



## Chandeleur Island Restoration

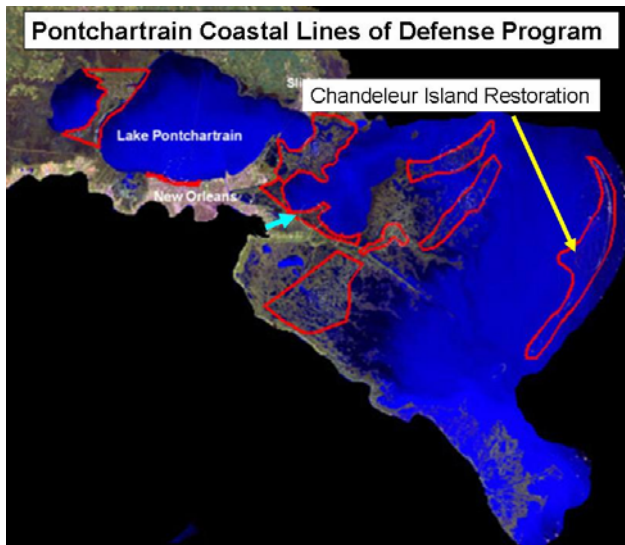
(Pontchartrain Coastal Lines of Defense Program)

Lake Pontchartrain Basin Foundation – Coastal Sustainability Program

Chandeleur Island Restoration is one of ten priority project areas within the Pontchartrain Coastal Lines of Defense Program for the Pontchartrain Basin (**Figure 1**). All projects within this program provide significant habitat restoration and flood protection. The Chandeleur Islands were heavily damaged by Hurricane Katrina and their restoration is significant mitigation for fish, wildlife and natural resources. Chandeleur Islands protect Chandeleur Sound and the Biloxi marsh both of which have numerous oil and gas developments. In 2005, an oil spill oiled hundreds of nesting brown pelicans in nearby Breton Sound.

The Pontchartrain Coastal Lines of Defense Program represents an integrated set of projects which is based on the highly vetted Comprehensive Habitat Management Plan for the Pontchartrain Basin (2006). The CHMP was developed over two years by a team of qualified engineers, biologists and physical scientists including representation from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, University of New Orleans, Southeastern University, LA Department of Nature Resources, Pontchartrain Institute for Environmental Sciences and LSU AgCenter. The plan was peer-reviewed by representatives from National Marine Fisheries Service, Natural Resource Conservation Service, LSU, U.S. Geological Survey, LA Geological Survey, The Nature Conservancy, and EPA Gulf of Mexico Program Office and the Coalition to Restore Coastal Louisiana.

The final CHMP is a federally approved plan by the EPA Region VI office. The Coalition to Restore Coastal Louisiana and the Louisiana Wildlife Federation have passed resolutions endorsing both the Comprehensive Habitat Management Plan and the Pontchartrain Coastal Lines of Defense Program. Since its release, the Pontchartrain Coastal Lines of Defense Program has been presented to numerous parish, state and federal officials. It is also publicly accessible on the web.



**Figure 1:** Location of the Chandeleur Island Restoration Project. This project is one ten projects in the Pontchartrain Coastal Lines of Defense Program. Restoration includes beach nourishment and vegetative planting.

Lake Pontchartrain Basin Foundation, 2006, Comprehensive Habitat Management Plan for the Pontchartrain Basin, <http://www.saveourlake.org/wetlands.htm> on April 2006

Lake Pontchartrain Basin Foundation, 2006, Pontchartrain Coastal Lines of Defense Program, <http://www.saveourlake.org/wetlands.htm> on April 2006

Lopez, J. A., 2006, The Multiple Lines of Defense Strategy to Sustain Coastal Louisiana, white paper, Lake Pontchartrain Basin Foundation

## Fact Sheet – Chandeleur Island Restoration

**Project Name:** Chandeleur Island Restoration

### Coastal Planning

Included in Coast 2050

Comprehensive Habitat Management Plan – endorsed by CRCL and LA Wildlife Federation

