

## **Oyster Research and Restoration 2022 Annual Legislative Report**

**Statutory Authority:** S.L. 2017-57, Sec. 13.12  
**Due Date:** March 1, 2022

**Receiving Entities:**

House Appropriations Committee, Agriculture and Natural and Economic Resources  
Senate Appropriations Committee, Agriculture and Natural and Economic Resources  
Fiscal Research Division

**Submitting Entity:**

North Carolina Department of Environmental Quality, Division of Marine Fisheries  
University of North Carolina at Wilmington

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## **University of North Carolina Wilmington**

### ***Oyster Brood Stock Development Program/Shellfish Research Hatchery***

The NC General Assembly continues to provide support for operations at the UNCW Shellfish Research Hatchery (SRH) through the Department of Environmental Quality, Division of Marine Fisheries. The hatchery continues to use these funds to support the selective breeding program with the goal of developing lines of oysters that perform well (fast growth, high survival) in North Carolina waters. This year's funds were allocated to support personnel (5 full time technicians, 6 part-time student workers, 4 graduate students), expendable supplies and to obtain/replace equipment. Additional funds have been budgeted for the continued monitoring of disease, genetics and waterquality, system maintenance and operational support. Two significant upgrades to the hatchery systems include the replacement of the 480 lights in the algae room culture system and the installation of an ultrafiltration system to replace our aging pasteurizer.

The 2021 production cycle began in April 2021. Fourteen spawns were executed over the 11-week season, with 11 successfully setting. Support to the industry and research continued with over 101,600 seed and 6.8 million larvae being provided by the SRH. Additional support in the form of scallops and clams are envisioned in the next few weeks. The 2021 broodstock continued to be reasonably free of the castrating trematode parasite that had complicated the 2019 season (8.6% in 2021, 7% in 2020, 20% in 2019), contributing to a successful season (~19 million oysters set).

Preparations for the 2022 production season began in January. We have 1115 oysters conditioning with the expectation that spawning will start mid-March. The even year lines that will be spawned in 2022 were, for the most part, initiated in 2012 with support of NC Sea Grant. These 2020 oysters are 35-42% larger than their 2012 ancestors and a significantly greater proportion of oysters in these selected lines reach market size (~3in) in 18 months relative to the unselected lines from 2012 (87% vs 10%). This season we are excited to incorporate modern genomic selection techniques for the first time. This is made possible through our participation in the Eastern Oyster Breeding Consortium with additional support from the Atlantic States Marine Fisheries Commission. In addition, we have pending projects that would, if funded, develop recirculating technology and probiotics strategies to improve hatchery production efficiencies.

We are also excited about working with a commercial operation, Down East Mariculture Supply (Smyrna NC) in March to use our selected lines in the production of triploids for the industry. This is the first of what we hope to be many such arrangements and is evidence of the progress we have made in breeding a better growing oyster for North Carolina.

## **N.C. Division of Marine Fisheries**

### ***Restoration Activities***

#### ***Cultch Planting***

In fiscal year 2021-2022, the net appropriation for cultch planting was \$798,054, all of which is recurring. The division typically purchases shell throughout the year and marl in 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 49,255 bushels of shell at an estimated cost of \$130,007.50. As of January 19, 2022, the division had purchased 9,255 bushels of oyster shells at a total cost of \$23,122.26, including transportation. To supplement purchased shell, the division is currently under contract to receive approximately 402,222 bushels of marine limestone marl for cultch planting at total cost of \$773,950. The combined estimated cost of cultch planting materials (shell and limestone) for FY 21-22 is \$903,957.50. Additional funding will be provided by the shellfish rehabilitation oyster sanctuary budget.

In addition to funding provided for cultch planting, the General Assembly provided \$1.5M in nonrecurring funds to support the purchase of a new flagship restoration vessel. This vessel is intended to replace the MV West Bay, which was retired from service in 2016/2017. As of January 19, 2022, the division had identified a suitable vessel and staff were performing due diligence to determine satisfactory condition and valuation. Once the vessel is purchased, remaining funds will be used to complete necessary modifications and upgrades.

#### ***Oyster Sanctuaries***

In fiscal year 2021-2022, the revised net appropriation for the Jean Preston Oyster Sanctuary Network is \$1.35M, of which \$750,000 is provided as nonrecurring. The division will continue its partnership with the North Carolina Coastal Federation, splitting material acquisition and deployment costs respectively. To fulfill the obligations of this partnership, the division is under contract to purchase and deliver 18,000 tons of Class B marine limestone marl at a total cost of \$787,500. The remaining appropriated funds will be used to support shellfish rehabilitation objectives, including program operations, cultch planting material, material deployments, and equipment replacement and repairs.