

Activity: Marsh Restoration in Fish River and Oyster Bay (Implementation)

Unique Identifier: DOC_RESTORE_001_006-008_Cat2

Location: Alabama, Baldwin County

Type of Activity: Implementation

FPL Category: 1 – Funding Approved

Cost Estimate: \$2,250,089

Responsible Council Members: Department of Commerce (DOC)/National Oceanic and Atmospheric Administration (NOAA) and Alabama Department of Conservation and Natural Resources (ADCNR)

Originally submitted by: The DOC as a component within the proposal “Connecting Coastal Waters: Restoring Coastal Wetland Hydrology”

Executive Summary: This project is part of the Connecting Coastal Waters initiative NOAA would lead with partners to implement projects that restore the extent, functionality, and resiliency of Gulf Coast wetlands. This project would restore a more natural hydrology to a total of 200 acres of wetlands at two sites within the Mobile Bay ecosystem in Alabama. At each site, this project would implement restoration activities, conduct monitoring to assess restoration outcomes, and engage in outreach and educational activities with restoration practitioners and stakeholders.

PROJECT DESCRIPTION: The project would consist of the following.

Specific Actions/Activities: The Connecting Coastal Waters (CCW) initiative would restore and enhance ecosystem resilience, sustainability, and natural defenses by reestablishing natural hydrology and connectivity between freshwater and marine habitats in priority areas across the Gulf Coast. This project would implement restoration activities, conduct monitoring to assess restoration outcomes, and engage in outreach and educational activities with restoration practitioners and stakeholders to restore wetlands at two sites across Mobile Bay, which are discussed in greater detail below.

- 1) Fish River and Weeks Bay Marsh Restoration** would restore 50 acres of wetlands by back-filling dead-end canals with approximately 40,000 cubic yards of upland-sourced sediment to create both more natural tidal creeks and salt marsh habitat. In areas where berms/levees are present, berms would be graded to the elevation of the adjacent marsh. Existing drainage ways would be maintained and connected to the restored tidal creeks. Plant material from donor sites would be used to plant the filled areas at appropriate densities. Invasive species would be treated to reduce or remove them.
- 2) Oyster Bay Marsh Restoration** would restore 150 acres of estuarine marsh by replacing undersized culverts, removing nuisance vegetation, and planting native species. Specific actions would be based on the design plan, including a hydrological assessment, developed under the

planning phase for this project to determine suitable locations, sizes, and elevations of replacement culverts. ADCNR would remove sediments from existing and historic channels to restore natural flow patterns and to remove nuisance vegetation before replacing culverts. ADCNR would coordinate with the City of Gulf Shores prior to and during construction. After culverts and headwalls are in place and the road surface is repaired, any remaining unvegetated areas would be replanted using native species from a suitable donor site.

Task 1: Planning and Local Involvement: A project team would be assembled to provide technical input and expertise during the construction and monitoring of this project. Team members would provide a multi-disciplinary approach to evaluate monitoring data and recommend any corrective actions necessary to meet restoration goals.

Deliverable 1: Project team member's list, roles, and team description.

Task 2: Construction: NOAA and ADCNR would develop a contract statement of work, select a construction contractor, determine a schedule, and finalize construction plans. The construction task includes both the action of restoring the site and post-construction management including monitoring of the constructed elements. Monitoring would occur before, during, and after construction to ensure work is progressing and completed as designed.

Deliverable 2.1: Construction Plan of Work and Bid Documents.

Deliverable 2.2: Final construction as-built drawings and construction completion report.

Task 3: Monitoring and Evaluation: This task would implement a monitoring and evaluation plan developed through the project planning phase. The data collected before and after project construction would document progress toward achieving restoration project goals and objectives and inform adaptive management decision-making. Three types of monitoring would be conducted: 1) pre-implementation monitoring—provides baseline information to compare with post implementation data to determine whether the restoration is having the desired effect; 2) implementation monitoring—ensures the project is being implemented as planned and identifies needed modifications; and 3) effectiveness monitoring—enables evaluation of whether the project has met its objectives.

Deliverable 3.1: Semi-annual Monitoring Reports and Data Sheets.

Deliverable 3.2: Final Monitoring and Evaluation Report.

Task 4: Outreach and Education: The project team would implement the Outreach and Education Plan developed through the project planning phase in cooperation with partners and existing community groups. Strategies may include site tours, presentations, interpretive outreach materials, videos, and other efforts to share project success. Activities conducted would be documented, including copies of materials produced, and compiled into a final report.

Deliverable 4.1: Outreach and Education Report.

Ecological Benefits/Outcomes and Metrics:

- **Fish River and Weeks Bay Marsh Restoration:** This project is located within Weeks Bay National Estuarine Research Reserve (NERR). The project site supports about 50 acres of estuarine tidal marsh that were impacted during the excavation of about 5 acres of

canals. Restoration of these canals would help restore water quality and provide suitable habitat for juvenile finfish, feeding areas for birds, and benthic invertebrates such as blue crab.

