a presentation on the economic valuation of fisheries production enhancement associated with seagrass in a temperate estuary.

After each presentation, Chairman Corbett opened the floor to commissioners for comments and questions.

View the video recording of the presentations and surrounding discussion

Issues from Commissioners

Chairman Corbett opened the floor to commissioners for comments, questions, and other discussion.

Commissioner Hobgood raised a concern regarding the increasing number of landings of Atlantic Bonito and requested to receive data regarding that fishery.

Commissioner Blanton raised a concern regarding the implementation and issues with the Observer Trip Scheduling System.

Commissioner Service requested a presentation regarding the implementation of the Deep-water Oyster Recovery Areas at an upcoming meeting.

View the video recording of the Issues from Commissioners and surrounding discussion

Meeting Assignments and Preview of Agenda Items for Next Meeting

The DMF's MFC Liaison Jesse Bissette reviewed meeting assignments and provided an overview of the August 2025 meeting items.

View the video recording of the discussion

Having no further business to conduct, Chairman Corbett adjourned the meeting at 11:03 a.m.

NC Marine Fisheries Commission

Chairman's Report

August 2025 Quarterly Business Meeting

Documents

State Ethics Education Reminder

2025 Annual Meeting Calendar

2026 Proposed Meeting Schedule

MFC Workplan

EDUCATION REQUIREMENTS FOR PUBLIC SERVANTS

Public Servants must complete the Ethics and Lobbying Education program provided by the N.C. State Ethics Commission within **six months** of their election, appointment, or employment. We recommend that this be completed as soon as possible, but the training must be repeated every two years after the initial session.

Our new 90-minute on-demand online program is available on our website under the Education tab. For your convenience, here is the link. The new program is compatible with portable devices such as phones and tablets.

Live webinar presentations are also offered every month. These presentations are 90 minutes in length and give the opportunity to ask questions of the speaker. Registration information for those can be found here.

For questions or additional information concerning the Ethics Education requirements, please contact Tracey Powell at (919) 814-3600.

Marine Fisheries Commission 2025 Calendar

Dates are subject to change

January

Su	Mo	Tu	We	Th	Fr	Sa
				2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19		21	22	23	24	25
26	27	28	29	30	31	

February

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

March

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

April

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17		19
20	21	22	23	24	25	26
27	28	29	30			

May

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25		27	28	29	30	31

June

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3		5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September

Su	Mo	Tu	We	Th	Fr	Sa
		2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10		12	13	14	15
16	17	18	19	20	21	22
23	24	25	26			29
30						

December

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23				27
28	29	30	31			

2025 MFC Meeting Dates

MFC Business Meetings	Northern Regional AC	Southern Regional AC
February 19-21	January 7	January 8
May 21-23	March 18	March 19
August 20-22	June 17	June 18
November 19-21	September 23	September 24
Shellfish/Crustacean	**Finfish Standing AC**	**Habitat and Water Quality**
January 9	March 25	January 15
March 20	June 24	March 26
June 19	September 30	June 25
September 25		October 1

Calendar Key

	MFC		Shellfish/Crustacean Standing AC
	Northern Regional AC		Habitat and Water Quality Standing AC
	Southern Regional AC		State Holiday
	Finfish Standing AC		Federal Commission or Council Meeting
	Joint Meeting of ACs for MFC Review and Presentation of Action Items		
	Joint Meeting of Northern, Southern, and Finfish AC		

Marine Fisheries Commission 2026 Calendar

Dates are subject to change

January

Su	Mo	Tu	We	Th	Fr	Sa
					2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18		20	21	22	23	24
25	26	27	28	29	30	31

February

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April

Su	Mo	Tu	We	Th	Fr	Sa
			1	2		4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	**20**	**21**	22	23
24		26	27	28	29	30
31						

June

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July

Su	Mo	Tu	We	Th	Fr	Sa
			1	2		4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	**19**	**20**	21	22
23	24	25	26	27	28	29
30	31					

September

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6		8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10		12	13	14
15	16	17	**18**	**19**	20	21
22	23	24	25			28
29	30					

December

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23			26
27	28	29	30	31		

2026 MFC Meeting Dates

MFC Business Meetings	Northern Regional AC	Southern Regional AC
February 18-19	January 6	January 7
May 20-21	March 10	March 11
August 19-20	June 9	June 10
November 18-19	September 8	September 9
Shellfish/Crustacean	**Finfish Standing AC**	**Habitat and Water Quality**
January 13	January 8	January 14
March 17	March 12	March 18
June 16	June 11	June 17
September 15	September 10	September 16

Calendar Key

	MFC		Shellfish/Crustacean Standing AC
	Northern Regional AC		Habitat and Water Quality Standing AC
	Southern Regional AC		State Holiday
	Finfish Standing AC		Federal Commission or Council Meeting
	Joint Meeting of ACs for MFC Review and Presentation of Action Items		
	Joint Meeting of Northern, Southern, and Finfish AC		

Marine Fisheries Commission Workplan - August 2025

Orange = Action Item		Green = No Action Necessary				
Topic	May 2025	Aug 2025	Nov 2025	Feb 2026	May 2026	August 2026
Active Management Plans						
Hard Clam FMP Amendment 3	Final Adoption					
Eastern Oyster FMP Amendment 5	Final Adoption					
Southern Flounder FMP Amendment 4	Select Preferred Options	Final Adoption				
Southern Flounder FMP Amendment 5	Scoping Period Overview	MFC Discussion	In Progress	In Progress	In Progress	In Progress
Blue Crab FMP Amendment 3 - Adaptive Management	Information Presented	Information Presented	Vote on Adaptive Management			
CSMA Amendment 2 Data Update	Information Presented	Information Presented	Information Presented			
Kingfish FMP Amendment 1			Preliminary Information Presented	In Progress	In Progress	In Progress
Red Drum FMP			Preliminary Information Presented	In Progress	In Progress	In Progress
Rulemaking						
Permit-Related Rules	Notice of Text	In Progress	Final Approval			
Franchises and Shellfish Leases	Notice of Text	In Progress	Final Approval			
Commission Requests						
Atlantic Bonito Management	In Progress	Background Information Presented	In Progress	Select Preferred Option	Notice of Text	In Progress

NC Marine Fisheries Commission

Director's Report

August 2025 Quarterly Business Meeting

Documents

Protected Resources Memo

Incidental Take Permit Report

Rule Suspensions Memo

Mid-Atlantic Fishery Management Council Meeting Report

South Atlantic Fishery Management Council Meeting Report

Eastern Oyster & Hard Clam Implementation Memo

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

July 25, 2025

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: David Ushakow, Biologist Supervisor
Protected Resources Program, Fisheries Management Section

SUBJECT: Protected Resources Program Update

Issue
Summary information is provided from the Division's Protected Resources Program on Observer Program activities during spring (March–May) 2025 and the Observer Trip Scheduling System (OTSS) for February–June 2025. Cumulative monthly reports to the National Marine Fisheries Service (NMFS) are required for the Sea Turtle and Sturgeon Incidental Take Permit (ITP) in which each month is cumulative across a season.

Overview of the ITP Report for Spring 2025
During spring 2025, the non-exempted large-mesh gill-net fishery was closed statewide. As such, all observer effort was targeted toward the small-mesh gill-net fishery. At the beginning of spring, the small-mesh gill-net fishery was open statewide. However, the observed take of a dead Green Sea Turtle on April 20 in Management Unit (MU) D1 extrapolated to an estimated total that caused the Division to exceed its internal annual take target. Of note, "take target" serves as an internal benchmark to ensure the Division does not exceed authorized take levels as outlined in the ITP. As a result, the Division closed MU D1 and implemented attendance requirements in MUs B, D2, and E to reduce the future likelihood of dead Green Sea Turtle takes (Proclamation M-9-2025).

During spring, DMF staff conducted 30 small-mesh gill-net observations, and estimated observer coverage met or exceeded the ITP-required levels for the small-mesh gill-net fishery in all MUs. Staff attempted to intercept trips through on-the-water searches and phone calls/in-person contacts. Observers and Marine Patrol officers logged 302 unsuccessful attempts to find and observe on-the-water non-exempt gill-net effort during spring 2025.

Observer Trip Scheduling System (OTSS)
OTSS launched on Monday, February 17 for fishing activity beginning the week of Monday, February 28. At the time of launch, OTSS experienced an outage of the automated phone system component. This outage was quickly resolved, and functionality was restored by 8:30 a.m. on Tuesday, February 18. During the outage, Observer Program staff used the non-automated helpline to assist fishermen by manually logging their fishing plans for the following week. Importantly,

this has been the only outage of OTSS to date. From launch through June 2025, 21 trips were observed from the 79 times a fisherman was selected to take an observer (26%).

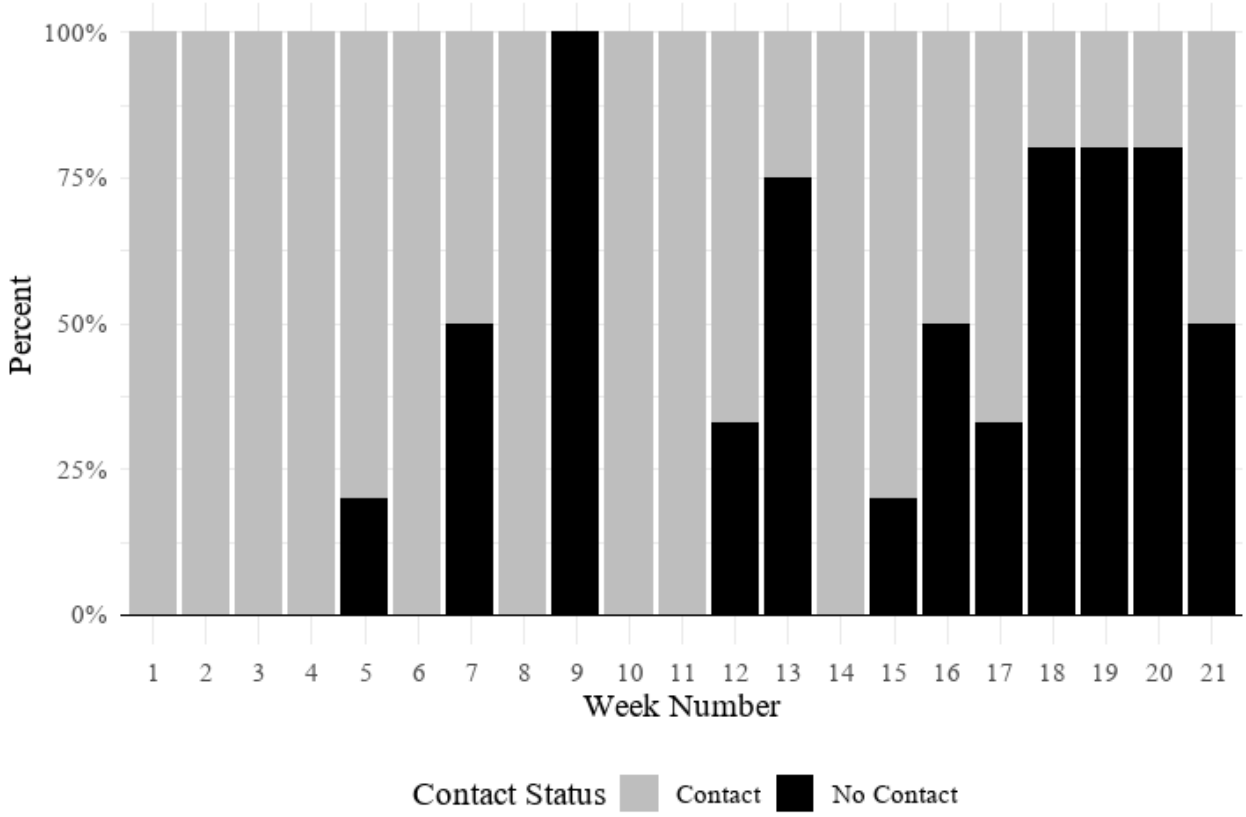
Prior to OTSS, observers' success rate of scheduling observed trips in advance was significantly reduced. For example, during ITP Year 2024 (September 2023–August 2024) only 3% of observed trips were scheduled in advance. Although advance trip scheduling has improved, the proportion of selected fishermen who fail to contact their assigned observer by 4:00 p.m. on Friday has increased since the issuance of Proclamation M-9-2025 (Table 1).

Notifications
Fishermen receive the following OTSS notifications through their choice of phone call, text message, and/or email: On Mondays and Wednesdays, all active Estuarine Gill Net Permit (EGNP) holders are notified of the upcoming deadline to submit fishing plans for the following week. Each Thursday, fishermen who submit fishing plans through OTSS are automatically contacted with either the name and phone number of their assigned observer (if selected to be observed), or with one to three confirmation numbers (if not selected). On Fridays, all fishermen selected for observation receive a reminder to contact their assigned observer by 4:00 p.m. to arrange to be observed or to cancel. If a phone call is not answered and a voicemail cannot be left, the call attempt is automatically repeated two additional times. Due to comments from the Marine Fisheries Commission and the public, it was determined that the notification frequency should be reduced. Additionally, staff have found that 537 of the 1,236 current EGNP holders are receiving notifications via all three methods.

In response to these comments, beginning in September 2025, Wednesday notifications and retries of unanswered Monday and Friday reminder phone calls will be eliminated. In advance of this adjustment, the Division is mailing an informational postcard to EGNP holders to announce the change, inform permittees they may opt out of two of the three notification methods, and request that permittees update their notification preferences.

Action Needed
For informational purposes only; **no action is needed at this time**.

Table 1. Weekly percentages of selected fishermen who contacted their assigned observer by 4:00 p.m. on Friday and those who did not (i.e., No Contact) under the Observer Trip Scheduling System. Weeks are numbered starting from the launch date of OTSS whereas week 1 is February 24, 2025 – March 2, 2025.



The final documents can be found at the following links:

Spring 2025 Seasonal Sea Turtle and Sturgeon ITP Report

Cumulative Monthly Progress Report
Incidental Take Permit No. 27106
March 1, 2025 – May 31, 2025
ITP Year 2025

David Ushakow
North Carolina Department of Environmental Quality
North Carolina Division of Marine Fisheries
Protected Resources Program
3441 Arendell Street
Morehead City, NC 28557

June 30, 2025

This document serves as a report on the North Carolina Division of Marine Fisheries (NCDMF) Observer Program activities during spring (March – May) 2025, of the 2025 Incidental Take Permit (ITP) Year (September 1, 2024 – August 31, 2025) for ITP #27106. Throughout this memo, all references to gill nets are for estuarine non-exempt gill nets (i.e., all gill nets except drift and runaround/drop/strike gill nets as defined in the ITP), unless stated otherwise. Mesh-size categories for gill nets are large-mesh, defined as ≥5 inches stretched mesh (ISM), and small-mesh, defined as <5 ISM. Finally, data used in this monthly report are preliminary and subject to change.

Small-Mesh Gill-Net Fishery

All Management Units (MUs) were open to the small-mesh gill net fishery through April 19, 2025. On April 20, 2025, after conferring with NMFS staff, MU D1 was closed to small-mesh gill nets and attendance requirements were set for MUs B, D2, and E to reduce the likelihood of lethal sea turtle takes (Proclamation M-9-2025).

Large-Mesh Gill-Net Fishery

The large-mesh gill-net fishery remained closed state-wide throughout spring 2025.

Fishing Effort Estimation

Prior to the spring season, the Observer Program used reported Trip Ticket Program (TTP) data to estimate the observed trips required to achieve ITP-mandated coverage levels for both small- and large-mesh fisheries. Small-mesh effort was estimated by month and MU using the most recent five years of TTP data. The resulting observed trip quota was then sent to NMFS for their concurrence, which was received on February 3, 2025.

Observed Trip and Incidental Take Summary

During spring 2025, there were observations of 30 small-mesh trips coastwide (Table 1). In addition to observed trips, there were 302 unsuccessful attempts to locate non-exempt gill-net fishing activity (i.e., No-Contact Trips). As such, observer coverage met or exceeded the 1% minimum target in all MUs for spring 2025 (Table 1).

During the observed small-mesh trips, a single live Atlantic Sturgeon take was observed in MU B, and a single lethal Green Sea Turtle take was observed in MU D1 (Table 2). The Green Sea Turtle was transferred to Matthew Godfrey (NCWRC) for necropsy which occurred on April 18. Findings were consistent with forced submergence due to entanglement (Figure 1).

Cumulative estimated and observed incidental takes during the 2025 ITP Year through May 2025 are included in Table 3. As a reminder, estimated take numbers are preliminary.

Table 1. Numbers of observed small-mesh (< 5 inches stretched mesh) estuarine non-exempt gill-net trips (n = 30) and estimates of observer coverage by Management Unit (MU) during spring (March - May) of ITP Year 2025 (September 1, 2024 – August 30, 2025). Numbers of No-Contact trips (n = 302) by MU are also provided. No-Contact refers to unsuccessful attempts to find and observe non-exempt gill-net effort.

Month	Management Unit	Estimated Total Trips	Observed Trips Needed for 2% Coverage	Observed Trips Needed for 1% Coverage	Observed Trips	Estimated Observer Coverage (%)	No-Contact Trips
March 2025	A	321	7	4	4	1.2	32
	B	312	7	4	8	2.6	12
	C	61	2	1	2	3.3	5
	D1	23	1	1	2	8.7	0
	D2	1	1	1	0	0.0	3
	E	22	1	1	3	13.6	33
April 2025	A	253	6	3	3	1.2	39
	B	548	11	6	5	0.9	16
	C	46	1	1	0	0.0	12
	D1	54	2	1	1	1.9	1
	D2	3	1	1	0	0.0	6
	E	40	1	1	0	0.0	34
May 2025	A	112	3	2	0	0.0	48
	B	469	10	5	1	0.2	22
	C	56	2	1	0	0.0	8
	D1	43	1	1	0	0.0	0
	D2	7	1	1	1	14.3	1
	E	50	1	1	0	0.0	30
Spring 2025	A	686	14	7	7	1.0	119
	B	1,329	27	14	14	1.1	50
	C	163	4	2	2	1.2	25
	D1	120	3	2	3	2.5	1
	D2	11	1	1	1	9.1	10
	E	112	3	2	3	2.7	97
	Overall	2,421	—	—	30	1.2	302

Table 2. Summary of protected species incidental takes during March – May of Incidental Take Permit Year 2025 (September 1, 2024 – August 30, 2025).

Date	Species	Condition	Management Unit	Latitude (DD)	Longitude (DD)	Mesh-Size Category	Total Length or CCL (mm)	Fork Length or CCW (mm)	Soak Time (Mins)	Length of Net (Yards)	Number of Nets
3/3/2025	Atlantic Sturgeon	Released Alive	B	35.35330	-76.12203	Small	N/R	N/R	900	100	7
4/14/2025	Green Sea Turtle	Dead	D1	34.89970	-76.27689	Small	283	250	840	100	8

Table 3. A comparison of authorized incidental takes by species to actual counts or predicted counts of observed incidental takes during ITP Year 2025 (September 1, 2024 – August 30, 2025) through May. Takes are either combined or separate for mesh-size category and disposition. Mesh-size categories are large (≥5 ISM [inches stretch mesh]) and small (<5 ISM). The table above the double line is of species with authorized two-year rolling take limits, and the table below the double line is of species with authorized take limits spanning the duration of the permit.

Species	Mesh-size Category	Disposition	Takes Predicted or Observed	Authorized 2-year Rolling Take	Takes
Atlantic Sturgeon	Large & Small	Live	Predicted	436	36.9
		Dead	Observed	6	1
Green Sea Turtle	Large & Small	Live	Predicted	542	53.2
		Dead	Predicted	170	101.7
Kemp's Ridley Sea Turtle	Large	Live	Observed	10	1
		Dead	Observed	4	1
	Small	Live or Dead	Observed	4	0
Loggerhead Sea Turtle	Large & Small	Live or Dead	Observed	4	0

Species	Mesh-size Category	Disposition	Predicted or Observed Takes	Authorized Total Take Over Permit Duration	Takes
Shortnose Sturgeon	Large & Small	Live or Dead	Observed	4	0
Hawksbill Sea Turtle	Large & Small	Live or Dead	Observed	2	0
Leatherback Sea Turtle	Large & Small	Live or Dead	Observed	2	0

Figure 1. Necropsy results for dead Green Sea Turtle small-mesh gill-net take on April 14, 2025.

North Carolina Aquariums &
NCSU College of Veterinary Medicine
Center for Marine Sciences and Technology
18 April 2025

Craig Harms DVM, PhD, DACZM

Attn: Matthew Godfrey, Sarah Finn

Cm-DMF-250414-01, *Chelonia mydas*, Weight: 2.48 kg, BCS 2.5/5, male

SCL-N	26.6 cm
SCL-T	27.1 cm
SCW	22.1 cm

Hx: juvenile green turtle found in gill net on 14Apr2025, frozen for later necropsy. Removed from freezer on 17Apr to thaw in cold room, necropsy performed late afternoon 18Apr2025 and NC State CMAST. Label affixed to LFF reads "466 4-14-2025, Green Turtle, Old Drum Inlet."

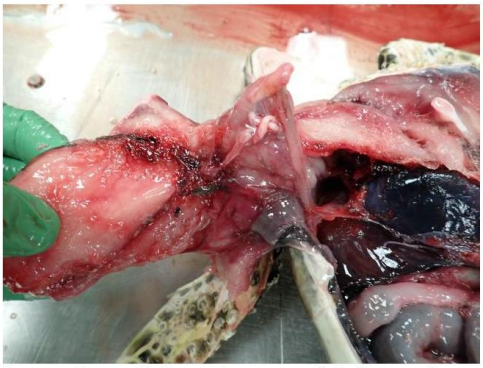
External findings: turtle is slightly thin, with ~85% mostly small barnacle and sediment coverage of the carapace (the parts without epibiota are cranial over the shoulders), numerous small soft tissue barnacles on the flippers, plastron with only ~5% small barnacle coverage. Erythema under chin, both axillae, patches on palmar surfaces of FFs bilaterally, and in perineum. Extreme distal tip of the RFF is missing (healed). No fractures visible or palpated, no lacerations.

Internal findings: dark red possible hemorrhage in pectoral muscles in close proximity to pectoral girdle. Adequate fat, no fat atrophy, no muscle atrophy, light load of trypanorhych cestode cysts in gastric serosa. There is a small amount of light pink foam throughout the trachea and bronchi, and lungs are mildly edematous. Liver, spleen, adrenal glands, thyroid, testes, stomach, intestines, kidneys, urinary bladder, heart, shoulder joints, brain, all NSF. Gall bladder is about ¾ full of dark green bile. There is no gas in cardiac chambers. The stomach, small and large intestines are ~80% filled with sea grasses in various states of digestion. No plastic is observe in the GI tract.

Interpretation: no underlying pathology is observed that would have contributed to death other than the observation of being found in a gill net. The possible hemorrhage in pectoral muscles may be an indication of struggling while entrapped underwater, as is occasionally observed in forced submergence cases. Light foam in the airways and pulmonary edema are consistent with though not diagnostic of forced submergence. Unless the craniolateral carapace was cleaned postmortem, the absence of epibiota and associated sediment in those patches may have resulted from being rubbed off by the net while the turtle attempted to extricate itself.

Dorsal view

Ventral view



Pectoral muscle insertions, possible hemorrhage

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

July 25, 2025

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Jason Rock, Fisheries Management Section Chief

SUBJECT: Temporary Rule Suspensions

Issue
In accordance with the North Carolina Division of Marine Fisheries Resource Management Policy Number 2014-2, Temporary Rule Suspension, the North Carolina Marine Fisheries Commission will vote on any new rule suspensions that have occurred since the last meeting of the commission.

Findings
There have been no new rule suspensions since the May 2025 meeting. Proclamation M-11-2023 was rescinded, effective May 22, 2025, as the suspended portion of NCMFC Rule 15A NCAC 03O .0501 (e)(4) PROCEDURES AND REQUIREMENTS TO OBTAIN PERMITS was deleted via a rule amendment that became effective March 24, 2025.

Action Needed
No action is needed.

Overview
In accordance with policy, the division will report current rule suspensions previously approved by the commission as non-action items. They include:

NCMFC Rule 15A NCAC 03J .0103 (h) GILL NETS, SEINES, IDENTIFICATION, RESTRICTIONS

> Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to implement year-round small mesh gill net attendance requirements in certain areas of the Tar-Pamlico and Neuse rivers systems. This action was taken as part of a department initiative to review existing small mesh gill net rules to limit yardage and address attendance requirements in certain areas of the state. This suspension continues in Proclamation M-13-2025.

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

NCMFC Rule 15A NCAC 03J .0501 (e)(2) DEFINITIONS AND STANDARDS FOR POUND NETS AND POUND NET SETS

Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to increase the minimum mesh size of escape panels for flounder pound nets in accordance with Amendment 3 of the North Carolina Southern Flounder Fishery Management Plan. This suspension was implemented in proclamation M-34-2015 and continues in Proclamation M-9-2024.

NCMFC Rule 15A NCAC 03L .0103 (a)(1) PROHIBITED NETS, MESH LENGTHS AND AREAS

Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to adjust trawl net minimum mesh size requirements in accordance with Amendment 2 to the North Carolina Shrimp Fishery Management Plan. This suspension was implemented in Proclamation SH-3-2019 and continues in Proclamation SH-1-2022.

NCMFC Rule 15A NCAC 03L .0105 (2) RECREATIONAL SHRIMP LIMITS

Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to modify the recreational possession limit of shrimp by removing the four quarts heads on and two and a half quarts heads off prohibition from waters closed to shrimping in accordance with Amendment 2 to the North Carolina Shrimp Fishery Management Plan. This suspension was implemented in Proclamation SH-4-2022.

NCMFC Rule 15A NCAC 03L .0205 (a) CRAB SPAWNING SANCTUARIES

Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to close crab spawning sanctuaries year-round to the use of trawls in accordance with Amendment 2 to the North Carolina Shrimp Fishery Management Plan. This suspension was implemented in Proclamation M-13-2024.

NCMFC Rule 15A NCAC 03M .0502 (a) MULLET

Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to modify the recreational and for-hire possession limits of mullet in accordance with Amendment 2 to the North Carolina Striped Mullet Fishery Management Plan. This suspension was implemented in Proclamation FF-27-2024.

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

NCMFC Rule 15A NCAC 03M .0515 (a)(2) DOLPHIN

Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to adjust the recreational vessel limit to complement management of dolphin under the South Atlantic Fishery Management Council's Amendment 10 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic. This suspension was implemented in Proclamation FF-30-2022.

NCMFC Rule 15A NCAC 03Q .0107 (4) SPECIAL REGULATIONS: JOINT WATERS

Suspension of a portion of this rule for an indefinite period. Suspension of this rule allows the division to adjust the creel limit for American shad under the management framework of the North Carolina American Shad Sustainable Fishery Plan. This suspension was continued in Proclamation FF-8-2025.

June 2025 Council Meeting Summary

The Mid-Atlantic Fishery Management Council met June 3-5, 2025, in Virginia Beach, VA. The following is a summary of actions taken and issues considered during the meeting. Presentations, briefing materials, motions, and webinar recordings are available on the Council's June 2025 meeting page.

HIGHLIGHTS

During this meeting, the Council:

- Adopted 2026 specifications for blueline tilefish
- Reviewed previously adopted 2026 specifications for golden tilefish and recommended no changes
- Maintained status quo chub mackerel specifications for 2026-2028
- Reviewed and recommended no changes to previously adopted 2026 specifications for butterfish
- Reviewed and recommended no changes to previously adopted 2026 specifications for longfin squid
- Reviewed and recommended no changes to previously adopted 2026 specifications for Atlantic surfclam and ocean quahog
- Adopted a range of alternatives to be considered as part of the Spiny Dogfish Accountability Measures Framework
- Received an update on development of the Joint New England and Mid-Atlantic Council Omnibus Alternative Gear Marking Framework Adjustment
- Received an update on development of a white paper on the scientific considerations of developing separate overfishing limits and acceptable biological catch limits for the commercial and recreational sectors of the summer flounder, scup, and black sea bass fisheries
- Received a presentation on the Northeast Fisheries Science Center Cost Survey for Commercial Fishing Businesses
- Received an update on ocean modeling products being developed using the Modular Ocean Model 6 via NOAA's Changing Ecosystems and Fisheries Initiative
- Reviewed Executive Order 14276: "Restoring American Seafood Competitiveness" and briefly discussed next steps for developing a response
- Discussed a For-Hire Letter of Authorization concept proposal

2026 Blueline Tilefish Specifications

The Council reviewed the most recent data limited model toolkit (DLM toolkit) for blueline tilefish north of Cape Hatteras, North Carolina recently conducted through the Southeast, Data, Assessment, and Review (SEDAR) 92 process. The Council also adopted 2026 specifications for the blueline tilefish fishery north of the North Carolina/Virginia border. Specifications were set for a single year given the Scientific and Statistical Committee's recommendation for a single year Acceptable Biological Catch (ABC). The discussion highlighted several sources of uncertainty identified by the SSC, including the absence of stock status, uncertainty associated with the sustainability of recent catch, and high variability and percent standard error (PSE) in private recreational catch estimates. The Council's recommendations are summarized in the table below.

Summary of Blueline Tilefish 2026 Specifications	
Acceptable Biological Catch	452,200 pounds
Recreational Total Allowable Landings	323,504 pounds

Recreational Trip Limits	Private vessel: 3 fish USCG uninspected for-hire vessel: 5 fish USCG inspected for-hire vessel: 7 fish
Commercial Total Allowable Landings	109,885 pounds
Commercial Trip Limits	500 pounds (until 70% of quota met, reduced to 300 pounds)

2026 Golden Tilefish Specifications Review

In 2026, golden tilefish will be in year 2 of multiyear specifications previously adopted for the 2025-2027 fishing years. After reviewing updated fishery information and considering recommendations from its SSC, Tilefish Monitoring Committee, Advisory Panel, and staff, the Council recommended no changes to the 2026 specifications. Additional details about these specifications are provided in the August 2024 Meeting Summary.

2026-2028 Chub Mackerel Specifications

After considering recommendations and input from the SSC, Monitoring Committee, and Advisory Panel, the Council agreed to maintain status quo chub mackerel specifications for 2026-2028. These specifications have remained unchanged since they were first implemented in 2020. The total allowable landings limit for 2026-2028 will remain at 4.50 million pounds, which is well above recent landings.

2026 Butterfish Specifications Review

The Council recommended no changes to the previously adopted 2026 specifications for butterfish. The ABC and commercial quota are planned to decrease in 2026 compared to 2025, but the commercial quota (8,051 metric tons) would still be several times higher than recent annual landings. These specifications are described in detail in the proposed rule published May 13, 2025. The Council recommended no changes to other management measures.

2026 Longfin Squid Specifications Review

The Council recommended no changes to the previously adopted 2026 specifications for longfin squid. The ABC and commercial quota (22,894 metric tons) are planned to stay the same in 2026 compared to 2025. These specifications are described in detail in the final rule published July 23, 2024. The Council recommended no changes to other management measures.

2026 Atlantic Surfclam and Ocean Quahog Specifications Review

The Atlantic surfclam and ocean quahog fisheries are approaching the sixth year of multi-year specifications previously set for the 2021-2026 fishing years. During this meeting, the Council reviewed recent information for both stocks and considered whether any changes to 2026 specifications are warranted. The Council recommended no changes for either species. To maintain the current measures, the Council voted to recommend the Regional Administrator suspend the minimum shell length for surfclam in 2026. These specifications are described in detail in the final rule published May 13, 2021.

Spiny Dogfish Accountability Measures and 2026-2027 Specifications Framework

The Council adopted a range of alternatives to be considered as part of the Spiny Dogfish Accountability Measures Framework. The Spiny Dogfish Fishery Management Plan (FMP) currently requires pound for pound paybacks of any Annual Catch Limit (ACL) overages as an accountability measure. This framework adjustment will consider if there are some circumstances where modified/relaxed payback accountability measures may be sufficient. This action aims to avoid unnecessary paybacks of ACL overages and minimize associated fishery disruptions in the spiny dogfish fishery. The Council agreed to include 2026-2027 specifications, which had been

planned as a separate action, in the framework. The Council also included a request to its Scientific and Statistical Committee (SSC) to include catch recommendation options based on both the Council's standard Risk Policy (lowers catches to reduce the risk of overfishing) and based on setting catches at the highest legal level (i.e., up to the overfishing limit). The New England Fishery Management Council will review the action in late June 2025. Final action by the Councils is anticipated in October/December 2025 after the Spiny Dogfish Advisory Panel and the Joint Spiny Dogfish Committee meet (likely in August/September) to provide recommendations.

Gear Marking/On-Demand Gear Framework

The Council received an update from Caroline Potter (GARFO, Sustainable Fisheries Division) on development of the Joint New England and Mid-Atlantic Council Omnibus Alternative Gear Marking Framework Adjustment. This action considers revisions to gear marking regulations to allow the use of fixed gear without a persistent buoy line in fixed-gear fisheries in the Greater Atlantic Region; this would reconcile fishery management plan regulations with recent and potential future changes to Marine Mammal Protection Act regulations. PDT/FMAT Meeting 5 is scheduled for July 8, 2025. Both the New England and Mid-Atlantic Councils initiated action in April 2025; the Councils are expected to take final action in September 2025 and October 2025, respectively.

Unmanaged Commercial Landings Report

The Council reviewed an annual report that summarizes commercial landings of species in locations where they are not managed at the state or federal level with a possession limit, size limit, seasonal closure, or limited access. The report also summarizes commercial landings of the species designated as Ecosystem Components through the Council's Unmanaged Forage Omnibus Amendment. The goal of this report is to look for signs of developing commercial fisheries for unmanaged species or Ecosystem Component species. Council staff suggested that none of the landings in this year's report suggest immediate concern. However, it may be worth continuing to monitor Atlantic cutlassfish and conch/whelk landings as they have exceeded 1 million pounds in recent years and are concentrated in the Mid-Atlantic. The Council did not express any concerns with the landings trends shown in this year's report.

White Paper on Separate Overfishing Limits (OFLs) and Acceptable Biological Catch Limits (ABCs) for Summer Flounder, Scup, and Black Sea Bass

The Council received an update on progress made by the SSC to develop a white paper on the scientific considerations of developing separate OFLs and ABCs for the commercial and recreational sectors of the summer flounder, scup, and black sea bass fisheries. The Council reviewed potential approaches identified by the SSC, as well as several associated implications. The Council agreed that the work carried out thus far is sufficient to form the basis for the white paper. The SSC will review and approve a final white paper at an upcoming meeting in 2025. The Council discussed that legal requirements and other additional considerations beyond what will be addressed in the white paper would need to be further evaluated before any of these approaches could be used in management.

Northeast Fisheries Science Center Cost Survey for Commercial Fishing Businesses

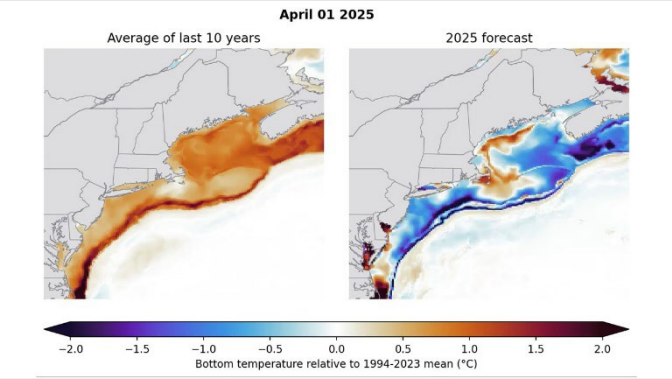
The Council received a presentation from Gregory Ardini (Social Science Branch of the Northeast Fisheries Science Center (NEFSC)) on the 2023 Northeast Commercial Fishing Vessel Cost Survey that collected costs incurred by vessel owners during 2022. Cost surveys are routinely conducted by the NEFSC to collect commercial fishing business costs from vessel owners in the Greater Atlantic Region. Collected data is used in a number of ways, including understanding cost trends, tracking economic performance of fleets, and generating analysis

that informs management decisions. For additional information, see the Cost Survey Project page found here and the Cost Data Visualization Tool found here.

2025 Modular Ocean Model (MOM) 6 Presentation

The Council received an update on ocean modeling products being developed using the Modular Ocean Model 6 (MOM6) via NOAA's Changing Ecosystems and Fisheries Initiative (CEFI). This initiative supports the development of high resolution regional ocean modeling products, including hindcast simulations, seasonal forecasts (out to 1 year), decadal projections (out to 10 years), and long terms projections (out to year 2100).

As reported in the 2025 State of the Ecosystem Report, Northeast US ocean temperature conditions in 2024 were cooler than the recent average. Newly available short-term forecasts for 2025 predict this trend will continue in much of the region, with notably cooler than average bottom temperatures predicted for the Gulf of Maine this spring and summer and may provide valuable insights on future stock productivity for fishermen and managers. However, this prediction is not uniform throughout the Greater Atlantic region, and the southern Mid-Atlantic Bight is expected to experience bottom temperatures that are much warmer than average during the same time period.



MOM6 Forecast for Bottom Temperature in the Northeast Region (click here to view animation)

Longer term forecasts predict that while sea surface temperatures will continue to experience an overall warming trend, this warming trend is expected to experience a temporary "pause" over the next decade due to natural fluctuations in ocean circulation patterns and a more southerly position of the Gulf Stream. In addition, on the water observations and data collection efforts with industry partners help inform and ground truth the model forecasting skills. Regional ocean model outputs, documentation, and additional information are available on the CEFI data portal at: https://psl.noaa.gov/cefi_portal/.

Offshore Wind Monitoring Standards Update

Northeast Fisheries Science Center (NEFSC) staff presented a summary of an effort to develop standards for monitoring surveys that are used to evaluate the impacts of offshore wind energy projects on fishery species, protected species, and socioeconomic impacts. Currently, this monitoring is done on a project by project basis. Development of monitoring standards aims to achieve greater consistency in the methods used across projects to help allow for integration of data across projects and evaluation of regional-scale impacts. The Council agreed to provide additional feedback on the monitoring standards once a draft document is available later this summer.

Other Business

Departing Council Members

The Council bid farewell to four Mid-Atlantic Council members: Wes Townsend (Delaware), Ken Neill (Virginia), Peter Hughes (New Jersey), and Dan Farnham (New York). In addition, the Council recognized Rick Bellavance, who has served as the New England Council's liaison to the Mid-Atlantic Council for the past year. The Council expressed its sincere appreciation to each of these individuals for their dedication and service.

Executive Orders

The Council discussed several recent executive orders. Executive Order (EO) 14276: "Restoring American Seafood Competitiveness" directs the Regional Fishery Management Councils to develop prioritized lists of recommended actions to reduce burdens on domestic fishing and increase production. The Council briefly discussed next steps for generating a list of recommendations. Staff also provided an update on the recommendations submitted by the Council in response to a similar EO in 2020. In the coming weeks staff will circulate feedback forms for the Council and members of the public to provide input. The Council will review input and develop a prioritized list of recommendations at the August Council Meeting.

Staff also provided an brief overview of EO 14192: "Unleashing Prosperity through Deregulation," with a focus on potential implications for the Council. This EO requires each federal agency to repeal at least ten existing regulations or guidance documents for every new regulatory action. NMFS staff have indicated that the majority of council actions are considered deregulatory or are classified as "routine fishery management measures," such as annual specifications, which are exempt from the 10-for-1 requirements. However, discretionary regulatory actions are subject to evaluation to determine whether they are regulatory or deregulatory. The Department of Commerce will compile a list of such actions each fall to assess compliance with the deregulatory targets. Given limited agency resources, any discretionary regulatory proposals will require prioritization and careful evaluation.

Comment Letters

The Council directed staff to submit comments in response to the Bureau of Ocean Energy Management (BOEM) Request for Information and Comments on the Preparation of the 11th National Outer Continental Shelf Oil and Gas Leasing Program. The Council's comments were submitted on 6/11/25 and can be read here.

Executive Director Chris Moore also noted that the following comment letters were submitted by the Council Coordination Committee (CCC) following their meeting in May:

- CCC Letter to Secretary Lutnick Regarding FY2025 Council Funding (05/27/25)
- CCC Response to Representative Magaziner's Inquiry Regarding the Current State of Fisheries (05/29/25)

For-Hire Letter of Authorization Concept

Regional Administrator Mike Pentony presented a Letter of Authorization (LOA) concept for potential inclusion in the Recreational Sector Separation Amendment. He outlined how a voluntary federal LOA system could be implemented for federally permitted for-hire vessels targeting summer flounder, scup, black sea bass, and bluefish. Under this proposal, states would have the option to opt in each year, and only vessels from participating states could obtain an LOA. Participating vessels would be subject to separate federal measures and exempt from coastwide or conservation equivalency regulations, with the goal of providing more tailored and economically viable management options for the for-hire sector. Mr. Pentony noted that the private sector accounts for the majority of recreational catch, and the LOA concept could help support the economic viability of the for-hire industry. Council members generally expressed support for further consideration of the concept, noting that many operational details would require additional discussion. The Council is expected to revisit the LOA proposal during its joint meeting with the Atlantic States Marine Fisheries Commission's Policy Board in August, when the two bodies will review draft approaches for further development.

Upcoming Meetings

The next Council meeting will be held **August 11-14, 2025,** in Annapolis, Maryland**.** A complete list of upcoming meetings can be found at https://www.mafmc.org/council-events.

South Atlantic Fishery Management Council

News Release

FOR IMMEDIATE RELEASE
June 19, 2025

CONTACT: Kim Iverson
Public Information Officer
Toll Free: 866/SAFMC-10 or 843/571-4366
kim.iverson@safmc.net

Federal Fishery Managers Consider New Approaches

Budget cuts, staff reductions and Executive Orders lead to open discussion for changes in federal fishery management; Options proposed for the commercial snapper grouper fishery, black sea bass management; Public hearings scheduled for Shrimp Fishery Access Area

Members of the South Atlantic Fishery Management Council met this past week in Cape Canaveral, Florida to address federal fishery management issues in the South Atlantic region. During the week-long meeting, the Council acknowledged that new approaches may be necessary to federal fisheries management given recent changes that include reductions in staffing and funding at NOAA Fisheries, as well as Executive Order 14276 *Restoring American Seafood Competitiveness*.

The Council will develop its response to the directives in Executive Order 14276, including identifying measures to reduce regulatory burden and promote domestic fisheries. Information will be provided on the Council website and input solicited from the public and Council advisory panels. Council members identified initial items that respond to the Executive Order during last week's meeting, including revision or removal of the "2 for 1" provision for commercial snapper grouper federal permits, removing species from the Snapper Grouper Fishery Management Unit, addressing shark depredation, and shifting management of Spiny Lobster to the State of Florida. The Council will review public input and continue discussions during its September 2025 meeting.

Commercial Snapper Grouper Fishery

After reviewing input from the Commercial Snapper Grouper Sub-Committee, the Council decided to move forward with scoping to gather input on management changes to be considered through Amendment 60 to the Snapper Grouper Fishery Management Plan. Potential actions at this time include revising or removing the current 2 for 1 snapper grouper unlimited permit policy and the requirements to acquire or retain a snapper grouper (SG1) commercial permit; considering dynamic trip limits that vary throughout the season; and establishing a non-target or out-of-season allowance for harvest.

Public scoping will be held online this summer and public feedback will be presented to the Commercial Sub-Committee at the September 2025 Council meeting.

Black Sea Bass

The results of the latest stock assessment for Black Sea Bass in the South Atlantic indicate the stock is overfished and experiencing overfishing despite uncertainties noted by the Council's Scientific and Statistical Committee (SSC) in the information used to develop catch level recommendations.

(Continued)

The Council will develop a framework amendment to address declining Black Sea Bass abundance. Potential actions will consider lowering Black Sea Bass catch levels, changes to minimum size limits, reducing the recreational bag limit, and implementing a spawning season closure. The Council requested further evaluation of the assessment by the SSC and additional peer review.

Rock Shrimp Fishery Access Area – Oculina Bank HAPC

The Council continued discussion of amendments to the Coral Fishery Management Plan and Shrimp Fishery Management Plan to establish a shrimp fishery access area for the rock shrimp fishery along the eastern edge of the northern extension of the Oculina Bank Habitat Area of Particular Concern (HAPC). The Coral HAPC extends along the eastern coast of Florida where deepwater coral, *Oculina varicosa*, is known to exist. Council members considered comments in support of allowing fishing in the historical area as well as those opposing any additional access to the deepwater coral HAPC.

Coral Amendment 11 and Shrimp Amendment 12 would allow federally permitted rock shrimp vessels access within a designated area along the eastern boundary of the Coral HAPC where the rock shrimp fishery operated historically. Federally permitted rock shrimp vessels are required to have Vessel Monitoring Systems to identify their location at all times.

The Council will hold two public hearings prior to its September 2025 meeting.

Other Business

In order to focus on actions that are de-regulatory in accordance with Executive Orders, the Council paused work on the For-Hire Reporting Improvement Amendment as well as an amendment to implement a private recreational permit and education requirement for the snapper grouper fishery. The amendments remain in the Council's work plan, but the timing of development is uncertain.

Additional information about the Council's June 2025 meeting, including individual reports from committee meetings and meetings of the full council, are available from the Council's website at: June 2025 Council Meeting - South Atlantic Fishery Management Council. The next meeting of the South Atlantic Fishery Management Council is scheduled for September 15-19, 2025, in North Charleston, South Carolina.

The South Atlantic Fishery Management Council, one of eight regional councils, conserves and manages fish stocks from three to 200 miles offshore of North Carolina, South Carolina, Georgia and east Florida.

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

July 31, 2025

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Bennett Paradis (oyster co-lead), Lorena da la Garza (clam co-lead), Chloe Dorin (clam co-lead)

SUBJECT: Eastern Oyster Fishery Management Plan Amendment 5 and Hard Clam Fishery Management Plan Amendment 3 Implementation Update

---

Issue
Update the N.C. Marine Fisheries Commission (MFC) on recent implementation progress for the Eastern Oyster Fishery Management Plan (FMP) Amendment 5 and the Hard Clam FMP Amendment 3.

Action Needed
For informational purposes only, **no action is needed at this time**.

Supporting Documents
- Amendment 5 to the Eastern Oyster Fishery Management Plan, 2025
- Amendment 3 to the Hard Clam Fishery Management Plan, 2025

Overview
This memo provides an overview of the progress made towards implementation of Amendment 5 to the Eastern Oyster FMP and Amendment 3 to the Hard Clam FMP, including **monitoring efforts for the adopted Deepwater Oyster Recovery Areas (DORAs), the establishment of rotational harvest management sites, and updates to the trigger sampling methodology** ahead of the mechanical harvest season for oysters in Pamlico Sound, North Carolina. It also provides an update on the **phase out of mechanical clam harvest** and the Division's exploration of potential options to **estimate recreational shellfish harvest** and establish a mechanism to routinely provide all recreational shellfish harvesters with health and safety information.

Deepwater Oyster Recovery Area Monitoring
The remnant deep-water natural oyster reefs in the Pamlico and Neuse rivers have been recognized by the MFC as a habitat requiring protection due to their ecological importance and vulnerability. These reefs have suffered from historical harvest, disease outbreak, habitat destruction, and mass mortality from water quality impacts, including low dissolved oxygen (hypoxic) events. Sites that contain these deep-water natural oyster reefs have been nominated by the MFC as Strategic Habitat Areas for the Pamlico Sound System.

North Carolina Division of Marine Fisheries (NCDMF) monitoring of the oyster resource in these areas has indicated that these reefs have few live or legal oysters and likely have not supported much fishery effort between the 2018–2019 and 2023–2024 oyster seasons. With these observations in mind, Amendment 5 of the Eastern Oyster FMP established two DORAs, one in the Neuse River and one in the Pamlico River. Beginning with the 2025 season, mechanical oyster harvest (dredging) will be prohibited in these DORAs. The long-term goal of DORAs is to allow deep-water oyster reefs to grow and accumulate living oysters and dead shell material to gain the height necessary to better function as habitat and be resilient to hypoxic events.

Initial monitoring efforts are already underway by NCDMF. Bathymetric and side-scan sonar surveys of the DORA reefs were completed in June and July of 2025. Efforts to map natural oyster reefs in the Neuse DORA included 127 acres of the known historical footprint (70% of the Neuse DORA reefs). In the Pamlico DORA, 99% of the known reefs have been scanned. The raw data from these scans are currently being processed to generate high resolution maps of the delineated reefs, providing a baseline for habitat footprint, vertical relief, and rugosity on these oyster reefs. SCUBA surveys are currently planned for late summer and early fall. These surveys will collect useful oyster metrics and representative data that will give greater detail to the condition of oysters in the DORAs, including size-class density estimates and population structure. The division will continue monitoring efforts to gather data to inform the MFC on the status of the DORAs, which will be re-evaluated under the next scheduled review of the FMP.

Rotational Harvest Management Cultch Sites NCDMF has constructed 13 of the 10-acre rotational harvest management cultch sites, with an additional five sites currently in development. A significant portion of cultch planting efforts and operating budget have been allocated to the establishment of rotational harvest sites. The teams on the R/V Oyster Creek, R/V Shell Point, and R/V Crab Slough have been instrumental in planting these sites with adequate material to span 10-acres and support subsequent oyster settlement and growth.

A schedule guiding the openings, closings, post-harvest evaluations, and re-planting efforts has been developed. Four sites will be opened via proclamation for the entirety of the 2025-2026 mechanical season. Each rotational site will be marked with four corner buoys. Marker buoys will be set 50 feet from the 10-acre permit boundary to allow commercial vessels to operate without hinderance. NCDMF is currently identifying funding sources for purchasing the buoy systems, and buoys will be deployed prior to the beginning of the mechanical harvest season in November

These rotational sites are also being monitored using similar methodologies as DORAs and typical cultch sites. At each rotational site, bathymetric and side scan sonar surveys have been completed to measure material footprint and persistence of material over time. Such surveys allow for direct comparison to natural reefs in terms of rugosity, a common index for quantifying habitat complexity.

Pre-season and in-season trigger sampling efforts
The cultch supported harvest strategy adopted within Amendment 5 to the Oyster FMP included a proposed revamped framework for monitoring areas where public oyster mechanical harvest occurs. This framework, here on referred to as ‘trigger sampling’, replaces the original protocol adopted in 2010 under Supplement A to Amendment 2 of the Oyster FMP. However, along with declining participation in the mechanical commercial oyster fishery, this previous methodology was affected by uncertain sample locations, sampling gear, and concerns about sampling accuracy resulting in highly variable and uncertain season lengths.

The changes to the trigger sampling protocol include: 1) transitioning from a dredge to hydraulic patent tongs for sampling, 2) conducting a pre-season survey to set a fixed season length and reduce uncertainty, 3) conducting a mid-season survey to re-examine season length, and 4) communicating with participants to ascertain coordinates for the aforementioned trigger sampling surveys.

Patent tongs offer a relatively straightforward and efficient method for collecting standardized samples from oyster reefs as they have been utilized in an annual survey by Virginia Institute of Marine Science (VIMS) and Virginia Marine Resources Commission (VMRC) since 1993. In addition to their use for season management, the data collected following this protocol may also be used for direct comparisons with other existing historical oyster monitoring programs (wild, cultch, oyster sanctuaries) and ultimately toward future stock assessment efforts. NCDMF staff have begun retrofitting survey vessels with tong equipment necessary for sampling in Pamlico Sound.

NCDMF staff have been proactive in communicating with participants in the mechanical oyster fishery about efforts to monitor areas open to public mechanical harvest. Currently, staff are planning to contact participants to request information to guide these surveys to accurately reflect where effort in the fishery will be occurring. Participants in the commercial mechanical oyster fishery should anticipate the opportunity to provide input and coordinates to NCDMF staff to be used in the pre-season survey to establish season length, and again in the mid-season survey to potentially extend the mechanical season.

Phase out of mechanical clam harvest
The adoption of Amendment 3 to the Hard Clam FMP included phasing out mechanical clam harvest over a three-year period ending in May 2028. Approaching that time, the rulemaking process will be initiated to amend NCMFC rules 15A NCAC 03K .0301 and .0302 such that mechanical clam harvest on public bottom, both in conjunction with maintenance dredging and during designated open seasons and areas, will not be permitted as of June 1, 2028. Mechanical clam harvest will continue to be allowed for a private lease that has the proper aquaculture permits in place.

Estimating recreational shellfish harvest
Both Amendment 3 to the Hard Clam FMP and Amendment 5 to the Oyster FMP included support for exploring options and developing a solution to estimate recreational shellfish participation and landings and developing a mechanism to provide all recreational shellfish harvesters with Shellfish Sanitation and Recreational Water Quality health and safety information. In support of this management strategy, in July 2025 the Division formed an internal workgroup to explore possible options, including a license or permit. Some options would require legislative action for implementation.

NC Marine Fisheries Commission

SCFL Eligibility Report

August 2025 Quarterly Business Meeting

Documents

Standard Commercial Fishing License Eligibility Pool Memo

Standard Commercial Fishing License Eligibility Pool Report

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

August 21, 2025

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Captain Garland Yopp, Marine Patrol, Eligibility Board Chair

SUBJECT: Standard Commercial Fishing License Eligibility Pool Determination

---

Issue
Determine number of licenses available to the Standard Commercial Fishing License (SCFL) Eligibility Pool.

Action Needed
A vote by the commission is needed to set the number of available licenses in the Eligibility Pool.

Overview
An individual who does not hold a Standard Commercial Fishing License but wants to purchase a license through the Division of Marine Fisheries can apply to receive the license through the Eligibility Pool process. The application goes before a board which determines if the applicant is qualified based on criteria set out in rule. The number of licenses available in this pool is set annually by the commission.

Session Law 1998-225, Section 4.24(f) states that "the number of SCFLs in the pool of available SCFLs in license years beginning with the 2000-2001 license year is the temporary cap less the number of SCFLs that were issued and renewed during the previous license year." The temporary cap was set at the number of valid Endorsements to Sell as of June 30, 1999 (8,396 licenses), plus an extra 500 licenses to be included in the Eligibility Pool (8,896 total licenses).

For the 2025-2026 license year, the number of licenses available through the Eligibility Board is 3,693. This number accounts for licenses issued in the 2024-2025 license year and the number of approvals from the Eligibility Board from 2024-2025 that still have the option to purchase a license before June 30, 2026. Individuals approved in the fall (September/October) must purchase their license by June 30 of the same license year, but

those approved in the spring (April) have until June 30 of the following license year to purchase their license.

Session Law 1998-225, Section 4.24(f) also states "the Commission may increase or decrease the number of SCFLs that are issued from the pool of available SCFLs. The Commission may increase the number of SCFLs that are issued from the pool of available SCFLs up to the temporary cap. The Commission may decrease the number of SCFLs that are issued from the pool of available SCFLs but may not refuse to renew a SCFL that is issued during the previous license year and that has not been suspended or revoked. The Commission shall increase or decrease the number of SCFLs that are issued to reflect its determination as to the effort that the fishery can support, based on the best available scientific evidence."

From July 1, 2024, to June 30, 2025, the Board received 40 applications and approved 39 of them. This was a 34% increase in approved applications from the 2023-2024 license year. So far, there are 5 pending applications for review at the fall Eligibility Board meeting.

Over the past several years, the commission has voted to make the number of available licenses in the Eligibility Pool different from the total number of licenses left in the cap. Below is a summary of the licenses made available to the pool by the commission since the 2013-2014 license year (Table 1).

Table 1. Number of licenses available and number of licenses approved by the commission in the SCFL Eligibility Pool, 2013-2014 license year through 2025-2026 license year.

License Year (fiscal year)	Number of Licenses Available	Number of Licenses Approved by MFC
2013–2014	1,368	1,368
2014–2015	1,257	1,257
2015–2016	1,238	1,238
2016–2017*	2,417	100
2017–2018	2,592	1,500
2018–2019	2,723	500
2019–2020	2,973	500
2020–2021	3,064	500
2021-2022	3,198	500
2022-2023	3,340	500
2023-2024	3,483	500
2024-2025	3,615	500
2025-2026	3,693	TBD

*Calculation to determine the number of available licenses changed

In summary, there are 3,693 licenses available to the Eligibility Pool for the 2025–2026 license year. The commission needs to determine the number of licenses it wants to place in the pool for the upcoming year.

Eligibility Pool
Commission Report for 2024–2025
August 21, 2025

How the Pool Number is Determined:

Session Law 1998-225, Section 4.24(f).

(f) Adjustment of Number of SCFLs. The number of SCFLs in the pool of available SCFLs in license years beginning with the 2000–01 license year is the temporary cap less the number of SCFLs that were issued and renewed during the previous license year.

Role of the Marine Fisheries Commission:

Session Law 1998-225, Section 4.24(f).

(f). . . The Commission may increase or decrease the number of SCFLs that are issued from the pool of available SCFLs. The Commission may increase the number of SCFLs that are issued from the pool of available SCFLs up to the temporary cap. The Commission may decrease the number of SCFLs that are issued from the pool of available SCFLs but may not refuse to renew a SCFL that is issued during the previous license year and that has not been suspended or revoked. The Commission shall increase or decrease the number of SCFLs that are issued to reflect its determination as to the effort that the fishery can support, based on the best available scientific evidence.

Temporary Cap:

The maximum number of SCFLs that can be issued is the number of valid Endorsements to Sell as of June 30, 1999, plus 500 for the first Eligibility Pool, for a total of 8,896.

Eligibility Board Pool Determination 2025–2026:

There are 3,693 SCFLs available through the Eligibility Board for the 2025–2026 license year.

Attachments:

2025–2026 Eligibility Pool Determination Calculations

FY2025 License Sales Report

Summary of Licenses Available and Temporary Cap as Approved by the Commission

Eligibility Board Meeting Summaries

Eligibility Board Open Files

Eligibility Pool Determination Calculations
For
2025–2026 License Year

Below is the current calculation used to determine the number of licenses available in the Eligibility Pool. Corrections were made to this calculation in August 2016 to prevent licenses already existing in the cap from being double counted and removed from the number of licenses remaining.

Licenses removed from the cap in this calculation include the number of SCFLs and RSCFLs issued and renewed in the 2024–2025 license year as well as any Eligibility Board approvals from the spring meeting. Those approved by the Eligibility Board in the spring have until the following license year to purchase their SCFL. These licenses are subtracted from the pool because they represent potential licenses available for purchase.

Current calculation:

Total Number of SCFLs Available in 2025–2026 License Year (Data run date: 07/18/2025)

1)	Total original SCFLs available (Cap)……	**8,896**
2)	Less total number of SCFLs issued and renewed in 2024–2025..……	**– 5,198**
3)	Total number of SCFLs available in the pool for 2025–2026……...	**3,698**
4)	Less total number of 2024 of 2024 2025 approvals through Eligibility Pool not yet issued[1] …	**- 5**
5)	**Total SCFLs available for the 2025–2026 license year**……	**3,693**

[1] Individuals approved in the spring (April 2025) have until June 30 of the following license year (2026) to purchase their SCFL.

