

DECISION DOCUMENT

Eastern Oyster Fishery Management Plan Amendment 5



This document was developed by the Division of Marine Fisheries to help the Marine Fisheries Commission track previous activity and prepare for upcoming actions for the Eastern Oyster FMP Amendment 5.

May 2025

Summary

At their March 2025 Business Meeting, the Marine Fisheries Commission (MFC) selected their preferred management options for Amendment 5 to the Eastern Oyster Fishery Management Plan (FMP). The draft FMP was revised to include these selected options and then provided to the Secretary of the North Carolina Department of Environmental Quality. The Secretary submitted the draft FMP to the Joint Legislative Oversight Committee on Agriculture and Natural and Economic Resources (AgNER) for their 30-day review period (N.C. General Statute § 113-182.1(e)). The draft FMP will be provided to the MFC for their vote on final adoption of Amendment 5 at their May 2025 Business Meeting.

This revised Decision Document includes the MFC preferred management options selected at the March 2025 Business Meeting and the suite of management options and rationale behind them that were provided to the MFC for their consideration at that meeting.

Background

The N.C. Eastern Oyster FMP is undergoing its five-year review with focus on wild mechanical harvest, recreational harvest, and formalizing cultch planting as an integrated fishery management strategy. Since there is no stock assessment for status determination, the goal is to manage the resource to maintain species population to provide long-term harvest and continue to offer protection and ecological benefits to North Carolina estuaries. Only wild oyster harvest issues and management strategies are considered in Amendment 5 as current shellfish aquaculture methods have limited impacts on wild oysters, and managing the private culture industry has grown beyond the scope of the FMP process.

A joint issue that will also be addressed in Amendment 3 of the Hard Clam FMP is recreational shellfish harvest. Recreational shellfish harvest does not require a license in NC, resulting in the inability of the DMF to adequately collect recreational landings data. This data gap has been cited as a major need in all past FMPs and needs to be addressed to account for all removals from the populations. These data are needed for future stock assessments of Hard Clams and Eastern Oysters. Additionally, shellfish harvest is subject to changing area closures due to human health and safety concerns. Without licensing or permitting requirements, the DMF is unable to ensure that every recreational harvester is informed of shellfish sanitation concerns. The draft FMP contains an issue paper outlining the broad need to capture recreational harvest sector information and have an effective means to provide health and safety information to all recreational shellfish harvesters.

Management strategies are divided regionally by Pamlico Sound and its surrounding bays (generally subtidal, mechanical harvest) and south of Core Sound (mixed subtidal and intertidal, hand harvest) populations. These strategies apply to both natural reefs and cultch reefs. Natural reefs formed with no human intervention and cultch reefs were built by DMF. Both types of reefs are colonized by wild oysters. Oyster reefs are highly susceptible to the

effects of harvest, particularly mechanical, due to oysters being both a fishery resource as well as their own habitat needed to perpetuate their population.

The greater Pamlico Sound area is the only area where mechanical gears are allowed for oyster harvest. Mechanical harvest is managed through a sampling program that was designed to stop mechanical harvest in a management area when the percent legal oyster falls below 26% to reduce habitat impacts. The season duration for mechanical harvest for oysters in each management area can be highly variable and is affected by the amount of the oyster resource available and fishery effort. The current trigger monitoring approach, despite a large sampling effort from the DMF, does not provide fishery independent data suitable to create indices for a future stock assessment. Additionally, the current approach results in the DMF having to quickly issue proclamations to close management areas to mechanical harvest with short public notice. The draft FMP proposes a tiered approach to management aimed to balance both the habitat and fishery value of Pamlico Sound oysters. The proposed strategy would provide some certainty in season length for mechanical harvesters and utilize the DMF’s extensive cultch planting program as a management tool.

South of Core Sound, only hand harvest occurs and this harvest accounts for most of the commercial oyster landings from hand harvest. The draft FMP contains an information paper outlining the decline in participation and landings in hand harvest after a management shift implemented in Amendment 4 reduced holders of a Shellfish License statewide to two bushels per day and no more than four bushels per vessel in Internal Coastal Fishing Waters. The DMF is investigating the use of a pilot oyster sentinel site monitoring program to collect fishery-independent data for intertidal oyster reefs to potentially inform a future stock assessment and management decisions for the southern region.

