

Climate Change and Oyster Restoration Policy in the Big Bend

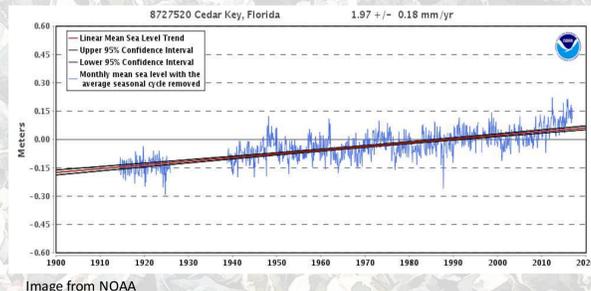
Hannah O. Brown, Derrick Vaughn, & James Woods
University of Florida

Pressures on Oyster Reefs

- Overharvesting
- Altered freshwater flows
- Climate change
- Sea-level rise
- Disease
- Predation
- Pollution



Photo by Dan Ward



Threats to and Benefits of Oyster Reefs Image: (Perini, 2015). Policy Options Image: (Clark, 2016). Stakeholder Engagement Image: Sink Your Shucks Oyster Reef Restoration (2017).

Community Value

- Significant value in ecosystem services of restored reefs
- Two restored oyster reefs in Mobile Bay (3.6 mi):
 - \$39,000/year for fisheries
 - Significant reduction in coastal erosion
 - Up to 4,160 pounds of nitrogen removed from Bay waters
 - \$8.4 million in local sales, \$2.8 million in earnings & 88 new jobs
- Wild oyster leases allow stakeholders facilitate economic stability and allow oyster fishers to harvest oysters at peak market price

Why Restore Oyster Reefs?

- Oyster reefs have been an important part of the Gulf ecosystem for thousands of years.
- Oyster reefs are habitat for many commercially important species.
- One acre of oyster reef provides habitat for 1.5 tons of fish and seafood.
- One acre of oyster reef filters out nutrients and algae at a rate of up to 36 Olympic swimming pools of water per day.
- Oyster reefs protect shorelines and wetlands from erosion caused by wave and tidal action.
- A more stable shoreline and cleaner water could attract more people and benefit the economy.

Policy Options:

- General permitting for small-scale restoration
 - *Limitations:* Size restriction of ¼ acre, requires specific type and size of materials, no room for experimentation.
- Individual permitting used for larger projects
 - *Limitations:* Need permission from DEP and Army Corps of Engineers, strict guidelines must be met to prevent state monitoring
- Open/closed harvest areas determined by FDACS
 - *Limitations:* Opens door to broader agency authority and less control for stakeholders.
- Wild oyster leases could use the framework of the aquaculture industry
 - *Limitations:* Significant financial investment from the state for restoration.

Recommendations

- Simplifying the permitting process involves removing some project restrictions, making state a more active participant by increasing monitoring and oversight, and creating a simplified manual to allow for easier understanding of permitting process.
- Open/closed harvest areas allow for oyster reef resiliency and adaptation to climate change.
- Wild oyster leases facilitate personal investment and ability to experiment with new methods that can help reefs adapt to changing environmental conditions.



Photo by Dan Ward