North Carolina Division of Marine Fisheries
Commercial Licenses Sold by License Type
FY2025 License Year

Data Run Date: 07/18/2025

Blanket For-Hire Captain's Coastal Recreational Fishing License:	**157**
Blanket For-Hire Vessel Coastal Recreational Fishing License:	**889**
Commercial Fishing Vessel Registration:	**6,089**
Fish Dealer License:	**650**
Land or Sell License:	**102**
License to Land Flounder from Atlantic Ocean:	**146**
NC Resident Shellfish License without SCFL:	**466**
Non-Blanket For-Hire Vessel License:	**113**
Ocean Pier License:	**18**
Recreational Fishing Tournament License:	**28**
Retired Standard Commercial Fishing License:	**1,363**
Standard Commercial Fishing License:	**3,835**
TOTAL LICENSES FOR ALL LICENSE TYPES:	**13,856**

3,835	**SCFL**
+ 1,363	**RSCFL**
5,198	**Total Number of SCFLs issued for FY2025**

Licenses Available from the Eligibility Pool – Annual Summary

License Year	Number of Licenses Available	Number of Licenses Approved by MFC
1999 - 2000	500	N/A
2000 - 2001	1,314	1,314
2001 - 2002	1,423	1,423
2002 - 2003	1,458	1,458
2003 - 2004	1,421	1,421
2004 - 2005	1,423	1,423
2005 - 2006	1,536	1,536
2006 - 2007	1,596	1,596
2007 - 2008	1,562	1,562
2008 - 2009	1,557	1,557
2009 - 2010	1,507	1,507
2010 - 2011	1,420	1,420
2011 - 2012	1,375	1,375
2012 - 2013	1,358	1,358
2013 - 2014	1,368	1,368
2014 - 2015	1,257	1,257
2015 - 2016	1,238	1,238
2016 - 2017*	2,417	100
2017 - 2018	2,592	1,500
2018 - 2019	2,723	500
2019 - 2020	2,973	500
2020 - 2021	3,064	500
2021 - 2022	3,198	500
2022 - 2023	3,340	500
2023 - 2024	3,483	500
2024 - 2025	3,615	500
2025 - 2026	3,693	TBD

*Calculation to determine the number of available licenses changed

Licenses Approved and Denied by the Eligibility Pool Board – Annual Summary

License Year	Approved	Denied
1999 - 2000	166	133
2000 - 2001	110	75
2001 - 2002	46	37
2002 - 2003	38	23
2003 - 2004	56	11
2004 - 2005	35	13
2005 - 2006	31	9
2006 - 2007	32	4
2007 - 2008	49	7
2008 - 2009	83	5
2009 - 2010	109	11
2010 - 2011	63	2
2011 - 2012	68	17
2012 - 2013	99	9
2013 - 2014	96	14
2014 - 2015	61	13
2015 - 2016	45	6
2016 - 2017	32	6
2017 - 2018	84	13
2018 - 2019	28	6
2019 - 2020	41	10
2020 - 2021	45	9
2021 - 2022	33	9
2022 - 2023	23	10
2023 - 2024	29	8
2024 - 2025	39	1
Totals	**1,541**	**461**

Eligibility Pool Board Meeting Summary

HEARING DATE	RESIDENTS				NON-RESIDENTS			
	APPROVE	DENY	TABLE*	TOTAL	APPROVE	DENY	TABLE*	TOTAL
5/5/1999	2	0	2	4	0	0	0	0
5/19/1999	5	0	1	6	1	0	0	1
6/17/1999	2	5	3	10	0	0	0	0
7/1/1998 - 6/30/1999	**9**	**5**	**6**	**20**	**1**	**0**	**0**	**1**
7/7/1999	12	10	0	22	3	0	0	3
7/8/1999	23	25	0	48	7	0	0	7
07/15/1999 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/11/1999	18	20	4	42	3	0	0	3
8/27/1999	17	33	0	50	0	1	0	1
09/09/1999 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/29/1999	18	11	1	30	0	0	0	0
11/3/1999	13	12	4	29	2	0	1	3
11/08/1999 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1/26/2000	9	5	5	19	1	0	1	2
02/18/2000 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/19/2000	19	6	8	33	1	0	2	3
5/18/2000	18	3	9	30	0	1	2	3
6/7/2000	10	3	2	15	0	0	1	1
HEARING DATE	**RESIDENTS**				**NON-RESIDENTS**			
	APPROVE	**DENY**	**TABLE***	**TOTAL**	**APPROVE**	**DENY**	**TABLE***	**TOTAL**
7/1/1999 – 6/30/2000	**157**	**128**	**33**	**318**	**17**	**2**	**7**	**26**
7/12/2000	11	1	4	16	2	0	0	2
7/21/2000 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/20/2000	24	15	7	46	1	0	0	1
10/27/2000	16	8	3	27	1	0	0	1
12/1/2000	5	16	2	23	0	0	0	0
1/24/2001	10	14	3	27	0	2	0	2
3/9/2001	12	12	8	32	0	0	0	0
4/4/2001	32	9	1	42	0	1	0	1
7/1/2000 – 6/30/2001	**110**	**75**	**28**	**213**	**4**	**3**	**0**	**7**
7/26/2001	18	10	2	30	3	0	1	4
08/21/2002 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/14/2002	12	15	3	30	2	1	0	3
2/21/2002	16	12	2	30	1	0	0	1
7/1/2001 – 6/30/2002	**46**	**37**	**7**	**90**	**6**	**1**	**1**	**8**
9/11/2002	28	14	6	48	2	0	1	3
08/19/2003 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/5/2003	10	9	1	20	2	0	0	2
7/1/2002 – 6/30/2003	**38**	**23**	**7**	**68**	**4**	**0**	**1**	**5**
08/19/2003 MFC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/9/2003	16	3	1	20	2	0	0	2
11/4/2003	17	2	0	19	3	0	0	3
3/19/2004	22	6	0	28	2	0	0	2
6/22/2004	1	0	0	1	0	0	0	0
7/1/2003 – 6/30/2004	**56**	**11**	**1**	**68**	**7**	**0**	**0**	**7**
11/1/2004	22	4	1	27	0	0	0	0
2/28/2005	11	2	0	13	0	1	0	1
4/18/2005	2	7	0	9	0	0	0	0
7/1/2004 – 6/30/2005	**35**	**13**	**1**	**49**	**0**	**1**	**0**	**1**
9/27/2005	17	7	1	25	1	0	0	1
3/15/2006	14	2	2	18	1	0	0	1
7/1/2005 – 6/30/2006	**31**	**9**	**3**	**43**	**2**	**0**	**0**	**2**
10/4/2006	16	3	2	21	1	0	0	**1**
3/14/2007	16	1	2	19	1	0	0	**1**
7/1/2006 – 6/30/2007	**32**	**4**	**4**	**40**	**2**	**0**	**0**	**2**
9/10/2007	26	2	4	32	0	0	0	0
3/19/2008	23	5	3	31	0	0	0	0
7/1/2007 – 6/30/2008	**49**	**7**	**7**	**63**	**0**	**0**	**0**	**0**
9/30/2008	39	0	3	42	4	0	0	4
3/24/2009	44	5	1	50	3	0	0	3
7/1/2008 – 6/30/2009	**83**	**5**	**4**	**92**	**7**	**0**	**0**	**7**
10/6/2009	52	6	1	59	2	1	0	3
3/10/2010	36	2	1	39	1	0	0	1
6/2/2010	21	3	0	24	0	0	0	0
7/1/2009 – 6/30/2010	**109**	**11**	**2**	**122**	**3**	**1**	**0**	**4**
9/21/2010	40	2	1	43	2	0	0	2
3/24/2011	23	0	0	23	4	0	0	4
7/1/2010 – 6/30/2011	**63**	**2**	**1**	**66**	**6**	**0**	**0**	**6**
10/4/2011	39	7	0	46	2	0	0	2

3/15/2012	28	10	0	38	2	0	0	2
1/13/2012	1	0	0	1	0	0	0	0
7/1/2011 – 6/30/2012	**68**	**17**	**0**	**85**	**4**	**0**	**0**	**4**
9/12/2012	53	7	3	63	1	1	0	2
3/19/2013	46	2	4	52	2	0	0	2
HEARING DATE	**RESIDENTS**				**NON-RESIDENTS**			
	APPROVE	**DENY**	**TABLE***	**TOTAL**	**APPROVE**	**DENY**	**TABLE***	**TOTAL**
7/1/2012 – 6/30/2013	**99**	**9**	**7**	**115**	**3**	**1**	**0**	**4**
9/18/2013	56	7	0	63	2	0	0	2
3/19/2014	40	7	1	48	0	0	0	0
7/1/2013 – 6/30/2014	**96**	**14**	**1**	**111**	**2**	**0**	**0**	**2**
9/17/2014	32	9	0	41	1	0	0	1
3/18/2015	25	3	5	33	0	0	1	1
5/12/2015	4	1	0	5	1	0	0	1
7/1/2014 – 6/30/2015	**61**	**13**	**5**	**79**	**2**	**0**	**1**	**3**
10/21/2015	16	4	1	21	3	0	0	3
3/23/2016	29	2	2	33	0	0	0	0
7/1/2015 – 6/30/2016	**45**	**6**	**3**	**54**	**3**	**0**	**0**	**3**
9/28/2016	17	3	2	22	0	0	0	0
3/16/2017	15	3	0	18	0	0	0	0
7/1/2016 – 6/30/2017	**32**	**6**	**2**	**40**	**0**	**0**	**0**	**0**
9/28/2017	44	9	0	53	1	0	0	1
11/1/2017	11	3	0	14	1	0	0	1
3/28/2018	29	1	0	30	3	0	0	3
7/1/2017 – 6/30/2018	**84**	**13**	**0**	**97**	**5**	**0**	**0**	**5**
10/30/2018	15	5	0	22**	1	1	0	2
4/11/2019	13	1	0	14	1	0	0	1
7/1/2018 – 6/30/2019	**28**	**6**	**0**	**36**	**2**	**1**	**0**	**3**
9/24/2019	25	6	1	32	1	1	0	2
3/26/2020	16	4	0	20	2	0	0	2
7/1/2019 – 6/30/2020	**41**	**10**	**1**	**52**	**3**	**1**	**0**	**4**
10/20/2020	25	7	0	32	1	0	0	1
4/9/2021	20	2	0	22	0	0	0	0
7/1/2020 - 6/30/2021	**45**	**9**	**0**	**54**	**1**	**0**	**0**	**1**
10/14/2021	16	4	0	20	1	1	0	1
4/7/2022	17	5	1	23	3	0	0	3
7/1/2021 - 6/30/2022	**33**	**9**	**1**	**43**	**4**	**1**	**0**	**4**
10/18/2022	**16**	**4**	**0**	**20**	**0**	**0**	**0**	**0**
04/05/2023	**7**	**6**	**0**	**13**	**0**	**1**	**0**	**1**
7/1/2022 – 6/30/2023	**23**	**10**	**0**	**33**	**0**	**1**	**0**	**1**
10/25/2023	**20**	**3**	**0**	**23**	**0**	**0**	**0**	**0**
04/09/2024	**9**	**5**	**0**	**14**	**1**	**0**	**0**	**1**
7/1/2023 – 6/30/2024	**29**	**8**	**0**	**37**	**1**	**0**	**0**	**1**
10/22/2024	**16**	**1**	**0**	**17**	**0**	**0**	**0**	**0**
04/17/2025	**23**	**0**	**0**	**23**	**1**	**0**	**0**	**1**
7/1/2024 – 6/30/2025	**39**	**1**	**0**	**40**	**1**	**0**	**0**	**1**
GRAND TOTALS	**1,541**	**461**	**124**	**2,128**	**90**	**13**	**10**	**112**

* TABLE files are presented again at the next Board meeting for a final decision of approval or denial and are then accounted for in the APPROVE or DENY categories. GRAND TOTALS do not equal total approved or denied because some files are reviewed in multiple meetings (tabled, etc.).
** Two applications were withdrawn.

Standard Commercial Fishing License Eligibility Pool Office
Summary of Open Files beginning July 1, 2025

File Description	Total Number of Files
To be researched/ready for the next board meeting	0
New/being processed	5
Pending responses to letters mailed requesting more information	0
Incomplete – no response to letters	0
Total Open/Pending Applications	**5**

NC Marine Fisheries Commission

Fishery Management Plans

August 2025 Quarterly Business Meeting

Contents

NC Marine Fisheries Commission

Fishery Management Plan Annual Review

August 2025 Quarterly Business Meeting

Documents

FMP Annual Update Report

FMP Review Schedule

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

Annual Fishery Management Plan Update
Division of Marine Fisheries
August 1, 2025

Authority and Process

The Fisheries Reform Act of 1997 and its amendments established the requirement to create fishery management plans (FMPs) for all of North Carolina's commercially and recreationally significant species or fisheries. Plan contents are specified, advisory committees are required, and oversight by the Department of Environmental Quality (DEQ) secretary, Joint Legislative Oversight Committee on Agriculture and Natural and Economic Resources (AgNER), and legislative Fiscal Research Division are mandated.

Annually, the Division of Marine Fisheries (division) reviews all State, Federal (Fishery Management Councils), and Atlantic States Marine Fisheries Commission (ASMFC) managed FMPs where North Carolina is directly involved. Stock conditions and management are monitored and reported through annual FMP updates. This information is used to determine if the State FMP Review Schedule remains appropriate or if it should be revised. The full 2024 FMP review and individual species FMP Annual Updates can be found at http://deq.nc.gov/fishery-management-plans.

Status of State FMPs

Out of 13 State FMPs, Southern flounder is under review and both red drum and kingfish begin review this year. A summary of State FMPs is provided below in order of the date of the last action. No schedule change is being requested at this time.

Southern Flounder (*under review*): Amendment 3 was adopted by the Marine Fisheries Commission (MFC) in May 2022. At the August 2024 MFC business meeting, the MFC passed a motion "*to ask the DMF Director to ask the DEQ Secretary to modify the Annual FMP Review Schedule to amend the Southern Flounder FMP for the review of the plan to begin in 2024. The intent is to allow for more recreational access while maintaining the rebuilding requirements of the North Carolina Southern Flounder FMP Amendment 3*". The DEQ Secretary approved the schedule change in November 2024, which included development of Amendment 4 to give the MFC the opportunity to consider implementing the 50/50 sector allocation in 2025 instead of 2026 as prescribed in Amendment 3. Additionally, the Secretary approved concurrent development of Amendment 5 to comprehensively explore long-term solutions to the issue of recreational access while maintaining Amendment 3 rebuilding requirements. The MFC is scheduled to take final action on Amendment 4 at the August 2025 MFC business meeting. Development of Amendment 5 will continue regardless of whether Amendment 4 is adopted.

Kingfishes (*review begins 2025*): Management strategies continue to be maintained as outlined in the State Kingfishes FMP. The FMP prescribes that if two or more of the seven triggers are activated in two consecutive years then data will be evaluated further and the need for management changes will be considered. Two or more triggers have been activated for the last two years (2023 and 2024). However, the data used to inform the three triggers activated in 2024 were from the SEAMAP-SA Coastal Trawl Survey, which has undergone recent survey changes that likely affect calculation of kingfish indices of relative

abundance. The scheduled review of the plan will begin in 2025 and will include a comprehensive review of available data. Triggers will also be reevaluated as changes to the SEAMAP-SA Coastal Trawl Survey and the DMF's Program 195 Pamlico Sound Trawl Survey limit their suitability as triggers.

Red Drum (*review begins 2025*): Red drum in North Carolina are managed under Amendment 1 to the North Carolina Red Drum FMP and Amendment 2 to the Atlantic States Marine Fisheries Commission (ASMFC) Interstate FMP for Red Drum. A benchmark stock assessment was completed by ASMFC in 2024 with data through fishing year 2021. Results indicate the northern red drum stock (which includes North Carolina) is not overfished and overfishing is not occurring, though concerning trends are developing. In response to stock assessment results, the ASMFC Sciaenid's Management Board initiated development of Addendum II to Amendment 2 to the Interstate FMP for Red Drum, which is tentatively scheduled for adoption in October 2025. Any changes to the State FMP must consider compliance requirements of the ASMFC plan. Review of the State's Red Drum FMP was originally scheduled to begin in 2024, but in 2024 the DEQ Secretary approved the division's request to delay the review one year to provide time for completion of the ASMFC's red drum stock assessment and align with the ASMFC's tentative adoption of Addendum II.

Blue Crab (*review begins 2026*): Amendment 3 was adopted by the MFC in February 2020 to address the overfished status and end overfishing, indicated by the 2018 benchmark stock assessment. All available information suggests the blue crab stock has continued to decline since adoption of Amendment 3 and management changes are needed. As prescribed by the Amendment 3 adaptive management framework, the division developed and presented management options and initial recommendations to the MFC's Northern, Southern, and Shellfish/Crustacean advisory committees in March 2025. The MFC is tentatively scheduled to take final action on Amendment 3 adaptive management in November 2025. Any management changes will be implemented as a Revision to Amendment 3. In 2024, the DEQ Secretary approved the division request to delay the plan review one year to afford time to implement Amendment 3 adaptive management. As a result, the next scheduled review of this plan will begin in 2026.

Bay Scallop (*review begins 2026*): Management continues to be maintained as outlined in the State FMP. After many years of low abundance, the season was opened in specific regions in 2021, 2022, and 2023 at the lowest allowed harvest levels but was not opened in 2024. In 2024, the DEQ Secretary approved the division request to delay the plan review one year to reduce overlap in ongoing plan reviews and upon identification of no immediate need for management changes. As a result, the next scheduled review of this plan will begin in 2026.

Shrimp (*review begins 2027*): Amendment 2 was adopted by the MFC in February 2022 and management has been implemented through proclamations. The May 2024 Revision to the Shrimp FMP Amendment 2 documents the rationale of the MFC for not pursuing further action to address Submerged Aquatic Vegetation (SAV) protection under Amendment 2, but instead recommending the examination of issues and development of management actions related to the broader conservation of SAV habitat consistent with the Coastal Habitat Protection Plan (CHPP). Amendment 2 includes a motion by the MFC that they will seek additional methods and funding sources for a long-term shrimp observer program. The next scheduled review of the plan will begin in 2027.

River Herring (*review begins 2027*): River herring in North Carolina are currently managed under two separate North Carolina FMPs, Amendment 2 to the North Carolina River Herring FMP and the North Carolina FMP for Interjurisdictional Fisheries, as well as ASMFC's Amendment 2 to the Interstate FMP for Shad and River Herring. The 2024 ASMFC Atlantic coast-wide stock assessment update indicated that river herring remain depleted and at near historic lows on a coast-wide basis. All management strategies will be maintained as outlined in the two State FMPs and ASMFC FMP. The Division recommends transitioning management from the North Carolina River Herring FMP and maintaining their management

solely through the North Carolina FMP for Interjurisdictional Fisheries with the ASMFC. As outlined below, the North Carolina FMP for Interjurisdictional Fisheries adopts FMPs approved by the ASMFC or Councils by reference. This action will achieve efficiencies by addressing any redundancy in management between the ASMFC Interstate FMP and two separate North Carolina FMPs. The DMF will begin taking the appropriate steps to facilitate this transfer, whereby river herring management would be addressed solely through the North Carolina FMP for Interjurisdictional Fisheries.

Estuarine Striped Bass (*review begins 2027*): Amendment 2 was jointly developed with the N.C. Wildlife Resources Commission and adopted by the MFC in November 2022. The FMP includes four stocks: the Albemarle-Roanoke (A-R) stock, the Tar-Pamlico River stock, the Neuse River stock, and the Cape Fear River stock. The 2022 A-R stock assessment update indicated the stock has continued to decline since the previous assessment and remains overfished with overfishing occurring. Based on stock assessment results, the 2024 Revision to Amendment 2 implemented a harvest moratorium in the Albemarle Sound and Roanoke River Management Areas. No stock status is available for the other three stocks; however, a population model indicates the stocks are depressed to a level where sustainability is unlikely. As prescribed in Amendment 2, in 2025 the division began a review of striped bass data through 2024 for the Tar-Pamlico and Neuse rivers to determine if populations are self-sustaining, if sustainable harvest can be determined, and to assess performance of the ferry line gill net prohibition at increasing striped bass abundance. Results of the evaluation and recommendations will be presented to the MFC in August 2025. The next scheduled review of the plan will begin in 2027.

Interjurisdictional Fisheries (*review begins 2028*): The goal of the FMP for Interjurisdictional Fisheries is to adopt FMPs, consistent with N.C. law, approved by the ASMFC or Councils by reference and implement corresponding fishery regulations in North Carolina to provide compliance or compatibility with approved FMPs and amendments, now and in the future. In 2024, the DEQ Secretary approved the division request to delay the plan review one year to reduce overlap in ongoing plan reviews. As a result, the next scheduled review of the plan will begin in 2028.

Striped Mullet (*review begins 2029*): Amendment 2 was adopted by the MFC in May 2024. The MFC adopted regulations intended to reduce striped mullet harvest with a goal of ending overfishing and rebuilding the stock. The regulations included commercial day of week harvest closures and reduced recreational possession limits. Adaptive management allows for adjustment to season closures, day of week closures, trip limits, and gill net yardage and mesh size restrictions to ensure management targets are being met, based on results of stock assessment updates, concerning stock conditions, or fishery trends. While commercial landings increased in 2024, fishery-independent indices also increased suggesting increased landings are related to increased stock abundance. Adaptive management action is not recommended at this time, but stock and fishery trends will continue to be monitored. The next scheduled review of the plan will begin in 2029.

Spotted Seatrout (*review begins 2030*): Amendment 1 to the Spotted Seatrout FMP was adopted by the MFC in March 2025. The MFC adopted regulations that are intended to reduce spotted seatrout harvest and end overfishing of the stock. Adopted regulations include commercial day of week harvest closures (that mirror striped mullet closures), a recreational slot limit, and a lower recreational bag limit. Adaptive management allows for adjustment to season closures, day of week closures, size limits, trip, bag or vessel limits, and gear restrictions to ensure management targets are being met. Amendment 1 also changed the adaptive management framework for cold stun events. The next scheduled review of the plan will begin in 2030.

Eastern Oyster and Hard Clam (*review begins 2030*): Amendment 5 to the Eastern Oyster FMP and Amendment 3 to the Hard Clam FMP were adopted by the MFC in May 2025. With issues related to shellfish leases, aquaculture, and franchises now being addressed by the Shellfish Lease and Aquaculture

Program, the amendments only address wild harvest. Additionally, stock assessments have not been completed for these species due to data limitations; therefore, population size and rate of removals are unknown. Amendment 5 to the Eastern Oyster FMP balances the value of oysters as a fishery resource and essential habitat by implementing deep-water oyster recovery areas (DORAs), cultch supported harvest, and rotational harvest cultch sites. Amendment 3 to the Hard Clam FMP phases out the use of mechanical harvest methods by 2028. Both plans adopted a strategy for the division to further explore options to estimate recreational shellfish participation and landings, and to distribute Shellfish Sanitation and Recreational Water Quality health and safety information. The next scheduled review of the plans will begin in 2030.

N.C. FISHERY MANAGEMENT PLAN REVIEW SCHEDULE (July 2025–June 2030) Revised November 12, 2024					
SPECIES (Date of Last Action)	2025–2026	2026–2027	2027–2028	2028–2029	2029–2030
SOUTHERN FLOUNDER (5/22) *					
RED DRUM (8/17) **					
KINGFISHES (8/20)					
BLUE CRAB (2/20) +					
BAY SCALLOP (8/20) ++					
SHRIMP (2/22)					
ESTUARINE STRIPED BASS (11/22)					
RIVER HERRING (8/22)					
INTERJURISDICTIONAL (5/22) ++					
STRIPED MULLET (5/24)					
SPOTTED SEATROUT (3/25)					
EASTERN OYSTER (5/25)					
HARD CLAM (5/25)					

* In 2024 the DEQ Secretary approved an early FMP review to consider alternate options for managing the recreational flounder fishery, while maintaining Amendment 3 rebuilding requirements.

** In 2024 the DEQ Secretary approved the division request to delay the plan review one year to afford time for completion of the Atlantic States Marine Fisheries Commission's red drum stock assessment which will inform management

\+ In 2024 the DEQ Secretary approved the division request to delay the plan review one year to afford time to implement Amendment 3 adaptive management

++ In 2024 the DEQ Secretary approved the division request to delay the plan review one year to reduce overlap in ongoing plan reviews

This schedule assumes no rulemaking is required to implement plan amendments.

NC Marine Fisheries Commission

Blue Crab Fishery Management Plan

August 2025 Quarterly Business Meeting

Documents

Blue Crab FMP Amendment 3 Decision Document

DECISION DOCUMENT

Blue Crab Fishery Management Plan

Amendment 3 Adaptive Management

This document was developed to help the MFC track previous activity and prepare for upcoming actions for Blue Crab FMP Amendment 3 Adaptive Management.

August 2025

Summary

Amendment 3 to the N.C. Blue Crab Fishery Management Plan (FMP) was adopted in February 2020 and is nearly halfway through the legislatively mandated 10-year stock rebuilding period with little evidence suggesting management measures have been successful in ending overfishing or achieving sustainable harvest. The intent of the Amendment 3 adaptive management framework is to allow for management changes if measures are or are not meeting objectives. Because Amendment 3 management measures have been unsuccessful in ending overfishing or achieving sustainable harvest, the adaptive management framework will be used to implement management measures projected to reduce fishing mortality (*F*) closer to the *F* target and rebuild the spawning stock closer to the spawner abundance target with greater than 50% probability of success.

Amendment 3 Background

As part of Amendment 3 to the North Carolina Blue Crab FMP a benchmark stock assessment was undertaken using data from 1995–2016. Based on assessment results, the N.C. blue crab stock was overfished and overfishing was occurring in 2016.

The North Carolina Fishery Reform Act of 1997 requires the State specify a time period not to exceed two years to end overfishing and achieve a sustainable harvest within 10 years of the date of adoption of the plan. To meet this requirement, a minimum harvest reduction of 0.4% (in numbers of crabs) was projected to end overfishing and a harvest reduction of 2.2% was projected to achieve sustainable harvest and rebuild the blue crab spawning stock within 10 years with a 50% probability of success (Table 1).

Table 1. Catch reduction projections for varying levels of fishing mortality (*F*) and the probability of achieving sustainable harvest within the 10-year rebuilding period defined in statute. Bolded row is minimum required harvest reduction.

F (yr-1)	Catch Reduction (%)	Probability of achieving sustainable harvest within 10 years (%)	Comments
1.48	0.0	31	2016 average *F* from stock assessment
1.46	0.4	45	Catch reduction to meet *F* threshold and end overfishing
1.40	1.7	46	Catch reduction to meet spawner abundance threshold and end overfished status
1.38	**2.2**	**50**	**Catch reduction to meet minimum statutory requirement for achieving sustainable harvest**
1.30	3.8	67	
1.22	5.9	90	Catch reduction to meet *F* target
1.10	9.3	96	
1.00	12.3	100	
0.90	15.7	100	
0.80	19.8	100	Catch reduction to meet spawner abundance target
0.70	24.3	100	

At their February 2020 business meeting the MFC adopted Amendment 3 to the FMP with the following management strategies to end overfishing and achieve sustainable harvest in the blue crab fishery:

- North of the Highway 58 Bridge: A January 1 through January 31 closed season.
- South of the Highway 58 Bridge: A March 1 through March 15 closed season.
- A 5-inch minimum size limit for mature female crabs statewide.
- Replacing the current pot closure period and remaining closed in entirety (could not be reopened early).
- Maintain the prohibition on harvest of immature female hard crabs statewide.
- Maintain the 5% cull tolerance established in the 2016 Revision to Amendment 2.
- Adopt proposed adaptive management framework and allow measures to be relaxed if the assessment update indicated the stock was not overfished and overfishing was not occurring and recommend updating the stock assessment once 2019 data is available.

The adopted management provided an estimated 2.4% harvest reduction with a 50% probability of achieving sustainable harvest. This reduction was just above the statutorily required minimum (2.2% reduction), but below the harvest reduction level needed to reduce *F* to the target (5.9% reduction) and the reduction needed to increase spawner abundance to the target (19.8% reduction; Table 1).

Amendment 3 management strategies have been fully in place since January 2021. Amendment 3 also maintained all measures implemented with the May 2016 Revision to the Blue Crab FMP. A summary of all management measures in place through Amendment 3 can be found in Amendment 3, the annual FMP Update or in the Amendment 3 flyer.

Amendment 3 Adaptive Management

1. Update the stock assessment at least once in between full reviews of the FMP, timing at the discretion of the division
    a. If the stock is overfished and/or overfishing is occurring or it is not projected to meet the sustainability requirements, then management measures shall be adjusted using the director's proclamation authority
    b. If the stock is not overfished and overfishing is not occurring, then management measures may be relaxed provided it will not jeopardize the sustainability of the blue crab stock
2. Any quantifiable management measure, including those not explored in this paper, with the ability to achieve sustainable harvest (as defined in the stock assessment), either on its own or in combination, may be considered
3. Use of the director's proclamation authority for adaptive management is contingent on:
    a. Consultation with the Northern, Southern, and Shellfish/Crustacean advisory committees
    b. Approval by the Marine Fisheries Commission

Upon evaluation by the division, if a management measure adopted to achieve sustainable harvest (either through Amendment 3 or a subsequent Revision) is not working as intended, then it may be revisited and either: 1) revised or 2) removed and replaced as needed provided it conforms to steps 2 and 3 above.

Post Amendment 3 Stock Assessment Update

Following full implementation of Amendment 3 management measures in 2021, DMF monitoring programs continued to observe historically low commercial landings, coupled with continued low abundance of all blue crab life stages (e.g., male and female juveniles, male and female adults, mature females). In response to stock concerns expressed by commercial crabbers and continued poor trends in abundance since adoption of Amendment 3, the DMF began updating the stock assessment with data through 2022. Results of the model update indicate the magnitude and trends for estimated recruitment, female spawner abundance, and fishing mortality were similar to the benchmark assessment (Figure 1); however, the Maximum Sustainable Yield (MSY) based reference points used to determine stock status for both female spawner abundance and fishing mortality changed drastically (Figures 2-3).

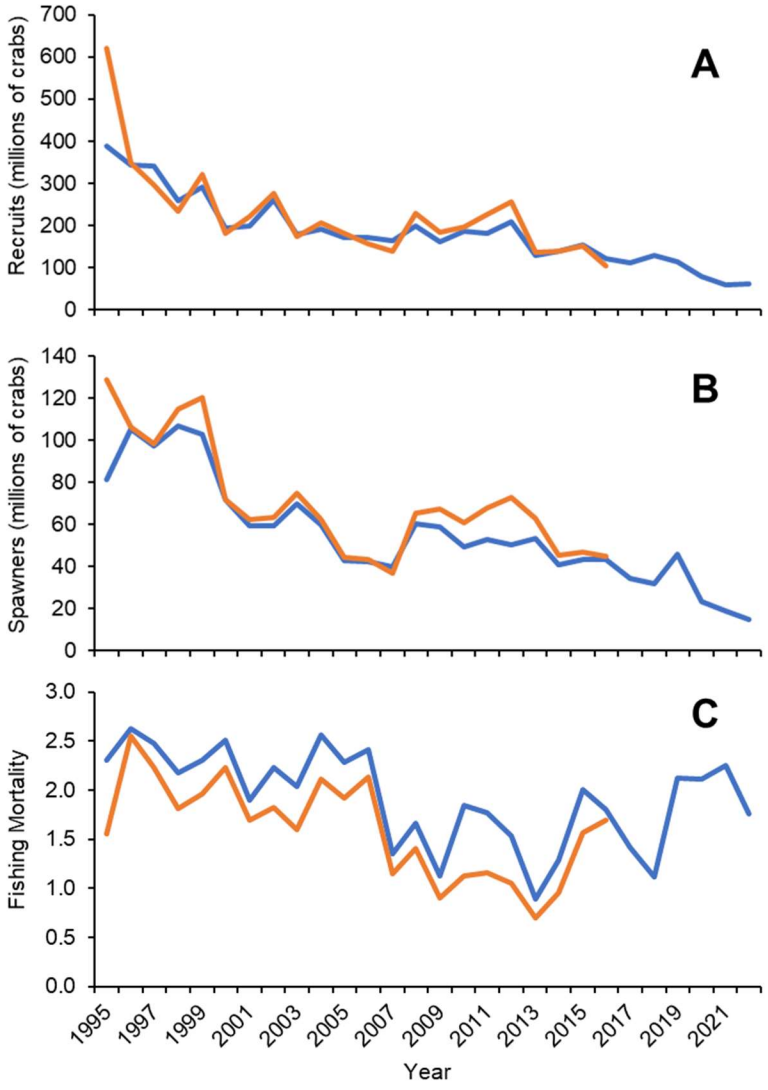


Figure 1. Comparison of estimates of (A) total recruitment, (B) female spawner abundance, and (C) fishing mortality between the 2023 stock assessment update (blue line) and the 2018 benchmark stock assessment (orange line).

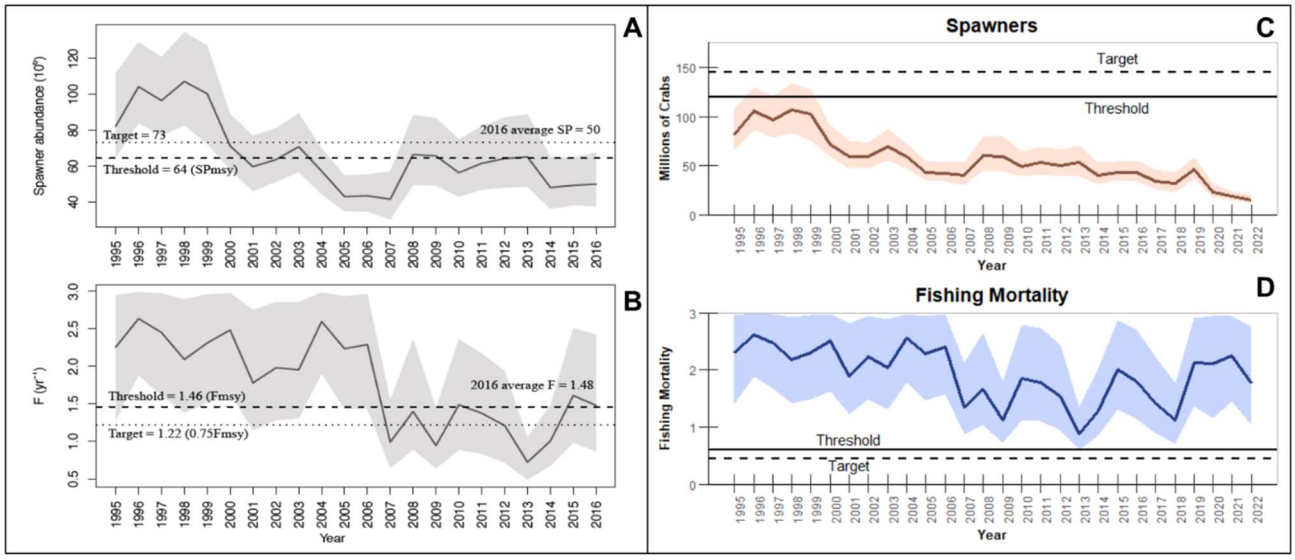


Figure 2. Annual estimates of (A) mature female spawner abundance and (B) fishing mortality relative to associated reference points from the 2018 benchmark stock assessment. Annual estimates of (C) mature female spawner abundance and (D) fishing mortality relative to associated reference points from the 2023 stock assessment update.

Due to the magnitude of the change in reference points, an external review of the assessment update was completed in late December 2023. Reviewers identified concerns with model specifications and results and strongly recommended resolving these issues before basing any management decisions solely on the assessment update. Suggestions provided by reviewers can only be incorporated with a new benchmark stock assessment. Given concerns with the assessment update identified by the DMF and external peer reviewers, the DMF does not recommend using results of the 2023 stock assessment update to inform management. Recommending against using the stock assessment update for management purposes does not invalidate the benchmark stock assessment or the data sources used in the model.

Declines in the North Carolina blue crab stock are not unique, as blue crab stocks in other Atlantic coast states have declined similarly. In January 2023 the South Carolina Department of Natural Resources released a status report for the South Carolina blue crab fishery. The report concluded the South Carolina blue crab stock has been in decline for nearly two decades and provided recommendations to prevent overharvesting, gradually reduce fishing pressure, prevent overexploitation, and strengthen enforcement capabilities. Concerns for the Chesapeake Bay blue crab stock have also persisted. While the Chesapeake Bay blue crab stock is not depleted and overfishing is not occurring, juvenile abundance remains low. Precautionary management, focusing on protecting mature females and juveniles, has been recommended for the Chesapeake Bay stock and a benchmark stock assessment has been started to better understand the population.

Management Measures and Preliminary Recommendations

Size limits are used to rebuild or protect a portion of the spawning stock. Currently, male and mature female hard crabs are subject to a 5-inch minimum carapace width (CW) statewide (harvest of immature females is prohibited).

Because a minimum size limit is already in place for blue crabs, and because achieving necessary harvest reductions through size limit changes alone is unlikely, management options for increasing the minimum size limit or establishing a maximum size limit were not developed.

Prohibiting Crab Trawling prevents harvest from a gear that primarily harvests female crabs prior to the spawning season. Most crab trawl harvest occurs from December through April and is highly variable from year to year. Due to location and time of year crab trawls operate, most crabs harvested by crab trawls are females of lower market value that are caught just prior to spawning. Even at its peak, crab trawls accounted for a small percentage of overall blue crab landings. For example, in 2023 crab trawls accounted for 0.6% of all hard blue crab landings. There is often conflict between the crab trawl and crab pot fisheries and while the crab trawl fishery does not currently have a lot of participants, further growth of this fishery may be detrimental to the crab stock.

Seasonal Closures can be used to reduce overall harvest by restricting harvest during specific times of the year. Amendment 3 implemented a January 1–31 closure in areas north of the Highway 58 bridge to Emerald Isle and a March 1–15 closure in areas south of the Highway 58 bridge to Emeral Isle.

Life Stage Closures and Limits are used to limit harvest of specific life stages (e.g., immature females, sponge crabs, etc.). Amendment 3 maintained the prohibition on harvest of immature female hard blue crabs and harvest of dark sponge crabs from April 1–30. The intent of prohibiting harvest of immature female blue crabs is to allow immature females the opportunity to mature and spawn before being subject to harvest. Prioritizing the reproductive potential of female crabs through life-stage closures serves as a proactive investment to the sustainability of the blue crab population. This strategy not only fosters increased abundance within the crab population but likely contributes to higher recruitment.

Trip or Bushel Limits limit catch while continuing to allow harvest opportunities. Maryland and Virginia each manage blue crab harvest with some form of a trip limit in combination with other measures.

Preliminary Recommendations

Current management of the North Carolina blue crab fishery recognizes the conservation value of protecting mature female crabs by prohibiting harvest of dark sponge crabs from April 1–30 and by establishing crab spawning sanctuaries (CSS) at all coastal inlets. The purpose of the CSS is to protect mature females in these areas prior to and during the spawning season, though sanctuary size and other factors limit their effectiveness. Season closures and life stage harvest limits can be used to enhance the effectiveness of the existing CSS by providing broader protections.

The comprehensive blue crab management program in Chesapeake Bay prioritizes protection of mature female blue crabs. Virginia has implemented extensive blue crab spawning sanctuaries where the harvest of blue crab is seasonally prohibited, and Maryland has implemented seasonal bushel limits for mature female crabs. Preferentially protecting mature female blue crabs in the Chesapeake Bay, allowed for recovery of the blue crab stock from low levels in the 2000s while allowing for consistent commercial harvest. While the Chesapeake Bay blue crab stock has declined recently, it is not depleted and overfishing is not occurring, though continued protection of mature females as well as immature blue crabs has been recommended.

Given these considerations, initial management options focus on limiting harvest of blue crabs during biologically important times of year (e.g., mating and spawning seasons), and specifically limiting harvest of mature females. Initial management options only included those projected to rebuild spawner abundance to a higher level with a much higher probability of success (Table 1).

Options 1, 2, and 3 implement 10-, 15-, or 20-bushel limits on all hard blue crabs year-round (**Option 1**), from September-December (**Option 2**), or from September–November (**Option 3**; Table 2a). **Option 3** implements seasonal bushel limits in combination with statewide season closures.

Option 4 implements a 10-, 15-, or 20-bushel limit on mature female blue crabs from September–October, a five-bushel limit on mature female mature female crabs from November–December, and no harvest of mature female blue crabs from January–May (Table 2b). **Option 5** is the same as **Option 4** but extends the period for no harvest of mature female crabs from January–May. **Option 6** implements a 10-, 15-, or 20-bushel limit on mature female blue crabs from September–November, a complete closure for all blue crabs from December–January and no harvest of mature female crabs from February–May. **Option 7** implements a 10-, 15-, or 20-bushel limit on mature female crabs from September–December and prohibits harvest of mature female crabs from January–May. **Option 8** is the same as **Option 7** but implements the 10-, 15-, or 20-bushel limit on mature female crabs from June–December.

In consideration of blue crab life history and blue crab fishery characteristics, the preliminary DMF recommendation presented to the Advisory Committees in March 2025 was Option 8.a, 10-bushel limit for mature female blue crabs from June–December and no harvest of mature female blue crabs from January–May (Table 2b). The DMF also preliminarily recommended maintaining existing season closures and all other blue crab management measures currently in place. In combination, these management measures would effectively reduce harvest by an estimated 21.7 percent compared to average landings from 2019–2023, increase the spawning stock biomass, and promote increased recruitment.

Table 2a. Season closure and trip limit management options. Unless stated otherwise all options are in addition to existing management including existing season closures. Estimated harvest reductions are calculated from 2016, 2023, and 2019–2023 commercial hard blue crab landings.

Option #	Measures	2016	2023	2019–2023
1	a. 10-bushel hard crab trip limit year-round	48.3	51.6	45.6
	b. 15-bushel hard crab trip limit year-round	34.5	38.3	31.9
	c. 20-bushel hard crab trip limit year-round	25.2	28.5	22.6
2	a. 10-bushel hard crab trip limit Sept–Dec	25.1	32.0	21.6
	b. 15-bushel hard crab trip limit Sept–Dec	20.4	25.2	16.4
	c. 20-bushel hard crab trip limit Sept–Dec	16.6	19.7	12.4
3	a. 10-bushel hard crab trip limit Sept–Nov, closed Dec–Mar	32.8	36.3	27.0
	b. 15-bushel hard crab trip limit Sept–Nov, closed Dec–Mar	28.5	30.2	22.3
	c. 20-bushel hard crab trip limit Sept–Nov, closed Dec–Mar	25	25.2	18.6
	d. 10-bushel hard crab trip limit Sept–Nov, closed Dec–Jan	27.4	34.5	24.0
	e. 15-bushel hard crab trip limit Sept–Nov, closed Dec–Jan	23.1	28.4	19.3
	f. 20-bushel hard crab trip limit Sept–Nov, closed Dec–Jan	19.6	23.4	15.6

Table 2b. Mature female season closure and trip limits management options. Unless stated otherwise all options are in addition to existing management including existing season closures. Estimated harvest reductions are calculated from 2016, 2023, and 2019–2023 commercial hard blue crab landings.

Option #	Measures	2016	2023	2019–2023
4	a. 10-bushel mature females Sept–Oct, 5-bushel mature females Nov–Dec, no mature females Jan–Mar	17.5	19.4	14.4
	b. 15-bushel mature females Sept–Oct, 5-bushel mature females Nov–Dec, no mature females Jan–Mar	15.7	16.9	12.3
	c. 20-bushel mature females Sept–Oct, 5-bushel mature females Nov–Dec, no mature females Jan–Mar	14.3	15.1	10.9
5	a. 10-bushel mature females Sept–Oct, 5-bushel mature females Nov–Dec, no mature females Jan–May	22.1	21.8	18.8
	b. 15-bushel mature females Sept–Oct, 5-bushel mature females Nov–Dec, no mature females Jan–May	20.2	19.2	16.7
	c. 20-bushel mature females Sept–Oct, 5-bushel mature females Nov–Dec, no mature females Jan–May	18.9	17.5	15.3
6	a. 10-bushel hard crabs limit Sept–Nov, complete closure Dec–Jan, no mature females Feb–May	34.8	37.8	29.9
	b. 15-bushel hard crabs limit Sept–Nov, complete closure Dec–Jan, no mature females Feb–May	30.3	31.6	24.2
	c. 20-bushel hard crabs limit Sept–Nov, complete closure Dec–Jan, no mature females Feb–May	26.7	26.4	19.8
7	a. 10-bushel mature females Sept–Dec, no mature females Jan–May	20.6	19.4	17.1
	b. 15-bushel mature females Sept–Dec, no mature females Jan–May	17.6	15.1	13.9
	c. 20-bushel mature females Sept–Dec, no mature females Jan–May	15.3	12.0	11.6
8	a. 10-bushel mature females June–Dec , no mature females Jan–May*	25.0	23.1	21.7
	b. 15-bushel mature females June–Dec, no mature females Jan–May	19.8	17.2	16.4
	c. 20-bushel mature females June–Dec, no mature females Jan–May	16.5	13.2	13.0

* Division preliminary recommendation presented to the MFC Advisory Committees (Northern, Southern, Shellfish/Crustacean) in March 2025

Advisory Committee Review

The Amendment 3 adaptive management framework requires "consultation" with the Northern, Southern, and Shellfish/Crustacean advisory committees before management changes can be approved by the MFC. To fulfill the "consultation" requirement, the advisory committees met the week of March 18–20, 2025 to discuss adaptive management and provide recommendations. DMF staff provided background information and the preliminary DMF recommendation. In addition, DMF staff were available prior to each meeting to answer questions and discuss blue crab science and management with the public.

Key takeaways from all meetings included:

- Concern about the economic impact of the preliminary DMF recommendation
- Concern about how the preliminary recommendation would disproportionately impact certain fishery segments and areas and the need for fair management between regions
- Distrust of stock assessment results and data
- Concern about the effects of water quality and predation on the blue crab stock
- Questions about authority to make management changes without an updated stock assessment
- Landings declines are the result of market conditions and participation declines, not a declining blue crab stock
- The need for cooperation with industry for data collection and formulating management
- Some acknowledgement the stock has declined since the 1990s even if it is not because of fishing
- Some concern about long-term declining trends

Advisory Committee Recommendations

Northern

Motion for the Marine Fisheries Commission to not take final action on Blue Crab Amendment 3 Adaptive Management until August 2025, instead of May 2023 (motion passes 10-0)

Motion for the Marine Fisheries Commission to remain status quo regarding the Blue Crab FMP Amendment 3 Adaptive Management (motion passes 7-2, with 1 abstention)

Southern

Motion to recommend the Marine Fisheries Commission to remain status quo regarding Blue Crab FMP Amendment 3 Adaptive Management and to move the Marine Fisheries Commission action on Blue Crab to the August 2025 meeting (motion passes 6-1, with 1 abstention)

Shellfish/Crustacean

Motion for the Marine Fisheries Commission to not take final action on Blue Crab Amendment 3 Adaptive Management until August 2025, instead of May 2025 (motion passes, 5-0, with 2 abstentions)

Motion to recommend to the Marine Fisheries Commission to remain status quo regarding Blue Crab FMP Amendment 3 (motion passes 4-0, with 3 abstentions)

Amendment 3 Adaptive Management Next Steps and Timeline

Amendment 3 is nearly halfway through the required rebuilding timeline and while an updated stock assessment is not currently available to inform stock status, there is little evidence suggesting overfishing has ended or Amendment 3 sustainability objectives will be met. Because there are strong indicators the stock is not recovering, the **DMF remains concerned about the blue crab stock.** However, in consideration of advisory committee input the DMF intends to:

Bring adaptive management options to the MFC for final action in November 2025

Final MFC adaptive management action will occur in November 2025. Prior to the November meeting, the DMF will consider advisory committee input, re-evaluate preliminary recommendations and continue to explore additional options. At the November 2025 meeting, DMF will present additional options accounting for public and advisory committee input.

Prioritize completing assessing the stock

Potential avenues for assessing the stock have been explored but there is no anticipated completion date at this time. With the declining trends in all data sources, there is potential a new assessment will not show stock recovery and may indicate the stock requires significant harvest reductions for recovery.

The updated timeline for revision development is:

May 2024	DMF presents results of stock assessment update and adaptive management plan to MFC
May 2024 – August 2024	Outreach and analysis
September 2024	DMF updates Northern, Southern, and Shellfish/Crustacean advisory committees
September 2024 – December 2024	Additional outreach and analysis. DMF drafts Revision to Amendment 3
March 2025	MFC AC (Northern, Southern, Shellfish/Crustacean) review draft
May 2025	DMF updates MFC on advisory committee recommendations and next steps
You Are Here August 2025	DMF provides update to MFC – **NO ACTION**
November 2025	MFC scheduled to vote on adoption of Amendment 3 Revision

*Gray indicates a step is complete.

NC Marine Fisheries Commission

Southern Flounder Fishery Management Plan

August 2025 Quarterly Business Meeting

Documents

Southern Flounder FMP Amendment 4 Memo

Draft Southern Flounder FMP Amendment 4

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

August 2, 2025

MEMORANDUM

TO: North Carolina Marine Fisheries Commission

FROM: Jeffrey Dobbs, Fishery Management Plan Coordinator
Anne Markwith, Southern Flounder Co-Lead
Holly White, Southern Flounder Co-Lead

SUBJECT: Amendment 4 to the Southern Flounder Fishery Management Plan

Issue
Vote on final adoption of Amendment 4 to the Southern Flounder Fishery Management Plan (FMP).

Supporting Documents
- Draft Amendment 4 to the Southern Flounder FMP

Action
Vote on final adoption of Amendment 4 to the Southern Flounder FMP.

Background
At their August 2024 business meeting the North Carolina Marine Fisheries Commission (MFC) passed a motion "*to ask the DMF Director to ask the DEQ Secretary to modify the Annual FMP Review Schedule to amend the Southern Flounder FMP for the review of the plan to begin in 2024. The intent is to allow for more recreational access while maintaining the rebuilding requirements of Amendment 3*". The Secretary approved this schedule change along with a request from the DMF to begin concurrent development of Amendment 5 to explore long-term solutions to the issue of recreational access while maintaining Amendment 3 rebuilding requirements. The primary purpose of Amendment 4 is to immediately address the August 2024 MFC motion by implementing the 50/50 sector allocation in 2025, instead of in 2026 as prescribed in Amendment 3 (Table 1). All other management measures from Amendment 3 are carried forward in Amendment 4. Expediting the shift to 50/50 reduces the possibility of recreational catch overages that may mitigate the need for future season closures, as the allocation shift will provide an additional buffer for catch. The shift in allocation will not increase the length of the recreational season.

Table 1. Amendment 3 annual allocations, in pounds, for the Southern Flounder commercial and recreational fisheries and associated sub-allocations for each sector that maintains a 72% overall reduction and the current pound net sub-allocation. An asterisk (*) indicates catch from Recreational Commercial Gear License holders is not included in the Total Allowable Landings.

					Commercial Fisheries			Recreational Fisheries*		
Year	Allocation	Total Allowable Catch	Dead Discards	Total Allowable Landings	Total Allowable Commercial Landings	Mobile Gears	Pound Nets	Total Allowable Recreational Landings	Hook and Line	Gigs
2021	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2022	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2023	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2024	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2025	60/40	548,034	15,682	532,352	319,411	132,953	186,458	212,941	189,608	23,333
2026	50/50	548,034	15,682	532,352	266,176	79,718	186,458	266,176	237,010	29,166

Following an accelerated timeline allows for adoption of Amendment 4 to the Southern Flounder FMP by the MFC in August 2025 (Table 2). If any step in this timeline is not completed as shown, it will result in an implementation date after the allowed window for a recreational season (August 16–September 30).

Table 2. Timeline for development and adoption of Amendment 4 to the Southern Flounder FMP.

Milestones	Completion Date
DMF drafts Amendment 4	October 31–December 20, 2024
Advisory committee review draft Amendment 4 (Finfish AC)	January 27, 2025
MFC approves Amendment 4 for AC review and public comment	March 21–23, 2025
Public and MFC AC review (Northern, Southern, Finfish)	April 1–30, 2025
MFC selects preferred management options	May 21–23, 2025
Legislative review of draft FMP Amendment 4	June–August, 2025
MFC votes on final adoption of FMP Amendment 4	August 20–21, 2025
Implement management	August 2025

Development and adoption of Amendment 4, as proposed, is a short-term solution to address recreational access. Amendment 5 will explore options beyond an allocation shift to address the long-term management of Southern Flounder.

Management Options

Status Quo: Maintain Amendment 3 allocation transition schedule.

Expedite Allocation Shift: Expedite the sector (commercial/recreational) allocation transition to 50/50 in 2025 rather than in 2026 as prescribed in Amendment 3.

MFC Selected Management

At its May 2025 business meeting, the MFC selected expediting the sector allocation transition to 50/50 in 2025 rather than in 2026 as prescribed in Amendment 3 as their preferred management option for Amendment 4 to the Southern Flounder FMP. The draft FMP was revised to include this selected option and then provided to the Secretary of the North Carolina Department of Environmental Quality. The Secretary submitted the draft FMP to AgNER for their 30-day review period (N.C. General Statute § 113-182.1(e)). No comments were received from AgNER.

Next Steps

At the August 2025 business meeting, the MFC will vote on the final adoption of measures for Amendment 4 to the Southern Flounder FMP. After adoption, the DMF will immediately begin implementation of the adopted management measures. Concurrently, the DMF will continue developing the draft of Amendment 5.

June 2025

North Carolina Southern Flounder Fishery Management Plan Amendment 4

North Carolina Division of Marine Fisheries

North Carolina Department of Environmental Quality
North Carolina Division of Marine Fisheries
3441 Arendell Street
P. O. Box 769
Morehead City, NC 28557

This document may be cited as:

NCDMF (North Carolina Division of Marine Fisheries). 2025. North Carolina Southern Flounder Fishery Management Plan Amendment 4. North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 34 p.

Disclaimer: Data in this Fishery Management Plan may have changed since publication based on updates to source documents.

ACKNOWLEDGMENTS

Amendment 4 to the North Carolina (NC) Southern Flounder Fishery Management Plan (FMP) was developed by the NC Department of Environmental Quality (NCDEQ), Division of Marine Fisheries (NCDMF) under the auspices of the NC Marine Fisheries Commission (NCMFC) with the advice of the Finfish Advisory Committee acting as the Southern Flounder Advisory Committee (AC). Deserving special recognition are the members of the Finfish AC and the NCDMF Plan Development Team (PDT) who contributed their time and knowledge to this effort.

Advisory Committee

Jeff Buckel
Lewis Dunn
Jake Griffin
Jesse Mock III
Randy Proctor
William Tarplee
Sammy Corbett
Tom Roller

Southern Flounder Plan Development Team

Anne Markwith (co-lead)
Holly White (co-lead)
Charlton Godwin
Chris Stewart
Jeffrey Dobbs
Christina Bland
Todd Mathes
Brenton Griffin
Tina Moore (mentor)
Michael Binkley
Kevin Aman
Brian Deanes
Jonathan Weaver
Kristina Flanigan
Alan Bianchi
Brad Johnson
Jason Walsh

The following division staff were also invaluable in assisting with the development of this document and providing administrative support: Barbie Byrd, Daniel Zapf, Jason Rock, Kathy Rawls, Jesse Bissette, Catherine Blum, Deborah Manley, Hope Wade, and Patricia Smith.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

The Southern Flounder supports important commercial and recreational fisheries along the U.S. South Atlantic and Gulf coasts and is particularly important to fisheries in North Carolina. Based on tagging, genetic, and age structure morphology data, Southern Flounder that occur in North Carolina are part of the biological unit stock that ranges from North Carolina to the east coast of Florida.

This South Atlantic Southern Flounder stock is overfished, and overfishing is occurring as of 2017, the terminal year of the 2019 coastwide stock assessment update (Flowers et al. 2019). Results indicate that spawning stock biomass (SSB) has decreased since 2006 and recruitment, while variable, has generally declined. Fishing mortality is less variable and decreased slightly in 2017. North Carolina law (G.S. § 113-182.1) requires management action to end overfishing within two years. Recovery of the stock from an overfished condition must occur within 10 years and provide at least a 50% probability of success from the date the plan is adopted.

Amendment 3 to the Southern Flounder Fishery Management Plan was adopted in May 2022 according to G.S. § 113-182.1. Amendment 3 implemented a quota-based approach to reduce North Carolina's portion of the coastwide catch by 72% to rebuild the stock to the SSB target by 2028 (NCDMF 2022). The quota was split between commercial and recreational fishing sectors with an initial split of 70% allocated to the commercial sector and 30% allocated to the recreational sector (70/30). The FMP outlines an allocation transition to 60/40 commercial/recreational in 2025 and 50/50 commercial/recreational in 2026.

At the August 2024 North Carolina Marine Fisheries Commission (NCMFC) business meeting, the NCMFC passed a motion "to ask the DMF Director to ask the DEQ Secretary to modify the Annual FMP Review Schedule to amend the Southern Flounder FMP for the review of the plan to begin in 2024. The intent is to allow for more recreational access while maintaining the rebuilding requirements of Amendment 3".

The goal and objectives of Amendment 4 are unchanged from Amendment 3. To address the August 2024 NCMFC motion Amendment 4, one issue was developed: increasing recreational access to Southern Flounder through sector allocation parity.

Expediting the sector (commercial/recreational) allocation transition to 50/50 (i.e., parity) in 2025 rather than 2026 as prescribed in Amendment 3 immediately addresses recreational access in time for a 2025 recreational season while maintaining Amendment 3 rebuilding requirements. Under the Amendment 3 allocation shift schedule to 60/40 in 2025, there would likely be a short recreational season in 2025. Expediting the shift to 50/50 in 2025 reduces the possibility of recreational catch overages that may mitigate the need for future season closures, though may not increase the length of the recreational season. Maintaining Amendment 3 rebuilding requirements does not provide substantial harvest opportunities for any fishing sector regardless of allocation. This allocation shift is a short-term approach to address recreational access. Long-term, more comprehensive approaches for recreational and commercial fisheries management will be addressed

during subsequent development of Amendment 5. For Amendment 4, the NCMFC selected the following management option at its March 2025 business meeting:

- Expedite the sector (commercial/recreational) allocation transition to 50/50 in 2025 rather than in 2026 as prescribed in Amendment 3.

Additionally, the following management measures from Amendment 3 are carried forward into Amendment 4:

- A commercial and recreational minimum size limit of 15 inches TL;
- A minimum mesh size of 6.0-inch stretched mesh (ISM) for anchored large-mesh gill nets used in the taking of flounder;
- A minimum mesh size of 5.75-ISM for pound net escape panels;
- Reduced commercial anchored large-mesh gill-net soak times to single overnight soaks where nets may be set no sooner than one hour before sunset and must be retrieved no later than one hour after sunrise the next morning;
- For anchored large-mesh gill nets with a 4.0 through 6.5 ISM, maintain a maximum of 1,500-yards in Management Units A, B, and C and a maximum of 750-yards in Management Units D1, D2, and E unless more restrictive yardage is specified through adaptive management or through the sea turtle or sturgeon Incidental Take Permit (ITP);
- Removal of all commercial gears targeting Southern Flounder from the water (e.g., commercial and RCGL anchored large-mesh gill nets and gigs) or make them inoperable (flounder pound nets) in areas and during times outside of an open season with exceptions for commercial large-mesh gill-net fisheries that target American shad (*Alosa sapidissima*), hickory shad (*A. mediocris*) and catfish species if these fisheries are only allowed to operate during times of the year and locations where bycatch of Southern Flounder is unlikely.
- Unlawful to use any method of retrieving live flounder from pound nets that causes injury to released fish (e.g., picks, gigs, spears, etc.);
- Unlawful for commercial fishery to possess any species of flounder harvested from the internal waters of the state during the closed Southern Flounder season;
- Combine mobile gears (gill nets, gigs, and “other” gears) into one gear category and maintain pound nets as their own separate commercial fishery;
- Divide mobile gears into two areas using the ITP boundary line for management sub-units Northern D1 and Southern D1, maintaining consistency with Amendment 2 and Amendment 3 boundary line;
- Divide the pound net fishery into three areas maintaining consistency with areas in Amendment 2 and 3;
- Maintain 72% reduction and current sub-allocation for the pound net fishery.
- Implement trip limits for pound nets, gigs, and hook and line only to maximize reopening after reaching division closure threshold;
- Implement a single season for the recreational gig and hook-and-line fisheries to constrain them to an annual quota;
- Maintain the recreational bag limit of flounder at one fish per person per day;
- Do not allow harvest of Southern Flounder using RCGL;

- Should landings be available, allow potential for spring ocellated flounder season to occur from March 1-April 1 in ocean waters only using hook-and-line gear with one-fish ocellated only bag limit;
- Maintain the adaptive management framework based on the peer-reviewed and approved stock assessment

INTRODUCTION

This is Amendment 4 to the Southern Flounder Fishery Management Plan (FMP). By law, each FMP must be reviewed at least once every five years (G.S. 113-182.1). The NC Division of Marine Fisheries (NCDMF) reviews each FMP annually and a comprehensive review is undertaken about every five years. The last comprehensive review of the plan was approved by the NC Marine Fisheries Commission (NCMFC) in 2022. FMPs are the ultimate product that brings all information and management considerations into one document. The NCDMF prepares FMPs for all commercially and recreationally significant species or fisheries that comprise state marine or estuarine resources adopted by the NC Marine Fisheries Commission (NCMFC). The goal of these plans is to ensure long-term viability of these fisheries. All management authority for the North Carolina Southern Flounder fishery is vested in the State of North Carolina. The NCMFC adopts rules and policies and implements management measures for the Southern Flounder fishery in Coastal Fishing Waters in accordance with 113-182.1. Until Amendment 4 is approved for management, Southern Flounder are managed under Amendment 3 (NCDMF 2022).

