



# *NCDMF Oyster Sanctuary Program*

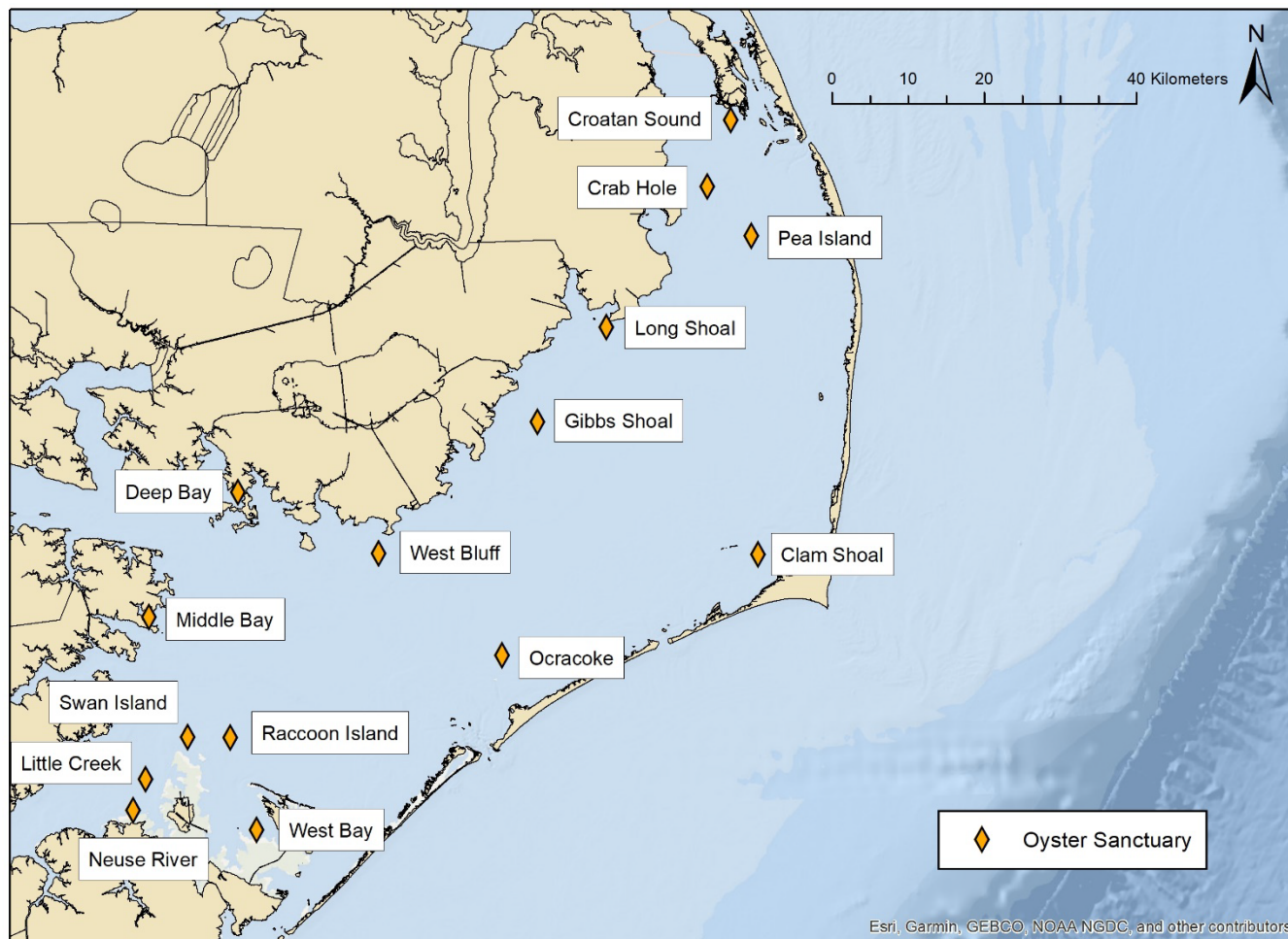
*DEPARTMENT OF ENVIRONMENTAL QUALITY*

Marine Fisheries

Marine Resources and Aquaculture | Cameron Luck | April 20, 2021



## *Where are they located?*



Map of Oyster Sanctuary Network in the Pamlico Sound, NC



# *Sanctuaries in NC: What do they look like?*

- High relief habitat (2-6' off bottom)
- Large aggregate rock (5-12") or other large materials
- 15 total sanctuaries, ~400 total protected acres
- **MASSIVE (15 to 70+ acres)**
- Long term resource investment

