



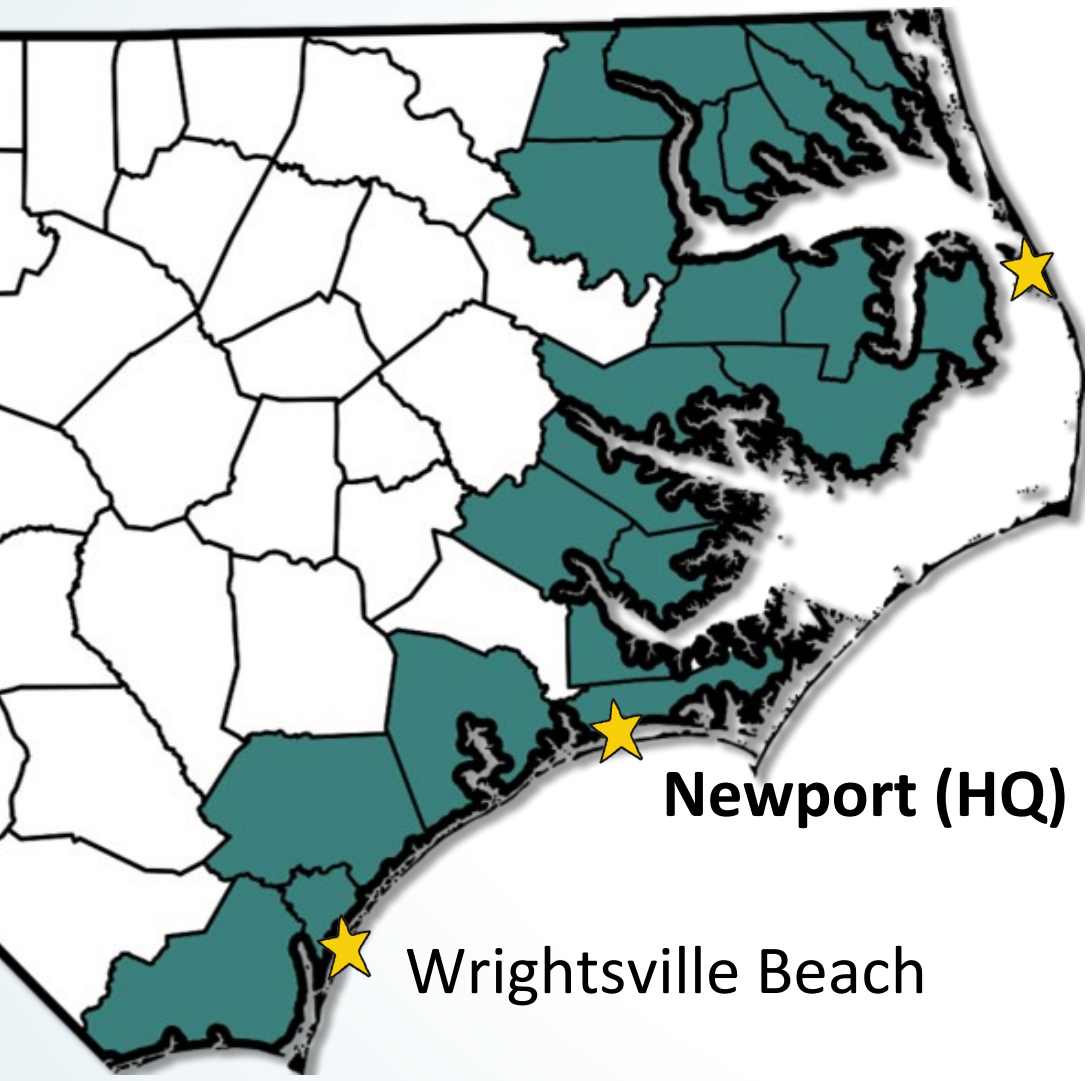
North Carolina  
Coastal Federation  
*Working Together for a Healthy Coast*



# Economic Analysis of North Carolina's Oyster Sanctuaries: 2013–2023

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*Coastal Advocate & Environmental Economist*



**Outer Banks**

**Newport (HQ)**

**Wrightsville Beach**



**North Carolina  
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Salt Marsh



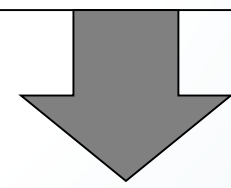
Oysters



Water Quality



Marine Debris



**Advocacy + Policy + Economics**



# Sanctuary Network

- Developed in the 1990s
- Now covers nearly 500 acres in the Pamlico Sound
- 17 individual sites



## Economic Questions:

1. How much has been invested to construct the Sanctuary Network from 2013 to 2023?
2. What is the ROI from funding?
3. What are the total economic benefits of sanctuary construction?
4. How are sanctuary benefits distributed across people and communities?