Fishery Management Plan History

Original FMP Adoption:	February 2005	
Amendments:	Amendment 1	February 2013
	Amendment 2	August 2019
	Amendment 3	May 2022
Revisions:	None	
Supplements:	Supplement A to the FMP	February 2011
	Supplement A to Amendment 1	August 2017
Information Updates:	None	
Schedule Changes:	Scheduled review was moved up from 2027 to begin concurrent development of Amendments 4 and 5 in 2024	

Past versions of the Southern Flounder FMP (NCDMF 2005, 2011, 2013, 2017, 2019, 2022) are available on the NCDMF website.

Management Unit

The management unit of this FMP includes all Southern Flounder inhabiting North Carolina coastal and joint fishing waters including the Atlantic Ocean.

Goal and Objectives

The goal of Amendment 4 is to manage the Southern Flounder fishery to achieve a self-sustaining population that provides sustainable harvest using science-based decision-making processes. The following objectives will be used to achieve this goal:

- Implement management strategies within North Carolina and encourage interjurisdictional management strategies that maintain/restore the Southern

Flounder spawning stock with expansion of age structure of the stock and adequate abundance to prevent overfishing.

- Restore, enhance, and protect habitat and environmental quality necessary to maintain or increase growth, survival, and reproduction of the Southern Flounder population.
- Use biological, environmental, habitat, fishery, social, and economic data needed to effectively monitor and manage the Southern Flounder fishery and its ecosystem impacts.
- Promote stewardship of the resource through increased public outreach and interjurisdictional cooperation throughout the species range regarding the status and management of the Southern Flounder fishery, including practices that minimize bycatch and discard mortality.
- Promote the restoration, enhancement, and protection of habitat and environmental quality in a manner consistent with the Coastal Habitat Protection Plan.

DESCRIPTION OF THE STOCK

Biological Profile

The Southern Flounder (*Paralichthys lethostigma)* is a bottom dwelling species of left eyed flounder found in the Atlantic Ocean, Gulf of Mexico, and estuaries from Virginia to northern Mexico (Blandon et al. 2001). This species is one of three commonly caught left eyed flounder in North Carolina; Southern Flounder, Gulf Flounder (*P. albigutta*), and Summer Flounder (*P. dentatus*). Southern Flounder supports important commercial and recreational fisheries along the U.S. South Atlantic and Gulf coasts and is particularly important to fisheries in North Carolina. Based on tagging, genetic, and age structure morphology data, Southern Flounder that occur in North Carolina are part of the biological unit stock that ranges from North Carolina to the east coast of Florida. Evidence also suggests some adult Southern Flounder return to the estuaries after spawning in the ocean, while others remain in the ocean (Watterson and Alexander 2004; Taylor et al. 2008; NCDMF 2024a). Tagged fish are typically recaptured south of original tagging locations and often in other states once in the ocean (Craig et al. 2015; Loeffler et al. 2019). Limited data from South Carolina and Georgia tagging programs suggest a low probability of adult movement from South Carolina or Georgia to North Carolina waters (Wenner et al. 1990; SCDNR Inshore Fisheries Section, unpublished data; Flowers et al. 2019).

NCDMF data indicates with the onset of maturity in the fall, females migrate to ocean waters to spawn. Spawning locations in the Atlantic Ocean are unknown; however, Benson (1982) observed the pelagic larval stage over the continental shelf where spawning is reported to occur. Data from satellite tagged Southern Flounder indicate a potential suite of migratory behaviors and habitat uses ranging from inshore estuarine environments to offshore outer continental shelf habitats (NCDMF 2024a). Southern Flounder can produce approximately 3 million eggs per female during multiple spawning events in a season, and spawning is thought to take place between November and April (Gunther 1945; Hettler and Barker 1993; Watanabe et al. 2001; Midway and Scharf 2012;

Hollensead 2018). Larval Southern Flounder pass through inlets within 30 to 45 days of hatching and settle throughout the sounds and rivers in the winter and early spring (Burke et al. 1991; Miller et al. 1991; Daniels 2000; Glass et al. 2008; Taylor et al. 2010; Lowe et al. 2011). Juveniles likely spend at least one year in inshore waters before migrating to the ocean (McKenna and Camp 1992; Hannah and Hannah 2000; Watterson and Alexander 2004; Taylor et al. 2008).

Nearly half of female Southern Flounder are mature by ages 1 and 2 (at approximately 16 inches TL; Monaghan, Jr. and Armstrong 2000; Midway and Scharf 2012). Females grow larger than males and Southern Flounder collected in the ocean tend to be larger and older than fish caught in estuarine waters. The largest female Southern Flounder observed in North Carolina was 33-inches TL and the largest male was 20-inches TL (Lee et al. 2018; Flowers et al. 2019; Schlick et al. 2024). The maximum observed age was 9 years for females and 6 years for males. Southern Flounder captured in North Carolina represent the oldest ages observed throughout the range (Lee et al. 2018; Flowers et al. 2019; Schlick et al. 2024).

For additional information about Southern Flounder life history and biology see NCDMF (2019) and NCDMF (2022).

Assessment Methodology

For additional assessment history see Lee et al. (2018) and Flowers et al. (2019).

Commercial and recreational landings and dead discards and data from eight fishery-independent surveys, were incorporated from all states across the biological unit stock (North Carolina south to the east coast of Florida). When considering population size and long-term viability, stock assessments most often use a measure of female spawning stock biomass (SSB) to determine the population's health. Female SSB includes mature female fish capable of producing offspring. Fishing mortality (F) is a measure of how fast fish are removed from the population by fishing activities. Removals include fish that are kept, discarded dead, or die after release.

The stock assessment estimates of female SSB and F were compared to levels, or reference points, that are considered sustainable. Reference points include a target and threshold. The threshold is the minimum level required for sustainability and when that level is achieved, the stock is considered healthy. The target is a level that minimizes risk and increases the probability of rebuilding or maintaining the stock. If female SSB is less than the biomass threshold ($SSB_{25\%}$), the stock is overfished. If the harvest rate is greater than the F threshold ($F_{25\%}$), the rate of removals is too high, and overfishing is occurring. Overfishing is the removal of fish at an unsustainable rate that will ultimately reduce female SSB and result in an overfished stock.

Stock Status

The South Atlantic Southern Flounder stock is overfished, and overfishing is occurring as of 2017, the terminal year of the 2019 coastwide stock assessment update (Flowers et al.

2019). Results indicate SSB has decreased since 2006 and recruitment, while variable, has generally declined. Fishing mortality is less variable and decreased slightly in 2017.

The model estimated a value of 0.35 for $F_{35\%}$ (*F* target) and a value of 0.53 for $F_{25\%}$ (*F* threshold). The estimate of $SSB_{35\%}$ (target) was 5,452 metric tons and the estimate of $SSB_{25\%}$ (threshold) was 3,900 metric tons.

The female SSB that represents the minimum level of sustainability for Southern Flounder was estimated at 8.6 million pounds. The stock assessment estimate of female SSB in 2017 was 2.3 million pounds (Figure 1). Because the 2017 estimate of female SSB is below the threshold reference point, the stock is considered overfished. The probability the 2017 estimate of SSB is below the threshold is 100%.

The assessment model estimated the *F* threshold at 0.53 (Figure 2). The 2017 *F* estimate was 0.91, which is above the *F* threshold. Because the 2017 *F* estimate is above the threshold, overfishing is occurring. The probability the 2017 *F* estimate is above the threshold is 96%. For additional information about the 2019 coastwide stock assessment see NCDMF (2019).

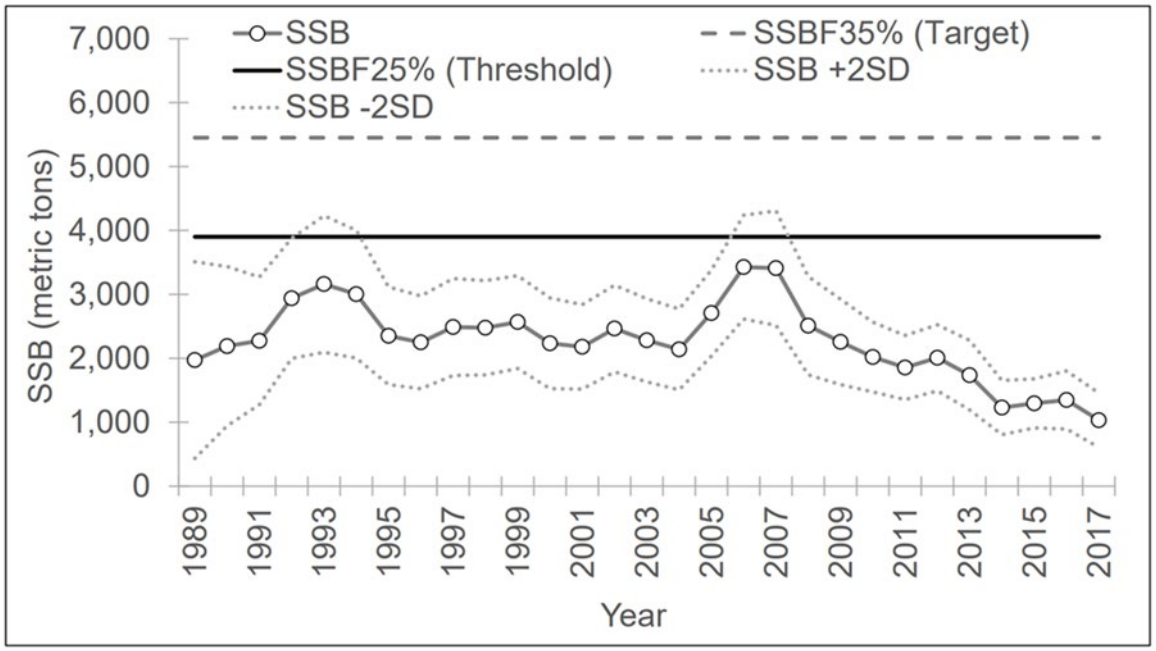


Figure 1. Estimated spawning stock biomass (SSB) compared to established reference points, 1989–2017 (Flowers et al. 2019).

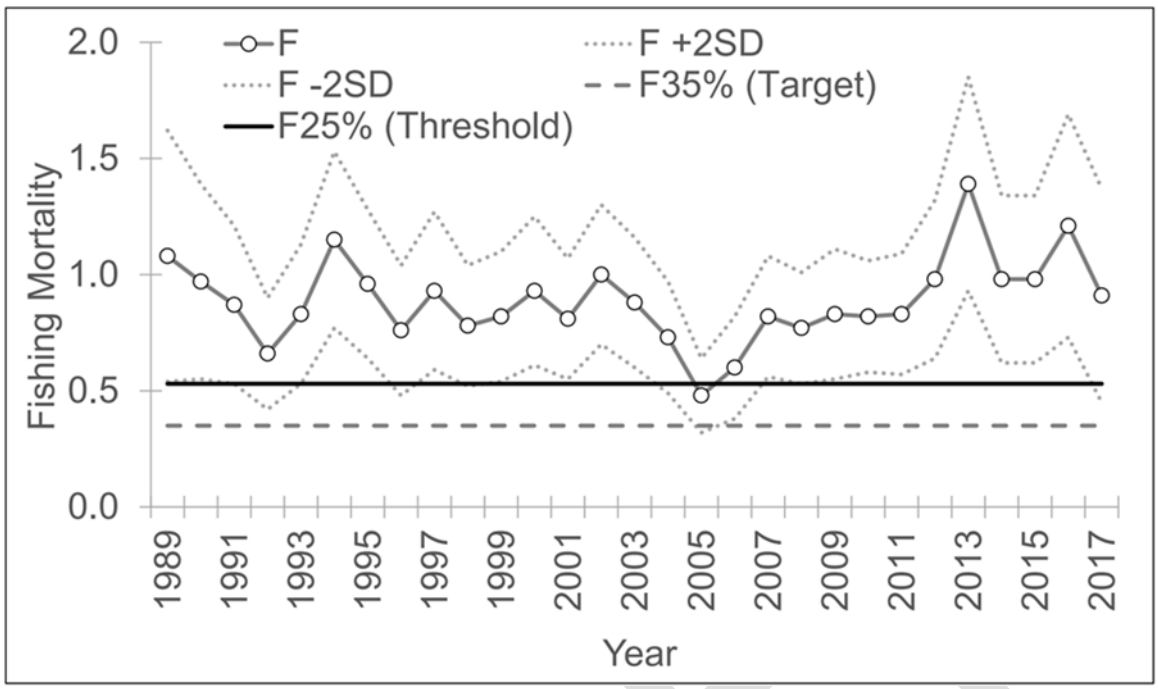


Figure 2. Estimated fishing mortality rates (numbers-weighted, ages 2-4) compared to established reference points, 1989–2017 (Flowers et al. 2019).

A second update to the ASAP model, with data through 2022, was completed in 2024. The update continued to show declining trends in SSB and recruitment since 2006; however, *F* decreased significantly in the last two years of the assessment (Schlick et al. 2024). Several trends and diagnostics from the model raised concerns, and division staff and partners from the other states decided to not use the new update for management. A new benchmark assessment is recommended no sooner than 2026.

DESCRIPTION OF THE FISHERY

Additional in-depth analyses and discussion of North Carolina's historical commercial and recreational Southern Flounder fisheries can be found in previous versions of the Southern Flounder FMP (NCDMF 2005, NCDMF 2019, NCDMF 2022). Commercial and recreational landings can be found in the License and Statistics Annual Report (NCDMF 2024b).

Discussion of socio-economic information in the License and Statistics Annual Report describes the fishery as of 2023 and is not intended to be used to predict potential impacts from management changes. This and other information are legislatively mandated and included to help inform decision-making regarding the long-term viability of the state's commercial and recreationally significant species and fisheries. For a detailed explanation of methodology used to estimate economic impacts, refer to the License and Statistics Section Annual Report (NCDMF 2023).

For additional discussion of commercial and recreational Southern Flounder fishery landings trends see Appendix 1: Increasing Recreational Access to Southern Flounder Through Sector Allocation Parity.

Commercial Fishery

All flounder landings reported as caught in inshore waters are considered Southern Flounder by the NCDMF Trip Ticket Program. Data from fishery-dependent sampling indicate Summer Flounder and Gulf Flounder account for approximately two percent or less of the flounder harvested from internal waters, while Southern Flounder make up less than one percent of the catch from ocean waters (NCDMF, unpublished data).

Most Southern Flounder commercial landings are from gill nets and pound nets, although gigs and other inshore gears (e.g., trawls) land flounder in smaller numbers. Between 1972 and 2022, peak commercial landings occurred in 1994 (Figure 3). Over this timeframe, there have been fluctuations in whether pound nets or gill nets were the dominant gear in terms of pounds landed (Figure 3). Historically, pound nets were the dominant gear, but gill nets became the dominant gear from 1994 to 2013 (Figure 3). The dominant gear switched back to pound nets from 2014 through 2020. Declining landings trends since 2010 were due, in part, to gill net regulations implemented to reduce the number of sea turtle and Atlantic Sturgeon interactions in this gear (78 FR 57132[1], 79 FR 43716[2]). Though less harvest overall comes from the gig fishery, harvest from this gear has generally increased over time, especially since 2010. Harvest by other commercial inshore gears decreased to its lowest point in 2023.

[1] https://www.federalregister.gov/documents/2013/09/17/2013-22592/endangered-species-file-no-16230
[2] https://www.federalregister.gov/documents/2014/07/28/2014-17645/endangered-species-file-no-18102

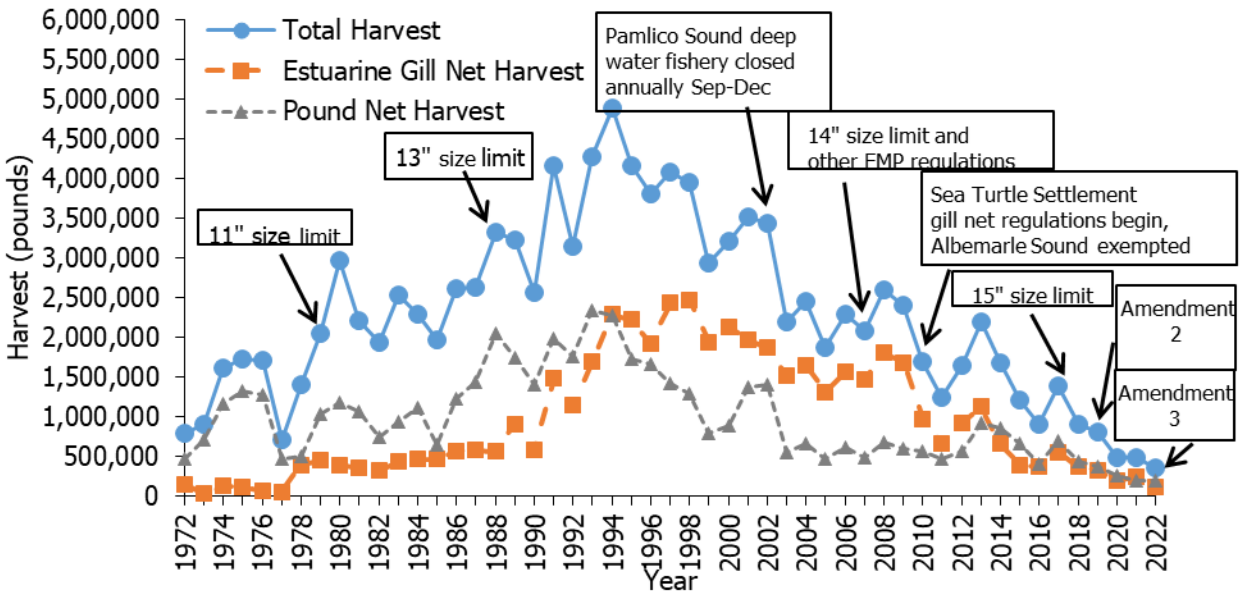


Figure 3. Southern Flounder commercial fishery landings (pounds) and landings from the top two gears (gill nets and pound nets) from the NC Trip Ticket Program, 1972–2023, with major fishery regulation changes noted. Noted regulation changes do not represent a comprehensive list. For additional regulation changes see Lee et al. (2018).

Commercial harvest from 2019 to 2023 was impacted by regulations implemented through Amendments 2 and 3 to the NC Southern Flounder FMP. Amendment 2 implemented seasons in the commercial Southern Flounder fishery for the first time, and Amendment 3 introduced quota management of the fishery. Under Amendment 2, the commercial fishing season was open for a maximum of 33 days in 2020 (Proclamation FF-25-2020) and 21 days in 2021 (Proclamation FF-40-2021) depending on management area. Under Amendment 3 the commercial fishery was separated into two mobile gear management areas (northern and southern) and three-pound net management areas. During 2022–2024, the commercial fishery was open between six and 28 days, depending on management area and gear type. For mobile gears, however, gill nets were not necessarily open all of those days.

Table 1. Number of days the Southern Flounder commercial fishery was open in 2022–2024 by gear type and management area: mobile gear, northern and southern management areas; pound nets, northern, central, and southern management areas.

	Mobile Gear		Pound Nets		
	Northern	Southern	Northern	Central	Southern
Year	Days open	Days open	Days open	Days open	Days open
2022	28	11	23	21	6
2023	21	21	21	24	8
2024	11	10	28	19	12

Trends in commercial trips reported between 1994 and 2023 have generally followed landings trends (Figure 4). Trips include the number of trip ticket records with landings reported; some trips may represent more than one day of fishing. The number of trips for all gears targeting Southern Flounder has decreased since regulatory changes due to Amendment 2 (seasonal management) and Amendment 3 (quota management) were implemented limiting the number of days flounder could be harvested.

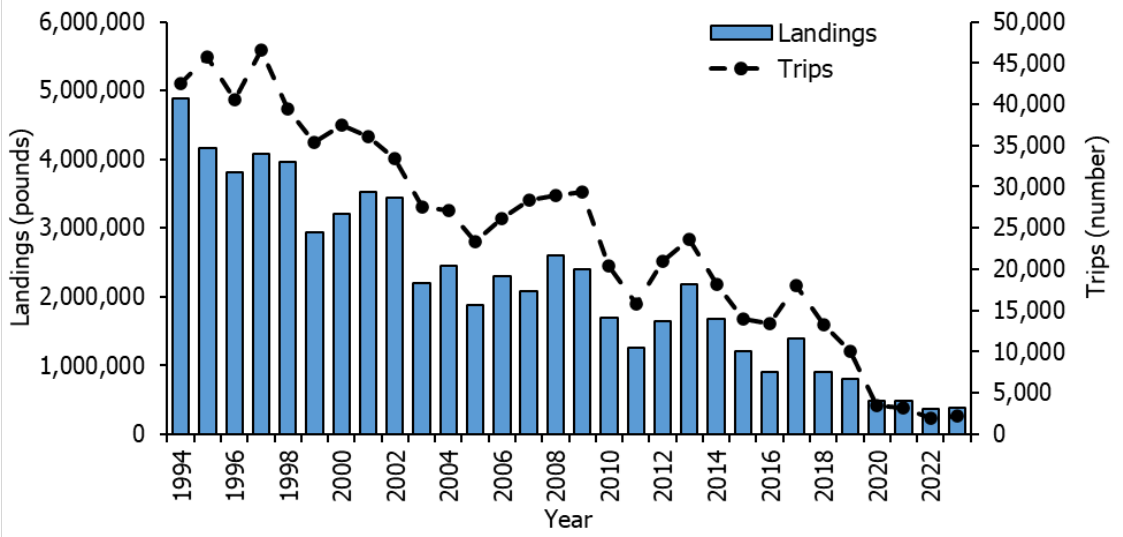


Figure 4. Southern Flounder commercial trips (numbers) and landings (pounds) from NC Trip Ticket Program, 1994–2023.

Recreational Fishery

Recreational harvest of Southern Flounder is mainly by hook-and-line and gigs, with a small amount of harvest by spearfishing or Recreational Commercial Gear License (RCGL) gears (prior to 2022).

Hook-and-line harvest can be split into ocean and inshore harvest, with most Southern Flounder harvested inshore. Between 1989 and 2023, hook-and-line harvest peaked in 2010 (Figure 5). Seasonal closures implemented through Amendment 2 to the NC Southern Flounder FMP impacted recreational harvest in 2020 and 2021. The season was shortened from 45 days in 2020 to 14 consecutive days in 2021 due to excessive overages that occurred during the 2020 season. Amendment 3 implemented fishing seasons to maintain recreational harvest within a quota and added paybacks to the following year for overages. The season in 2022 was 30 days and the 2023 season was shortened to 14 days. Due to overages in 2022, the 2023 TAC (landings plus dead discards) was adjusted from 170,655 pounds to 114,315 pounds. In 2023, 192,168 pounds of Southern Flounder were caught recreationally by hook-and-line, exceeding the expected catch by 127,294 pounds. Because of these overages, there was no recreational flounder season in 2024.

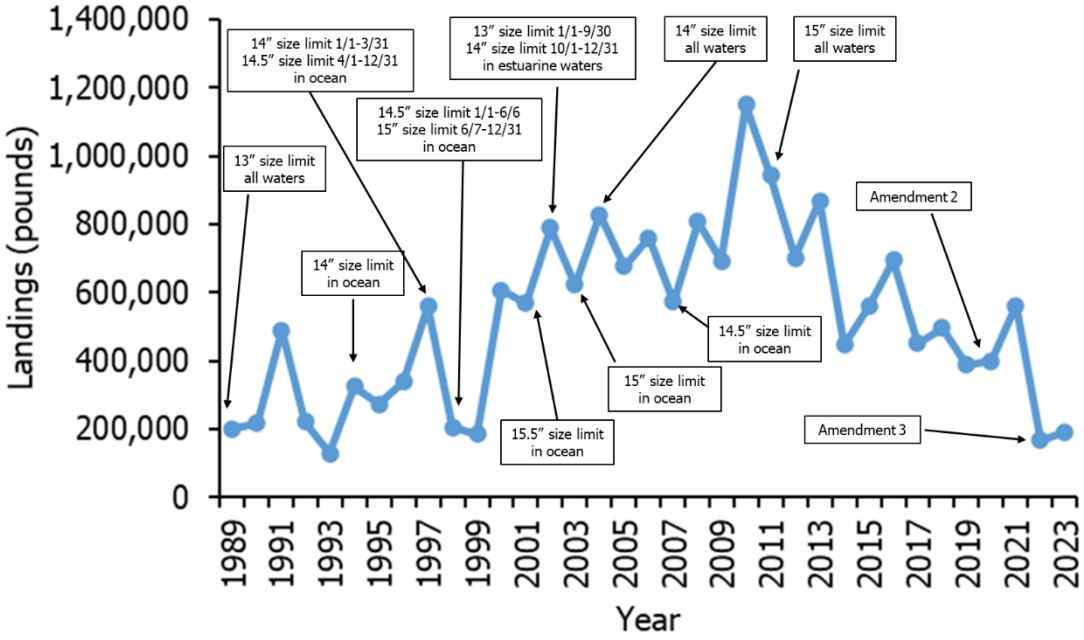


Figure 5. MRIP estimates of recreational hook-and-line Southern Flounder harvest (pounds) and major fishery regulation changes, 1989–2023. Noted regulation changes do not represent a comprehensive list. For additional regulation changes see Lee et al. (2018).

Trends in recreational trips are difficult to interpret because they represent all recreationally important Paralichthyid flounder species commonly caught in North Carolina (Southern, Summer, and Gulf flounder). This is because anglers only report targeting 'flounder' rather than a particular flounder species. Trips can be defined in several ways, but in this document all trips that harvested or released any Paralichthyid

flounder species were included. Trends in trips and harvest are similar throughout the time-series, but trips have declined since 2014 while harvest has varied (Figure 6). Recreational estimates across all years have been updated and are now based on the 2018 MRIP Fishing Effort Survey-based calibrated estimates. For more information on MRIP see https://www.fisheries.noaa.gov/topic/recreational-fishing-data.

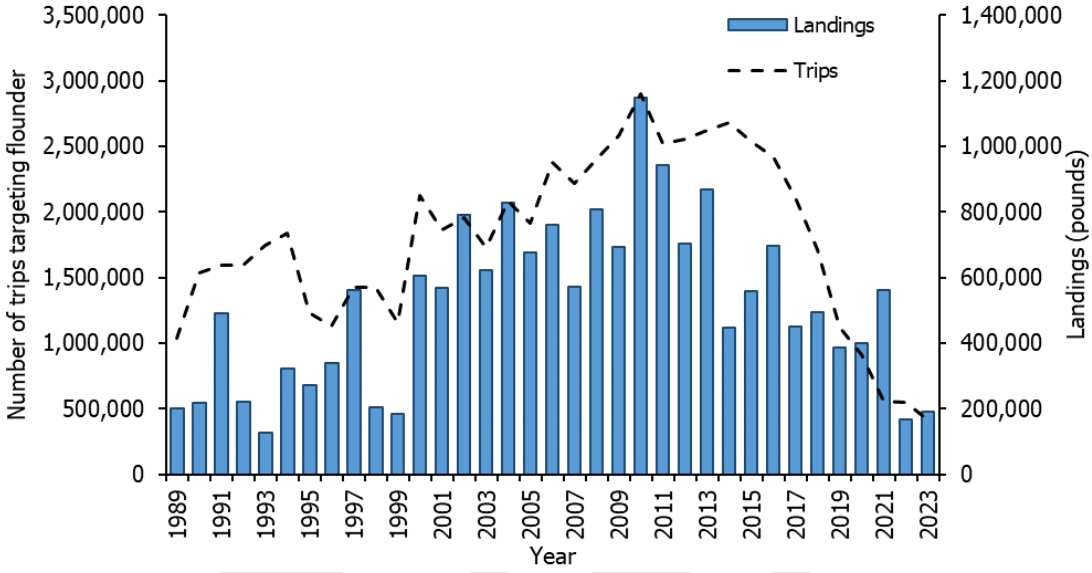


Figure 6. MRIP estimates of recreational hook-and-line harvest (pounds) and all trips that harvested or released Paralichthyid flounder species, 1989–2023. Data prior to 2004 were calibrated to align with MRIP estimates post-2004.

SUMMARY OF ECONOMIC IMPACT

For detailed discussion of economic impacts of the commercial and recreational Southern Flounder fisheries see Appendix 1. For additional information see NCDMF (2022).

Commercial Fishery

Historically, the Southern Flounder commercial fishery has been a strong economic driver for the state and one of its largest fisheries. Within the direct impacts effort and production have on the value of the commercial flounder industry, there are several factors that can dictate total economic impact of this fishery on a broader market level and individual product level. As a popular seafood across the country, the value of flounder in North Carolina is influenced by broader trends of supply and demand. There is a wide range of competitive substitutes for North Carolina caught flounder, including flounder caught in other states, as well as seafood products with comparatively similar properties, such as halibut (*Hippoglossus* spp.) or sole (*Solea* spp.). Because of this, the value of flounder in North Carolina is not only influenced by in-state product availability but also regulations,

seasons, and effort for the harvest of flounder and substitute products worldwide. However, as flounder is a popular fish with several available substitutes, it is difficult to accurately track how supply of other products directly influences in state prices.

In addition to broader dynamics of supply and demand that influence North Carolina's flounder market, there are specific factors that can adjust product value on different time scales. Method of catch often influences price, as consumers seek product caught with gears perceived to be more environmentally friendly, or gears that produce higher-quality flounder (Asche and Guillen 2011). This can lead to increased prices on flounder caught with certain gears.

Additionally, enterprise level marketing can impact product value. Fishermen and dealers market their business and product as they wish. When marketing strategies are successful, prices and value can increase, though this is on an individual level and demonstrates the volatility within the market. Such changes in value are demonstrated by the positive effects local product branding and direct-to-consumer strategies have produced in North Carolina (NCREDC 2013; Stoll et al. 2015). While these are just two examples of the variety of factors influencing value of North Carolina's flounder industry, they demonstrate the complicated dynamics at play, as many factors driving the price of flounder are not dictated by fishery managers, but by consumers and producers within the market.

Recreational Fishery

The top industries impacted by recreational Southern Flounder fishing in terms of output sales and employment are retail gasoline stores, retail sporting goods stores, retail food and beverage stores, real estate, and wholesale trade businesses. Due to the magnitude and popularity of the recreational flounder fishery in North Carolina, changes in access may lead to tangible, yet unquantifiable impacts to the value of other sport fisheries (Scheld et al. 2020). Broadly, participants target or catch flounder more than other recreational species due to higher personal satisfaction gained from fishing for this species over others. However, it is unknown whether this benefit from flounder fishing would transfer to other fisheries if effort restrictions were put in place. There is a possibility that when faced with reduced access to flounder fishing, some anglers may choose not to fish, rather than seek out new target species, while others may target other species more frequently or switch to catch-and-release flounder fishing.

Through this complicated dynamic, the value and economic impact of other recreationally important species may increase or decrease. However, while it is important to acknowledge how flounder management may economically impact other fisheries, this interaction is not fully understood, and therefore, it cannot be determined how the value of other recreational species would shift with changes in access to flounder.

ECOSYSTEM PROTECTION AND IMPACT

Habitat use patterns of Southern Flounder vary by life stage over time and space. Growth and survival of Southern Flounder within the habitats they use is maximized when water quality parameters, such as temperature, salinity, and dissolved oxygen, are within

optimal ranges. Good water quality is essential for supporting the various life stages of Southern Flounder (Figure 7) and maintaining their habitats. Natural processes and human activities can alter salinity or temperature conditions, elevate toxins, nutrients, turbidity, as well as lower dissolved oxygen levels which can degrade water quality.

For additional information about habitat use by life stage and optimal water quality parameters, see the Description of the Stock section of this FMP, NCDMF (2019), or NCDMF (2022). For a comprehensive review of ecosystem impacts from the Southern Flounder fishery, including habitat degradation and loss, water quality degradation, gear impacts on habitat, bycatch and discards of non-target species, protected species, climate change and resiliency, and habitat protection, see NCDMF (2022).

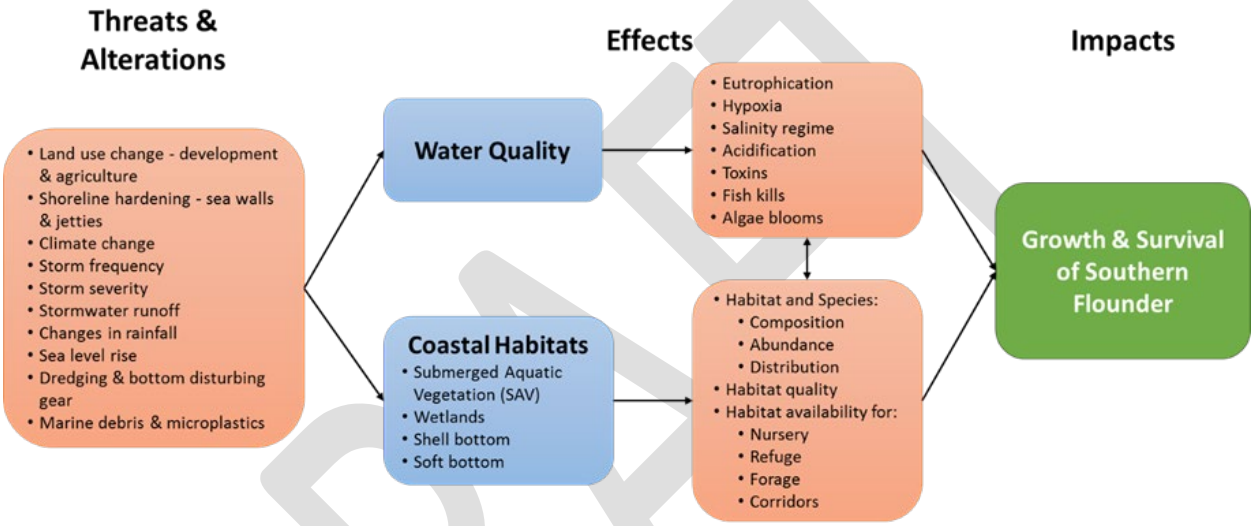


Figure 7. Effects of threats and alterations on water quality and coastal habitats and their ultimate impact on the growth and survival of Southern Flounder.

Coastal Habitat Protection Plan

The Fisheries Reform Act of 1997 requires development of a Coastal Habitat Protection Plan (CHPP) be drafted by the NCDEQ and reviewed every five years (G.S. 143B-279.8). The CHPP is a resource and guide compiled by NCDEQ staff to assist the NCMFC, Environmental Management Commission (EMC), and Coastal Resources Commission (CRC) in developing goals and recommendations for the continued protection and enhancement of fishery habitats in North Carolina. These commissions are required by state law (G.S. 143B-279.8) to adopt and implement management strategies specified in the CHPP as part of a coordinated management approach. Habitat recommendations related to fishery management can be addressed directly by the NCMFC. The NCMFC has passed rules providing protection for Southern Flounder habitat including the prohibition of bottom-disturbing gear in specific areas, and designation of sensitive fish habitat such as nursery areas and submerged aquatic vegetation (SAV) beds with applicable gear restrictions. Habitat recommendations not under NCMFC authority (e.g., water quality management and shoreline development) can be addressed by the other

commissions through the CHPP process. The CHPP helps to ensure consistent actions among these commissions as well as their supporting NCDEQ divisions. The CHPP also summarizes the economic and ecological value of coastal habitats to North Carolina, their status, and potential threats to their sustainability. The 2021 CHPP Amendment (NCDEQ 2021) is the most recent update to the CHPP, building upon the 2016 CHPP source document (NCDEQ 2016)

FINAL AMENDMENT 4 MANAGEMENT STRATEGY

The NCMFC selected management measure

APPENDIX 1: INCREASING RECREATIONAL ACCESS TO SOUTHERN FLOUNDER THROUGH SECTOR ALLOCATION PARITY

Expedite the sector allocation transition to 50% commercial and 50% recreational in 2025 rather than in 2026 as prescribed in Amendment 3

MANAGEMENT FROM PREVIOUS PLANS

There are several management measures from Amendment 3 to carry forward in Amendment 4 that address fishing behavior and potential changes in effort to minimize the possibility of catching Southern Flounder in greater volume than predicted.

Unless otherwise stated, all Southern Flounder Amendment 3 management measures will be carried forward in Amendment 4 and remain in effect including, but not limited to, the following:

- A commercial and recreational minimum size limit of 15 inches TL;
- A minimum mesh size of 6.0-inch stretched mesh (ISM) for anchored large-mesh gill nets used in the taking of flounder;
- A minimum mesh size of 5.75-ISM for pound net escape panels;
- Reduced commercial anchored large-mesh gill-net soak times to single overnight soaks where nets may be set no sooner than one hour before sunset and must be retrieved no later than one hour after sunrise the next morning;
- For anchored large-mesh gill nets with a 4.0 through 6.5 ISM, maintain a maximum of 1,500-yards in Management Units A, B, and C and a maximum of 750-yards in Management Units D1, D2, and E unless more restrictive yardage is specified through adaptive management or through the sea turtle or sturgeon Incidental Take Permit (ITP);
- Removal of all commercial gears targeting Southern Flounder from the water (e.g., commercial and RCGL anchored large-mesh gill nets and gigs) or make them inoperable (flounder pound nets) in areas and during times outside of an open season with exceptions for commercial large-mesh gill-net fisheries that target American shad (*Alosa sapidissima*), hickory shad (*A. mediocris*) and catfish species if these fisheries are only allowed to operate during times of the year and locations where bycatch of Southern Flounder is unlikely.
- Unlawful to use any method of retrieving live flounder from pound nets that causes injury to released fish (e.g., picks, gigs, spears, etc.);

- Unlawful for commercial fishery to possess any species of flounder harvested from the internal waters of the state during the closed Southern Flounder season;
- Combine mobile gears (gill nets, gigs, and "other" gears) into one gear category and maintain pound nets as their own separate commercial fishery;
- Divide mobile gears into two areas using the ITP boundary line for management sub-units Northern D1 and Southern D1, maintaining consistency with Amendment 2 and Amendment 3 boundary line;
- Divide the pound net fishery into three areas maintaining consistency with areas in Amendment 2 and 3;
- Maintain 72% reduction and current sub-allocation for the pound net fishery.
- Implement trip limits for pound nets, gigs, and hook and line only to maximize reopening after reaching division closure threshold;
- Implement a single season for the recreational gig and hook-and-line fisheries to constrain them to an annual quota;
- Maintain the recreational bag limit of flounder at one fish per person per day;
- Do not allow harvest of Southern Flounder using RCGL;
- Should landings be available, allow potential for spring ocellated flounder season to occur from March 1-April 1 in ocean waters only using hook-and-line gear with one-fish ocellated only bag limit;
- Maintain the adaptive management framework based on the peer-reviewed and approved stock assessment

RESEARCH NEEDS

The research recommendations listed below are offered by the NCDMF to improve future management strategies. They are considered high priority as they will help to better understand the Southern Flounder fishery and meet the goal and objectives of the FMP. A more comprehensive list of research recommendations is provided in the Annual FMP Review and NCDMF Research Priorities documents.

- Conduct studies to quantify fecundity and fecundity-size/age relationships in Atlantic Southern Flounder.
- Improve estimates of the discard (B2) component (catches, lengths, and ages) for Southern Flounder from MRIP.
- Expand, improve, or add fisheries-independent surveys of the ocean component of the stock.
- Determine locations of spawning aggregations of Southern Flounder.
- Complete and age validation study using known age fish.

APPENDICES

Appendix 1: Increasing Recreational Access to Southern Flounder Through Sector Allocation Parity

ISSUE

Provide the North Carolina Marine Fisheries Commission (NCMFC) with an option to increase recreational access to the Southern Flounder fishery by accelerating the shift to sector allocation parity in 2025 rather than in 2026 as originally scheduled in the Southern Flounder Fishery Management Plan (FMP) Amendment 3.

ORIGINATION

At the August 2024 NCMFC business meeting, the NCMFC passed a motion "to ask the DMF Director to ask the DEQ Secretary to modify the Annual FMP Review Schedule to amend the Southern Flounder FMP for the review of the plan to begin in 2024. The intent is to allow for more recreational access while maintaining the rebuilding requirements of the North Carolina Southern Flounder FMP Amendment 3 (Amendment 3)".

BACKGROUND

A coast-wide stock assessment update of Southern Flounder completed in 2019 concluded the stock was overfished and overfishing was occurring (Flowers et al. 2019). North Carolina law (G.S. § 113-182.1) requires management action to end overfishing within two years. Recovery of the stock from an overfished condition must occur within 10 years and provide at least a 50% probability of success from the date the plan is adopted. To rebuild the spawning stock biomass (SSB) to the target by 2028, a 72% coast-wide reduction in Total Allowable Catch (landings and dead discards; TAC), measured in pounds, was needed.

Amendment 3 was adopted in May 2022 and implemented a quota-based approach to reduce North Carolina's portion of the catch from the terminal year (2017) of the assessment by 72% to help rebuild the stock to the target SSB as required by G.S. § 113-182.1) (NCDMF 2022). The quota was set so the Total Allowable Landings (TAL) that establishes annual maximum fishing limits (in pounds) for all participants does not exceed a pre-determined amount. Quota management includes paybacks for more precise management and to account for quota overages. The quota that met the required reductions and the NCMFC allocation motion was 548,034 pounds of TAC, which results in 532,352 pounds of TAL. This TAL was further divided into commercial and recreational sector allocations. The allocation was set to 70% commercial and 30% recreational for 2021 through 2024, moving to 60% commercial and 40% recreational in 2025, and 50% commercial and 50% recreational beginning in 2026 (Table 1.1).

Commercial Fisheries

The TAL allocated to the commercial sector from the overall quota are 372,646 pounds of Southern Flounder for 2021 through 2024, 319,411 pounds in 2025, and 266,176 pounds beginning in 2026 (Table 1.1).

Table 1.1. Allocation in pounds for commercial and recreational fisheries for the North Carolina Southern Flounder Fishery that maintains overall reductions of 72%. An asterisk (*) indicates that Recreational Commercial Gear License (RCGL) gear removals are not included in the Total Allowable Landings.

					Commercial Fisheries	Recreational Fisheries*
Year	Allocation	Total Allowable Catch	Dead Discards	Total Allowable Landings	Total Allowable Commercial Landings	Total Allowable Recreational Landings
2021	70/30	548,034	15,682	532,352	372,646	159,706
2022	70/30	548,034	15,682	532,352	372,646	159,706
2023	70/30	548,034	15,682	532,352	372,646	159,706
2024	70/30	548,034	15,682	532,352	372,646	159,706
2025	60/40	548,034	15,682	532,352	319,411	212,941
2026	50/50	548,034	15,682	532,352	266,176	266,176

Commercial Gear Sub-Allocations

Given the large reduction needed to achieve sustainable harvest and the importance of maintaining each sector within its allowed landings, it was most practical to separate the commercial gears into two categories: pound nets and mobile gears. Mobile gears include those that target Southern Flounder, primarily gigs and gill nets, and “other” gears that do not target Southern Flounder such as shrimp trawls, crab pots, and fyke nets.

Allowed landings in the commercial sector were sub-allocated into the two commercial gear categories. Due to the scheduled shift in allocation between commercial and recreational sectors, it was prudent to evaluate the sub-allocations for the commercial fishery. Amendment 3 adopted sub-allocations so the pound net fishery could maintain its 2017 harvest of 186,458 pounds because of the increased monetary investment of operating and maintaining pound net gear (Table 1.2).

Table 1.2. Allocation in pounds for the North Carolina Southern Flounder commercial and recreational fisheries and associated sub-allocations for each sector that maintains overall reductions of 72% but maintains the current level of sub-allocation for the pound net fishery. An asterisk (*) indicates that RCGL gear removals are not included in the Total Allowable Landings.

					Commercial Gear				Recreational Gear*	
Year	Allocation	Total Allowable Catch	Dead Discards	Total Allowable Landings	Total Allowable Commercial Landings	Mobile Gears	Pound Nets	Total Allowable Recreational Landings	Hook-and-line	Gigs
2021	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2022	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2023	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2024	70/30	548,034	15,682	532,352	372,646	186,188	186,458	159,706	142,206	17,500
2025	60/40	548,034	15,682	532,352	319,411	132,953	186,458	212,941	189,608	23,333
2026	50/50	548,034	15,682	532,352	266,176	79,718	186,458	266,176	237,010	29,166

Table 1.3. Total allowable landings (in pounds) for the North Carolina Southern Flounder commercial fishery and associated sub-allocations for each gear management area adopted in Amendment 3.

Commercial Gear Sector	Allocation %	Management Area/Total Allowable Landings			
		Northern	Central	Southern	Total Allowable Landings
Mobile Gears	70	123,879	-	62,309	186,188
	60	88,460	-	44,493	132,953
	50	53,040	-	26,678	79,718
Pound Nets	70	39,700	121,756	25,002	186,458
	60	39,700	121,756	25,002	186,458
	50	39,700	121,756	25,002	186,458

Commercial Areas Allocation

Because of the migratory nature of Southern Flounder, management areas were established in Amendment 3 to allow more equitable access by fishermen across the state with seasonal openings varying by area (Figure 1.1). After investigating North Carolina Trip Ticket data by waterbody, the fishery was split into two areas for mobile gears and three areas for pound nets. Management area sub-allocations were determined by 2017 landings (Table 1.3)

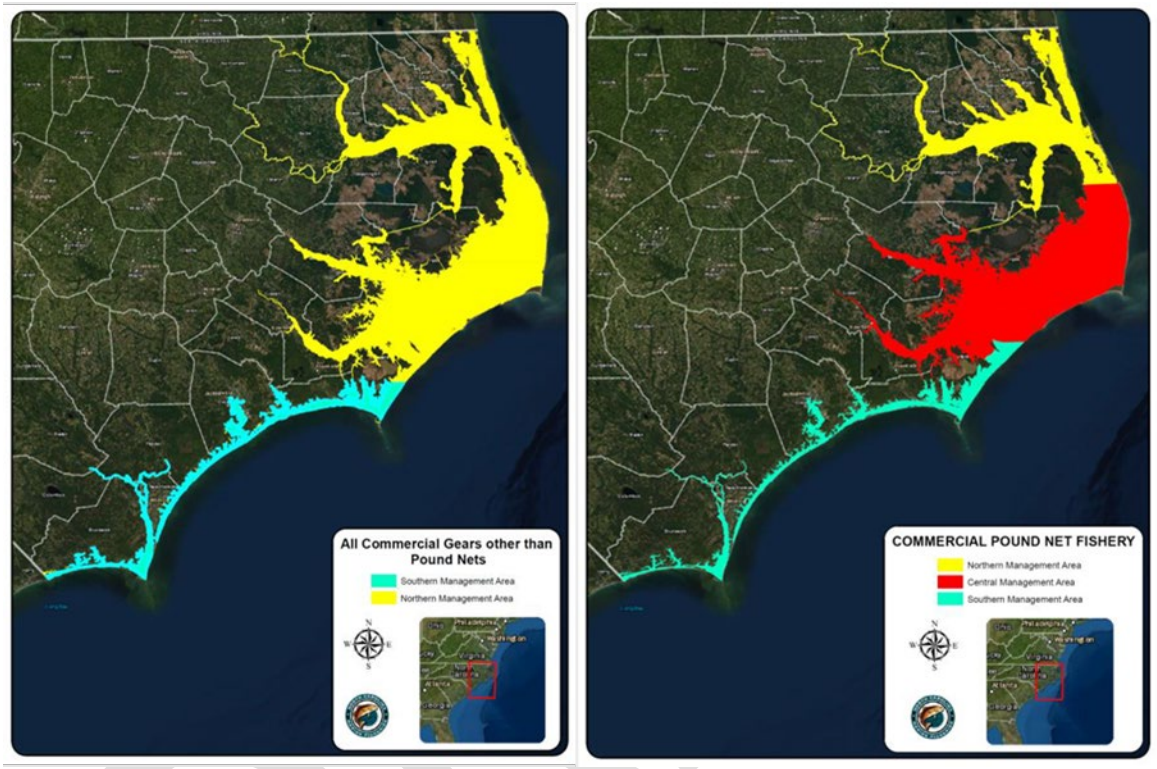


Figure 1.1. Boundary descriptions for the two mobile gear (left) and three pound net (right) management areas adopted in Amendment 3.

Recreational Fisheries

The TAL allocated to the recreational sector, including hook-and-line and gigs, from the overall quota will change from 159,706 pounds in 2021 through 2024, to 212,941 pounds in 2025, and from 2026 onward the TAL will be 266,176 pounds (Table 1.1).

The recreational allocation was further refined to allow an annual harvest of 89% of the recreational TAL for the hook-and-line fishery and 11% of the recreational TAL for the recreational gig fishery. However, it was determined that concurrent seasons for the recreational hook-and-line and gig fisheries be maintained to keep from undermining the success of achieving necessary harvest reductions.

Landings and Reductions

Under Amendment 3, commercial landings have been closely monitored by the Trip Ticket Program to maintain total landings near the quota in near real-time for each gear and management area sub-allocation. This approach is not realistic for the recreational sector; thus, a one-fish bag limit and restricted harvest seasons have been used to constrain recreational landings. Total recreational landings are estimated through the Marine Recreational Information Program (MRIP) and the NCDMF Gig Mail surveys and those data are not available until after the fishing season. A restructuring of the license database in 2023 disrupted the division's ability to establish a sampling of eligible anglers for mail surveys. As a result, the mail surveys could not be administered, and survey estimates are not available for 2023. Since the mail survey estimates are used in determining if the recreational fishery exceeded their TAC, recreational gig data from 2022 was used as a proxy for 2023. Dead discards for both sectors are not available until after the fisheries close but are added to make sure that the sector's total allowable catch is not exceeded each year. Management under Amendment 3 achieved a 59% harvest reduction in 2022, and 68% in 2023 (Table 1.4). However, the 72% target reduction has not been met through 2023 due to overages in the recreational fishery (Table 1.5).

In 2022, total removals from the recreational fishery (226,995 pounds) exceeded its TAC by an estimated 56,340 pounds (Table 1.5). This overage was deducted from the 2023 recreational TAC and the season was reduced to two weeks (Proclamation FF-31-2023). Despite this adjustment, recreational removals increased to 241,609 pounds in 2023, resulting in an overage of 127,294 pounds. The overage was deducted from the 2024 recreational TAC (170,655 pounds), leaving 43,361 pounds in adjusted TAC which was less than the predicted recreational dead discards (47,291 pounds), causing the NCDMF to not open the recreational season in 2024. A major contributor to recreational overages has been dead discards in the hook-and-line fishery, which have remained at or above the level observed in 2017 (39,080 pounds) despite shortened seasons. Regardless of the closed season in 2024, estimated dead discards and landings that were allowed by the NC Wildlife Resources Commission in internal waters will be used to adjust the TAC for the 2025 season.

Table 1.4. Catch estimates with target and actual reductions from the North Carolina Southern Flounder fishery, 2017–2023. (North Carolina Trip Ticket Program and MRIP). *Target reductions under Amendment 2.

Year	Total Landings	Dead Discards	Total Removals	2017 Total Removals	Target reduction	Actual reduction
2017	1,901,256	56,008	1,957,264	1,957,264	.	.
2018	1,452,590	36,670	1,489,259	1,957,264	.	.
2019	1,233,695	41,309	1,275,003	1,957,264	62%*	34.9%
2020	905,149	45,266	950,415	1,957,264	72%*	51.4%
2021	1,071,541	52,132	1,123,673	1,957,264	72%*	42.6%
2022	540,494	62,668	603,162	1,957,264	72%	69.2%
2023	576,013	48,457	624,470	1,957,264	72%	68.1%

Table 1.5. Recreational Total Allowable Catch (TAC) and catch estimates in pounds with adjusted TAC based on overage reductions, 2022–2024. Estimates are based on data from the Marine Recreational Information Program (MRIP) and recreational gig survey. An asterisk (*) indicates that the value is estimated from the previous year.

Year	TAC	Adjusted TAC	MRIP Landings	Gig Landings	Total Landings	MRIP Dead Discard	Gig Dead Discard	Total Dead Discard	Total Removals	Overage deducted from next year's TAC
2022	170,655	170,655	166,091	7,882	173,973	52,771	251	53,022	226,995	56,340
2023	170,655	114,315	192,168	*7,882**	200,050	41,308	*251**	41,559	241,609	127,294
2024	170,655	43,361	not yet available							

In response to the closed recreational season in 2024, at the August 2024 NCMFC business meeting, the NCMFC passed a motion to request modification of the Annual FMP Review Schedule to amend the Southern Flounder FMP for the review of the plan to begin in 2024 to allow more recreational access to the fishery while maintaining Amendment 3 rebuilding requirements.

Socioeconomic Analysis

Commercial

Southern Flounder has historically been one of the top harvested species by the commercial fleet in North Carolina. From 2014 until 2021 Southern Flounder was in the top five species ranked by ex-vessel value (point of sale value). In 2022 and 2023 the ex-vessel value dropped below one million dollars from a high of over seven million dollars in 2017 (Table 1.6). Participation in the fishery decreased from 1,759 participants in 2014 to 492 in 2023.

Using IMPLAN modelling software and expenditure estimates from NOAA's Fisheries Economics of the U.S. (FEUS) report, the indirect impacts of the Southern Flounder fishery to the state economy at-large can also be estimated. By assuming the flounder industry contributes to these expenditure categories at a proportion equal to their contribution to total commercial ex-vessel values, estimates of the total economic impact of flounder harvest can be generated. For a detailed explanation of the methodology used to estimate the economic impacts please refer to the NCDMF's License and Statistics Section Annual Report.

Overall, the large economic impact of Southern Flounder to the state's commercial fishing industry is reflected in its effect on the state economy. Total impacts vary slightly year-over-year, though these values remain relatively consistent from a state-impact perspective until 2020. The ex-vessel value has declined significantly since 2014, with a precipitous decline in 2020 due to restrictive management and high supply of Summer Flounder. This reduced value has persisted through 2022 and 2023. These years had the lowest landings and ex-vessel value of Southern Flounder in the last ten years.

Flounder landings as a proportion of total commercial catch has decreased from a peak of 7% in 2017 to the current low of 2% (Figure 1.2).

Table 1.6. Commercial Southern Flounder economic contribution estimates from 2023–2014 reported in 2023 dollars.

Year	Pounds Landed	Ex-Vessel Value	Job Impacts	Income Impacts	Value Added Impacts	Sales Impacts
2023	375,963	$837,570	492	$1,633,087	$2,854,513	$3,665,223
2022	366,510	$979,684	568	$2,190,945	$3,699,221	$4,939,489
2021	485,024	$1,626,653	674	$3,820,854	$6,005,097	$8,767,231
2020	479,905	$1,244,878	630	$3,128,717	$5,072,299	$7,024,328
2019	800,080	$3,669,245	1,086	$9,300,809	$13,624,054	$21,729,471
2018	903,842	$4,640,012	1,263	$10,491,007	$17,252,260	$23,825,993
2017	1,396,384	$7,039,608	1,662	$18,245,416	$27,209,451	$42,008,243
2016	899,932	$4,593,509	1,357	$12,121,629	$18,679,737	$27,651,565
2015	1,202,952	$4,916,044	1,463	$12,849,015	$19,860,767	$29,247,840
2014	1,673,511	$6,229,650	1,759	$15,135,194	$22,775,298	$34,894,849

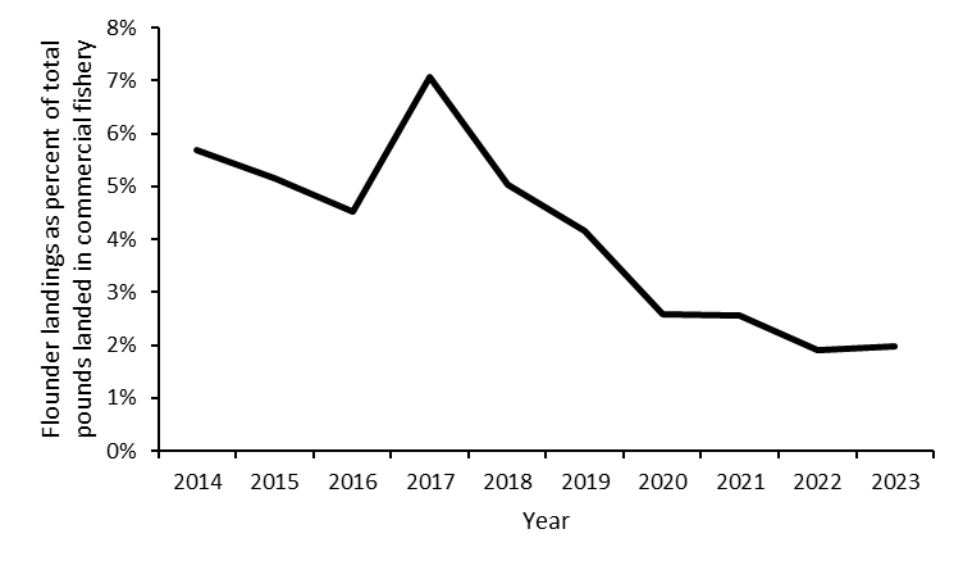


Figure 1.2. Pounds of Southern Flounder landed as a percent of total commercial finfish landed in North Carolina from 2014–2023.

Recreational

The economic impact estimates of Southern Flounder recreational fishing represent the economic activity generated from trip expenditures. These estimates are a product of annual trip estimations originating from the NOAA Fisheries Marine Recreational Information Program (MRIP) effort data by area and mode (i.e., shore, for-hire, private/rental vessel, and man-made), and trip expenditure estimates from the NCDMF

economics program biennial socioeconomic survey of Coastal Recreational Fishing License holders (Dumas et al. 2009; Crosson 2010; Hadley 2012; Stemle 2018). The product of these estimates provides an annual estimate of trip expenditures made by all licensed anglers for a given year. For this analysis, a recreational flounder trip is defined as any trip in which flounder was the primary or secondary target species by the angler, or if Southern Flounder was caught during that trip.