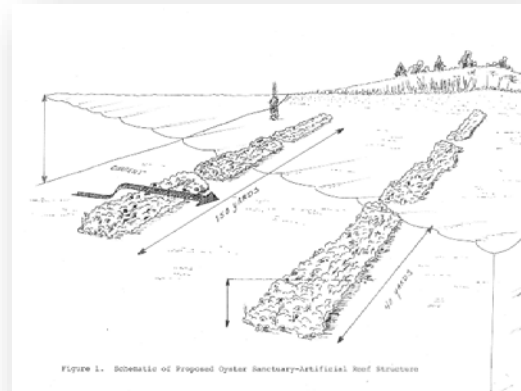
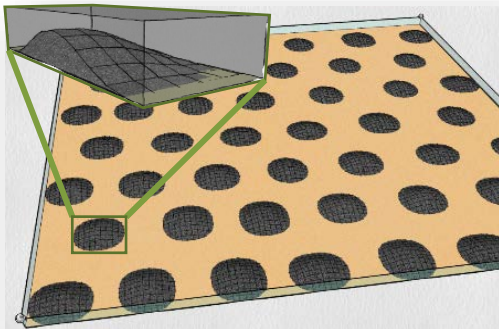
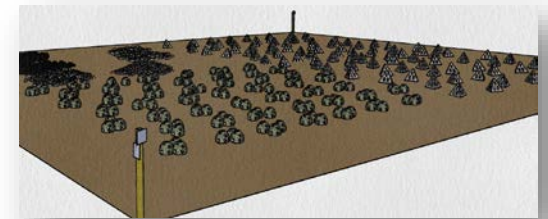
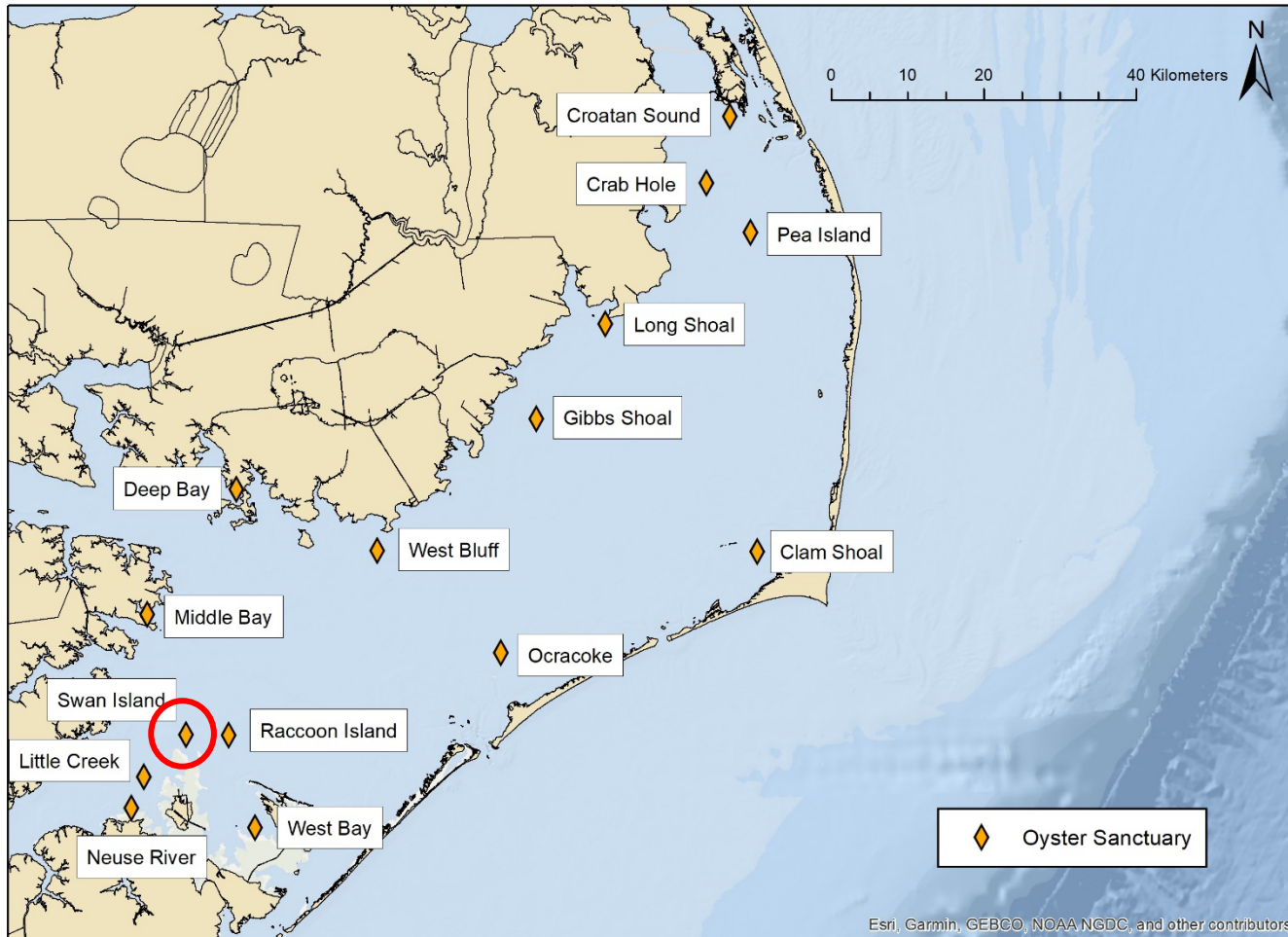


