

# ALABAMA STATE EXPENDITURE PLAN (SEP)

## Project #1: Environmental Restoration of Cotton Bayou & Terry Cove

### Project Description/Summary

- a) This project will provide planning assistance to develop Best Available Science (BAS) documentation needed to plan and carry out a comprehensive environmental study. Once completed, the BAS will be used to prepare an engineering plan and cost estimate for restoration of the Cotton Bayou/Terry Cove system in Orange Beach, Alabama.

The Cotton Bayou/Terry Cove system is located in the heart of Orange Beach, Alabama, and is a component of the larger Perdido Bay watershed, which is connected to the Gulf of Mexico by the Perdido Pass. The canals, marshes, and other shallow waters of the Cotton Bayou/Terry Cove system have historically served as nursery habitat for aquatic and avian wildlife. Over time, human development and re-development has replaced much of the natural shoreline with seawalls and other structures. Historically poor storm water run-off management, natural extreme tropical storm events, and an ongoing rapidly growing population may have contributed to sediment has accumulated in ways that disrupt natural hydrodynamic mixing. These and other unknown factors are contributing to sedimentation buildup and water quality degradation; as well as, highly fluctuating temperatures, salinity, and dissolved oxygen concentrations, which may be driving algae blooms, fish kills, and other indicators of poor ecological health.

The goal of this project is to develop a science-based, comprehensive understanding of the factors governing the environmental and ecological health of the Cotton Bayou/Terry Cove system, leading to a scientifically-defensible plan for restoring the ecological and environmental health within this system.

Activities associated with this project will also include the comprehensive administration of this grant, including, but not limited to, project development and oversight, contracting, and sub-recipient monitoring.

- a. **Need:** Without restoration of the Cotton Bayou/Terry Cove system, there will be continued degradation of environmental and ecological conditions with a myriad of known and unknown future consequences for the living resources within this system and the Orange Beach community.

**Purpose:** The purpose of this project is to develop BAS documentation (including existing data, peer- and non-peer reviewed literature), use this documentation to plan and carry out a comprehensive environmental study of Cotton Bayou and Terry Cove located in Perdido Bay adjacent to the City of Orange Beach, AL, and use the results of this study to prepare an engineering plan and cost estimate for restoration of the Cotton Bayou/Terry Cove system.

**Objective:** The primary objectives of this project are:

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- Develop Best Available Science documentation to support historical and existing hydrologic and environmental conditions governing water quality and wildlife habitat in Cotton Bayou and Terry Cove;
  - Conduct a comprehensive study of the Cotton Bayou/Terry Cove system, based on BAS documentation, to quantify existing conditions, predict future outcomes, and test potential solutions for improving existing conditions; and
  - Develop a professionally designed restoration plan based on the results of the BAS documentation and comprehensive study to achieve long-term improvements in water quality and wildlife habitat in this system.
- b. This project is located in the Gulf Coast region and will be carried out in the City of Orange Beach in Baldwin County, Alabama.
- c. This project is expected to begin 7/1/2019 and end 6/30/2021 (2 years).
- d. The proposed project will be implemented by the City of Orange Beach.
- b) This project will provide data necessary to ultimately improve the water quality and ecological conditions of the Cotton Bayou/Terry Cove system. Improved water quality leads to enhanced ecosystem health and recreational opportunities resulting in the restoration of the Gulf economy.

### Eligibility and Statutory Requirements

This activity is located in the Gulf Coast Region and is eligible for Spill Impact Component funding under Category #8 - Planning Assistance (primary). Secondary activities include Category #1 - Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region; Category #2 - Mitigation of damage to fish, wildlife, and natural resource; Category #3 - Implementation of a federally approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring; and Category 10# - Promotion of tourism in the Gulf Coast Region, including recreational fishing.

### Comprehensive Plan Goals and Objectives

This project is consistent with the following Comprehensive Plan goals:

- Goal 1: Restore and Conserve Habitat – Restore and conserve the health, diversity, and resilience of key coastal, estuarine, and marine habitats;
- Goal 2: Restore Water Quality and Quantity – Restore and protect the water quality and quantity of the Gulf Coast region’s fresh, estuarine and marine waters;
- Goal 3: Replenish and Project Living Coastal and Marine Resources – Restore and protect healthy, diverse, and sustainable living coastal and marine resources:

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- Goal 5: Restore and Revitalize the Gulf Economy – Enhance the sustainability and resiliency of the Gulf economy.

This project supports the following Comprehensive Plan objectives:

- Objective 1: Restore, Enhance, and Protect Habitats – Restore, enhance, and protect the extent, functionality, resiliency, and sustainability of coastal, freshwater, estuarine, wildlife, and marine habitats. These include barrier islands, beaches, dunes, coastal wetlands, coastal forests, pine savannahs, coastal prairies, submerged aquatic vegetation, oyster reefs, and shallow and deepwater corals;
- Objective 2: Restore, Improve, and Protect Water Resources – Restore, improve, and protect the Gulf Coast region’s fresh, estuarine, and marine water resources by reducing or treating nutrient and pollutant loading; and improving the management of freshwater flows, discharges to, and withdrawal from critical systems; and
- Objective 7: Improve Science-Based Decision-Making Processes – Improve science-based decision-making processes used by the Council.

### Major Milestones

- a) Milestone 1: Assessment of existing data
- b) Milestone 2: Prepare Best Available Science documentation
- c) Milestone 3: Conduct study
- d) Milestone 4: Prepare study interim report
- e) Milestone 5: Prepare study final report
- f) Milestone 6: Draft Phase II plan

### Success Criteria/Metrics/Outcomes

The anticipated outcome of the Environmental Restoration of Cotton Bayou/Terry Cove Canals project will be:

- Development of a plan to restore the ecological health of the Cotton Bayou/Terry Cove system.

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**Table 2. Proposed Projects Success Criteria/Metrics/Outcomes**

Activity	Anticipated Project Success Criteria/Metrics	Short-term outcome	Long-term outcome
Development of a plan to restore Cotton Bayou/Terry Cove	Development of Best Available Science documentation  Completion of an Environmental Study  Completion of Engineering Plan	Development of a restoration plan that is ready for implementation	Improved ecosystem health  Enhanced recreational opportunities

## Monitoring and Evaluation

- a) Submit procurement/bid process results to ADCNR prior to awarding contract(s)
- b) Submission of BAS report to ADCNR for review
- c) Submission of Environmental Study to ADCNR for review
- d) Development and submission to ADCNR of the Restoration Plan
- e) Submission of quarterly and final report to ADCNR for review

## Best Available Science

It is necessary to develop a science-based, comprehensive understanding of the factors governing the environmental and ecological health of the Cotton Bayou/Terry Cove system, leading to a scientifically-defensible plan for restoring the ecological and environmental health within this system. Once the problems are identified, solutions based on Best Available Science will be developed to ensure the most sustainable outcome for improved ecosystem health.

This project is consistent with the values and recommendations set forth in the MBNEP's Comprehensive Conservation and Management Plan 2013-2018, available on the MBNEP [website](#).

## Budget/Funding

- a) Estimated cost of the project and amount to be requested from Spill Impact Component Funds: \$515,000 (100% - Planning).
- b) No other funding sources are anticipated at this time.

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## Partnerships/Collaboration (if applicable)

Not applicable at this time.

## Leveraged Resources (if applicable)

Not applicable at this time.

## Funds Used As Non-Federal Match (if applicable)

Not applicable at this time.

## Other

Not applicable at this time.



Figure 1: Location of Cotton Bayou and Terry Cove in Orange Beach, Alabama.