Additionally, these data are used to generate state-level economic impact estimates of recreational flounder fishing in North Carolina. Using IMPLAN statistical software, these direct expenditure estimates for recreational flounder fishing produce indirect output impacts to the state economy across four categories: sales, labor income, value-added impacts, and employment. Additionally, all imputed expenditure estimates are adjusted for inflation based on 2023 prices, as this was the most recent year of expenditure survey data. For a detailed explanation of the methodology used to estimate the economic impacts please refer to the NCDMF's License and Statistics Section Annual Report.

Since 2020 trips have declined with 2023 having the lowest number of trips in the time series (Table 1.7). The number of flounder trips as a percentage of total recreational trips ranged from a high of 5% in 2015 to a low of 1% in 2022 (Figure 1.3). The relative number of flounder trips increased to 3% in 2023.

Table 1.7. Recreational flounder economic contribution estimates from 2023–2014 reported in 2023 dollars.

Year	Trips	Expenditure	Job Impacts	Income Impacts	Value Added Impacts	Sales Impacts
2023	414,322	$107,560,90	736	$33,825,714	$52,588,610	$91,413,988
2022	515,638	$111,446,34	711	$33,956,950	$52,603,145	$92,802,221
2021	518,636	$124,895,81	736	$37,060,764	$57,416,999	$103,850,738
2020	891,057	$236,224,06	1,521	$76,653,218	$109,987,034	$195,316,448
2019	1,118,50	$291,045,60	1,880	$88,935,317	$135,155,036	$244,036,124
2018	1,179,89	$308,646,57	2,003	$96,804,743	$146,722,413	$261,904,279
2017	1,234,21	$313,229,18	2,066	$97,779,917	$147,510,316	$270,355,489
2016	1,676,50	$435,414,42	2,935	$139,973,659	$208,013,684	$377,002,717
2015	1,723,01	$446,698,25	2,901	$138,075,359	$224,369,794	$373,979,472
2014	1,619,85	$435,654,16	2,887	$135,636,199	$201,597,395	$360,751,939

It should be noted that not included in these estimates, but presented in NCDMF overall recreational impacts models, are the durable good impacts from economic activity associated with the consumption of durable goods (e.g., rods and reels, other fishing related equipment, boats, vehicles, and second homes). Durable goods represent goods that have multi-year life spans and are not immediately consumable. Some equipment related to fishing are considered durable goods. However, we cannot estimate the durable good expense of anglers for a given species. Durable good expenses and impacts are

estimated on an annual basis and serve to supplement angler expenditures outside of trip-based estimates.

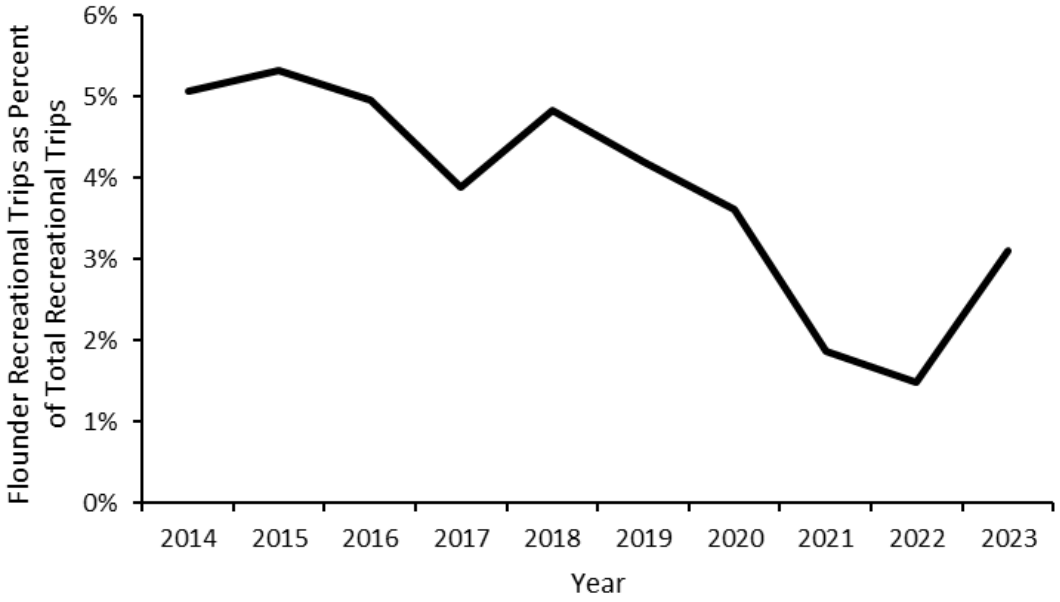


Figure 1.3. Number of flounder trips as a percent of total recreational fishing trips in North Carolina from 2014–2023.

AUTHORITY

North Carolina General Statutes

G.S. 113-134 RULES
G.S. 113-182 REGULATIONS OF FISHING AND FISHERIES
G.S. 113-182.1 FISHERY MANAGEMENT PLANS
G.S. 143B-289.52 MARINE FISHERIES COMMISSION – POWERS AND DUTIES

North Carolina Marine Fisheries Commission Rules

15A NCAC 03H .0103 PROCLAMATIONS, GENERAL
15A NCAC 03M .0503 FLOUNDER
15A NCAC 03M .0512 COMPLIANCE WITH FISHERY MANAGEMENT PLANS

DISCUSSION

Expediting the sector (commercial/recreational) allocation transition to 50/50 in 2025 rather than 2026 as prescribed in Amendment 3 immediately addresses recreational access in time for a 2025 recreational season while maintaining Amendment 3 rebuilding

requirements. This would result in a 66.7% increase in recreational TAL by adding 106,470 pounds from the commercial sector to the recreational sector allocation in 2025 (Table 1.2). Under the Amendment 3 allocation shift schedule to 60/40 in 2025, there would likely be a short recreational season in 2025. Expediting the shift to 50/50 in 2025 reduces the possibility of recreational catch overages that may mitigate the need for future season closures, though may not increase the length of the recreational season. However, maintaining Amendment 3 rebuilding requirements does not provide substantial harvest opportunities for any fishing sector regardless of allocation, and given recreational landings and discard levels in recent years, even with a shift to 50/50 allocation, season closures in 2026 and beyond remain a possibility due to overages. This allocation shift is a short-term approach to address recreational access. Long-term, more comprehensive approaches for recreational and commercial management will be addressed during subsequent development of Amendment 5.

Recreational Season

Estimated recreational landings from 2022 and 2023 indicate an increase in catch over shorter seasons (Tables 1.8). More successful trips are to be expected as the stock rebuilds. Angler reports of seeing more flounder than ever provide indication management is working. Even with a shift to 50/50 allocation, a recreational season that maintains the one fish bag limit from Amendment 3 would need to be brief (e.g., between two and four weeks) to maintain allowable landings (266,176 pounds; Table 1.2) while accounting for dead discards. The recreational catch estimates from 2024 will be available in 2025. These estimates will be used to determine if recreational catch estimates exceeded the adjusted TAC (43,361 pounds) in 2024. Any overages will be subtracted from the 2025 TAL.

Table 1.8. Recreational harvest estimates during 2022 and 2023 from the Marine Recreational Information Program (MRIP) and recreational gig survey. An asterisk (*) indicates the 2022 estimate was used because data from 2023 were not available.

Year	Hook-and-line Landings	Gig Landings	Total Landings	Hook-and-line Dead Discard	Gig Dead Discard	Total Dead Discard	Total Catch	Season length
2022	166,091	7,882	173,973	52,771	251	53,022	226,995	4 weeks
2023	192,168	*7,882**	200,050	41,308	*251**	41,559	241,609	2 weeks

Commercial Implications

The Amendment 3 management strategy provides guidance on the shift in landings from the commercial to the recreational sector. Per Amendment 3, the pound net TAL allocation will be maintained at 186,458 pounds and the poundage shifted to recreational landings will come from the commercial mobile gear TAL allocation (Tables 1.2; 1.3). This will leave 79,718 pounds of TAL for mobile gears, minus any overages that may have occurred in 2024. While the number of participants in the Southern Flounder commercial fishery declined precipitously following adoption of Amendment 2 (2019) and declined

further following adoption of Amendment 3 (2022), participation remains relatively high considering the constrained season (Table 1.9). Based on recent mobile gear landings trends, the scheduled allocation shift will result in a mobile gear season that will likely last one or two days, which may be non-consecutive.

Table 1.9. Commercial Southern Flounder pounds landed, number of trips landing southern flounder, and number of commercial participants and dealers participating in the fishery, 2018–2023.

Year	Pounds	Trips	Participants	Dealers
2018	903,842	13,320	912	186
2019	800,080	10,036	781	175
2020	479,905	3,485	522	144
2021	485,024	3,142	541	139
2022	366,510	1,927	485	125
2023	375,963	2,157	430	118

The 70% commercial, 30% recreational allocation (Tables 1.1; 1.2) from Amendment 3 is based on historical harvest for each sector through 2017. Different allocation scenarios have the potential to significantly reduce available harvest in a sector which may have ramifications for the viability of those sectors. Under the Amendment 3 allocation schedule, and the shift proposed in this Amendment, allocations for some sectors may be too low to viably prosecute.

Shifting allocation between sectors is within the authority of the MFC (G.S. 113-134, 113-182, 113-182.1, and 143B-289.52). Allocation changes may have positive or negative impacts on different sectors of the southern flounder fishery. Amendment 5 will further examine long-term management for both sectors.

MANAGEMENT OPTIONS

Status Quo

Status quo would maintain the allocation transition schedule from Amendment 3, moving to 60% commercial and 40% recreational in 2025, and 50% commercial and 50% recreational beginning in 2026. This does not immediately address the NCMFC motion to increase recreational access to the Southern Flounder fishery. The motion would be addressed by a more comprehensive amendment process.

Expedited Allocation Shift

Expedite the sector (commercial/recreational) allocation transition to 50/50 in 2025 rather than in 2026 as prescribed in Amendment 3. This option immediately addresses the NCMFC motion to increase recreational access to Southern Flounder. Long-term, more comprehensive approaches for recreational and commercial management will be addressed during subsequent development of Amendment 5 to the NC Southern Flounder FMP.

RECOMMENDATIONS

The NCDMF does not have a recommendation for this issue.

Advisory Committee Recommendations and Public Comment: see Appendix 2

NCFMC Selected Management Options

Expedite the sector allocation transition to 50% commercial and 50% recreational in 2025 rather than in 2026 as prescribed in Amendment 3

Appendix 2: Summary Of Management Recommendations and Comment

Table 2.1. Summary of management recommendations from NCDMF, the Northern, Southern, Shellfish & Crustacean, and Habitat & Water Quality Advisory Committees (AC).

	NCDMF	Northern AC	Southern AC	Finfish AC
Increasing Recreational Access to Southern Flounder Through Sector Allocation Parity	No Recommendation	Recommend to the Marine Fisheries Commission to remain status quo regarding southern flounder allocation	No recommendation	Recommend to the Marine Fisheries Commission to remain status quo in regard to the allocation schedule in Southern Flounder Fishery Management Plan Amendment 3
Other Issues	No Recommendation	Recommend that the Marine Fisheries Commission ask the DEQ Secretary to allow Amendment 5 to the Southern Flounder Fishery Management Plan to change the 72% reduction that was adopted in Amendment 3 to a 52% reduction and split the total allocation equally between the commercial and recreational sectors	No Recommendation	

Online Southern Flounder Amendment 4 Public Comment

The online public comment period was opened April 1, 2025, and closed April 30, 2025. The division received 21 responses during this period. Most commentors expressed broad support for the expedited shift to 50/50 allocation in 2025. Some commentors expressed concern over commercial gears' effect on the Southern Flounder population.

REFERENCES

Asche, F., and J. Guillen. 2012. The importance of fishing method, gear and origin: The Spanish hake market. Marine Policy 36(2):365–369.

Benson, N.G. (editor). 1982. Life history requirements of selected finfish and shellfish in Mississippi Sound and adjacent waters. U.S. Fish and Wildlife Service FWS/OBS-81/51. 97 p.

Blandon, I. R., R. Ward, and T. L. King. 2001. Preliminary genetic population structure of southern flounder, *Paralichthys lethostigma*, along the Atlantic Coast and Gulf of Mexico. Fisheries Bulletin 99(4):671–678.

Craig, J. K., W. E. Smith, F. S. Scharf, and J. P. Monaghan. 2015. Estuarine residency and migration of southern flounder inferred from conventional tag returns at multiple spatial scales. Marine and Coastal Fisheries 7:450–463.

Crosson, S. 2010. A Social and Economic Survey of Recreational Saltwater Anglers in North Carolina. Department of Environment and Natural Resources, Division of Marine Fisheries.

Daniels, H. V. 2000. Species profile: southern flounder. Southern Regional Aquaculture Center Publication No. 726. 4 p.

Dumas, C., J. Whitehead, C. Landry, and J. Herstine. 2009. Economic Impacts and Recreational Value of the North Carolina For-Hire Fishing Fleet. North Carolina Sea Grant Fishery Resource Grant Report 07-FEG-05.

Flowers, A. M., S. D. Allen, A. L. Markwith, and L. M. Lee (editors). 2019. Stock assessment of southern flounder (*Paralichthys lethostigma*) in the South Atlantic, 1989–2017. Joint report of the North Carolina Division of Marine Fisheries, South Carolina Department of Natural Resources, Georgia Coastal Resources Division, Florida Fish and Wildlife Research Institute, University of North Carolina at Wilmington, and Louisiana State University. NCDMF SAP-SAR-2019-01. 213 p.

Glass, L. A., J. R. Rooker, R. T. Kraus, and G. J. Holt. 2008. Distribution, condition, and growth of newly settled southern flounder (*Paralichthys lethostigma*) in the Galveston Bay Estuary, TX. Journal of Sea Research 59(4):259–268.

Gunther, G. 1945. Studies on marine fishes of Texas. Publications of the Institute for Marine Science, University of Texas 1:1–190.

Hadley, J. 2012. A Social and Economic Profile of Ocean Fishing Piers in North Carolina. Department of Environment and Natural Resources, Division of Marine Fisheries.

Hannah, T., and P. Hannah. 2000. Crab trawl tailbag testing. North Carolina Fisheries Resource Grant. FRG-98-10. North Carolina Sea Grant. Raleigh, NC 19 p.

Hettler Jr., W. F., and D. L. Barker. 1993. Distribution and abundance of larval fishes at two North Carolina inlets. Estuarine, Coastal and Shelf Science 37:161–179.

Hollensead, L. D. 2018. Multi-scale examination of habitat use and migration dynamics of southern flounder in a North Carolina estuary using acoustic telemetry techniques. Doctoral dissertation, University of North Carolina Wilmington, Wilmington, North Carolina.

IMPLAN® model, [2024] Data, using inputs provided by the user and IMPLAN Group LLC, IMPLAN System (data and software), 16905 Northcross Dr., Suite 120, Huntersville, NC 28078 www.IMPLAN.com

Lee, L. M., S. D. Allen, A. M. Flowers, and Y. Li (editors). 2018. Stock assessment of southern flounder (*Paralichthys lethostigma*) in the South Atlantic, 1989–2015. Joint report of the North Carolina Division of Marine Fisheries, South Carolina Department of Natural Resources, Georgia Coastal Resources Division, Florida Fish and Wildlife Research Institute, University of North Carolina at Wilmington, and Louisiana State University. NCDMF SAP-SAR-2018-01. 425 p.

Loeffler, M. S., L. M. Paramore, S. P. Darsee, T. M. Mathes, A. M. Comer-Flowers, C. B. Stewart, S. J. Poland, T. C. Bauer, A. L. Markwith, and T. K. Scheffel. 2019. North Carolina multi-species tagging program. North Carolina Division of Marine Fisheries, CRFL Grant 2F40 F017, Morehead City, NC. 29 p.

McClellan, C. M. 2001. Mesoscale habitat use of juvenile southern flounder, *Paralichthys lethostigma*: responses to environmental variability. Master's thesis. Duke University Nicholas School of the Environment, Durham, North Carolina. 116 p.

McKenna, S. A., and J. T. Camp. 1992. An examination of the blue crab fishery in the Pamlico River Estuary. Albemarle-Pamlico Estuarine Study, No. 92-08. 101 p.

Midway, S. R., and F. S. Scharf. 2012. Histological analysis reveals larger size at maturity for southern flounder with implications for biological reference points. Marine and Coastal Fisheries 4:628–638.

Miller, J. M., J. S. Burke, and G. R. Fitzhugh. 1991. Early life history patterns of Atlantic North American flatfish: Likely (and unlikely) factors controlling recruitment. Netherlands Journal of Sea Research 27:261–275.

Monaghan, J. P., and J. L. Armstrong. 2000. Reproductive ecology of selected marine recreational fishes in North Carolina: southern flounder, *Paralichthys lethostigma*. Completion Report Grant F-60. Segments 1-2. North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, North Carolina. 1.1-1.17.

National Marine Fisheries Service. 2024. Fisheries Economics of the United States, 2022. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-248B, 28 p.

NCDEQ (North Carolina Department of Environmental Quality). 2016. North Carolina Habitat Protection Plan: Source document. Division of Marine Fisheries, Morehead City, NC. 475 p.

NCDEQ. 2020. North Carolina Climate Risk Assessment and Resiliency Plan. 1601 Mail Service Center, Raleigh, NC.

NCDEQ. 2021. North Carolina Habitat Protection Plan 2021 Amendment: Department of Environmental Quality, Raleigh, NC. 267 p.

NCDMF (North Carolina Division of Marine Fisheries). 2005. North Carolina southern flounder (*Paralichthys lethostigma*) fishery management plan. North Carolina Division of Marine Fisheries, Morehead City, NC. 260 p.

NCDMF. 2011. Supplement A to the 2005 NC Southern Flounder Fishery Management Plan. North Carolina Division of Marine Fisheries, Morehead City, NC. 12 p.

NCDMF. 2013. North Carolina southern flounder (*Paralichthys lethostigma*) fishery management plan: Amendment 1. North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC. 380 p.

NCDMF. 2017. North Carolina southern flounder (*Paralichthys lethostigma*) fishery management plan: Supplement A to Amendment 1. North Carolina Division of Marine Fisheries, Morehead City, NC. 83 p.

NCDMF. 2019. North Carolina southern flounder (Paralichthys lethostigma) fishery management plan: Amendment 2. North Carolina Department of Environmental Quality, Division of Marine Fisheries, Morehead City, NC. 62 p.

NCDMF. 2022. Amendment 3 to the North Carolina Southern Flounder (*Paralicthys lethostigma*) Fishery management Plan. North Carolina Department of Environmental Quality, North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 176 p.

NCDMF. 2024a. North Carolina Division of Marine Fisheries Southern Flounder satellite tagging study. North Carolina Commercial Fishing Resource Fund Grant #2358-0006. North Carolina Department of Environmental Quality, Division of Marine Fisheries, Morehead City, NC. 48 p.

NCDMF. 2024b. North Carolina Division of Marine Fisheries License and Statistics Section Annual Report. North Carolina Department of Environmental Quality, Division of Marine Fisheries, Morehead City, NC.

NCREDC (North Carolina Rural Economic Development Center). 2013. A Supply Chain Analysis of North Carolina's Commercial Fishing Industry.

Scheld, A. M., W. M. Goldsmith, S. White, H. J. Small, and S. Musick. 2020. Quantifying the behavioral and economic effects of regulatory change in a recreational cobia fishery. Fisheries Research 224. [online serial].

Schlick, C. J. C., L. M. Lee, S. D. Allen, A. L. Markwith, and H. White (editors). 2024. Stock Assessment of Southern Flounder (*Paralichthys lethostigma*) in the South Atlantic, 1989–2022. North Carolina Division of Marine Fisheries, NCDMF SAP-SAR-2024-01. Morehead City, North Carolina.

Stemle, A., and M. Condon. 2018. Socioeconomic Survey of Recreational Saltwater Anglers in North Carolina 2016. Division of Marine Fisheries, Morehead City, NC

Stoll, J. S., B. A. Dubik, and L. M. Campbell. 2015. Local seafood: rethinking the direct marketing paradigm. Ecology and Society 20(2):40. [online serial].

Taylor, J. C., J. M. Miller, L. J. Pietrafesa, D. A. Dickey, and S. W. Ross. 2010. Winter winds and river discharge determine juvenile southern flounder (*Paralichthys lethostigma*) recruitment and distribution in North Carolina estuaries. Journal of Sea Research 64:15–25.

Taylor, J. C., J. M. Miller, and D. Hilton. 2008. Inferring southern flounder migration from otolith microchemistry. Final Report Fishery resource Grant 05-FEG-06, Morehead City, NC.

Watanabe, W. O., P. M. Carroll, and H. V. Daniels. 2001. Sustained, natural spawning of southern flounder *Paralichthys lethostigma* under an extended photothermal regime. Journal of the World Aquaculture Society 32(2):153–166.

Watterson, J. C., and J. L. Alexander. 2004. Southern flounder escapement in North Carolina, July 2001–June 2004. Final Performance Report Grant F-73 Segments 1–3. North Carolina Department of Natural Resources, Division of Marine Fisheries. Morehead City, North Carolina. 41 p.

Wenner, C. A., W. A. Roumillat, J. E. Moran Jr., M. B. Maddox, L. B. Daniel III, and J. W. Smith. 1990. Investigations on the life history and population dynamics of marine recreational fishes in South Carolina: Part 1. Marine Resources Research Institute, South Carolina Wildlife and Marine Resources Department, Charleston, SC. 180 p.

NC Marine Fisheries Commission

Striped Bass Fishery Management Plan

August 2025 Quarterly Business Meeting

Documents

Striped Bass FMP Amendment 2
Decision Document

Striped Bass Data Analysis
Information Paper

DECISION DOCUMENT

Estuarine Striped Bass
Fishery Management Plan Amendment 2
Data Evaluation for Tar-Pamlico and Neuse Rivers Stocks

This Decision Document provides background information for Amendment 2 to the N.C. Striped Bass Fishery Management Plan and the adaptive management steps prescribed for the Tar-Pamlico and Neuse Rivers stocks.

August 2025

Summary

Estuarine striped bass (*Morone saxatilis*) in North Carolina are managed under Amendment 2 to the North Carolina Fishery Management Plan (FMP) adopted in November 2022 and its subsequent revision (2024). Striped bass stocks in North Carolina are managed jointly by the North Carolina Marine Fisheries Commission (MFC) and the North Carolina Wildlife Resources Commission (WRC). Amendment 2 management for the Tar-Pamlico and Neuse rivers stocks carried forward the Supplement A no-possession measure, maintained the gill net closure above the ferry lines, and maintained the use of 3-foot tie-downs for gill nets below the ferry lines. The Amendment 2 adaptive management framework for the Tar-Pamlico and Neuse rivers stocks prescribes that in 2025, data through 2024 will be reviewed to determine if populations are self-sustaining and if sustainable harvest can be determined. In addition, the MFC approved the following measure in Amendment 2 regarding the gill net closure: "maintain the gill net prohibition through 2024 to allow for assessment of its performance". This document provides Amendment 2 background information, data analysis results and conclusions, and next steps in the adaptive management process.

Amendment 2 Goal and Objectives

The goal of Amendment 2 is to manage the estuarine striped bass fisheries to achieve self-sustaining populations that provide sustainable harvest based on science-based decision-making processes. If biological and/or environmental factors prevent a self-sustaining population, then alternate management strategies will be implemented that provide protection for, and access, to the resource. The following objectives will be used to achieve this goal:

- Implement management strategies within North Carolina and encourage interjurisdictional management strategies that maintain and/or restore spawning stock with adequate age structure and abundance to maintain recruitment potential and to prevent overfishing.
- Restore, enhance, and protect critical habitat and environmental quality in a manner consistent with the Coastal Habitat Protection Plan, to maintain or increase growth, survival, and reproduction of the striped bass stocks.
- Use biological, social, economic, fishery, habitat, and environmental data to effectively monitor and manage the fisheries and their ecosystem impacts.
- Promote stewardship of the resource through public outreach and interjurisdictional cooperation regarding the status and management of the North Carolina striped bass stocks, including practices that minimize bycatch and discard mortality.

Background

There are two estuarine striped bass management units and four stocks in North Carolina. The Northern Management Unit includes the Albemarle Sound Management Area (ASMA) and Roanoke River Management Area (RRMA). The striped bass stock in these management areas is the Albemarle-Roanoke (A-R) stock. The A-R stock is also included in the management unit of Amendment 7 to the Atlantic States Marine Fisheries Commission (ASMFC) Interstate FMP for Atlantic Striped Bass. The Southern Management Unit is the Central/Southern Management Area (CSMA) and includes the Tar-Pamlico, Neuse, and Cape Fear rivers stocks.

CSMA Stock Status

The stock status of the CSMA striped bass is unknown, no stock status determination has been performed, and no biological reference points have been generated. The CSMA Estuarine Striped Bass Stocks report, completed in 2020, is a collection of 1) all available data, 2) all management effort, and 3) all major analyses that have been completed for CSMA stocks; this report served as an aid in development of Amendment 2. While this report does not determine stock status, it does indicate that sustainability of Tar-Pamlico and Neuse rivers stocks is unlikely at any level of fishing mortality, citing the lack of natural recruitment as the primary limiting factor. The report concludes that without stocking, abundance will decline.

Supplement A to Amendment 1

At the November 2018 MFC business meeting, the N.C. Division of Marine Fisheries (DMF) recommended development of temporary management measures to supplement the N.C. Estuarine Striped Bass FMP Amendment 1 providing for a no-possession provision for striped bass in the internal coastal and joint waters of the CSMA to protect important year classes of striped bass while Amendment 2 to the FMP was developed. This supplement, Supplement A, was adopted by the MFC at their February 2019 business meeting and by the WRC in March 2019. Supplement actions were implemented March 29, 2019, consisting of the following:

- Commercial and recreational no possession measure for striped bass (including hybrids) in coastal and inland fishing waters of the CSMA (Proclamation FF-6-2019). The WRC hook and line closure proclamation had the effect of suspending rules 15A NCAC 10C .0107 (l) and 10C .0314 (g). A no-possession requirement already exists in the Cape Fear River by rule.
- Consistent with Amendment 1, commercial anchored gill-net restrictions requiring tie-downs and distance from shore measures will apply year-round.

Ferry Line Gill Net Closures

Prior to 2019, after the commercial striped bass season in the Tar-Pamlico and Neuse rivers closed, large mesh gill nets were required to use three-foot tie downs throughout the entirety

of the rivers and be set greater than 50 yards from shore in the upper portions of the rivers. These restrictions were based on data indicating their effectiveness with subsequent analysis estimating striped bass discards were reduced by approximately 82% after these restrictions were implemented.

See Figure 1 for gill net restrictions in the Pamlico, Pungo, Bay, and Neuse rivers in place prior to implementation of the ferry line gill net closures.

Independent of Supplement A but also at the February 2019 MFC business meeting, the following motion passed:

> "Ask the director of NCDMF to issue a proclamation, effective in conjunction with the Supplement, that restricts the use of gill-nets that interact with striped bass upstream of the ferry lines and requires attendance of gill-nets that interact with striped bass upstream of the tie-down lines."

After careful consideration, the director declined the motion request, concluding the scientific data did not support the requested management measure (see letter from the DMF director to the MFC chairman dated March 4, 2019).

On March 13, 2019, the MFC held an emergency meeting and passed a motion directing the director to issue a proclamation regarding gill nets, beyond what was contained in Supplement A. Proclamation M-6-2019 implemented the following:

- Prohibits the use of all gill nets upstream of the ferry lines from the Bayview Ferry to Aurora Ferry on Pamlico River and the Minnesott Beach Ferry to Cherry Branch Ferry on the Neuse River.
- Maintains tie-down (vertical height restrictions) and distance from shore restrictions for gill nets with a stretched mesh length 5 inches and greater in the western Pamlico Sound and rivers.

North Carolina General Statute section 113-221.1(d), authorizes the Chair of the MFC to call an emergency meeting (pursuant to the request of five or more MFC members) to review the desirability of directing the fisheries director to issue a proclamation. Once the MFC votes under this provision to direct issuance of a proclamation, the fisheries director has no discretion to choose another management option and is bound by law to follow the MFC decision. In these cases, under existing law, the decision of the MFC to direct the director to issue a proclamation is final and can only be overruled by the courts.

Amendment 2

Amendment 2 to the N.C. Estuarine Striped Bass FMP was adopted by the MFC at its November 2022 business meeting. The amendment included the no-possession measure for the Tar-Pamlico and Neuse rivers stocks that was included in Supplement A. Amendment 2 also maintained the gill net closure above the ferry lines and the use of 3-foot tie-downs for gill nets below the ferry lines. The draft of Amendment 2 presented to the MFC at their February 2022 business meeting included discussion of the ferry line gill net closures and options that would have provided limited access for the gill net fishery above the ferry

lines while continuing to minimize striped bass discards. However, at that meeting, the MFC approved a motion to send the draft Estuarine Striped Bass FMP Amendment 2 for review by the public and advisory committees with the change of deleting these options. Therefore, the only option considered by the public, MFC Advisory Committees, and MFC related to the ferry line gill net closure in Amendment 2 was to maintain it.

Amendment 2 included two measures for the Tar-Pamlico and Neuse rivers stocks that require reconsideration after 2024. First, the adaptive management framework prescribes that in 2025, data through 2024 will be reviewed "*to determine if populations are self-sustaining and if sustainable harvest can be determined*". In addition, the MFC approved the following motion: "*maintain the gill net prohibition through 2024 to allow for assessment of its performance*".

Adaptive Management

Adaptive management allows managers to adjust management measures based on new information or data that was not available during adoption of the FMP. Data through 2024 were reviewed in early 2025 to determine the impact of the 2019 no-possession provision on the stocks.

If the data review suggests continuing the no-possession provision is needed for stock recovery, no changes in harvest management measures will be recommended until the next FMP Amendment is developed. Adaptive management may be used to adjust management measures, including area, time, and gear restrictions, if it is determined additional protections for the stocks are needed.

If analysis indicates the populations are self-sustaining and a level of sustainable harvest can be determined, recommendations for harvest strategies will be developed. Conversely, if analysis indicates biological and/or environmental factors prevent a self-sustaining population, then, consistent with the goal of Amendment 2, alternate management strategies will be developed that provide protection for, and access to, the resource.

2025 Data Review

Methods

Several data sets were updated with data from 2024 and analyzed to assess the impact of the 2019 no-possession provision on the Tar-Pamlico and Neuse rivers stocks. Analysis included evaluation of adult abundance, age structure, natural recruitment, and hatchery contribution. The analysis also considered environmental conditions (e.g., river flow), changes to stocking strategies, and new life history information. Details of complete data analysis and results can be found in "*Analysis of Striped Bass Fishery-Independent and Fishery-Dependent Data from the Tar-Pamlico and Neuse Rivers for Purposes of Amendment 2 Adaptive Management*".

Summary of Results

- No 'wild' juveniles have been caught in the Tar-Pamlico or Neuse rivers since two individuals were caught in 2021.
- From 2019–2024, the percentage of hatchery striped bass on the spawning grounds of the Tar-Pamlico and Neuse rivers has increased to nearly 100%.
- From 2019–2024, the percentage of hatchery origin striped bass in the lower Tar-Pamlico and Neuse rivers has been variable ranging from <50% to >90%.
- Abundance of all age classes in the lower rivers is significantly lower after the harvest closure.
- Abundance of all age classes on the spawning grounds did not increase significantly after the harvest closure.

Conclusions

- Harvest closure and gill net closure have been ineffective at increasing adult abundance, expanding the age structure, and promoting recruitment.
- The Tar-Pamlico and Neuse rivers striped bass stocks are currently not sustainable.
- Factors other than fishing mortality and inadequate spawning abundance are preventing sustainability of the Tar-Pamlico and Neuse rivers striped bass stocks.
- Acoustic and conventional tagging data indicate that most 'wild' fish in the Tar-Pamlico and Neuse rivers are likely part of the Albemarle-Roanoke stock.
- Environmental factors and declines in the Albemarle-Roanoke stock have contributed to reduced striped bass abundance in the Tar-Pamlico and Neuse rivers.

Based on data from the DMF and WRC fishery-independent and dependent sampling programs reviewed through 2024, the striped bass populations in the Tar-Pamlico and Neuse rivers are currently not self-sustaining. Evaluation of the harvest and gill net closures shows these measures have been ineffective at increasing adult abundance, expanding the age structure, and promoting natural recruitment through year six of implementation. Striped bass have been shown to quickly rebound even at low population levels given favorable environmental conditions (Robitaille et al. 2011; DFO 2023), suggesting factors other than fishing mortality and inadequate spawner abundance are preventing successful reproduction and self-sustaining striped bass populations in the Tar-Pamlico and Neuse rivers. Additional management aimed at trying to achieve sustainability of these stocks is unlikely to be effective unless significant environmental improvements occur.

Acoustic telemetry and genetic data suggest there are three groups of striped bass in the Tar-Pamlico and Neuse rivers. Most of the fish are hatchery reared stocked fish, followed by 'wild' fish originating from the Albemarle-Roanoke, with a small portion of 'wild' fish originating from the spawning ground on the Tar-Pamlico and Neuse rivers.

Next Steps and Timeline

Consistent with the Amendment 2 goal and adaptive management framework, the DMF and WRC will begin developing harvest management measures that provide protection for, and access to, the resource. Harvest management measures will focus harvest on stocked fish in the Tar-Pamlico and Neuse rivers while limiting harvest of Albemarle-Roanoke stock striped bass to the greatest extent possible. Additionally, harvest will be limited to allow for mature stocked striped bass abundance in the rivers to be maintained so in the event of favorable environmental conditions, natural reproduction could occur.

Preliminarily, the DMF and WRC have explored harvest management measures that include the following:

- An open recreational harvest season in the Tar-Pamlico and Neuse rivers from April 1-30
- A one fish per person per day recreational creel limit
- And 18-22" recreational harvest slot with an allowance for one fish >27"

Next steps include reviewing available data to determine the downstream extent of where harvest could be allowed to minimize harvest of Albemarle-Roanoke stock striped bass and exploring possibilities for commercial harvest. An initial harvest plan will be presented to the MFC in November 2025.

Timeline

(gray indicates completed step)

Supplement A to Amendment 1 adopted	March 2019
Ferry Line Gill Net Closure implemented	March 15, 2019
Amendment 2 adopted	November 2022
Division begins data review	January 1, 2025
Division provides background to MFC	May 21 - 23, 2025
Division presents data analysis/conclusions/next steps to MFC – NO ACTION	**August 2025**
Division presents initial harvest management plan to MFC	November 2025

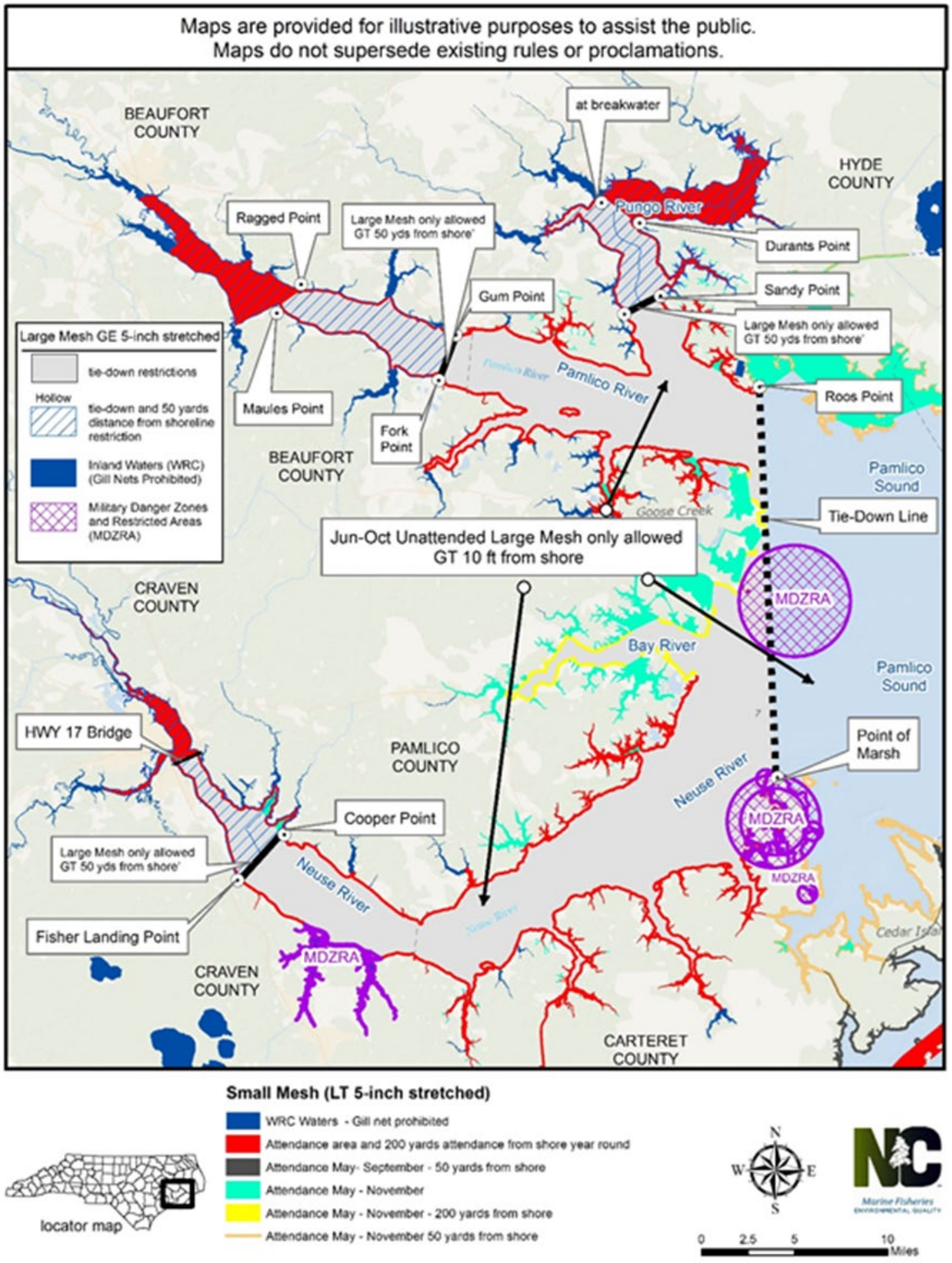


Figure 1. Gill-net regulations for small and large mesh gill nets in the Pamlico, Pungo, Bay, and Neuse rivers in place prior to implementation of the ferry line gill net closures. LT=less than.

References

Fisheries and Ocean Canada (DFO). 2023. Update of spawner abundance and biological characteristics of Striped Bass (*Morone saxatilis*) in the southern Gulf of St. Lawrence to 2022. DFO Canadian Science Advisory Secretariat Science Response. 2023/004.

Robitaille, J., M. Bérubé, A. Gosselin, M. Baril, J. Beauchamp, J. Boucher, S. Dionne, M. Legault, Y. Mailhot, B. Ouellet, P. Sirois, S. Tremblay G. Trencia, G. Verreault and D. Villeneuve. 2011. Recovery Strategy for the Striped Bass (Morone saxatilis), St. Lawrence Estuary Population, Canada. Species at Risk Act Recovery Strategy Series. Ottawa : Fisheries and Oceans Canada. xi + 51 p.

Analysis of Striped Bass Fishery-Independent and Fishery-Dependent Data from the Tar-Pamlico and Neuse Rivers for Purposes of Amendment 2 Adaptive Management

August 1, 2025

ISSUE

- Determine whether striped bass populations in the Tar-Pamlico and Neuse rivers are self-sustaining and if sustainable harvest can be determined
- Assess the impact of the 2019 no-possession provision and the gill net closure (closures) on the stocks
- Assess the impact of the 2019 gill net closure above the ferry line in each river system on the stocks

The goal of Amendment 2 is to manage the estuarine striped bass fisheries to achieve self-sustaining populations that provide sustainable harvest based on science-based decision-making processes. If biological and/or environmental factors prevent a self-sustaining population, then alternate management strategies will be implemented that provide protection for and access to the resource.

ORIGINATION

Amendment 2 to the North Carolina Estuarine Striped Bass Fishery Management Plan (FMP) adopted an adaptive management strategy where data through 2024 will be reviewed in 2025 to determine if populations are self-sustaining and if sustainable harvest can be determined. In addition, the approved North Carolina Marine Fisheries Commission (MFC) motion included language to: “maintain the gill net prohibition through 2024 to allow for assessment of its performance”.

The Amendment 2 adaptive management strategy further stated if the data review suggests continuing the no-possession provision is needed for additional stock recovery, no changes in harvest management measures will be recommended until the next scheduled FMP Amendment is developed starting in 2027. Adaptive management may be used to adjust management measures including area and time restrictions and gear restrictions if it is determined additional protections for the stock are needed.

If analysis indicates the populations are self-sustaining and a level of sustainable harvest can be determined, recommendations for harvest strategies will be developed. If analysis indicates biological and/or environmental factors prevent a self-sustaining population, then alternate management strategies will be developed that provide protection for and access to the resource.

BACKGROUND

Natural reproduction is required for maintaining self-sustaining fish populations at levels that support harvest. In self-sustaining populations, the numbers of offspring produced by natural reproduction are greater than can be stocked by managers. Striped bass stocks that allow harvest and can self-replace through natural reproduction are considered sustainable. Until there are naturally reproducing populations in the Tar-Pamlico and Neuse rivers capable of self-replacement, the sustainable harvest objective of Amendment 2 cannot be met.

The Tar-Pamlico and Neuse rivers striped bass populations have been sustained by continuous stocking since at least the early 2000’s (O’Donnell and Farrae 2017; see NCDMF 2022, Appendix 1), providing harvest opportunities for recreational and commercial fisheries in the rivers which generally harvested between 5,000 and 10,000 striped bass annually (Table 1).

Table 1. Recreational harvest (number of fish landed and weight in pounds) and releases (number of fish) and commercial harvest (number and weight in pounds) of CSMA striped bass from North Carolina, 2004–2024.

	Recreational			Commercial		
Year	Number Landed	Number Released	Weight Landed	Number Landed	Weight Landed	Total Weight Landed
2004	6,141	13,557	22,958	3,950	32,479	55,437
2005	3,832	16,854	14,965	3,723	27,132	42,097
2006	2,481	14,895	7,352	2,850	21,149	28,501
2007	3,597	23,527	10,794	3,608	25,008	35,802
2008	843	17,966	2,990	1,719	10,115	13,105
2009	895	6,965	3,061	4,140	24,847	27,908
2010	1,757	7,990	5,537	4,486	23,888	29,425
2011	2,728	24,188	9,474	4,083	28,054	37,528
2012	3,922	43,313	15,240	3,693	22,725	37,964
2013	5,467	32,816	19,537	4,439	28,597	48,134
2014	3,301	30,209	13,368	5,830	25,245	38,613
2015	3,934	31,353	14,269	6,029	27,336	41,605
2016	6,697	75,461	25,260	4,123	23,041	48,301
2017	7,334	131,129	26,973	4,382	23,018	49,991
2018	3,371	49,122	10,884	3,788	20,057	30,941
2019	959	36,080	3,562	0	0	3,562
2020	0	19,420	0	0	0	0
2021	0	23,216	0	0	0	0
2022	0	30,026	0	0	0	0
2023	0	13,536	0	0	0	0
2024	0	9,795	0	0	0	0
Mean	3,579	31,020	12,889	4,056	24,179	35,557

Roanoke River origin striped bass have either been stocked or used as broodstock in the Tar-Pamlico and Neuse rivers for decades (Bayless and Smith 1962; Woodroffe 2011). Although North Carolina rivers, including the Tar-Pamlico and Neuse rivers, may have once supported genetically distinct populations, evidence suggests there is little genetic differentiation between populations (Reading 2020). The need for continued conservation management efforts are supported by persistent recruitment failure, multiple mortality sources, absence of older, larger fish, low water flow levels on the spawning grounds in the spring, poor environmental conditions in the nursery areas, and the high percentage of stocked fish in the populations (Bradley et al. 2018; Rachels and Ricks 2018; Mathes et al. 2020). Reliable population estimates have never been determined for Tar-Pamlico River striped bass. In 2018, Bradley et al. (2018) provided a population estimate of 18,457 for Neuse River adult striped bass.

Life History

Striped bass are an estuarine dependent species found from the lower St. Lawrence River in Canada to the west coast of Florida through the northern shore of the Gulf of Mexico to Texas. Striped bass migrate long distances to spawning grounds located in freshwater portions of coastal rivers. The Albemarle-Roanoke (A-R) stock is considered migratory, meaning they spend most of their adult life in estuarine and nearshore ocean waters, migrating to fresh water to spawn in the spring. Striped bass stocks from the Tar-Pamlico and Neuse rivers stocks south through Florida, are considered riverine, meaning they do not make extensive seasonal ocean migrations like northern (Roanoke River and north) striped bass stocks and, instead, spend their entire life in the upper estuary and riverine system (Setzler et al. 1980; Rulifson et al. 1982; Callihan 2012).

Historically there were naturally reproducing stocks of striped bass in many of the large coastal rivers in South Carolina, Georgia, and Florida. Similar to North Carolina, the striped bass stocks in these states started showing declines in abundance and reduced natural spawning success in the 1970s or earlier. While there remain a few coastal rivers in these states that have naturally reproducing populations of striped bass, reproduction is limited and harvest management strategies are supported by extensive striped bass stocking programs in these states (GADNR; FLFWC SCDNR).

A maximum age of 15 years has been observed for striped bass in the Tar-Pamlico and Neuse rivers, and fish older than eight are rare. Striped bass in the Central Southern Management Area (CSMA; Tar-Pamlico, Neuse and Cape Fear rivers) grow at a faster rate and have a greater total length at age compared to the A-R stock (Knight 2015) and Neuse River striped bass exhibit the fastest growth rate in the CSMA (NCDMF 2020).

In the Tar-Pamlico and Neuse rivers, 50% of female striped bass are mature at 2.7 years and 98% are mature by age-3 (Knight 2015). Length at 50% maturity (L50) in the Tar-Pamlico and Neuse rivers was estimated at 467.8 mm TL (18.4 inches TL) and fish were estimated to be 100% mature at 537.3 mm TL (21.2 inches TL). Female striped bass produce large quantities of eggs which are broadcast into riverine spawning areas and fertilized by age-2 and older males. In the Tar-Pamlico and Neuse rivers, fecundity ranged from 223,110 eggs for an age-3 female to 3,273,206 eggs for an age-10 female.

In the Tar-Pamlico River, striped bass spawning is suspected to occur from the Rocky Mount Mills Dam,125 miles upstream of Washington, NC, to Tarboro, NC (Smith and Rulifson 2015). Neuse River spawning grounds are centered between Smithfield and Clayton, NC, but range from Kinston at river mile (rm) 130 to Raleigh (rm 236). Successful juvenile recruitment occurs infrequently and at low levels in the Tar-Pamlico and Neuse rivers. The Tar-Pamlico and Neuse rivers stocks are supported by continuous stocking efforts as evidenced by stocked fish comprising nearly 100% of the striped bass on the spawning grounds and up to 70% in downriver coastal fishing waters in some years (O'Donnell and Farrae 2017; Cushman et al. 2018; Farrae 2019; Harris and Farrae 2020; Mathes et al. 2020; Harris and Farrae 2021; Harris and Farrae 2022; Doll and Farrae 2023; Doll and Farrae 2024).

Management History

Amendment 1

Management measures in Amendment 1 consisted of daily possession limits, open and closed harvest seasons, seasonal gill net attendance and other gill-net requirements, minimum size limits, and slot limits to work towards the goal of achieving sustainable harvest. Tie down and distance from shore gill net management measures from the 2004 Estuarine Striped Bass FMP (NCDMF 2004) that were maintained in Amendment 1 were implemented using science-based decision-making processes. Rock et al. (2016) estimated these measures decreased striped bass

discards by 82% compared to estimates prior to implementation, indicating effectiveness of these measures. Amendment 1 also maintained the stocking measures in the major CSMA river systems (NCDMF 2013).

Supplement A to Amendment 1

In 2017 and 2018, available Parentage-Based Tagging (PBT) data, which is a genetic method used to identify parentage of hatchery origin fish, suggested there were potentially one or two successful striped bass spawning events in the Tar-Pamlico and Neuse rivers in 2014 and 2015 that produced 'wild' fish and was particularly evident in the Neuse River (Table 2). Additionally, 2016–2018 CSMA Creel Survey angler data showed a significant increase in recreational catch of under-sized striped bass in the Pungo, Tar-Pamlico and Neuse rivers (Figure 1). Supplement A to Amendment 1 (NCDMF 2019) implemented a recreational and commercial no-possession provision for striped bass in the internal coastal and joint waters of the CSMA (Tar-Pamlico and Neuse rivers) with the objective of providing additional protection for these potentially naturally produced year classes in support of the Amendment 1 goal to achieve sustainable harvest through science-based decision-making processes that conserve adequate spawning stock and provide and maintain a broad age structure. Supplement A maintained commercial gill net restrictions requiring 3-foot tie-downs and 50-yard distance from shore measures year-round (M-5-2019).

Table 2. PBT results from Tar-Pamlico and Neuse rivers striped bass showing the number and percentages of hatchery origin versus 'wild' origin fish, 2016–2024.

River System	Year	Number of PBT Samples	Hatchery (n)	'Wild' (n)	Hatchery (%)	'Wild' (%)
Tar-Pamlico	2016	190	164	26	86.0	14.0
	2017	147	102	45	70.0	31.0
	2018	206	74	132	36.0	64.0
	2019	108	48	60	44.4	55.6
	2020	56	39	17	69.6	30.4
	2021	103	53	50	51.5	48.5
	2022	81	75	6	92.6	7.4
	2023	47	44	3	93.6	6.4
	2024	21	20	1	95.2	4.8
Neuse	2016	150	142	8	95.0	5.0
	2017	118	66	52	56.0	44.0
	2018	86	46	40	54.0	47.0
	2019	102	68	34	66.7	33.3
	2020	24	17	7	70.8	29.2
	2021	114	56	58	49.1	50.9
	2022	34	29	5	85.3	14.7
	2023	35	33	2	94.3	5.7
	2024	23	22	1	95.7	4.3

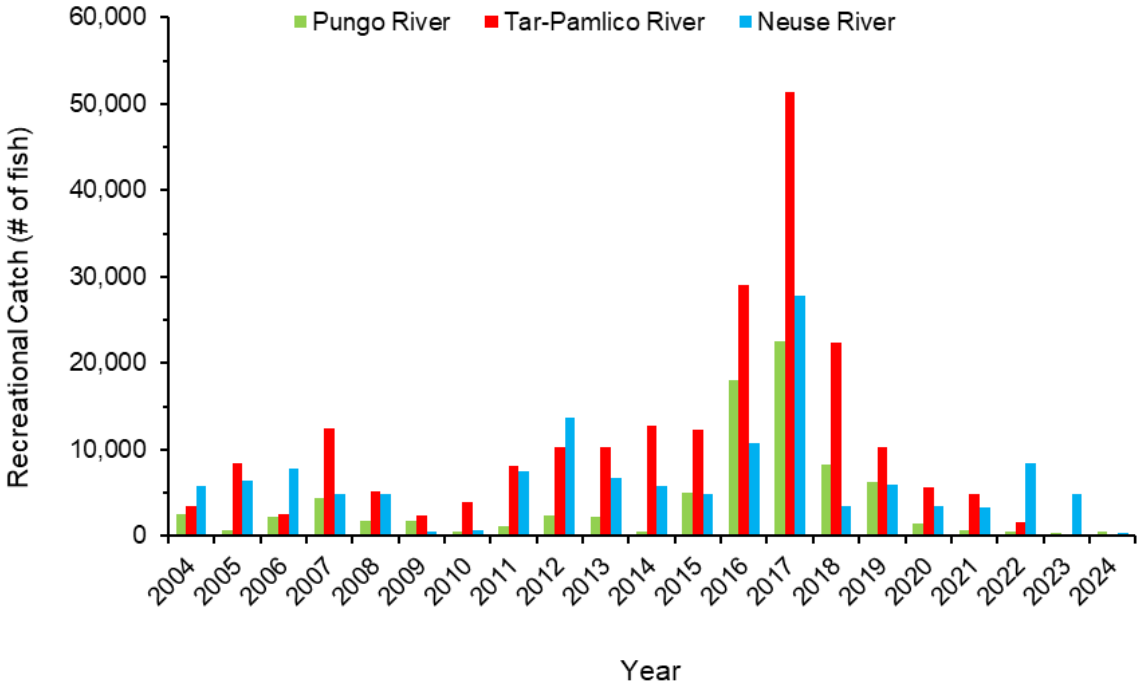


Figure 1. CSMA Creel Survey estimates of under-sized recreationally caught striped bass in the Pungo, Tar-Pamlico, and Neuse rivers, 2004–2024.

Ferry Line Gill Net Closure

Independent of Supplement A but also at the February 2019 NCMFC business meeting, the following motion passed:

> "Ask the director of the NCDMF to issue a proclamation, effective in conjunction with the Supplement, that restricts the use of gill nets that interact with striped bass upstream of the ferry lines and requires attendance of gill nets that interact with striped bass upstream of the tie-down lines."

After careful consideration, the DMF Director declined the request concluding that scientific data did not support the requested management measure (see Appendix 2 DMF Director Memo to MFC, March 4, 2019). On March 13, 2019, the MFC held an emergency meeting to request the North Carolina Wildlife Resources Commission (WRC) adopt concurrent regulations regarding recreational harvest of striped bass in joint waters. At the emergency meeting the MFC passed a motion directing the division to issue a proclamation regarding gill nets beyond what was contained in Supplement A.

An emergency meeting called under N.C. General Statute section 113-221.1(d), authorizes the commission to review the desirability of directing the fisheries director to issue a proclamation. Once the commission votes under this provision to direct issuance of a proclamation, the fisheries director has no discretion to choose another management option and is bound by law to follow the commission decision. In these cases, under existing law, the decision of the commission to direct the director to issue a proclamation is final and can only be overruled by the courts. Given this requirement Proclamation M-6-2019 implemented the following:

- Prohibits the use of all gill nets upstream of the ferry lines from the Bayview Ferry to Aurora Ferry on the Pamlico River and the Minnesott Beach Ferry to Cherry Branch Ferry on the Neuse River.
- Maintains tie-down (vertical net height restrictions) and distance from shore restrictions for gill nets with a stretched mesh length 5 inches and greater in the western Pamlico Sound and rivers (superseded M-5-2019).

Amendment 2
Amendment 2, adopted in November of 2022, contained management measures for the Tar-Pamlico and Neuse rivers stocks that maintained the no-possession measure, the gill net closure above the ferry lines, and the use of 3-foot tie-downs below the ferry lines. Additionally, the Amendment 2 adaptive management strategy prescribed that in 2025, data through 2024 will be reviewed to determine if populations are self-sustaining and if sustainable harvest can be determined. In addition, Amendment 2 maintained the gill net prohibition through 2024 to allow for assessment of its performance.

DATA

Methods
To assess if the 2019 no-possession provision and ferry line gill net closures have increased relative abundance of striped bass and expanded the age structure of the stock, and to assess whether striped bass populations in the Tar-Pamlico and Neuse rivers have achieved a level of sustainability through successful natural reproduction, several fishery-independent and dependent data sources were reviewed. The DMF Independent Gill Net Survey and the WRC Electrofishing Survey data sets are the primary data sources for the evaluation; however, the CSMA Striped Bass Creel survey and DMF gill net observer program data were also evaluated.

For further information about survey methodology, design and data collection see Mathes et al. (2020) and NCDMF (2024).

Adult Relative Abundance

Fisheries-Independent Gill Net Survey (Program 915)
Program 915 employs a random survey design stratified by area and depth that has sampled in the Tar-Pamlico, Pungo, and Neuse rivers since 2003. Striped bass abundance calculations exclude Pungo River data due to elevated presence of A-R stock fish in this river (Mathes et al. 2020). Only shallow sets during April, and October–November were used in relative abundance calculations because striped bass are most available to the survey in these areas and months.

WRC Spawning Grounds Electrofishing Survey
Electrofishing surveys have been conducted by the WRC on the Tar-Pamlico River spawning grounds since 1996 and on the Neuse River spawning grounds since 1994. The objectives of the WRC spawning ground surveys are to monitor and quantify population metrics of striped bass migrating to the spawning grounds during spring each year. The survey uses a stratified random sampling design in the Tar-Pamlico and Neuse rivers. In the Tar-Pamlico River, striped bass sampling typically begins in March and continues into May until water temperatures consistently exceed optimal temperatures for spawning (18–22 °C) and spawning appears complete. Sampling on the Neuse River is conducted a minimum of once at each stratum per week during the spawning season and generally occurs from April–May. Sampling upstream strata is highly dependent on streamflow, with low flow conditions causing sampling to only occur in lower river strata. In these instances, striped bass using upper river habitats would not be sampled; however,

striped bass access to upriver habitats is also limited during low water levels. Relative abundance is calculated as the number of fish captured per hour of electrofishing.

Age Data

Striped bass otoliths and fin clips were collected opportunistically from DMF fishery-independent and dependent sampling programs. Age samples were primarily collected from Program 915, but DMF also uses an electrofishing boat to collect striped bass to increase the sample size and collect a representative size range of striped bass including older, larger fish.

Juvenile Relative Abundance (Program 100)

Program 100 sampling has been conducted in the Tar-Pamlico and Neuse rivers since 2017. The survey employs beach seines (June–July) and trawls (July–October) to monitor striped bass recruitment and assess the effectiveness of management measures aimed at promoting natural reproduction. Seine and trawl survey stations are located in the upriver sections of the Tar-Pamlico and Neuse rivers, near Washington and New Bern, respectively. A sample consisted of one trawl tow or one pull of the seine per station (Mathes et. al 2020). A fin clip was collected from all YOY striped bass to determine if they are of hatchery or 'wild' origin using genetic methods.

Parentage-Based Tagging (PBT)

Analysis using microsatellite markers has been used by the WRC since 2010 and the DMF since 2016 to genetically identify stocked fish in the Tar-Pamlico and Neuse rivers. PBT techniques identify a fish as hatchery reared or non-hatchery by using genetic microsatellite markers to match stocked fish with broodfish used in hatchery production (Denson et al. 2012). PBT cannot distinguish the origin of non-hatchery striped bass. Fish determined to not be of hatchery origin could be the result of 'wild' reproduction in any system. Additionally, striped bass stocked prior to 2010 are not identifiable using PBT techniques. Striped bass fin clip samples were collected opportunistically from DMF fishery-independent and dependent sampling programs, as well as from the WRC spawning ground surveys to identify fish as either hatchery or non-hatchery origin.

Mann-Kendall (M-K) Trend Test

The M-K test is a non-parametric statistical test used to detect significance of increasing or decreasing trends over time, without requiring the data to be normally distributed. M-K tests were used to assess the impact of the 2019 no-possession provision on the stocks. The test provides a p-value, which indicates the probability of observing the results if there is no trend in the time series. If the p-value is below a certain significance level (e.g., 0.05), the null hypothesis is rejected, suggesting there is a statistically significant trend. In an M-K Trend Test, Kendall's Tau is a correlation coefficient used as a measure of the relationship between two variables. Kendall's Tau measures the strength and direction of the trend in a time series. It indicates whether the values tend to increase or decrease over time. A positive Tau suggests an increasing trend, a negative Tau indicates a decreasing trend, and a value close to zero suggests no trend.

Randomization Test

The Randomization test is a non-parametric statistical test used to detect significant differences between groups that relies on randomly shuffling observed data to determine if observed differences are statistically significant. Randomization tests shuffle data many times to evaluate mean catch per unit effort differences. Additionally, after each shuffle, the means computed from the shuffled data are compared with the observed mean difference. The p-value for the

randomization test is the percentage of times the absolute value of the shuffled mean difference is equal to or greater than the absolute value of the observed mean. Randomization tests were applied to fisheries-independent data (Program 915 and WRC Electrofishing Survey) to assess if striped bass catch was significantly different after the harvest closure compared to before the harvest closure and if striped bass catch was significantly different above the ferry lines after the gill net closure.