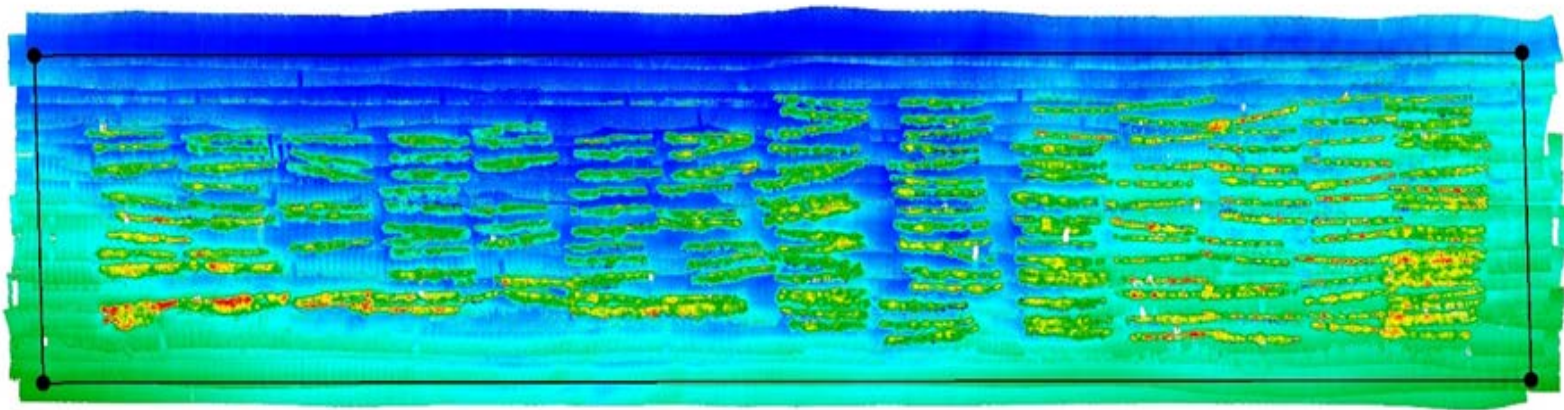
Figure 1. Schematic of Proposed Oyster Sanctuary-Artificial Reef Structure