Amendment Timing

(gray indicates completed step)

DMF holds public scoping period	September 2023
MFC approves goal and objectives of FMP	November 2023
DMF drafts FMP	December 2023 – June 2024
DMF held workshop to review and further develop the draft FMP with the Oyster/Clam FMP Advisory Committee	July 2024
DMF updates draft plan	August – November 2024
MFC Reviews draft and votes on sending draft FMP for public and AC review	November 2024
MFC Advisory Committees meet to review draft FMP and receive public comment	January 2025
MFC selects preferred management options	February 2025
Legislative review of draft FMP	March – April 2025
MFC votes on final adoption of FMP Amendment 5	May 2025
DMF implements management strategies	TBD

You are here

Goal and Objectives

The goal of the N.C. Eastern Oyster FMP is to manage the oyster resource in such a way as to maintain oyster populations that provide long-term harvest and continue to offer protection and ecological benefits to North Carolina's estuaries. To achieve this goal, it is recommended that the following objectives be met:

- Use the best available biological, environmental, habitat, fishery, social, and economic data to effectively monitor and manage the oyster fishery and its environmental role.
- Support and implement the restoration and protection of oyster populations as both a fishery resource and an important estuarine habitat through the actions of the Cultch Planting and Oyster Sanctuary programs.
- Coordinate with DEQ and stakeholders to implement actions that protect habitat and environmental quality consistent with the Coastal Habitat Protection Plan (CHPP) recommendations.
- Manage oyster harvesting gear use to minimize damage to habitat.
- Promote stewardship of the resource through public outreach to increase public awareness regarding the ecological value of oysters and encourage stakeholder involvement in fishery management and habitat enhancement activities.

Management Measures

Management Carried Forward in Amendment 5

There are management measures from the previous FMP to carry forward into Amendment 5 as listed below:

- A daily limit of two bushels of oysters per person with a maximum of four bushels of oysters per vessel off public bottom for Shellfish License holders statewide.
- A six-week opening timeframe for mechanical harvest in deep bays to begin on the Monday of the week prior to Thanksgiving week through the Friday after Thanksgiving. Reopen two weeks before Christmas for the remainder of the six-week season.
- A 15-bushel hand/mechanical harvest limit in Pamlico Sound mechanical harvest areas outside the bays, 10-bushel hand/mechanical harvest limit in the bays, and 10-bushel hand harvest limit in the Mechanical Methods Prohibited area along the Outer Banks of Pamlico Sound.

MFC Selected Management Measures

Outlined below are the preferred management options by issue selected in March 2025 by the MFC for Amendment 5 to the Eastern Oyster FMP.

Recreational Harvest

- Support the DMF to further explore potential options and develop a solution to estimate recreational shellfish participation and landings, with the intent to move towards a stock assessment and stock level management for both hard clams and oysters; and to establish a mechanism to provide all recreational shellfish harvesters with Shellfish Sanitation and Recreational Water Quality (SSRWQ) health and safety information outside of the FMP process.

Mechanical Harvest

- Adopt the proposed Pamlico and Neuse River Deep-water Oyster Recovery Areas (DORAs), which are bound by existing navigational aids as presented to the MFC Advisory Committees, to protect deep subtidal oyster reefs from continued physical disturbance by mechanical gear. These areas will be closed to mechanical oyster dredging and monitoring efforts will be used to evaluate the effectiveness of closure within the next FMP amendment. The DORAs cover 681 acres of potential oyster habitat (500 acres in Pamlico River and 180 acres in Neuse River), which represents approximately 81% of the vulnerable deep-water oyster habitat.
- Adopt the Cultch Supported Harvest strategy outlined in Appendix 2, which would set the season length based on pre-season sampling aided by industry input on sampling locations with the 10 bushel per day and 15 bushel per day areas considered separately.
- Adopt the inclusion of Rotational Harvest Cultch Sites strategy outlined in Appendix 2. This strategy would create a rotating series of readily available cultch areas available to harvest for the full extent of the mechanical season length each year with the intent of reducing harvest pressure on natural reefs.
- Adopt the proposed adaptive management framework to allow for modification of set season length based on changes to participation in the fishery.

Suite of Management Options Presented

(Options outlined in blue represent MFC's preferred option selected in March 2025 and DMF's recommendation)

Recreational Harvest

Implementing a licensing or permitting requirement for recreational shellfish harvesters would give the DMF the opportunity to adequately collect recreational landings data needed for future stock assessments of Eastern Oysters and Hard Clams, and to inform participants of where to find information on harvest closure boundaries, where to sign up to receive polluted area proclamations or to access temporary closure maps, and where to find information on safe handling practices, particularly as it relates to *Vibrio* bacteria.