CWPPRA nominated project by U.S. FWS for PPL16

### Project Location

Region 1, Pontchartrain Basin, St. Bernard Parish

### Problem

The Chandeleur Islands have had significant recent hurricane impacts from several storms, including Hurricane Georges in 1998, Tropical Storms Isidore and Hanna in 2002, Tropical Storm Bill in 2003, Hurricane Ivan in 2004, Tropical Storm Cindy, Hurricane Dennis and Hurricane Katrina in 2005. Hurricane Katrina appears to have done the most severe damage. **Figure 2** indicates that a large portion of the islands were washed away by the hurricane. 60% of the island may have been initially lost after Hurricane Katrina (Penland, pers. comm.). Much of the un-vegetated sand portions of the islands are no longer emergent (**Figure 3**). The USGS preliminary estimate is that the Chandeleur Islands lost 3.6 miles of land area from fall 2004 to fall 2005 (Barras and Johnston, 2006).

### Proposed Project Features

- Beach nourishment of beach and close chronic breaches with sand
- Replant native plants
- Rebuild salt marsh

### Goals

- Restore barrier island shoreface maximizing long shore transport
- Restore dune habitat using fencing or other stabilization features
- Stabilize overwash fans where appropriate with planting of native vegetation
- Restore bay side lagoons

### Preliminary Project Benefits

The project will restore approximately 5 miles of barrier island representing approximately 800 acres of barrier island habitats.

### Identification of Potential Issues

The Chandeleur Islands have been presumed to be off limits for restoration due to the federal refuge. This apparently not the case. James Harris of USFWS has indicated restoration is possible as long as impacts are minimized.

### Preliminary Construction Costs

The estimated construction cost in the primary Chandeleur Island area is \$60 million - \$100 million.

### Preparers of Fact Sheet

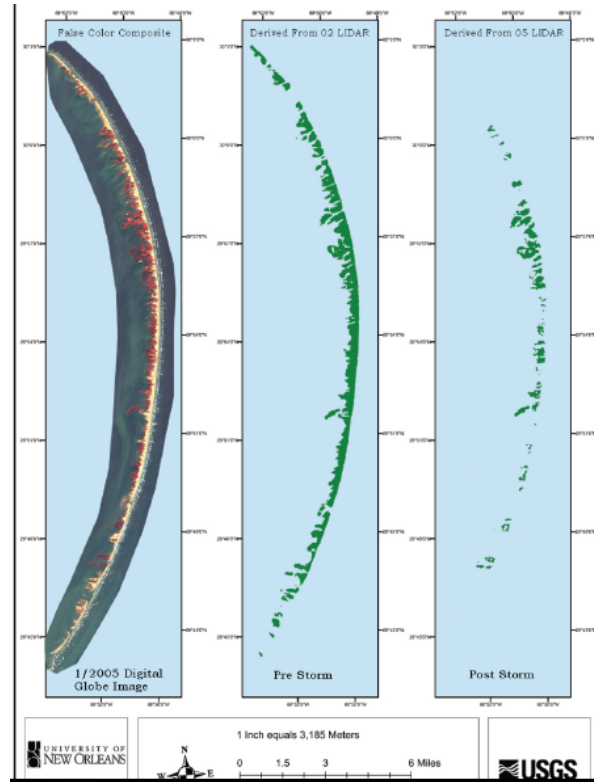
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**Figure 2:** Reduced areal extent of the Chandealeur Islands from recent hurricanes.



**Oblique aerial photographs of a segment of the Chandealeur Islands in the easternmost area of the Pontchartrain Basin in southeastern Louisiana.**

Arrows mark a common referenced location. The Chandealeur Islands are part of the Breton Island National Wildlife Refuge established by President Teddy Roosevelt in 1904. The islands normally function as a major bird rookery, which provides critical habitat for several endangered species.

The photographs were taken before and after four hurricane passages occurring between 2001 and 2005. Note the extreme overwash of the barrier island in which most sand (white area) was washed away. Much of the vegetated platform (dark area) was also eroded. The Chandealeur Islands do breach naturally and may heal themselves. Recent storm activity, such as Hurricane Katrina, has not allowed sufficient time for significant recovery of the islands. Long term, the islands have had a net reduction in areal extent resulting in a loss of important habitat and hurricane protection to the coast. Imagery from the U.S. Geological Survey – St. Petersburg Florida.

**Figure 3:** Typical pattern of loss on Chandealeur Islands from Hurricane Katrina