# Swan Island Oyster Sanctuary



# *Swan Island Oyster Sanctuary*



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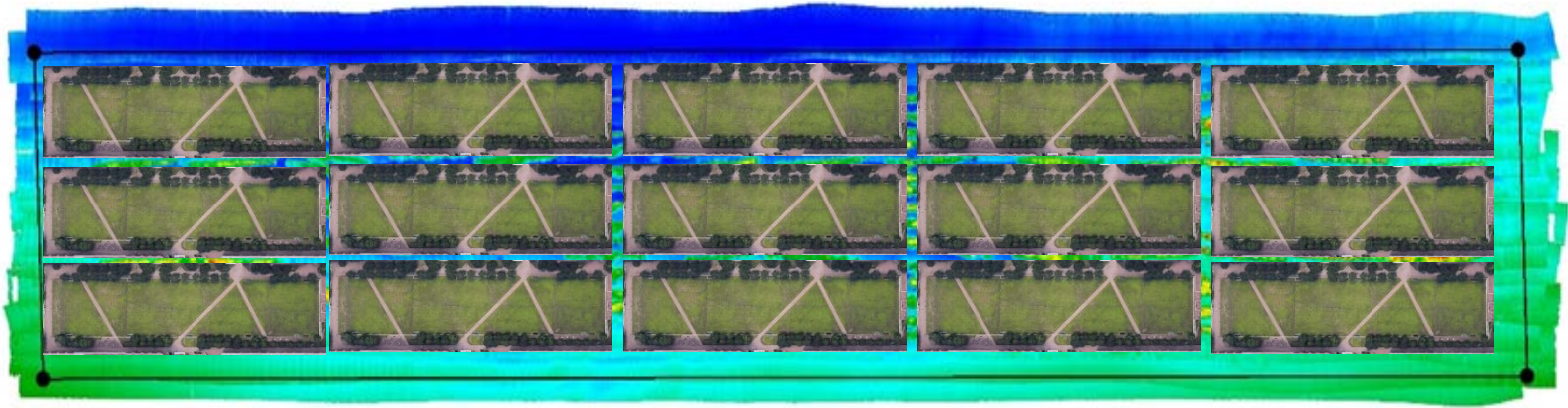
x 15

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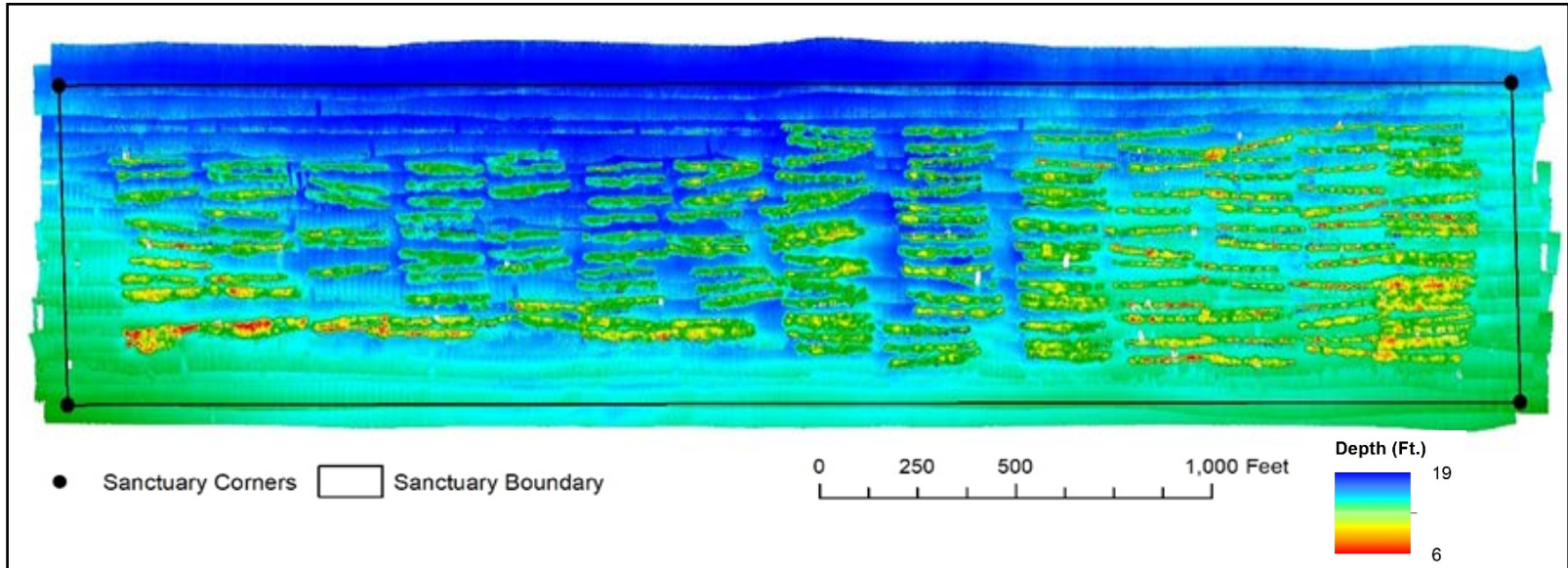
# *Swan Island Oyster Sanctuary*



