

Case Study

Models for a Regenerative Economy: Natural Environment Impacts in the Southeast

Apalachicola Bay Oyster Restoration, Apalachicola Bay, Florida (2013-present)

Prepared by Bailey Shea, Program Coordinator for Policy

Overview

Funder: National Fish and Wildlife Foundation, Gulf Environmental Benefit Fund

Lead Organization: Florida Fish and Wildlife Conservation Commission

Description: A massive project is underway to restore oyster habitat and populations in Apalachicola Bay. Located in the Florida Panhandle, the Bay has historically been one of the most biologically diverse ecosystems in the U.S. and once supplied roughly 90% of Florida's and 10% of the nation's oysters.¹ The restoration project will lead to regeneration of the natural environment, the local economy and way of life, and the way that the built environments in three Southeastern states consume and conserve water.



A number of organizations work together to protect the Apalachicola Bay oyster population, whose filtering abilities are essential to maintaining healthy waters. (Photo by John Wijsman)

Natural Environment Impact

- The Apalachicola Bay has been in need of restoration and regeneration for years, after decades of overdevelopment, oil spills, increasingly frequent and intense storms, drought and overconsumption of water from the Apalachicola-Chattahoochee-Flint (ACF) Basin, which feeds into the Bay, have created rampant erosion, dangerously high salinity levels, and decimated the natural systems and habitats. Decreased freshwater outflows from the ACF Basin have led to high salinity in the Bay, creating an unsatisfactory environment for oysters and increasing predators. Each year, oyster populations see higher juvenile mortality, and fewer adults survive. In addition to natural degradation of existing reefs, oyster harvests remove shell material from reefs. In 2012, the Bay was devastated by drought and hit a breaking point. After 2012, oyster harvests decreased nearly 98%.²
- The Florida Fish and Wildlife Conservation Commission (FWC) is the latest organization to receive funding from the National Fish and Wildlife Foundation (NFWF) to work on the Apalachicola Bay Oyster Reef Restoration. This is the second phase of the project, which ultimately aims to restore 3,000 acres of oyster reef habitat and create stakeholder-informed strategies for harvest helping ensure the survival of the reefs through mapping and data collection, stakeholder-informed strategic planning, and clutching –laying down materials for oysters to rebuild their reefs – in 2022.
- Oyster populations are critical to maintaining healthy waters through natural filtration, ensuring populations of predators like conches and certain sea snails are kept in balance, and even protecting underwater vegetation from the violent impacts of storms by acting as a natural breakwater.^{3,4} Thus, the Apalachicola Bay Oyster Reef Restoration will do more than restore a minimum amount of the natural oyster populations; it will in fact be working to regenerate the rich natural environment of the Bay.

Connection to the Social Environment

- In 2019, NFWF, which manages the Gulf Environmental Benefit Fund (GEBF) that resulted from the 2010 Deepwater Horizon oil spill, dedicated nearly \$55 million to support efforts to restore the Bay. While the GEBF had already identified Apalachicola Bay as a priority site for restoration, the effort has further benefits to associated restoration efforts. In addition to this project team, more researchers will engage in the projects in the Bay. Apalachicola Riverkeeper, the University of Florida, Florida State University, the Florida Department of Agriculture and Consumer Services, the Apalachicola National Estuarine Research Reserve and Ducks Unlimited are all involved in four related efforts to restore the Bay's oyster habitat and the hydrologic function in the Bay's wetlands and floodplains.⁵

¹ <https://www.nfwf.org/sites/default/files/gulf/Documents/fl-apalachicola-bay.pdf>

² <https://myfwc.com/news/all-news/oyster-comm-720/>

³ <https://www.fisheries.noaa.gov/national/habitat-conservation/oyster-reef-habitat#:~:text=Besides%20providing%20seafood%2C%20oysters%20make%20of%20water%20per%20day>

⁴ <https://www.smithsonianmag.com/innovation/storms-get-bigger-oyster-reefs-can-help-protect-shorelines-180967774/>

