

Estuarine Striped Bass Fishery Management Plan Amendment 2 Decision Document



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N.C. Division of Marine Fisheries

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Morehead City, North Carolina 28557

This Decision Document is a companion document to Amendment 2 to the Estuarine Striped Bass Fishery Management Plan. It provides a brief overview and context for the issues. The document also provides references to the full Amendment document where more detailed information and exact management option language is located. The Estuarine Striped Bass Fishery Management Plan Amendment 2 document is the plan under consideration and is the focus of all NCMFC action.

Summary

In February 2022, the North Carolina Marine Fisheries Commission (MFC) reviewed draft Amendment 2 of the Estuarine Striped Bass Fishery Management Plan (FMP). At that time a motion was passed to send draft Amendment 2 for public and MFC Advisory Committee review after a requested edit to the plan, removing options associated with gill net use above the ferry lines in the Tar-Pamlico and Neuse rivers.

Amendment 2 was jointly developed by the Division of Marine Fisheries (DMF) and Wildlife Resources Commission (WRC) staff and includes four issue papers, three address sustainable harvest in three areas of the state and one addresses hook and line as a commercial gear. The goal of the plan being to achieve self-sustaining populations unless prevented by biological or environmental factors.

November 2020	Division holds public scoping period
February 2021	MFC approves goal and objectives of FMP
October 2020 – September 2021	Division drafts FMP
September - October 2021	Division holds workshops to further develop draft FMP with Plan Advisory Committee
October 2021 – January 2022	Division updates draft plan
February 2022	MFC votes to send draft FMP for public and AC review
March 2022	MFC Advisory Committees meet to review draft FMP and receive public comment
May 2022	MFC selects preferred management options
June - July 2022	DEQ Secretary and Legislative review of draft FMP
August 2022	MFC votes on final adoption of FMP
TBD	DMF and MFC implement management strategies

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 two harvest management areas is referred to as the Albemarle– Roanoke (A-R) stock, and its spawning grounds are in the Roanoke River in the vicinity of Weldon, NC. Implementation of recreational and commercial striped bass regulations within the ASMA is the responsibility of the MFC. Within the RRMA, commercial regulations are the responsibility of the NCMFC while recreational regulations are the responsibility of the WRC. The A-R stock is also included in the management unit of Amendment 6 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 the Cape Fear rivers stocks.

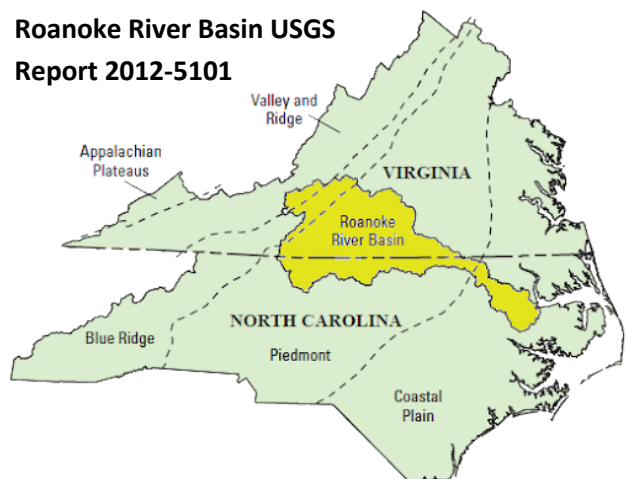
The most recent A-R striped bass stock assessment was completed and approved for management use in 2020. The assessment indicated the resource is overfished and is experiencing overfishing. The North Carolina Fisheries Reform Act and Amendment 6 to the ASMFC Interstate FMP for Atlantic Striped Bass require management measures to be implemented to end overfishing in 1-year and end the overfished status in 10-years. Adaptive management described in Amendment 1 was triggered by the assessment and the November 2020 Revision to Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan reduced the striped bass total allowable landings (TAL) from 275,000 pounds to 51,216 pounds in the ASMA and RRMA. This reduction in TAL is expected to end overfishing in one year. This adaptive management action maintains compliance with Amendment 1 to the North Carolina Estuarine Striped Bass FMP and ASMFC Addendum IV to Amendment 6 to the Interstate FMP for Atlantic Striped Bass. The new TAL was effective January 1, 2021. The commercial and recreational fisheries are set at a 50/50 allocation. Recreational allocation is split evenly between the ASMA and RRMA.