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# Swan Island Oyster Sanctuary



- ◇ Built from 2017 - 2020
- ◇ 70 permitted acres
- ◇ 6+ million dollars | 3+ year project
- ◇ ~25,000 tons granite & ~60,000 tons of marl Rip Rap
- ◇ High Relief design to promote larval oyster settlement
- ◇ Spawning oysters already present + lots of fish

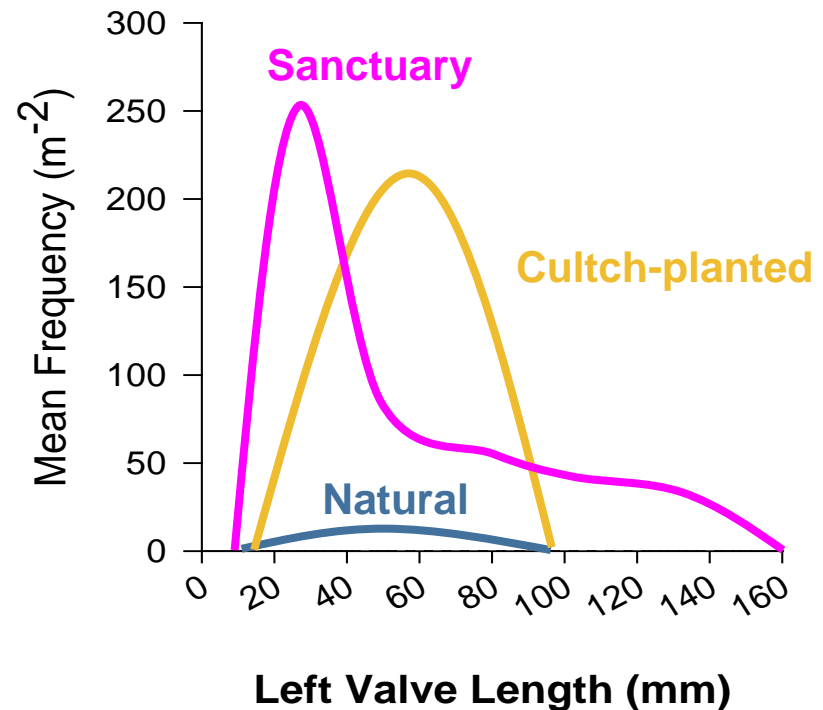
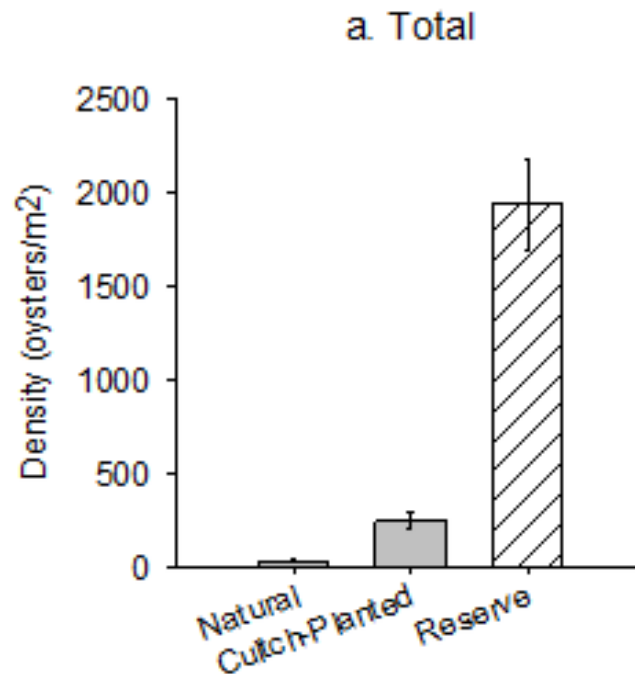