Results

Adult Relative Abundance

Program 915

Striped bass relative abundance from Program 915 in the Tar-Pamlico and Neuse rivers ranged from 0.8 to 9.0 fish per sample during 2004–2024. Striped bass relative abundance in the Tar-Pamlico River was the lowest in the time series during 2021–2024, and well below the time series average of 4.3 striped bass per set before the 2019 closure (Figure 2). After the management measures went into place in the Tar-Pamlico River there was a decrease in relative abundance (61% reduction, 4.3 to 1.7 fish per set; Figure 2).

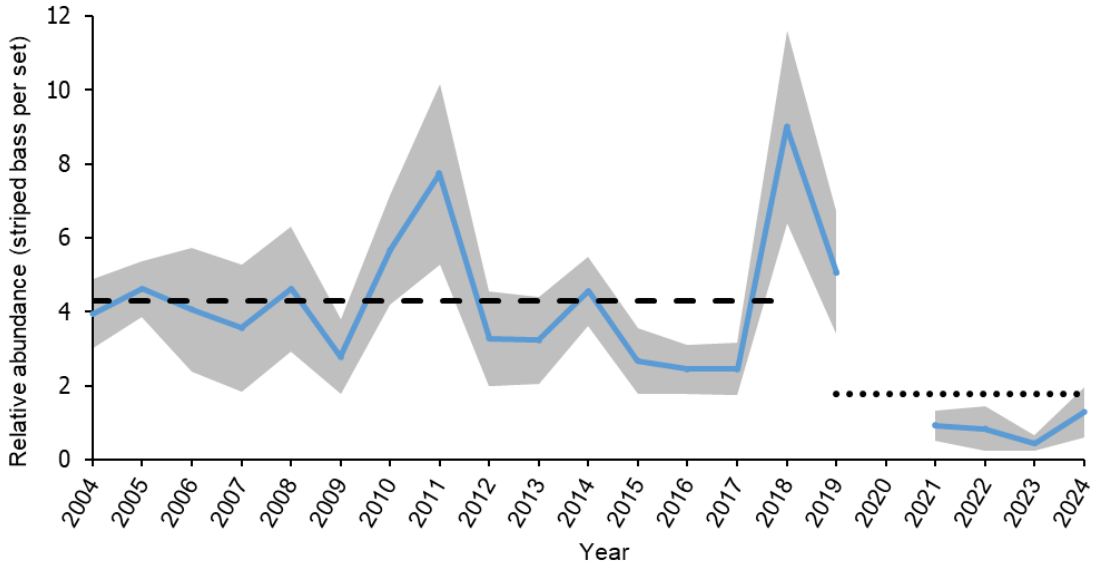


Figure 2. Annual index of adult striped bass relative abundance from Program 915 in the Tar-Pamlico River during April, and October–November, in shallow water sets, 2004–2024. No sampling occurred in 2020, and limited sampling occurred in 2021 (July–December). Error bars represent ± 1 standard error. Dashed line is mean abundance from 2004–2018 (pre-closure), dotted line is mean abundance from 2019–2024 (post-closure).

In the Neuse River, striped bass relative abundance has declined since 2021 and in 2022–2024 had the lowest values in the time series, well below the time series average of 3.6 striped bass per set before the 2019 closure (Figure 3). After the closure went into place in the Neuse River there was a decrease in relative abundance (42% reduction, 3.6 to 2.1 fish per set; Figure 3).

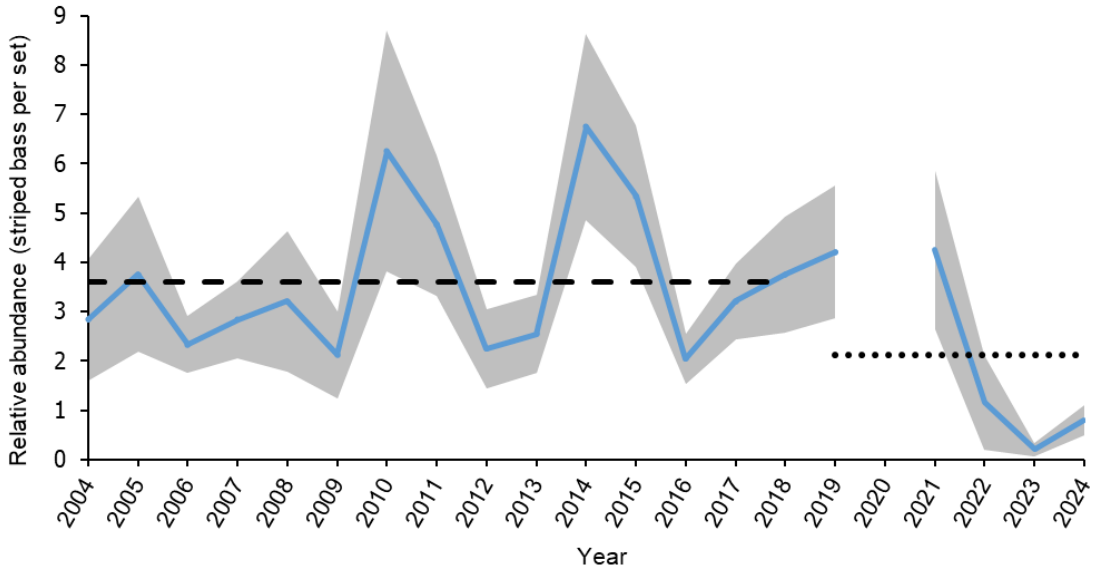


Figure 3. Annual index of adult striped bass relative abundance from Program 915 in the Neuse River during April, and October–November, in shallow water sets, 2004–2024. No sampling occurred in 2020, and limited sampling occurred in 2021 (July–December). Error bars represent ± 1 standard error. Dashed line is mean abundance from 2004–2018 (pre-closure), dotted line is mean abundance from 2019–2024 (post-closure).

Striped bass length frequencies from Program 915 in the Tar-Pamlico and Neuse rivers are shown in Figure 4. Length frequency distributions are variable between years but generally range from 10–25 inches total length (TL), however in the Tar-Pamlico River from 2016–2017 (Figure 4A) and in the Neuse River from 2015–2017 (Figure 4B) there was a higher percentage of small fish that could represent the two-year classes of striped bass thought to be the result of successful natural reproduction in 2014 and 2015. In 2023, catch was composed of high percentages of fish greater than 20 inches which could be tracking continued growth and perpetuation of the 2014- and 2015-year classes. During 2021–2023 there were few smaller fish, less than 15 inches, in the gill net survey catch. In 2024, there was an even distribution of striped bass lengths in the Tar-Pamlico River ranging from 12-29 inches TL, while lengths in the Neuse River were centered around 20 inches TL. The decrease in the proportion of larger fish may be reflective of A-R fish from the 2014- and 2015-year classes leaving the rivers and entering the Atlantic Ocean migratory stock. Due to the low numbers of striped bass captured (N=17 during April, and October–November from shallow water sets), the length-frequency distribution may not be reflective of the populations size distribution.

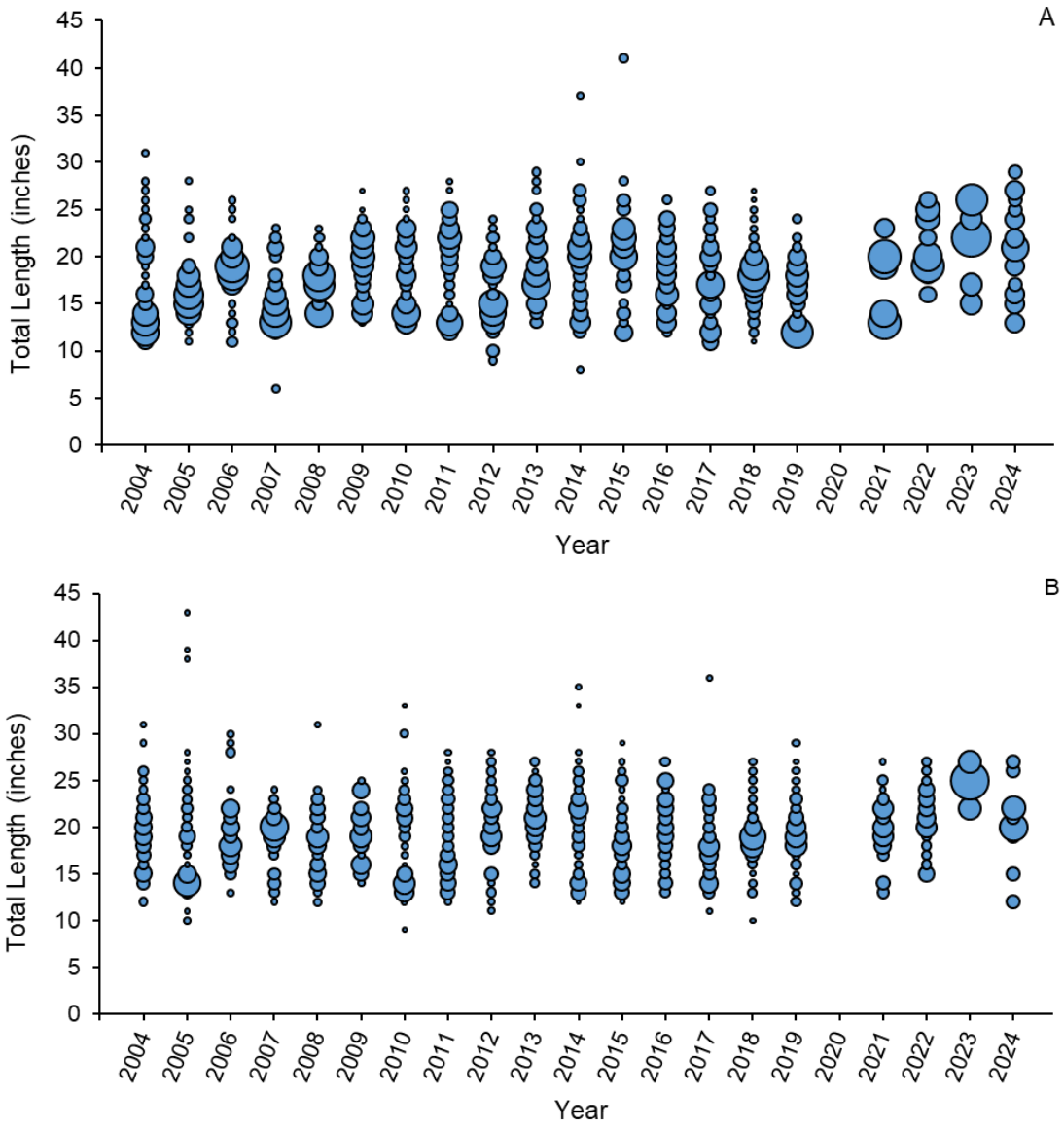


Figure 4. Length frequency of striped bass captured in Program 915 in the Tar-Pamlico River (A), and the Neuse River (B) during April, and October–November, in shallow water sets (2004–2024). No sampling occurred in 2020 and limited sampling occurred in 2021 (July–December). Bubbles represent fish at length and the bubble size is proportional to the number of fish at that length.

WRC Spawning Grounds Electrofishing Survey

Striped bass relative abundance from the WRC spawning grounds electrofishing survey in the Tar-Pamlico River has ranged from a low of 18.2 striped bass per hour in 2018 to a peak of 100.0 per hour in 2010 (Figure 5). Since the harvest closure in 2019, relative abundance has increased approaching levels near the 1996–2018 time series average of 40.8 fish per hour; however, there was a decrease in relative abundance after the 2019 closures went into place (20% reduction, 40.8 to 32.7 fish per sample; Figure 5). Additionally, the percentage of Age 6+ (~600 mm TL) striped bass on the Tar River spawning grounds has decreased from a 10-year average (2009–2018) of 18% by approximately 12% since the 2019 closures.

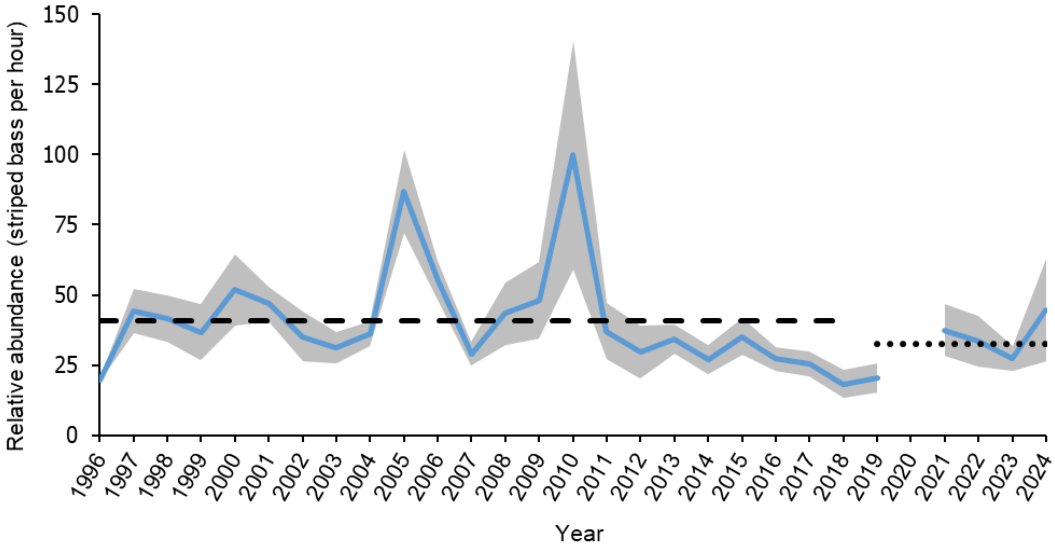


Figure 5. Relative abundance of Tar-Pamlico River striped bass from the WRC spawning grounds electrofishing survey, 1996–2024. No sampling occurred in 2020. Shaded error bars represent ± 1 standard error. Dashed line is mean abundance from 2004–2018 (pre-closures), dotted line is mean abundance from 2019–2024 (post-closures).

From 1994 through 2024, striped bass relative abundance in the Neuse River has been highly variable, ranging from 4.4 fish per hour in 2008 to 20.4 fish per hour in 1999 (Figure 6).

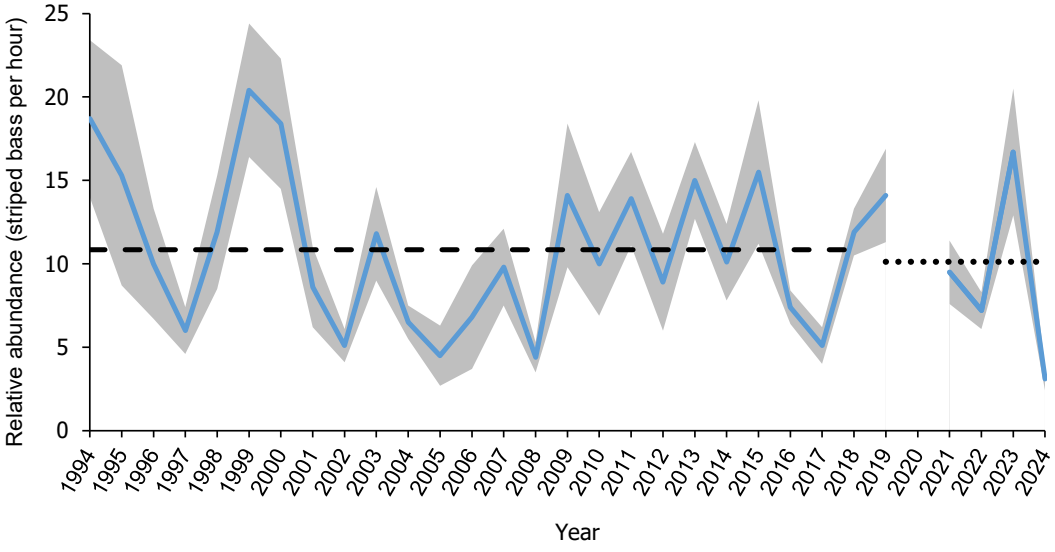


Figure 6. Relative abundance of Neuse River striped bass from the WRC spawning grounds electrofishing survey, 1994–2024. No sampling occurred in 2020. Shaded error bars represent ± 1 standard error. Dashed line is mean abundance from 2004–2018 (pre-closures), dotted line is mean abundance from 2019–2024 (post-closures).

Although relative abundance has continued to be highly variable since the 2019 closures, ranging from 16.7 fish per hour in 2023 to 3.1 fish per hour in 2024, the mean value during 2019–2024 (7% reduction, 10.1 fish per hour) is at the 1994–2018 time series average (10.8 fish per hour). Relative abundance from the WRC electrofishing surveys in the Tar-Pamlico and Neuse rivers shows little to no trend since the 2019 closures.

Age Data

Fishery-independent and fishery-dependent age data (2004–2024) collected from otolith and genetic samples show no expansion of the age structure (increased numbers of age-10+ fish) in the Tar-Pamlico or Neuse rivers since implementation of the harvest and gill net closures in 2019. Modal and maximum age has not increased beyond what was observed prior to 2019 (Table 3, modal age=3; maximum age=12).

Table 3. Tar-Pamlico and Neuse rivers striped bass otolith and genetic age data from fishery dependent and independent surveys, 2004–2024. PBT age data for 2024 are not yet available.

	Modal Age		Minimum Age		Maximum Age		Total Number Aged	
Year	otolith	genetic	otolith	genetic	otolith	genetic	otolith	genetic
2004	3	-	1	-	11	-	50	-
2005	2	-	1	-	9	-	78	-
2006	3	-	1	-	9	-	111	-
2007	3	-	1	-	9	-	86	-
2008	3	-	1	-	8	-	103	-
2009	4	-	1	-	6	-	37	-
2010	5	-	1	-	9	-	154	-
2011	3	-	1	-	6	-	56	-
2012	3	-	1	-	7	-	205	-
2013	3	-	1	-	8	-	156	-
2014	3	-	1	-	11	-	172	-
2015	3	-	1	-	9	-	113	-
2016	2	3	1	2	8	6	38	323
2017	2	4	1	1	9	7	98	247
2018	3	4	1	1	12	8	109	201
2019	4	3	1	1	11	9	307	183
2020	5	4	1	1	9	9	147	99
2021	3	3	1	1	10	10	352	109
2022	3	4	1	0	11	11	114	128
2023	3	3	1	0	9	8	95	84
2024	4	-	1	-	10	-	65	45

Striped bass up to age-6 are commonly encountered and striped bass age-6 and under make up around 90% of the DMF otolith age samples in the Tar-Pamlico and Neuse rivers (Figure 7). However, fish older than age-10 are rare and make up less than 10% of the age samples in all years since 2013.

Two tagged striped bass, raised at Edenton National Fish Hatchery and released into the Tar-Pamlico River as phase-II sized fingerlings in 2008, were recaptured in November 2023 by an angler along the railroad bridge over the Tar-Pamlico River in Washington, NC. These tag returns indicate an increase in the maximum observed age of Tar-Pamlico River striped bass from 12 years to 15 years.

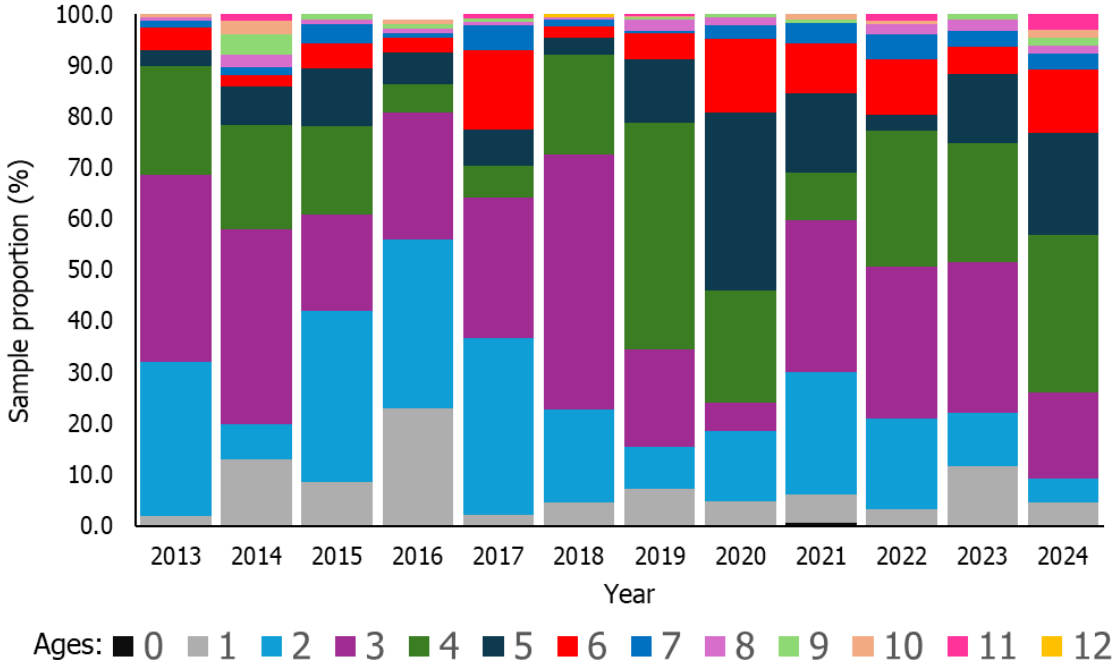


Figure 7. Proportion (%) at age (otolith ages) for striped bass collected from DMF sampling programs in the Tar-Pamlico and Neuse rivers, 2013–2024.

Juvenile Relative Abundance

As of 2024, only two 'wild' (non-hatchery) juvenile striped bass were collected from the Tar-Pamlico River (2021), with no 'wild' juvenile striped bass collected in the Neuse River. Stocked phase-I size (1–2 inch) juvenile striped bass were collected from the Tar-Pamlico (n=35) and Neuse rivers (n=8) in 2022 and 2023 (Table 4). Because no striped bass were captured in trawl sampling 2017–2022, trawl sampling was discontinued after the 2022 season and additional seine sampling was added.

Table 4. Relative abundance (Index) of striped bass (number of individuals per sample), total number of striped bass collected, and the number of beach seine and trawl samples (N) in the Tar-Pamlico and Neuse rivers, 2017–2024.

	Tar-Pamlico River						Neuse River					
	Seine			Trawl			Seine			Trawl		
Year	Striped bass (N)	Samples (N)	Index	Striped bass (N)	Samples (N)	Index	Striped bass (N)	Samples (N)	Index	Striped bass (N)	Samples (N)	Index
2017	0	54	0.00	0	48	0.00	0	54	0.00	0	48	0.00
2018	0	30	0.00	0	36	0.00	0	30	0.00	0	36	0.00
2019	0	36	0.00	0	48	0.00	0	36	0.00	0	48	0.00
2020	0	48	0.00	0	48	0.00	0	48	0.00	0	48	0.00
2021*	2	48	0.04	0	48	0.00	0	48	0.00	0	48	0.00
2022†	21	48	0.44	0	36	0.00	4	48	0.08	0	36	0.00
2023†	14	71	0.20	-	-	-	4	70	0.06	-	-	-
2024	0	63	0.00	-	-	-	0	64	0.00	-	-	-
Total	37	398	0.09	0	264	0.00	8	398	0.02	0	264	0.00

*non-hatchery or ‘‘wild’’ fish
† phase-I hatchery origin

Parentage Based Tagging

PBT analysis of samples collected on the spawning grounds and from internal coastal waters of the Tar-Pamlico and Neuse rivers indicates stocked striped bass can make up greater than 90% of the fish sampled in some years (2013–2016); however, results from 2017 and 2018 indicated a noticeable decrease in contribution of hatchery-stocked fish in the Tar-Pamlico and Neuse rivers (Farrae and Darden 2018; Figure 8). From 2019 to 2023, the percentage of stocked fish continued to increase. However, results from 2021 DMF samples (n=220) showed a noticeable drop in the percentage of hatchery fish to a 50/50 split with ‘wild’ striped bass. Upon further investigation of the 2021 PBT data, DMF striped bass collections in the Tar-Pamlico and Neuse rivers from January through March consisted of nearly 100% ‘wild’ origin striped bass. Interestingly, ages 6 and 7 represented 29% of the catch which could be ‘wild’ A-R stock striped bass from the 2014- and 2015-year classes produced in the Roanoke River. Additionally, age-3 striped bass represented 27% of the samples which could indicate successful natural recruitment in the Tar-Pamlico and Neuse rivers from the 2018-year class, or recruitment from the A-R system even though the 2018 A-R juvenile abundance index was low.

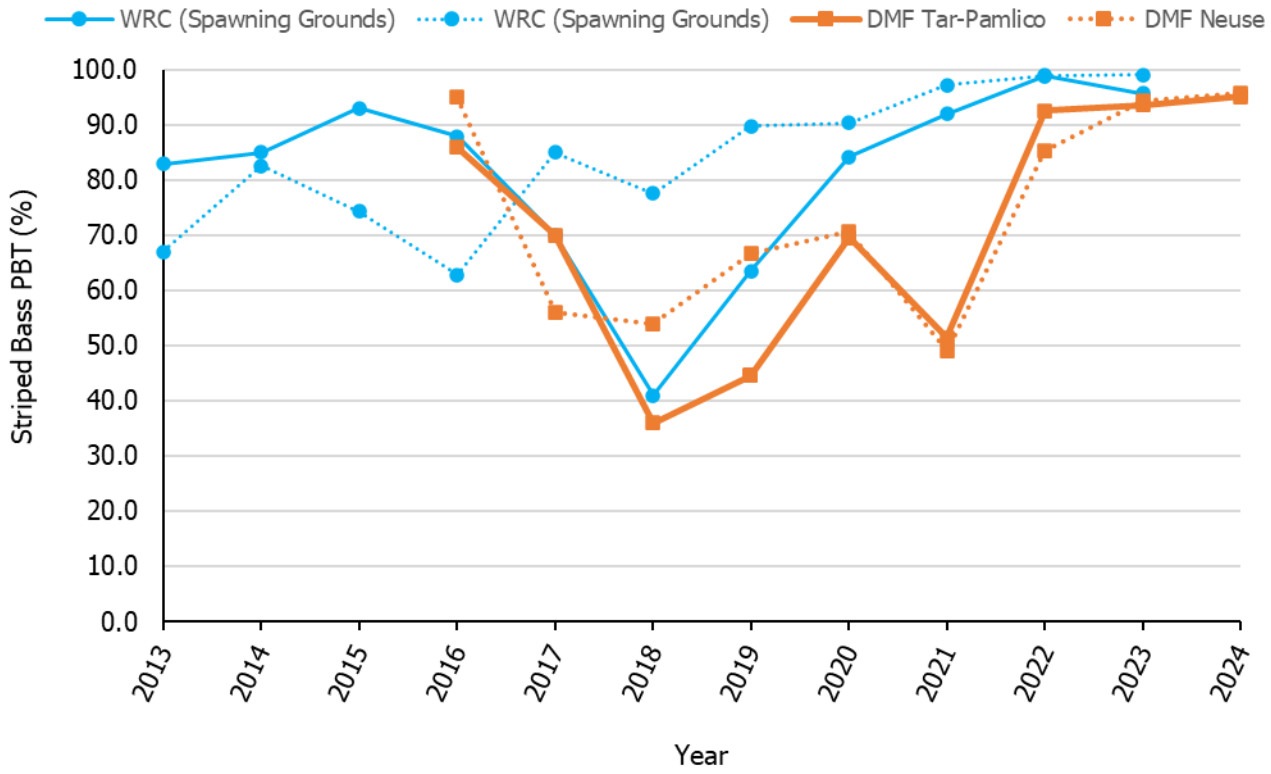


Figure 8. Hatchery contribution from the DMF Fisheries Independent and Dependent sampling programs (2016–2024) and the WRC Electrofishing Surveys (2013–2023) on the spawning grounds in the Tar-Pamlico and Neuse rivers. WRC PBT data for 2024 are not yet available.

Creel Survey

A comprehensive creel survey was initiated in January 2004 to identify and estimate recreational striped bass effort and catch in the CSMA, particularly the Tar-Pamlico and Neuse rivers. Although the recreational striped bass season in the CSMA has remained closed since March 2019, data collection characterizing fishing effort and release disposition has continued. Within the CSMA there is a significant catch-and-release fishery and releases during the past ten years (2015–2024) have averaged 43,168 fish annually (Table 5). In 2024, the number of striped bass caught and released as discards was 6,971 fish which was a decrease from 12,957 fish in 2023, and below the ten-year average. Under-sized discards peaked in 2017 mainly due to the large number of sub-legal striped bass available in the Tar-Pamlico River system; however, the number of under-sized discards has declined since, and in 2024 there were only an estimated 944 under-sized striped bass discards.

Table 5. Recreational striped bass effort (trips and hours), harvest, and discards from the Pungo, Tar-Pamlico, and Neuse rivers (2004–2024). There was a limited

recreational harvest season in 2019 (January 1–March 19, 2019) prior to the closures.

Year	Number Striped Bass Trips	Number Striped Bass Hours	Harvest		Discard				Catch # Fish
			Number	Pounds	Over Creel	Under-Sized	Legal-Sized	Slot	
2004	12,782	63,791	6,141	22,958	85	11,729	1,743	0	19,698
2005	16,414	69,370	3,832	14,965	152	15,609	1,016	77	20,671
2006	10,611	42,066	2,481	7,352	33	12,548	2,314	0	17,376
2007	10,971	46,655	3,597	10,794	147	21,673	1,707	0	27,124
2008	6,621	28,413	843	2,990	2,838	11,721	3,316	91	18,809
2009	5,642	26,611	895	3,061	7	4,471	1,769	718	7,860
2010	6,559	25,354	1,757	5,537	29	5,200	2,401	360	9,747
2011	12,606	51,540	2,728	9,474	9	16,659	5,397	2,123	26,916
2012	18,338	71,964	3,922	15,240	439	26,343	13,621	2,910	47,236
2013	20,136	86,049	5,467	19,537	447	19,302	10,356	2,357	37,928
2014	15,244	68,153	3,301	13,368	728	19,185	7,104	1,641	31,959
2015	17,950	78,696	3,934	14,269	40	22,272	8,029	813	35,088
2016	23,283	108,989	6,697	25,260	203	57,874	9,977	6,779	81,529
2017	26,100	119,522	7,334	26,973	549	101,787	26,487	2,293	138,450
2018	16,369	69,856	3,371	10,884	871	34,128	12,092	1,890	52,353
2019	8,796	40,485	959	3,562	924	22,375	7,817	2,481	34,557
2020	2,839	13,247	0	0	0	10,440	7,575	1,406	19,420
2021	4,641	17,596	0	0	0	8,815	12,311	1,769	22,895
2022	3,953	13,727	0	0	0	10,601	12,159	4,701	27,462
2023	3,020	10,923	0	0	0	5,268	5,860	1,829	12,957
2024	1,604	7,867	0	0	0	944	4,724	4,055	9,722
Total	244,480	1,060,873	57,258	206,224	7,502	438,943	157,776	38,293	699,758

Observer Program

Program 466

Onboard Observer Monitoring was designed to monitor fisheries for protected species interactions in the large and small mesh anchored commercial gill-net fishery by providing onboard observations. During onboard trips, this program also monitors finfish catch and discards and characterizes effort in the fishery. Program 466 does not conduct observations on commercial trips using gill nets that are exempt from the Division's Incidental Take Permit, including runaround, strike, drop, or drift gill nets. Number of striped bass observed in the Tar-Pamlico and Neuse rivers commercial large and small mesh gill net fisheries averaged 102 fish per year with a high of 302 fish in 2014 and a low of zero fish in 2020 and 2021 (Table 6). Since the harvest and gill net closures (2019), the number of observed striped bass has averaged 5.3 fish per trip. The decrease in number of observed striped bass is due in part to prohibiting the use of gill nets above the ferry lines and harvest restrictions in other fisheries, most notably southern flounder, that have significantly limited the use of anchored large mesh gill nets.

Table 6. Number of observed (Program 466) gill net trips and number of striped bass harvested and discarded, including disposition observed by mesh size in the Tar-Pamlico and Neuse rivers (all trips west of tie down line), 2012–2024. Note: observations in 2020 and 2021 were limited due to COVID restrictions.

	Large Mesh				Small Mesh				Total Numbers				
Year	Trips	Harvested	Dead Discard	Alive Discard	Trips	Harvested	Dead Discard	Alive Discard	Trips	Harvested	Dead Discard	Alive Discard	Striped Bass Captured
2012	70	19	1	8	17	0	1	12	87	19	2	20	41
2013	104	58	14	12	11	0	0	0	115	58	14	12	84
2014	252	167	41	83	39	2	0	9	291	169	41	92	302
2015	149	202	16	42	39	4	4	9	188	206	20	51	277
2016	153	119	25	14	23	0	4	12	176	119	29	26	174
2017	163	110	12	134	35	0	0	36	198	110	12	170	292
2018	122	37	15	45	23	1	2	10	145	38	17	55	110
2019	60	0	8	12	45	0	2	5	105	0	10	17	27
2020	0	0	0	0	7	0	0	1	7	0	0	0	1
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	3	0	0	0	0	0	0	0	3	0	0	0	0
2023	8	0	0	3	4	0	0	3	12	0	0	3	3
2024	4	0	0	1	4	0	0	1	8	0	0	1	1
Totals	1,088	712	132	355	247	7	13	98	1,335	719	145	447	1,312

Analysis of Pre and Post Closures Abundance Trends

The M-K Trend Test was used to compare Program 915 and the WRC Electrofishing Survey abundance trends before and after the striped bass harvest and gill net closures to determine if striped bass abundance trends were significant after the closures.

Randomization Tests were used to compare striped bass abundance from Program 915 and the WRC Electrofishing Survey before and after the harvest and gill net closures to determine if striped bass abundance increased significantly after the closures.

Program 915 M-K Trend Test

M-K Trend Test results showed for the period before the closures (2004–2018) there was no significant trend in Program 915 striped bass catch in the Tar-Pamlico River (P value greater than 0.05; Table 7). In the Neuse River, M-K Trend Test results indicated no significant trend in striped bass catch before or after the closures.

Table 7. M-K Trend Test for striped bass relative abundance from Program 915 indicating the direction of the trend in the Tar-Pamlico and Neuse rivers before (2004–2018) and after (2019–2024) the closures (P-value < α; α = 0.05). NS = not a significant trend.

System	Closures	P-value < a; a = 0.05	Trend
Tar-Pamlico River	Before (2004 - 2018)	0.28	NS
	After (2019 - 2024)	0.46	NS
Neuse River	Before (2004 - 2018)	0.65	NS
	After (2019 - 2024)	0.22	NS

Program 915 Randomization Test

The Randomization Test for the Tar-Pamlico River indicated abundance of striped bass in Program 915 was significantly lower after the closures compared to before the closures (Figure 9, *p-value = 0.0002). Results of the Neuse River Randomization Test indicated abundance of striped bass was significantly lower after the closures compared to before the closures (Figure 10, *p-value = 0.0006).

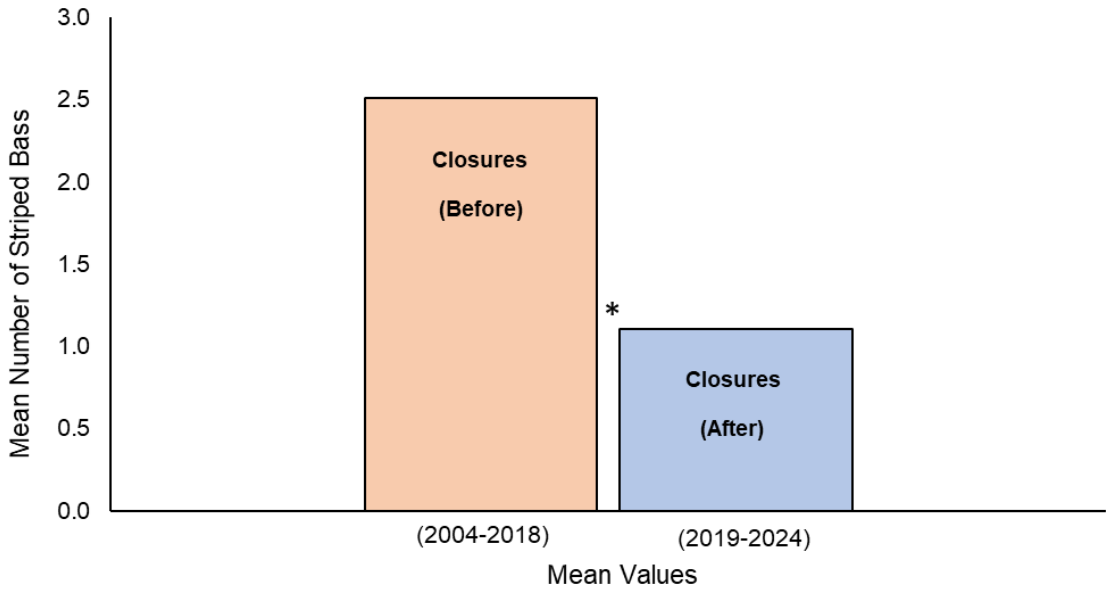


Figure 9. Abundance of Tar-Pamlico River striped bass from Program 915 before (2004–2018) and after (2019–2024) the closures. *Represents a statistically significant difference (p-value ≤ 0.05).

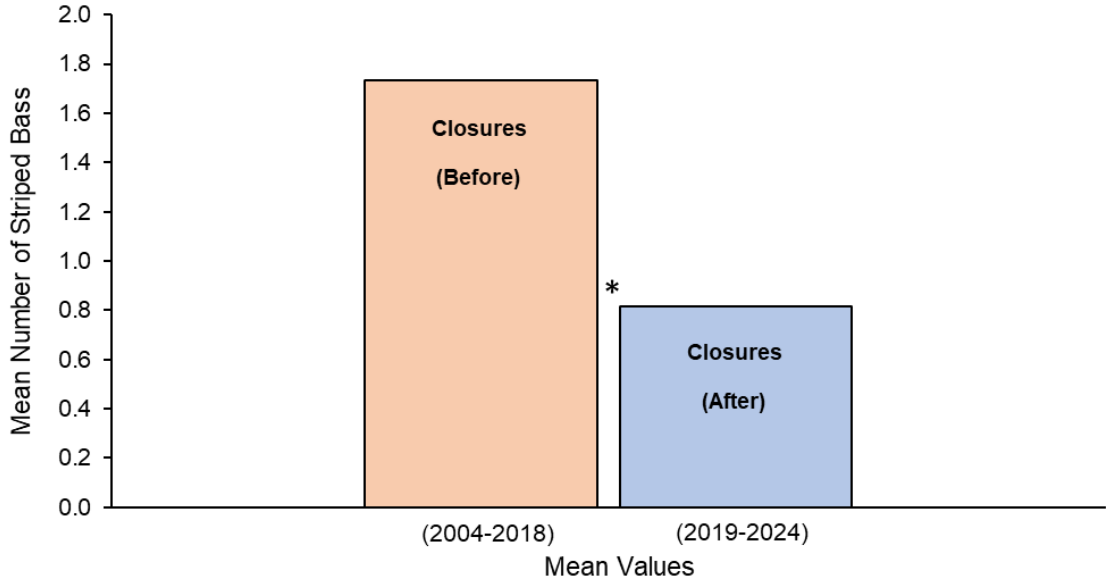


Figure 10. Abundance of Neuse River striped bass from Program 915 before (2004–2018) and after (2019–2024) the closures. *Represents a statistically significant difference (p-value ≤ 0.05).

WRC Electrofishing Survey M-K Trend Test

In the Tar-Pamlico River, M-K Trend Test results indicated a negative abundance trend on the spawning grounds before the closures (1996–2018); however, a p-value of exactly 0.05 is on the borderline but still considered significant at the 5% level (Table 8). Results of the Kendall's Tau correlation for the period before the closures indicated a decreasing trend (Tau=-0.3). There was no significant trend in abundance after (2019–2024) the closures in the Tar-Pamlico River. In the Neuse River, M-K Trend Test results indicated no significant trend before or after the closures.

Table 8. M-K Trend Test of annual striped bass relative abundance from the WRC Electrofishing Spawning Ground Survey indicating the direction of the trend (P-value < α; α = 0.05) in the Tar-Pamlico (1996–2024) and Neuse rivers (1994–2024). NS = not a significant trend.

System	Closures	P-value < a; a = 0.05	Trend
Tar-Pamlico River	Before (1996–2018)	0.05	↓
	After (2019–2024)	0.46	NS
Neuse River	Before (1994–2018)	0.48	NS
	Ater (2019–2024)	0.46	NS

WRC Electrofishing Survey Randomization Test

The Randomization Test indicated striped bass abundance on the Tar-Pamlico River spawning grounds was significantly lower after the closures compared to before (Figure 11; *p-value=0.03).

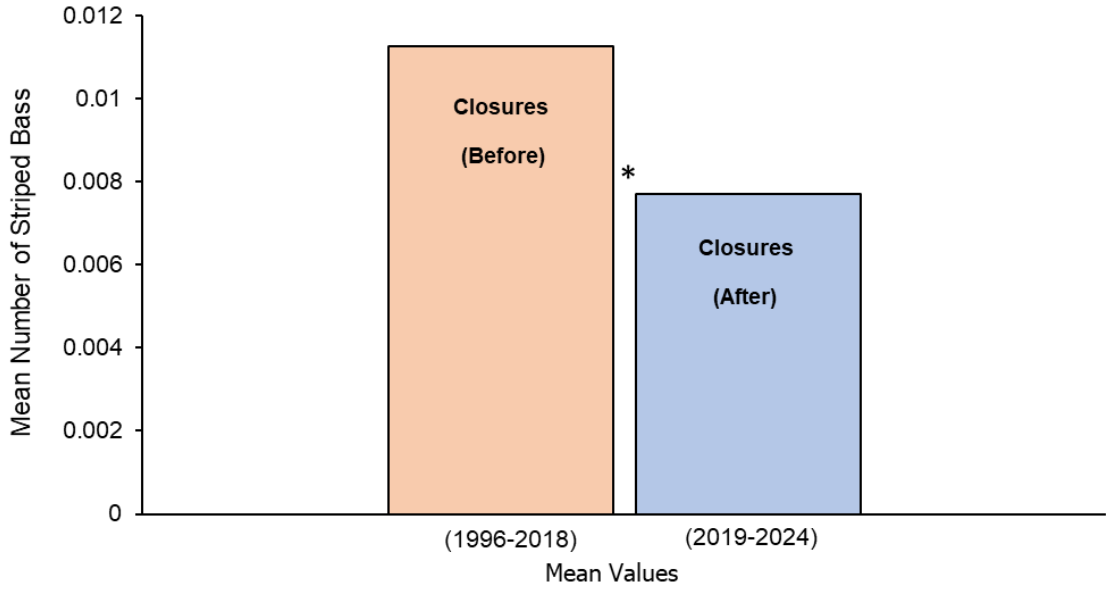


Figure 11. Abundance of Tar-Pamlico River striped bass from the WRC Electrofishing Survey before (1996–2018) and after (2019–2024) the closures. *Represents a statistically significant difference (p-value ≤ 0.05).

While striped bass abundance from the WRC electrofishing survey on the Neuse River spawning grounds was higher after the closures the Randomization Test indicated the difference before and after was not significant and therefore considered to be equal or not different (Figure 12; *p-value=0.08).

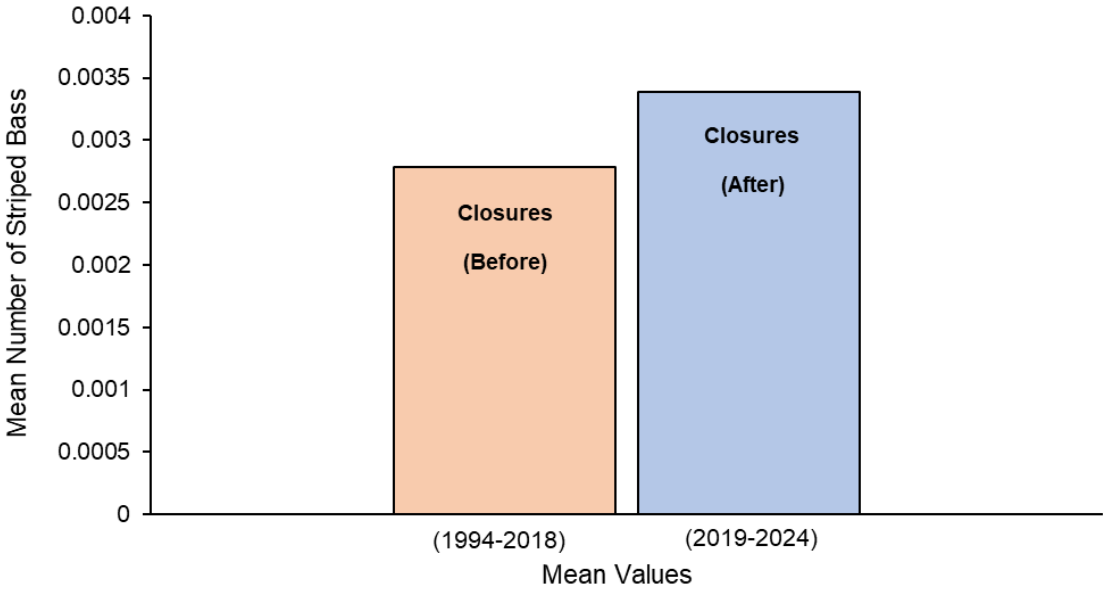


Figure 12. Abundance of Neuse River striped bass from the WRC Electrofishing Survey before (1994–2018) and after (2019–2024) the closures.

Ferry Line Gill Net Closure Analysis

Program 915 data was used to evaluate performance of the gill net closure above the ferry lines by comparing striped bass abundance upstream of the lines before and after the gill net closure and striped bass harvest closure were put in place.

M-K Trend Test

M-K Trend Test results for the Tar-Pamlico River indicated there was no significant trend in striped bass abundance above the ferry line for the period before or after the closures. In the Neuse River, M-K Trend Test results indicated no significant trends in abundance above the ferry line before or after the closures.

Table 9. M-K Trend Test of annual striped bass relative abundance from Program 915 for the areas above the ferry lines indicating the direction of the trend in the Tar-Pamlico and Neuse rivers, before (2004–2018) and after (2019–2024) the closures (P-value < α; α = 0.05). NS = not a significant trend.

System	Closures	P-value < a; a = 0.05	Trend
Tar-Pamlico River	Before (2004–2018)	0.30	NS
	After (2019–2024)	0.46	NS
Neuse River	Before (2004–2018)	0.88	NS
	After (2019–2024)	0.09	NS

Randomization Test

Abundance of striped bass above the ferry lines in the Tar-Pamlico River was significantly lower after the closures compared to before the closures (Figure 13; p-value=0.0002).

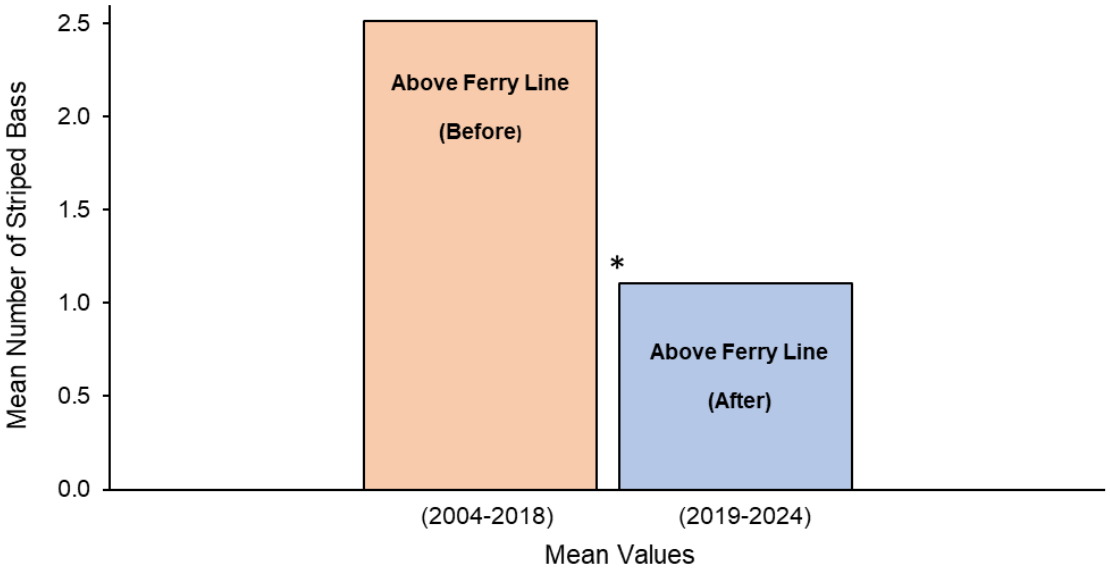


Figure 13. Abundance of Tar-Pamlico River striped bass from Program 915 above the ferry line closure area before (2004–2018) and after (2019–2024) the closures. *Represents a statistically significant difference (p-value ≤ 0.05).

Abundance of striped bass above the ferry lines in the Neuse River was significantly lower after the closures compared to before the closures (Figure 14; p-value=0.003).

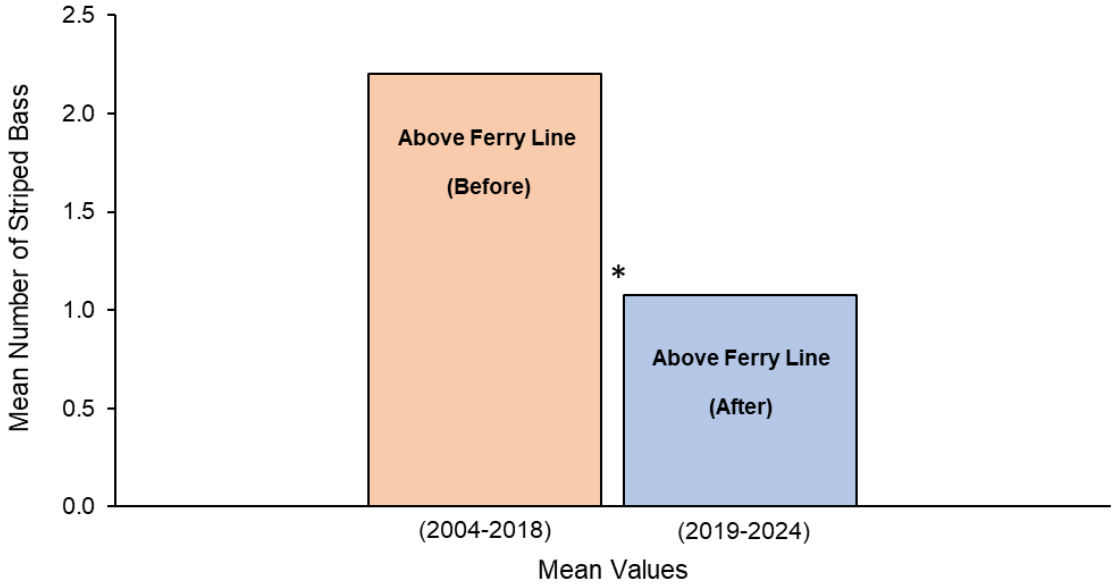


Figure 14. Abundance of Neuse River striped bass from Program 915 above the ferry line closure area before (2004–2018) and after (2019–2024) the closures. *Represents a statistically significant difference (p-value ≤ 0.05).

DISCUSSION

Amendment 2 to the North Carolina Estuarine Striped Bass FMP adopted an adaptive management strategy to review data through 2024 to determine if striped bass populations in the Tar-Pamlico and Neuse rivers are self-sustaining and if sustainable harvest can be determined. In addition, Amendment 2 included language to: “maintain the gill net prohibition through 2024 to allow for assessment of its performance”. Adaptive management allows adjustments to management measures as new information or data becomes available. Trends in key population parameters including natural recruitment, adult abundance, age structure, and hatchery contribution were evaluated to determine the impact of the 2019 no-possession provision and the gill net closure above the ferry lines on the stocks.

As part of Amendment 2 development, a demographic matrix model was used to evaluate stocking and management strategies for striped bass in the Tar-Pamlico and Neuse rivers (Mathes et al. 2020). Matrix model results indicated natural recruitment is the primary factor limiting Tar-Pamlico and Neuse rivers stocks and if stocking was stopped the populations would decline. Based on matrix model results, the striped bass populations in the Tar-Pamlico and Neuse rivers were depressed to an extent that no level of fishing mortality is sustainable.

The matrix model results indicated a 10-year closure was most effective at increasing adult (age-3+) and old adult (age-6+) abundance (Figure 15; Mathes et al. 2020). The stocking strategy in the Tar-Pamlico and Neuse rivers during the closure has been to stock 100,000 phase-II fish per year in each river (stocking scenario 4; Figure 15). Under this stocking scenario and a 10-year closure old adult abundance is not projected to increase significantly for the first five years of the closure before starting to increase in year six. In this stocking and management scenario, abundance of age-3+ striped bass was projected to begin increasing in year two of the closure.

The striped bass harvest and ferry line gill net closures in the Tar-Pamlico and Neuse rivers were implemented in 2019 and as of 2024 have been in place for six years and have significantly decreased the number of striped bass removed from these rivers by fishing each year (Table 1). Fishery-independent monitoring since 2019 does not indicate abundance increases in downriver areas and abundance on the spawning grounds remains at levels similar to what was observed before the closure. Abundance of age-3+ and age-6+ striped bass has declined or remained consistent and there appears to be little expansion of the age structure past age-6.

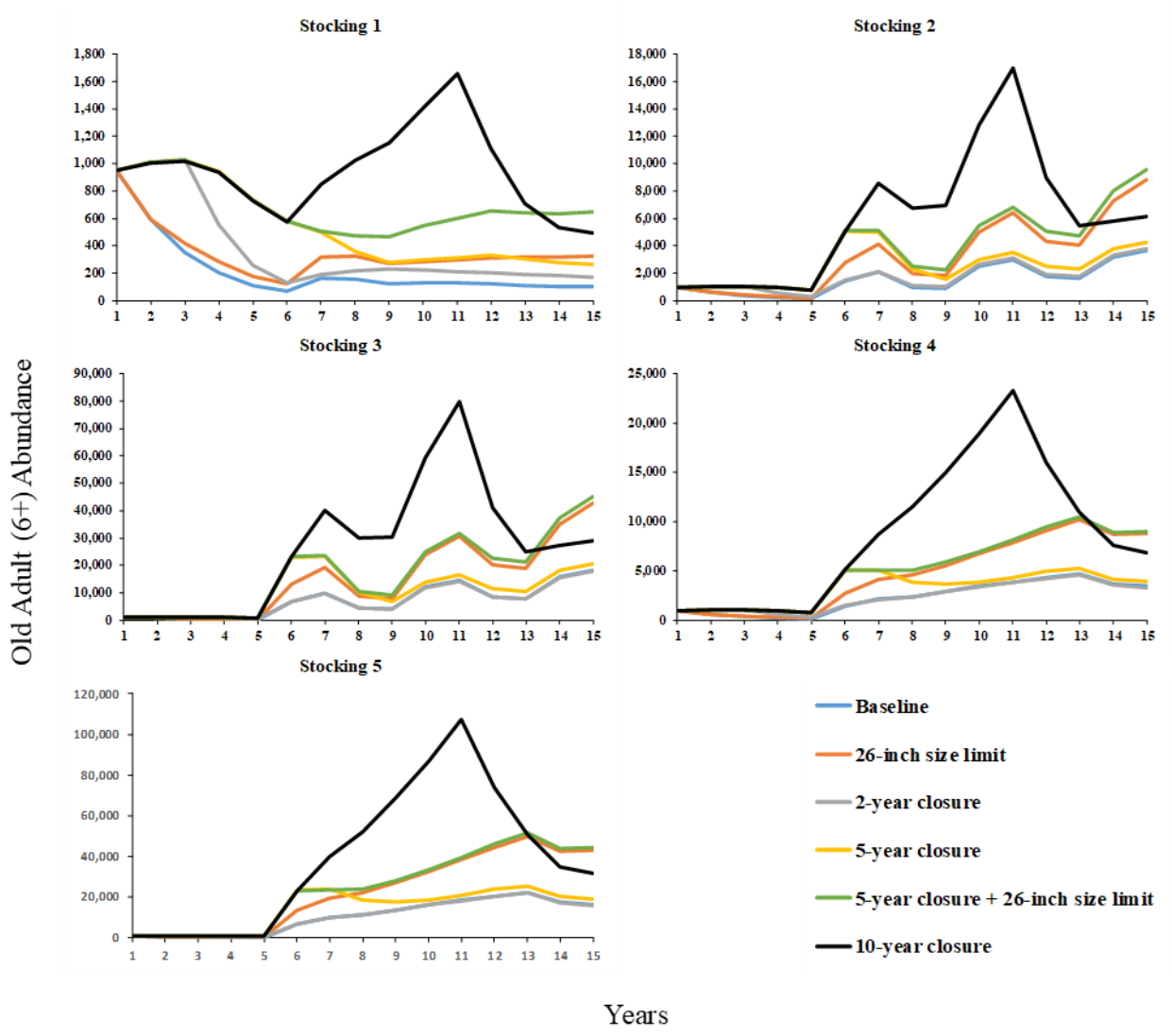


Figure 15. Abundance of old adults (age 6+) projected under five stocking strategies and six fishing strategies. Stocking 1 - no stocking; Stocking 2 - stocking 100,000 fish per year with 2-year stocking and 2-year no stocking alternating for 15 years (8 years of stocking in total); Stocking 3 - stocking 500,000 fish per year with 2-year stocking and 2-year no stocking alternating for 15 years (8 years of stocking in total); Stocking 4 - stocking 100,000 fish per year with 8-year continuous stocking; Stocking 5 - stocking 500,000 fish per year with 8-year continuous stocking. Lines show the median from 10,000 iterations (figure from Mathes et al. 2020).

Since 2019 the percentage of stocked fish on the spawning grounds has increased to nearly 100% suggesting the 'wild' fish present in 2018 and 2019 are not making spawning runs in these systems and are not contributing to natural reproduction. In the lower rivers, the percentage of 'wild' fish has been more variable, and examination of age data suggests some persistence of the 2014- and 2015-year classes, at least through 2020.

It is difficult to pinpoint specific reasons why abundance has not increased, and the age structure has not expanded despite significant reductions in fishing mortality. The Tar-Pamlico and Neuse rivers striped bass stocks are supported by a stocking program with an annual goal of stocking 100,00 phase-II striped bass per river system; however, actual stocking numbers are variable

from year to year and since implementation of the harvest and ferry line gill nets closures in 2019, an average of 55,541 phase-II fish were stocked in the Tar-Pamlico River each year and 66,036 phase-II striped bass were stocked in the Neuse River each year (Table 10). Additionally, environmental conditions, such as low dissolved oxygen and warm water temperatures play a role in successful striped bass recruitment and increasing stock size. There is evidence total mortality (especially natural mortality) is high in these systems. A telemetry tagging study conducted on the Neuse River from December 2013 through September 2015 estimated a discrete annual total mortality of 66.3% for phase II stocked juveniles (202–227 mm TL), a discrete annual total mortality of 54.0% for adults (349–923 mm TL), and a discrete natural mortality of 20.1% for adults (Bradley et al. 2018). Analysis of tagging data showed that striped bass stocked in the Neuse and Tar-Pamlico rivers experienced higher mortality (instantaneous total mortality of 0.48–0.51) than in the Roanoke River/Albemarle Sound habitat (instantaneous total mortality of 0.33; Callihan et al. 2014).