The CSMA Estuarine Striped Bass Stocks report completed in 2020, is a collection of (1) all data that have been collected, (2) all management effort, and (3) all major analyses that have been completed for CSMA stocks to serve as an aid in development of Amendment 2. While this report does not yield a stock status, it does indicate that sustainability of Tar-Pamlico and Neuse rivers stocks is unlikely at any level of fishing mortality. It also indicates that natural recruitment is the primary limiting factor. The report concludes that without stocking, abundance will decline. In the Cape Fear River, abundance declined even with no possession measures in place. No-possession measures were implemented in the Cape Fear River in 2008 and the Tar-Pamlico and Neuse rivers in 2019. The overall goal of the no-possession measures is to increase the age structure and abundance of fish in these systems to move towards sustainable stocks.

River Flow

Striped bass are broadcast spawners, producing eggs that must remain suspended in the water column to develop and hatch. Proper river flow is a critical environmental factor influencing year class strength. In the RRMA, extended periods of high water flow from May to June negatively impact eggs and fry. Recruitment failures since 2001 are thought to be due to spring flooding.

There are three dams on the Roanoke River above Weldon. The Federal Energy Regulatory Commission does limit activities, such as hydropeaking, to limit dam impacts. However, rainfall in the river basin impacts the ability to regulate river flow while limiting flooding. The Roanoke River is impacted by rain north of Winston-Salem, NC and into southern Virginia.



A cooperative agreement with the US Army Corp. of Engineers strives to maintain Roanoke River flow rates within specified ranges to allow for striped bass spawning success. Flow rates that strive to benefit striped bass spawning are negotiated. Spawning success is measured by the annual juvenile abundance index (JAI). In 2005, the flow was ideal for spawning and the JAI was high. In 2013, the flow rate was too high for half of the spawning period. The resulting JAI was low. Poor recruitment is a major factor causing population declines. Inter-agency work continues to address these environmental concerns.

Stocking

In the late 19th century, the Weldon Hatchery began growing striped bass to release into the wild. Since then striped bass have been stocked in the Albemarle Sound, Tar-Pamlico, Neuse, and Cape Fear rivers. An interagency cooperative agreement (See Appendix 1A, p. 51) between the US Fish and Wildlife Service, DMF, and WRC was established in 1986 to oversee the North Carolina Coastal Striped Bass Stocking Program. An annual workplan establishes stocking goals by river system.



Historically, Roanoke River broodstock were used when stocking the rivers of North Carolina. This has resulted in genetically similar fish stocks across the state. Broodstock are now retrieved from the different river systems; however, the fish are genetically from the same stock.

Stocking is necessary to maintain the Tar-Pamlico, Neuse, and Cape Fear stocks. Data collection efforts continue to evaluate if self-sustaining stocks are achievable in these systems. If not, alternative management may be considered, such as hatchery supported fisheries. More on the history of stocking

and an assessment of the state stocking program is provided in Appendix 1 of the FMP document (p. 31) . This information informs the three sustainable harvest issue papers.

Amendment 2 to the Estuarine Striped Bass FMP

Amendment 2 addresses the management strategies for the A-R stock and the CSMA stocks separately. Appendix 2 focuses on the A-R stock, while Appendix 3 and 4 are focused on the CSMA stocks. Appendix 5 addresses a gear specific issue. Initial recommendations are indicated in options followed by rationale. **Orange** text with a * indicate DMF initial recommendations. When WRC staff recommendations differ, they are indicated in **green** text with ** following. **Recommendations may change based on public and advisory committee input.**

Appendix 2: Albemarle-Roanoke Sustainable Harvest Issue Paper

The peer reviewed stock assessment indicates the A-R stock is overfished and overfishing is occurring. The state Fisheries Reform Act and the ASMFC FMP require management measures be implemented to address the status of the stock. The November 2020 Revision to Amendment 1 implemented management to end overfishing in one year. This issue paper considers management beyond the revision to achieve sustainable harvest.

