

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 (I) 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

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.