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# Why are Oyster Sanctuaries important?

## Sanctuaries strengthen and support the oyster population

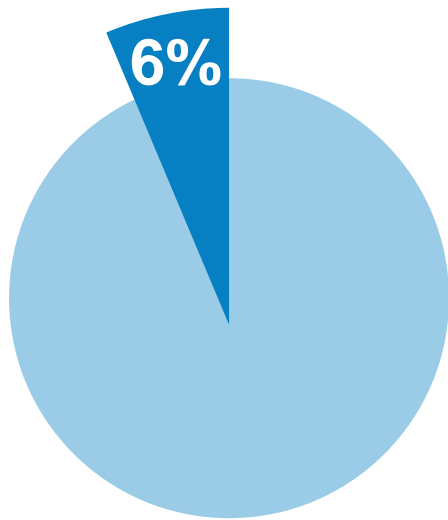




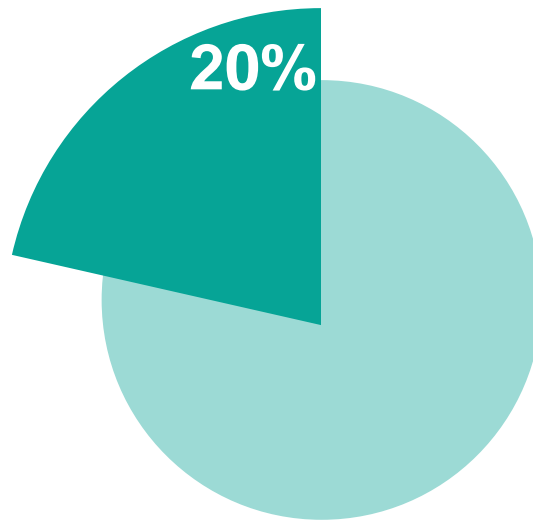
# *Why are Oyster Sanctuaries important?*

