

**Report to North Carolina's Fiscal Research Division and
House and Senate Appropriations Committees on
Agriculture, Natural, and Economic Resources**



Oyster Research and Restoration Activities

March 1, 2026

Division of Marine Fisheries

**NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY**

Pursuant to S.L. 2017-57, Sec. 13.12

Oyster Research and Restoration 2026 Annual Legislative Report

University of North Carolina Wilmington (UNCW) *Oyster Broodstock Development Program/Shellfish Research Hatchery*

The North Carolina General Assembly provides support for the UNCW Shellfish Research Hatchery (SRH) through the Department of Environmental Quality. These funds support a selective breeding program focused on developing oyster lines that exhibit strong performance, particularly rapid growth and high survival in North Carolina waters. We are experiencing an increased need for equipment replacement due to aging infrastructure. Many hatchery systems are now 15 years old and are approaching the end of their serviceable life, necessitating replacement to maintain operational reliability. Since July 2025, 50% of expenditures were used to support personnel, 24% for supplies and 26% for equipment.

Core Breeding Program; The 2025 oyster production cycle began in March 2025. The four odd—year breeding lines were each spawned twice, and all were successfully set, resulting in more than 19.5 million larvae. Support to industry and the research community continued, with the SRH supplying over 580,000 seed oysters and 5.5 million larvae. Additionally, 17,000 seed scallops and more than 26,000 seed clams were provided to growers in 2025. The core breeding program was further strengthened through two additional areas of research and development.

Breeding for SUMS Resilience: We continued efforts to selectively breed oysters with resistance to Sudden Unusual Mortality Syndrome (SUMS), which has affected the North Carolina industry for several years. Eleven putatively resistant lines were produced in 2025 using oysters that survived 2024 mortality events, and these lines will be deployed to farms in April for field testing. Observations from recent deployments indicate that slower-growing oysters may demonstrate greater resilience, underscoring the need for continued research to determine whether fast-growing, resilient oysters can be bred. This work is supported primarily by the NC Collaboratory and the NC Commercial Fishing Resources Fund.

Polyploidy: Progress also continued in our polyploidy research, with the production of three lines of chemical triploids in 2025. Chemical triploids represent the first step in the multi-year process of producing tetraploid oysters, which are required to generate natural triploids. Natural triploids are highly valued by industry due to their faster growth rates and superior condition during summer months. Our first attempt at the second stage of this process, inducing tetraploidy in triploids, will occur this season using the 2023 chemical triploids. If successful, these will be the first tetraploids derived from North Carolina oysters.

Preparations for the 2026 Production Season: Preparations for the 2026 production season are advancing. Oysters (~1000) are currently conditioning in anticipation of spawning beginning in March. An additional 1,400 oysters are scheduled to be brought in from the field in February. The even-year breeding lines to be spawned in 2026 were originally initiated in 2012 and are larger (~40%) and exhibit higher survival rates than their 2012 ancestors, and >90% of oysters in these selected lines reach market size (~3 inches) in under 18 months. We anticipate continued work on breeding for SUMS resilience, with a particular focus on regaining lost gains in growth

improvement associated with the differential impacts of SUMS on oysters of varying sizes. Efforts to produce a stable tetraploid breeding population will also proceed in the coming months..

North Carolina Division of Marine Fisheries (NCDMF)
Restoration Activities

Cultch Planting: In fiscal year 2025-2026, the net appropriation for cultch planting is \$798,054, all of which is recurring. The Division typically purchases shell throughout the year and marl in January or February, thus some of the expenditures for this fiscal year have not yet been incurred. By the end of the fiscal year, the Division estimates purchasing a grand total of up to 29,817.78 bushels of shell at an estimated cost of \$175,183.76. As of January 13th, 2026, the Division had purchased 15,405.64 bushels of oyster shells at a total cost of \$92,901.01, including transportation. To supplement the purchased shell, the Division is under contract to purchase approximately 13,400 tons or approximately 297,778 bushels of marine limestone marl for cultch planting at a total estimated cost of \$744,080. The combined estimated cost of cultch planting materials (shell and limestone) for FY 25-26 is \$919,263.76. Funds have been shifted from Oyster Sanctuaries to support this material purchase while still completing year three of the three-year partnership. The remaining funds will be used to support program operations, including vessel and heavy equipment fleet maintenance and reef construction costs such as fuel, mobilization, staff travel, and administration. Of note, the cost of diesel fuel, as well as other goods and services related to marine operations have increased substantially over the last several fiscal years, at a rate faster than reef-building material commodities. Therefore, an increasing proportion of these appropriations is necessary to support fleet operations.

Oyster Sanctuaries: In fiscal year 2025-2026, the revised net appropriation for the Jean Preston Oyster Sanctuary Network is \$850,000, all of which is recurring. This FY, the Department of Environmental Quality Division of Marine Fisheries will complete a three-year partnership with the North Carolina Coastal Federation to construct two new oyster sanctuaries. Under the partnership, with funds provided by the general assembly during FY 23-24, the North Carolina Coastal Federation will reimburse the Division for expenses to support the project, up to \$900,000 total over three years beginning in FY 23-24. The Division will submit a reimbursement request in early 2026 for \$339,388.29 for reef material acquisition, temporary staff, stockpile site infrastructure, and fuel. We expect additional expenses this FY for temporary staff, stockpile site infrastructure, and fuel, totaling approximately \$29,000. By September 2026, all remaining reimbursement funds related to this project will be received by the Division.