To pursue any of these solutions, significant time and effort will be needed to assess internal program and resource capabilities and limitations. Any legislative changes require a specific process and are ultimately out of DMF or MFC control. Given these constraints, DMF recommends exploring potential options and solutions outside of the FMP process.

Option 1: Recreational Harvest

(Refer to pp. 44-51 in the Draft Eastern Oyster FMP Amendment 5, Appendix 1 for additional details)

- a. Status Quo
- b. Support the DMF to further explore potential options and develop a solution to estimate recreational shellfish participation and landings, and to establish a mechanism to provide all recreational shellfish harvesters with SSRWQ health and safety information outside of the FMP process.

Mechanical Harvest

The oyster resource in Pamlico Sound is unique in that the commodity is responsible for building the substrate of valuable subtidal habitat that supports rich biodiversity and provides vital ecosystem services. To continue to maintain harvestable oyster populations in Pamlico Sound, and to better balance the value of oysters as both a fishery resource and essential habitat, a three-tiered approach is proposed for the Pamlico Sound oyster mechanical harvest management:

1. Deep-Water Oyster Recovery Areas
2. Cultch Supported Harvest
3. Rotational Cultch Sites

Tier/Strategy 1, Deep-Water Oyster Recovery Areas (DORAs):

The remnant deep water natural oyster reefs in the Pamlico River and Neuse River have suffered mass mortality from water quality impacts. These oyster reefs need high vertical relief (height) to be resilient to negative water quality impacts from storm events. However, mechanical harvest reduces the ability of natural oyster reefs in deep water to gain and maintain height as dredging actively removes valuable shell bottom habitat. These reefs have likely not supported much fishery effort since 2018 and have had very few live or legal oysters sampled during DMF monitoring efforts. Past and present permit restrictions do not allow for the enhancement of deep-water reefs in Pamlico Sound with cultch. However, if future permitting could be secured to enhance or restore these deep-water reefs, low-relief

cultch plantings would likely not be sufficient to quickly restore the reef height needed, and large high relief materials would need to be employed. The use of large materials such as boulders may prevent any future mechanical harvest of these sites once restored. Proposed DORAs would not open to the mechanical harvest of oysters to allow these reefs to accumulate shell material to gain the height necessary to be resilient to storm events. Reefs deeper than five meters (~16 ft) have been identified to be most vulnerable to poor water quality events. Two DORAs (Pamlico and Neuse River) with options for varying sizes have been proposed by creating boundaries using existing navigational aids for ease of compliance and enforceability (Appendix 2). Determination of successful recovery and developing sustainable harvest strategies would occur in a future FMP. Future sustainable harvest is defined as a level of harvest that would not result in a net loss of reef height through time and maintain reef height gained through DORA implementation.

Tier/Strategy 2, Cultch Supported Harvest:

The Cultch Supported Harvest strategy seeks to link mechanical oyster harvest management in Pamlico Sound to the DMF's extensive cultch planting effort. The primary changes from previous management in the proposed strategy are that season lengths will be predetermined and based on DMF pre-season sampling of the oyster resource in these areas, and the 10-bushel per day bays and 15-bushel per day open areas will be considered differently for each management area based on the pre-season sampling. This will eliminate the unpredictability experienced by harvesters of how long mechanical harvest will occur in a given season and consider differences in oyster mortality experienced at varying depths of Pamlico Sound. Season lengths will be predetermined based on pre-season sampling of oyster condition. Results of sampling data will be used to set season length as shown in the Mechanical Oyster Harvest Management Issue Paper (Appendix 2). During the harvest season, in-season sampling will occur to determine if the initial season length should be extended. Harvesters will be encouraged to report productive sites, aiding in more accurate in-season assessments. The new approach aims to reduce unpredictability by setting season lengths based on oyster resource conditions and ensuring that harvesting does not overly damage oyster habitats. The goal is to balance sustainable oyster harvests with the preservation of habitat provided by cultch planting

Tier/Strategy 3, Rotational Cultch Harvest Sites:

The Cultch Planting Program has implemented a reef building strategy in Pamlico Sound to create large (~10-acre) cultch planting sites in areas open to mechanical harvest, with the goal of having at least 16 sites planted by 2026. Within each of four management areas, there would be at least four cultch sites integrated into a rotational opening plan. These Rotational Cultch Sites would not be subject to the season lengths set for Cultch Supported Harvest. Instead, a subset of these large cultch sites would be open in each management area and their open/closure status would rotate between seasons. This strategy focuses on the fishery value of these reefs and gives harvesters relatively open access to these targeted cultch plantings. Formalizing a rotational strategy would also help to add statutory anchor points for the Cultch Planting Program within the requirements of G.S. 113-182.1. This could be useful in pursuing additional and consistent funding for the program moving forward.