## **Sanctuaries contribute disproportionately to reproductive output**

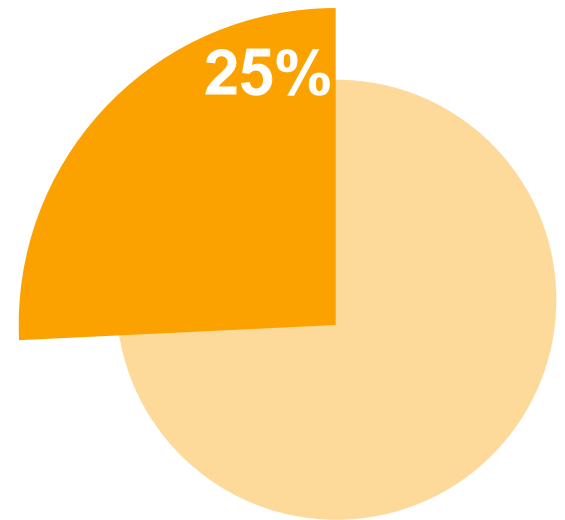
Reef area



Population size

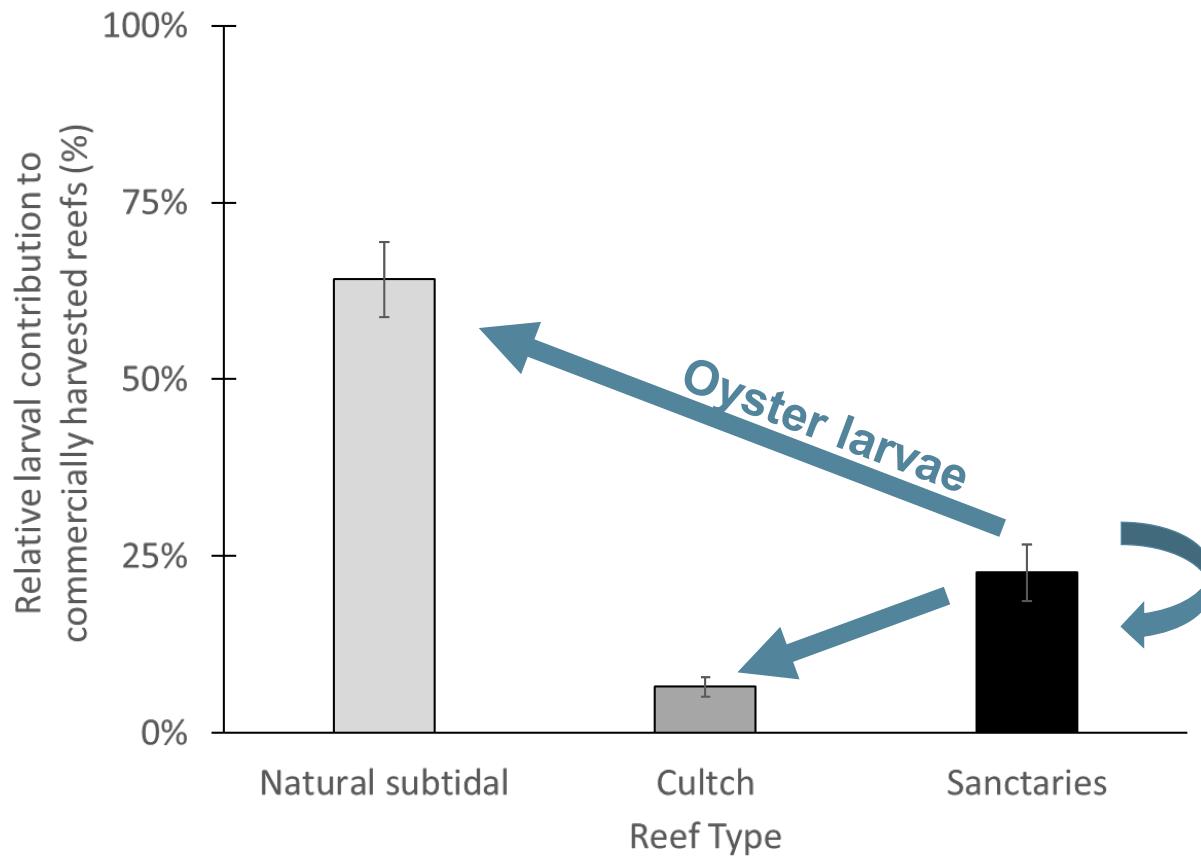


Larval production



# *Why are Oyster Sanctuaries important?*

## **Sanctuaries supporting oyster growth on commercially harvested reefs**



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# *Why are Oyster Sanctuaries important?*

## **Sanctuaries facilitate estuarine water filtration**

Oysters can:

- Actively decrease water turbidity, increasing water clarity
- Effectively aid in the suppression of nutrient runoff
- Promote the recovery of SAV, providing additional finfish/shellfish habitat