# Evaluating Impacts of Oyster Sanctuaries:

## 1. Economic Impact Analysis:

Traces direct spending in the community, estimates indirect effects



**1**  
Direct Effects



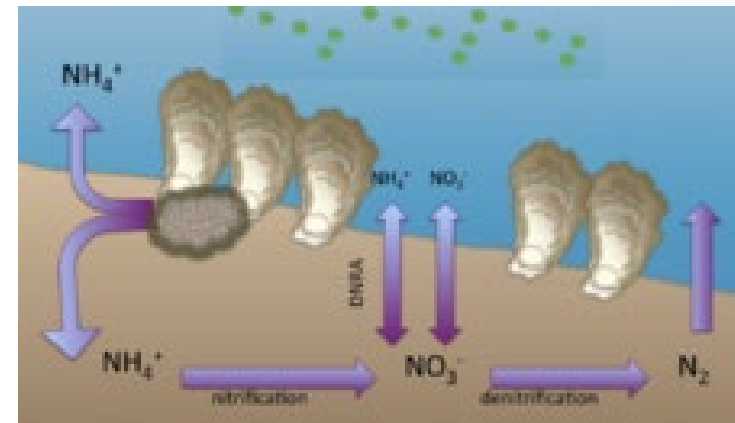
**2**  
Indirect Effects



**3**  
Induced Effects

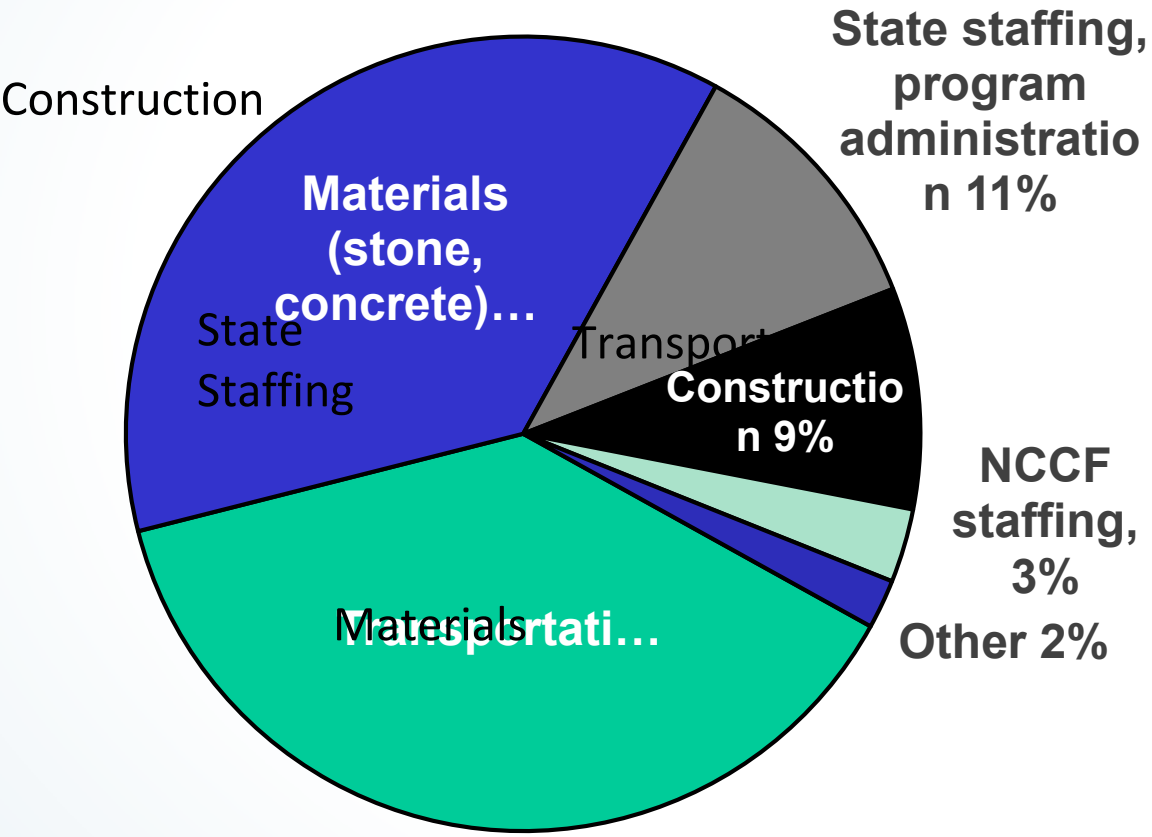
## 2. Cost-Benefit Analysis:

Incorporates the monetary value of non-market benefits



# Sanctuary Costs 2013-2023:

## *Planning, Constructing & Maintaining*



Year	Cost (million 2023 Dollars)
2013	\$1.9
2014	\$0.7
2015	\$0.6
2016	\$1.1
2017	\$3.2
2018	\$3.1
2019	\$2.5
2020	\$1.0
2021	\$2.0
2022	\$1.9
2023	\$2.4
Total	\$20.3

# Economic Impact Summary

Impact	Jobs	Labor Income (million \$)	Value Added (million \$)	Output (million \$)
Direct	61	\$4.4	\$9.0	\$20.3
Indirect (B2B)	52	\$2.9	\$4.4	\$8.7
Induced	30	\$1.4	\$2.8	\$4.8
Total	143	\$8.7	\$16.2	\$33.9

**Total economic impacts associated with oyster sanctuaries > 10 year investment**



# Building & Managing Sanctuaries = Partnership!



The Federation



Division of Marine Fisheries



NC Aquariums



Martin Marietta



Cape Dredging



Stevens Towing





The Federation



Division of Marine Fisheries



NC Aquariums



Martin Marietta



Cape Dredging



Stevens Towing

## Legend

1. Aquarium at Roanoke Island
2. Northeast Office
3. South River Launch Site
4. Morehead City (Headquarters)
5. Central Office (Headquarters)
6. Southeast Office (Stanbeck Coastal Education Center)
7. Clarks Quarry
8. Stevens Towing Edenton Office
9. Cape Dredging Buxton HQ



# Economic Impacts: People & Communities

*“Our guys were able to build oyster reefs when our other more traditional marine business had dried up. We were thankful for the jobs created by the initiative to build oyster reefs, similar to other infrastructure projects for the coast”*

**Simon Rich, Stevens Towing, Contractor of Swan Island Oyster Sanctuary**



*“This is yet another example of how our aggregates can be used for countless applications for the betterment of our communities. Most people think of aggregates as solely an end use for construction purposes. While this makes up most of the primary business, projects like oyster sanctuaries underscore the wide breadth of unique opportunities for our aggregates to partner with the local environmental communities. Additionally, by having the source quarry close to the project allows for these projects to be completed by the most economical means possible.”*

**Matt Waligora, General District Manager for Martin Marietta**



# Value of Ecosystem Services

Ecosystem Service Values	Minimum	Maximum	Average
Finfish and Mobile Crustacean Value			
Recreational	NA	NA	\$3,546
Commercial	NA	NA	\$2,260
Water Quality Services			
Nitrogen removal <sup>a</sup>	\$759	\$3,682	\$2,768
SAV enhancement <sup>b</sup>	0	\$1,417	\$708
Non-Oyster Harvest Service Total	\$6,566	\$58,048	\$9,283



## Benefit Cost Results

- Every \$1.00 invested in oyster sanctuaries provides North Carolina with \$1.71 in expected benefits
- Expected benefits include:
  - recreational fishing (38%)
  - water quality (33%) - *nitrogen removal, SAV enhancement*
  - commercial fishing (29%)

# Distribution of Benefits:

- Recreational fishing benefits are experienced by residents and tourists who engage in off-shore fishing
- Water quality benefits accrue broadly to residents of coastal communities, tourists, and state taxpayers
- Commercial fishing benefits are experienced by individuals who rely on seafood products for their livelihood
  - Benefits people who consume seafood





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