Mathes et al. (2020) and Rachels and Ricks (2018) documented commercial effort as an important predictor of striped bass mortality in the Neuse River. Model averaging analysis by Rachels and Ricks (2018) indicated commercial gill-net effort was far more influential than other parameters that were examined. Although Rachels and Ricks (2018) did not include recreational effort or harvest in the model due to the benefits of a longer available time series for commercial data, the study acknowledged the potential importance of recreational angling on total mortality of Neuse River striped bass. Results of analysis from Mathes et al. (2020) indicated recreational effort and recreational discards may indeed be as influential on annual striped bass mortality as commercial effort and commercial harvest. While recreational and commercial harvest and commercial discard mortality of striped bass have been minimized by the harvest closure and concurrent gill net restrictions, recreational discards remain a source of mortality and may confound capacity for the stock to grow. Since the harvest closure, recreational striped bass discards remain similar to those observed prior to the harvest closure in some years (Table 5; NCDMF 2024).

In response to increased abundance of non-hatchery origin (wild) striped bass present in the Tar-Pamlico and Neuse rivers in 2017 and 2018, DMF initiated an acoustic telemetry study to track movements of ‘wild’ fish. Because striped bass return to natal rivers to spawn, the objective of the acoustic tagging study was to infer origin of wild striped bass found in the lower-middle Tar-Pamlico and Neuse rivers by tracking spring spawning migrations. Fifty adult striped bass (ages 4–5) from the lower-middle Tar-Pamlico and Neuse rivers were implanted with acoustic tags. Fin clips were taken from each fish, and PBT analysis was conducted to determine if the fish were hatchery or wild origin. PBT results indicated 30 of the tagged striped bass were wild. Of the 30 wild striped bass, 70% (n=21) were later detected in the Albemarle Sound or on the Roanoke River spawning grounds in the spring (see Appendix 3). Most (53%) wild fish entering the Albemarle Sound were detected on the spawning grounds near Weldon, N.C. Several of these wild striped bass (n=5) made repeated annual migrations in the spring back to the Roanoke River spawning grounds. The remaining wild acoustic tagged striped bass did not move out of the Tar-Pamlico and Neuse rivers and were not detected in Albemarle Sound. A single wild striped bass tagged in the Tar-Pamlico River was later detected on the spawning grounds in the Tar River and one wild striped bass tagged in the Neuse River was later detected on the spawning grounds in the Neuse River suggesting limited natural recruitment in these rivers or straying of A-R stock fish to the Tar and Neuse rivers spawning grounds. Additionally, one wild striped bass tagged in the Neuse River was later detected on the spawning grounds in the Tar River (see Appendix 3).

Results of the acoustic study add additional support to the existing body of evidence indicating annual movement of striped bass between the Albemarle Sound and Tar-Pamlico and Neuse rivers. Conventional tag return data has documented increased movement of smaller A-R stock striped bass into the Tar-Pamlico and Neuse rivers during periods of increased A-R stock

abundance (Callihan et al. 2014). While abundance of A-R stock striped bass is currently very low, 2014 and 2015 represent the most recent strong year classes produced (Figure 16). Striped bass from the strong 2014 and 2015 A-R year classes likely migrated to the Tar-Pamlico and Neuse rivers: increasing abundance and providing the appearance of successful natural reproduction. Callihan et al. (2014) indicated up to 31% of the A-R stock could use areas outside the Albemarle Sound during times of higher abundance. Rulifson (2014) concluded 53% of striped bass sampled from the Neuse River in 2010 were not of hatchery origin. While the exact origin of these fish is unknown, they could be fish from the strong 2005 A-R year class. Potential spillover of the 2005 A-R year class into the Tar-Pamlico and Neuse rivers may also explain the 2010 and 2011 striped bass abundance peaks from Program 915 in the Tar-Pamlico and Neuse rivers (Figures 2 and 3) and the 2010 abundance peak from the WRC Electrofishing Survey on the Tar River spawning grounds (Figure 5).

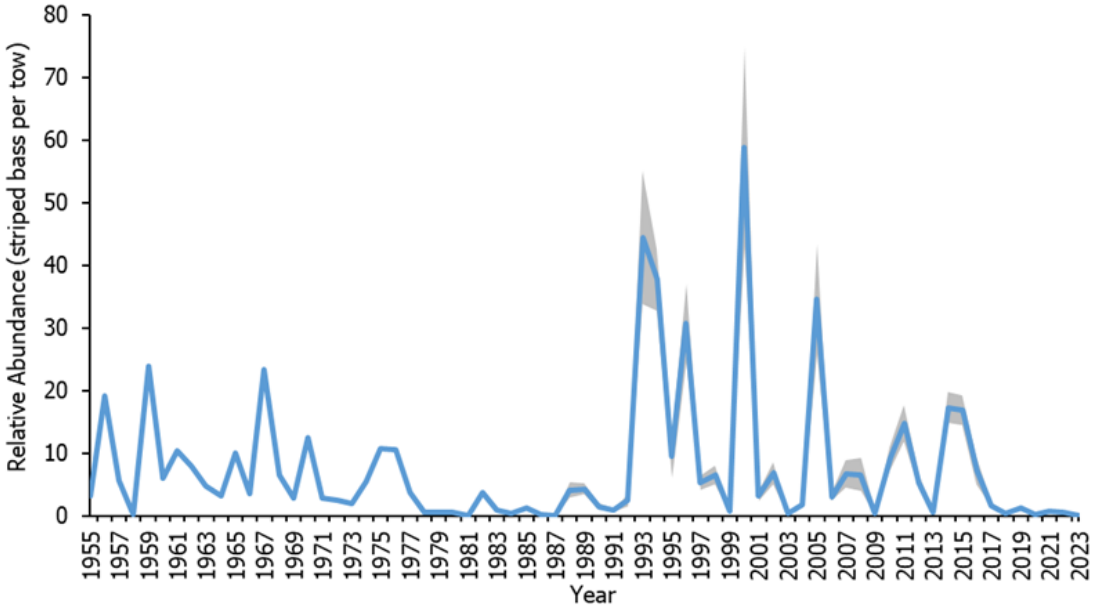


Figure 16. Juvenile abundance index (JAI) of Albemarle-Roanoke striped bass from the DMF juvenile trawl survey, western Albemarle Sound, NC, 1955–2023.

Striped bass are generally thought to exhibit low levels of straying to non-natal rivers and Roanoke River striped bass are suspected to have high spawning site fidelity (Callihan et al. 2015); though, potential straying to non-natal systems has been suggested for other stocks (Secor et al. 2020). In addition, striped bass have been documented to reside in non-natal estuaries in Maine and New Jersey, including moving upriver during expected spawning seasons suggesting an attempt to reproduce (Grothues et al. 2009), and Roanoke River striped bass have been documented in river systems in other states outside of the spawning season (Callihan et al. 2015). This suggests it would not be unlikely for A-R stock striped bass to reside in the adjacent Tar-Pamlico and Neuse rivers and for some small portion of the stock to make spawning runs in these systems.

There has been little change in abundance or the age structure of the Tar-Pamlico and Neuse rivers striped bass stocks since implementation of the harvest and gill net closures. It appears abundance of striped bass in the lower Tar-Pamlico and Neuse rivers is highly influenced by year-class strength of the A-R stock. Abundance on the spawning grounds, while highly variable, is generally more stable, likely due to stocking. Matrix model results suggested stocking more fish provides the most benefit to the stocks (Figure 15; stocking scenario 5). During the closure period

the goal has been to stock 100,000 phase-II fish per river system, though this goal has not always been met (Table 10). Recently (beginning in 2023) stocking resources have shifted toward maintaining and restoring the A-R stock. Given hatchery and resource constraints it is unlikely the number of fish stocked in the Tar-Pamlico and Neuse rivers can be increased by any significant amount, and without increased stocking, the populations may not be able to grow beyond current levels, though recovery and expansion of the A-R stock is likely to increase abundance of striped bass in the Tar-Pamlico and Neuse rivers.

Table 10. Number of Phase-I and Phase II size striped bass stocked in the Tar-Pamlico and Neuse rivers, 2010–2024.

	Tar-Pamlico River			Neuse River	
Year-Class	Phase-I	Phase-II	Year-Class	Phase-I	Phase-II
2010	0	114,012	2010	0	107,142
2011	0	107,767	2011	0	102,089
2012	0	45,667	2012	50,180	91,985
2013	257,404	123,416	2013	181,327	113,784
2014	138,889	92,727	2014	79,864	78,866
2015	0	52,922	2015	0	109,107
2016	234,718	121,190	2016	80,910	134,559
2017	0	101,987	2017	0	14,203
2018	0	120,668	2018	96,900	86,556
2019	0	97,920	2019	0	85,694
2020	0	90,614	2020	0	96,933
2021	0	23,082	2021	31,208	80,122
2022	175,633	55,465	2022	91,569	33,560
2023	116,989	66,165	2023	62,885	71,527
2024	0	0	2024	0	0

Based on historical stocking efforts for striped bass, population abundance can increase dramatically from just a few individuals, provided adequate environmental conditions exist. In 1879, 132 young striped bass from the Navesink River, New Jersey, were released into the Carquinez Strait, the tidal estuary where the Sacramento and San Joaquin rivers drain into San Francisco Bay. A second batch of 300 young fish from the Shrewsbury River, New Jersey, were introduced in 1882. Commercial harvest started in the early 1880s, and by 1900 exceeded 99,208 lb. (450,000 kg) annually. The greatest catch occurred in 1903 when over 1,984,160 lb. (900,000 kg) were harvested (Craig 1928).

The striped bass population in the southern Gulf of St. Lawrence, Canada, declined to less than 5,000 spawners in the late 1990s which led to the closure of the commercial fishery in 1996 and recreational and indigenous fisheries in 2000 (DFO 2023). Between 2002 and 2009 a stocking program stocked 6,475,000 striped bass fry and 6,321 striped bass ages 0–6 (Robitaille, et al. 2011) into the systems. The striped bass population subsequently increased to an estimated 900,000 spawners by 2017 (DFO 2023).

Over the past several decades, few larval and juvenile striped bass have been collected from CSMA systems (Marshall 1976; Hawkins 1980; Nelson and Little 1991; Burdick and Hightower 2006; Barwick et al. 2008; Smith and Rulifson 2015; and Buckley et al. 2019, NCDMF 2024).

Several factors have been suggested as potentially affecting natural recruitment in the Tar-Pamlico and Neuse rivers, including spawning stock abundance, truncated age structure (Bradley et al. 2018; Rachels and Ricks 2018; Buckley et al. 2019), and egg abundance. Even in the absence of most fishing mortality, abundance has not increased, and the age structure has not expanded suggesting biological and/or environmental factors are preventing self-sustaining populations and that additional management changes aimed at achieving sustainable striped bass populations in these rivers are unlikely to be successful unless significant environmental improvements occur.

One possible confounding factor is that eggs produced by Tar-Pamlico and Neuse rivers broodstock are very small, heavy (dense) eggs, which are more likely to sink than float (Kowalchyk 2020). Egg densities have been shown to be influenced by both genetic and environmental factors (Kowalchyk 2020). Spawning grounds in these river systems are predominantly shallow (between 0.2 and 1.0 meters), so the potential for heavy eggs to contact bottom sediment and die is increased. Additionally, because many of the streams and creeks in these systems have been altered by channelization, rapid flow increases can occur shortly after a rainfall event begins followed by a rapid return to base conditions after the end of the rainfall event potentially impacting striped bass spawning success (NCDWQ 2009; NCDWQ 2010).

Flows during the spring striped bass spawning season are an important factor affecting successful striped bass natural reproduction; however, unlike on the Roanoke River, there are no agreements with the U.S. Army Corps of Engineers (USACE) to maintain adequate flows for striped bass spawning in the Tar-Pamlico or Neuse rivers. The USACE is consulted weekly regarding water releases in the Neuse River from Falls Lake in Raleigh, but due to the watershed and storage capabilities, it is not possible to manipulate flows in the Neuse River like it is in the Roanoke River. The USACE, in cooperation with DMF and WRC staff, is currently studying flows in the Neuse River in an attempt to identify conditions that could be beneficial for striped bass spawning. Flows on the Tar-Pamlico River are based on pulse rainfall events. The ability to manipulate releases, while limited, may become important as we get more information on flows in these systems. If flows are too low during the spawning period, heavy eggs may be more likely to contact the bottom and die before hatching successfully.

CONCLUSIONS

Based on data from DMF and WRC fishery-independent and dependent sampling programs which were reviewed through 2024, the striped bass populations in the Tar-Pamlico and Neuse rivers are currently not self-sustaining. However, it is worth noting again that striped bass have been shown to quickly rebound even at low population levels given favorable environmental conditions. Evaluation of the harvest and gill net closures has shown these measures to be ineffective at promoting natural recruitment, increasing adult abundance, or expanding the age structure and increasing the number of older, larger (age-10+) striped bass through year six of implementation. Even if these closures had resulted in a measurable effect on striped bass populations, it would be impossible to attribute the effect to either the harvest or gill net closures individually because they occurred concurrently. Factors other than fishing mortality and inadequate spawner stock abundance are preventing successful reproduction and self-sustaining populations of the Tar-Pamlico and Neuse rivers striped bass stocks. Environmental factors and declines in the A-R stock have contributed to reduced striped bass abundance in the Tar-Pamlico and Neuse rivers. Additional management aimed at trying to achieve sustainability of these stocks is unlikely to be effective unless significant environmental improvements occur.

Acoustic telemetry and PBT data suggest there are three groups of striped bass in the Tar-Pamlico and Neuse rivers. Most of the fish are hatchery reared stocked fish, followed by wild fish originating from the A-R (see Appendix 3), with a very small portion of fish originating from the

spawning grounds on the Tar-Pamlico or Neuse rivers. Acoustic data revealed that striped bass stocked in the Tar-Pamlico and Neuse rivers do not leave the system where they were released and fish can be found throughout the entire system; however, a portion of adult wild fish were shown to reside within the lower portions of both the Tar-Pamlico and Neuse rivers and return annually to the Roanoke River spawning grounds in spring (April\May).

Based on Amendment 2 adaptive management, if analysis indicates biological and/or environmental factors prevent a self-sustaining population, then alternate management strategies will be developed that provide protection for and access to the resource.

ADAPTIVE MANAGEMENT NEXT STEPS

In accordance with the Amendment 2 adaptive management framework the DMF and WRC will develop harvest management measures that allowing access to and protection for the resource. Harvest will be allowed, but harvest will be restricted to levels low enough that mature striped bass abundance in the rivers is maintained so in the event of favorable environmental conditions, natural reproduction could occur. Confounding this management strategy, however, is the fact the A-R stock has had very poor spawning success since 2017 and is currently under a harvest moratorium. The harvest management strategy will focus harvest on stocked fish in the Tar-Pamlico and Neuse rivers but limit harvest of A-R striped bass to the greatest extent possible.

REFERENCES

Barwick, R. D., J. M. Homan, K. R. Rundle, W. J. Collart, and C. D. Thomas. 2008. An assessment of striped bass spawning stocks and contribution by stocked juveniles in two North Carolina coastal rivers. North Carolina Wildlife Resources Commission, Federal Aid in Fish Restoration, Project F-22. Final Report, Raleigh.

Bayless, J.D., and W.B. Smith. 1962. Survey and classification of the Neuse River and tributaries, North Carolina. Final Report, Federal Aid in Fish Restoration Job IA, Project F-14-R. North Carolina Wildlife Resources Commission, Raleigh.

Bradley, C. E., J. A. Rice, D. D. Aday, J. E. Hightower, J. Rock, and K. L. Lincoln. 2018. Juvenile and adult Striped Bass mortality and distribution in an unrecovered coastal population. North American Journal of Fisheries Management 38:104–119.

Buckley, C., K. Lincoln, K. Rachels, and B. Ricks. 2019. Striped bass ichthyoplankton surveys in the Neuse River, 2016–2017. Final Report, Project F-108, Federal Aid in Sport Fish Restoration. North Carolina Wildlife Resources Commission, Raleigh, North Carolina.

Burdick, M., and J.E. Hightower. 2006. Distribution of spawning activity by anadromous fishes in an Atlantic slope drainage after removal of a low-head dam. Transactions of the American Fisheries Society 135:1290–1300.

Callihan, J. 2012. Summary maps of North Carolina tagging programs. NCDMF Marine Fisheries Fellowship, 2011–2012. North Carolina Division of Marine Fisheries, Morehead City, North Carolina.

Callihan, J.L., C.H. Godwin, and J.A. Buckel. 2014. Effect of demography on spatial distribution: movement patterns of Albemarle Sound-Roanoke River striped bass (*Morone saxatilis*) in relation to their stock recovery. Fisheries Bulletin 112(2-3):131–143.

Callihan, J.L., J.E. Harris, and J.E. Hightower. 2015. Coastal migration and homing of Roanoke River striped bass. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science. 7:301-315.

Craig, J.A. 1928. The striped bass supply of California. California Fish and Game. 14: 265-272.

Cushman, B., T. O'Donnell, and D. Farrae. 2018. North Carolina Wildlife Resources Commission 2017 striped bass genotyping and parentage analyses. South Carolina Department of Natural Resources. 2017 Final Report.

Denson, M.R., K. Brenkert, W.E. Jenkins, and T.L. Darden. 2012. Assessing red drum juvenile stocking in a South Carolina estuary using genetic identification. North American Journal of Fisheries Management 32:32– 43.

Doll and D. Farrae. 2023. North Carolina Wildlife Resources Commission 2022 striped bass genotyping and parentage analyses. South Carolina Department of Natural Resources. 2022 Final Report.

Doll and D. Farrae. 2024. North Carolina Wildlife Resources Commission 2023 striped bass genotyping and parentage analyses. South Carolina Department of Natural Resources. 2023 Final Report.

Farrae, D. 2019. North Carolina Wildlife Resources Commission 2018 striped bass genotyping and parentage analyses. South Carolina Department of Natural Resources. 2018 Final Report.

Farrae, D., and T. Darden. 2018. North Carolina Division of Marine Fisheries 2017 Striped Bass Genotyping Report. South Carolina Department of Natural Resources. Charleston, SC. 9 p.

Fisheries and Ocean Canada (DFO). 2023. Update of spawner abundance and biological characteristics of Striped Bass (Morone saxatilis) in the southern Gulf of St. Lawrence to 2022. DFO Canadian Science Advisory Secretariat Science Response. 2023/004.

Grothues, T.M., K.W. Able, J. Carter, and T.W. Arienti. 2009. Migration patterns of striped bass through nonnatal estuaries of the U.S. Atlantic coast. American Fisheries Society Symposium. 69:135-150.

Harris, S., and D. Farrae. 2020. North Carolina Wildlife Resources Commission 2019 striped bass genotyping and parentage analyses. South Carolina Department of Natural Resources. 2019 Final Report.

Harris, S., and D. Farrae. 2021. North Carolina Wildlife Resources Commission 2020 striped bass genotyping and parentage analyses. South Carolina Department of Natural Resources. 2020 Final Report.

Harris, S., and D. Farrae. 2022. North Carolina Wildlife Resources Commission 2019 striped bass genotyping and parentage analyses. South Carolina Department of Natural Resources. 2021 Final Report.

Hawkins, J. H. 1980. Investigations of Anadromous Fishes of the Neuse River, North Carolina. Final Report for Project AFCS-13. N.C. Department of Natural Resources and Community Development, Division of Marine Fisheries, 111 p.

Kowalchyk, C. 2020. Influence of Genetic and Environmental Adaptation on Striped bass (*Morone saxatilis*) Egg Characteristics. Master's Thesis, North Carolina University, Raleigh, NC. 59 pp.

Marshall, M.D. 1976. Anadromous Fisheries Research Program: Tar River, Pamlico River, and northern Pamlico Sound, North Carolina. Completion Report for Project AFCS-10. N.C. Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, N.C.

Mathes, T., Y. Li, T. Teears, and L.M. Lee (editors). 2020. Central Southern Management Area striped bass stocks in North Carolina, 2020. North Carolina Division of Marine Fisheries, NCDMF SAP-SAR-2020-02, Morehead City, North Carolina. 161 p. + appendices

NCDMF (North Carolina Division of Marine Fisheries). 2004. North Carolina Fishery Management Plan. Estuarine Striped Bass. By the North Carolina Division of Marine Fisheries and the North Carolina Wildlife Resources Commission. North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries. Morehead City, NC. 375 p.

NCDMF. 2013. Amendment 1 to the North Carolina estuarine striped bass fishery management plan. By the North Carolina Division of Marine Fisheries and the North Carolina Wildlife Resources Commission. North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries. Morehead City, NC. 826 p.

NCDMF. 2019. Supplement A to Amendment 1 to the N.C. Estuarine Striped Bass Fishery Management Plan. Implementation of a Striped Bass No-Possession Limit in the Internal Coastal and Joint Fishing Waters of the Central Southern Management Area. North Carolina Department of Environmental Quality. Division of Marine Fisheries. Morehead City, NC. 37 p.

NCDMF. 2022. North Carolina Estuarine Striped Bass Fishery Management Plan, Amendment 2. North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 149 p.

NCDMF. 2024. Fishery Management Plan Update Estuarine Striped Bass. North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 50 p.

NCDWQ (North Carolina Division of Water Quality). 2009. Neuse River Basinwide Water Quality Plan. North Carolina Department of Environmental Quality, Division of Water Quality, Raleigh, North Carolina.

NCDWQ 2010. Tar-Pamlico River Basinwide Water Quality Management Plan. North Carolina Department of Environmental Quality, Division of Water Quality, Raleigh, North Carolina.

Nelson, K.L., and A.E. Little. 1991. Early life history characteristics of Striped Bass in the Tar and Neuse rivers, North Carolina. Final Report, Project F-22-11, Federal Aid in Sport Fish Restoration. North Carolina Wildlife Resources Commission, Raleigh, North Carolina.

O'Donnell T., and D. Farrae. 2017. South Carolina Department of Natural Resources. North Carolina Wildlife Resources Commission 2016 Striped Bass Genotyping and Parentage Analyses 2016 Final Report.

Rachels, K.T., and B.R. Ricks. 2018. Exploring causal factors of spawning stock mortality in a riverine striped bass population. Marine and Coastal Fisheries 10:424–434.

Reading, B.J., J. Fischer, and C. Kowalchyk 2020. Egg yolk, egg buoyancy, and striped bass recruitment: A common link? Semi-Annual Performance Report, CRFL Grant 2017-F-046. North Carolina Department of Environmental Quality, Division of Marine Fisheries. Morehead City, North Carolina. 60 p.

Robitaille, J., M. Bérubé, A. Gosselin, M. Baril, J. Beauchamp, J. Boucher, S. Dionne, M. Legault, Y. Mailhot, B. Ouellet, P. Sirois, S. Tremblay G. Trencia, G. Verreault and D. Villeneuve. 2011. Recovery Strategy for the Striped Bass (Morone saxatilis), St. Lawrence Estuary Population, Canada. Species at Risk Act Recovery Strategy Series. Ottawa : Fisheries and Oceans Canada. xi + 51 p.

Rock, J., D. Zapf, C. Wilson, and D. Mumford. 2016. Improving estimates of striped bass discards in the Central Southern Management Area (CSMA) through a recreation access site survey and an expanded observer program. Final Report, CRFL Grant 2011-F-001. North Carolina Department of Environmental Quality, Division of Marine Fisheries. Morehead City, North Carolina. 76 p.

Rulifson, R.A., M.T. Huish, and R.W.W Thoesen. 1982. Status of anadromous fisheries in southeast U.S. estuaries. Pages 413–425 In: V. Kennedy (editor), Estuarine comparisons. Academic Press Inc., New York, NY.

Appendix 1

Motions
N.C. Marine Fisheries Commission Emergency Meeting
March 13, 2019

Motion by Cameron Boltes to approve the agenda. Second by Chuck Laughridge.
Motion carries unanimously.

Motion by Cameron Boltes to direct the director of the Division of Marine Fisheries to issue a proclamation, effective in conjunction with the Supplement, that prohibits the use of gill nets upstream of the ferry lines, dock to dock from the Bayview to Aurora Ferry on the Pamlico River and dock to dock from the Minnesott Beach to Cherry Branch Ferry on the Neuse River, within the Central Southern Management Area. Second by Pete Kornegay.
Motion carries 5-4.

Motion by Chuck Laughridge to ask the N.C. Wildlife Resources Commission to adopt concurrent regulations for recreational harvest in Supplement A in joint coastal waters. Second by Pete Kornegay.
Motion carries with no opposition.

Appendix 2

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
STEPHEN W. MURPHEY
Director

March 4, 2019

Dear Chairman Bizzell,

At the February 2019 Marine Fisheries Commission (MFC) meeting the MFC passed Supplement A to Amendment 1 of the Estuarine Striped Bass Fishery Management Plan. As approved, Supplement A specifies a no-possession limit, essentially a closed season for striped bass, in the Central Southern Management Area (CSMA). There are, however, complicating jurisdictional issues between MFC and the Wildlife Resources Commission (WRC).

Last week, Department of Environmental Quality (DEQ) and Division of Marines Fisheries (DMF) staff met with the Director and staff of the WRC. The WRC Director indicated that because of the joint jurisdictional language in N.C.G.S. §113-132 that the Supplement A measure would be inconsistent with existing WRC recreational limits in joint waters of the CSMA. After consulting with WRC and with legal counsel for both Commissions and DEQ it was decided that the best approach forward would be to convene a special meeting of the MFC to formally request that the WRC implement management measures consistent with Supplement A for the joint coastal waters of the CSMA to harmoniously resolve the jurisdictional conflict. I think this could be done over the phone with at least one listening station and it would be up to you to decide if any additional public comment would be warranted.

If a special meeting is not called, then it is important to have this on the May agenda for the MFC meeting. The recreational season closes April 30 by rule (15A NCAC 03M .0202) so if we do hold a special meeting it would only buy a brief period with the no-possession limit was in place for the recreational spring season. However, it is important to address it to implement the no-possession limit in the fall recreational fishery. The next regularly scheduled meeting of the WRC is in April.

Considering this, I plan to issue proclamations this week to implement the following:

1. Close the remainder of the recreational season on striped bass in the coastal waters of the CSMA. This closes the season year-round.
2. Allowing the joint coastal water recreational season to remain open with current catch limits until the MFC can request from concurrence from the WRC and they concur.
3. Implementing in the coastal and joint coastal waters 36-inch tie-down and 50-yard distance from shore regulations in the western Pamlico Sound including the Tar-Pamlico and Neuse rivers and their tributaries. This is required under the management measures of the FMP whenever the striped bass season is closed. The MFC, in the adoption of the Supplement confirmed that action.

4. The CSMA commercial season which opens by proclamation will not be opened due to the adoption of Supplement A.

This will present a situation where our coastal waters include stronger recreational conservation measures for striped bass than the joint coastal waters until this consistency issue is resolved. It is likely the recreational season for spring 2019 will close before this can happen (April 30). Because WRC does not regulate any commercial gear, there is not an inconsistency with existing rule to prevent our implementing the commercial no-possession and gill net measures in the joint coastal waters as well.
Finally, after the passage of Supplement A, the MFC approved a motion to "ask" the DMF Director to issue a proclamation, effective in conjunction with the supplement, that restricts the use of gill nets that interact with striped bass upstream of the ferry lines and requires attendance of gill nets that interact with striped bass upstream of the tie-down lines. I have received dozens of emails supporting this measure both in form letters and in original letters.

While I respect the concerns of both the public and the MFC, after careful consideration I have concluded that such a measure is not supported by the scientific data that support gill nets as the primary or even the most significant source of discard mortality. As you are aware, recreational effort will not be controlled under the Supplement and catch and release will be a source of discard mortality as well. The motion to remove nets was also not a part of the supplement measure approved by the DEQ Secretary. The DMF Director's proclamation authority acts within the bounds of the FMP.
Therefore, I respectfully decline to act on this request to issue a proclamation further restricting gill nets beyond those measures outlined in Supplement A. I would, however, like to provide some supporting information underlying the basis for this decision.

SUPPORTING INFORMATION FOR DECISION
The journal article by Rachels and Ricks (2018), explores causal factors of spawning stock mortality sources in the N.C. riverine striped bass fishery, and notes that their inability to include recreational angling as an exploitation factor reduces the amount of variability in spawning stock mortality that can be accounted for in their study. The authors go on to include that it is likely that the inclusion of recreational harvest and discard would perform comparably to the results of the commercial harvest in their modeling.

In Supplement A, the DMF used the CSMA creel survey data, (not a part of MRIP), to determine recreational harvest, discards and discard mortality. From 2012-2017 all but the last two years' total removals of striped bass (harvest + dead discards) were nearly equal between the recreational and commercial sector. The increase in recreational discard mortality in the last two years is due to what appears to be a successful natural spawning event in the rivers during 2014 and possibly 2015.

Moreover, the following is a list of gill net regulations that are either already in place or will be implemented by proclamation in the areas upstream of the tie down lines. The purpose of these regulations is to reduce regulatory discards of striped bass and important estuarine finfish and protected species. On-board observer data and empirical *in-situ* field studies by the DMF has shown these large mesh regulations have decreased striped bass discards significantly

(potentially up to 75%) compared to pre-2008 estimates of striped bass discards before the tie-downs and distance from shore regulations were implemented. Striped bass gill-net discards mortality estimates for 2012-2017 in the Tar-Pamlico and Neuse rivers combined, range from 507 to 986 fish annually.

Regulations for gill nets with stretched mesh of 5 inches and greater:

- It is unlawful to fail to equip gill nets with tie-downs spaced no farther apart than 10 yards to restrict the vertical distance between the top and bottom lines to 36 inches or less. If the vertical height of the net (distance between the top and bottom line) is 36 inches or less, no tie-downs are required. Nets must be set to fish on the bottom and not exceed a vertical height of 36 inches. (Tie- down regulation see map)
- It is unlawful for any portion of the net to be within 50 yards of any point on shore when set or deployed in the following river areas: (distance from shore regulation - see map)

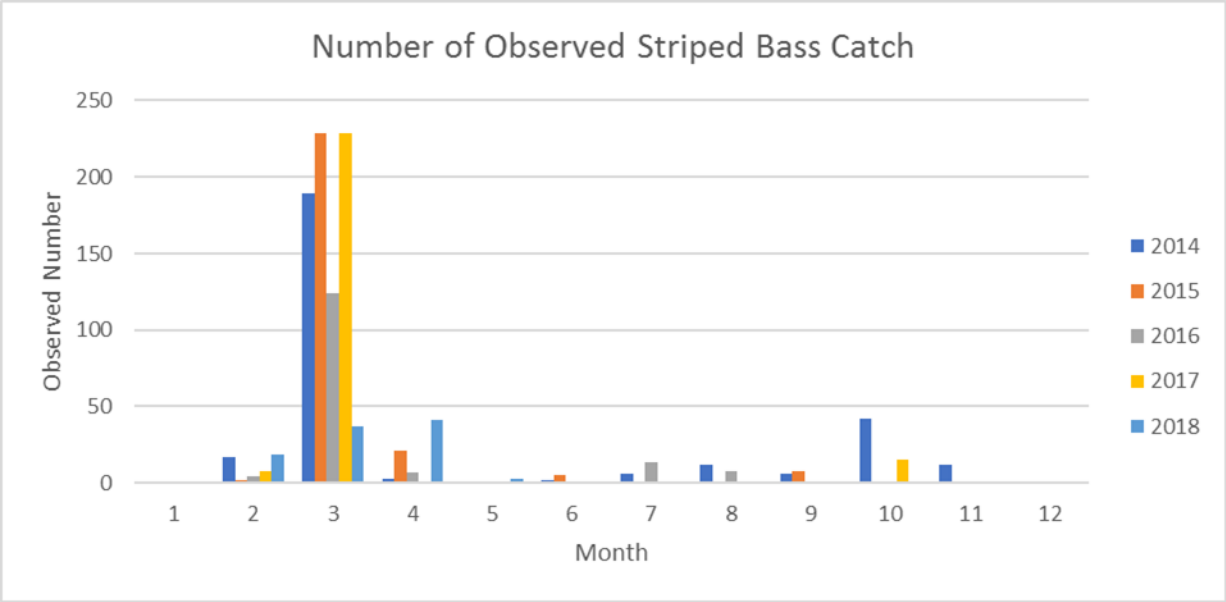
The previous years estuarine striped bass commercial seasons in the CSMA have been as follows:

Year	Day Open	Day Closed*
2014	03/01/14	03/20/14
2015	03/01/15	03/18/15
2016	03/01/16	03/21/16
2017	03/01/17	04/03/17
2018	03/01/18	04/30/18

*Closings before 4/30 of a year are early closures due to the 25,000 lb. quota being met or exceeded.

In the figure below, interactions with striped bass drop significantly in the large mesh gill net fishery above the tie-down line following the closure of the commercial striped bass season. Remember that the tie-down requirement and distance from shore requirements are not in place when the commercial season is open. With a no possession limit under Supplement A, the commercial season will not open and tie-down and distance from shore requirements will be in effect year-round. Gill net bycatch is anticipated to be more reflective of the May-February figures.

Figure 1. All striped bass (striped bass and hybrid bass) observed during Program 466 trips on the Pamlico, Neuse, Trent, and Pungo rivers. Data are from the previous 5-year period, 2014 to 2018. These data were selected to mirror the area that would be affected by the Proclamation requested at the February 2019 MFC meeting.



Regulations for gill nets with stretched mesh of less than 5 inches:

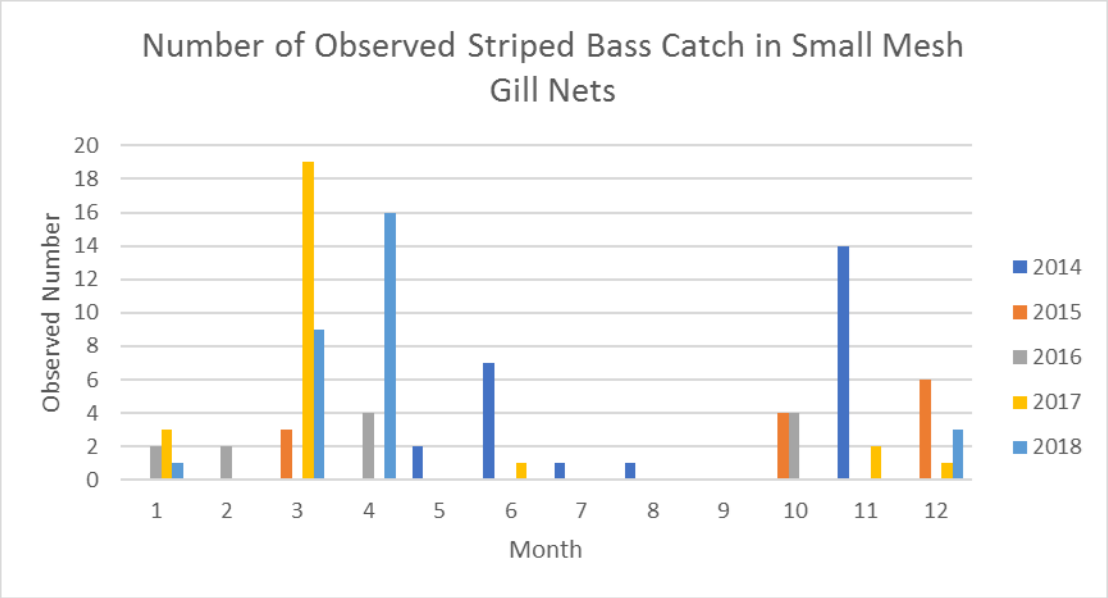
- Attendance of small mesh gill nets (<5 ISM) is required year-round in the following areas based on NCMFC rule 15A NCAC 3R.0112 (a):
    - Upper portions of the Pamlico, Pungo, Neuse, and Trent rivers
    - Within 200 yards of shore in the lower portions of the Pamlico, Pungo, Neuse, and Trent rivers

Regulations in effect statewide, large and small mesh gill nets:

- All unattended gill nets ≥ 5 ISM must be at least 10 feet from shore from June through November (NCDMF 2008).
- Gill nets with a mesh size ≥ 5 ISM and <5 ½ ISM is prohibited from April 15 through December 15 (NCDMF 2005).
- 2,000 yard/vessel limit on gill nets ≥ 5 ISM (NCDMF 2005).
- Gill nets with a mesh size < 5 ISM must be attended in all primary and secondary nursery areas and no-trawl areas described in NCMFC Rule 15A NCAC 3R.0106(2), (4), (5), (7), (8), (10), (11), and (12) from May 1 through November 30 (NCDMF 2001).
- It is unlawful to set gill nets in joint waters from midnight on Friday to midnight on Sunday each week, except in Albemarle Sound and Currituck Sound north of the Highway 158 Wright Memorial Bridge (NCDMF 2012).
- The use of gill nets > 6 ½ ISM stretch mesh is prohibited in all waters.
- It is unlawful to use gill nets with a mesh size < 2 ½ inches ISM stretch mesh.

In the figure below, interactions with striped bass are more mixed in the small mesh gill net fishery above the tie-down line. This data is less robust due to lower observation numbers in the small mesh fishery and these data do not indicate whether fish were alive or dead. However, there are attendance requirements in place for small mesh nets above the tie-down line which are put in place to reduce dead discards in the small mesh fishery as outlined above (see map – attachment 1).

Figure 3. Data included are all striped bass (striped bass and hybrid bass) observed during Program 466 trips on the Pamlico, Neuse, Trent, and Pungo rivers. Data are from the previous 5-year period, 2014 to 2018 and are for small mesh gill nets. These data were selected to mirror the area that would be affected by the Proclamation requested at the most recent MFC meeting.



In conclusion, the implementation of gill net restrictions is best served through the continued development of the Estuarine Striped Bass Fishery Management Plan. The Supplement A measures will certainly not stop discards and dead discards from occurring in the commercial or recreational fishery. However, the DMF's data supports that Supplement A will reduce the overall number of fish being removed from the stock, thereby providing additional and more conservative protection to the two successful spawning year classes moving through the area of the CSMA. Observer coverage will continue, and we will try to increase observer coverage as much as is feasible during 2019. If significant spikes of discards are observed, I certainly reserve the right to consider additional measures if warranted.

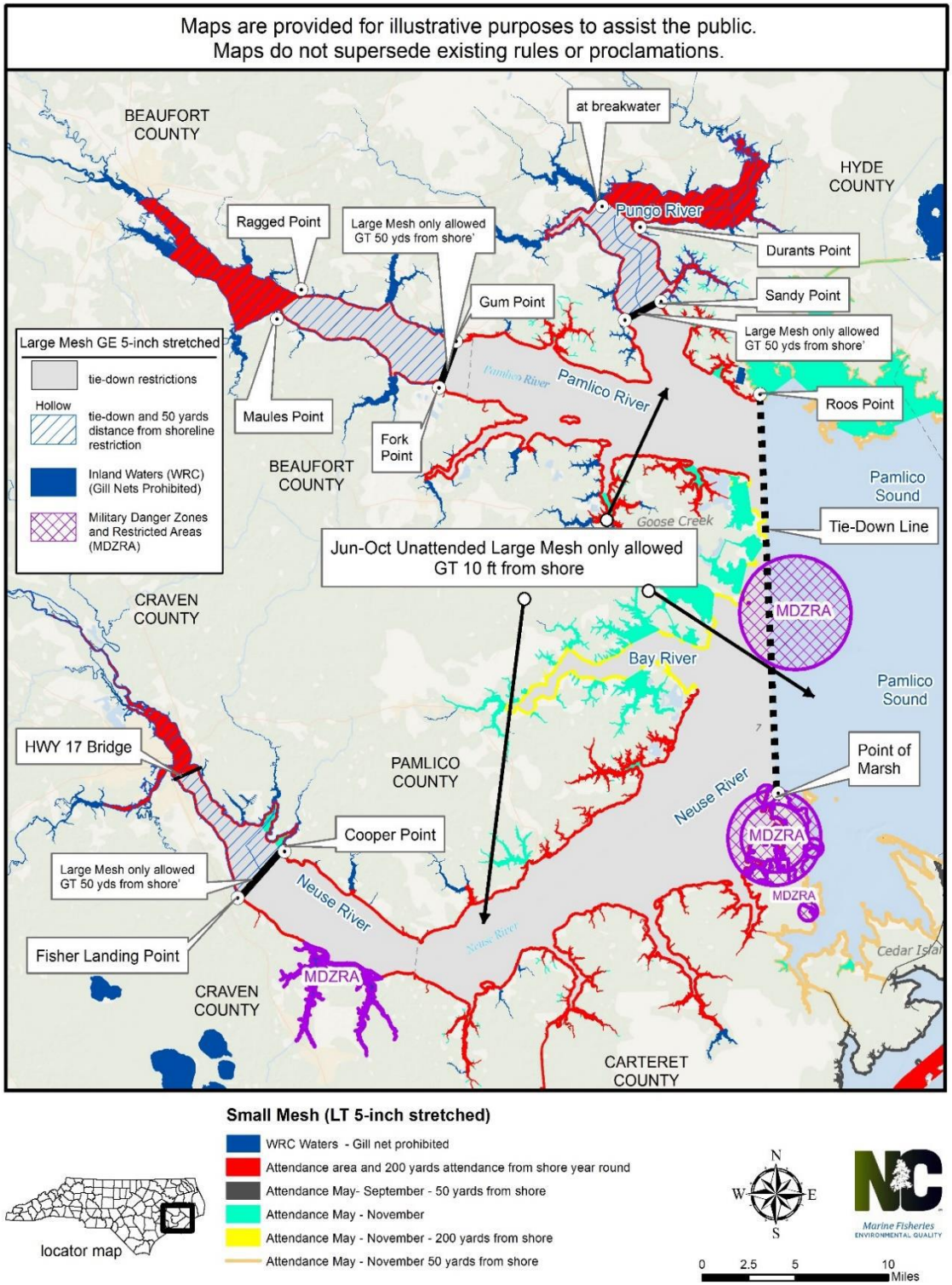
Sincerely,
Steve Murphey, Director

NC Division of Marine Fisheries

Cc: Marine Fisheries Commission
John Nicholson
Shawn Maier
John Batherson
Gordon Myers

Attachment 1

Gill-net regulation map for various gill-net types and seasons in the Central Southern Management



Appendix 3

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
KATHY B. RAWLS
Director

November 1, 2022

MEMORANDUM

TO: North Carolina Marine Fisheries Commission

FROM: Todd Mathes, Striped Bass Fishery Management Plan Co-Lead

SUBJECT: Acoustic Tagging Striped Bass in the Tar-Pamlico and Neuse Rivers Summary of Results

Goal
To deploy acoustic tags in striped bass from the 2014 and 2015 year-classes captured in the Tar-Pamlico and Neuse rivers to determine movement patterns during the summer, fall, and winter months and spring spawning migrations.

Background
Parentage based tagging (PBT) of striped bass stocked in the Central Southern Management Area (CSMA) began in 2010. Genetic stock identification of striped bass captured in the Central Southern Management area since 2010 indicates the stocks are near 100% hatchery origin, suggesting there has been minimal successful natural reproduction in these systems (NCDMF 2019). However, more recent PBT analysis of striped bass collected in 2017 shows there may have been successful ‘‘wild’’ striped bass spawning events in 2014 and 2015 in the Tar-Pamlico and Neuse rivers (Farrae and Darden 2018). Results of PBT analysis from fish captured in 2017 revealed a decrease in the contribution of hatchery fish found in these rivers. Striped bass <22 inches total length (TL) identified by PBT analysis as non-hatchery or ‘‘wild’’ fish collected in 2017 are potentially the result of successful natural spawning events in the Tar-Pamlico and Neuse rivers. Otolith ages of the non-hatchery fish <22 inches TL indicate these fish collected in 2017 are all from the 2014 and 2015 year classes (Farrae and Darden 2018; NCDMF 2019).

Based on this information, the North Carolina Marine Fisheries Commission (MFC) approved Supplement A to Amendment 1 to the N.C. Estuarine Striped Bass Fishery Management Plan in February 2019 implementing a no-possession limit for striped bass in the Internal Coastal and Joint fishing waters of the CSMA. In March 2019, the North Carolina Wildlife Resources Commission (NCWRC) passed a concurrent measure prohibiting the possession of striped bass in Inland and Joint Fishing Waters. Supplement A to Amendment 1 was adopted by the MFC to protect these two important year classes of striped bass while Amendment 2 to the N.C. Estuarine Striped Bass Fishery Management Plan was being developed.

Though a portion of striped bass collected from this period in the CSMA are classified as non-hatchery produced, it is not possible to identify the river system where these ‘‘wild’’ striped bass were spawned. Conventional tag return data suggests density-dependent movement occurs from Albemarle-Roanoke

stock striped bass moving into the CSMA rivers (Callihan et al. 2014). Juvenile sampling for striped bass in the Albemarle Sound indicated above average abundance of juveniles for the 2014 and 2015 year-classes (Figure 1), so it is possible the increased abundance of ‘‘wild’’ striped bass from the 2014 and 2015 year classes observed in the Tar-Pamlico and Neuse Rivers are actually related to an expansion from the Albemarle-Roanoke stock for these two year-classes. If these fish are from the Albemarle-Roanoke stock, they will likely not make spawning runs in the Tar-Pamlico and Neuse rivers. Albemarle-Roanoke stock striped bass exhibit size dependent migrations to the ocean and exhibit natal homing to the Roanoke River (Callihan et al. 2015) whereas CSMA striped bass stocks are considered non-migratory and do not exhibit the anadromous behavior of the Albemarle-Roanoke stock. Alternatively, Rock et al. (2018) noted that some larger acoustic tagged striped bass in the Tar-Pamlico and Neuse rivers later migrated to the ocean and at least one was detected in the Chowan River and Albemarle Sound providing additional evidence for overlap between the Albemarle-Roanoke and CSMA stocks. It is also possible the presence of the 2014 and 2015 cohorts were the result of spawning success from one of either the Tar-Pamlico or Neuse rivers, and not in both systems. If this is the case, it is critical to determine the river system these fish were spawned in and understand movement patterns between the Tar-Pamlico and Neuse rivers to guide future management should natural reproduction continue to occur.

Understanding the movement and migration patterns of these two year classes of striped bass is important in gauging the success of Supplement A and directing future management. Striped bass from these year classes were tagged with acoustic transmitters following the methods of Rock et al. (2018) and movements within the Tar-Pamlico and Neuse rivers are tracked using existing acoustic receiver arrays in place in these rivers. In addition, any movement of these fish in the Albemarle Sound and Roanoke River is detected from existing acoustic arrays in that system. If these striped bass were naturally produced in the CSMA rivers this acoustic study would collect initial migration data for these cohorts of striped bass from these rivers. If these striped bass were naturally produced in the Albemarle-Roanoke, additional data about movement patterns of striped bass between the CSMA and Albemarle Sound will provide valuable information to inform future assessment and management of this stock.

Because there is a no-possession limit for striped bass in the CSMA, fishing mortality on tagged striped bass should be minimized allowing for maximum rates of detection. Tagging fish with Vemco V16 (10-year tags) allows for long term monitoring of movement patterns and potentially multiple spawning runs.

Objectives

The objectives of this project are:

1. Insert acoustic tags, as well as conventional tags, into striped bass from the 2014 and 2015 year classes captured in the Tar-Pamlico and Neuse rivers.
2. Determine if these striped bass make spawning runs in the Tar-Pamlico and Neuse rivers.
3. Determine if these striped bass move between the CSMA and ASMA and RRMA.
4. Determine if these striped bass migrate to the ocean.

Methods

Striped bass were collected using electrofishing gear in the Tar-Pamlico and Neuse rivers. Effort was made to capture fish throughout the river and to deploy tags across multiple tagging days. Only fish at lengths that would be in the 2014 and 2015 year classes (ages 4 and 5) were tagged (Table 1). All striped bass were tagged with Vemco V16 (10-year tags) acoustic tags following the methods of Rock et al. (2018), along with a PIT tag and an internal anchor tag. All acoustic tagged fish were measured to the nearest millimeter (FL and TL), weighed, and a fin clip was collected to determine hatchery origin. When possible, sex was recorded. Acoustic tags were deployed during the winter when low water temperatures

provided the greatest chance of survival and provided time for the fish to recover prior to the spawning period (March–May).

Receiver downloads in RRMA, ASMA, and CSMA rivers occurred quarterly, and this schedule has been maintained to collect additional detections.

Results

All acoustic tagging occurred in the Tar-Pamlico and Neuse rivers. Between December 2019 and January 2020, Division staff tagged 50 striped bass (25 from the Tar-Pamlico River and 25 from the Neuse River) with acoustic, PIT, and conventional tags. In addition, 48 striped bass (23 from the Tar-Pamlico River and 25 from the Neuse River) were collected and sacrificed in conjunction with the acoustic tagged fish to provide ages of ''wild'' striped bass. Since ages derived from PBT analysis can only be achieved with fish of hatchery origin, there was a need to sample a subset of fish to determine ages for ''wild'' fish from structures (otoliths). Results from length and age data indicate success in targeting fish from the 2014 and 2015 year classes. Acoustic tagged striped bass varied in size from 20.8 to 25.6 inches TL, with a mean of 22.7 inches TL (Table 2). Striped bass that were determined to be ''wild'' varied in size from 20.8 to 25.0 inches TL, with a mean of 22.9 inches TL (Table 2). Additionally, ''wild'' striped bass that were collected and sampled for age determination using otoliths ranged in age from four to six and had a modal age of four years old in the Neuse River, and five years old in the Tar-Pamlico River.

The acoustic tag detection data for this analysis covers a period beginning in December 2019 through March 2022.

PBT analysis from the 50 acoustically tagged striped bass revealed that 30 were non-hatchery origin and classified as ''wild'', with the remaining 20 fish being classified as hatchery origin. Twenty of the 25 fish tagged in the Tar-Pamlico River were classified as ''wild'' while 10 of the 25 fish tagged in the Neuse River were classified as ''wild''. Of the 20 fish determined to be hatchery fish, five were tagged in the Tar-Pamlico River and 15 were tagged in the Neuse River.

''wild'' origin striped bass

Of the 30 total tagged ''wild'' striped bass, 70% (n=21) were determined to likely be ''wild'' Roanoke River striped bass because they left the CSMA river systems where they were tagged and were detected within the Albemarle Sound and/or Roanoke River (Figure 2). Most of the ''wild'' Roanoke River striped bass that left the CSMA and moved into the Albemarle Sound migrated up the Roanoke River (60%; n=18) and were ultimately detected on the spawning grounds near Weldon, N.C. (53%; n=16). Many of the ''wild'' Roanoke River striped bass had detection patterns indicating these fish reside in CSMA rivers throughout the year prior to undertaking migrations to the spawning grounds in the Roanoke River in the spring, then returning to the CSMA rivers after spawning is complete. The three remaining ''wild'' Roanoke River striped bass that left the CSMA system, were only detected as far as the Alligator River end of the Intracoastal Waterway (ICW) and the Alligator River Bridge. One of these was presumed dead due to repeated detections at the same location for an extended period and the other two had limited detections during the study period.

The remaining ''wild'' acoustic tagged striped bass (n=9) did not move out of the CSMA rivers and were not detected in Albemarle Sound; however, six of these fish did not have enough detection data to analyze movement patterns. Results indicate that a limited number of ''wild'' striped bass make spawning runs in the Tar-Pamlico and Neuse rivers. A single ''wild'' striped bass tagged in the Tar-Pamlico River was

later detected on the spawning grounds in the spring near Rocky Mount, N.C. and one ‘‘wild’’ striped bass tagged in the Neuse River was later detected on the spawning grounds in the Neuse River (Figure 2). Additionally, one ‘‘wild’’ striped bass tagged in the Neuse River was later detected in the Tar-Pamlico River and ultimately on the spawning grounds near Rocky Mount, N.C. ‘‘wild’’ fish moving to the spawning grounds within the river systems they were tagged, or adjacent CSMA rivers, suggests some striped bass from other stocks may stray into CSMA rivers to attempt spawning or some low level of successful natural reproduction occurs.

Noteworthy movement data of ‘‘wild’’ striped bass:

- 53% (n=16) of the ‘‘wild’’ fish were detected on the spawning grounds near Weldon, N.C. Several of these ‘‘wild’’ striped bass (n=5) made repeated annual migrations in the spring back to the Roanoke River spawning grounds.

- 50% (n=4) of the ‘‘wild’’ fish tagged in the Neuse River were detected moving through Manns Harbor, and 13% (n=1) moved into the Albemarle Sound through the Pungo River/Alligator River ICW.

- 31% (n=4) of the ‘‘wild’’ striped bass tagged in the Tar-Pamlico River entered the Albemarle Sound through the Pungo River/Alligator River ICW

- One ‘‘wild’’ striped bass tagged in the Tar-Pamlico River was detected two years in a row on the Roanoke River spawning grounds and resided in the Tar-Pamlico the first year and in the Neuse River the second year.

- One ‘‘wild’’ striped bass after being detected on the spawning grounds at Weldon, NC, was later detected at Oregon Inlet presumably out-migrating to join the Atlantic migratory stock.

- One ‘‘wild’’ striped bass was commercially harvested in Edenton Bay on May 14, 2020.

Hatchery origin striped bass

Movement patterns of hatchery origin striped bass (n=20) show they did not leave the river system where they were tagged. Results indicate hatchery striped bass make spawning runs in the Tar-Pamlico and Neuse rivers. Due to the low sample size of hatchery origin fish collected in the Tar-Pamlico River (n=5) there is minimal data to infer movement patterns; however, a single hatchery origin striped bass was detected on the spawning grounds (n=1; 20%; Figure 3). In the Neuse River, 10 of 15 hatchery origin striped bass (62%) were detected on the spawning grounds (Figure 4).

Next Steps

All striped bass were tagged with 10-year acoustic tags; however, detections decreased substantially within the first two years after tagging (Figure 5). Currently, there are approximately seven ‘‘wild’’ and four hatchery origin striped bass that are still being detected routinely on acoustic receivers throughout the tracking area. A total of three striped bass are considered mortalities because they have been detected at the same location for an extended period, and one striped bass was harvested in the commercial fishery in the ASMA. Division staff will continue to download the acoustic receiver array to monitor for additional striped bass detections for the duration of the tag life.

Literature Cited

Callihan, J.L., C.H. Godwin, and J.A. Buckel. 2014. Effect of demography on spatial distribution: movement patterns of the Albemarle Sound-Roanoke River stock of striped bass (*Morone saxatilis*) in relation to their recovery.

Callihan, J.L., J.E. Harris, and J.E. Hightower. 2015. Coastal migration and homing of Roanoke River striped bass. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 7(1):301-315.

Farrae, D., and T. Darden. 2018. North Carolina Division of Marine Fisheries 2017 Striped Bass Genotyping Report. South Carolina Department of Natural Resources. Charleston, SC. 9 p.

NCDMF. 2019. Supplement A to Amendment 1 to the N.C. Estuarine Striped Bass Fishery Management Plan. Implementation of a Striped Bass No-Possession Limit in the Internal Coastal and Joint Fishing Waters of the Central Southern Management Area. North Carolina Department of Environmental Quality. Division of Marine Fisheries. Morehead City, NC. 37 p.

Rock, J, D. Zapf, J. Facendola, C. Stewart. 2018. Assessing critical habitat, movement patterns, and spawning grounds of anadromous fishes in the Tar/Pamlico, Neuse, and Cape Fear rivers using telemetry tagging techniques. North Carolina Department of Environmental Quality. Division of Marine Fisheries. Morehead City, NC. CRFL Grant 2013-F-013 Final Report. 120 pp.

Table 1. Striped bass length at age (2016-2017 PBT ages) for the Neuse and Tar-Pamlico rivers. Shaded cells are size ranges that were targeted for acoustic tagging.

			TL (mm)			TL (inch)		
Age	**River System**	**n**	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
3	Neuse	70	517	446	616	20.4	17.6	24.3
	Tar-Pamlico	18	498	460	568	19.6	18.1	22.4
4	Neuse	54	572	451	641	22.5	17.8	25.2
	Tar-Pamlico	119	574	473	659	22.6	18.6	25.9
5	Neuse	30	632	489	717	24.9	19.3	28.2
	Tar-Pamlico	79	618	528	681	24.3	20.8	26.8
6	Neuse	21	669	573	735	26.3	22.6	28.9
	Tar-Pamlico	40	657	587	718	25.9	23.1	28.3
7	Neuse	7	704	651	766	27.7	25.6	30.2
	Tar-Pamlico	2	696	668	723	27.4	26.3	28.5

Table 2. Acoustic tagged striped bass lengths for the Neuse and Tar-Pamlico rivers separated by treatment (tagged or sampled for aging structure) and origin.

				TL (mm)			TL (inch)		
River	**Treatment**	**Origin**	**n**	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
Neuse	tagged	hatchery	15	581	537	650	22.9	21.1	25.6
		‘wild’	10	597	539	635	23.5	21.2	25.0
	sampled	hatchery	16	591	527	665	23.3	20.7	26.2
		‘wild’	9	586	533	641	23.1	21.0	25.2
Tar-Pamlico	tagged	hatchery	5	545	531	572	21.5	20.9	22.5
		‘wild’	20	572	529	633	22.5	20.8	24.9
	sampled	hatchery	7	558	535	626	22.0	21.1	24.6
		‘wild’	16	567	533	642	22.3	21.9	25.3

Table 3. Striped bass ages (otolith and PBT) for the Neuse and Tar-Pamlico rivers separated by treatment (tagged or sampled for aging structure) and origin.

			Age							
			Modal		Min		Max		Total Number Aged	
River	Treatment	Origin	otolith	PBT	otolith	PBT	otolith	PBT	otolith	PBT
Neuse	tagged	hatchery	-	4	-	4	-	6	-	15
		'wild'	-	-	-	-	-	-	-	-
	harvested	hatchery	4	4	3	3	7	7	16	16
		'wild'	4	-	4	-	6	-	9	-
Tar-Pamlico	tagged	hatchery	-	4	4	-	4	-	-	5
		'wild'	-	-	-	-	-	-	-	-
	harvested	hatchery	4	4	4	4	6	6	7	7
		'wild'	5	-	5	-	6	-	16	0

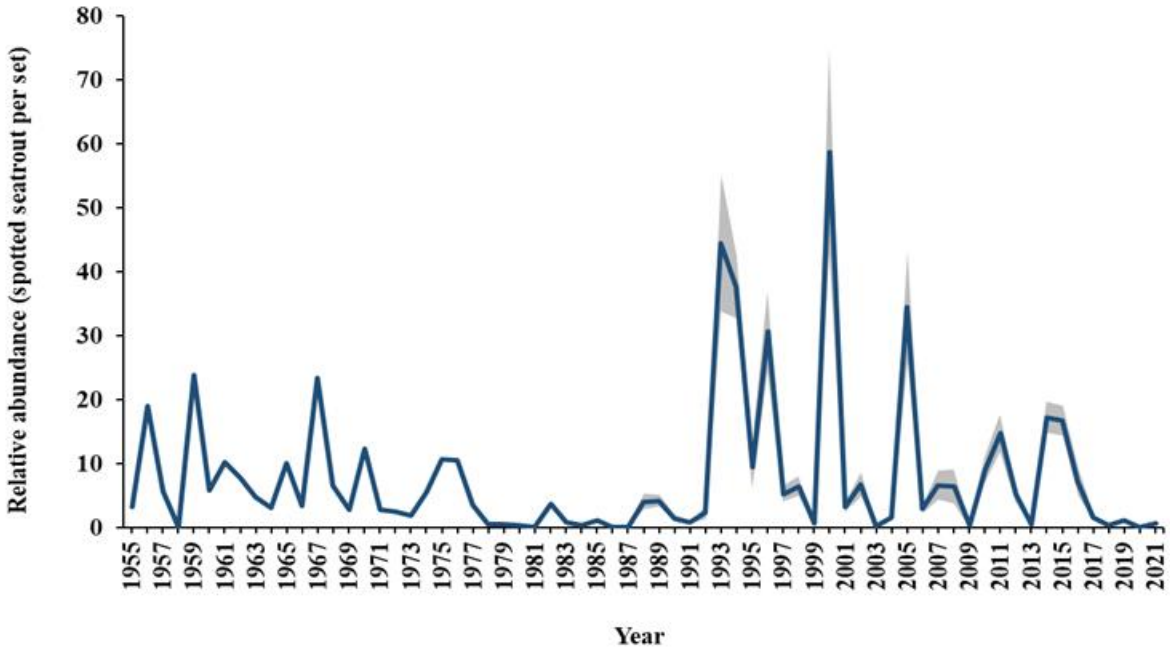


Figure 1. Juvenile abundance index (JAI) of Albemarle-Roanoke striped bass from the NCDMF juvenile trawl survey, western Albemarle Sound, NC, 1955–2021.