Adaptive Management:

The fixed mechanical season lengths for Cultch Supported Harvest were developed using fishery monitoring data for the five oyster mechanical harvest seasons between November 2018 and May 2023. Any large changes in effort could result in these fixed season lengths becoming either inadequate or too restrictive. The annual average number of participants with landings in the mechanical oyster fishery between 2018 and 2023 was 93. If the three-year running average of participants is less than 70 or greater than 116 (calculated during annual FMP Update), examination of oyster sampling data and potential adjustment to fixed season lengths for Cultch Supported Harvest is triggered.

Option 1: Mechanical Oyster Harvest – Deep-Water Oyster Recovery Areas (DORAs)

(Refer to pp. 52-84 in the Draft Eastern Oyster FMP Amendment 5, Appendix 2 for additional details)

- a. Status Quo
- b. Adopt larger proposed Pamlico and Neuse River Deep-water Oyster Recovery Areas (DORAs), which are bound by existing navigational aids as presented to the NC MFC regional Advisory Committees, to protect deep subtidal oyster reefs from continued physical disturbance by mechanical gear. These areas will be closed to mechanical oyster dredging and monitoring efforts will be used to evaluate the effectiveness of closure within the next FMP amendment. The DORAs cover 681 acres of potential oyster habitat (500 acres in Pamlico River and 180 acres in Neuse River), which represents approximately 81% of the vulnerable deep-water oyster habitat.
- c. Adopt smaller proposed Pamlico and Neuse River Deep-water Oyster Recovery Areas (DORAs), which are bound by existing navigational aids, to protect deep subtidal oyster reefs from continued physical disturbance by mechanical gear. These areas will be closed to mechanical oyster dredging and monitoring efforts will be used to evaluate the effectiveness of closure within the next FMP amendment. The smaller DORAs cover 271 acres of potential habitat (200 acres in Pamlico River and 71 acres in Neuse River), which represents only approximately 32% of the vulnerable habitat.

Option 2: Mechanical Oyster Harvest – Cultch Supported Harvest

(Refer to pp. 52-84 in the Draft Eastern Oyster FMP Amendment 5, Appendix 2 for additional details)

- a. Status Quo
- b. Adopt the Cultch Supported Harvest strategy outlined in Appendix 2, which would set the season length based on pre-season sampling aided by industry input on sampling locations with the 10 bushel per day and 15 bushel per day areas considered separately.

Option 3: Mechanical Oyster Harvest – Rotational Harvest Cultch Sites

(Refer to pp. 52-84 in the Draft Eastern Oyster FMP Amendment 5, Appendix 2 for additional details)

- a. Status Quo
- b. Adopt the inclusion of Rotational Harvest Cultch Sites strategy outlined in Appendix 2. This strategy would create a rotating series of readily available cultch areas available to harvest for the full extent of the mechanical season length each year with the intent of reducing harvest pressure on natural reefs.

Option 4: Mechanical Oyster Harvest – Adaptive Management for Cultch Supported Harvest Strategy

(Refer to pp. 52-84 in the Draft Eastern Oyster FMP Amendment 5, Appendix 2 for additional details)

- a. Status Quo
- b. Adopt the proposed adaptive management framework to allow for modification of set season length based on changes to participation in the fishery.

Next Steps

The MFC selected their preferred management options at their March 2025 Business Meeting. The draft FMP was revised to include these selected options and then provided to the Secretary of the North Carolina Department of Environmental Quality. The Secretary submitted the draft FMP to the Joint Legislative Oversight Committee on Agriculture and Natural and Economic Resources (AgNER) for their 30-day review period (N.C. General Statute § 113-182.1(e)). At the May 2025 business meeting, the MFC will be presented any comments from the review and will vote on the final adoption of measures for the Eastern Oyster FMP Amendment 5. After adoption, the DMF will immediately begin implementation of the adopted management measures.