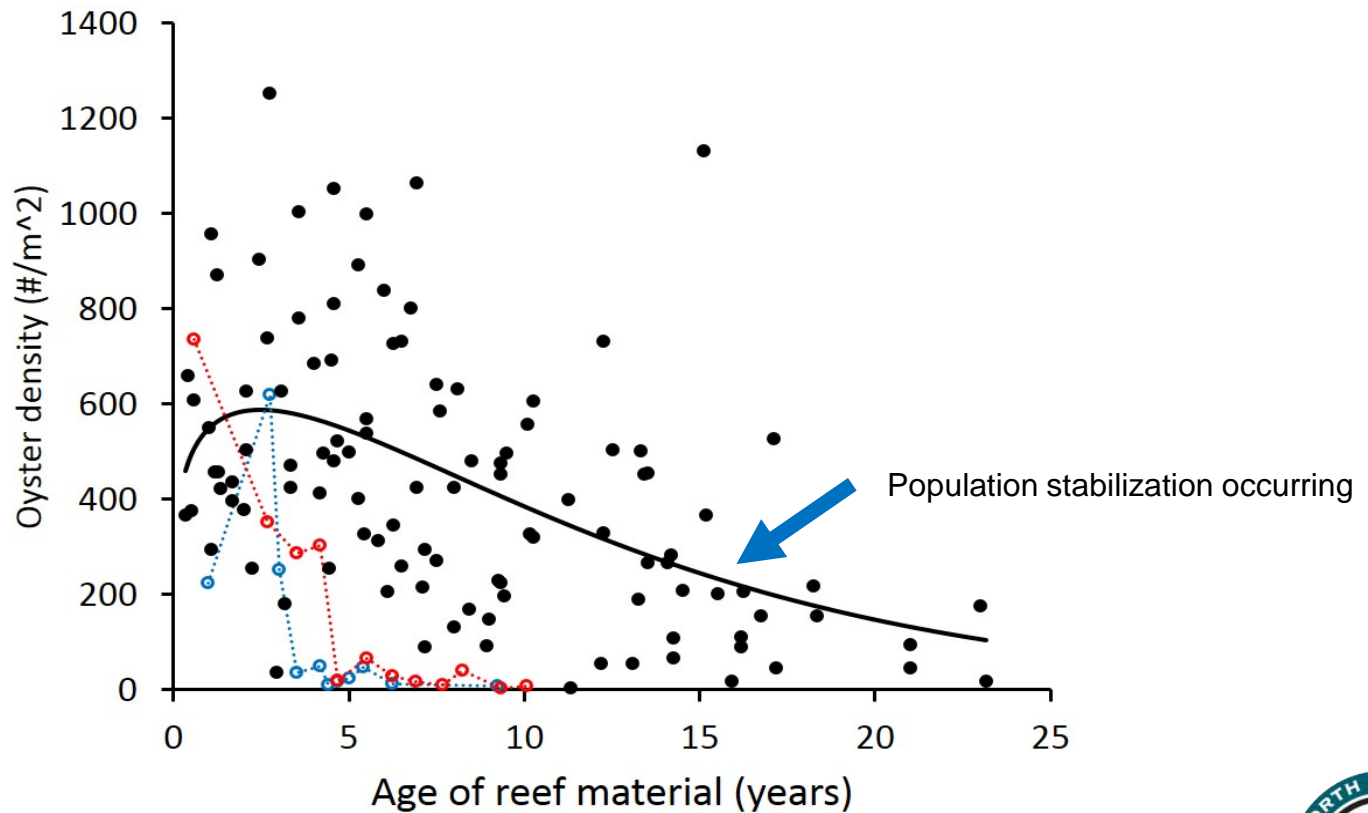
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# Why are Oyster Sanctuaries important?

## Sanctuaries last a LONG time



# *Why are Oyster Sanctuaries important?*

## **Points to remember!**

The Oyster Sanctuary Network:

- Supports the entire Pamlico Sound oyster population
- Functions as a larvae factory in a relatively small package
- Subsidizes commercially harvested reefs with critically important larvae
- Facilitates estuarine water filtration
- Lasts a **LONG** time
- Is a work in progress

