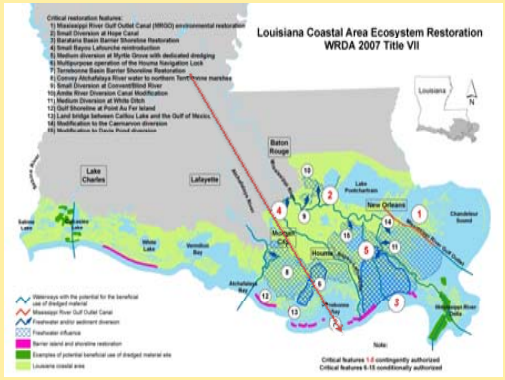
Louisiana Coastal Area
Terrebonne Basin Barrier Shoreline Restoration - Feasibility Study

Joseph “Wes” LeBlanc
Joseph.LeBlanc@la.gov
State of Louisiana, Office of Coastal Protection & Restoration

LCA WRDA 2007 TITLE VII PROJECTS



STUDY AUTHORITY

Title VII of the Water Resources Development Act 2007: (Public Law 110-114, 121 STAT. 1270) authorizes the Louisiana Coastal Area (LCA) program. The *Louisiana Coastal Area*, *Louisiana Ecosystem Restoration Study* was recommended to Congress by a Chief of Engineers report dated January 31, 2005, which called for a coordinated, feasible solution to the identified critical water resource problems and opportunities in coastal Louisiana.

The goal of the LCA Plan is to reverse the current trend of degradation of the coastal ecosystem using restoration strategies that: reintroduce historical flows of river water, nutrients, and sediment to coastal wetlands: restore coastal hydrology to minimize saltwater intrusion; and maintain the structural integrity of the coastal ecosystem. The Terrebonne Basin Barrier Shoreline Restoration project was identified in the LCA 2005 report as a critical near term restoration project.

SIGNIFICANCE

Louisiana contains one of the largest expanses of coastal wetlands in the contiguous United States and accounts for 90% of the total coastal marsh loss occurring in the nation. The Terrebonne Basin Barrier Shoreline Restoration Study Area is an unique and valuable ecosystem since it includes wetland habitats, essential fish habitat, and has high fish and wildlife values. The barrier islands protect the interior coastal wetlands, which also have high fish and wildlife value as well as great economic value through their support of commercial and recreational fisheries. These ecosystems provide habitat for migratory birds, wildlife, finfish, shellfish, and other aquatic organisms including threatened or endangered species.

PROJECT PURPOSE AND GOAL

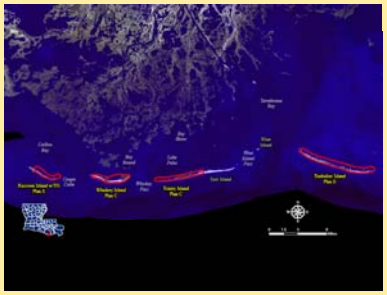
Purpose:

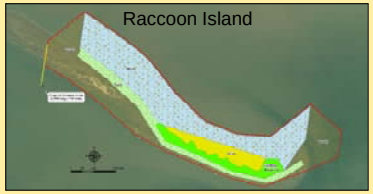
Address the critical near-term needs for shoreline restoration in Terrebonne Basin through simulation of historical conditions, which will be achieved by enlarging the existing barrier islands (width and dune crest) and reducing the current number of breaches.

Goal:

Reverse the continuing degradation and deterioration of the Isles Dernieres (Raccoon Island, Whiskey Island, Trinity Island, Wine Island, and East Island) and Timbalier Islands (Timbalier Island, East Timbalier Island) in order to achieve a sustainable coastal ecosystem that can support and protect the environment, economy, and culture of southern Louisiana and the Nation.

RECOMMENDED PLAN





WITHOUT ACTION

Without action, the barrier island system would:

- Continue to degrade in geomorphic form and ecological function;
- Lose productive and diverse fish and wildlife habitats;
- Lose the ability to diminish coastal flooding during periods of storm surge; and
- Lose the ability to maintain gradients between saline and freshwater systems.

SOLUTION

This project would restore the geomorphologic form and ecologic function of four islands in the Terrebonne Basin barrier system. Immediately after construction, the project will add 3,283 acres of habitat (dune, supratidal, and intertidal) to the existing island footprints of Raccoon, Whiskey, Trinity, and Timbalier Islands, increasing the total size of the islands to 5,840 acres. This includes approximately 472 acres of dune, 4,320 acres of supratidal habitat, and 1,048 acres of intertidal habitat. The project will require approximately 27.3 mcy of beach material and 18.7 mcy of marsh material for initial construction. This material will be dredged from a number of offshore borrow areas.

The creation of dune, supratidal, and intertidal habitats will provide essential habitats for fish, migratory birds, and other terrestrial and aquatic species. Furthermore, the project would increase sediment input to supplement longshore sediment transport processes along the gulf shoreline by mechanically introducing compatible sediment, and increasing the ability of the restored area to continue to function and provide habitat with minimum continuing intervention. Sediment placed on Trinity Island would eventually be transported to Whiskey Island and Raccoon Island as the sediment moves westward through the system. Raccoon Island would also receive sediment directly from Whiskey Island.