

NOAA FISHERIES Southeast

North Carolina's Shellfish Initiative Restoration: A Key Ingredient



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NOAA's National Shellfish Initiative

Goal: increase populations of bivalves through shellfish farming and restoration

- Encourage commercial and restoration shellfish communities to work together
- Launched in 2011 to implement NOAA Aquaculture Policy
- NOAA's role in State/Regional
 Shellfish Initiatives





NOAA Fisheries/Restoration Center Funded Oyster Projects

Total Funding from 2009-2019 at ~\$10 Million



Community-based Restoration



Large-Scale / Sanctuary Implementation



Why invest in non-harvested reefs? = Ecosystem Services



Oyster Reef Habitat is Fish Habitat

- Support of Commercial and Recreational Fisheries
- Summer flounder, red drum, striped bass, gray snapper, gag grouper, sheepshead, anchovies, croaker, herring, silver perch, Spanish mackerel, speckled trout, spot, shrimp, blue crab, and stone crab depend on oyster reefs!



Annual non-oyster fisheries production value: up to \$4,000/acre

Photo of sheepshead with Dr. Jeffrey Lafond by Brian Carroll

Oyster Reefs Protect the Shoreline



Oyster growth on shell bag sills at Trinity Center (photos by North Carolina Coastal Federation)



Oysters Improve Water Quality



Oysters filter water leading to reduced turbidity, better light penetration, reduced eutrophication, and improved dissolved oxygen

It also saves us the cost of wastewater treatment and stormwater BMPs

Oyster Reef Ecosystem Services



Oyster Ecosystem Services are worth **\$26 Billion to \$554 Billion** per year in North Carolina (Grabowski et al. 2012)

Next Steps? : 2020 and Beyond

North Carolina: A leader in the field of shellfish Restoration

- On the ground success !
- Common Vision / Solid Partnerships !
- Strong Steering Committee !
- What are the next innovative steps for North Carolina?
- How can you use your leadership position to help on a regional or national scale?



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Literature Cited

Grabowski, J.H., R.D. Brumbaugh, R.F. Conrad, A.G. Keeler, J.J. Opaluch, C.H. Peterson, M.F. Piehler, S.P. Powers, and A.R. Smyth. 2012. Economic valuation of ecosystem services provided by oyster reefs. BioScience, V. 62 (10):900-909.

- Grabowski, J.H. M.F. Piehler, and C.H. Peterson. 2011. Assessing the long-term economic value and costs of the Crab Hole and Clam Shoal oyster reef sanctuaries in North Carolina. Unpublished report to the North Carolina Coastal Federation.
- Schuster, E., and Doerr. 2015. A guide for incorporating ecosystem service valuation into coastal restoration projects. The Nature Conservancy, New Jersey Chapter, Delmont, NJ.
- Stokes, S., Wunderlink, S., Lowe, M., and G. Gereffi. 2012. Restoring Gulf oyster reefs: opportunities for innovation. Duke Center on Globalization, Governance, and Competitiveness. Prepared for the Environmental Defense Fund.

