

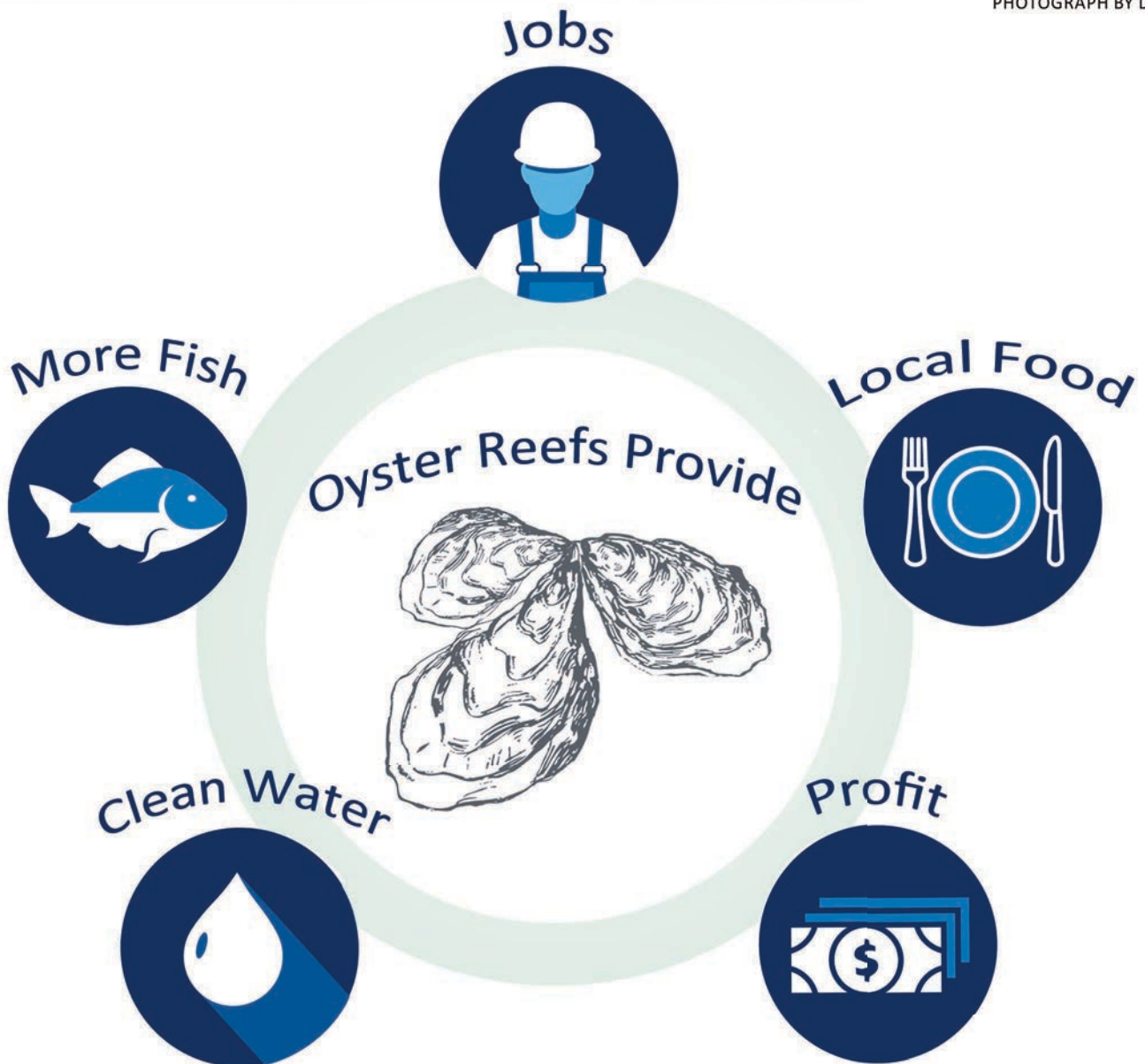
Increasing Our Oyster Population



North Carolina
Coastal Federation
Working Together for a Healthy Coast



PHOTOGRAPH BY DANIEL PULLEN



State of Oysters in North Carolina

Historic overharvest, habitat loss, natural disasters, disease and poor water quality have resulted in a decline in oyster populations in North Carolina over the past century. **Current harvest is 15-20 percent of historic peak harvest.**

Efforts to Restore Native Oysters

Native or wild oysters produce free floating oyster larvae. These baby oysters require a hard surface to attach and grow upon within two weeks or they will not survive. Because of this, many restoration efforts either concentrate on providing a hard surface for spat to attach to, or attempt to provide more spat to the surrounding waters. Restoration efforts have been underway since the 1990s, but work is still needed as it takes much more time to regrow the reefs than it does to take them away. Popular oyster restoration practices include:



To create reefs, the N.C. Division of Marine Fisheries (DMF) annually deposits tens of thousands of bushels of oyster shell, marine limestone and/or clam shell — called “cultch” — in shellfish waters. The cultch is colonized by oyster larvae that attach and grow to harvest size in 18 to 24 months. Cultch planting sites are open to public harvest once oysters reach legal harvest size (3 inches).*



Larger scale oyster sanctuaries are constructed throughout North Carolina’s sounds. These sanctuaries are typically closed to harvest, but open to hook-and-line fishing. They are strategically located and designed to act as a reliable oyster larvae seed source for the wild population and cultch-planted areas. *



Oyster farming or mariculture has the potential to provide numerous benefits including increased water filtration and additional habitat for fish and other estuarine species. Oyster mariculture also has the potential to reduce harvest pressure off the native population while acting as an oyster larvae seed source to the surrounding waters.



Patch reefs are typically smaller scale restoration efforts carried out by nonprofit organizations, universities or concerned community members. The reefs created are typically not open to harvest and range in size from a tenth of an acre to two acres.

*Both cultch planted and sanctuary sites are sited through a public comment process. See page 4 for details.

Current Project: Swan Island Oyster Sanctuary

Oysters got some help in 2017 and work will continue in 2018. Over the two years, The North Carolina Coastal Federation received \$2.4 million from the NOAA Restoration Center, and North Carolina Division of Marine Fisheries put up \$2.6 million from state appropriations to build 125 acres of oyster reefs state-wide.

The Plan

1. Build **25** acres of oyster sanctuary in Pamlico Sound
2. Build **100** acres of cultch reefs statewide

Using grant funding and 2016-18 state appropriations, project partners will have completed 25 acres of the Swan Island Oyster Sanctuary, which is part of the larger Senator Jean Preston Oyster Sanctuary Network. This funding will also build 100 acres of cultch reefs statewide.

The building of this sanctuary is unique, as it is a partnership between the state, a nonprofit and a private contractor. A North Carolina contractor built the reef, and a North Carolina supplier purchased the reef materials. The partnership builds the reef at a much faster pace than if the state built the reef using its own staff and equipment.



Legend

- Future Cultch Planting Locations
- Swan Island Oyster Sanctuary Location

The Benefits of Oyster Restoration

EACH YEAR, One Acre of Oyster Reef Provides:



Over \$2,619 in augmented recreational value

\$1,637 in augmented commercial finfish and shrimp production

\$11,000 in ecosystem services (any positive benefit to people) ¹

**EVERY
\$1.00 INVESTED
IN THE STATE'S
HABITAT ENHANCEMENT
ACTIVITIES PROVIDES \$4.05 IN BENEFITS.**



1. Grabowski et al. 2011. Assessing the long-term economic value and costs of the Crab Hole and Clam Shoal oyster reef sanctuaries in North Carolina.
2. Callihan R, et al. 2016. Economic Analysis of the Costs and Benefits of Restoration and Enhancement of Shellfish Habitat and Oyster Propagation in North Carolina. RTI International. Prepared for the Albemarle-Pamlico National Estuary Partnership.

How the Public Comment Process Works: Your Input is Important



The North Carolina Coastal Federation has a long-standing mission to encourage active participation in coastal management decisions. Oyster restoration sites for 2018 have already been selected, but to participate in future decision making, the following process outlines how to get involved:

1 SITE SELECTION

Public Input

Your opinions matter, and they matter most at this step. Public meetings are held statewide each summer and fall. The public is encouraged to attend and submit comments on where to locate sanctuaries and cultch plantings. Send written comments to:

Jason Peters
North Carolina Division of Marine Fisheries
Jason.Peters@ncdenr.gov
252.808.8063

Field Work

Once a list of potential sites is created, DMF will investigate the site to see if it is suitable for restoration by looking at various biological parameters and logistics.

Modeling from Universities

N.C. State University and UNC Wilmington have developed various tools that help predict where oyster restoration efforts will be most successful. These tools use environmental parameters, historic reef location, connectivity modeling and information on known public use conflicts to aid site selection.

2 PERMITTING

Public Comment

After a site has been selected, DMF will secure state and federal permits to perform the restoration work. At this stage, there is opportunity for public comment on the issuance of the permit through the North Carolina Division of Coastal Management's permitting process.

3 CONSTRUCTION

Once permits are secured, DMF works with local contractors to purchase material. When feasible, private contractors and fishermen are hired to build the reefs.

**To find out more or get involved please
contact Erin Fleckenstein at 252-473-1607 or
erinf@nccoast.org**