Management Options

1. Manage for sustainable harvest through harvest restrictions (page 59)
 - A. **Status Quo: use of a TAL***
 - B. Implement a harvest moratorium

Continued on next page...

Appendix 2: Albemarle-Roanoke Sustainable Harvest Issue Paper (continued)

Management Options Continued

2. Commercial fishery managed as bycatch fishery (page 62)
 - A. Status Quo: bycatch fishery*
 - B. End bycatch fishery
3. Accountability measures address TAL overages (example table on p. 7 of this document; FMP page 64)

Please note, for all overage options: overages will be deducted from the management area/sectors fishery(ies) TAL, not the TAL plus buffer; if paybacks exceed the next year's TAL, paybacks will be required in subsequent years to meet the full reduction amount; in situations where a TAL has been reduced from a previous year's overage, if the reduced TAL is exceeded, any required paybacks are reduced from the fisheries' original TAL, not from the reduced TAL. WRC staff do not agree with the accountability measures for overages as written under Option 3**.

 - A. If landings from the management area/sectors three fisheries combined (RRMA recreational, ASMA recreational, and ASMA commercial) exceeds the total TAL by 10% in a single calendar year, then the fishery(ies) contributing to the overage will reduce their TAL by their percent contribution to the overage the next calendar year.
 - Chronic: if the five-year running average of the landings from the management area/sectors three fisheries combined (RRMA recreational, ASMA recreational, and ASMA commercial) exceeds the five-year running average of the total TAL by 2%, the fishery(ies) exceeding their allocated TAL deduct the annual average overage from their annual TAL for the next five years.
 - B. If the landings from the management area/sectors three fisheries combined (RRMA recreational, ASMA recreational, and ASMA commercial) exceeds the total TAL by 5% in a single calendar year, then the fishery(ies) contributing to the overage will reduce their TAL by their percent contribution to the overage the next calendar year.
 - C. If the landings in any one of the management areas' three fisheries (RRMA recreational, ASMA recreational, and ASMA commercial) exceeds their allocated TAL by 5% in a calendar year, any landings in excess of the TAL will be deducted from that fisheries' TAL the next calendar year. **
 - D. If the landings in any one of the management areas' three fisheries (RRMA recreational, ASMA recreational, and ASMA commercial) exceeds their allocated TAL in a calendar year, any landings in excess of the TAL will be deducted from that fisheries' allocated TAL the next calendar year. *
4. Size limits to expand age structure (page 65)
 - A. Status Quo: 18-inch ASMA and 18 – 22-inch harvest slot with 1 fish greater than 27-inch in RRMA
 - B. Increase minimum size
 - C. In ASMA, implement 18-25-inch harvest slot*
 - D. In RRMA, maintain 18-22-inch harvest slot and one fish greater than 40 inches**
 - E. In RRMA, maintain slot limit 18-22 inch and no fish greater*
5. Gear modifications and area closures to reduce discard mortality (page 69)
 - A. Status Quo: Commercial harvest of striped bass with gill nets and recreational harvest and catch-and-release fishing in the ASMA and RRMA including on the spawning grounds*
 - B. Do not allow harvest of striped bass with gill nets
 - C. Do not allow harvest or catch-and-release fishing for striped bass on the spawning grounds
 - D. Expand the single barbless hook requirement to the entire RRMA during striped bass season
 - E. Require non-offset, barbless circle hooks when fishing live or natural bait in inland waters of the RRMA May 1 through June 30

Appendix 2: Albemarle-Roanoke Sustainable Harvest Issue Paper (continued)

Management Options Continued

6. Adaptive Management* (page 73)

- Update stock assessment at least once between benchmarks to review Biological Reference Points and TAL*
- If F exceeds the F_{Target} , reduce the TAL*
- A future harvest moratorium is an option based on stock assessment results
- Ability to change daily possession limits, open and close seasons, and require gear modifications to keep below the TAL*