- **Oyster Bay Marsh Restoration:** This project site includes about 150 acres of estuarine tidal and brackish marsh. Restoration of this site would allow finfish movement and provide more suitable feeding habitat for birds and benthic invertebrates.

Metrics to evaluate ecological benefits and outcomes would be established in the planning phase of this project. Potential monitoring parameters to measure success include:

Project	Constructed as Designed	Acres Restored	Flow Rate	Plant Coverage	Invasive Cover	Water Quality *
Fish River	✓	✓	✓	✓	✓	✓
Oyster Bay	✓	✓	✓	✓	✓	✓

*Water quality could include dissolved oxygen, salinity, and turbidity.

Leveraging:

- **Adjoining:** The Fish River/Weeks Bay sites would benefit from other restoration and research projects planned by the Weeks Bay NERR for these properties including prescribed fire, invasive species eradication, and flora and fauna surveys.
- **Building on prior or other investments:** Technical input by Weeks Bay NERR and the City of Gulf Shores staff during construction, operation, and maintenance phases. Local partners can assist with construction observation and identification of maintenance needs and Gulf Shores would take responsibility for Oyster Bay post-construction inspection and maintenance.

Duration of Activity: 2 Years.

Life of Activity: Life span of culverts is conservatively estimated to be 25 years. The Fish River/Weeks Bay Restoration site is protected in perpetuity.

RESPONSE TO SCIENCE REVIEWS:

Comment: External science review of the Connecting Coastal Waters proposal, which included a total of eleven projects, resulted in all or mostly positive comments, but with a request for more information. Reviewers requested information related to outcomes of planning, engineering, design, and permitting including, site-specific conditions, evaluation of uncertainties, risk, and mitigation, measures of success, and data quality standards.

Response: This project would implement restoration activities with detailed restoration plans, certified engineering and design, and approved permits completed by the project planning phase. The project’s construction design, as well as the monitoring and evaluation plan, would incorporate necessary steps to mitigate for project uncertainties and risks that would be identified in greater detail through the permitting and environmental compliance process

conducted under the planning phase (see additional information below). This project would also implement a detailed monitoring and evaluation plan developed under the planning phase that would collect data to evaluate project specific measures of success. Data collected under this proposal would undergo verification to ensure the quality, utility, and integrity of information collected.

Comment: On the Fish River and Weeks Bay Marsh Restoration portion, the review stated that filling channels must be accompanied by removal of levee.

Response: The project implementation includes both filling the canals and removing berms / levees. Additional detail has been provided above.

ENVIRONMENTAL COMPLIANCE:

To comply with the National Environmental Policy Act (NEPA), the Council is adopting the 2015 Programmatic Environmental Impact Statement (PEIS) developed by NOAA's Restoration Center. This PEIS provides a programmatic-level environmental analysis to support NOAA's restoration activities throughout the coastal United States, including the Gulf of Mexico. The NOAA PEIS includes a programmatic-level analysis of restoration alternatives by activity type and the associated environmental consequences. In addition to providing a programmatic analysis, the PEIS can be used to cover site-specific actions, including funding awards, provided that the activity being proposed is within the range of alternatives and scope of potential environmental consequences and does not have significant adverse impacts. NOAA has determined and documented, in NEPA Inclusion Analyses and NEPA Concurrence Forms dated November 23, 2020, that the Category 2 Marsh Restoration in Fish River and Oyster Bay implementation activities for which Council funding is being sought meet these criteria and that no further NEPA review is needed.

During project-specific engineering and design and Clean Water Act (CWA) permitting, there was additional analysis of site specific conditions and the effects of project-specific design alternatives. It was determined that projects' activities meet the criteria of U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) 27: Aquatic Habitat Restoration, Enhancement and Establishment Activities (USACE file number SAM-2019-00333-SBC). NOAA's Restoration Center coordinated with NOAA's Protected Resources and Habitat Conservation Divisions and determined that consultations have been completed for resources under the agency's jurisdiction with respect to the Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA). NOAA Restoration Center also received concurrence from the U.S. Fish and Wildlife Service with regards to effects' determinations under the ESA. Regarding the National Historic Preservation Act, NOAA Restoration Center received concurrence from the Alabama State Historic Preservation Office of the Alabama Historical Commission that the activities will have no effect on cultural resources eligible for listing on the National Register of Historic Places. NOAA also consulted with federally recognized tribes.

The Council has reviewed the applicable environmental compliance documentation. Based on this review, the Council is proposing to adopt the PEIS to support the approval of implementation funds for the Marsh Restoration in Fish River and Oyster Bay, provided that the activities are implemented in accordance with the effects analyzed in the PEIS and with the terms and conditions of NWP 27.

Associated environmental compliance documentation can be found [here](#).