Case Study

Models for a Regenerative Economy: Natural Environment Impacts in the Southeast

Apalachicola Bay Oyster Restoration, Apalachicola Bay, Florida (2013-present)

Prepared by Bailey Shea, Program Coordinator for Policy

- The effort to rebuild the Apalachicola Bay, which stems in part from the decades-long judicial battle over water rights between Georgia, Florida and Alabama, has resulted in a stakeholder engagement project called the Apalachicola-Chattahoochee-Flint (ACF) Stakeholders.⁶ This group of stakeholders, which includes those involved in oyster harvest planning and the groups involved in the various research projects in the area, exemplifies an unprecedented level of involvement to restore a region that might justly be referred to as a movement.
- The potential economic benefits to the Apalachicola Bay community are immense. The fishery once supported over 2,500 jobs.⁷ In 2019, only two reefs in the Bay produced harvest-size oysters, and each of those reefs were significantly depleted. Since 2012, oyster harvests have declined to just 21,000 pounds annually – that’s compared to the 3 million pounds annually seen prior to that year. What’s more, the value of oysters has declined as well, by 98% in the last eight years.⁸ In July 2020, oyster harvesting in the historic Apalachicola oyster fishery was officially suspended for at least five years to give the chance for the reef to regrow.⁹
- The long-term benefits of the harvest stoppage and the restoration work underway have yet to be realized, but the majority of the community are optimistic for a revived and sustainable local seafood economy in the Bay region. Restoring livelihoods for thousands of community members and providing a healthier ecosystem and economic foundation for the future – now that’s a regenerative economy.

Connection to the Built Environment

- While the solutions to the regeneration of Apalachicola Bay are grounded in the natural and social environments, the built environment also plays a role. The water consumption needs of the built environment – from the Chattahoochee River headwaters in the northeast corner of Georgia through Atlanta, Columbus, and Auburn, Alabama, all the way down to the crook of the Florida Panhandle – combined with intense drought particularly from 2010 to 2012, have decimated the freshwater flows and created the scenario we’re seeing play out in the Bay today.¹⁰
- For three decades, a judicial battle commonly referred to as the “Tri-State Water Wars” between Georgia, Florida and Alabama has debated the water rights of the 19,800 acre basin that stretches across three states.¹¹ Much of the debate hinges on the need to support Atlanta’s growing population with water from the ACF Basin. This demand for water has put significant strain on the freshwater flows to the Apalachicola Bay. What’s more, Alabama is concerned that the basin’s depleting water supply could limit the water available for its power generation and other needs. Several dams for hydroelectric power plants lie along the rivers in the Basin, further complicating matters.
- Currently, the case is in its second period of review by a Special Master of the Supreme Court of the United States. The Supreme Court has announced that it will hear the case in February 2021 and a final ruling in the case by the end of 2021.^{12,13} In the meantime, much continues to be done to conserve water up-river. In addition to the restoration project and related research projects at play, if the Apalachicola Bay is to survive as a healthy regenerated natural system for years or decades to come, municipalities, watershed management departments, and policymakers in the energy and water space must reduce water system leaks and waste, require water efficiency efforts by residents and businesses, and prioritize water conservation and water loss reduction in the electric power sector.

⁵ <https://www.nfwf.org/gulf-environmental-benefit-fund>

⁶ <https://www.acfstakeholders.org/>

⁷ <http://apalachicolariverkeeper.org/wp-content/uploads/4b-presentation-apalachicolaoysters.pdf>

⁸ <https://www.npr.org/2020/07/22/894074674/floridas-oyster-beds-devastated-by-years-of-drought-other-pressures>

⁹ <https://www.npr.org/2020/07/22/894074674/floridas-oyster-beds-devastated-by-years-of-drought-other-pressures>

¹⁰ <https://www.acfstakeholders.org/the-basins>

¹¹ <https://www.southernenvironment.org/cases-and-projects/tri-state-water-wars-al-ga-fl>

¹² https://www.supremecourt.gov/oral_arguments/calendarsandlists.aspx

¹³ <https://www.npr.org/2020/01/07/790136973/a-3-decade-long-water-dispute-heads-to-the-supreme-court>