Initial Recommendations Rationale - Albemarle-Roanoke Sustainable Harvest

- A TAL is the recommended management as the stock rebounded in the 1990s with a limited TAL.
- The DMF recommends continuing management with the bycatch provision in the commercial fishery. If commercial hook and line is implemented, bycatch requirements would not be appropriate.
- The DMF recommends pound for pound overage pay backs due to the status of the stock and a need to be conservative. The WRC would prefer a 5% buffer over the TAL to account for uncertainty in the recreational landings estimate. The difference in rationale between DMF and WRC staff is in determining if the buffer is only a trigger and overages are paid back to the TAL, or if the buffer is a trigger as well as only overages greater than the TAL plus 5% would be paid back. The WRC preference is currently not an option under the accountability strategy to address overages.
- Implementing a slot limit in the ASMA would increase protections for the spawning stock.
- In the RRMA, it is recommended the slot limit of 18-25 inches and no fish greater to increase protection for the spawning stock.
- Not allowing gill nets to harvest striped bass will increase commercial dead discards and possibly negatively impact the commercial shad and southern flounder fisheries.
- Expanding the single barbless hook requirement to the entire RRMA would negatively impact fishers targeting many sport fish species. Continue angler education on best fishing practices is recommended.
- Adaptive management allows management to be adjusted to respond to data between full FMP reviews. Note that WRC has limited proclamation authority.



EXAMPLES of Accountability measures to address TAL Overage

Option	Buffer	When Payback Is Required	Management Area/Sector	Area/Sector TAL	TAL + Buffer	Area/Sector Landings	Landings Over/Under TAL	Total Payback Required	Percent Contribution to Overage	Payback	Next Season Area/Sector TAL (lb)	Explanation
3.A.	10% over TAL	Overall landings are greater than (Overall TAL + Buffer)	RRMA recreational	12,804	14,084	27,546	14,742	12,197	88%	12,197 x 88% = 10,733 lb	2,071	Total TAL+10% exceeded so payback is necessary.
			ASMA recreational	12,804	14,084	8,258	-4,546		0%	12,197 x 0% = 0 lb	12,804	
			ASMA Commercial	25,608	28,169	27,609	2,001		12%	12,197 x 12% = 1,464 lb	24,144	
3.B.	5% over TAL	Overall landings are greater than (Overall TAL + Buffer)	RRMA recreational	12,804	13,444	17,804	5,000	0	100%	0	12,804	Despite RRMA recreational exceeding TAL, Total TAL+5% not exceeded so no paybacks are necessary.
			ASMA recreational	12,804	13,444	4,000	0		0%	0	12,804	
			ASMA Commercial	25,608	26,888	25,608	0		0%	0	25,608	
3.C.	5% over Fishery TAL	Fishery landings are greater than (Fishery TAL + Buffer)	RRMA recreational	12,804	13,444	12,000	-804	Not Applicable	ASMA recreational landings exceeded TAL+5% so must pay back full overage. ASMA commercial exceeded TAL by less than 5% buffer so no paybacks are necessary.	0	12,804	ASMA recreational landings exceeded TAL+5% so must pay back full overage. ASMA commercial exceeded TAL by less than 5% buffer so no paybacks are necessary.
			ASMA Commercial	25,608	26,888	26,200	392			0	25,608	
			RRMA recreational	12,804	12,804	12,954	150			150 lb	12,654	
3.D.	No Buffer	Landings greater than Fishery TAL	ASMA recreational	12,804	12,804	13,494	690	Each area/sector exceeded their TAL and must pay back all landings in excess of their TAL.	690 lb	12,114	Each area/sector exceeded their TAL and must pay back all landings in excess of their TAL.	
			ASMA Commercial	25,608	25,608	25,825	217		217 lb	25,391		
			RRMA recreational	12,804	12,804	12,954	150		150 lb	12,654		

Appendix 3: Tar-Pamlico and Neuse Rivers Sustainable Harvest

This issue paper considers management measures in the Tar-Pamlico and Neuse rivers to promote self-sustaining populations. A no-possession measure was implemented in 2019 to protect important year classes in order to increase the age structure and abundance of Tar-Pamlico and Neuse river striped bass. Options 2 and 3 are dependent on continuing the no-possession measure for CSMA striped bass.