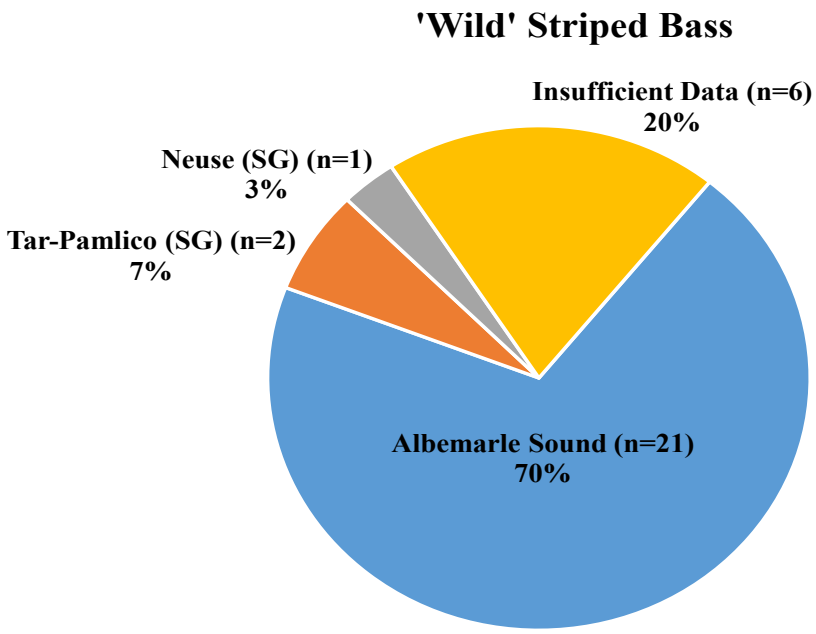


Figure 2. Detection location (%) of all acoustic tagged ‘‘wild’’ striped bass (n=30) by area (Tar-Pamlico and Neuse Rivers spawning grounds (SG), and Albemarle Sound). All original tagging events occurred in the Tar-Pamlico and Neuse River systems.

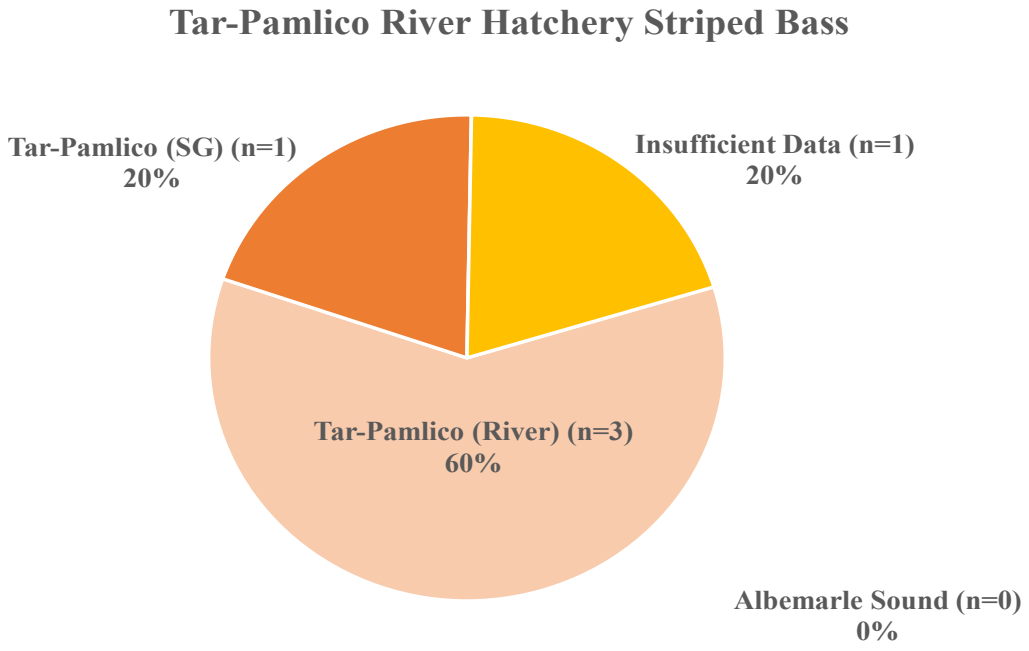


Figure 3. Detection location (%) for acoustic tagged hatchery origin striped bass in the Tar-Pamlico River system (n=5) by area (detection on spawning grounds (SG) or river residence). No hatchery origin fish from the Tar-Pamlico River system were detected in the Albemarle Sound area.

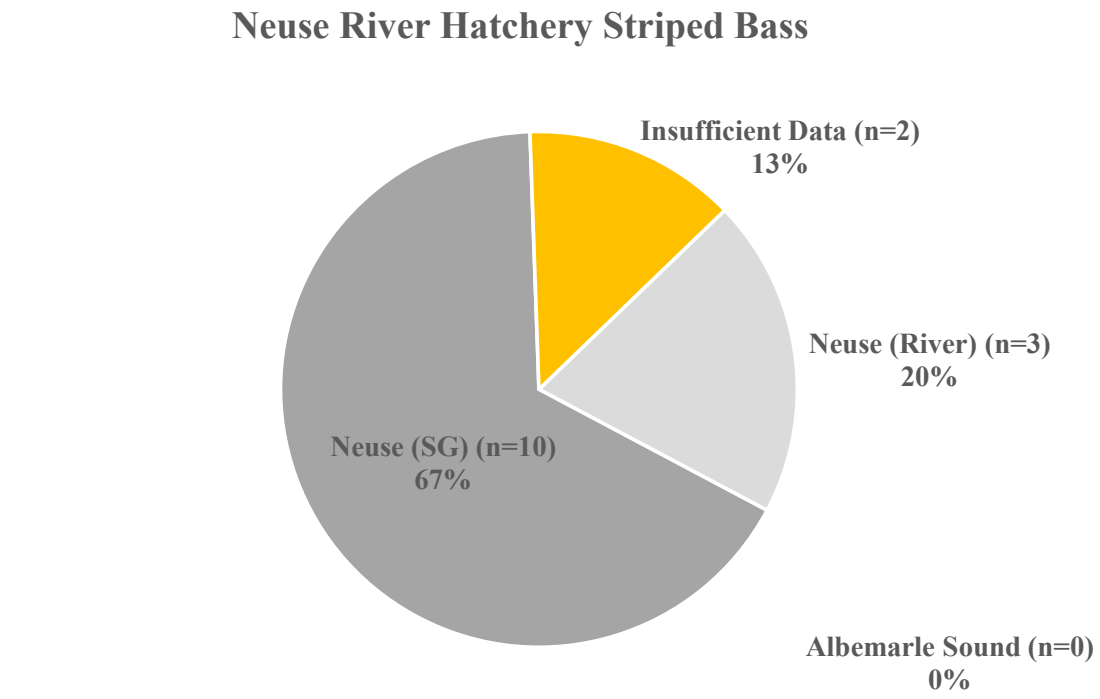


Figure 4. Detection location (%) for acoustic tagged hatchery origin striped bass in the Neuse River system (n=15) by area (detections on the spawning grounds (SG) or river residence). No hatchery origin fish from the Neuse River system were detected in the Albemarle Sound area.

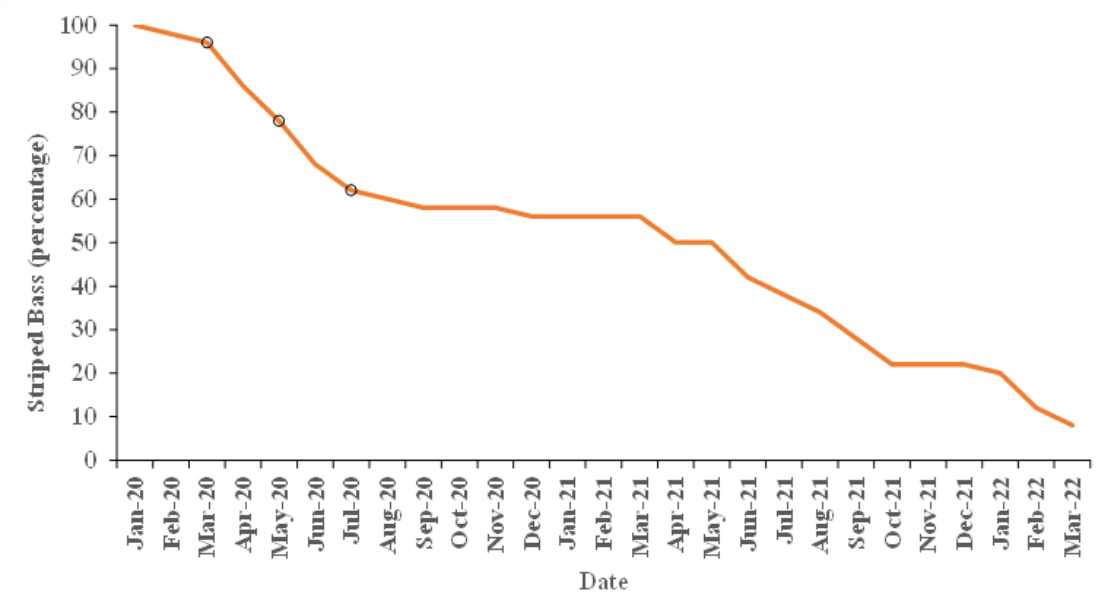


Figure 5. Tag detection loss (%) of acoustic tagged striped bass. Black circles represent known mortalities (n=4).

NC Marine Fisheries Commission

Rulemaking

August 2025 Quarterly Business Meeting

Documents

Rulemaking Update Memo

2024-2025 Annual Rulemaking Cycle

2025-2026 Annual Rulemaking Cycle

News Release for 2025-2026 Rulemaking Public Hearing

N.C. Register Excerpt

Atlantic Bonito Information Update Memo

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

August 4, 2025

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Catherine Blum, Rulemaking Coordinator
Marine Fisheries Commission Office

SUBJECT: Rulemaking Update

Issue

Update the N.C. Marine Fisheries Commission (MFC) on the status of rulemaking in support of the 2024-2025 and 2025-2026 rulemaking cycles.

Findings

- 2024-2025 Rulemaking Cycle – Update
  - At its August 2024 business meeting, the MFC began the process for eight rules in this cycle about pot marking requirements, false albacore management, and the Interstate Wildlife Violator Compact.
  - On October 1, 2024, a news release was issued and the proposed rules were published in the *N.C. Register*, beginning the public comment process. A public hearing was held on October 30, 2024, and the public comment period closed December 2, 2024.
  - The public comments received were presented to the MFC at its February 2025 business meeting when it gave final approval of the rules.
  - The Rules Review Commission (RRC) approved two of the rules on April 24, 2025; both rules will be available for legislative review in the 2026 short session (pots, false albacore).
  - The RRC approved five rules on May 29, 2025; one rule was withdrawn as it was determined to be unnecessary. These five rules became effective June 1, 2025 (Interstate Wildlife Violator Compact).
- 2025-2026 Rulemaking Cycle – Update
  - At its May 2025 business meeting, the MFC began the process for nine rules in this cycle about permits, and franchises and shellfish leases.
  - On August 1, 2025, the proposed rules were published in the *N.C. Register*, beginning the public comment process; a news release was issued August 1, 2025 announcing the public comment period, as well.
  - A public hearing is scheduled to be held on August 26, 2025, at 6 p.m. via WebEx with a listening station in Morehead City.
  - The public comment period will close September 30, 2025.
  - The public comments will be presented to the MFC at its November 2025 business meeting when it is scheduled to vote on final approval of the rules.
  - The rules are subject to legislative review, so they will have a delayed effective date.

Action Needed
No rulemaking action is scheduled for the MFC's August 2025 business meeting.

2024-2025 Rulemaking Cycle (8 rules)
At its August 2024 business meeting, the MFC approved Notice of Text for Rulemaking to begin the process for eight rules about pot marking requirements, false albacore management, and the Interstate Wildlife Violator Compact. A summary of the proposed rules by subject is provided below. A table showing the timing of the steps in the process is included in the rulemaking section of the briefing materials. On October 1, 2024, a news release was issued, and the proposed rules were published in the *N.C. Register*, beginning the public comment period. The MFC accepted public comments on the proposed rules from October 1 through December 2, 2024. A public hearing was held on October 30, 2024. The public comments received were presented to the MFC at its February 2025 business meeting when it gave final approval of the rules.

The RRC approved two of the rules on April 24, 2025; both rules will be available for legislative review in the 2026 short session (pots, false albacore). The RRC approved five rules on May 29, 2025; one rule was withdrawn as it was determined to be unnecessary. These five rules became effective June 1, 2025 (Interstate Wildlife Violator Compact; 15A NCAC 03O .0600) and are available in the latest supplement to the April 1, 2020 North Carolina Marine Fisheries Commission Rules (see https://www.deq.nc.gov/about/divisions/marine-fisheries/rules-proclamations-and-size-and-bag-limits/rules).

POT MARKING REQUIREMENTS RULE AMENDMENTS (1 rule)
Proposed amendments would simplify pot marking requirements for commercial fishermen by requiring only one of three ways to mark pot buoys, not two ways: 1) gear owner's current motorboat registration number; or 2) gear owner's U.S. vessel documentation name; or 3) gear owner's last name and initials. The current rule requires the gear owner's last name and initials be identified on each buoy as a baseline. Then, if a vessel is used, the identification must also include either the gear owner's current motorboat registration number or the gear owner's U.S. vessel documentation name. There have been no problems with pot identification and pot identification would be sufficient via a single identifier. The proposed amendments would simplify the requirements and grant some relief to commercial fishermen that use pots in their commercial fishing operation. The rule is automatically subject to legislative review pursuant to Session Law 2019-198 and N.C.G.S. § 14-4.1.

FALSE ALBACORE MANAGEMENT RULE ADOPTION (1 rule)
The proposed adoption of this rule would provide a mechanism to implement management measures to cap harvest when the false albacore fishery landings exceed a threshold of 200% of average landings from both sectors combined from 2018 to 2022. Harvest restrictions would be implemented if the threshold is exceeded as a means to prevent further expansion of the false albacore fisheries beyond the threshold. Currently, there are no rules in place for management of false albacore in North Carolina. There is no baseline stock assessment for false albacore and thus, no biological basis for reducing harvest. The only mechanism to monitor false albacore is through annual landings in North Carolina, which is not a measure for sustainability of the stock. While there is no need to manage to meet sustainability requirements, the MFC is seeking proactive management of false albacore to limit expansion of new and existing fisheries. Management options would include commercial trip limits, recreational bag limits, and recreational vessel limits. The rule is subject to legislative review pursuant to N.C.G.S. § 150B-21.3.

INTERSTATE WILDLIFE VIOLATOR COMPACT RULE ADOPTIONS (6 rules)
The Interstate Wildlife Violator Compact is a voluntary interstate agreement that provides participating states with a mechanism to participate in a reciprocal program to: (1) promote compliance with the statutes, laws, administrative rules and regulations relating to management of wildlife resources in their respective states; and (2) provide for the fair and impartial treatment of wildlife violators operating within the participating states in recognition of the individual's right of due process and the sovereign status of a party state. North Carolina's participation in the Interstate Wildlife Violator Compact has been enacted into state law, so it must be implemented and enforced. Article 22B includes N.C.G.S. § 113-300.7, which requires the Wildlife Resources Commission (WRC) and the MFC to adopt rules necessary to carry out the purpose of Article 22B. The WRC has adopted its rules. For the purposes of the Interstate Wildlife Violator Compact, "wildlife" includes marine and estuarine resources managed by the MFC and the Division of Marine Fisheries (DMF).

2025-2026 Rulemaking Cycle (9 rules)

At its May 2025 business meeting, the MFC approved Notice of Text for Rulemaking to begin the process for nine rules about permits, and franchises and shellfish leases. A summary of the proposed rules by subject is provided below. A table showing the timing of the steps in the process is included in the rulemaking section of the briefing materials. On August 1, 2025, the proposed rules were published in the *N.C. Register*, beginning the public comment period; a news release was issued August 1, 2025 announcing the public comment period, as well. A public hearing is scheduled to be held on August 26, 2025, at 6 p.m. via WebEx with a listening station in Morehead City. The public comment period will close September 30, 2025. The public comments will be presented to the MFC at its November 2025 business meeting when it is scheduled to vote on final approval of the rules. The proposed rules are automatically subject to legislative review pursuant to Session Law 2019-198 and N.C.G.S. § 14-4.1 no earlier than the 2026 legislative session and thus will have a delayed effective date.

PERMIT RULE AMENDMENTS (5 rules)
(15A NCAC 03I .0101, .0114, 03O .0501-.0503)

Consistent with N.C.G.S. § 150B-19.1, Requirements for agencies in the rule-making process, DMF employees reviewed several MFC rules with permit requirements. DMF employees identified proposed amendments to several rules that would achieve a variety of actions. These actions would add requirements to permanent rules that are no longer variable in nature, increase efficiencies for quota monitoring, protect DMF employees and improve data collection and public health protection, reduce the burden on regulated stakeholders, clarify rules, and remove outdated or unnecessary requirements from rules.

An issue paper was provided to the MFC at its May 2025 business meeting that provides information about the affected permits, processes, and requirements, as well as a detailed description of the proposed rule amendments, which are expected to accomplish the following:

- Update and clarify MFC rules, including:
    - Adding four permits to permanent rule that are currently issued by proclamation;

  - Clarifying a fish dealer is required to submit a trip ticket for fish not sold consistent with N.C. law and MFC rules for commercial harvest reporting requirements;
  - Relocating from proclamation to rule the permit condition that makes it unlawful to refuse to allow DMF employees to obtain data for the conservation and management of marine and estuarine resources;
  - Broadening the definition of "educational institution" to better align with the original purpose of two permits;
  - Adding links to webpages in rules for supporting information that can change frequently;
  - Repealing the Horseshoe Crab Biomedical Use Permit;
- Reduce burden on regulated stakeholders, including:
  - Adding email as an additional means to satisfy call-in requirements for two permits; and
  - Removing the requirement to notarize a permit application, instead requiring the initial permit general condition form to be notarized. This is a more appropriate time in the permit issuance process to verify a permittee's identity; and
- Achieve efficiencies for quota monitored fisheries by requiring any seafood dealer that reports trip tickets electronically to report quota monitoring logs electronically.

CONFORMING RULE AMENDMENTS FOR FRANCHISES AND SHELLFISH LEASES
(5 rules)
(15A NCAC 03I .0101, 03O .0201, .0207, .0208, .0210)

Shellfish franchises recognized under N.C.G.S. § 113-206 are perpetual. The DMF has understood that because franchises are perpetual, the DMF does not have the authority to terminate franchises and thus subjecting a franchise to production requirements would have no consequence. The N.C. General Assembly codified this understanding with the passage of Session Law 2024-32, Section 5.(a), which removed franchises from the production requirements of Session Law 2019-37, Section 3. The MFC's authority over private and protected deeded rights of a shellfish franchise is limited to subjects such as proper marking requirements and permitting of the aquaculture activities occurring on a franchise. So, proposed amendments include the removal of franchises from all shellfish production requirements, as the production requirements are grounds for termination of a leasehold only. Proposed amendments also remove franchises from the rule for termination procedures.

Additional proposed amendments in 15A NCAC 03O .0201, in Paragraphs (d) through (g), clarify production requirements for shellfish leases based on the date a shellfish lease was granted or last renewed. Additional amendments to Paragraphs (i) and (j) clarify who determines eligibility for additional shellfish lease acreage, the time at which the determination of eligibility for additional acreage occurs, what is considered additional shellfish lease acreage, and what is considered acres under a shellfish lease. An issue paper was provided to the MFC at its May 2025 business meeting that provides background information and a detailed description of the proposed rule amendments.

While clarifying amendments are proposed in this issue paper for shellfish leaseholders, it is important to note that the primary reason for the proposed rule amendments is to undertake a paper exercise to align MFC rules with current DMF procedures and N.C. General Assembly authority for shellfish aquaculture, neither of which has changed in practice in recent years relative to requirements for franchises. This issue paper presents a single option for consideration, as it is the only option that achieves the objective of the proposed rule changes: to align with current statutory authority and DMF procedures for franchises and shellfish leases, consistent with N.C. Session Law 2019-37, Section 3 as amended by N.C. Session Law 2024-32, Section 5.(a), as well as rulemaking requirements in the Administrative Procedure Act. This option complies with State law and clarifies MFC rules by removing out-of-date requirements, but it requires undergoing the lengthy rulemaking process.

N.C. Marine Fisheries Commission
2024-2025 Annual Rulemaking Cycle

August 2025

Time of Year	Action
February-July 2024	Fiscal analysis of rules prepared by DMF staff and approved by Office of State Budget and Management
Aug. 23, 2024	MFC approved Notice of Text for Rulemaking
Oct. 1, 2024	Publication of proposed rules in the *North Carolina Register*
Oct. 1-Dec. 2, 2024	Public comment period held
Oct. 30, 2024, 6 p.m.	Public hearing held via WebEx with listening station
March 12, 2025	MFC received public comments and gave final approval of eight permanent rules
April 24, 2025	Two rules subject to legislative review approved by Office of Administrative Hearings/Rules Review Commission (15A NCAC 03J .0301, 03M .0523)
May 29, 2025	Five rules approved by Office of Administrative Hearings/Rules Review Commission and one rule withdrawn (15A NCAC 03O .0600)
June 1, 2025	Effective date of five rules not automatically subject to legislative review
June 1, 2025	Rulebook supplement available online
2026 legislative session	Possible effective date of two rules subject to legislative review per S.L. 2019-198 and G.S. 14-4.1, and G.S. 150B-21.3

N.C. Marine Fisheries Commission
2025-2026 Annual Rulemaking Cycle

August 2025

Time of Year	Action
February-April 2025	Fiscal analysis of rules prepared by DMF staff and approved by Office of State Budget and Management
May 22, 2025	MFC approved Notice of Text for Rulemaking
Aug. 1, 2025	Publication of proposed rules in the *North Carolina Register*
Aug. 1-Sept. 30, 2025	Public comment period held
August 26, 2025, 6 p.m.	Public hearing held via WebEx with listening station at NCDEQ Division of Marine Fisheries Central District Office at 5285 Highway 70 West, Morehead City
November 2025	MFC receives public comments and votes on final approval of permanent rules
January 2026	Rules reviewed by Office of Administrative Hearings/ Rules Review Commission
2026 legislative session	Possible effective date of rules subject to legislative review per S.L. 2019-37, Section 3, as amended by S.L. 2024-32, Section 5.(a); and S.L. 2019-198
2026 legislative session	Rulebook supplement available online pending legislative review process

Aug. 1, 2025

Comment period opens, public hearing scheduled for marine fisheries rules

MOREHEAD CITY – The N.C. Marine Fisheries Commission is accepting public comment on nine proposed rules pertaining to permits, and franchises and shellfish leases.

A public hearing will be held by WebEx on Aug. 26, 2025, at 6 p.m. A listening station will be established at the NCDEQ Division of Marine Fisheries Central District Office at 5285 Highway 70 West, Morehead City.

The public may join the meeting online; however, those who wish to comment during the hearing must register to speak by noon on the day of the hearing. Those who wish to speak at the listening station may sign up when they arrive.

WHO: Marine Fisheries Commission
WHAT: Public Hearing for Proposed Rules
WHEN: Aug. 26, 2025, at 6 p.m.
WHERE: Meeting by Web Conference

Members of the public may also submit written comments through an online form or through the mail to:

N.C. Marine Fisheries Commission Rules Comments
P.O. Box 769
Morehead City, N.C. 28557

Comments must be posted online or received by the Division of Marine Fisheries by 5 p.m. Sept. 30, 2025.

Links to the public hearing registration form and online comment form, as well as text of the proposed rules and links to join the meeting, can be found on the N.C. Marine Fisheries Commission's 2025-2026 Proposed Rules Webpage.

Permit Rule Amendments – Proposed amendments to five rules (15A NCAC 03I .0101, .0114, 03O .0501-.0503) would:

- Require any seafood dealer that reports trip tickets electronically to report quota monitoring logs electronically;

- Add four permits to permanent rule that are currently issued by proclamation, including a dealer permit for the estuarine flounder fishery and the Estuarine Gill Net Permit. There are no changes to current requirements;
- Clarify a fish dealer is required to submit a trip ticket for fish not sold consistent with North Carolina law and MFC rules for commercial harvest reporting requirements;
- Relocate from proclamation to rule the permit condition that makes it unlawful to refuse to allow DMF employees to obtain data for the conservation and management of marine and estuarine resources;
- Broaden the definition of "educational institution" to include schools and educational organizations;
- Add links to webpages in rules for supporting information that can change frequently;
- Repeal the Horseshoe Crab Biomedical Use Permit due to lack of use. Harvest would continue to be allowed during the open commercial bait harvest season;
- Add email as an additional means to satisfy call-in requirements for two permits; and
- Remove the requirement to notarize a permit application and instead require only the initial permit general condition form to be notarized.

Shellfish Leases and Franchises Rule Amendments: Proposed amendments to 5 rules (15A (NCAC 03I .0101, 03O .0201, .0207, .0208, .0210) would codify current procedures and align rules with state laws by:

- Removing franchises from productions requirements and termination procedures;
- Clarifying that production requirements for shellfish leases are based on the date a shellfish lease was granted or last renewed; and
- Clarifying who determines eligibility for additional shellfish lease acreage, the time at which the determination of eligibility for additional acreage occurs, what is considered additional shellfish lease acreage, and what is considered acres under a shellfish lease.

The proposed rule changes will be presented to the N.C. Marine Fisheries Commission for final approval in November 2025. If approved, the effective date of the rules would be pending legislative review in 2026.

For questions about the N.C. Marine Fisheries Commission rulemaking process, email Catherine Blum, rules coordinator for the Division of Marine Fisheries.

For More Information
Contact: Patricia Smith
Phone: 252-515-5500

Website: https://www.deq.nc.gov/dmf
Facebook: https://www.facebook.com/NCMarineFisheries

Instagram: https://www.instagram.com/NC_DMF
Twitter: https://twitter.com/NC_DMF
P.O. Box 769, 3441 Arendell St., Morehead City N.C. 28577

NORTH CAROLINA REGISTER

VOLUME 40 • ISSUE 03 • Pages 267 – 402

August 1, 2025

PUBLISHED BY
The Office of Administrative Hearings
Rules Division
1711 New Hope Church Road
Raleigh, NC 27609
Telephone 984-236-1850
Fax 984-236-1947

Melissa Owens Lassiter, Director
Brian Liebman, Codifier of Rules
Julie B. Eddins, Publications Coordinator

Contact List for Rulemaking Questions or Concerns

For questions or concerns regarding the Administrative Procedure Act or any of its components, consult with the agencies below. The bolded headings are typical issues which the given agency can address but are not inclusive.

Rule Notices, Filings, Register, Deadlines, Copies of Proposed Rules, etc.

Office of Administrative Hearings
Rules Division
1711 New Hope Church Road — 984-236-1850
Raleigh, North Carolina 27609 — 984-236-1947 FAX

contact:	Brian Liebman, Codifier of Rules	brian.liebman@oah.nc.gov	984-236-1941
	Julie B. Eddins, Publications Coordinator	julie.eddins@oah.nc.gov	984-236-1937

Rule Review and Legal Issues

Rules Review Commission
1711 New Hope Church Road — 984-236-1850
Raleigh, North Carolina 27609 — 984-236-1947 FAX

contact:	Seth M. Ascher, Commission Counsel	seth.ascher@oah.nc.gov	984-236-1934
	Travis Wiggs, Commission Counsel	travis.wiggs@oah.nc.gov	984-236-1929
	Alexander Burgos, Paralegal	alexander.burgos@oah.nc.gov	984-236-1940

Fiscal Notes & Economic Analysis

Office of State Budget and Management
116 West Jones Street
Raleigh, North Carolina 27603-8005
Contact: Julie Ventaloro, Economic Analyst — osbmruleanalysis@osbm.nc.gov — 984-236-0694

Fiscal Research Division
Legislative Office Building
300 N. Salisbury Street, Suites 619 and 400
Raleigh, NC 27603-5925
Contact: Brian Matteson — brian.matteson@ncleg.gov — 919-733-4910

NC Association of County Commissioners — 919-715-2893
215 North Dawson Street
Raleigh, North Carolina 27603
contact: Amy Bason — amy.bason@ncacc.org

NC League of Municipalities — 919-715-2925
424 Fayetteville Street, Suite 1900
Raleigh, North Carolina 27601
contact: Baxter Wells — bwells@nclm.org

Legislative Process Concerning Rulemaking

545 Legislative Office Building
300 North Salisbury Street — 919-733-2578
Raleigh, North Carolina 27611 — 919-715-5460 FAX

Jason Moran-Bates, Staff Attorney
Chris Saunders, Staff Attorney
Aaron McGlothlin, Staff Attorney

NORTH CAROLINA REGISTER

Publication Schedule for January 2025 – December 2025

FILING DEADLINES			NOTICE OF TEXT		PERMANENT RULE			TEMPORARY RULES
Volume & issue number	Issue date	Last day for filing	Earliest date for public hearing	End of required comment Period	Deadline to submit to RRC for review at next meeting	RRC Meeting Date	Earliest Eff. Date of Permanent Rule	270th day from publication in the Register
39:13	01/02/25	12/06/24	01/17/25	03/03/25	03/20/25	04/24/2025	05/01/25	09/29/25
39:14	01/15/25	12/19/24	01/30/25	03/17/25	03/20/25	04/24/2025	05/01/25	10/12/25
39:15	02/03/25	01/10/25	02/18/25	04/04/25	04/20/25	05/29/2025	06/01/25	10/31/25
39:16	02/17/25	01/27/25	03/04/25	04/21/25	05/20/25	06/26/2025	07/01/25	11/14/25
39:17	03/03/25	02/10/25	03/18/25	05/02/25	05/20/25	06/26/2025	07/01/25	11/28/25
39:18	03/17/25	02/24/25	04/01/25	05/16/25	05/20/25	06/26/2025	07/01/25	12/12/25
39:19	04/01/25	03/11/25	04/16/25	06/02/25	06/20/25	07/30/2025	08/01/25	12/27/25
39:20	04/15/25	03/25/25	04/30/25	06/16/25	06/20/25	07/30/2025	08/01/25	01/10/26
39:21	05/01/25	04/09/25	05/16/25	06/30/25	07/20/25	08/28/2025	09/01/25	01/26/26
39:22	05/15/25	04/24/25	05/30/25	07/14/25	07/20/25	08/28/2025	09/01/25	02/09/26
39:23	06/02/25	05/09/25	06/17/25	08/01/25	08/20/25	09/25/2025	10/01/25	02/27/26
39:24	06/16/25	05/23/25	07/01/25	08/15/25	08/20/25	09/25/2025	10/01/25	03/13/26
40:01	07/01/25	06/10/25	07/16/25	09/02/25	09/20/25	10/30/2025	11/01/25	03/28/26
40:02	07/15/25	06/23/25	07/30/25	09/15/25	09/20/25	10/30/2025	11/01/25	04/11/26
40:03	08/01/25	07/11/25	08/16/25	09/30/25	10/20/25	11/20/2025	12/01/25	04/28/26
40:04	08/15/25	07/25/25	08/30/25	10/14/25	10/20/25	11/20/2025	12/01/25	05/12/26
40:05	09/02/25	08/11/25	09/17/25	11/03/25	11/20/25	12/18/2025	01/01/26	05/30/26
40:06	09/15/25	08/22/25	09/30/25	11/14/25	11/20/25	12/18/2025	01/01/26	06/12/26
40:07	10/01/25	09/10/25	10/16/25	12/01/25	12/20/25	*01/29/2026	02/01/26	06/28/26
40:08	10/15/25	09/24/25	10/30/25	12/15/25	12/20/25	*01/29/2026	02/01/26	07/12/26
40:09	11/03/25	10/13/25	11/18/25	01/02/26	01/20/26	*02/26/2026	03/01/26	07/31/26
40:10	11/17/25	10/24/25	12/02/25	01/16/26	01/20/26	*02/26/2026	03/01/26	08/14/26
40:11	12/01/25	11/05/25	12/16/25	01/30/26	02/20/26	*03/26/2026	04/01/26	08/28/26
40:12	12/15/25	11/20/25	12/30/25	02/13/26	02/20/26	*03/26/2026	04/01/26	09/11/26

*Dates not approved by RRC

EXPLANATION OF THE PUBLICATION SCHEDULE

This Publication Schedule is prepared by the Office of Administrative Hearings as a public service and the computation of time periods are not to be deemed binding or controlling. Time is computed according to 26 NCAC 2C .0302 and the Rules of Civil Procedure, Rule 6.

GENERAL

The North Carolina Register shall be published twice a month and contains the following information submitted for publication by a state agency:

(1) temporary rules;
(2) text of proposed rules;
(3) text of permanent rules approved by the Rules Review Commission;
(4) emergency rules
(5) Executive Orders of the Governor;
(6) final decision letters from the U.S. Attorney General concerning changes in laws affecting voting in a jurisdiction subject of Section 5 of the Voting Rights Act of 1965, as required by G.S. 120-30.9H; and
(7) other information the Codifier of Rules determines to be helpful to the public.

COMPUTING TIME: In computing time in the schedule, the day of publication of the North Carolina Register is not included. The last day of the period so computed is included, unless it is a Saturday, Sunday, or State holiday, in which event the period runs until the preceding day which is not a Saturday, Sunday, or State holiday.

FILING DEADLINES

ISSUE DATE: The Register is published on the first and fifteen of each month if the first or fifteenth of the month is not a Saturday, Sunday, or State holiday for employees mandated by the State Human Resources Commission. If the first or fifteenth of any month is a Saturday, Sunday, or a holiday for State employees, the North Carolina Register issue for that day will be published on the day of that month after the first or fifteenth that is not a Saturday, Sunday, or holiday for State employees.

LAST DAY FOR FILING: The last day for filing for any issue is 15 days before the issue date excluding Saturdays, Sundays, and holidays for State employees.

NOTICE OF TEXT

EARLIEST DATE FOR PUBLIC HEARING: The hearing date shall be at least 15 days but not later than 60 days after the date a notice of the hearing is published.

END OF REQUIRED COMMENT PERIOD An agency shall accept comments on the text of a proposed rule for at least 60 days after the text is published.

DEADLINE TO SUBMIT TO THE RULES REVIEW COMMISSION: The Commission shall review a rule submitted to it on or before the twentieth of a month by the last day of the next month.

~~(29)~~(30) Nitrogen, Total Kjeldahl;
~~(30)~~(31) Oil and Grease;
~~(31)~~(32) Orthophosphate;
~~(32)~~(33) Paint Filter Liquids;
~~(33)~~(34) pH;
~~(34)~~(35) Phenols;
~~(35)~~(36) Phosphorus, Total;
~~(36)~~(37) Residue, Settleable;
~~(37)~~(38) Residue, Total;
~~(38)~~(39) Residue, Total Dissolved;
~~(39)~~(40) Residue, Total Suspended;
~~(40)~~(41) Residue, Volatile;
~~(41)~~(42) Salinity;
~~(42)~~(43) Salmonella;
~~(43)~~(44) Silica;
~~(44)~~(45) Sulfate;
~~(45)~~(46) Sulfide;
~~(46)~~(47) Sulfite;
~~(47)~~(48) Temperature;
~~(48)~~(49) Total Organic Carbon;
~~(49)~~(50) Turbidity;
~~(50)~~(51) Vector Attraction Reduction: Option 1;
~~(51)~~(52) Vector Attraction Reduction: Option 2;
~~(52)~~(53) Vector Attraction Reduction: Option 3;
~~(53)~~(54) Vector Attraction Reduction: Option 4;
~~(54)~~(55) Vector Attraction Reduction: Option 5;
~~(55)~~(56) Vector Attraction Reduction: Option 6;
~~(56)~~(57) Vector Attraction Reduction: Option 7;
~~(57)~~(58) Vector Attraction Reduction: Option 8; and
~~(58)~~(59) Vector Attraction Reduction: Option 12.

(c) Metals: Each of the metals listed in this Paragraph shall be considered a certifiable Parameter. One or more Parameter Methods shall be listed with a laboratory's certified Parameters. Analytical methods shall be determined from the sources listed in Rule .0805(a)(1) of this Section. Certifiable metals are as follows:

(1) Aluminum;
(2) Antimony;
(3) Arsenic;
(4) Barium;
(5) Beryllium;
(6) Boron;
(7) Cadmium;
(8) Calcium;
(9) Chromium, Hexavalent (Chromium VI);
(10) Chromium, Total;
(11) Chromium, Trivalent (Chromium III);
(12) Cobalt;
(13) Copper;
(14) Hardness, Total (Calcium + Magnesium);
(15) Iron;
(16) Lead;
(17) Lithium;
(18) Magnesium;
(19) Manganese;
(20) Mercury;
(21) Molybdenum;
(22) Nickel;
(23) Potassium;
(24) Phosphorus;
(25) Selenium;
(26) Silica;
(27) Silver;
(28) Sodium;
(29) Strontium;
(30) Thallium;
(31) Tin;
(32) Titanium;
(33) Vanadium; and
(34) Zinc.

(d) Organics: Each of the organic Parameters listed in this Paragraph shall be considered a certifiable Parameter. One or more Parameter Methods shall be listed with a laboratory's certified Parameters. Analytical methods shall be determined from the sources listed in Rule .0805(a)(1) of this Section. Certifiable organic Parameters are as follows:

(1) 1,2-Dibromoethane (EDB); 1,2-Dibromo-3-chloro-propane (DBCP); 1,2,3-Trichloropropane (TCP);
(2) Acetonitrile;
(3) Acrolein, Acrylonitrile;
(4) Adsorbable Organic Halides;
(5) Base/Neutral and Acid Organics;
(6) Benzidines;
(7) Chlorinated Acid Herbicides;
(8) Chlorinated Hydrocarbons;
(9) Chlorinated Phenolics;
(10) Explosives;
(11) Extractable Petroleum Hydrocarbons;
(12) Haloethers;
(13) N-Methylcarbamates;
(14) Nitroaromatics and Isophorone;
(15) Nitrosamines;
(16) Nonhalogenated Volatile Organics;
(17) Organochlorine Pesticides;
(18) Organophosphorus Pesticides;
(19) Per- and polyfluoroalkyl substances (PFAS);
(20) Pharmaceutical Pollutants
~~(20)~~(21) Phenols;
~~(21)~~(22) Phthalate Esters;
~~(22)~~(23) Polychlorinated Biphenyls;
~~(23)~~(24) Polynuclear Aromatic Hydrocarbons;
~~(24)~~(25) Purgeable Aromatics;
~~(25)~~(26) Purgeable Halocarbons;
~~(26)~~(27) Purgeable Organics;
~~(27)~~(28) Total Organic Halides;
~~(28)~~(29) Total Petroleum Hydrocarbons – Diesel Range Organics;
~~(29)~~(30) Total Petroleum Hydrocarbons – Gasoline Range Organics; and
~~(30)~~(31) Volatile Petroleum Hydrocarbons.

Authority G.S. 143-215.3(a)(1); 143-215.3(a)(10); Eff. February 1, 1976.

* * * * * * * * * * * * * * * * * * *

***Notice** is hereby given in accordance with G.S. 150B-21.2 that the Marine Fisheries Commission intends to amend the rules cited as*

15A NCAC 03I .0101, .0114; 03O .0201, .0207, .0208, .0210, and .0501-.0503.

Link to agency website pursuant to G.S. 150B-19.1(c): *https://deq.nc.gov/mfc-proposed-rules*

Proposed Effective Date: *Subject to Legislative Review*

Public Hearing:
Date: *August 26, 2025*
Time: *6:00 pm*
Location: *WebEx Events meeting link: https://ncgov.webex.com/ncgov/j.php?MTID=m5bba69179ac81774461e45721b2f9452 Event number: 2426 352 8767 Event password: 1234 Event phone number: 1-415-655-0003 Access code: 242 635 28767 Listening station: Division of Marine Fisheries Central District Office, 5285 Highway 70 West, Morehead City, NC 28557*

Reason for Proposed Action:

Permits

15A NCAC 03I .0101 DEFINITIONS
Proposed amendments broaden the definition of "educational institution" to better align with the original purpose of the Scientific and Educational Activity Permit and Coastal Recreational Fishing License Exemption Permit. Additional proposed amendments add a definition of "quota monitoring log" in support of requirements for dealer permits for monitoring fisheries under a quota or allocation, and a definition of "permittee" to address the ubiquitous and interchangeable use of "permittee" and "permit holder" (which is already defined) throughout N.C. Marine Fisheries Commission rules.

15A NCAC 03I .0114 RECORDKEEPING REQUIREMENTS
Proposed amendments set the same recordkeeping requirements for quota monitoring logs as for trip tickets for licensed fish dealers but apply only to dealers holding a permit for monitoring fisheries under a quota or allocation. Additional proposed amendments clarify a fish dealer is required to submit a trip ticket for fish not sold consistent with N.C. law and MFC rules for commercial harvest reporting requirements.

15A NCAC 03O .0501 PROCEDURES AND REQUIREMENTS TO OBTAIN PERMITS
Proposed amendments remove the requirement for a permit application signature to be notarized, instead requiring the initial permit general condition form to be notarized. This is a more appropriate time in the permit issuance process to verify a permittee's identity. Additional proposed amendments clarify existing requirements for holders of an Estuarine Gill Net Permit to hold a valid Recreational Commercial Gear License, Standard Commercial Fishing License, or Retired Standard Commercial Fishing License. Proposed amendments also add a link to the N.C. Division of Marine Fisheries website to access permit applications and related information.

15A NCAC 03O .0502 GENERAL PERMIT CONDITIONS
Proposed amendments relocate from proclamation to rule the permit condition that makes it unlawful to refuse to allow N.C. Division of Marine Fisheries (DMF) employees to obtain data for the conservation and management of marine and estuarine resources, and data for the protection of public health related to the public health programs that fall under the authority of the N.C. Marine Fisheries Commission. These requirements are in five other N.C. Marine Fisheries Commission rules, so the proposed amendments would bring consistency across rules and add clarity for regulated stakeholders.

15A NCAC 03O .0503 PERMIT CONDITIONS; SPECIFIC
Proposed amendments address seven items. First, proposed amendments relocate four existing permits from proclamation into rule: Estuarine Gill Net Permit, Estuarine Flounder Dealer Permit, Shellfish Lease Restoration Permit, and Shellfish Relocation Permit to aid in the clarity of existing requirements for the public. Relocating the permit requirements in rule has no real impact on holders of the permits as the application process, permit conditions, and reporting requirements would not change. Second, proposed amendments require any seafood dealer that reports trip tickets electronically be required to report quota monitoring logs electronically, improving the timeliness and accuracy of reporting. Third, proposed amendments include email as a way to satisfy the call-in requirements for Scientific and Educational Activity Permits and Permits for Weekend Trawling for Live Shrimp, making it easier for regulated stakeholders to forward required information to the N.C. Division of Marine Fisheries and improving the tracking of activity by the Division. Fourth, proposed amendments clarify requirements for a Coastal Recreational Fishing License Exemption Permit to reflect proposed changes to another rule that broadens the definition of "educational institution", to better align with the original purpose of the permit. Fifth, proposed amendments add a link to the N.C. Division of Marine Fisheries website to access information about which Division offices issue striped bass tags for permitted dealers. Sixth, management for horseshoe crabs falls under the Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for Horseshoe Crab, which establishes state-by-state quotas in all Atlantic states for horseshoe crabs harvested for bait and the requirement to collect information on the use of horseshoe crabs for biomedical purposes. The Horseshoe Crab Biomedical Use Permit was designed to collect that information but is proposed for repeal because the industry has not shown the anticipated growth since its inception over 25 years ago. Eliminating the permit would not disallow use of horseshoe crabs for biomedical purposes in North Carolina, but access to horseshoe crabs would be limited to the open commercial bait harvest season and counted towards the annual bait quota to maintain compliance with the Interstate Fishery Management Plan. Lastly, proposed amendments add nongovernmental conservation organizations as entities eligible for a Scientific or Educational Activity Permit that exempts the holder from N.C. license, rule, proclamation, or statutory requirements for approved scientific, educational, or conservation activities, pursuant to S.L. 2015-241, s. 14.10A.

Franchises and Shellfish Leases

15A NCAC 03I .0101 DEFINITIONS
Proposed amendments clarify the existing definition of "holder" to align occurrences of "franchise holder" throughout N.C. Marine Fisheries Commission rules with shellfish franchises recognized pursuant to N.C.G.S. § 113-206.

15A NCAC 03O .0201 STANDARDS AND REQUIREMENTS FOR SHELLFISH LEASES AND FRANCHISES
Proposed amendments include the removal of franchises from all shellfish production requirements, as the production requirements are grounds for termination of a leasehold only. Shellfish franchises recognized under N.C.G.S. § 113-206 are perpetual. The N.C. Division of Marine Fisheries has understood that because franchises are perpetual, the Division does not have the authority to terminate franchises and thus subjecting a franchise to production requirements would have no consequence. The N.C. General Assembly codified this understanding with the passage of Session Law 2024-32, Section 5.(a), which removed franchises from the production requirements of Session Law 2019-37, Section 3. The N.C. Marine Fisheries Commission's authority over private and protected deeded rights of a shellfish franchise is limited to subjects such as proper marking requirements and permitting of the aquaculture activities occurring on a franchise. Additional amendments in paragraphs (d) through (g) clarify production requirements for shellfish leases based on the date a shellfish lease was granted or last renewed. Additional amendments to paragraphs (a) and (i) clarify who determines eligibility for additional shellfish lease acreage, the time at which the determination of eligibility for additional acreage occurs, what is considered additional shellfish lease acreage, and what is considered acres under a shellfish lease.

15A NCAC 03O .0207 SHELLFISH LEASE AND FRANCHISE PRODUCTION REPORTS
Proposed amendments remove franchises from production report requirements. Franchises are perpetual and not subject to termination, and compliant production reports relate to procedures for termination.

15A NCAC 03O .0208 TERMINATION PROCEDURES FOR SHELLFISH LEASES AND FRANCHISES
Proposed amendments align the rule with Session Law 2024-32, Section 5.(a), by eliminating references to franchises.

15A NCAC 03O .0210 STANDARDS AND REQUIREMENTS FOR FRANCHISES
Proposed amendments clarify the proper activation of a shellfish franchise enables the franchise to be permitted, remove the time limit of 30 days following activation, and remove the method for evaluating production of a franchise, as franchises are perpetual and not subject to termination.

Comments may be submitted to: *Catherine Blum, PO Box 769, Morehead City, NC 28557 (Written comments may also be submitted via an online form available at https://deq.nc.gov/mfc-proposed-rules.)*

Comment period ends: *September 30, 2025*

Rule(s) is automatically subject to legislative review: *S.L. 2019-37, Section 3, as amended by S.L. 2024-32, Section 5.(a): 15A NCAC 03O .0201; S.L. 2019-198: 15A NCAC 03I .0114, 03O .0501-.0503*

Fiscal impact. Does any rule or combination of rules in this notice create an economic impact? Check all that apply.
☒ **State funds affected**
☐ **Local funds affected**
☐ **Substantial economic impact (>= $1,000,000)**
☒ **Approved by OSBM**
☐ **No fiscal note required**

CHAPTER 03 - MARINE FISHERIES

SUBCHAPTER 03I – GENERAL RULES

SECTION .0100 – GENERAL RULES

15A NCAC 03I .0101 DEFINITIONS
All definitions set out in G.S. 113, Subchapter IV and the following additional terms shall apply to this Chapter:

(1) enforcement and management terms:
  (a) "Commercial quota" means total quantity of fish allocated for harvest by commercial fishing operations.
  (b) "Educational institution" means 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 Environmental Quality Office of Environmental Education and Public Affairs; ~~or~~ a zoo or aquarium certified by the Association of Zoos and ~~Aquariums.~~ Aquariums; or a public school unit, private school, or an organization whose mission includes education.
  (c) "Internal Coastal Waters" or "Internal Waters" means all Coastal Fishing Waters except the Atlantic Ocean.
  (d) length of finfish:
    (i) "Curved fork length" means 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" means 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" means 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" means 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) "Nongovernmental conservation organization" means an organization whose primary mission is the conservation of natural resources. For the purpose of this Chapter, a determination of the organization's primary mission is based upon the Division of Marine Fisheries' consideration of the organization's publicly stated purpose and activities.

(f) "Polluted" means any shellfish growing waters as defined in 15A NCAC 18A .0901:

(i) that are contaminated with fecal material, pathogenic microorganisms, poisonous or deleterious substances, or marine biotoxins that render the consumption of shellfish from those growing waters hazardous. This includes poisonous or deleterious substances as listed in the latest approved edition of the National Shellfish Sanitation Program (NSSP) Guide for the Control of Molluscan Shellfish, Section IV: Guidance Documents, Chapter II: Growing Areas; Action Levels, Tolerances and Guidance Levels for Poisonous or Deleterious Substances in Seafood, which is incorporated by reference, including subsequent amendments and editions. A copy of the reference material can be found at https://www.fda.gov/food/federalstate-food-programs/national-shellfish-sanitation-program-nssp, at no cost;

(ii) that have been determined through a sanitary survey as defined in 15A NCAC 18A .0901 to be adjacent to a sewage treatment plant outfall or other point source outfall that may contaminate shellfish and cause a food safety hazard as defined in 15A NCAC 18A .0301;

(iii) that have been determined through a sanitary survey as defined in 15A NCAC 18A .0901 to be in or adjacent to a marina;

(iv) that have been determined through a sanitary survey as defined in 15A NCAC 18A .0901 to be impacted by other potential sources of pollution that render the consumption of shellfish from those growing waters hazardous, such as a wastewater treatment facility that does not contaminate a shellfish area when it is operating normally but will contaminate a shellfish area and shellfish in that area when a malfunction occurs; or

(v) where the Division is unable to complete the monitoring necessary to determine the presence of contamination or potential pollution sources.

(g) "Recreational possession limit" means restrictions on size, quantity, season, time period, area, means, and methods where take or possession is for a recreational purpose.

(h) "Recreational quota" means total quantity of fish allocated for harvest for a recreational purpose.

(i) "Regular closed oyster season" means March 31 through October 15, unless amended by the Fisheries Director through proclamation authority.

(j) "Scientific institution" means one of the following entities:

(i) an educational institution as defined in this Item;
(ii) a state or federal agency charged with the management of marine or estuarine resources; or
(iii) a professional organization or secondary school working under the direction of, or in compliance with mandates from, the entities listed in Sub-items (j)(i) and (ii) of this Item.

(2) fishing activities:
(a) "Aquaculture operation" means an operation that produces artificially propagated stocks of marine or estuarine resources, or other non-native species that may thrive if introduced into Coastal Fishing Waters, or obtains such stocks from permitted sources for the purpose of rearing on private bottom (with or without the superadjacent water column) or 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 circulation, utilizing technology not found in the natural environment.
(b) "Attended" means 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" means 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) "Depurate" or "depuration" has the same meaning as defined in the 2019 revision of the NSSP Guide for the Control of Molluscan Shellfish, Section I: Purpose and Definitions. This definition is incorporated by reference, not including subsequent amendments and editions. A copy of the reference material can be found at https://www.fda.gov/food/federalstate-food-programs/national-shellfish-sanitation-program-nssp, at no cost.
(e) "Long haul operation" means fishing a seine towed between two vessels.
(f) "Peeler crab" means 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" means any actual or constructive holding whether under claim of ownership or not.
(h) "Recreational purpose" means a fishing activity that is not a commercial fishing operation as defined in G.S. 113-168.
(i) "Swipe net operations" means fishing a seine towed by one vessel.
(j) "Transport" means to ship, carry, or cause to be carried or moved by public or private carrier by land, sea, or air.
(k) "Use" means to employ, set, operate, or permit to be operated or employed.

(3) gear:
(a) "Bunt net" means 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" means 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" means 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" means 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" means 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" means a net anchored or staked to the bottom, or some structure attached to the bottom, at both ends of the net.

(g) "Fyke net" means 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" means 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" means 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" means 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" means 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" means 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" means 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" means 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" means 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 net" means 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" means 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" means the estuarine and marine areas that support juvenile and adult populations of fish species throughout their entire life cycle, including early growth and development, as well as forage species utilized in the food chain. Fish habitats in all Coastal Fishing Waters, as determined through marine and estuarine survey sampling, are:

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

(b) "Anadromous fish spawning areas" means 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" means:

(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" means a formation, regardless of size or shape, formed of shell and live oysters of varying density.

(e) "Live rock" means 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" means 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 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" means 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" means 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" means 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, which is six feet or less, average light availability, which is a 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, of this Rule or 15A NCAC 03K .0304 and .0404, to apply to or conflict with the non-development control activities authorized by that Act.

(5) licenses, permits, shellfish leases and franchises, and record keeping:

(a) "Assignment" means 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" means 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, means when the vessel is fishing in State waters or when the

vessel originates from or returns to a North Carolina port.

(d) "Franchise" means a franchise recognized pursuant to G.S. 113-206.

(e) "Holder" means a person who has been lawfully issued in the person's name a license, permit, ~~franchise,~~ shellfish lease, or ~~assignment.~~ assignment, or who possesses a shellfish franchise recognized pursuant to G.S. 113-206.

(f) "Land" means:

(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.

(g) "Licensee" means any person holding a valid license from the ~~Department~~ Division to take or deal in ~~marine fisheries resources,~~ resources governed by any provision of Subchapter 113 of the North Carolina General Statutes under the authority of the Marine Fisheries Commission or any rule adopted by the Marine Fisheries Commission pursuant to Subchapter 113, except as otherwise defined in 15A NCAC 03O .0109.

(h) "Logbook" means paper forms provided by the Division and electronic data files generated from software or web-based utilities provided by the Division for the reporting of fisheries statistics by persons engaged in commercial or recreational fishing or for-hire operators.

(i) "Master" means captain or operator of a vessel or one who commands and has control, authority, or power over a vessel.

(j) "New fish dealer" means any fish dealer ~~making application~~ applying 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.

(k) "Office of the Division" means physical locations of the Division conducting license and permit transactions in Wilmington, Morehead City, Washington, and Roanoke Island, 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.

(l) "Permittee" means any person who has been issued a permit from the Division to take or deal in resources governed by any provision of Subchapter 113 of the North Carolina General Statutes under the authority of the Marine Fisheries Commission or any rule adopted by the Marine Fisheries Commission pursuant to Subchapter 113.

(m) "Quota monitoring log" means paper forms provided by the Division and electronic data files generated from software or web-based utilities provided by the Division for the reporting of fisheries statistics by licensed fish dealers who hold dealer permits for monitoring fisheries under a quota or allocation.

~~(l)~~(n) "Responsible party" means the 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.

~~(m)~~(o) "Tournament organizer" means the person who coordinates, supervises, or otherwise directs a recreational fishing tournament and is the holder of the Recreational Fishing Tournament License.

~~(n)~~(p) "Transaction" means an act of doing business such that fish are sold, offered for sale, exchanged, bartered, distributed, or landed.

~~(o)~~(q) "Transfer" means 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.

~~(p)~~(r) "Trip ticket" means paper forms provided by the Division and electronic data files generated from software or web-based utilities provided by the Division for the reporting of fisheries statistics by licensed fish dealers.

Authority G.S. 113-134; 113-174; 113-182; 143B-289.52; S.L. 2015-241, s. 14.10A.

15A NCAC 03I .0114 RECORDKEEPING REQUIREMENTS

(a) It shall be unlawful for a licensed fish dealer:

(1) to record false information on the North Carolina trip ticket or to fail to legibly record all items on the North Carolina trip ticket for each ~~transaction~~ transaction, including for fish harvested but not sold pursuant to 15A NCAC 03I .0123, and submit the trip ticket in accordance with G.S. 113-168.2, including the following:
  (A) fisherman's name;
  (B) fisherman's North Carolina license number;
  (C) dealer's North Carolina license number;
  (D) start date of trip, including year, month, and day;
  (E) unload date of trip, including year, month, and day;
  (F) North Carolina Division of Marine Fisheries Vessel Identification Number or indicate if no vessel was used;
  (G) crew size;
  (H) gear fished;
  (I) waterbody fished;
  (J) species landed;
  (K) quantity of each species landed in pounds, numbers of fish, bushels, or other units of measurement;
  (L) disposition of species;
  (M) transaction number;
  (N) number of crab pots or peeler pots fished, if applicable;
  (O) state where species was taken if other than North Carolina;
  (P) lease number, if applicable;
  (Q) bottom type, if applicable; and
  (R) shellfish harvest area, if ~~applicable.~~ applicable;

(2) to fail to provide to the Division a Trip Ticket Submittal/Transaction form indicating the number of transactions that occurred during the previous month;

(3) to fail to make paper copies or electronic copies of trip tickets or N.C. Trip Ticket Program Dock Tickets available at the dealer location for inspection by Marine Fisheries inspectors;

(4) to fail to submit trip tickets to the Division via electronic file transfer if that dealer reported an annual average of greater than 50,000 pounds of finfish for the previous three calendar years. Dealers subject to the electronic reporting requirement shall be notified by the Division via certified mail and within 120 days of receipt shall:
  (A) initiate electronic file transfer of trip tickets; and
  (B) continue to report by electronic file transfer until the dealer no longer holds a fish dealer license with finfish or consolidated categories;

(5) to fail to use software or web-based utilities authorized by the Division when reporting electronically; ~~and~~

(6) to fail to keep all trip tickets and all supporting documentation for each transaction including receipts, checks, bills of lading, records, electronic files, and accounts for a period of not less than three ~~years.~~ years;

(7) to fail to submit quota monitoring logs in accordance with 15A NCAC 03O .0503 if the licensed fish dealer holds a dealer permit for monitoring fisheries under a quota or allocation; and

(8) to fail to keep all quota monitoring logs including electronic files for a period of not less than three years.

(b) It shall be unlawful for a seller licensed under G.S. 113, Article 14A or donor to fail to provide to the fish dealer, at the time of transaction, the following:

(1) a current and valid license or permit to sell the type of fish being offered and if a vessel is used, the Commercial Fishing Vessel Registration; and

(2) complete and accurate information on harvest method and area of catch and other information required by the Division, in accordance with G.S. 113-168.2 and G.S. 113-169.3.

(c) It shall be unlawful to transport fish without having ready at hand for inspection a bill of consignment, bill of lading, or other shipping documentation provided by the shipping dealer showing the following items:

(1) name of the consignee;
(2) name of the shipper;
(3) date of the shipment;
(4) name of fish being shipped; and
(5) quantity of each fish being shipped.