Management Options

1. Striped bass harvest (page 89)
 - A. Continue no-possession measure*
 - B. End no-possession measure
2. Gill net restrictions or limits (page 91)
 - A. Maintain gill net closure above ferry lines
3. Adaptive management* (page 95)
 - In 2025, review data through 2024 to evaluate management*

Initial Recommendation Rationale - Tar-Pamlico and Neuse Rivers Sustainable Harvest

- Maintaining no-possession will continue to protect important age classes and increase the age structure and abundance moving towards sustainable stocks.
- Adaptive management allows management to be adjusted to respond to data between full FMP reviews. It should be noted that WRC has limited proclamation authority and temporary rules require 30-days to be implemented.

MFC actions

At its February 2022 business meeting, the MFC passed a motion to remove options 2.B. and 2.C. from draft Appendix 3. These options, if selected, provided access above the ferry lines to commercial gill net operations during shad season. Gear, season, and area limitations were included in those options as well as observer monitoring. These options have been removed from the draft plan currently under public and advisory committees review.



Appendix 4: Cape Fear River Sustainable Harvest

This issue paper considers management measures in the Cape Fear River to promote sustainable harvest. A no-possession measure was implemented in 2008 to increase the age structure and abundance of Cape Fear River striped bass.

Management Options

1. Maintain no possession provision* (page 112)
2. Allow seasonal harvest in the Cape Fear** (page 113)
3. Allow seasonal harvest in Joint and Inland Fishing Waters above the 140 Bridge (page 114)
4. Allow seasonal harvest in Inland Fishing Waters on the mainstem of the Cape Fear River (page 115)
5. Adaptive management* (page 115)
 - A. Continue YOY surveys and genetic PBT analysis (Appendix 4 page 13)
 - B. Management measures which may be adjusted include means and methods, harvest area, season, size, and creel limit.
 - C. Must be evaluated by staff with the MFC Finfish AC consultation.

Initial Recommendation Rationale - Cape Fear River Sustainable Harvest

- The DMF recommends maintaining no-possession to evaluate passage at the newly renovated Lock and Dam 1 and further assess indications of wild spawning occurring in the system (See figure below). Allowing harvest during spawning season may impact fish making successful passage to spawn.



Lock # 2 - View directly over dam
Low flow ~2300 cfs @ LD1
4/29/21

- The WRC recommends allowing harvest in the Cape Fear to provide opportunities for harvest of a hatchery-supported stock. Despite 13-years of no-harvest, the population remains stocked fish with limited spawning and access to spawning grounds is unlikely before the next plan review. Options 3 and 4 provide access should conditions improve. Adaptive management may be used to limit area and season.

- Adaptive management allows management to be adjusted to respond to data between full FMP reviews. It should be noted that WRC has limited proclamation authority and temporary rules require 30-days to be implemented.



Lock # 2 - View directly over dam
Experimental flow pulse 3/31/21

Appendix 5: Hook and Line as a Commercial Gear

Amendment 1 management did not approve use of hook-and-line at that time. However, a rule change was made to allow this as an adaptive management tool. This issue paper further considers the appropriate time for approval of hook-and-line as a commercial gear.

Management Options

1. Do not allow hook and line as a commercial gear for estuarine striped bass* (page 121)
2. Allow hook and line as a commercial gear for estuarine striped bass (page 121)
3. Adaptive management* (page 124)
 - i. If TAL will be quickly exceeded or unable to be harvested, management will be reevaluated.*
 - ii. If enforcement activity or License and Statistics data suggests significant unreported catch, additional tagging or reporting requirements may be implemented.*
 - iii. Management measures that may be adjusted include means and methods, harvest area, season, size, and limit.*
 - iv. Must be evaluated by staff and MFC*

Initial Recommendation Rationale - Hook and Line as a Commercial Gear

- Due to the stock status and limited TAL, status quo is the appropriate management.
- Adaptive management allows management flexibility to respond to data between full FMP reviews. If there are changes within the fishery or stock which indicate management changes are appropriate, DMF and the MFC may evaluate at that time.