In the event the fisherman taking the fish is also a licensed fish dealer and ships from the point of landing, all shipping records shall be recorded at the point of landing. Fishermen who transport their fish directly to licensed fish dealers are exempt from this Paragraph.

(d) It shall be unlawful to export fish landed in the State in a commercial fishing operation without a North Carolina licensed

fish dealer completing all the recordkeeping requirements in G.S. 113-168.2(i).

(e) It shall be unlawful to offer for sale fish purchased from a licensed fish dealer without having ready at hand for inspection by Marine Fisheries inspectors or other agents of the Fisheries Director written documentation of purchase showing the following items:

(1) name of the licensed fish dealer;
(2) name of the purchaser;
(3) date of the purchase;
(4) name of fish purchased; and
(5) quantity of each fish purchased.

(f) It shall be unlawful for a holder of a Fish Dealer License to have fish in possession at a licensed location without written documentation from a licensed fish dealer or a completed North Carolina trip ticket to show the quantity and origin of all fish.

Authority G.S. 113-134; 113-168.2; 113-168.3; 113-169.3; 113-170; 113-170.3; 113-170.4; 113-182; 143B-289.52.

SUBCHAPTER 03O - LICENSES, LEASES, FRANCHISES, AND PERMITS

SECTION .0200 – SHELLFISH LEASES AND FRANCHISES

15A NCAC 03O .0201 STANDARDS AND REQUIREMENTS FOR SHELLFISH LEASES AND FRANCHISES

(a) For the purpose of this Section:

(1) "any acres under a shellfish lease" shall include a water column amendment superjacent to a franchise.
(2) "application for additional shellfish lease acreage" shall include a water column amendment application to an existing shellfish bottom lease or to a franchise when the franchise holder also holds a shellfish bottom lease.
~~(1)~~(3) "extensive shellfish culture" shall mean shellfish grown on the bottom without the use of cages, racks, bags, or floats.
~~(2)~~(4) "intensive shellfish culture" shall mean shellfish grown on the bottom or in the water column using cages, racks, bags, or floats.
~~(3)~~(5) "plant" shall mean providing evidence of purchasing shellfish seed or planting shellfish seed or authorized cultch materials on a shellfish ~~lease or franchise.~~ lease.
~~(4)~~(6) "produce" shall mean the culture and harvest of oysters, clams, scallops, or mussels from a shellfish lease ~~or franchise~~ and lawful sale of those shellfish to the public at large or to a licensed shellfish dealer.

(b) All areas of the public bottom underlying Coastal Fishing Waters shall meet the following standards and requirements, in addition to the standards in G.S. 113-202, in order to be deemed suitable for leasing for shellfish aquaculture purposes:

(1) the proposed shellfish lease area shall not contain a "natural shellfish bed," as defined in G.S. 113-201.1, or have 10 bushels or more of shellfish per acre;
(2) the proposed shellfish lease area shall not be closer than 250 feet from a developed shoreline or a water-dependent shore-based structure, except no minimum setback is required when the area to be leased borders the applicant's property, the property of "riparian owners" as defined in G.S. 113-201.1 who have consented in a notarized statement, or is in an area bordered by undeveloped shoreline. For the purpose of this Rule, a water-dependent shore-based structure shall include docks, wharves, boat ramps, bridges, bulkheads, and groins;
(3) the proposed shellfish lease area shall not be closer than 250 feet to an existing lease;
(4) the proposed shellfish lease area, either alone or when considered cumulatively with other existing lease areas in the vicinity, shall not interfere with navigation or with existing, traditional uses of the area; and
(5) the proposed shellfish lease area shall not be less than one-half acre and shall not exceed 10 acres.

(c) To be suitable for leasing for shellfish aquaculture purposes, shellfish water column leases superjacent to a shellfish bottom lease shall meet the standards in G.S. 113-202.1 and shellfish water column leases superjacent to franchises shall meet the standards in G.S. 113-202.2.

(d) Shellfish bottom leases ~~and franchises~~ granted or renewed on or before July 1, 2019 and not renewed after July 1, 2019 shall be terminated unless they meet the following requirements, in addition to the standards in and as allowed by G.S. 113-202:

(1) they produce 10 bushels of shellfish per acre per year; and
(2) they are planted with 25 bushels of seed shellfish per acre per year or 50 bushels of cultch per acre per year, or a combination of cultch and seed shellfish where the percentage of required cultch planted and the percentage of required seed shellfish planted totals at least 100 percent.

(e) Shellfish water column leases granted or renewed on or before July 1, 2019 and not renewed after July 1, 2019 shall be terminated unless they meet the following requirements, in addition to the standards in and as allowed by G.S. 113-202.1 and G.S. 113-202.2:

(1) they produce 40 bushels of shellfish per acre per year; or
(2) the underlying bottom is planted with 100 bushels of cultch or seed shellfish per acre per year.

(f) Shellfish bottom leases ~~and franchises~~ granted or renewed after July 1, 2019 shall be terminated unless they meet the following requirements, in addition to the standards in and as allowed by G.S. 113-202:

(1) they produce a minimum of 20 bushels of shellfish per acre averaged over the previous three-year period beginning in year five of the shellfish bottom ~~lease or franchise;~~ lease; or

(2) for intensive culture bottom operations, the holder of the shellfish bottom lease ~~or franchise~~ provides evidence of purchasing a minimum of 23,000 shellfish seed per acre annually and for extensive culture bottom operations, the holder of the lease ~~or franchise~~ plants a minimum of 15,000 shellfish seed per acre per year.

(g) Shellfish water column leases granted or renewed after July 1, 2019 shall be terminated unless they meet the following requirements, in addition to the standards in and as allowed by G.S. 113-202.1 and 113-202.2:

(1) they produce a minimum of 50 bushels of shellfish per acre averaged over the previous three-year period beginning in year five of the shellfish water column lease; or

(2) the holder of the shellfish water column lease provides evidence of purchasing a minimum of 23,000 shellfish seed per acre annually.

(h) The following standards shall be applied to determine compliance with Paragraphs (d), (e), (f), and (g) of this Rule:

(1) only shellfish planted or produced as defined in Paragraph (a) of this Rule shall be included in the annual shellfish lease ~~and franchise~~ production reports required by Rule .0207 of this Section.

(2) if more than one shellfish lease ~~or franchise~~ is used in the production of shellfish, one of the leases ~~or franchises~~ used in the production of the shellfish shall be designated as the producing lease ~~or franchise~~ for those shellfish. Each bushel of shellfish shall be produced by only one shellfish ~~lease or franchise.~~ lease. Shellfish transplanted between shellfish leases ~~or franchises~~ shall be credited as planting effort on only one ~~lease or franchise.~~ lease.

(3) production information and planting effort information shall be compiled and averaged separately to assess compliance with the requirements of this Rule. Shellfish bottom leases ~~and franchises~~ granted on or before July 1, 2019 shall meet both the production requirement and the planting effort requirement within the dates set forth in G.S. 113-202.1 and G.S. 113-202.2 to be deemed in compliance. Shellfish bottom leases ~~and franchises~~ granted after July 1, 2019 and shellfish water column leases shall meet either the production requirement or the planting effort requirement within the dates set forth in G.S. 113-202.1 and G.S. 113-202.2 to be deemed in compliance.

(4) all bushel measurements shall be in standard U.S. bushels.

(5) in determining production ~~and marketing~~ averages and planting effort averages for information not reported in bushel measurements, the following conversion factors shall be used:

(A) 300 oysters, 400 clams, or 400 scallops equal one bushel; and

(B) 40 pounds of scallop shell, 60 pounds of oyster shell, 75 pounds of clam shell, or 90 pounds of fossil stone equal one bushel.

(6) production rate averages shall be computed irrespective of transfer of the shellfish ~~lease or franchise.~~ lease. The production rates shall be averaged for the following situations using the time periods described:

(A) for an initial shellfish bottom ~~lease or franchise,~~ lease, over the consecutive full calendar years remaining on the bottom lease ~~or franchise~~ contract after December 31 following the second anniversary of the initial bottom ~~lease or franchise;~~ lease;

(B) for a renewal shellfish bottom ~~lease or franchise,~~ lease, over the consecutive full calendar years beginning January 1 of the final year of the previous bottom lease ~~or franchise~~ term and ending December 31 of the final year of the current bottom lease ~~or franchise~~ contract;

(C) for a shellfish water column lease, over the first five-year period for an initial water column lease and over the most recent five-year period thereafter for a renewal water column lease; or

(D) for a shellfish bottom lease ~~or franchise~~ issued an extension period under Rule .0208 of this Section, over the most recent five-year period.

(7) in the event that a portion of an existing shellfish lease ~~or franchise~~ is obtained by a new lease ~~or franchise~~ holder, the production history for the portion obtained shall be a percentage of the originating lease ~~or franchise~~ production equal to the percentage of the area of lease ~~or franchise~~ site obtained to the area of the originating ~~lease or franchise.~~ lease.

(i) ~~To~~ Consistent with G.S. 113-202, G.S. 113-202.1, and G.S. 113-202.2, to be deemed eligible ~~for~~ by the Secretary to hold additional shellfish lease acreage, persons holding any acres under a shellfish lease ~~or franchise~~ shall meet the following requirements ~~established in:~~ at the time of submitting a shellfish lease application for additional shellfish lease acreage:

(1) Paragraphs (d), (e), (f), and (g) of this Rule;

(2) Rule .0204 of this Section; and

(3) Rule .0503(a) of this Subchapter.

Authority G.S. 113-134; 113-182; 113-201; 113-202; 113-202.1; 113-202.2; 113-206; 143B-289.52; S.L. 2019-37, s. 3; S.L. 2024-32, s. 5.(a).

15A NCAC 03O .0207 SHELLFISH LEASE ~~AND FRANCHISE~~ PRODUCTION REPORTS

(a) The holder or holders of a shellfish lease ~~or franchise~~ shall provide an annual production report to the Division of Marine Fisheries by March 31 of each year showing the amounts of material planted, purchased, and harvested; where and when the material was obtained; and when the material was planted in accordance with Rules .0201 and .0202 of this Section. The report shall include documentation of purchased seed in accordance with Rule .0201 of this Section.

(b) The Division shall provide reporting forms annually to each shellfish lease ~~or franchise~~ holder to be used for the annual production report.

(c) Failure by the holder or holders of the shellfish lease ~~or franchise~~ to submit the required annual production report or filing an incomplete report or a report containing false information constitutes grounds for termination as set forth in Rule .0208 of this Section.

Authority G.S. 113-134; 113-182; 113-201; 113-202; 113-202.1; 113-202.2; ~~113-206;~~ 143B-289.52.

15A NCAC 03O .0208 TERMINATION PROCEDURES FOR SHELLFISH LEASES ~~AND FRANCHISES~~

(a) Procedures for termination of shellfish leases ~~and franchises~~ are provided in G.S. 113-202.

(b) Consistent with G.S. 113-202(l1) and G.S. 113-201(b), a shellfish lease ~~or franchise~~ holder that failed to meet the requirements in G.S. 113-202, G.S. 113-202.1, G.S. 113-202.2, or the rules of this Section that govern a determination of failure to utilize the lease on a continuing basis for the commercial production of shellfish may be granted a single extension period of no more than two years per contract period upon a showing of hardship by written notice to the Fisheries Director or the Fisheries Director's designee received prior to the expiration of the lease term that documents one of the following occurrences caused or will cause the lease ~~or franchise~~ holder to fail to meet lease requirements:

(1) death, illness, or incapacity of the shellfish lease ~~or franchise~~ holder or the holder's immediate family as defined in G.S. 113-168 that prevented or will prevent the lease ~~or franchise~~ holder from working the lease;

(2) damage to the shellfish lease ~~or franchise~~ from hurricanes, tropical storms, or other severe weather events recognized by the National Weather Service;

(3) shellfish mortality caused by disease, natural predators, or parasites; or

(4) damage to the shellfish lease ~~or franchise~~ from a manmade disaster that triggers a state emergency declaration or federal emergency declaration.

(c) In the case of hardship as described in Paragraph (b) of this Rule, the notice shall state the shellfish lease ~~or franchise~~ number. In the case of hardship as described in Subparagraph (b)(1) of this Rule, the notice shall also state the name of the shellfish lease ~~or franchise~~ holder or immediate family member and either the date of death or the date of the illness or incapacity. The Fisheries Director may require a doctor's verification that the illness or incapacity occurred. In the case of hardship as described in Subparagraphs (b)(2) through (b)(4) of this Rule, the notice shall also include documentation of damage to the shellfish ~~lease or franchise.~~ lease. Written notice and supporting documentation shall be addressed to the Director of the Division of Marine Fisheries, 3441 Arendell Street, P.O. Box 769, Morehead City, NC 28557.

Authority G.S. 113-134; 113-182; 113-201; 113-202; 113-202.1; 113-202.2; 113-205; ~~113-206;~~ 143B-289.52.

15A NCAC 03O .0210 STANDARDS AND REQUIREMENTS FOR FRANCHISES

(a) A franchise holder desiring a permit from the Division of Marine Fisheries to conduct shellfish aquaculture on their franchise shall submit a Shellfish Management ~~Plans,~~ Plan, prepared in accordance with the standards for a Shellfish Lease Management Plan in Rule .0202 of this Section, ~~shall be provided~~ to the Division ~~of Marine Fisheries within 30 days~~ following formal recognition of a valid chain of title and at ten-year intervals thereafter.

(b) The Shellfish Management Plan requirements in Paragraph (a) of this Rule and all other requirements and conditions of this Section affecting management of franchises shall apply to all valid franchises.

~~(c) Commercial production requirements for franchises shall be identical to that required for shellfish bottom leases in accordance with Rules .0201 and .0207 of this Section averaged over the most recent three year period after January 1 following the second anniversary of the dates of recognition of claims as valid franchises and continuing throughout the term of Shellfish Management Plans required in Paragraph (a) of this Rule.~~

Authority G.S. 113-134; 113-182; 113-201; 113-202; 113-202.2; 113-205; 113-206; 143B-289.52.

SECTION .0500 - PERMITS

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

(a) To obtain a Division of Marine Fisheries permit, an applicant, responsible party, or person holding a power of attorney shall provide the following information:

(1) the full name, physical address, mailing address, date of birth, and signature of the applicant on the application and, if the applicant is not appearing before a license agent or the designated Division of Marine Fisheries ~~contact, the applicant's signature on the application shall be notarized;~~ contact;

(2) a current picture identification of the applicant, responsible party, or person holding a power of attorney, acceptable forms of which shall include driver's license, North Carolina Identification card issued by the North Carolina Division of Motor Vehicles, military identification card, resident alien card (green

card), or passport or, if applying by mail, a copy thereof;

(3) for permits that require a list of designees, the full names and dates of birth of the designees of the applicant who will be acting pursuant to the requested permit;

(4) certification that the applicant and his or her designees do not have four or more ~~marine or estuarine resource~~ convictions for violation of any provision of Subchapter 113 of the North Carolina General Statutes under the authority of the Marine Fisheries Commission or any rule adopted by the Marine Fisheries Commission pursuant to Subchapter 113 during the previous three years; and

(5) for permit applications from business entities:

(A) the business name;

(B) the type of business entity: corporation, "educational institution" as defined in 15A NCAC 03I .0101, limited liability company (LLC), partnership, or sole proprietorship;

(C) the name, address, and phone number of responsible party and other identifying information required by this Subchapter or rules related to a specific permit;

(D) for a corporation applying for a permit in a corporate name, the current articles of incorporation and a current list of corporate officers;

(E) for a partnership that is established by a written partnership agreement, a current copy of such agreement shall be provided when applying for a permit; and

(F) for business entities other than corporations, copies of current assumed name statements if filed with the Register of Deeds office for the corresponding county and copies of current business privilege tax certificates, if applicable.

(b) A permittee shall hold a valid:

(1) Recreational Commercial Gear License, Standard Commercial Fishing License, or Retired Standard Commercial Fishing License to hold an Estuarine Gill Net Permit.

~~(1)~~(2) Standard or Retired Standard Commercial Fishing License ~~in order~~ to hold:

(A) an Atlantic Ocean Striped Bass Commercial Gear Permit;

(B) a Permit for Weekend Trawling for Live Shrimp; or

(C) a Pound Net Set Permit.

The master designated on the single vessel corporation Standard Commercial Fishing License is the individual required to hold the Permit for Weekend Trawling for Live Shrimp.

~~(2)~~(3) Fish Dealer License in the proper category ~~in order~~ to hold dealer permits for monitoring fisheries under a quota or allocation for that category.

(c) An individual who is assigned a valid Standard Commercial Fishing License with applicable endorsements shall be eligible to hold any permit that requires a Standard Commercial Fishing License except a Pound Net Set Permit.

(d) If mechanical methods to take shellfish are used, a permittee and ~~his~~ a permittee's designees shall hold a valid Standard or Retired Standard Commercial Fishing License with a Shellfish Endorsement ~~in order~~ for a permittee to hold a:

(1) Depuration Permit;

(2) Permit to Transplant Oysters from Seed Oyster Management Areas; or

(3) Permit to Use Mechanical Methods for Shellfish on Shellfish Leases or Franchises, except as provided in G.S. 113-169.2.

(e) If mechanical methods to take shellfish are not used, a permittee and ~~his~~ a permittee's designees shall hold a valid Standard or Retired Standard Commercial Fishing License with a Shellfish Endorsement or a Shellfish License ~~in order~~ for a permittee to hold a:

(1) Depuration Permit; or

(2) Permit to Transplant Oysters from Seed Oyster Management Areas.

(f) Aquaculture Operation Permit and Aquaculture Collection Permit:

(1) A permittee shall hold a valid Aquaculture Operation Permit issued by the Fisheries Director to hold an Aquaculture Collection Permit.

(2) The permittee or designees shall hold appropriate licenses from the Division of Marine Fisheries for the species harvested and the gear used under the Aquaculture Collection Permit.

(g) Atlantic Ocean Striped Bass Commercial Gear Permit:

(1) An applicant for an Atlantic Ocean Striped Bass Commercial Gear Permit shall declare one of the following types of gear for an initial permit and at intervals of three consecutive license years thereafter:

(A) a gill net;

(B) a trawl net; or

(C) a beach seine.

For the purpose of this Rule, a "beach seine" shall mean a swipe net constructed of multi-filament or multi-fiber webbing fished from the ocean beach that is deployed from a vessel launched from the ocean beach where the fishing operation takes place. Gear declarations shall be binding on the permittee for three consecutive license years without regard to subsequent annual permit issuance.

(2) A person is not eligible for more than one Atlantic Ocean Striped Bass Commercial Gear Permit regardless of the number of Standard Commercial Fishing Licenses, Retired

Standard Commercial Fishing Licenses, or assignments held by that person.

(h) Applications submitted without complete and required information shall not be processed until all required information has been submitted. Incomplete applications shall be returned within two business days to the applicant with the deficiency in the application noted.

(i) A permit shall be issued only after the application is deemed complete and the applicant certifies his or her agreement to abide by the permit general and specific conditions established under 15A NCAC 03J .0501 and .0505, 03K .0103 and .0107, Rule .0211 of this Subchapter, and Rules .0502 and .0503 of this Section, as applicable to the requested permit. The permittee's signature on the initial permit general conditions form shall be notarized. In the case of a person holding more than one permit, the permittee's signature on the permit general conditions form shall be notarized for the initial permit issued but shall not be required for subsequent permits.

(j) For permit renewals, the permittee's signature on the specific condition form shall certify all information is true and accurate. Notarized signatures on renewal permits shall not be required.

~~(j)~~(k) In determining whether to issue, modify, or renew a permit, the Fisheries Director or his or her agent shall evaluate the following factors:

(1) potential threats to public health or marine and estuarine resources regulated by the Marine Fisheries Commission;

(2) whether the permit application meets the requirements for the permit; and

(3) whether the applicant has a history of eight or more violations of any provision of Subchapter 113 of the North Carolina General Statutes under the authority of the Marine Fisheries Commission or any rule adopted by the Marine Fisheries Commission pursuant to Subchapter 113 within 10 years.

~~(k)~~(l) The Division of Marine Fisheries shall notify the applicant in writing of the denial or modification of any permit application and the reasons therefor. The applicant may submit further information or reasons why the permit application should not be denied or modified.

~~(l)~~(m) Permits are valid from the date of issuance through the expiration date printed on the permit. Unless otherwise established by rule, the Fisheries Director may establish the issuance timeframe for specific types and categories of permits based on season, calendar year, or other period based upon the nature of the activity permitted, the duration of the activity, compliance with federal or State fishery management plans or implementing rules, conflicts with other fisheries or gear usage, or seasons for the species involved. The expiration date shall be specified on the permit.

~~(m) For permit renewals, the permittee's signature on the application shall certify all information is true and accurate. Notarized signatures on renewal applications shall not be required.~~

(n) It shall be unlawful for a permit holder to fail to notify the Division of Marine Fisheries within 30 days of a change of name or address, in accordance with G.S. 113-169.2.

(o) It shall be unlawful for a permit holder to fail to notify the Division of Marine Fisheries of a change of designee prior to use of the permit by that designee.

(p) Permit applications shall be available at ~~all~~ the Division of Marine ~~Fisheries offices.~~ Fisheries; a list of permits and the location where each permit application is available is on the Division's website at https://deq.nc.gov/dmf-permit-info.

Authority G.S. 113-134; 113-169.1; 113-169.2; 113-169.3; 113-182; 113-210; 143B-289.52.

15A NCAC 03O .0502 GENERAL PERMIT CONDITIONS

(a) It shall be unlawful to violate any permit condition.

(b) The following conditions shall apply to all permits issued by the Fisheries Director:

(1) it shall be unlawful to:

(A) operate under the permit except in areas, at times, and under conditions specified on the permit.

(B) operate under a permit without having the permit or copy thereof in possession of the permittee or the permittee's designees at all times of operation and the permit or copy thereof shall be ready at hand for inspection, except for a Pound Net Set Permit.

(C) operate under a permit without having a current picture identification in possession and ready at hand for inspection.

(D) refuse to allow inspection and sampling of a permitted activity by an agent of the Division of Marine Fisheries.

(E) fail to provide complete and accurate information requested by the Division in connection with the permitted activity.

(F) provide false information in the application for initial issuance, renewal, or transfer of a permit.

(G) hold a permit issued by the Fisheries Director if not eligible to hold any license required as a condition for that permit as stated in Rule .0501 of this Section.

(H) fail to provide reports within the timeframe required by the specific permit conditions.

(I) fail to keep such records and accounts as required by the rules in this Chapter for determination of conservation policy, equitable and efficient administration and enforcement, or promotion of commercial or recreational fisheries.

(J) assign or transfer permits issued by the Fisheries Director, except for a Pound Net Set Permit as authorized by 15A NCAC 03J .0504.

(K) fail to participate in and provide accurate information for data collection in accordance with 15A NCAC 03I .0113 and for survey programs administered by the Division.

(2) the Fisheries Director or the Fisheries Director's agent may, by conditions of the permit, impose on a commercial fishing operation and for recreational purposes any of the following restrictions for the permitted purposes:

(A) specify time;
(B) specify area;
(C) specify means and methods;
(D) specify record keeping and reporting requirements;
(E) specify season;
(F) specify species;
(G) specify size;
(H) specify quantity;
(I) specify disposition of resources;
(J) specify marking requirements; and
(K) specify harvest conditions.

(3) unless specifically stated as a condition on the permit, all statutes, rules, and proclamations shall apply to the permittee and the permittee's designees.

Authority G.S. 113-134; 113-169.1; 113-170.2; 113-170.3; 113-182; 113-210; 143B-289.52.

15A NCAC 03O .0503 PERMIT CONDITIONS; SPECIFIC

(a) Aquaculture Operation Permit and Aquaculture Collection Permit:

(1) It shall be unlawful to conduct aquaculture operations using marine and estuarine resources without first securing an Aquaculture Operation Permit from the Fisheries Director.

(2) It shall be unlawful:

(A) to take marine and estuarine resources from Coastal Fishing Waters for aquaculture purposes without first obtaining an Aquaculture Collection Permit from the Fisheries Director;

(B) to sell or use for any purpose not related to North Carolina aquaculture marine and estuarine resources taken pursuant to an Aquaculture Collection Permit; or

(C) to fail to submit to the Fisheries Director an annual report, due on December 1 of each year on the form provided by the Division of Marine Fisheries, stating the amount and disposition of marine and estuarine resources collected under authority of an Aquaculture Collection Permit.

(3) Aquaculture Operation Permits and Aquaculture Collection Permits shall be issued or renewed on a calendar year basis.

(4) It shall be unlawful to fail to provide the Division with a listing of all designees acting pursuant to an Aquaculture Collection Permit at the time of application.

(b) Atlantic Ocean Striped Bass Commercial Gear Permit:

(1) It shall be unlawful to take striped bass from the Atlantic Ocean in a commercial fishing operation without first obtaining an Atlantic Ocean Striped Bass Commercial Gear Permit.

(2) It shall be unlawful to obtain more than one Atlantic Ocean Striped Bass Commercial Gear Permit during a license year, regardless of the number of Standard Commercial Fishing licenses, Retired Standard Commercial Fishing licenses, or assignments.

(c) Blue Crab Shedding Permit: It shall be unlawful to possess more than 50 blue crabs in a shedding operation without first obtaining a Blue Crab Shedding Permit from the ~~Division of Marine Fisheries.~~ Division.

(d) Coastal Recreational Fishing License Exemption Permit:

(1) It shall be unlawful for the responsible party seeking exemption from recreational fishing license requirements for eligible individuals to conduct an organized fishing event held in Joint or Coastal Fishing Waters without first obtaining a Coastal Recreational Fishing License Exemption Permit.

(2) The Coastal Recreational Fishing License Exemption Permit shall only be issued for recreational fishing activity conducted solely for the participation and benefit of one of the following groups of eligible individuals:

(A) individuals with physical or mental impairment;
(B) members of the United States Armed Forces and their dependents, upon presentation of a valid military identification card;
(C) individuals receiving instruction on recreational fishing techniques and conservation practices from employees of state or federal marine or estuarine resource management agencies or instructors affiliated with an educational ~~institutions;~~ institution as defined in 15A NCAC 03I .0101(1); and
(D) disadvantaged youths as set forth in 42 U.S. Code 12511.

~~For the purpose of this Paragraph, educational institutions include high schools and other secondary educational institutions.~~

(3) The Coastal Recreational Fishing License Exemption Permit shall be valid for the date, time, and physical location of the organized fishing event for which the exemption is granted and the duration of the permit shall not exceed one year from the date of issuance.

(4) The Coastal Recreational Fishing License Exemption Permit shall only be issued if all of the following, in addition to the information required in Rule .0501 of this Section, is submitted to the Fisheries Director, in writing, at least 30 days prior to the event:

(A) the name, date, time, and physical location of the event;

(B) documentation that substantiates local, state, or federal involvement in the organized fishing event, if applicable;

(C) the cost or requirements, if any, for an individual to participate in the event; and

(D) an estimate of the number of participants.

(e) Requirements for ~~Dealer~~ dealer permits for monitoring fisheries under a quota or allocation:

(1) All species-specific permits listed in Subparagraphs (e)(2) through (e)(6) of this Rule are subject to the requirements of this Paragraph. During ~~the~~ commercial ~~season~~ harvest of a fishery opened by proclamation or rule ~~for the fishery~~ for which a dealer permit for monitoring fisheries under a quota or allocation shall be issued, it shall be unlawful for a fish dealer issued such permit to fail to:

(A) ~~fax or send via electronic mail~~ submit by electronic means, including electronic mail, fax, or text message, by noon ~~daily, on forms provided by the Division of Marine Fisheries,~~ daily in quota monitoring logs, the previous day's landings for the permitted fishery to the Division. The form shall include the dealer's name, dealer's license number, date the fish were landed, permittee's or designee's signature, date the permittee or designee signed the form, and species-specific information as listed in Parts (e)(2)(A), (e)(3)(A), (e)(4)(A), and (e)(5)(A) of this Rule. If the dealer submits their trip tickets by electronic means, then the dealer shall submit their quota monitoring logs by electronic means. If the dealer is unable to submit by electronic means the required information, the permittee shall call in the previous day's landings to the Division of Marine Fisheries Communications Center at 800-682-2632 or 252-515-5500. Landings for Fridays or Saturdays shall be submitted no later than noon on the following ~~Monday. If the dealer is unable to fax or electronically mail the required information, the permittee shall call in the previous day's landings to the Division;~~ Monday;

(B) submit the required form set forth in Part (e)(1)(A) of this Rule to the Division upon request or no later than five days after the close of the ~~season~~ harvest in a commercial fishing operation for the fishery permitted;

(C) maintain ~~faxes and other~~ related documentation in accordance with 15A NCAC 03I .0114;

(D) contact the Division daily, regardless of whether a transaction for the fishery for which a dealer is permitted occurred; and

(E) record the permanent dealer identification number on the bill of lading or receipt for each transaction or shipment from the permitted fishery.

(2) Atlantic Ocean Flounder Dealer Permit:

(A) In addition to the information required in Part (e)(1)(A) of this Rule, the form to record the previous day's landings of Atlantic Ocean flounder shall include the permit number, number of vessels used for harvest, and ~~the~~ pounds harvested.

(B) It shall be unlawful for a fish dealer to allow vessels holding a valid License to Land Flounder from the Atlantic Ocean to land more than 100 pounds of flounder from a single transaction at their licensed location during the open season without first obtaining an Atlantic Ocean Flounder Dealer Permit. The licensed location shall be specified on the Atlantic Ocean Flounder Dealer Permit and only one location per permit shall be allowed.

(C) It shall be unlawful for a fish dealer to possess, buy, sell, or offer for sale more than 100 pounds of flounder from a single transaction from the Atlantic Ocean without first obtaining an Atlantic Ocean Flounder Dealer Permit.

(3) Black Sea Bass North of Cape Hatteras Dealer Permit:

(A) In addition to the information required in Part (e)(1)(A) of this Rule, the form to record the previous day's landings of black sea bass north of Cape

Hatteras shall include the permit number, number of vessels used for harvest, and ~~the~~ pounds harvested.

(B) It shall be unlawful for a fish dealer to purchase or possess more than 100 pounds of black sea bass taken from the Atlantic Ocean north of Cape Hatteras (35° 15.0321' N) per day per commercial fishing operation during the open season unless the dealer has a Black Sea Bass North of Cape Hatteras Dealer Permit.

(4) Estuarine Flounder Dealer Permit:

(A) In addition to the information required in Part (e)(1)(A) of this Rule, the form to record the previous day's landings of estuarine flounder shall include the permit number, number of vessels used for harvest, pounds harvested, gear category, and management area.

(B) It shall be unlawful for a fish dealer to possess, purchase, sell, or offer for sale flounder taken from estuarine waters without first obtaining an Estuarine Flounder Dealer Permit required for specific management purposes for the applicable fisheries and harvest area.

~~(4)~~(5) Spiny Dogfish Dealer Permit:

(A) In addition to the information required in Part (e)(1)(A) of this Rule, the form to record the previous day's landings of spiny dogfish shall include the permit number, number of vessels used for harvest, and ~~the~~ pounds harvested.

(B) It shall be unlawful for a fish dealer to purchase or possess more than 100 pounds of spiny dogfish per day per commercial fishing operation unless the dealer has a Spiny Dogfish Dealer Permit.

~~(5)~~(6) Striped Bass Dealer Permit:

(A) In addition to the information required in Part (e)(1)(A) of this Rule, the form to record the previous day's landings of striped bass shall include the permit number, number of tags used by area, pounds harvested by area, and for the Atlantic Ocean, type of gear used for harvest.

(B) It shall be unlawful for a fish dealer to possess, buy, sell, or offer for sale striped bass taken from the following areas without first obtaining a Striped Bass Dealer Permit validated for the applicable harvest area:

(i) the Atlantic Ocean;

(ii) the Albemarle Sound Management Area as designated in 15A NCAC 03R .0201; or

(iii) the Joint and Coastal Fishing Waters of the Central/Southern Management Area as designated in 15A NCAC 03R .0201.

(C) No permittee shall possess, buy, sell, or offer for sale striped bass taken from the harvest areas opened by proclamation without having a valid ~~Division of Marine Fisheries issued~~ Division-issued tag for the applicable area affixed through the mouth and gill cover or, in the case of striped bass imported from other states, a similar tag that is issued for striped bass in the state of origin. Division striped bass tags shall not be bought, sold, offered for sale, or transferred. Tags shall be obtained ~~at~~ from the ~~Division offices.~~ Division; office locations that provide tags can be found on the Division's website at https://www.deq.nc.gov/striped-bass-commercial-harvest-tags. The Division shall specify the quantity of tags to be issued based on historical striped bass landings. It shall be unlawful for the permittee to fail to surrender unused tags to the Division upon request.

~~(f) Horseshoe Crab Biomedical Use Permit:~~

~~(1) It shall be unlawful to use horseshoe crabs for biomedical purposes without first obtaining a permit.~~

~~(2) It shall be unlawful for persons who have been issued a Horseshoe Crab Biomedical Use Permit to fail to submit an annual report on the use of horseshoe crabs to the Division of Marine Fisheries, due on February 1 of each year. Such reports shall be filed on forms provided by the Division and shall include a monthly account of the number of crabs harvested, a statement of percent mortality up to the point of release, the harvest method, the number or percent of males and females, and the disposition of bled crabs prior to release.~~

~~(3) It shall be unlawful for persons who have been issued a Horseshoe Crab Biomedical Use Permit to fail to comply with the Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for Horseshoe Crab. The Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for Horseshoe Crab is incorporated by~~

~~reference including subsequent amendments and editions. Copies of this plan are available via the Internet from the Atlantic States Marine Fisheries Commission at http://www.asmfc.org/fisheries-management/program-overview and at the Division of Marine Fisheries, 3441 Arendell Street, P.O. Box 769, Morehead City, NC 28557, at no cost.~~

(f) Estuarine Gill Net Permit:

(1) It shall be unlawful for an individual to deploy gill nets in Internal Waters, except for runaround, strike, drop, or drift gill nets, without possessing a valid Estuarine Gill Net Permit issued by the Division.

(2) Estuarine Gill Net Permits shall be issued or renewed by the Division on a calendar year basis. For renewals, any changes in information or supporting documents shall be provided by the permit holder at the time of renewal.

(3) It shall be unlawful for a permit holder:

(A) to violate the provisions of any rules or proclamations regarding the conditions set out in the federally issued Endangered Species Act 16 U.S.C. 1539(a)(1)(B) Incidental Take Permits, for the estuarine non-exempt gill net fisheries;

(B) to refuse or deny Division employees a trip aboard the vessel the permit holder is using or observation from a Division vessel to obtain data or samples in accordance with 15A NCAC 03I .0113;

(C) and the master and crew members of the boat, to interfere with or obstruct Division employees in the course of obtaining data or samples, which shall include refusal or failure to provide information on fishing gear parameters or to relinquish any captured sturgeon or sea turtle to Division employees;

(D) to avoid or mislead Division employees by providing incorrect information on fishing activity;

(E) to fail to provide a valid phone number at which the Estuarine Gill Net Permit holder can be reached, return phone calls, or answer text messages from the Division, or fail to notify the Division of a phone number change within 14 calendar days of such change;

(F) to fail to comply with all observer notification system or call-in requirements set out by permit conditions, proclamations, or rules; and

(G) to fail to report to the Division any incidental take of sea turtle or sturgeon within 24 hours.

(g) Permit for Weekend Trawling for Live Shrimp:

(1) It shall be unlawful to take shrimp with trawls from 9:00 p.m. on Friday through 12 noon on Saturday without first obtaining a Permit for Weekend Trawling for Live Shrimp.

(2) It shall be unlawful for a holder of a Permit for Weekend Trawling for Live Shrimp to use trawls from 12:01 p.m. on Saturday through 4:59 p.m. on Sunday.

(3) It shall be unlawful for a permit holder during the timeframe specified in Subparagraph (g)(1) of this Rule to:

(A) use trawl nets to take live shrimp except from areas open to the harvest of shrimp with trawls;

(B) take shrimp with trawls that have a combined headrope length of greater than 40 feet in Internal Coastal Waters;

(C) possess more than one gallon of dead shrimp (heads on) per trip;

(D) fail to have a functioning live bait tank or a combination of multiple functioning live bait tanks, with aerators or circulating water, with a minimum combined tank capacity of 50 gallons; or

(E) fail to call or email the Division ~~of Marine Fisheries Communications Center at 800-682-2632 or 252-515-5500~~ prior to each weekend use of the permit, specifying activities and location. Calls shall be directed to the Division of Marine Fisheries Communications Center at 800-682-2632 or 252-515-5500 and emails shall be sent to the email address provided in the permit specific conditions.

(h) Pound Net Set Permit: The holder of a Pound Net Set Permit shall follow the Pound Net Set Permit conditions as set forth in 15A NCAC 03J .0505.

(i) Scientific or Educational Activity Permit:

(1) It shall be unlawful for institutions or ~~agencies~~ organizations seeking exemptions from license, rule, proclamation, or statutory requirements to collect, hold, culture, or exhibit for scientific or educational purposes any marine or estuarine species without first obtaining a Scientific or Educational Activity Permit.

(2) The Scientific or Educational Activity Permit shall only be issued for collection methods and possession allowances approved by the ~~Division of Marine Fisheries.~~ Division.

(3) The Scientific or Educational Activity Permit shall only be issued for ~~approved~~ activities

conducted by or under the direction of ~~Scientific or Educational institutions~~ educational institutions, nongovernmental conservation organizations, or scientific institutions as defined in 15A NCAC 03I ~~.0101.~~ .0101(1) and approved by the Division.

(4) It shall be unlawful for the responsible party issued a Scientific or Educational Activity Permit to fail to submit an annual report on collections and, if authorized, sales to the Division, due on December 1 of each year, unless otherwise specified on the permit. The reports shall be filed on forms provided by the Division. Scientific or Educational Activity permits shall be issued on a calendar year basis.

(5) It shall be unlawful to sell marine or estuarine species taken under a Scientific or Educational Activity Permit without:
- (A) the required license for such sale;
- (B) an authorization stated on the permit for such sale; and
- (C) providing the information required by 15A NCAC 03I .0114 if the sale is to a licensed fish dealer.

(6) It shall be unlawful to fail to provide the Division with a list of all designees acting under a Scientific or Educational Activity Permit at the time of application.

(7) The permittee or designees utilizing the permit shall call or email the Division ~~of Marine Fisheries Communications Center at 800-682-2632 or 252-515-5500~~ no later than 24 hours prior to use of the permit, specifying activities and location. Calls shall be directed to the Division of Marine Fisheries Communications Center at 800-682-2632 or 252-515-5500 and emails shall be sent to the email address provided in the permit specific conditions.

(j) Shellfish Lease Restoration Permit:

(1) It shall be unlawful to transport shellfish cultivated on a shellfish lease or franchise to a restoration site without first obtaining a Shellfish Lease Restoration Permit.

(2) The Shellfish Lease Restoration Permit shall only be issued for approved activities associated with a shellfish lease or franchise.

(3) It shall be unlawful to harvest shellfish under a Shellfish Lease Restoration Permit without being recorded on a trip ticket through a certified shellfish dealer as set forth in 15A NCAC 03I .0114.

(4) It shall be unlawful for the permittee or permit designee to fail to maintain a record of all shellfish transported for restoration purposes and to fail to submit the record annually, unless otherwise specified on the permit.

(5) The permittee or designees utilizing the permit shall call the Division of Marine Fisheries Communications Center at 800-682-2632 or 252-515-5500 no later than 24 hours prior to use of the permit, specifying activities, location, and product size.

(k) Shellfish Relocation Permit:

(1) It shall be unlawful, without first obtaining a Shellfish Relocation Permit, to relocate shellfish from an area designated by the Fisheries Director as a site where shellfish would otherwise be destroyed due to maintenance dredging, construction, or other development activities.

(2) The Shellfish Relocation Permit shall be issued by the Fisheries Director only as part of a Coastal Area Management Act Permit issued in accordance with G.S. 113A-118 and G.S. 113-229 for development projects based on the status of shellfish resources in the development area, availability of Division employees to supervise the relocation activity, and if the Division has verified that there is no other avoidance or minimization measure that can be incorporated.

~~(j)~~(l) Under Dock Oyster Culture Permit:

(1) It shall be unlawful to cultivate oysters in containers under docks for personal consumption without first obtaining an Under Dock Oyster Culture Permit.

(2) An Under Dock Oyster Culture Permit shall be issued only in accordance with provisions set forth in G.S. 113-210(c).

(3) The applicant shall complete and submit an examination, with a minimum of 70 percent correct answers, based on an educational package provided by the Division ~~of Marine Fisheries~~ pursuant to G.S. 113-210(j), demonstrating the applicant's knowledge of:
- (A) the application process;
- (B) permit criteria;
- (C) basic oyster biology and culture techniques;
- (D) shellfish harvest area closures due to pollution;
- (E) safe handling practices;
- (F) permit conditions; and
- (G) permit revocation criteria.

(4) Action by an Under Dock Oyster Culture Permit holder to encroach on or usurp the legal rights of the public to access public trust resources in Coastal Fishing Waters shall result in permit revocation.

Authority G.S. 113-134; 113-169.1; 113-169.2; 113-169.3; 113-182; 113-210; 143B-289.52.

TITLE 21 - OCCUPATIONAL LICENSING BOARDS AND COMMISSIONS

CHAPTER 16 - DENTAL EXAMINERS

JOSH STEIN
Governor

D. REID WILSON
Secretary

KATHY B. RAWLS
Director

August 1, 2025

MEMORANDUM

TO: N.C. Marine Fisheries Commission

FROM: Jacqui Degan, Fisheries Biologist

SUBJECT: Atlantic Bonito Issue Paper

Issue
Present background information and catch characteristics to the North Carolina Marine Fisheries Commission (MFC) to explore trends in data for Atlantic bonito (*Sarda sarda*). Review potential data trends and solicit feedback from the MFC to incorporate into the draft issue paper.

Objective
Address the MFC's request made at its May 2024 business meeting for N.C. Division of Marine Fisheries (DMF) staff to develop an issue paper for Atlantic bonito management, including landings information, and proposed rule language.

Action Needed
Review and provide input on North Carolina's recreational and commercial Atlantic bonito fisheries for the purpose of developing an issue paper to determine if management is needed. This feedback will be incorporated as staff continue to draft the Atlantic Bonito Issue Paper, including rulemaking language as requested by the MFC.

Background
Atlantic bonito is a small tuna species typically found in tropical to temperate coastal waters of the Atlantic Ocean. Atlantic bonito has become a more popular and targeted fishery in recent years, especially for the recreational sector. Participants associated with the fishery have expressed concern over increases in harvest and targeted trips of the species to both state and federal fisheries managers. In May of this year, the Massachusetts Division of Marine Fisheries enacted the first-ever size and possession limits for both false albacore (little tunny) and Atlantic bonito due to significant growth in the fishery. The Massachusetts Division of Marine Fisheries opted to adopt these precautionary management measures until a more robust science and management program is implemented. Currently, there are no rules for management in place for Atlantic bonito in any other states, but some states are considering management. Management is not currently being pursued at the Atlantic States Marine fisheries Commission (ASMFC) or federal level, though it has been discussed by the ASMFC and South Atlantic Fishery Management Council (SAMFC).

From 2011 to 2024, North Carolina recreational landings of Atlantic bonito averaged 116,268 pounds, which accounts for 31% of coastwide (MA to FL) recreational landings and 92% of South Atlantic (NC to FL) recreational landings (Figures 1 and 2). North Carolina commercial landings during this same time averaged 12,633 pounds and accounted for 27% of coastwide commercial landings and 81% of commercial landings in the South Atlantic (Figures 3 and 4).

The stock status of the Atlantic bonito fishery is unknown, primarily because there is very little data available on which to base a stock assessment. Age and growth, sex and maturity, and tagging studies would help fill these data gaps for Atlantic bonito in the western Atlantic; however, funding to complete these studies is limited. Currently, the American Saltwater Guides Association, in collaboration with North Carolina State University and the Nature Conservancy, has initiated several studies with the aim of addressing some of the coast-wide data gaps, including stock structure and migration patterns.

At its May 2024 business meeting, the MFC requested that DMF staff develop an issue paper for Atlantic bonito management, including landings information and proposed rule language, to determine if proactive management is needed. Members of the MFC expressed their concern with the growth of North Carolina's recreational Atlantic bonito fishery in the last several years due to closed recreational fisheries and the availability of new technology that has changed how fishermen are pursuing this fish. While there is no stock assessment currently available for Atlantic bonito, management action may be needed to address the following data trends in NC:

<u>Recreational</u>

- Recreational landings have been trending upwards since 2011, with North Carolina landings accounting for 31% of coastwide landings (MA to FL) and 92% of South Atlantic landings from 2011 to 2024(NC to FL, Figures 1 and 2).
- Directed recreational trips in NC have doubled since 2019, after remaining steady for the time series (Figure 5).
- Most Atlantic bonito harvested by recreational anglers from 2020–2024 were smaller than the length at first maturity of 15 inches (Figure 6).

<u>Commercial</u>

- North Carolina accounts for 27% of coastwide commercial landings and 81% of South Atlantic commercial landings from 2011 to 2024 (Figures 3 and 4).
- Commercial landings have remained close to the time series average of 12,633 pounds, though commercial landings in 2023 were above that average (17,876 pounds).

Additional information, including a more detailed characterization of the Atlantic bonito fishery coastwide, will be provided in a presentation at the August MFC meeting. DMF staff are actively developing the requested issue paper and proposed rule language. Input from the MFC at the August quarterly business meeting will help guide staff early in the drafting phase and prevent potential delays later in the development process.

Figures

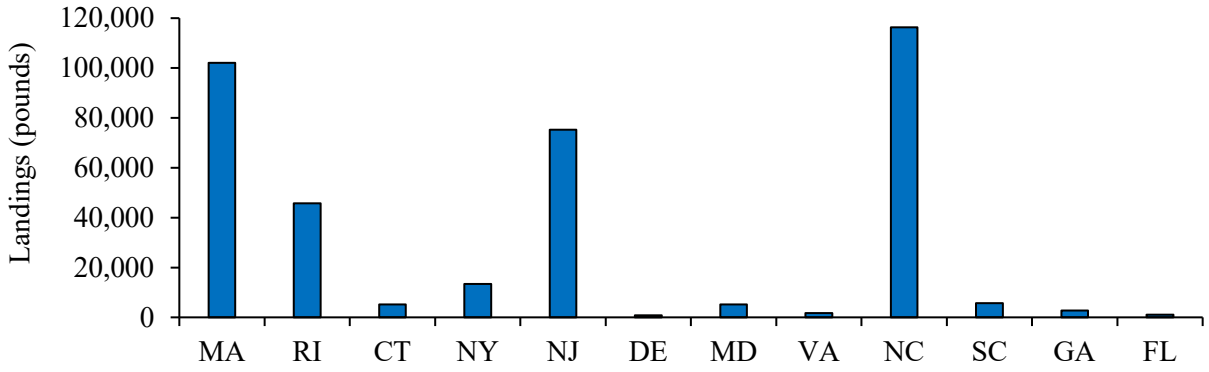


Figure 1. Average Atlantic bonito landings (pounds), MA–FL, 2011–024. (Source: Marine Recreational Information Program)

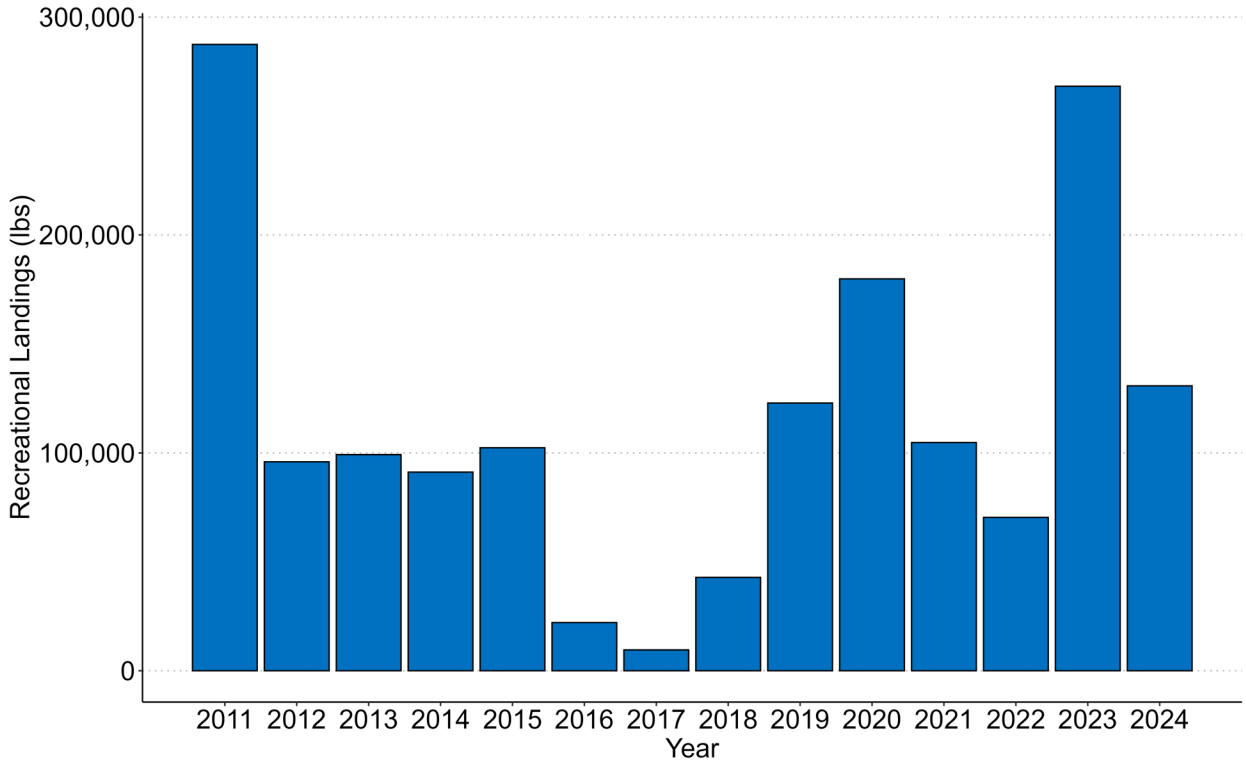


Figure 2. South Atlantic recreational landings (pounds) by state, 2011–2024. (Source: Marine Recreational Information Program)

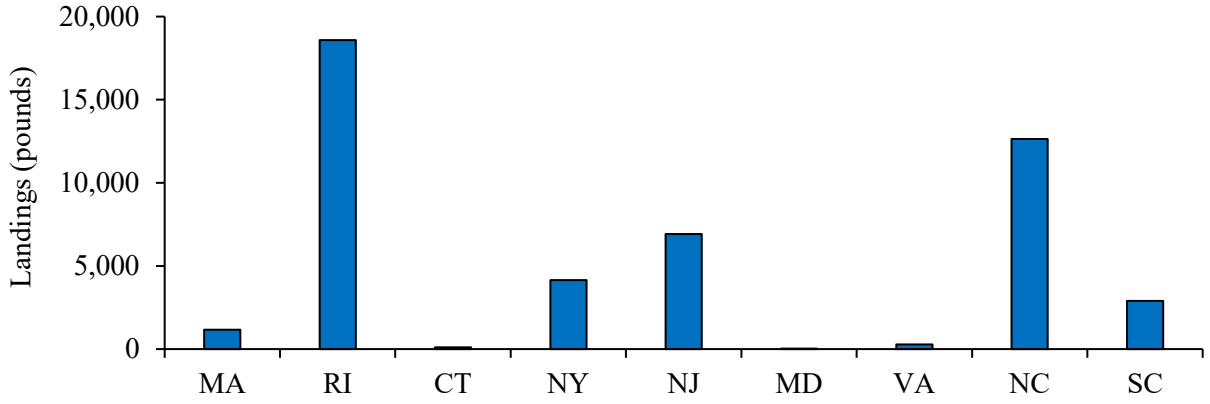


Figure 3. Average Atlantic bonito landings, MA–SC (pounds), 2011–2024. States not shown on graph did not have commercial landings. (Source: Atlantic Coastal Cooperative Statistics Program and North Carolina Trip Ticket Program)

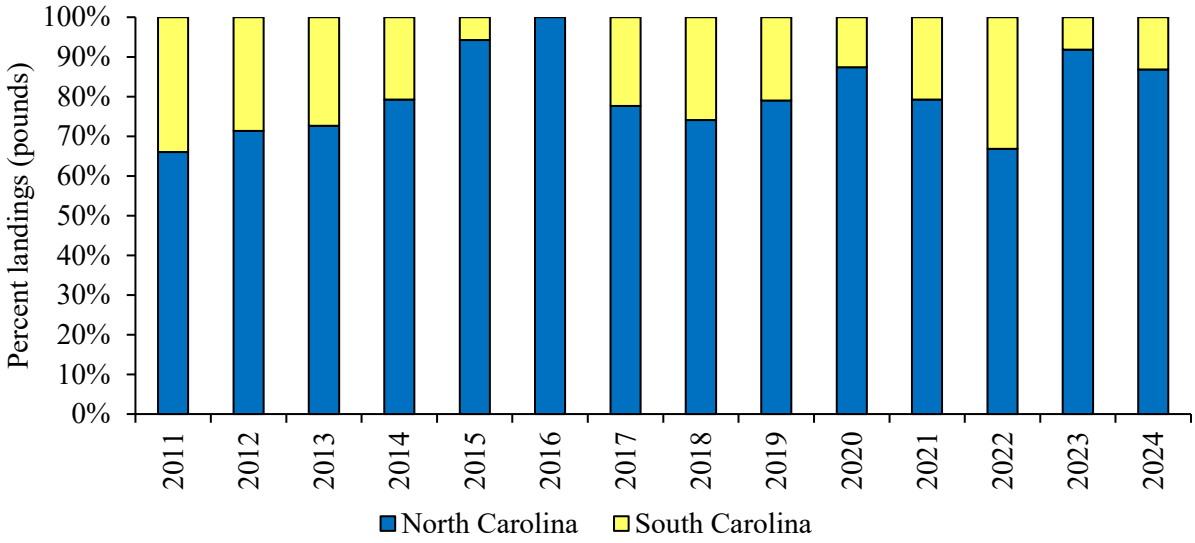


Figure 4. South Atlantic commercial landings (percent of total pounds) by state, 2011-2024. Florida and Georgia reported no landings during this time frame. (Source: Atlantic Coastal Cooperative Statistics Program)

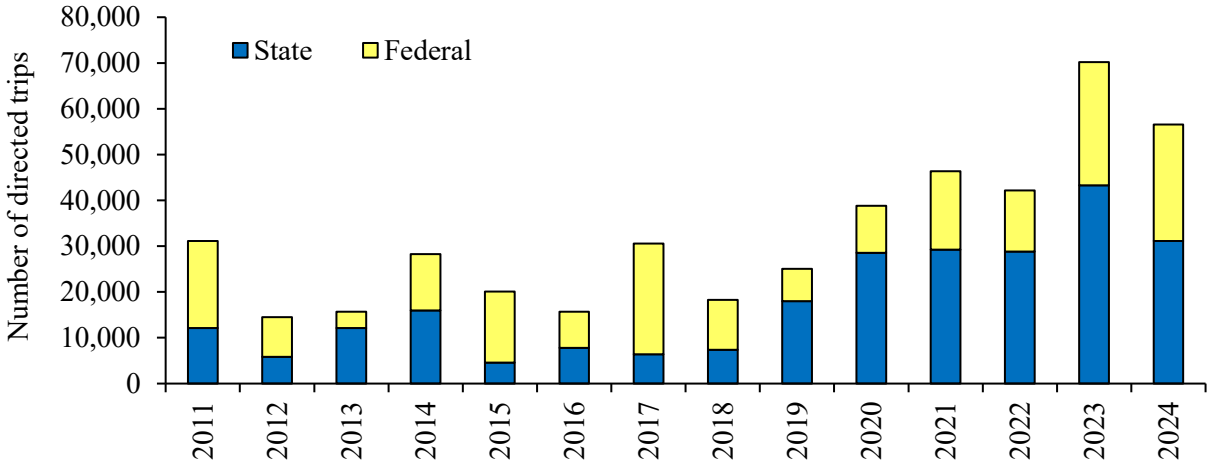


Figure 5. Directed recreational trips for Atlantic bonito in North Carolina in state (0-3 miles) and federal (>3 miles) waters, 2011-2024. (Source: Marine Recreational Information Program)

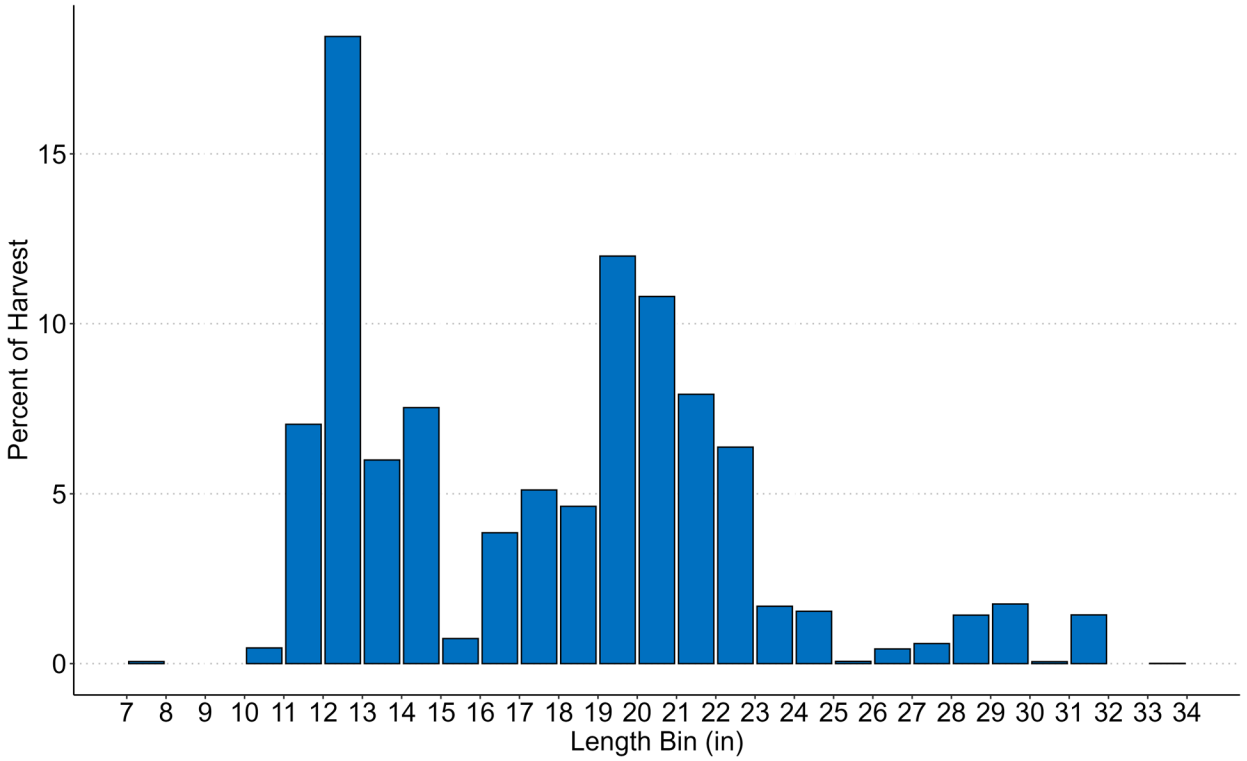


Figure 6. Percent of recreational Atlantic bonito harvest by length frequency (fork length, inches), 2011–2024. (Source: Marine Recreational Information Program)